



Board of Directors
Thursday, January 28, 2021
1:00 pm
Zoom

Join Zoom Meeting

<https://zoom.us/j/92891972345?pwd=SjNLMWZ2enFIMi9QMXUwa0FjSHB6UT09>

Meeting ID: 928 9197 2345

Passcode: 391038

+1 778 907 2071 Canada

A G E N D A

1. Call to Order

2. Land Acknowledgement

We acknowledge and appreciate that the land on which we gather is the converging, traditional and unceded territory of the Syilx, Secwepemc, Sinixt and Ktunaxa Peoples as well as the Metis Peoples whose footsteps have also marked these lands.

3. Consideration of the Agenda (additions/deletions)

The agenda for the Regional District of Kootenay Boundary Board of Directors meeting of January 28, 2021 is presented.

Recommendation: Corporate Vote Unweighted

That the agenda for the Regional District of Kootenay Boundary Board of Directors meeting of January 28, 2021 be adopted as presented.

4. Draft Minutes

4.a) The draft minutes of the Regional District of Kootenay Boundary Board of Directors meeting held January 13, 2021 are presented.

[Draft Minutes-Board of Directors-13 Jan 2021-BoD Jan 28 21](#)

Recommendation: Corporate Vote Unweighted

That the draft minutes of the Regional District of Kootenay Boundary Board of Directors meeting held January 13, 2021 be adopted as presented.

5. **Consent Agenda**

The items appearing on the Consent Agenda, which may present a conflict of interest for Directors and or items which the Board wishes to discuss, must be removed from the Consent Agenda and considered separately (Item 12).

5.a) **Consent Agenda Highlights**

- Receipt of Item 10 (Reports-10) 10.a)-Monthly Cheque Register for the month of December 2020 for \$2,367,726.80, 10.b)-RDKB Committee Minutes, 10.c)-Recreation Commission Minutes and 10.d)-Draft Advisory Planning Commission (APC) Minutes.

Recommendation: Corporate Vote Unweighted

That Consent Agenda item 10 be received by general consent of the Board.

6. **Presentations at the Request of the Board**

There are no presentations.

7. **Delegations**

There are not any delegations attending the Board meeting.

8. **Applicants & Persons Attending to Speak to Agenda Items**

8.a) **Electoral Area Services Committee (Jan. 14/21)**

D. Patterson, Planner

Re: Application for Development Variance Permit-Electoral Area C/Christina Lake

Attending: Carolin and Joseph McLean, applicants.

Director Grieve, Committee Chair/Director McGregor, Vice Chair

A staff report from Danielle Patterson, Planner regarding an application for a Development Variance Permit in Electoral Area A/Christina Lake is presented.

[Staff Report McLean DVP BoD Jan 28 21](#)

Recommendation: Stakeholder Vote (Electoral Area Directors) Unweighted

That the Development Variance Permit application submitted by Carolin McLean and Joseph McLean, to vary Section 402.8(b) of the Electoral Area C / Christina Lake Zoning Bylaw No. 1300, 2007 to increase the

height of their garage addition from 4.6 m to 6.7 m – a variance of 2.1 m, for the construction garage containing a car lift on the property legally described as Lot 2, Plan KAP47883, District Lot 1020s, Similkameen Division of Yale Land District, Electoral Area C/Christina Lake be presented to the Regional District of Kootenay Boundary Board of Directors for consideration, with a recommendation to approve.

8.b) Electoral Area Services Committee (Jan. 14/21)

D. Patterson, Planner

Re: FrontCounter BC Referral for Licenses of Occupations for Powder Renegade Lodge-Electoral Area D/Rural Grand Forks and Electoral Area E/West Boundary

*Attending: Cassandra and Kerry Penney, Powder Renegade Lodge, Applicants and Nick Holmes-Smith, Consultant
Margaret Steele, Area D Resident*

Director Grieve, Committee Chair/Director McGregor, Vice Chair

A referral from FrontCounter BC presenting an Adventure Tourism and Roads License of Occupation request from Powder Renegade Lodge Inc. for the purposes of a snowcat-skiing operation, located between Granby Provincial Park and Christina Valley.

[Staff Report PowderRenegade Board-Jan 28 2021](#)

Recommendation: Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors direct staff to forward this staff report for FrontCounter BC Referral – Adventure Tourism and Roads Licenses of Occupations for Powder Renegade Lodge Inc., which contains comments from the Electoral Area E/West Boundary Advisory Planning Commission and the Electoral Area D/Rural Grand Forks Advisory Planning Commission, to FrontCounter BC for consideration, AND FURTHER that the Board requests that the project proponent conduct public consultation before the Province makes a decision.

8.c) Electoral Area Services Committee (Jan. 14/21)

D. Patterson, Planner

Re: Agricultural Land Commission (ALC)-Subdivision Referral in Electoral Area E/West Boundary

Attending: Colleen Kocsis, Applicant

Director Grieve, Committee Chair/Director McGregor, Vice Chair

A staff report from Danielle Patterson, Planner regarding an application for subdivision in the Agricultural Land Reserve (ALR), Electoral Area E/West Boundary near Greenwood is presented.

[Staff Report Kocsis ALRsub Board-Jan 28 2021](#)

Recommendation: Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors direct staff to forward the staff report, without a recommendation, to the Agricultural Land Commission for the subdivision application submitted by Colleen Kocsis for the property legally described District Lot 1020, Similkameen Division of Yale Land District at 2725 Boundary Creek Road, Electoral Area 'E'/West Boundary.

8.d) D. Dean, Manager of Planning & Development

Re: RDKB Bylaw No. 1747-Amending Electoral Area E/West Boundary-Big White Zoning Bylaw No. 1166, 2001

First and Second Readings and Set up Public Hearing

Jeff Barber and Trent Kitsch, attending

[Bylaw1747-Amending Big White Zoning-BoD Jan 28 21](#)

**Recommendation: Stakeholder Vote
(Electoral Area Directors) Unweighted**

That Regional District of Kootenay Boundary Zoning Amendment Bylaw No. 1747, 2021 be read a First and Second time.

**Recommendation: Stakeholder Vote
(Electoral Area Directors) Unweighted**

That staff arrange a public hearing for Regional District of Kootenay Boundary Zoning Amendment Bylaw No. 1747, 2021. **FURTHER** that Director Gee be appointed as the Public Hearing Chair with Directors O'Donnell and McGregor as alternates.

9. Communications (Information Only)-Consent Agenda

There aren't any communications for the Board to consider.

10. Reports-Consent Agenda

10.a) Monthly Cheque Register Summary

The Monthly Cheque Register Summary for December 2020 for \$2,367,726.80 is presented.

[2020 12 Dec Vendor Payments-BoD Jan 28 21](#)

10.b) RDKB Committee Minutes

Minutes of RDKB Committee Meetings as adopted by the respective Committees are presented: Utilities Committee (Nov. 10/20), Electoral Area Services Committee (Nov. 20/20), East End Services

Committee (Dec. 17/20), Beaver Valley Regional Parks and Regional Trails committee (Nov. 17/20)

[Minutes-Utilities Committee-10 Nov-BoD Jan 28 21- Pdf](#)

[Minutes-Electoral Area Services-12 Nov-Jan 28 21 - Pdf](#)

[Minutes-17 Dec -EES-BoD Jan 28 21 Pdf](#)

[Minutes-Nov 17-BV Rec-BoD Jan 28 21](#)

10.c) Recreation Commission Minutes-Consent Agenda

The following minutes of RDKB Electoral Area C/Christina Lake Parks and Recreation Commission and Grand Forks and District Recreation Commission meetings, as adopted by the respective Commissions are presented: Electoral Area C/Christina Lake Parks & Recreation Commission (Nov. 18/20 and Dec. 9/20), Grand Forks and District Recreation Commission (Sept. 10/20, Oct. 8/20 and Nov. 12/20).

[Minutes-Area C Parks & Recreation-Nov. 18 20-BoD Jan 28 21](#)

[Minutes-Area C Parks & Recreation-Dec. 9 20-BoD Jan 28 21](#)

[Minutes-Grand Forks & District Recreation-Sept. 10 20-BoD Jan 28 21](#)

[Minutes-Grand Forks & District Recreation-Oct. 8 20-BoD Jan 28 21](#)

[Minutes-Grand Forks District & Recreation-Nov12 20-BoD Jan 28 21](#)

10.d) Draft Advisory Planning Commission (APC) Minutes

The following draft minutes of the Advisory Planning Commission (APC) meetings held during January 2021 are presented:

Electoral Area A (Jan. 5/21), Electoral Area B/Lower Columbia-Old Glory (Jan. 4/21), Electoral Area D/Rural Grand Forks (Jan. 5/21), Electoral Area E/West Boundary (Jan. 4/21), and Electoral Area E/West Boundary (Big White) (Jan. 5/21).

[APC Minutes-Area A-Board-Jan 28 2021](#)

[APC Minutes-Area B-Board-Jan 28 2021](#)

[APC Minutes-Area D-Board-Jan 28 2021](#)

[APC Minutes-Area E-Board-Jan 28 2021](#)

[APC Minutes-BigWhite-Board-Jan 28 2021](#)

11. Board Appointments Updates-Consent Agenda

The Board appointments update(s) will be presented at the next meeting.

Southern Interior Development Initiative Trust (S.I.D.I.T.)-Director McGregor

B.C. Rural Centre/Southern Interior Beetle Action Coalition (S.I.B.A.C.)-Director McGregor

Okanagan Film Commission-Director Gee

Boundary Weed Stakeholders Committee-Director Gee

Columbia River Treaty Local Government Committee (CRT LGC)-
Directors Worley & Langman
Columbia Basin Regional Advisory Committee (CBRAC)-Director
Worley & Goran Denkovski, Manager of Infrastructure &
Sustainability
West Kootenay Regional Transit Committee (Directors Cacchioni &
Worley, Alternate Director Parkinson)
Rural Development Institute (RDI)-Director Worley Chair's Update-
Chair Langman

12. Items Removed from the Consent Agenda for Consideration

If necessary, the Board may consider items removed from the
Consent Agenda.

13. Unfinished Business

**13.a) M. Stephens, Manager of Emergency Programs
Re: Proposed Revised 2021-2025 Emergency Preparedness
(012) Financial Plan**

Director Worley, Emergency Preparedness Liaison

A staff report from Mark Stephens, Manager of Emergency Programs
presenting an updated 2021 Emergency Preparedness Service (012)
Five Year Financial Plan.

[Staff report -EM 2021 Budget summary-BoD Jan 28 21](#)
[5YR-EM Service 012-Revised Budget-BoD Jan 28 21](#)

Recommendation: Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors
discuss the proposed Emergency Preparedness Service (012) 2021-
2025 Financial Plan as presented to the Board on January 28, 2021.

FURTHER that the Board provides direction to staff as to the
preferred budget option to proceed with and refer it to a future
meeting for approval with any minor adjustments for year-end.

**13.b) G. Denkovski, Manager of Infrastructure and Sustainability
F. Phillips, Senior Energy Specialist
Re: Kootenay Clean Energy Transition**

Director Morel, Environmental Services Liaison

A staff report from Goran Denkovski, Manager of Infrastructure and
Sustainability and Freya Phillips, Senior Energy Specialist regarding
the Kootenay Clean Energy Transition pilot project is presented.

[Staff Report - Kootenay Clean Energy Transition - Board - January
28 2021 - Pdf](#)

Recommendation: Corporate Vote Weighted

That the Regional District of Kootenay Boundary Board of Directors direct staff to allocate \$30,000 in 2021 from the CARIP reserve fund to the General Administration (001) budget to implement the Kootenay Clean Energy Transition pilot work plan.

13.c) Verbal Updates-COVID-19

M. Stephens, Manager of Emergency Programs

Re: COVID-19 Pandemic Emergency Operations

Director Worley, Emergency Preparedness Liaison

M. Andison, Chief Administrative Officer

Re: Impacts of the COVID-19 Wage Continuation Policy

Director McGregor, Finance Liaison

Recommendation: Corporate Vote Unweighted

That the verbal updates regarding the RDKB COVID-19 Pandemic Emergency Operations (EOC) and the COVID-19 Pandemic Wage Continuation Policy presented to the Board on January 28, 2021 be received.

14. Communications-RDKB Corporate Communications Officer

14.a) F. Maika, Corporate Communications Officer

Re: Verbal Update

Frances Maika, Corporate Communications Officer will present a verbal update on current communications activities.

Recommendation: Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors receive the verbal update regarding RDKB communications as presented to the Board by Frances Maika, Corporate Communications Officer on January 28, 2021.

15. Committee Recommendations to Board of Directors

Recommendations to the Board of Directors referred by the respective RDKB Committees are presented for consideration.

Final 2021 Work Plans - For Adoption by the Board of Directors. The Work Plans reviewed by the Boundary Services Committee will be presented to the Board at the next meeting scheduled for February 10th, 2021.

15.a) Final 2021 Work Plans-Utilities Committee (Jan. 13/21)

[500 2021 Beaver Valley Water Service Work Plan](#)

[650 2021 Rivervale Water Utility Service Work Plan](#)
[800 2021 Oasis Rivervale Sewer Utility Service Work Plan](#)
[600 2021 Columbia Gardens Water Utility Service Work Plan](#)
[101 2021 Big White Street Lights Service Work Plan](#)
[103 2021 Beaverdell Street Lights Service Work Plan](#)
[700 2021 East End Regional Sewer Utility Service Work Plan](#)
[550 2021 Christina Lake Water Utility Service Work Plan](#)

Recommendation: Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors adopt the 2021 Work Plans for the following Utilities services as approved by the Utilities Committee on January 13, 2021 and presented to the Board on January 28, 2021:

Beaver Valley Water (500), Rivervale Water Utility (650), Rivervale Oasis Sewer (800), Columbia Gardens Water Utility (600), Big White Street Lights (101), Beaverdell Street Lights (103), East End Regional Sewer (700), and Christina Lake Water Utility (550).

15.b) Final 2021 Work Plans-Electoral Area Services Committee (Jan. 14/21)

[002 Electoral Area Administration 2021 Work Plan final January 14, 2021](#)
[005 Planning Development-Work Plan Draft2](#)
[120 House Numbering Areas A C Work Plan](#)

Recommendation: Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors adopt the 2021 Work Plans for the following Electoral Area services as approved by the Electoral Area Services Committee on January 14, 2021 and presented to the Board on January 28, 2021:

Electoral Area Administration (002), Planning and Development (005) and House Numbering Electoral Areas A and C/Christina Lake (120).

15.c) Final 2021 Work Plans-Beaver Valley Regional Parks & Regional Trails Committee (Jan. 19/21)

[011 2021 Work Plan BVA Service](#)
[013 2021 Work Plan Beaver Valley Recreation Service](#)
[019 2021 Work Plan BV Parks and Trails Service Draft](#)

Recommendation: Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors adopt the 2021 Work Plans for the following Beaver Valley Regional Parks and Regional Trails services as approved by the Beaver Valley Regional Parks and Regional Trails Committee (Beaver Valley Recreation) on January 19, 2021 and presented to the Board on January 28, 2021:

Beaver Valley Arena (011), Beaver Valley Recreation (013) and Beaver Valley Regional Parks and Regional Trails (019).

15.d) Final 2021 Work Plans-East End Services Committee (Jan. 19/21)

[009 2021 Work Plan Victim Services](#)

[014 2021 Work Plan Area B Recreation Service](#)

[018 2021 Work Plan GTCC](#)

[050 Kootenay Boundary Regional Fire Rescue Service Work Plan](#)

[070 2021 Work Plan East End Animal Control Service](#)

[090 2021 Work Plan Weed Control Area A](#)

[122 House Numbering Area B Work Plan](#)

[900 2021 Work Plan East End Transit Service](#)

Recommendation: Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors adopt the 2021 Work Plans for the following East End Services Committee services as approved by the East End Services Committee on January 19, 2021 and presented to the Board on January 28, 2021:

Victim Services (009), Electoral Area B/Lower Columbia-Old Glory Recreation (014), Culture, Arts and Recreation for the Lower Columbia (018), Kootenay Boundary Regional Fire Rescue (050), East End Animal Control (070), Noxious Weed Control Specified Area A-Columbia Gardens (090), House Numbering Electoral Area B/Lower Columbia-Old Glory (122) and East End Transit (900).

16. New Business

16.a) 2021 APC Appointments-RDKB Electoral Areas A-E

For Approval

**Recommendation: Stakeholder Vote
(Electoral Area Directors) Unweighted**

That the Regional District of Kootenay Boundary Board of Directors approve the following appointments to the 2021 RDKB Electoral Areas A-E Advisory Planning Commissions:

Electoral Area A

Fred Buckley

Linda Green

Rob Ironmonger

Shelley Levick

Craig Stemmler

Tylen Underwood

Travis Mashford

Electoral Area B/Lower Columbia-Old Glory

Grant Saprunoff
Graham Jones
Mary MacInnis
Fern Acton
Henk Ravestein
Darlene Espenhain

Electoral Area C/Christina Lake

Dave Bartlett
Terry Mooney
Peter Darbyshire
Butch Bisaro
Jason Patrick Taylor
Annie Rioux
Phil Mody
Jeff Olsen
Jessica Coleman
Leanne Keys

Electoral Area D/Rural Grand Forks

Della Mallette
Kathy Hutton
Brian Noble
Lynn Bleiler
John Thomas

Electoral Area E/West Boundary

Grant Harfman
Jamie Haynes
Fred Marshall
Florence Hewer
Michael Fenwick-Wilson
Lynne Storm

Electoral Area E/West Boundary (Big White)

Anastasia Byrne
Gerry Molyneaux
Paul Sulyma
Peter Hutchinson
John Lebrun
Rachelle Hawk

16.b) D. Patterson, Planner

Re: Agricultural Land Commission (ALC) Referral of Non-Farm Use Application-Electoral Area A

A staff report from Danielle Patterson, Planner regarding an ALC application for Non-Farm Use in Electoral Area A is presented.

[Staff Report LeylandPrice ALR Board-Jan 28 2021](#)

Recommendation: Corporate Vote Unweighted

That Regional District of Kootenay Boundary Board of Directors defer the Agricultural Land Commission Non-Farm Use Application 61321, submitted by Brandon van Dyk on behalf of property owners Orest Leyland and Heather Price, for the property legally described as Lot 2, Plan NEP2675, Township 7A, Kootenay District, at 9128 Station Road in Electoral Area A, to allow the applicant an opportunity to submit a separate application to the Regional District of Kootenay Boundary to allow a distillery as a permitted use on the subject property.

16.c) D. Patterson, Planner

Re: FrontCounter BC Referral-Application for an Adventure Tourism Temporary Licence-Electoral Area B/Lower Columbia-Old Glory

A staff report from Danielle Patterson, Planner regarding a FrontCounter BC referral for a Temporary Adventure Tourism Licence for a 6-day mountain bike race in Electoral Area B/Lower Columbia-Old Glory is presented.

[Staff Report Crown-TransRockies Board-Jan 28 2021](#)

Recommendation: Corporate Vote Unweighted

That Regional District of Kootenay Boundary Board of Directors direct staff to forward the FrontCounter BC Referral – Crown Land Adventure Tourism Temporary Licence Application for TransRockies Inc. report, which includes comment from the Advisory Planning Commission, for TransRockies Inc.'s 2021 "Single track 6" event near the City of Rossland in Electoral Area B/Lower Columbia-Old Glory, for consideration by FrontCounter BC.

16.d) D. Patterson, Planner

Re: Ministry of Energy, Mines & Petroleum Resources-Referral for Notice of Work-Sand & Gravel Pit Electoral Area B/Lower Columbia-Old Glory

A staff report from Danielle Patterson, Planner regarding a referral from the Ministry of Energy, Mines & Petroleum Resources (MEMPR) for a Notice of Work-Sand and Gravel Pit (West K Sand and Gravel Ltd.) in Electoral Area B/Lower Columbia-Old Glory is presented.

[Staff Report WestKSandGravel Board-Jan 28 2021](#)

Recommendation: Corporate Vote Unweighted

That the staff report regarding the Ministry of Energy, Mines & Petroleum Resources – Notice of Work – Sand and Gravel Pit – West

K Sand and Gravel Ltd. referral for works to take place on the property legally described as Lot 1, Plan NE91135, District Lot 7163, Kootenay Land District, & District Lot 7187, in Genelle, Electoral Area B/Lower Columbia-Old Glory be received and that staff be directed to forward the Advisory Planning Commission's request to have the proponent post a blasting notice at the Genelle post office to the Ministry of Energy, Mines & Petroleum Resources.

16.e) Danielle Patterson, Planner

Re: Flett Environmental Services Referral-Small Scale Wood Salvage-Electoral Area D/Rural Grand Forks

A staff report from Danielle Patterson, Planner presenting a referral from Flett Environmental Services regarding a small-scale wood salvage operation in Electoral Area D/Rural Grand Forks.

[Staff Report Referral Flett Board-Jan 28 2021](#)

Recommendation: Corporate Vote Unweighted

That Regional District of Kootenay Boundary Board of Directors direct staff to forward this staff referral report to Flett Environmental Services Referral for the Small Scale Wood Salvage, which includes the recommendation of the Electoral Area D/Rural Grand Forks Advisory Planning Commission, to Flett Environmental Services for consideration.

16.f) D. Patterson, Planner

Re: Interfor Referral-Tree Farm Licence 8 Management Plan #11-Electoral Area E/West Boundary

A staff report from Danielle Patterson, Planner regarding a referral from Interfor giving the RDKB the opportunity to provide comments on Interfor's Information Package for Tree Farm License 8 – Management Plan #11, version 2.2, located in Electoral Area E/West Boundary is presented.

[Staff Report Interfor Board-Jan 21 2021](#)

Recommendation: Corporate Vote Unweighted

That Regional District of Kootenay Boundary Board of Directors direct staff to forward the staff report for Interfor Referral – Tree Farm License 8 – Management Plan #11 version 2.2 Information Package, which contains comments from the Electoral Area E/West Boundary and the Electoral Area E/West Boundary-Big White Advisory Planning Commissions, to Debbie Bhattacharya, on behalf of Interfor, for the Management Plan located in Electoral Area E/West Boundary.

16.g) B. Ihlen, General Manager of Finance/Chief Financial Officer

Re: Asset Management Planning Grants

Director McGregor, Finance Liaison

A staff report from Barb Ihlen, General Manager of Finance/CFO, regarding application for Asset Management Planning grants from the BC Government Infrastructure Planning Grant Program and from the Federation of Canadian Municipalities (FCM) Municipal Asset Management Program (MAMP) is presented.

[Staff Report - Asset Management Grants - Board - Jan 28 2020 v2](#)

Recommendation: Corporate Vote Weighted

That the Regional District of Kootenay Boundary Board of Directors direct staff to apply for a grant opportunity from the BC Government Infrastructure Planning Grant Program for *Building Asset Management Capacity Within the RDKB*. **FURTHER** that the Regional District of Kootenay Boundary commits to conducting the following activities in its proposed project submitted to the BC Government Infrastructure Planning Grant Program to advance our asset management program:

- Employee training (asset register),
- Development of a user guide (asset register), and
- Continue to create and update the state of infrastructure dashboards.

FURTHER that the Regional District of Kootenay Boundary commits \$15,000 from its budget toward the costs of this initiative.

Recommendation: Corporate Vote Weighted

That the Regional District of Kootenay Boundary Board of Directors direct staff to apply for a grant opportunity from the Federation of Canadian Municipalities' Municipal Asset Management Program for *Building Asset Management Capacity - Board Development, Policy, and Strategy*. **FURTHER** that the Regional District of Kootenay Boundary commits to conducting the following activities in its proposed project submitted to the Federation of Canadian Municipalities' Municipal Asset Management Program to advance our asset management program:

- Board development and understanding,
- Development of AM policy,
- Development of AM strategy, and
- Other AM roles and responsibilities.

FURTHER that the Regional District of Kootenay Boundary commits \$12,500 from its budget toward the costs of this initiative.

16.h) Grants in Aid - as of January 21, 2021:

[Grants in Aid-Board-January 28 2021](#)

[Fruitvale for BV Age Friendly-Area A GIA](#)

**Recommendation: Stakeholder Vote
(Electoral Area Directors) Weighted**

That the following grants-in-aid be approved:

1. JL Crowe Secondary School – RDKB Area 'A' Fallen Firefighters Memorial Award – Electoral Area 'A' - \$750.
2. The Village of Fruitvale – Candy Cane Lane Expenses – Electoral Area 'A' - \$1,500.
3. The Village of Fruitvale – Harvest Central Community Garden Tool Shed – Electoral Area 'A' - \$3,000.
4. The Village of Fruitvale – Remembrance Day Luncheon – Electoral Area 'A' - \$500.
5. JL Crowe Secondary School – RDKB Area B/Lower Columbia-Old Glory Fallen Firefighters Memorial Award – Electoral Area 'B'/Lower Columbia-Old Glory - \$750.
6. Boundary Multi 4-H Club – Program Costs – Electoral Area 'C'/Christina Lake - \$500.
7. Boundary Multi 4-H Club – Program Costs – Electoral Area 'D'/Rural Grand Forks - \$500.
8. Village of Fruitvale for BV Age Friendly Program-Electoral Area A-\$1,000.

17. Bylaws

17.a) B. Ihlen, General Manager of Finance/Chief Financial Officer Re: 2021 Revenue Anticipation Borrowing Bylaw No. 1751, 2021

First, Second and Third Readings and Adoption

A staff report from Barb Ihlen, General Manager of Finance/CFO, presenting Year 2021 Revenue Anticipation Borrowing Bylaw No. 1751, 2021.

[Staff Report-Bylaw 1751-2021 RevenueAnticipation-BoD Jan28 21](#)

Recommendation: Corporate Vote Weighted

That Regional District of Kootenay Boundary Year 2021 Revenue Anticipation Borrowing Bylaw No. 1751, 2021 be read a First, Second and Third time.

Recommendation: Corporate Vote Weighted

That Regional District of Kootenay Boundary Year 2021 Revenue Anticipation Borrowing Bylaw No. 1751, 2021 be Adopted.

17.b) B. Ihlen, General Manager of Finance/Chief Financial Officer Re: Financial Plan Amendment Bylaw No. 1749, 2021

First, Second and Third Readings and Adoption

A staff report from Barb Ihlen, General Manager of Finance/CFO, presenting Financial Plan Amendment Bylaw No. 1749, 2021.

[Staff Report-Bylaw 1749-2020 Financial Plan Amendment-BoD Jan 28 21](#)

Recommendation: Corporate Vote Weighted

That the Regional District of Kootenay Boundary Financial Plan Amendment Bylaw No. 1749, 2021 be read a First, Second and Third time.

Recommendation: Corporate Vote Weighted

That the Regional District of Kootenay Boundary Financial Plan Amendment Bylaw No. 1749, 2021 be Adopted.

**17.c) D. Dean, Manager of Planning & Development
Re: RDKB Bylaw No. 1748-Amending Electoral Area D/Rural
Grand Forks Zoning Bylaw No. 1675**

First and Second Readings and Set up Public Hearing
[ByLaw1748 Amending Area D Zoning-BoD Jan 28 21](#)

Recommendation: Stakeholder

(Electoral Area Directors) Vote Unweighted

That Regional District of Kootenay Boundary Zoning Amendment Bylaw No. 1748, 2021 be read a First and Second time.

Recommendation: Stakeholder

(Electoral Area Directors) Vote Unweighted

That staff arrange a public hearing for Regional District of Kootenay Boundary Zoning Amendment Bylaw No. 1748, 2021. **FURTHER** that Director O'Donnell be appointed as the Public Hearing Chair with Directors McGregor and Gee as alternates.

18. Late (Emergent) Items

19. Discussion of Items for Future Meetings

20. Question Period for Public and Media

21. Closed Meeting

22. Adjournment



Board of Directors

**Wednesday, January 13, 2021
Via Zoom Online Video Conferencing**

Minutes

Board Members Present:

Director D. Langman, Chair
Director G. McGregor, Vice-Chair
Director A. Grieve
Alternate Director Tollis
Director L. Worley
Director V. Gee
Director S. Morissette
Director M. Walsh
Director R. Cacchioni
Director A. Morel
Director C. Korolek
Director B. Noll
Director R. Dunsdon

Staff Present:

M. Andison, Chief Administrative Officer
T. Lenardon, Manager of Corporate Administration Corporate Officer/Recording Secretary
B. Ihlen, General Manager of Finance/Chief Financial Officer
J. Dougall, General Manager of Environmental Services
D. Dean, Manager of Planning and Development
F. Maika, Corporate Communications Officer
D. Derby, Regional Fire Chief
M. Stephens, Manager of Emergency Programs
B. Champlin, Manager of Building Inspection

1. Call to Order

The Chair called the meeting to order at 1:00 p.m.

2. Land Acknowledgement

We acknowledge and appreciate that the land on which we gather is the converging, traditional and unceded territory of the Syilx, Secwepemc, Sinixt and Ktunaxa Peoples as well as the Metis Peoples whose footsteps have also marked these lands.

The Chair stated that the live RDKB Board meeting is recorded and that meeting attendees' personal information that may be disclosed, is collected by the RDKB under the *Freedom of Information and Protection of Privacy Act*.

3. Consideration of the Agenda (additions/deletions)

The agenda for the Regional District of Kootenay Boundary Board of Directors January 13, 2021 meeting was presented.

01-21

Moved / Seconded

Corporate Vote Unweighted

That the agenda for the Regional District of Kootenay Boundary Board of Directors January 13, 2021 meeting be adopted as presented.

Carried.

4. Draft Minutes

The draft minutes of the Regional District of Kootenay Boundary Board of Directors meeting held on December 9, 2020 were presented.

The reference to the total financial impact of the RDKB COVID-19 Pandemic Wage Continuation Policy made on page 6 of the minutes will be revised to read \$46,000, and it was;

02-21

Moved / Seconded

Corporate Vote Unweighted

That the draft minutes of the Regional District of Kootenay Boundary Board of Directors meeting held December 9, 2020 be adopted as amended.

Carried.

5. Consent Agenda

The items appearing on the Consent Agenda, which may present a conflict of interest for Directors and or items that the Board wishes to discuss must be removed from the Consent Agenda and considered separately.

5.a) Consent Agenda Highlights

- Receipt of Item 9 Communications (Information Only)-9.a) to 9.c).
- Receipt of Item 10 Reports-10.b) and 10.c).
- Receipt of Item 11 Board Appointment Updates.

03-21

Moved / Seconded

Corporate Vote Unweighted

That Consent Agenda items 9, 10 and 11 be received by general consent. **FURTHER** that consent agenda items 9.b) and 9.c) be considered separately under item 12.
Carried.

6. Presentations at the Request of the Board

There were no presentations.

7. Delegations

There were no delegations.

8. Applicants & Persons Attending to Speak to Agenda Items

There were no applicants and or other persons in attendance at the meeting.

9. Communications (Information Only)-Consent Agenda

9.a) Agricultural Land Commission-Dec.11/20

Re: Regin Decision-ALC Application 60989

9.b) City of Vernon-Nov.30/20

Re: Request for Letter of Support for Universal No-cost Contraception

9.c) City of Rossland-Dec.16/20

Re: Letter of Support for the City of Vernon request

10. Reports-Consent Agenda

10.a) Monthly Cheque Register Summary

The Monthly Cheque Register Summary will be presented at a future meeting.

10.b) RDKB Committee Minutes

Minutes of RDKB Committee Meetings as adopted by the respective Committees are presented.

- Boundary Services Committee (Dec. 15/20).

10.c) Recreation Commission Minutes

- Electoral Area C/Christina Lake (Nov 18/20).

10.d) Draft Advisory Planning Commission (APC) Minutes

APC minutes will be presented at a future meeting.

11. Board Appointment Updates-Consent Agenda

Southern Interior Development Initiative Trust (S.I.D.I.T.)-Director McGregor

There is nothing new to report.

B.C. Rural Centre/Southern Interior Beetle Action Coalition (S.I.B.A.C.)-Director McGregor

There is nothing new to report.

Okanagan Film Commission-Director Gee

The Film Commission reported that they had their busiest year filming ever with COVID-19.

Boundary Weed Stakeholders Committee-Director Gee

There is nothing new to report.

Columbia River Treaty Local Government Committee (CRT LGC)- Directors Worley & Langman-Reports attached.

Director Worley spoke to the reports attached to the agenda and she advised that the Committee had a conference call with the Province and Federal governments on January 15th to prepare for presentation of the Committee's recommendations for Columbia River Treaty negotiations with the United States.

Columbia Basin Regional Advisory Committee (CBRAC)-Director Worley & Goran Denkovski, Manager of Infrastructure & Sustainability

Director Worley noted that as a member of the CBRAC Steering Committee, she will attend a meeting on January 21st. She explained that BC Hydro has been requested to provide a long-term Integrated Resource Plan (IRP). This plan is required in order to identify future electricity demands and for information that is relevant to the CRT LGC's treaty recommendations.

West Kootenay Regional Transit Committee (Directors Cacchioni & Worley, Alternate Director Parkinson)

Director Cacchioni noted that the current balance of funds for this service might make the regional transit service whole. If not, the Committee may need to apply for some of the COVID-19 Pandemic relief funding. There is a Regional Transit Committee meeting at the end of January. There won't be any increases in bus fares until 2024.

Rural Development Institute (RDI)-Director Worley

There is no RDI update at this time. Director Worley noted that she sits on the Regional Innovation Council, which includes representatives from RDCK and RDEK. The work of this Committee concerns employment, innovation etc., and is related to the RDI. The first meeting was held on January 12th. Further information is forthcoming.

Chair's Update-Chair Langman

Chair Langman provided an update on broadband and advised that the RDKB has provided the member municipalities the necessary information to take the Columbia Basin Trust (CBC) online speed test. She explained that the Southeastern BC Regional Connectivity Committee is making an application for better broadband in our area.

Chair Langman advised that with the pending retirement of the current Corporate Officer, Theresa Lenardon that staff have recruited Anitra Winje, former Corporate Officer with the Regional District of Central Kootenay (RDCK). Anitra will assume the position sometime towards the end of February 2021.

04-21

Moved / Seconded

Corporate Vote Unweighted

That the verbal and written board appointment updates presented to the Board on January 13, 2021 be received.

Carried.

12. Item(s) Removed from Consent Agenda for Consideration**12.a) Item 9.b) and 9.c)-Requests for Letter of Support**

The Board considered correspondence from the City of Vernon, dated November 30, 2020, requesting a letter of support for universal no-cost access to all prescription contraception. The Board also reviewed the letter of support for same from the City of Rossland, and it was:

05-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary of Directors send a letter of support to the provincial government lobbying for no-cost access to all prescription contraception;

WHEREAS cost is a significant barrier to people accessing contraception, particularly to people with low incomes, youth, and people from marginalized communities; and

WHEREAS providing free prescription contraception has been shown to improve health outcomes for parents and infants by reducing the risks associated with unintended pregnancy, and is likely to reduce direct medical costs on the provincial health system; and

WHEREAS contraceptive methods such as condoms or vasectomies are available at low cost, no cost, or are covered by BC's Medical Services Plan, whereas all contraceptive methods for people with uterus (such as birth control pills, intrauterine devices or hormone injections) have high up-front costs, making access to contraception unequal and gendered;

THEREFORE BE IT RESOLVED

THAT the Regional District of Kootenay Boundary Board of Directors write to the Provincial Minister of Finance, the Provincial Minister of Health, the Premier of BC and the local MLA supporting universal no-cost access to all prescription contraception available in BC under the Medical Services Plan; and

THAT this letter be forwarded to all BC municipalities asking to write their support as well.

Carried.

13. Unfinished Business

13.a) Verbal Updates-COVID-19

M. Stephens, Manager of Emergency Programs

Re: COVID-19 Pandemic Emergency Operations

Director Worley, Emergency Preparedness Liaison

Mark Stephens, Manager of Emergency Programs provided a verbal update on the RDKB's emergency operations response to COVID-19 Pandemic cases at Big White Ski Resort, Electoral Area E/West Boundary. In mid-December, Interior Health (IH) requested logistical support from the RDKB to house people from Big White Ski Resort who had tested positive or who were waiting for testing and who could not self-isolate in their own residences. Through this emergency response, the RDKB has assisted approximately 18 people.

Mr. Stephens explained how IH links the COVID-19 data and advised that documentation for reimbursement for EOC costs will be submitted to the Province.

Mr. Stephens provided a snapshot on the Province's COVID-19 statistics.

M. Andison, Chief Administrative Officer

Re: Impacts of the COVID-19 Pandemic Wage Continuation Policy

Director McGregor, Finance Liaison

Mark Andison, Chief Administrative Officer noted that costs associated with the COVID-19 Pandemic Wage Continuation Policy have dropped off considerably since the last update that was provided in December 2020. To date, the total financial impact associated with the policy since it was adopted on March 31, 2020 is approximately \$46,843. These costs will be captured through the COVID-19 start-up grant provided by the province.

06-21

Moved / Seconded

Corporate Vote Unweighted

That the verbal updates regarding the RDKB COVID-19 Pandemic Emergency Operations and the COVID-19 Pandemic Wage Continuation Policy, presented to the Board on January 13, 2021 be received.

Carried.

14. Communications-RDKB Corporate Communications Officer

A written report will be provided at a future meeting.

15. Committee Recommendations to Board of Directors

Recommendations adopted by RDKB Committees during the month will be presented at the next meeting.

16. Final 2021 Work Plans-Adoption and Draft 2021-2025 Financial Plans**16.a) M. Andison, Chief Administrative Officer****B. Ihlen, General Manager of Finance/Chief Financial Officer****Re: General Government Services/Administration (001)**

A staff report from Barb Ihlen, General Manager of Finance/Chief Financial Officer regarding the final 2021 General Government/Administration (001) Work Plan and the proposed 2021-2025 Five Year Financial Plan was presented.

Barb Ihlen, General Manager of Finance/Chief Financial Officer reviewed the staff report. Some edits have been made to the work plan introduction and permissions regarding services but there have not been any changes to the projects.

Staff presented the General Government (001) preliminary proposed budget summary noting there is a 1.1% increase in the requisition and a 2.31% increase in the overall budget for 2021. The primary drivers for the changes include the internal recovery of administrative costs as discussed with the Policy and Personnel Committee, which is developing a cost allocation policy.

Staff reviewed the budget highlights including a decrease in director and staff-related travel and expenses due to COVID-19 provincial health orders reducing the ability to travel in 2021. At a future meeting, staff will provide an update on the cost-savings from reduced director and staff-related travel and expenses during the pandemic. Staff reviewed the accounts for miscellaneous revenue and asset management. It was noted that there will be further discussions and Board education around a strategy for developing the asset management plan.

There was a discussion on the increase in the requisition amount and using reserves to offset the increase. It was noted that this is the first version of the financial plan and changes are forthcoming. Staff will review the direction given at the meeting and present an updated budget at a future meeting, and it was;

07-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors approve the 2021 General Government/Administration Services (001) Work Plan as presented to the Board on January 13, 2021.

Carried.

08-21

Moved / Seconded

Corporate Vote Unweighted

That the proposed draft General Government/Administration Services (001) 2021-2025 Financial Plan be referred to staff for updates and presented back to the Board for approval at a future meeting.

Carried.

The Chair recessed the meeting at 2:37 p.m.

The Chair reconvened the meeting at 2:50 p.m.

16.b) J. Dougall, General Manager of Environmental Services

Re: Regional Solid Waste Management Services (010)

A staff report from Janine Dougall, General Manager of Environmental Services regarding the final 2021 Regional Solid Waste Management Services (010) Work Plan and the proposed 2021-2025 Five Year Financial Plan was presented.

The General Manager of Environmental Services advised that there have not been any changes to the overall work plan except updates to the projected budget year-end actuals. She listed current and projected costs for various projects and she explained the primary drivers for the 4.09% tax increase for 2021.

Staff reviewed projects where grant applications have been successful and advised that applications for grant funding for other projects have been submitted or are pending submission. There was a discussion around the use of reserves to reduce the requisition. Staff explained when the use of reserve funds would be best and why. Staff reviewed revenue changes (2020 to 2021) for materials recovery, miscellaneous revenue, previous year's surplus, transfer from reserve, revenue from capital fund, expenditure changes (2020 to 2021) and future project cost considerations. There was a discussion on the contribution to the Board fee/shared internal costs, the implications of the cost allocation policy and sharing of the BC Hydro grant-in-lieu, and it was;

09-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors approve the 2021 Regional Solid Waste Services (010) Work Plan as presented to the Board on January 13, 2021.

Carried.

10-21

Moved / Seconded

Corporate Vote Unweighted

That the proposed draft Regional Solid Waste Services (010) 2021-2025 Financial Plan be referred to staff for updates and presented back to the Board for approval at a future meeting.

Carried.

As the Finance Liaison and Board Vice-Chair, Director McGregor will work with staff to develop further information and visuals that will explain the allocation of the BC Hydro grant-in-lieu.

The Chair called a recess at 2:37 p.m.

The Chair reconvened the meeting at 2:50 p.m.

16.c) J. Dougall, General Manager of Environmental Services**Re: Big White Solid Waste Management Services (064)**

A staff report from Janine Dougall, General Manager of Environmental Services regarding the final 2021 Big White Solid Waste Management Services (064) Work Plan and the proposed 2021-2025 Five Year Financial Plan was presented.

11-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors approve the 2021 Big White Solid Waste Services (064) Work Plan as presented to the Board on January 13, 2021.

Carried.

12-21

Moved / Seconded

Corporate Vote Unweighted

That the proposed draft Big White Solid Waste Services (064) 2021-2025 Financial Plan be referred to staff for updates and presented back to the Board for approval at a future meeting.

Carried.

16.d) D. Derby, Regional Fire Chief**Re: 9-1-1 Emergency Communications (015)**

A staff report from Dan Derby, Regional Fire Chief regarding the final 2021 9-1-1 Emergency Communications (015) Work Plan and the proposed 2021-2025 Five Year Financial Plan was presented.

Dan Derby, Regional Fire Chief reviewed the final 2021 work plan and noted that overall there are no substantial changes other than an update to actual expenditures with the reallocation of public safety salaries. He explained the allocation of \$35,000 budgeted for an evaluation of the fire dispatch network radio communications system for the fire dispatch repeater network across the RDKB.

Staff answered inquiries regarding the use of reserves and surpluses to offset the costs for the radio communications system evaluation, and it was;

13-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors approve the 2021 9-1-1 Emergency Communications Service (015) Work Plan as presented to the Board on January 13, 2021.

Carried.

14-21

Moved / Seconded

Corporate Vote Unweighted

That the proposed draft 9-1-1 Emergency Communications Service (015) 2021-2025 Financial Plan be referred to staff for updates and presented back to the Board for approval at a future meeting.

Carried.

16.e) M. Stephens, Manager of Emergency Programs**Re: Emergency Preparedness Service (012)**

A staff report from Mark Stephens, Manager of Emergency Programs regarding the final 2021 Emergency Preparedness Service (012) Work Plan and the proposed 2021-2025 Five Year Financial Plan was presented.

Mark Stephens advised that the work plan is largely unchanged since it was presented to the Board last fall. He noted that there is a 47.11% increase in the requisition for 2021 due to the use of reserves in previous years to pay down requisition levels. Cost allocations and salaries including the salary for 1 FTE in the Emergency Preparedness Service are other drivers for the requisition increase.

There was a discussion regarding the high demand on RDKB resources and work plans when the RDKB Emergency Operations Centre (EOC) is activated. There was also a discussion regarding support from municipal staff during emergencies through their

participation in EOC training and in the EOC during emergencies. Staff will provide the Board with a report regarding this matter at a future meeting.

There was a review of options regarding the addition of one FTE to the Emergency Preparedness Service. Staff explained the need for this position and that it is included in the budget as a 2-year term position. Directors Gee and Cacchioni noted their concerns with the increase in the requisition levels, and it was;

15-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors approve the 2021 Emergency Preparedness Service (012) Work Plan as presented to the Board on January 13, 2021.

Carried.

(Directors Gee, Cacchioni and Morel opposed)

16-21

Moved / Seconded

Corporate Vote Unweighted

That the proposed draft Emergency Preparedness Service (012) 2021-2025 Financial Plan be referred to staff for updates and presented back to the Board for approval at a future meeting.

Carried.

16.f) B. Ihlen, General Manager of Finance/Chief Financial Officer

Re: Feasibility Studies Service (006)

A staff report from Barb Ihlen, General Manager of Finance/Chief Financial Officer regarding the draft proposed Feasibility Studies Service (006) 2021-2025 Five Year Financial Plan was presented.

17-21

Moved / Seconded

Corporate Vote Unweighted

That the draft Feasibility Studies Service (006) 2021-2025 Financial Plan be referred to staff for updates and presented back to the Board for approval at a future meeting.

Carried.

16.g) B. Ihlen, General Manager of Finance/Chief Financial Officer

Re: Municipal Finance Authority (MFA) Debt (001MFA)

A staff report from Barb Ihlen, General Manager of Finance/Chief Financial Officer regarding the draft proposed Municipal Finance Authority (MFA) Service (001MFA) 2021-2025 Five Year Financial Plan was presented.

18-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors approve the proposed Municipal Finance Authority (MFA) Debt (001MFA) 2021-2025 Financial Plan as presented to the Board of Directors on January 13, 2021.

Carried.

16.h) B. Champlin, Manager of Building Inspection**Re: Building Inspection Services (004)**

A staff report from Brian Champlin, Manager of Building Inspection Services regarding the final 2021 Building Inspection Services (004) Work Plan and the proposed 2021-2025 Five Year Financial Plan was presented.

Mark Andison, Chief Administrative Officer noted that there are not many changes to the work plan and that there is a 1.68% increase in the requisition. He reviewed the reserve balance and noted that the aspects of the budget are purely operational with a capital expenditure from reserves for a new vehicle, and it was:

19-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors approve the 2021 Building Inspection Services (004) Work Plan as presented to the Board on January 13, 2021.

Carried.

20-21

Moved / Seconded

Corporate Vote Unweighted

That the draft Building Inspection Service (004) 2021-2025 Financial Plan be referred to staff for updates and presented back to the Board for approval at a future meeting

Carried.

17. New Business

**17.a) Expressions of Interest for Appointment to the Rural Development Institute (RDI)-Director Worley, Current RDKB Appointee
1-Year Term (January 2021 to December 31, 2021)**

The term for Director Worley's RDI appointment expired at the end of December 2020. Director Worley expressed her interest in this appointment for 2021, and it was;

21-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors appoint Director Worley to represent the Board on the Rural Development Institute for the Year 2021.

Carried.

17.b) The Kelowna & District Society for People in Motion**Re: Application for West Boundary Recreation Grant****Baldy Bluejays Adaptive Snow Sports Program 2020-2021**

Director Gee explained that the service participants have been discussing whether or not to continue with allocating grant funds. Discussions will continue in the future.

Director Gee advised that the RDKB participants have supported this request in the past however, this particular application is not actually servicing any West Boundary residents as all the clients are from the Okanagan. Director Gee will suggest that the applicants submit an Area E/West Boundary grant-in-aid, and it was;

22-21

Moved / Seconded

Stakeholder Vote (Area E/West Boundary, Greenwood & Midway) Weighted

That the application for a West Boundary Recreation Grant from The Kelowna & District Society for People in Motion for \$3,000 to support the Baldy Bluejays Adaptive Snow Sports Program in 2020-2021 be received.

Carried.

17.c) T. Dueck, Solid Waste Program Coordinator**Re: Licence of Occupation**

A Staff Report from Tim Dueck, Solid Waste Program Coordinator asking the Board of Directors to approve a 30-year Licence of Occupation agreement with the Province of BC for tenure at the Big White Solid Waste Transfer Station was presented.

23-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors directs staff to enter into an agreement for a Licence of Occupation with the Province for the term of 30 years for waste transfer station purposes over the land described as: That unsurveyed portion of District Lot 2713, Similkameen Division Yale District, except Plans 42584 and A12042 and containing 0.40 hectares, more or less.

Carried.

17.d) Grants in Aid - as of January 7, 2021:

24-21

Moved / Seconded

Stakeholder Vote (Electoral Area Directors) Weighted

That the following grants-in-aid be approved:

1. Christina Lake Arts and Artisans Society – Replacement of Revenue Lost to Covid-19 Cancellations – Electoral Area 'C'/Christina Lake - \$4,000.
2. Boundary Metis Community Association – Wilgress Lake Fishing Derby Family Day prizes – Electoral Area 'D'/Rural Grand Forks - \$500.
3. Phoenix Mountain Alpine Ski Society – Replacement of Hand Held Radio Devices and Snow Removal Mounting Equipment – Electoral Area 'D'/Rural Grand Forks - \$5,000.
4. Greenwood Community Association/Greenwood Board of Trade – Christmas Dinner Hampers and Take-Out Meals – Electoral Area 'E'/West Boundary - \$300.
5. Trails to the Boundary Society – Kettle River Echo Seed Money – Electoral Area 'E'/West Boundary - \$5,000.
6. West Boundary Community Services Co-op – Mileage for Economic Development Consultant, Sandy Mark, August to December, 2020 – Electoral Area 'E'/West Boundary - \$750.

Carried.

17.e) B. Ihlen, General Manager of Finance/Chief Financial Officer**Re: Early Retirement Incentive Program (ERIP) Policy**

A staff report from Barb Ihlen, General Manager of Finance/Chief Financial Officer regarding the RDKB ERIP Policy was presented.

Staff explained the report and reviewed the policy with the Board members, and it was;

25-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors approve the Management Early Retirement Incentive Program (ERIP) policy for employees of the Regional District who are members of the Municipal Pension Plan and who are described more particularly in the details of the ERIP policy (Schedule A: revised January 14, 2019). **FURTHER** that the Regional District of Kootenay Boundary Board of Directors agree to pay one hundred percent (100%) of the total cost of the ERIP as determined by the Pension Corporation.

Carried.

17.f) D. Dean, Manager of Planning and Development**Re: Steering Committee and Terms of Reference****Boundary Area Poverty Reduction Plan**

A staff report from Donna Dean, Manager of Planning and Development regarding the Boundary Area Poverty Reduction Plan Steering Committee and Terms of Reference was presented.

Staff provided background information and answered inquiries regarding Steering Committee membership. The Board members reviewed the draft Terms of Reference.

After further review, it was;

26-21

Moved / Seconded

Corporate Vote Unweighted

That the Regional District of Kootenay Boundary Board of Directors endorse the Terms of Reference and membership of the Boundary Area Poverty Reduction Plan Steering Committee as presented to the Board on January 13 2021.

Carried.

Director Cacchioni left the meeting (time: 2:50 p.m.).

18. Bylaws

18.a) B. Champlin, Manager of Building Inspection

Re: Proposed Draft RDKB Building Bylaw No. 1741, 2020

A staff report from Brian Champlin, Manager of Building Inspection Services presenting a proposed revised bylaw for the administration of the *Building Code and Regulation of Construction* within the Electoral Areas of the Regional District and rescinding the previous Building Bylaw No. 449, 1985.

Staff reviewed the report and summarized the regulatory updates and clerical edits that have been included in the revised bylaw.

27-21

Moved / Seconded

Stakeholder Vote (Electoral Area Directors) Unweighted

That Regional District of Kootenay Boundary Building Bylaw No. 1741, 2020 be given First, Second and Third Readings.

Carried.

28-21

Moved / Seconded

Stakeholder Vote (Electoral Area Directors) Unweighted

That Regional District of Kootenay Boundary Building Bylaw No. 1741, 2020 be Adopted.

Carried.

18.b) D. Dean, Manager of Planning and Development

RDKB Bylaw No. 1746-Amending Electoral Area C/Christina Lake

Official Community Plan Bylaw No. 1250

First and Second Reading and Set up Public Hearing

29-21

Moved / Seconded

Stakeholder Vote (Electoral Area Directors) Unweighted

That Regional District of Kootenay Boundary Official Community Plan Amendment Bylaw No. 1746, 2021 be read a First and Second Time.

Carried.

30-21

Moved / Seconded

Stakeholder Vote (Electoral Area Directors) Unweighted

That staff arrange a public hearing for Regional District of Kootenay Boundary Official Community Plan Amendment Bylaw No. 1746, 2021. **FURTHER** that Director McGregor be appointed as the Public Hearing Chair with Alternate Director Tollis and Director Gee as Alternates.

Carried.

18.c) D. Dean, Manager of Planning and Development**Re: RDKB Bylaw Notice Enforcement Bylaw No. 1742, 2021**

First, Second and Third Readings and Adoption

31-21

Moved / Seconded

Corporate Vote Unweighted

That Regional District of Kootenay Boundary Bylaw Notice Enforcement Bylaw No. 1742, 2021 be read a First, Second and Third time.

Carried.

32-21

Moved / Seconded

Corporate Vote Unweighted

That Regional District of Kootenay Boundary Bylaw Notice Enforcement Bylaw No. 1742, 2021 be Adopted.

Carried.

19. Late (Emergent) Items

There were no late emergent items to discuss.

20. Discussion of Items for Future Meetings

1. Staff report and discussion regarding municipal staff participating in EOC training and in the RDKB EOC during emergencies.

21. Question Period for Public and Media

A question period was not necessary.

22. Closed Meeting

A closed meeting was not required.

23. Adjournment

There being no further business to discuss, the meeting was adjourned (time: 3:57 p.m.).

TL



Regional District of
Kootenay Boundary

Electoral Area Services (EAS) Committee Staff Report

RE:	Development Variance Permit – McLean		
Date:	January 16, 2021	File #:	C-1020s-02595.655
To:	Chair Grieve and members of the EAS Committee		
From:	Danielle Patterson, Planner		

Issue Introduction

The Regional District of Kootenay Boundary (RDKB) has received a Development Variance Permit application to increase the permitted height of an accessory building from 4.6 m to 6.7 m, for a property at Christina Lake (see Attachment 1 - Site Location Map).

Property Information	
Owners:	Carolyn McLean and Joseph McLean
Location:	1371 Frisk Road
Electoral Area:	Electoral Area C/Christina Lake
Legal Description:	Lot 2, Plan KAP47883, District Lot 1020s, Similkameen Division of Yale Land District
Area:	3,880.9 m ² or approx. 1/3 ha (0.96 ac)
Current Use:	Residential
Land Use Bylaws	
OCP Bylaw: 1250	Residential
DP Area:	NA
Zoning Bylaw: 1300	Single Family Residential 1 Zone (R1)
Other	
Service Area:	Christina Lake Water Utility Service
Planning Agreement Area:	NA

History / Background Information

The subject property is located on a short cul-de-sac off of Schulli Road (see Attachment 2 – Subject Property Map). The neighbourhood is generally comprised of single family dwellings and the subject property backs onto Crown land. Approximately 40% of the subject property is down a steep embankment.

The subject property has an easement and restrictive covenant registered on title; neither are effected by the requested variance. The covenant restricts the distance for constructing buildings from the natural boundary of Moody Creek and the nearby water

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reservoir. It further requires floor systems to be a minimum of 5 ft (1.5 m) above Moody Creek or the full pool elevation of the reservoir. Planning staff have confirmed with G. Denkovski, Manager of Infrastructure and Sustainability, that the reservoir referenced is an old surface reservoir formally used for storing drinking water for the Christina Lake Water Utility Service. The easement is related to infrastructure and access for the Christina Lake Water Utility Service.

Proposal

The applicants plan to build a 61.3 m² (660 ft²) and 6.7 m (22 ft) high addition to their garage in order to store classic cars using a car lift, allowing one car to be lifted and stored above the other (see Attachment 3 – Applicant Submission and Attachment 4 – Site Photos). The lift would require the garage to be higher than permitted in the Zoning Bylaw.

Section 402.8(b) of Zoning Bylaw 1300 limits the height of accessory buildings to 4.6 m. Due to this, the applicant is requesting a variance to Section 402.8(b) to vary the height of their garage addition from 4.6 m to 6.7 m – a variance of 2.1 m to accommodate the car lift.

Advisory Planning Commission (APC)

At their November 23, 2020 meeting, the Electoral Area C/Christina Lake APC reviewed the application and recommended it be supported.

Implications

The RDKB application requests a clear rationale for development variance permit requests. Each Development Variance Permit application is to be reviewed based on its own merit.

The applicants have stated the reason they want to store their classic cars in the garage addition is because they have experienced vehicle vandalism in the past. The applicants selected a garage design that would connect the existing single car garage and the garage addition under a one roof. They stated the garage proposal will improve the appearance of the property and neighbourhood. The applicants have noted that they are located near the end of a cul-de-sac.

When considering the proposed Development Variance Permit, staff note the following:

1. Other than the requested variance, the proposal and existing development on the subject property meet Zoning Bylaw requirements, including parcel coverage (seven percent), building setbacks, parking, density, and land use.
2. The proposed garage addition would be accessed via the existing driveway.
3. Section 2.13.1.1 of the Area C OCP Goals includes protecting residential areas from commercialization and industrialization. While the overall height of the garage is high enough to accommodate a commercial vehicle, the garage has been designed to have doors that are 2.44 m in height; therefore the doors are too low to

accommodate a commercial vehicle. If approved, the garage design presented would be part of the Development Variance Permit.

4. Section 2.13.13, Policy 5 of the Area C OCP states, "implementing bylaws will contain regulations which encourage buildings which are in scale with existing neighbourhoods and don't crowd the lot". The surrounding neighbourhood includes a mix of properties with multi-level homes, double vehicle garages, and storage of leisure vehicles on some properties. Other neighbourhood properties have single storey single detached dwellings with single vehicle garages or carports.
5. Approximately 40% of the subject property has a steep incline. Stacking vehicles in a higher garage rather than spacing them over a larger parcel area reduces the overall building and structure footprint on the level portion of the subject property.
6. The power line visible in the applicant photos is approximately 6 m (20 ft) away from the footprint of the proposed garage addition and does not pose a concern related to the proposed development variance.

Staff comments

The applicants' proposed garage is designed in such a way that the door is too low to allow for the storage of commercial vehicles. If the Development Variance Permit is approved, the garage design would become part of the permit, ensuring that vehicles can be stacked in the higher garage, without the risks of larger commercial vehicles encroaching in this residential area.

Staff note there have been anecdotal instances of garage heights leading to uses contrary to zoning bylaws in some rural and residential neighbourhoods, such as commercial vehicle use. While, due to garage design, this is not a concern with this particular development variance permit application, it may be beneficial for staff to perform a more detailed analysis of development variance permits related to the height and area of accessory buildings in the future.

Recommendation

That the Development Variance Permit application submitted by Carolin McLean and Joseph McLean, to vary Section 402.8(b) of the Electoral Area C / Christina Lake Zoning Bylaw No. 1300, 2007 to increase the height of their garage addition from 4.6 m to 6.7 m – a variance of 2.1 m, for the construction garage containing a car lift on the property legally described as Lot 2, Plan KAP47883, District Lot 1020s, Similkameen Division of Yale Land District, Electoral Area C/Christina Lake be presented to the Regional District of Kootenay Boundary Board of Directors for consideration, with a recommendation to approve.

Attachments

1. Site Location Map
2. Subject Property Map
3. Applicant Submission
4. Site Photos

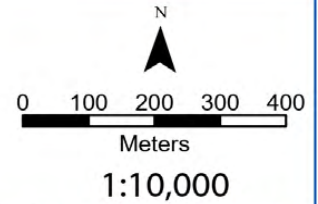


Regional District of
Kootenay Boundary

Date: 2020-11-04

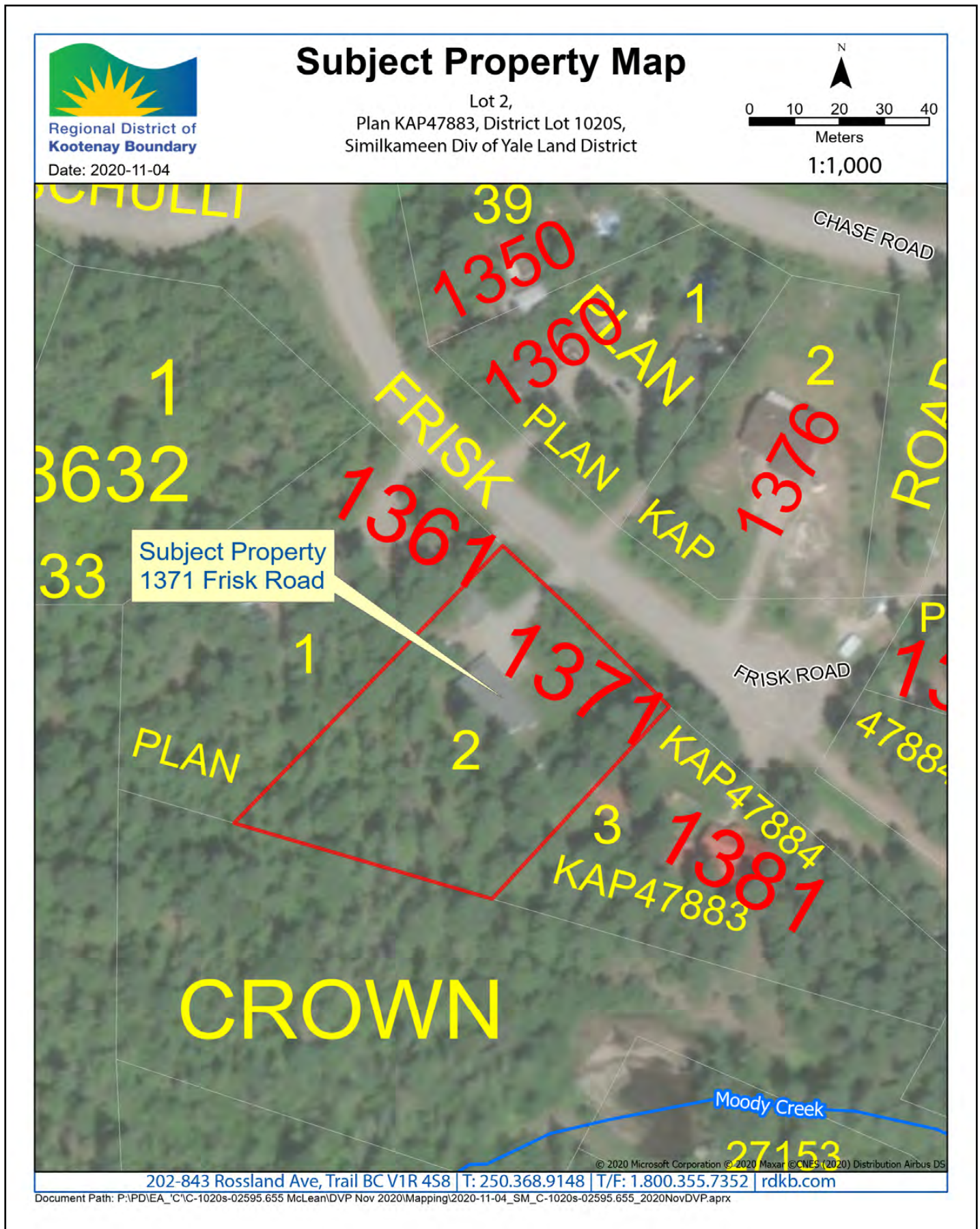
Site Location Map

Lot 2,
Plan KAP47883, District Lot 1020S,
Similkameen Div of Yale Land District



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Statement of Request for Variance

I am requesting a height variance to build a residential garage located in area C, Christina Lake. The height allowance for a garage is 4.6 meters and I am seeking a variance to allow a height of 6.7 meters or approximately 22ft.

There is a restrictive covenant and an easement registered on this property neither of which are affected by the variance request. The **restrictive covenant** is on the area of the site map marked 'lower property' and is approx. 200ft away from and approx. 35ft lower in elevation from the proposed building site. The **easement** is in regard to access for the water district. Copies of both easement and restrictive covenant are enclosed in this application.

The reason for this request is to provide height inside the garage to accept a vehicle storage lift (see photo in application). The lift weighs approx. 2000lbs or approx. half the weight of an average car and the installation is meant to be used for non-commercial use. I own a number of classic vehicles and the purpose of the lift will provide safe and proper storage inside the garage reducing the risk of damage or theft which would otherwise be considered if stored outside. While living in Christina Lake my 1963 Corvette was vandalized resulting in slashed tires and fingernail polish remover poured over it destroying the paint and damaging the soft top. I wish to avoid any future problems like this.

I also believe this garage addition will improve the look of both the property and overall appearance of the neighbourhood. The new garage and the existing garage will be attached to each other using the same pitch to the roof creating a pleasing appearance.

I live on a dead end street and I am the second to last house at the end of a large cul-de-sac.

I believe granting this variance will have no negative impact on any of my neighbours properties.

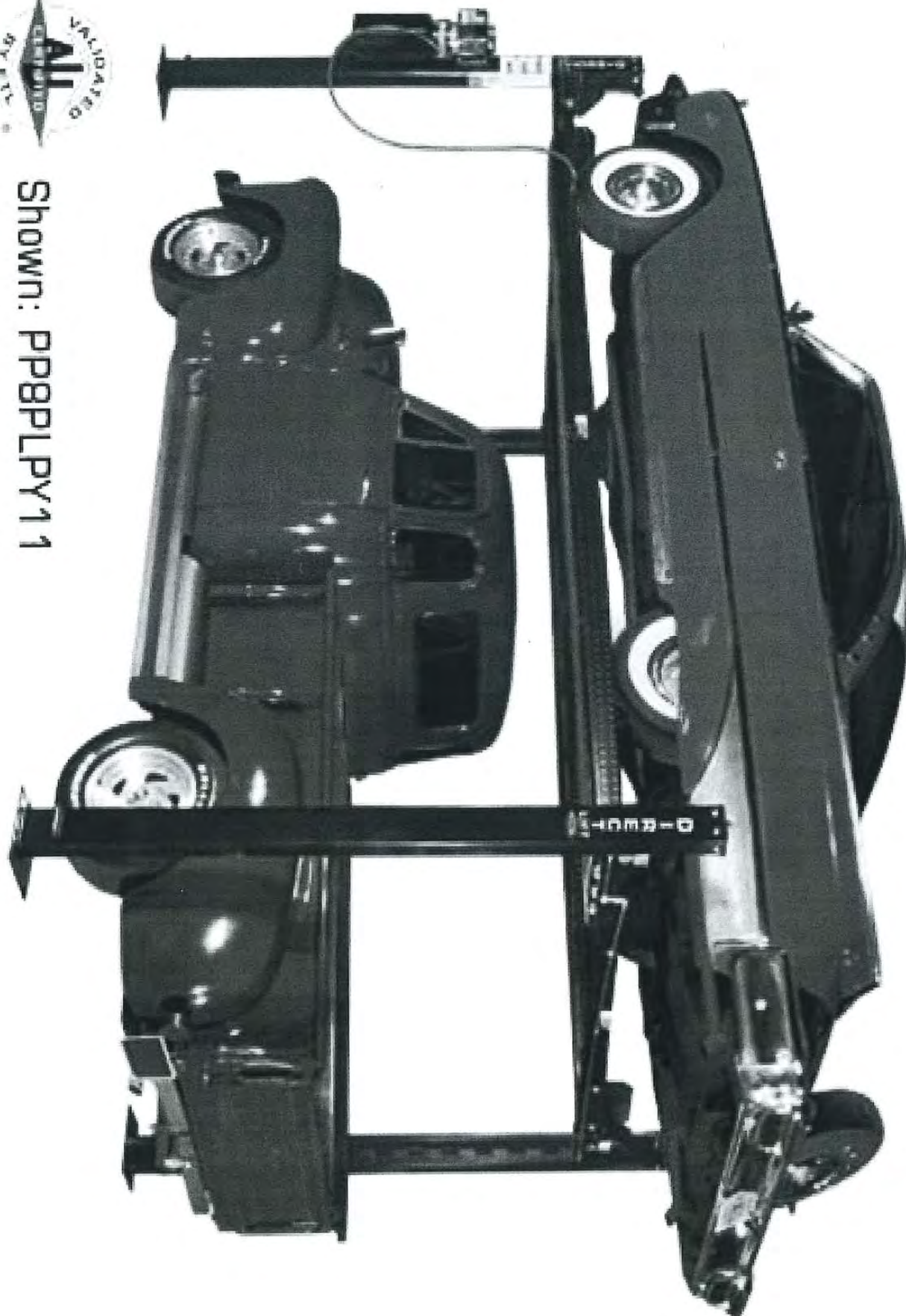
I believe granting this variance will resolve my vehicle storage concerns and enhance the overall look of my property and the neighbourhood.

Thank you for your consideration

Joe McLean



Shown: PP8PLPY11



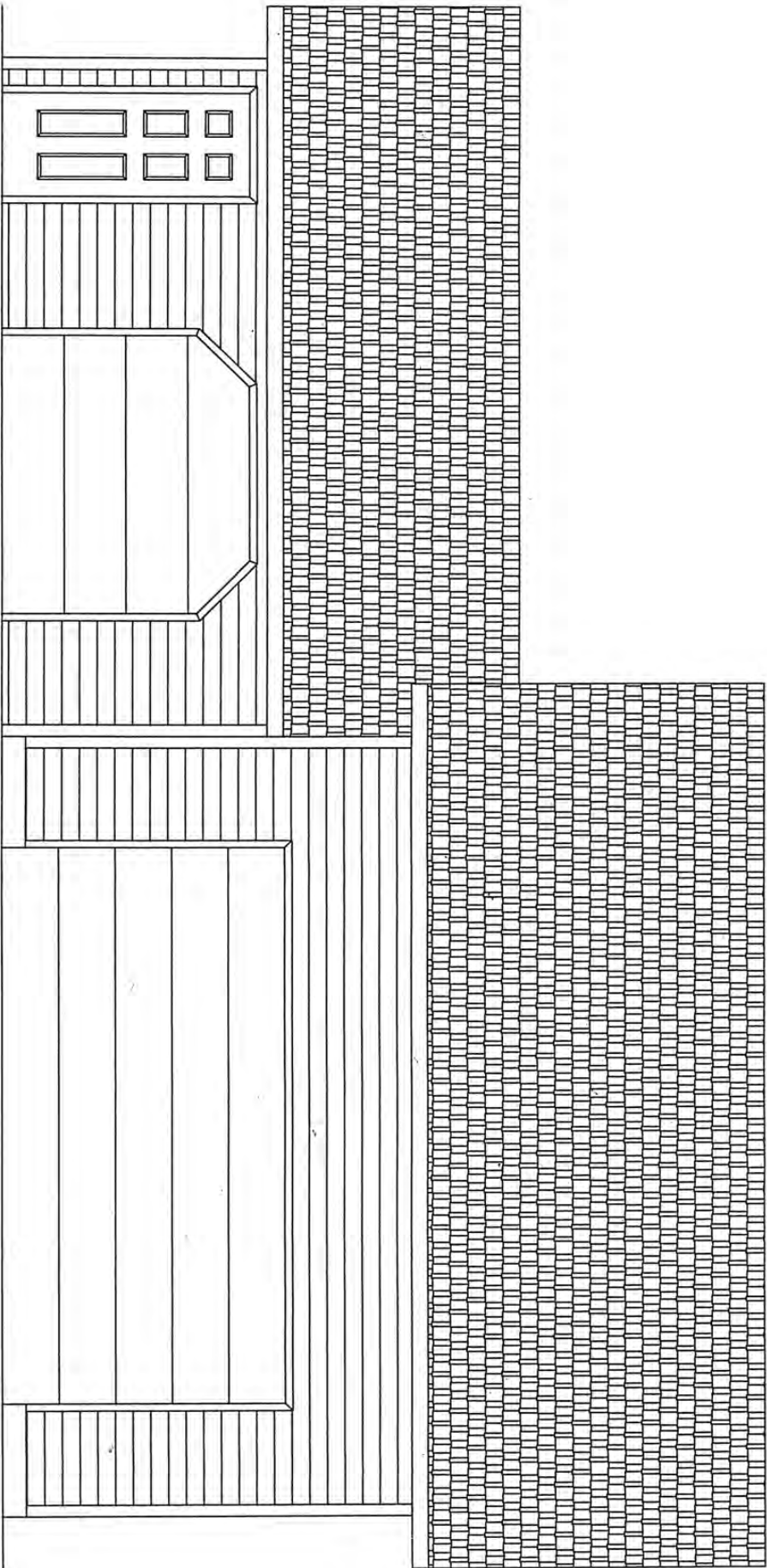
Joe McLean
1371 Frisk Rd.



DATE: AUGUST 21, 2020

SCALE: AS NOTED

PAGE: 1 OF 6



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

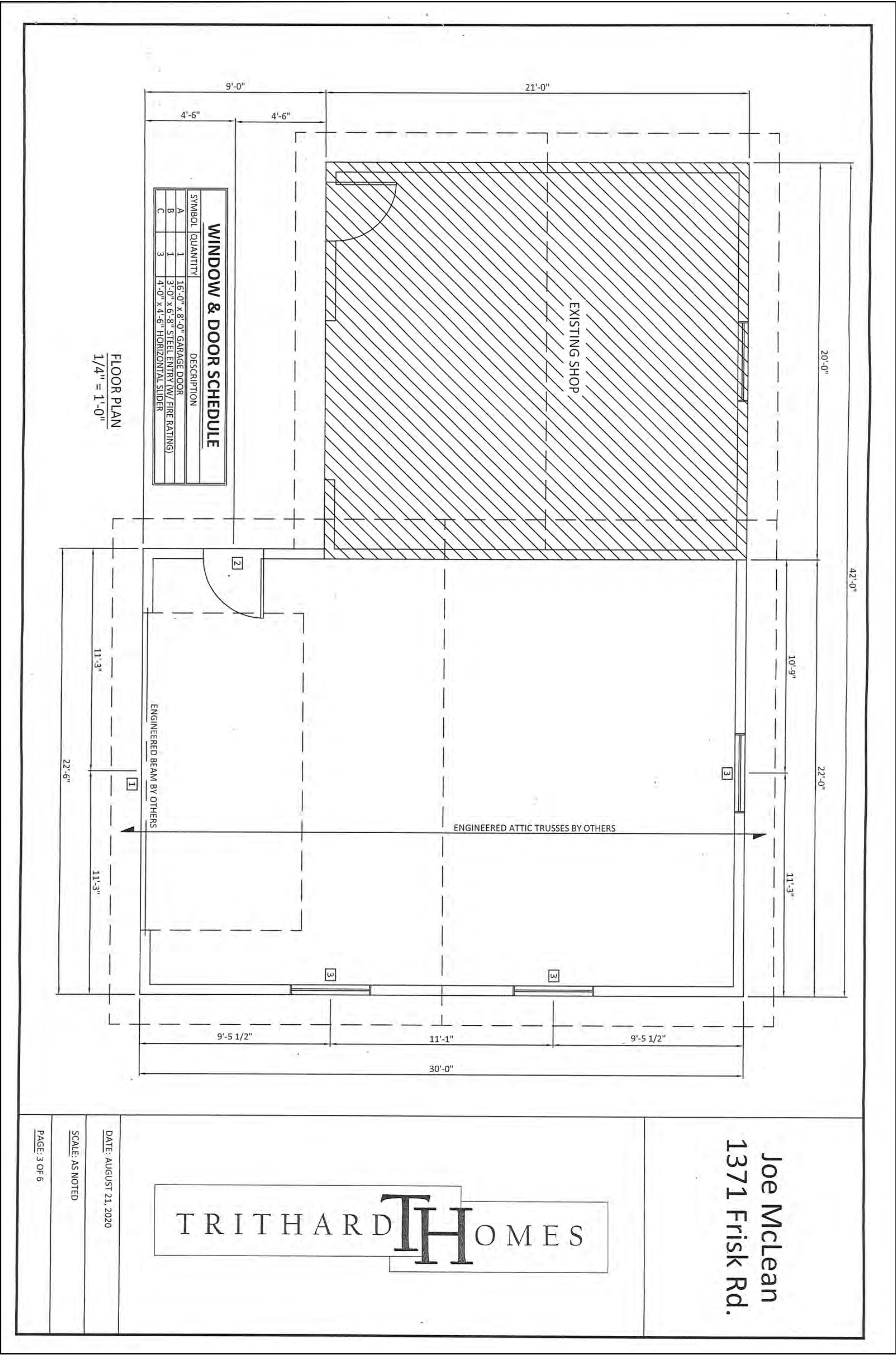
GENERAL NOTES

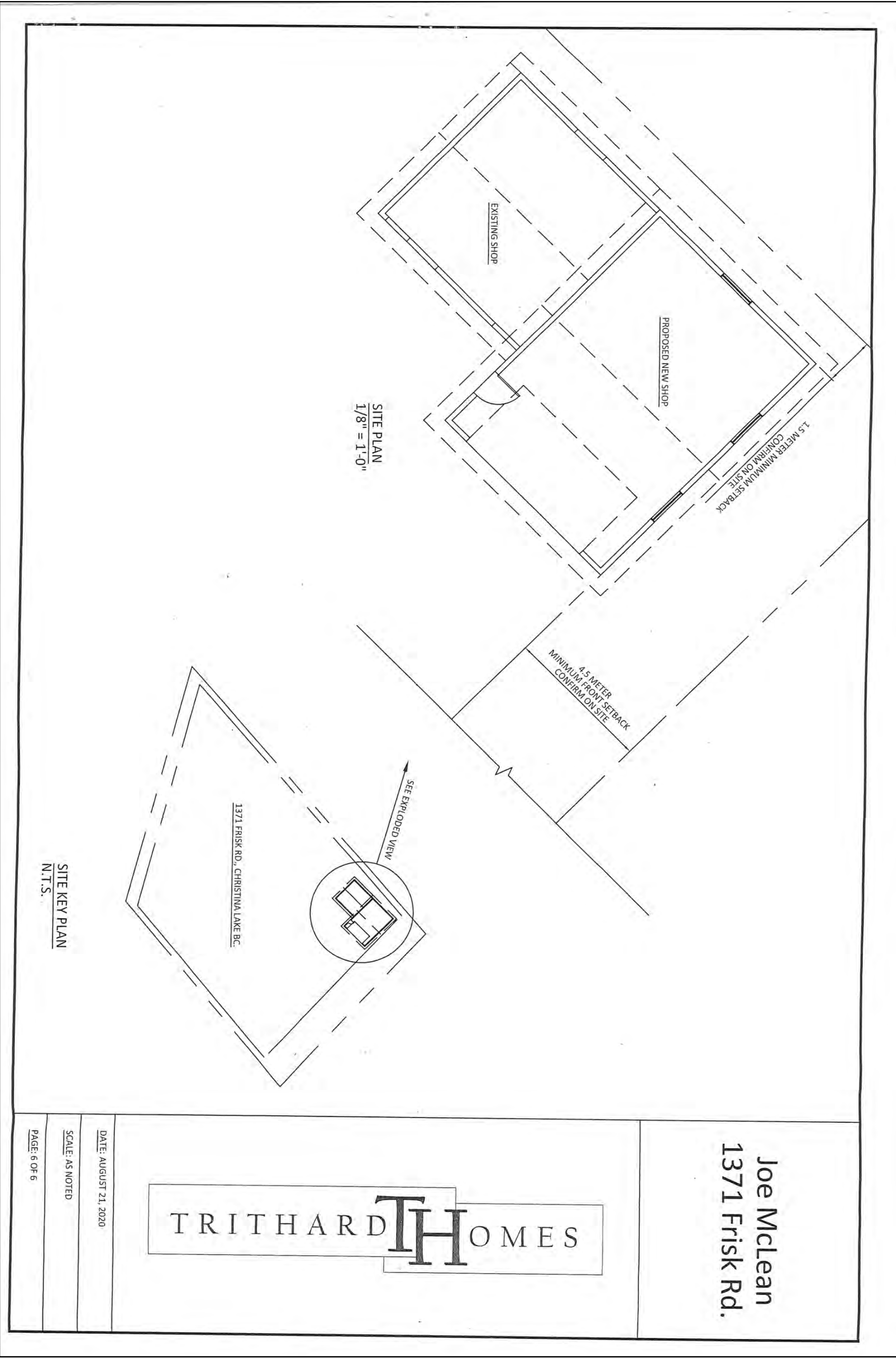
- ALL WORKMANSHIP is to be of a standard equal in all respects to good building practice.
- DESIGN LOADS for roof and floors are estimated. Refer to truss/joist drawings for actual design criteria. It is the responsibility of the owner or builder to ensure that the specified foundations are adequate for the loads as specified in truss/joist shop drawings and to consult qualified persons to make any changes necessary.
- DEPTH OF FOOTINGS below foundation grade will also be affected according to frost and soil conditions. It is the responsibility of the users of this plan make the appropriate revisions.
- CONCRETE: Concrete walls, beams to be minimum 20MPa. Garage floor slab to be as per hoist manufacturer or structural engineer. Piles & footings to be 25MPa, sulphate resistant Type 50 Kalcrete.
- GRADES shown on elevations are estimated. Adjust on the site as required. Retaining walls other than the foundation walls of the structure are beyond the scope of these drawings, and it is the responsibility of the owner or the building contractor to consult the appropriate professionals where necessary.
- CONCRETE FOOTINGS must be placed on undisturbed soil at an elevation below the frost line. Footings shown on these drawings are assumed to have a soil bearing capacity of 75kPa (1500psf). Strip type footings are to have 10M hooked dowels to foundation wall @ 32" O.C. (as shown). It is the responsibility of the owner or building contractor to confirm the actual soil bearing capacity of the specific building site. If a lesser bearing capacity is encountered, it shall be the responsibility of the owner or the builder to have the footings redesigned by qualified persons to suit existing conditions.
- Any drawings supplied by the structural engineer shall take precedence over these specifications.
- FOUNDATION WALLS not designed by the structural engineer shall be reinforced with minimum 15M continuous bars @ 16" O.C. on inside face & 10M verticals @ 32" O.C. on inside face.

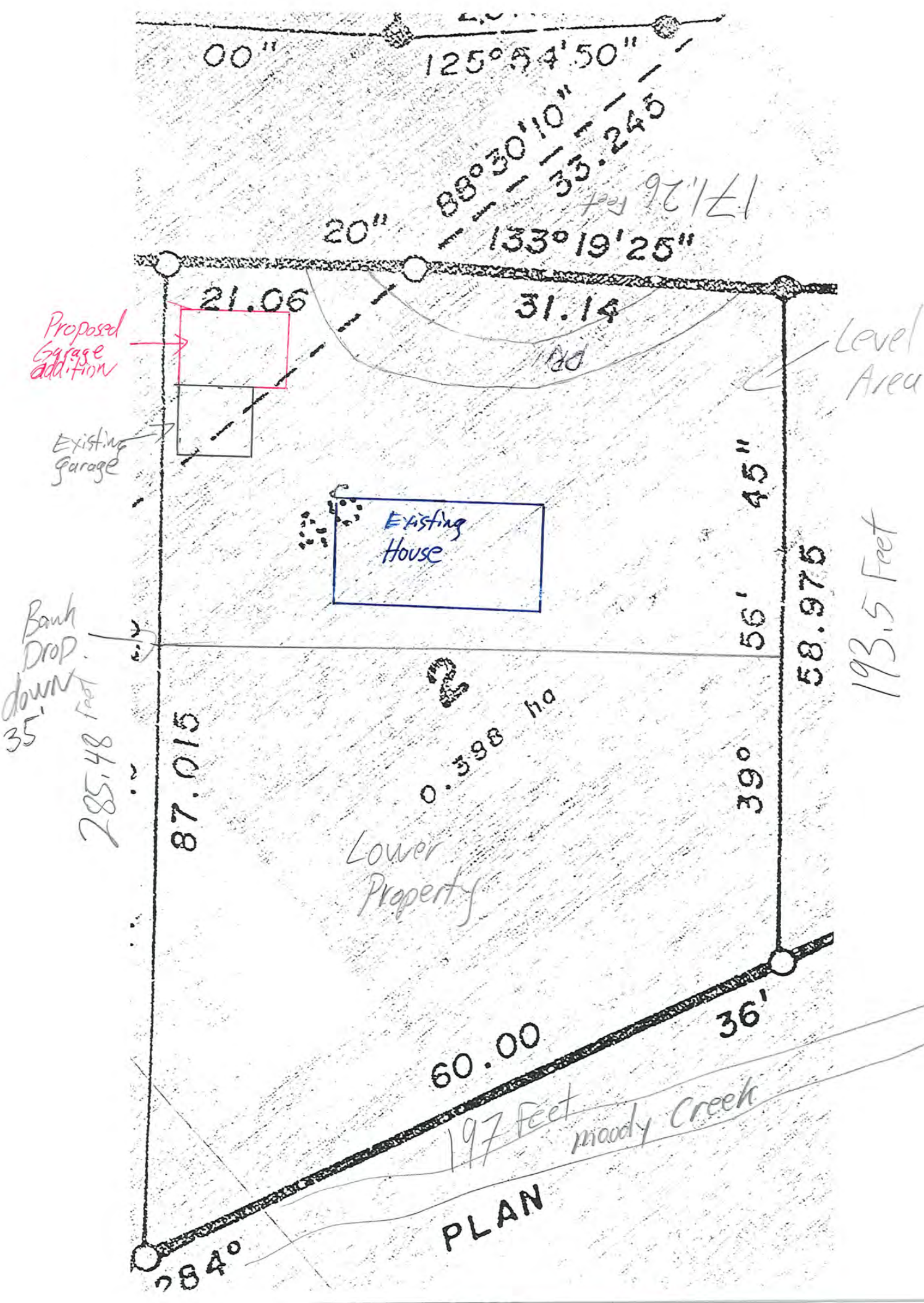
GENERAL NOTES CONT.

- ALL WOOD PLATES on concrete shall have 2.2kg/m² (45lbs.) roofing D.P.C. with 12mm (1/2") bolts at 1200mm (4'-0") o.c.
- FRAMING LUMBER: all number two (2) and better Spruce, Pine, Fir. For other common species, refer span tables of the National Building Code, most recent edition. All beam and lintel sizes shown on the drawings are based on number two and better Spruce Pine Fir.
- ALL LINTELS to be 2-38x235mm (2-2x10's) unless otherwise noted.
- Owner or builder to obtain certificate from manufacturer for trusses and glue laminated and other composite beams.
- Owner or builder to be responsible to ensure that the appropriate hangers and hold-down anchors are used in accordance with specific engineering requirements and supplier's instructions.
- MISCELLANEOUS:
 - Electrical to comply with Section 9 of the National Building Code, most recent edition.
 - Flash over all exterior openings.
 - Caulk over and around all exterior openings using non-hardening caulking compound.
 - Flash all changes in materials on exterior walls.
 - All siding or stucco to be minimum 200mm (8") above finished grade.
 - If brick veneer is to be installed, counter flashing shall be installed up 200mm (8") behind the building felt and below bottom course with vertical joints raked clean. Weep holes 600mm (2'-0") o.c.
 - Approved heat/smoke detectors to be installed as required.









Applicant Site Photos for 1371 Frisk Road



Location of proposed garage location approximated in red



Staff Report

RE:	FrontCounter BC Referral – Adventure Tourism and Roads Licenses of Occupations for Powder Renegade Lodge Inc.		
Date:	January 28, 2021	File #:	E-10 (Referrals) & D-6 (Electoral Area D General Ministry Referrals)
To:	Chair Langman and members of the Board of Directors		
From:	Danielle, Planner		

Issue Introduction

The Regional District of Kootenay Boundary (RDKB) received a referral from FrontCounter BC regarding an Adventure Tourism and Roads License of Occupation request from Powder Renegade Lodge Inc. for the purposes of a snowcat-skiing operation, located between Granby Provincial Park and Christina Valley (see Attachment 1 – Site Location Map).

Property Information	
Owner:	Crown Provincial
Agent:	Cassandra Frances Penney, Powder Renegade Lodge Inc.
Location:	Midway Range, Monashee Mountains
Electoral Area:	Electoral Area D/Rural Grand Forks & Electoral Area E/West Boundary
Legal Description:	NA
Total Area:	8,847 ha (21,861 ac)
Current Use:	Adventure License of Occupation/ Forestry/Passive Recreation
Land Use Bylaws	
OCP Bylaw No. 1555	Rural Resource 2 (Area D only)
DP Area:	NA
Zoning Bylaw No. 1675:	Rural Resource 3
Other	
Waterfront / Floodplain:	Various
Other	Kettle River Watershed

History / Background Information

The proposal area covers a total area of 8,847 ha (21,861 ac). It is located between the Granby River and Kettle River, approximately 60 km northwest of Grand Forks. The majority of the proposal is located in Electoral Area E, with a sizeable area located in

Electoral Area D (see Attachment 2- Subject Property Map). It is south of Arthurs Creek and north of Thone Creek, with portions of the site area lying in the Cochrane, Hellroarer, and Grano Creek watersheds. The closest access to the proposed site is at the kilometer 51 marker of Christina Valley Road at Grano Creek Forest Service Road (FSR). There are cutblocks on the lands from past forestry operations.

Much of the proposal area was previously used by Powder Outfitters, who offered heli-skiing, ski-touring, and snowshoeing tours in the general location of the proposal area. The License of Occupation held by Powder Outfitters expires December 2021. Regardless of this existing License of Occupation, Powder Renegade has received permission from the Ministry of Forests, Lands, Natural Resources, and Rural Development (FLNRORD) to apply for their Licenses of Occupation, as Powder Outfitters has become insolvent and has not operated the site for over ten years.

Proposal

The proponent has applied to FrontCounter BC for both an Adventure Tourism License of Occupation and Roads License of Occupation to build and operate a snow caterpillar (snowcat) skiing operation in the area abutting the western and southern boundaries of Granby Provincial Park. The proponent plans for snowcat operations from early December to early April of each year, with no plans for summer recreation activities.

Most guests are planned to be helicoptered directly to the lodge from Kelowna International Airport. The road access to the site would be via the Grano Creek FSR, located in Electoral Area E. The proponent states that this is to be used by fuel trucks, to bring in equipment and construction materials, and on some occasions, guests. When weather requires it, the proponent plans to have two helicopter drop off sites on FSRs to bring guests from the Kelowna International Airport; otherwise guests would be flown in directly from Kelowna. From there, guests would travel by way of snowcat.

The proponent is planning for site construction during the summer and fall of 2021 and summer 2022. The site would include a 24 bedroom lodge, a separate 17 unit staff lodging building, a machine shop for onsite maintenance needs, fuel caches, skiing staging areas, and communications sites/emergency shelters, as shown in *Diagram 1*, taken from the proponents *Tenure Management Plan*. The applicant proposes to use a 90,000 litre double walled Enviro tank to store the fuel.

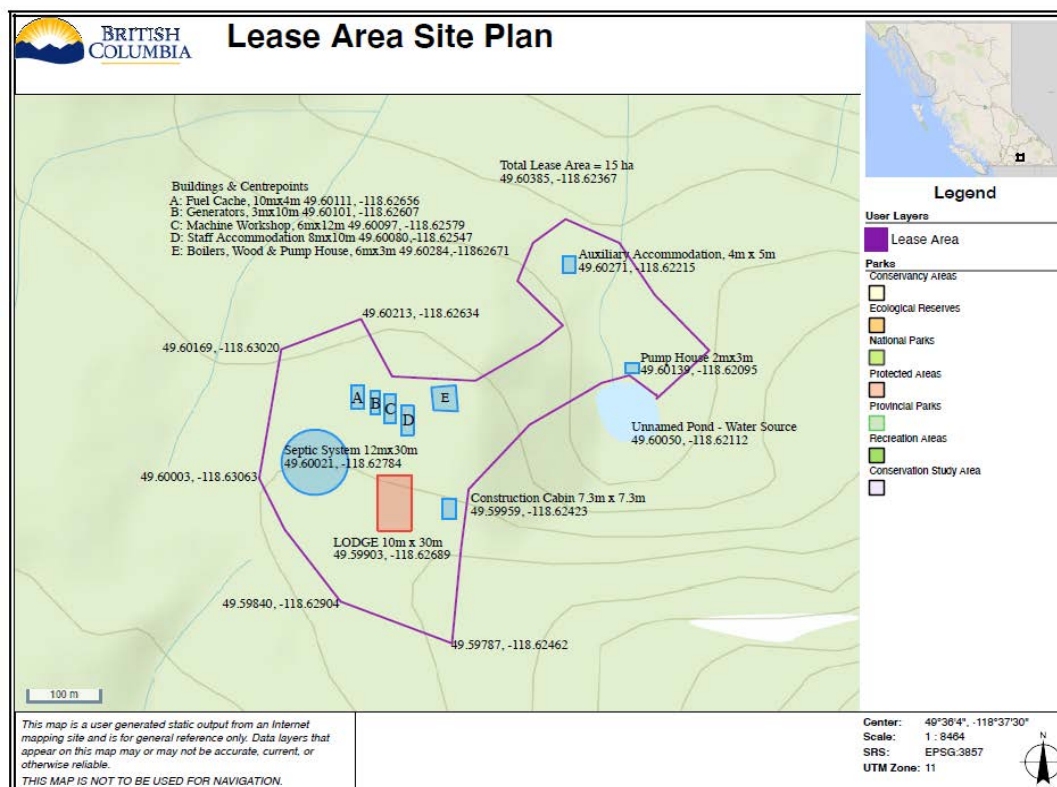


Diagram 1. Excerpt lease area site plan from Powder Renegade Lodge's Tenure Management Plan.

The Roads License of Occupation is to construct dirt roads, similar to the Forestry Resource Roads (FSRs) found in the Boundary region. This includes a lodge road to connect the future lodge to the closest FSR road. This road would be approximately 360 m long and 7 m wide, and utilized year-round. The application is also for seasonal winter roads to move a snowcat over the mountain terrain.

Staff comments on timeline for referral response

The original referral request from FrontCounter BC was submitted on November 17, 2020, requesting a referral response by January 16, 2021, with the earliest RDKB APC meeting dates occurring in January 2021. Due to the scale and complexity of the project and the timelines provided by FrontCounter BC, in late December 2020, staff requested an extension in the referral response date to February 5, 2021.

Advisory Planning Commission (APC)

The Electoral Area E/West Boundary and Electoral Area D/Rural Grand Forks APCs reviewed the referral at their meetings on January 4, and January 5, 2021, respectively.

Electoral Area E/West Boundary APC

The APC recommends to the Regional District that the referral be not supported for the following reasons:

- This is a high impact project with attendant high impacts on the landscape;
- There is potential for impact on the Timber Harvest Land Base;
- There is potential for negative impacts on hydrological regimes, Spring flooding and Fall droughts;
- Detailed assessments have not yet been done on development in the Intensive Development Area (buildings, water development, and septic systems);
- There is potential for negative impact of proposed road construction;
- There is concern about the fiscal liability of the operation as a winter-only operation, especially with climate change, and concern about whether there will be pressure from the applicant in the future for summer operations;
- There is potential for negative impacts to wildlife that could possibly lead to extirpation;
- There is concern about lack of public consultation and lack of understanding of the use that Area E residents make of the area;
- There is concern that there has been practically no on the ground assessment;
- There is concern with the timeline, which does not allow for the assessments that are needed; and
- The timeline needs to be slowed down in order to address these issues.

Electoral Area D/Rural Grand Forks APC

The APC recommends to the Regional District that consideration of the referral be postponed, with the following reasons: *"Postpone comments until proponents talk with the APC," the Boundary Watershed Forest Stewardship Society "[BFWSS] report is completed and presented to the affected APCs, and further, that the Provincial Government be notified that they will receive comments after the deadline of January [16], 2021."*

Implications

Official Community Plan (OCP) and Zoning

The majority of the proposal area is located in Electoral Area E, where there is no OCP or Zoning Bylaw in place. For the sizeable portion located in Electoral Area D, the land is designated Rural Resource 2.

Permitted uses for lands designated Rural Resource 2 include resource extraction and processing; and accessory buildings and structures. The OCP lists the proposal area as being located in environmentally sensitive areas for Grizzly Bear and the Pondersa Pine-Black Cottonwood-Snowberry ecosystem.

Also within Electoral Area D, the land is zoned Rural Resource 3. Permitted principal uses in this zone are agriculture; campground; conversation areas, ecological reserves, wildlife sanctuaries; interpretive centres; log home manufacturing; portable shake, shingle, and saw mills; post and tie operations; and resource use. Resource use is defined as *"a use providing for the conservation, and management of natural resources and extraction and processing of primary forest materials, and the extraction, grading, crushing, and processing of mineral resource."* Snowcat skiing is not encompassed in these uses.

Passive recreation, comprised of "non-motorized recreation not requiring facilities and may include but not be limited to wildlife observation, picnicking, walking, biking and canoeing," is permitted in all Electoral Area D zones.

Other Regulations

The RDKB Floodplain Bylaw and Building Bylaw apply to all lands in the electoral areas of the RDKB. The proponent has stated in their proposal that they will obtain the appropriate building permits, when required, from the RDKB.

The proponent further states that their operations align with the 1997 Kootenay-Boundary Land Use Plan Implementation Strategy Plan, which states that *"alpine and sub-alpine areas should be managed to achieve a Recreation Opportunity System (ROS) classification of semi-primitive, non-motorized. However, there is specific reference that in winter months, these areas may be used by snowmobiles and snowcats, subject to lower level strategic planning, local agreements and not in conflict with sensitive wildlife species"*.

Water and Environment

The proposed water source is a pond near the proposed lodge site. The source water of the pond water is ground water recharge and the pond receives snow melt from upper elevations. An onsite septic system is proposed by the proponent and the plan states that garbage will be transported every two weeks by snowcat to a staging area on private land, where the plans state it will be locked and stored until the conclusion of the ski season.

The proponent has applied for a Water License as required under the *Water Sustainably Act* and upon receipt of the proposal, the license was at the application stage.

The proponent's Environmental Impact Assessment (EIA) prepared by Karen Grainger, RPBio, notes the following environmental values that require avoidance or mitigation:

1. Grizzly Bear occurrences and habitat,
2. Migratory birds nesting activity and habitat,
3. Riparian (no fish) ecosystems and habitat for several species,
4. Mule Deer winter range (entrance of Grano Creek FSR),
5. Raptor and owl nesting potential,
6. Whitebark Pine Federally-designated critical habitat (includes occurrences and regeneration/recovery zones),

7. Wolverine occurrences and habitat,
8. Non-legal Old Growth Management Areas, and
9. Red (endangered, rare, threatened: Idaho fescue-bluebunch wheatgrass – silky lupine-junegrass) and blue (special concern: subalpine fir/white-flowered rhododendron/sitka valerian, scrub birch/ water sedge, narrow-leaved cotton-grass-shore sedge, and tufted clubbrush/ golden-star moss) listed ecosystems.

The proponent's EIA outlines details related to the following:

- During construction, all riparian setbacks for any vegetation clearing will follow the Provincial Riparian Areas Management Guidebook;
- During operations, containment of bear attractants (from Parks Canada guidelines);
- Avoiding wildlife interactions (habituation and food conditioning) of bears and wolves is a high priority for any activities in or near a Park;
- EIA outlines practices for waterbodies; encounter with Northern Goshawks; storage of hazardous materials; encounters with mountain goats, wolverine, and grizzly bear;
- The EIA states that staff will have training in the applicable components of the Wildlife Guidelines for Backcountry/Commercial Recreation Tourism in BC and that the proponent will comply with the best management practices for addressing wildlife disturbance concerns.

The proponent has stated that they plan to perform glading (the act of removing select, natural timber from a stand of timber that has not previously been harvested) and tree spacing in the area for their operations. This may require an Occupant License to Cut from FLNRORD.

Boundary Area Watershed Planner – Kristina Anderson Comments

As there are limited bylaws currently in place in Area E, the recommendations made are in response to the endorsed information from Action item 3.3.2 of the *Kettle River Watershed Management Plan* (KRWMP) and Best Management Practices, either written or implied.

The KRWMP outlines the RDKB and community goals for the Kettle River Watershed, determined over a multi-year project and extensive stakeholder involvement. Action 3.3.2 identifies the priority of biodiversity and ecosystem protection for the Boundary region. It states, "[c]onsider the extension and integration of ecosystem-based resource management to increase protection and improvement of biodiversity and ecosystem services [...]"

Realizing there are a number of Provincially blue listed species within the development zone (such as Grizzly Bears, Mountain Goats and Wolverines), a review of this application should consider whether the proposed works, as identified, have the potential of impacting the local biodiversity and ecosystems.

Furthermore, consideration should be made as to whether mitigation measures could be put in place to accommodate the development, or what would be needed to determine what mitigation measures are warranted. The following Ministry of Environment and Climate Change Strategy (MoECCS) website provides information on impacts to mammals associated with recreational activities¹. Additionally, attention given to the importance of wildlife corridors/corridor connectivity in or around the development location and whether the local wildlife research for the location has been reviewed.

Other points of consideration in reviewing the proposal are:

1. Impacts of thinning and road construction (snow roads versus summer roads) in the area and how this can be done in conjunction with existing forestry impacts;
2. What impacts the proposal would have on wildlife corridors and water management;
3. Water sourcing from the alpine pond:
 - a. What the drawdown will be from the pond associated with this tenure license application, with the majority of water being withdrawn in the winter months, and
 - b. How the drawdown may affect other biota in the region;
4. Protection of the provincially-owned long-term snow pillow monitoring station at Grano Creek, which is required to ensure the readings can continue in order to be compared to previous years and is an essential tool for flood preparedness and response in the Boundary watersheds. This station is located either in or just outside of the development boundary;
5. Cumulative effects of other alpine and sub-alpine projects in the area, including forestry, including what is needed to help determine this impact and what needs to happen to help mitigate the impact;
6. How the impacts connected to climate change have been considered for the flora and fauna of the area; whether development plans are designed to be sustainable over the length of the project; and how development may change with a changing climate; and
7. Whether the design, construction, and operations of the project incorporated ecosystem sensitive approaches.

Timing and Public Consultation

This proposal has generated significant interest from individuals and organizations across the Boundary. Staff is aware of comments on the proposal made directly to the Province from others. A common concern is the limited commenting period, given the time of year of the release of the proposal, the scale of the proposal and potential negative impacts. Another concern is the lack of field work carried out as part of the Environmental Impact Assessment.

¹ For more information, see <http://www.env.gov.bc.ca/wld/twg/species/mammals.html#seventh>

Recommendation

That the Regional District of Kootenay Boundary Board of Directors direct staff to forward this staff report for FrontCounter BC Referral – Adventure Tourism and Roads Licenses of Occupations for Powder Renegade Lodge Inc., which contains comments from the Electoral Area E/West Boundary Advisory Planning Commission and the Electoral Area D/Rural Grand Forks Advisory Planning Commission, to FrontCounter BC for consideration, AND FURTHER that the Board requests that the project proponent conduct public consultation before the Province makes a decision.

Attachments

1. Site Location Map
2. Subject Property Map
3. Applicant Submission

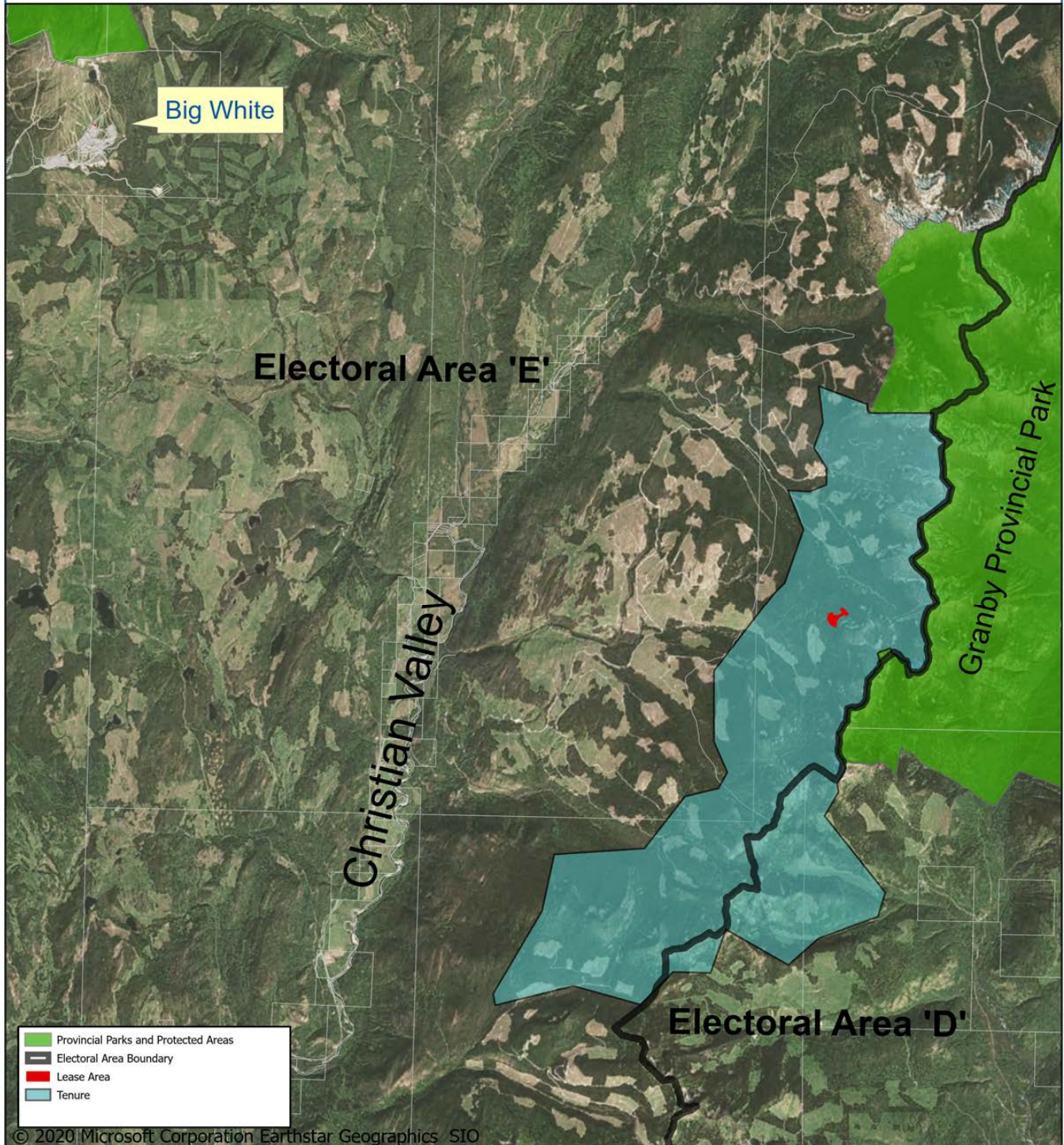
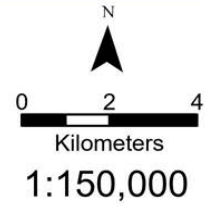


Regional District of
Kootenay Boundary

Date: 2020-12-08

Site Location Map

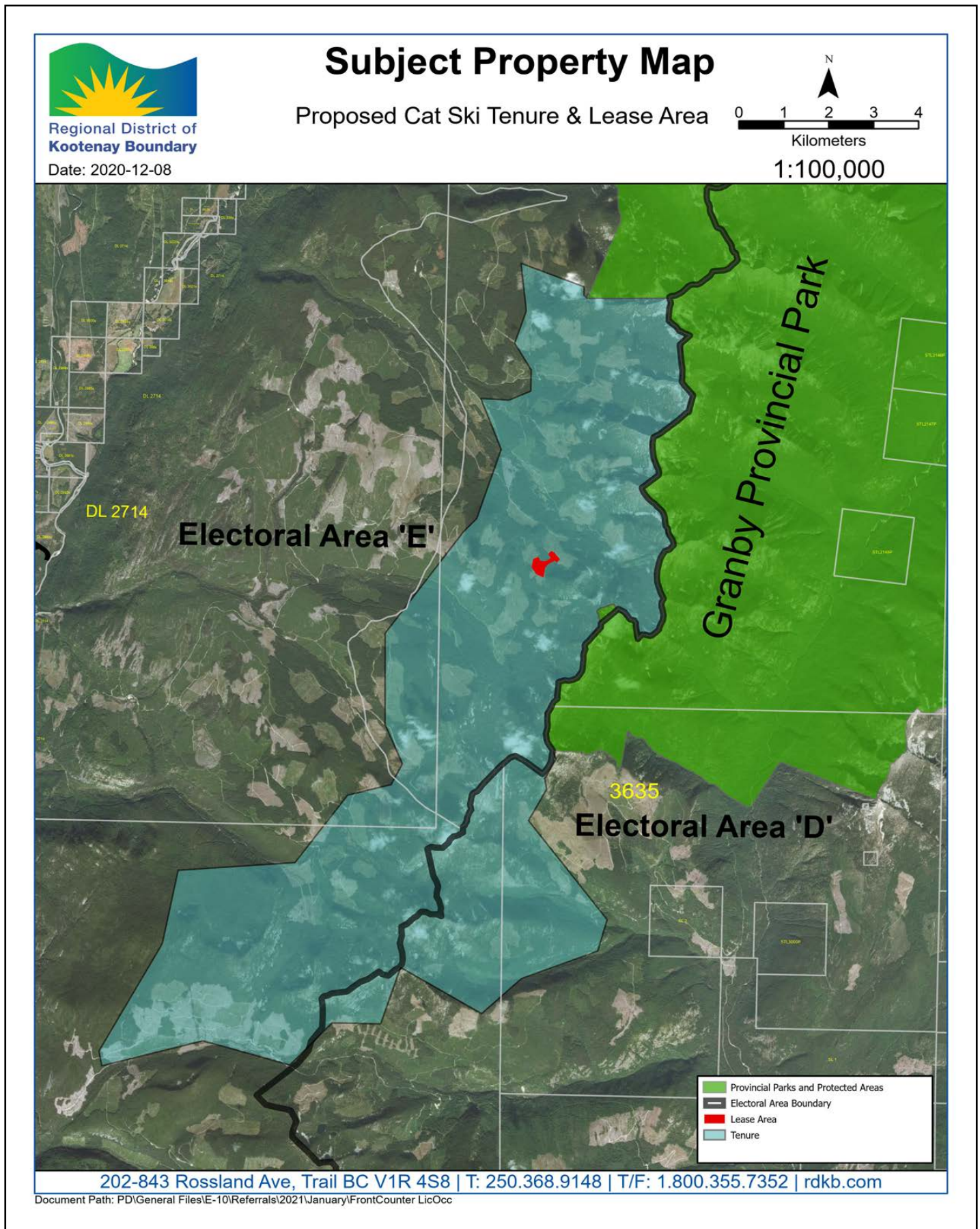
Proposed Cat Ski Area: Area D & E



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Document Path: PD\General Files\E-10\Referrals\2021\January\FrontCounter LicOcc





Crown Land Tenure Application

Tracking Number: 100325390

Applicant Information

If approved, will the authorization be issued to
an Individual or Company/Organization? Company/Organization
What is your relationship to the
company/organization? Owner

REFERRAL / PUBLIC COMMENT CONTACT INFORMATION

Company / Organization: POWDER RENEGADE LODGE INC.
Contact Name: Cassandra Frances Penney
Contact Address: [REDACTED]
Contact Phone: [REDACTED]
Contact Email: [REDACTED]

APPLICANT COMPANY / ORGANIZATION CONTACT INFORMATION

Please enter the contact information of the Individual/Organization who is acting on behalf of the applicant.

Name: POWDER RENEGADE LODGE INC.
Doing Business As:
Phone: 250-423-1843
Fax:
Email: powderrenegade@gmail.com
BC Incorporation Number: BC1255468
Extra Provincial Inc. No:
Society Number:
GST Registration Number: 726333131RT0001
Contact Name: Cassandra Frances Penney
Mailing Address: [REDACTED]

CORRESPONDENCE E-MAIL ADDRESS

If you would like to receive correspondence at a different email address than shown above, please provide the correspondence email address here. If left blank, all correspondence will be sent to the above given email address.

Email: powderrenegade@gmail.com
Contact Name: Cassandra Penney

ELIGIBILITY

Question	Answer	Warning
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Do all applicants and co-applicants meet the eligibility criteria for the appropriate category as listed below?	Yes	
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Applicants and/or co-applicants who are Individuals must:

1. be 19 years of age or older and
2. must be Canadian citizens or permanent residents of Canada. (Except if you are applying for a Private Moorage)

Applicants and/or co-applicants who are Organizations must either:

1. be incorporated or registered in British Columbia (Corporations also include registered partnerships, cooperatives, and non-profit societies which are formed under the relevant Provincial statutes) or
2. First Nations who can apply through Band corporations or

Indian Band and Tribal Councils (Band or Tribal Councils require a Band Council Resolution).

TECHNICAL INFORMATION

Please provide us with the following general information about you and your application:

EXISTING TENURE DETAILS

Do you hold another Crown Land Tenure? No

ALL SEASONS RESORTS

The All Seasons Resorts Program serves to support the development of Alpine Ski and non-ski resorts on Crown land. For more detailed information on this program please see the operational policy and if you have further questions please contact FrontCounter BC.

Are you applying within an alpine ski resort? No

WHAT IS YOUR INTENDED USE OF CROWN LAND?

Use the "Add Purpose" button to select a proposed land use from the drop down menu.

If you wish to use Crown land for a short term, low impact activity you may not need to apply for tenure, you may be authorized under the Permissions policy or Private Moorage policy.

To determine if your use is permissible under the Land Act please refer to either the Land Use Policy - Permissions or Land Use Policy - Private Moorage located here.

Purpose	Tenure	Period
Adventure Tourism Cat Ski	Licence of Occupation	Ten to thirty years

Roads	Licence of Occupation	Ten to thirty years
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We are proposing to construct dirt roads, similar to the existing FSR's in the boundary. The main lodge road will connect the closest FSR, to the lodge site. This road will be approximately 360 metres long, and used year round to access the lodge. Other roads throughout the boundary will also be necessary to facilitate the movement of the snowcat over the mountain terrain. These roads will be used on a seasonal basis, only in the winter when the business is active.

You have added more than one purpose to your application. This is only possible if those are part of the same project and are directly related. Please provide us with an explanation of the relation between the different purposes.

Explanation: The purposes are part of the same project. Cat skiing activities require a proper road network for accessibility. The license and lease application are for cat skiing activities and the lodge. The Roadway License of Occupation will allow for the development and use of access roads within the tenure. One road will provide year round access to the lodge site, and the others will help with the overall connectivity for the terrain in our Adventure Tourism License of Occupation.

ACCESS TO CROWN LAND

Please describe how you plan to access your proposed crown land from the closest public road: Access from the closest public road is at the 51km marker on the Christian Valley road. The Christian Valley road begins at a junction in Westbridge, off of Hwy 33.

ADVENTURE TOURISM

Adventure Tourism applies to tourism operators who provide outdoor recreation activities for a fee or other form of compensation. For more information visit the website.

Specific Purpose: Cat Ski
Period: Ten to thirty years
Tenure: Licence of Occupation

TOTAL APPLICATION AREA

Please give us some information on the size of the area you are applying for.

Please specify the area: 8847 hectares

MECHANIZED / NON-MECHANIZED

Mechanized Activity means guided AT activities where mechanized or motorized transport of clients (e.g., helicopters, snowmobiles, All Terrain Vehicles, etc.) is an integral part of the recreation experience offered to the clients. Motorized use includes vessels that use power as an integral part of the guided operation. Vessels that use motorized propulsion only intermittently for control or safety purposes are considered non-mechanized (e.g. whitewater rafting). In addition, where a vessel simply provides a transport service to and from a kayak operation it will be considered a non-motorized activity.

Does your operation include motorized / mechanized activities? Yes

GUIDE OUTFITTER (COMMERCIAL HUNTING GUIDES)

Any improvements on Crown land for the purpose of guide outfitting must be approved and tenured under this program (e.g. lodges, cabins, camps).

Is your application related to a guide outfitting operation? No

ANGLING GUIDE

Any improvements on Crown land for the purpose of guided angling must be approved and tenured under this program (e.g. lodges, cabins, camps).

Is your application related to an Angling guide operation? No

ALL SEASONS RESORT

If your activities include more than one million dollars in Recreational Infrastructure and more than 100 Commercial Bed Units, your activities may fall under the All Seasons Resort Policy.

Are you applying to build an all season resort as defined under the All Seasons Resort Policy, including more than one million dollars in Recreational Infrastructure and more than 100 Commercial Bed Units? No

ROADS

Applications are accepted for public and private road development that service Crown land and private parcels. It also includes public road allowances under Section 79 and 80 of the Land Act; roads within Crown land subdivisions; and dedications under the Land Title Act Section 102 and 107 of titled lands.

Note - In the case of industrial roads associated with Clean Energy Projects, and located within the Provincial Forest, an authorization may be applied for here under the Land Act or applied for through the Provincial Forest Use Regulation, Forest Practices Code Act by a Special Use Permit.

Specific Purpose: We are proposing to construct dirt roads, similar to the existing FSR's in the boundary. The main lodge road will connect the closest FSR, to the lodge site. This road will be approximately 360 metres long, and used year round to access the lodge. Other roads throughout the boundary will also be necessary to facilitate the movement of the snowcat over the mountain terrain. These roads will be used on a seasonal basis, only in the winter when the business is active.

Period: Ten to thirty years

Tenure: Licence of Occupation

TOTAL APPLICATION AREA

Please give us some information on the size of the area you are applying for.

Specify Length: 10700 meters
Specify Width: 7 meters

ROAD ACCESS

Do you have a safety reason to exclude the public from this road? No

Does the road access a subdivision, and will become a publicly maintained road? No

IMPORTANT CONSIDERATIONS

Selecting yes to any of the following questions may indicate that you will require further or additional authorizations under the Land Act or other legislation.

Is this road related to a Clean Energy project? No

Is this related to a forest service road or a logging road? Yes

Please contact your local Forest District office, Enquiry BC.

Will this road connect to a public road? No

Will you need fill material to construct this road? Yes

ADDITIONAL QUESTIONS

In many cases you might require other authorizations or permits in order to complete your project. In order to make that determination and point you in the right direction please answer the questions below. In addition, your application may be referred to other agencies for comments.

Is the Applicant or any Co-Applicant or their Spouse(s) an employee of the Provincial Government of British Columbia? No

Are you planning to cut timber on the Crown Land you are applying for? Yes

To cut timber on the Crown Land once your tenure has been issued you may require an Occupant Licence to Cut. Check out the website of the forest district responsible for more information or contact them if you have any questions.

Are you planning to use an open fire to burn timber or other materials? No

Do you want to transport heavy equipment or materials on an existing forest road? Yes

You must obtain a Road Use Permit from the Ministry of Forests, Lands and Natural Resources Operations if the road is a Forest Service road, or negotiate a Maintenance Agreement with an existing permit holder if the road is under road permit or special use permit.

Are you planning to work in or around water? Yes

1. If you will be working in or around fresh water, you will require a Water Sustainability Act Change Approval or Notification from the Province. 2. The federal Department of Fisheries and Oceans might need to review your project. 3. Review the Transport Canada website if the Navigation Protection Act applies.

Does your operation fall within a park area? No

LOCATION INFORMATION

LAND DETAILS**DRAWINGS**

Please provide information on the location and shape of your Crown land application area. You can use one or more of the tools provided.

☒ I will upload files created from a Geographic Information System (GIS)

SPATIAL FILES

Do you have a spatial file from your GIS system? You can upload it here.

NOTE: When uploading a shapefile, we require the .dbf, shp and .shx files at minimum. Please ensure that it is a polygon that has been projected in BC Albers in NAD83 format. For more information, refer to Commonly Used Spatial File Formats.

Description	Filename	Purpose
Complete KML of operating area and improvements proposed by Powder Renegade Lodge	Renegade Completed Map.kml	Applies to all purposes

ATTACHED DOCUMENTS

Document Type	Description	Filename
Extensive Area Map	Zone 1 Map	Zone 1 Tanner Cochrane.pdf
Extensive Area Map	Zone 2 Map	Zone 2 Horseshoe Valley.pdf
Extensive Area Map	Zone 3 Map	Zone 3 North Hellroarer.pdf
Extensive Area Map	Zone 4 Map	Zone 4 South Hellroarer.pdf
Extensive Area Map	Zone 5 Map	Zone 5- Grano.pdf
General Location Map	General Location Map	PRL General Location Map.pdf
Management Plan	Roadway Management Plan	Powder Renegade Roadway Man...
Management Plan	Tenure Management Plan	Powder Renegade Management ...
Other	First Nations Communication Log	First Nations Log Communica...
Other	Water Licence Application Tracking No	Associated Water Licence Nu...
Site Plan	Lease Site Plan	Site Plan.pdf

PRIVACY DECLARATION

☒ Check here to indicate that you have read and agree to the privacy declaration stated above.

IMPORTANT NOTICES

- Once you click 'Next' the application will be locked down and you will NOT be able to edit it any more.

DECLARATION

☒ By submitting this application form, I, declare that the information contained on this form is complete and accurate.

OTHER INFORMATION

Is there any other information you would like us to know?

APPLICATION AND ASSOCIATED FEES

Item	Amount	Taxes	Total	Outstanding Balance
Crown Land Tenure Application Fee				

OFFICE

Office to submit application to: Cranbrook

PROJECT INFORMATION

Is this application for an activity or project which requires more than one natural resource authorization from the Province of BC? No

OFFICE USE ONLY

Office Cranbrook	File Number	Project Number
	Disposition ID	Client Number

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Adventure Tourism Management Plan

ADVENTURE TOURISM COMMERCIAL RECREATION TENURE MANAGEMENT PLAN



FILE #

LICENSE #

TRACKING # 100325390

DATE: October 16, 2020

ACCEPTED BY:

SIGNED on behalf of HER MAJESTY THE QUEEN IN THE RIGHT OF THE **PROVINCE OF BRITISH COLUMBIA** by Crown land Adjudication, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, authorized representative of the minister responsible for the *Land Act*.

The signature of the Province's authorized representative is solely for the purpose of acknowledging the Province's acceptance of this document as the Tenure Management Plan for the purposes of the Licenses and does not represent a certification by the Province or its signatory of any factual content of acceptance of professional responsibility by the Province's signatory for any advice or analysis contained in this document.

Authorized Signature

Crown Land Adjudication

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

*Print Name*_____
Authorized Signature

Powder Renegade Lodge Inc

*Print Name**Contains 70 pages (including this page)**Powder Renegade Lodge Inc*

1

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1.0 INTRODUCTION

1.1 Project Overview

This Tenure Management Plan has been prepared in support of Powder Renegade Lodge Inc's request for a winter, commercial recreation Adventure Tourism tenure for guided cat skiing and remote lodge. The tenure includes a Lease for an Intensive Use Site, License of Occupation for an Extensive Use Area, and a License of Occupation for Roadway, all for 30 year terms. The proposed tenure encompasses 8,847 ha of Crown land in the Midway Range of the Southern Monashee Mountains, between the Granby and Kettle rivers, 70 kms east of Kelowna, BC.

For the past several decades, the demand for back country skiing in British Columbia has been continuously increasing. BC is globally recognized as a leader of the heli-skiing, cat skiing and ski touring industries. Existing back country operators of similar nature have been unable to keep up with ever-increasing demand and popularity of their product, and most lodges have long waitlists. Consequently, the launch of a new backcountry cat skiing lodge is an excellent opportunity.

A snowcat (short for snow and caterpillar) is an enclosed-cab, truck-sized, fully tracked vehicle designed to move on snow. Their passenger cabins can hold up to 18 people. The snowcat travels along a road system of forestry roads and snow trails to the upper elevation points within the tenure area, where guests are dropped off. From there, they are guided down untracked powder runs to a predetermined pick up point. The snowcat travels to that point, picks up the guests and proceeds to another part of the tenure for another run, in essence acting as a ski lift for the guests. The lead guide decides on the daily program, based on avalanche stability and snow quality. Once a run has been skied, it is not skied again until fresh snow has filled in the tracks.

A typical cat skiing day provides 12-20,000 vertical feet of downhill skiing (about 10-15 ski runs). A typical ski day would have the group moving away from the lodge in the morning, and then working their way back toward the lodge in the afternoon. This strategy results in a large variety of terrain being experienced by the guests each day. The terrain varies from open bowls to perfectly spaced trees, steep powdery chutes, boulder gardens, uninterrupted fall lines and high peaks with glorious views.

The proposed operating area has close proximity to the Kelowna International Airport and regions including the Okanagan Valley, Big White Ski Resort, the Lower Mainland and the United States. This presents an exciting and unique competitive advantage in the remote lodge, multi day ski holiday industry.

In summary, this management plan outlines a great business opportunity and the minimal impact this operation will have on the land and wildlife values. The proponent is committed to conducting business in a manner that demonstrates high ethical standards and efforts to be a good corporate citizen. By working with First Nations, various government (federal, provincial and local) agencies, local economic development organization, other tourism operators and public recreation users, the company seeks to ensure that its operations are sustainable for the long term.

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All maps included in this management plan are available in KML and digital spatial files upon request. A separate management plan for the License of Occupation for Roadway has been prepared and will form part of the tenure.

This management plan was developed and written by Cassandra and Kerry Penney. Nick Holmes-Smith is an active consultant and associate on this project, and will remain so over the course of application into business start up.

1.2 Proponent

Powder Renegade Lodge Inc (PRL) is a BC incorporated company based out of Kelowna, BC. The founders are Cassandra Penney, Kerry Penney and Nick Holmes-Smith. They share an enormous passion for creating cat ski tenures and truly make an excellent team with their unique and diverse skills.

The Penney's are striving entrepreneurs and residents of Kelowna, BC. In October 2018, they had purchased an existing cat skiing tenure called Highland Powder Skiing (file #4403378, license #403047), which was based out of Meadow Creek, BC. This tenure had been previously replaced in 2010 for a further 30 year term, so the Penney's felt confident that the tenure had longevity. The Penney's extensively updated the management plan and became knowledgeable of the adventure tourism tenure application process.

As the application process transpired, GPS telemetry and other data shared by FLNRO indicated locations and movement of critical herd of Southern Mountain Caribou within this boundary. In December 2019, it was deemed that it was not in the public interest for a cat skiing operation to operate in this location based on the objective of this local population unit to reach self-sustainability. A tenure termination agreement was signed ending the license of occupation in March 2020.

The Penney's are committed to achieving their lifelong family dream of owning and operating a cat skiing operation with a remote lodge. This tenure is essentially the replacement for the cancellation of HPS. Cassandra and Kerry also have two young daughters who have both been skiing since the age of two.

Nick and his wife Ali-Holmes Smith have founded two cat skiing operations including Mustang Powder Lodge; which they currently own and operate, and Monashee Powder Snowcats prior to Mustang. They raised their daughters while operating their snowcat business, just as the Penney's wish to do. Nick has been working closely with the Penney's on the development of this business and tenure. His role as a consultant and mentor has provided extensive knowledge and experience when it comes to creating and maintaining a very successful remote lodge, multi day skiing product.

When timing is appropriate, PRL will become a regular member of the HeliCat Canada Association (HCC). PRL will ensure their lead guides will meet or exceed the HCC operation guidelines for snowcat skiing. The guides will be certified by the ACMG or CSGA and will have all the proper training for the level of responsibility they carry.

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1.2.1 Corporate Summary

Incorporation # BC1255468

Business Address: 303-567 Yates Road, Kelowna, BC V1V 2V4

Corporate Officers: Cassandra Penney, President

Contact: Phone: (250)-423-1843

Email: powderrenegade@gmail.com

Ownership & Management: Powder Renegade Lodge is owned and operated by Cassandra and Kerry Penney. Kerry is the creative director who will also oversee operations. Cassandra is the business director who oversees the company and business. Nick Holmes-Smith is a consultant and mentor on this project start up.

1.3 Historical Perspective

Cat skiing was invented by Alan and Brenda Drury of Selkirk Wilderness Lodge in the mid 1970's. Since then, Southern BC has continued to be the centre of cat skiing, particularly the remote lodge, multi-day ski holiday product. Currently, standard cat skiing holidays typically cost between \$1000-1500 a day in the high season, and all ascents are done by snowcat.

This proposed operating area is encompassed with a license of occupation (File #3409453) that is now suspended and due to expire in December 2021. This proponent known as Powder Outfitters offered heli-skiing, ski touring and snowshoeing tours out of this general location. This proponent is now insolvent and has not been actively using the terrain for over a decade. PRL has received express permission from the Cranbrook FLNRO office to apply for a license of occupation overlapping this tenure, see *Appendix 3.0*.

This area has been extensively logged and includes multiple cut blocks and expansive road networks that will greatly assist the start up and development of a cat skiing operation. PRL would propose to utilize this existing road system as an effective method of access terrain, without creating new disturbances to the natural land. PRL understands that permission to use the existing active roads are subject to use and maintenance agreements with the active forestry companies who hold respective licenses (Interfor Corporation & BC Timber Sales), and/or the Selkirk Forest District.

The PRL team has conducted research and development site visits to understand the terrain and determine a suitable and long term sustainable business model. The team has been able to identify comparable strengths and weaknesses to other operations, and truly understands the land from many perspectives including Google Earth, in person on snowmobile, in a plane over and around the area, and helicopter touch downs to lodge sites and various locations.

The team conducted ski touring and heli-skiing trial runs throughout locations within the proposed boundary to check snow quality and potential for run development coinciding with a road network for snowcat access. The conclusion was this terrain is very suitable for a cat skiing product and would be a strong rival to many of the existing operators providing a similar product.

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PRL has also conducted inquiries to identify potential show stoppers with respect to wildlife values and concerns, closures, protected areas and overall potential red flags to assess if there were any major hurdles for this application prior to beginning intensive research and business development. The conclusion was interpreted that with appropriate and aligning mitigation and diligent use measures, this application has potential to receive approval.

1.4 Aboriginal Interests Consideration

PRL understands consultation with First Nations is an important part of land and resource decision-making. The Province of British Columbia has a legal obligation to consult and where required, accommodate First Nations when a Crown land activity and/or resource decisions that could impact their Aboriginal Interests. While the Province is responsible for ensuring adequate and appropriate consultation and accommodation, it may involve the proponent in the procedural aspects of consultation.

Proponents are encouraged to engage with First Nations as early as possible in the planning stages to build relationships and for information sharing purposes. PRL applied their proposed boundary into the First Nation Consultation Area Database (CAD) and identified eight groups who could have asserted or proven rights or title on the land base queried, and include the following:

- Penticton Indian Band
- Okanagan Nation Alliance
- Westbank First Nation
- Qwelmintse Secwepemc
- Upper Nicola Band
- Lower Similkameen Indian Band
- Okanagan Indian Band
- Splatshin First Nation

PRL appreciates that their activities may impact existing First Nations rights, title, interests and values. They are keen to learn and explore how all parties interested can work together through a cooperative sense of sharing, and in a collectively beneficial manner. Through analysis of other similar business models that overlap First Nation Traditional Territory, it is evident that First Nation groups are interested in opportunities arising from tourism and recreation developments within their Traditional Territory. PRL remains open and willing to develop agreements that outline how potential opportunities can be offered and allocated in an effective and meaningful way.

1.4.1 Archaeological Sites

PRL has queried iMapBC and Natural Resources Sector Online Services and has been unable to identify any existing archaeological, cultural or heritage sites within their proposed tenure boundary. PRL recognizes the importance of archaeological sites within BC, and is committed to protect and conserve this rich but fragile legacy.

PRL acknowledges that in the event that a potential First Nations artifact or site is located, the location will be marked, left untouched and immediately reported to FLNRO and the appropriate First Nations group. If the appropriate First Nations group cannot be identified

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through the site or artifact, all groups that have been identified through the CAD will be notified so ownership to this site or artifact can be claimed. PRL would cease use of any sites related to archaeological significance upon request by appropriate First Nations groups, and/or FLNRO.

2.0 LOCATION

2.1 General Description

The proposed tenure boundary is 60 km northwest of Grand Forks and 70 km southeast of Kelowna in the Midway Range of the Monashee Mountains. It is adjacent to the south western border of Granby Provincial Park between the Kettle River and Granby River. East of the Christian Valley, south of Arthurs creek and north of Thone Creek with portions lying in Cochrane, Hellroarer and Grano Creeks. See *Figure 2-1, General Location Map*.

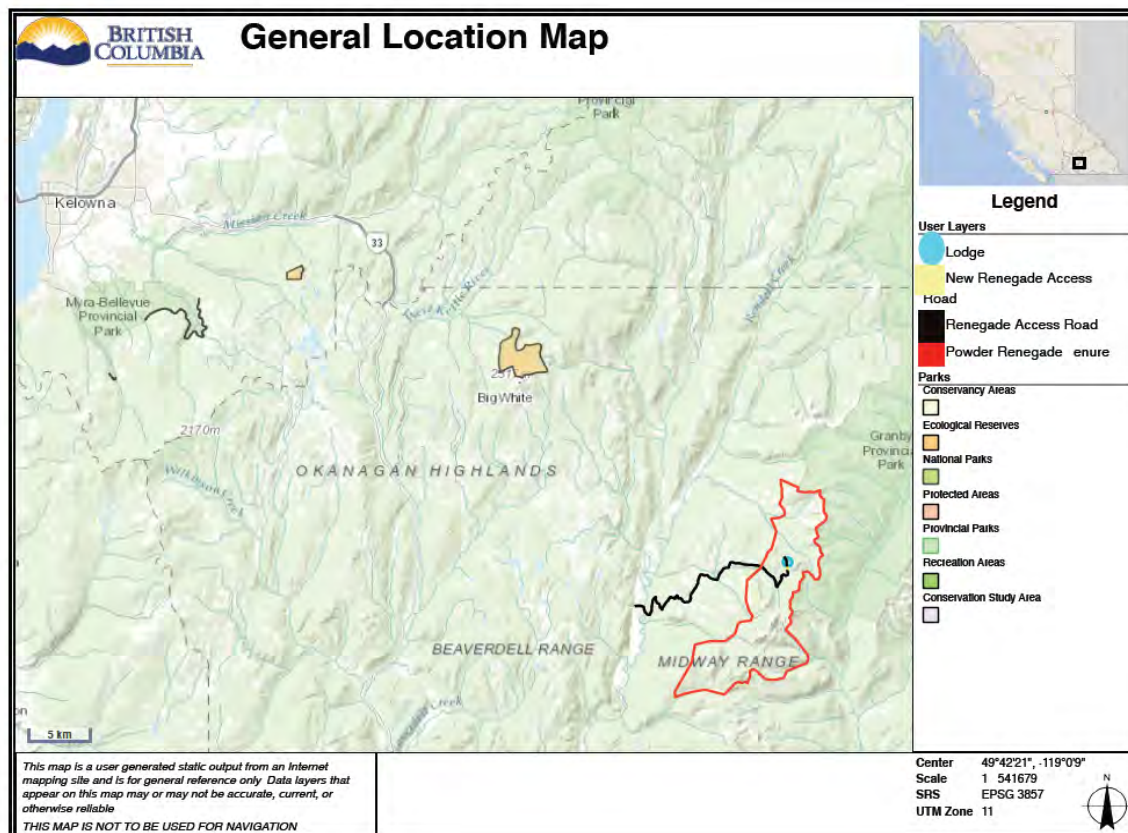
The operating area encompasses 8847 hectares with the majority of proposed ski terrain being between 1200 and 2400 meters elevation. This location has been extensively logged and has an excellent existing road network. There are also many existing cut blocks that present great skiing opportunities. These mountain ranges also have nicely spaced natural forests that allow for skiing during cloudy weather. The tree line within the operating area is generally at the 2200 metres elevation with above tree line being mainly open alpine meadows and rock.

The southern interior of British Columbia has more cat skiing operations than anywhere in the world. In addition to boasting large volumes of high quality powder snow and great tree skiing, the legacy of logging roads has been crucial in the creation of this industry. This location is a great example of how existing forestry roads can allow for the creation of a new, and long term sustainable operation using the same infrastructure.

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Figure 2-1: General Location Map



2.2 Access

Ground access to the tenure is via the Grano Creek FSR. This FSR begins at the 51km marker off of the Christian Valley Road. There are multiple access points into the logging road system within the tenure from this FSR. To access the lodge site, follow the Grano Creek FSR for 14.2 kms, staying right onto Charlie Road FSR road for 1.1 kms, and then stay right onto Noren FSR for 4.3 kms, which climbs a southwest aspect hillside. Stay right again on Grano 14640 which continues climbing and ends at 1900m elevation. An excavated road 374m long is required to connect to Grano 22830, at 1960m elevation.

Fuel trucks, equipment, construction vehicles and suppliers will use this ground method by following the route direct to the lodge site in non-snowbound weather to service the lodge and equipment. On occasion, guests will also be transported by snowcat to the lodge site on this route (1.5-2 hour snowcat ride). PRL will establish an agreement with private land owners for a staging area, as most land surrounding the entrance of the Grano Creek FSR is private land.

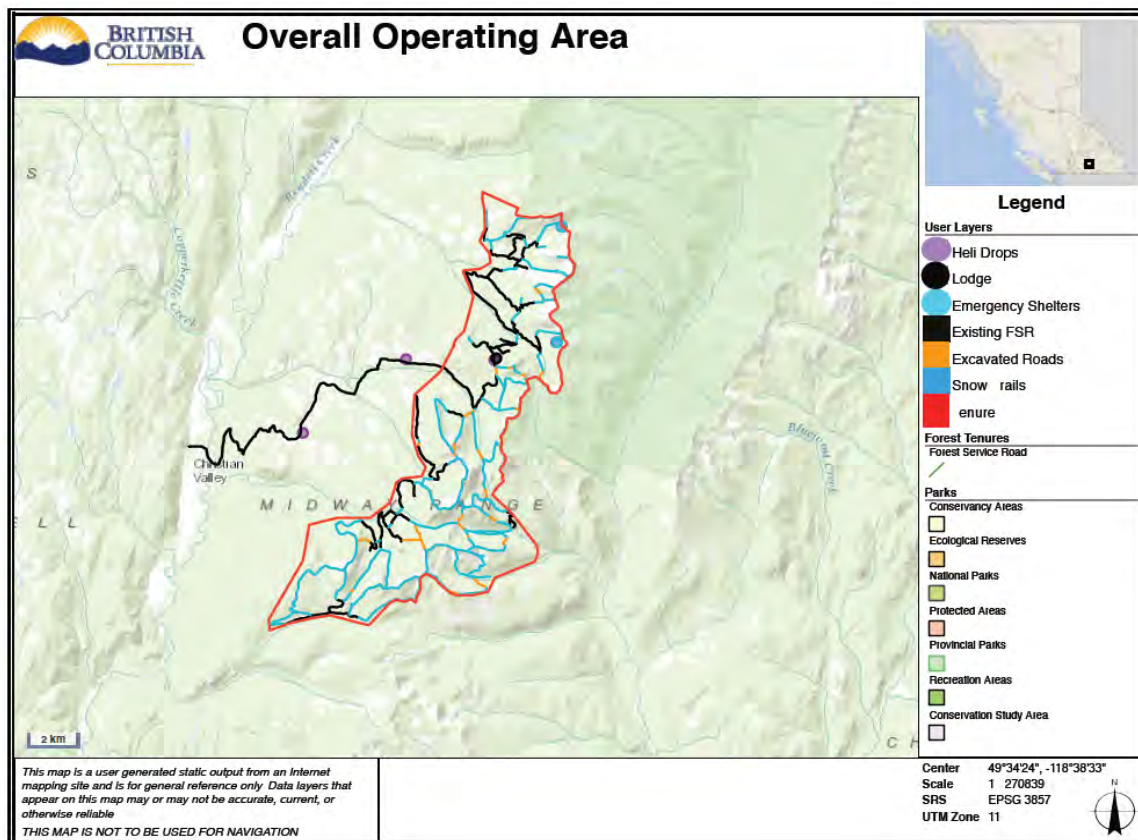
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For guest transport, primary lodge access will involve guests being flown by helicopter to the lodge site, from a designated area at the Kelowna International Airport (KIA). This flight takes approximately 30 minutes. It provides convenience, comfort and very fast access. This is possible 80% of the time throughout the operational months. Secondary guest access fly guests to one of the two heli drops along the entrance FSR system (see *Figure 2-2: Overall Operating Area*), approximately a 25 minute flight. They would then be loaded into a snowcat and transported to the lodge, a 1-1.5 hour snowcat ride.

Flight information was provided by Derek Robinson, owner of Eclipse Helicopters Ltd of Penticton, BC who has been flying this area of interest for 20 years. The PRL team flew with Derek twice over the area. Eclipse Helicopters will be the transportation provider for all helicopter services related to PRL and will remain an active consultant throughout the application process and business development.

Figure 2-2: Overall Operating Area



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Figure 2-1: Aerial Image of Operating Area - Looking North at Mt. Tanner & Mt. Cochrane



Figure 2-2: Aerial Image of Operating Area - Looking east toward tenure



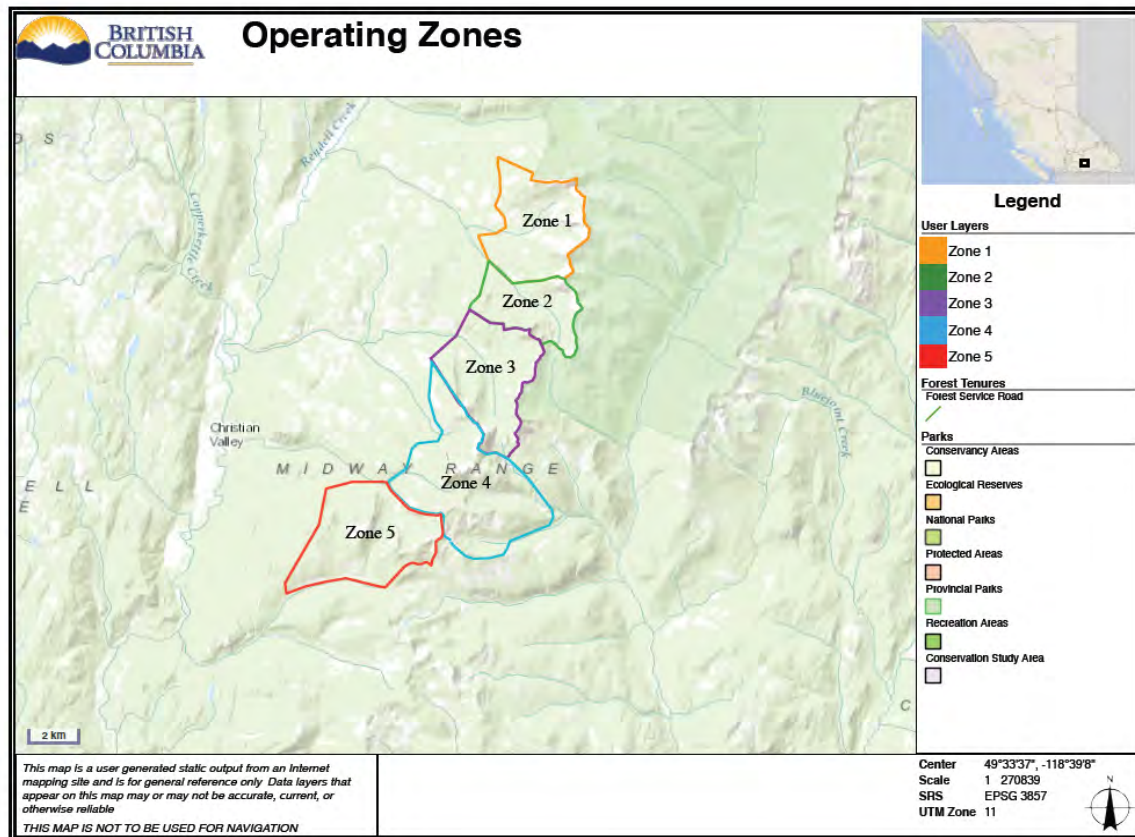
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2.3 Description of Operating Zones

The five ski zones within the PRL operating area have been determined using a combination of geographical features such as drainages or ridge tops and the operational approach of the business. Each ski zone contains areas which would be used more frequently than others - depending on terrain, snow conditions, weather, accessibility and client requirements.

Figure 2-4: PRL Operating Area Zones



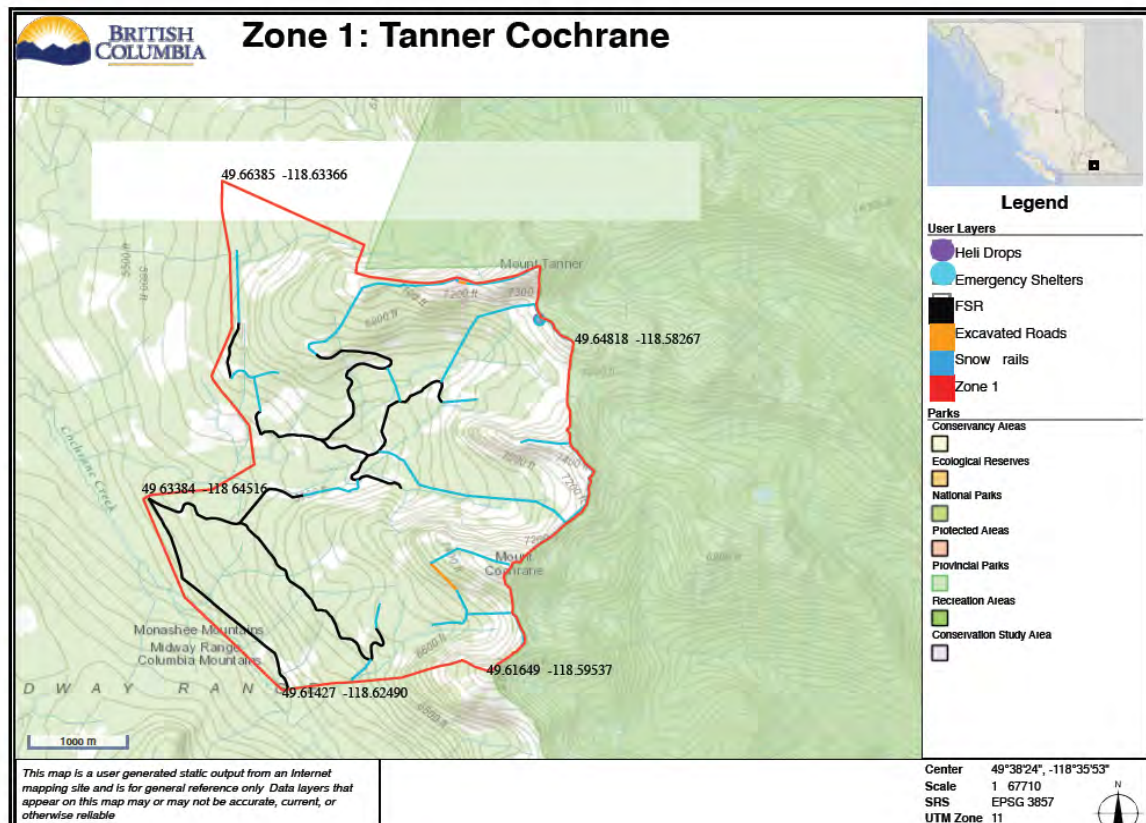
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2.3.1 Zone 1 - Tanner-Cochrane (1721 ha)

The northern border of the Tanner Cochrane zone runs along the height of land on Mt. Tanner, and the southern border is the height of land south to the Cochrane drainage. This zone encompasses the Mt. Tanner and Mt. Cochrane drainages, and their spectacular peaks dominate the view. Several west aspect valleys are tucked between the peaks and there are many logging cut blocks that extend up to the 2000 meter elevation.

Figure 2-5: Map of Zone 1



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Figure 2-5: Aerial Image of Mt Tanner looking southeast



Figure 2-6: Aerial Image of Mt. Cochrane looking southeast



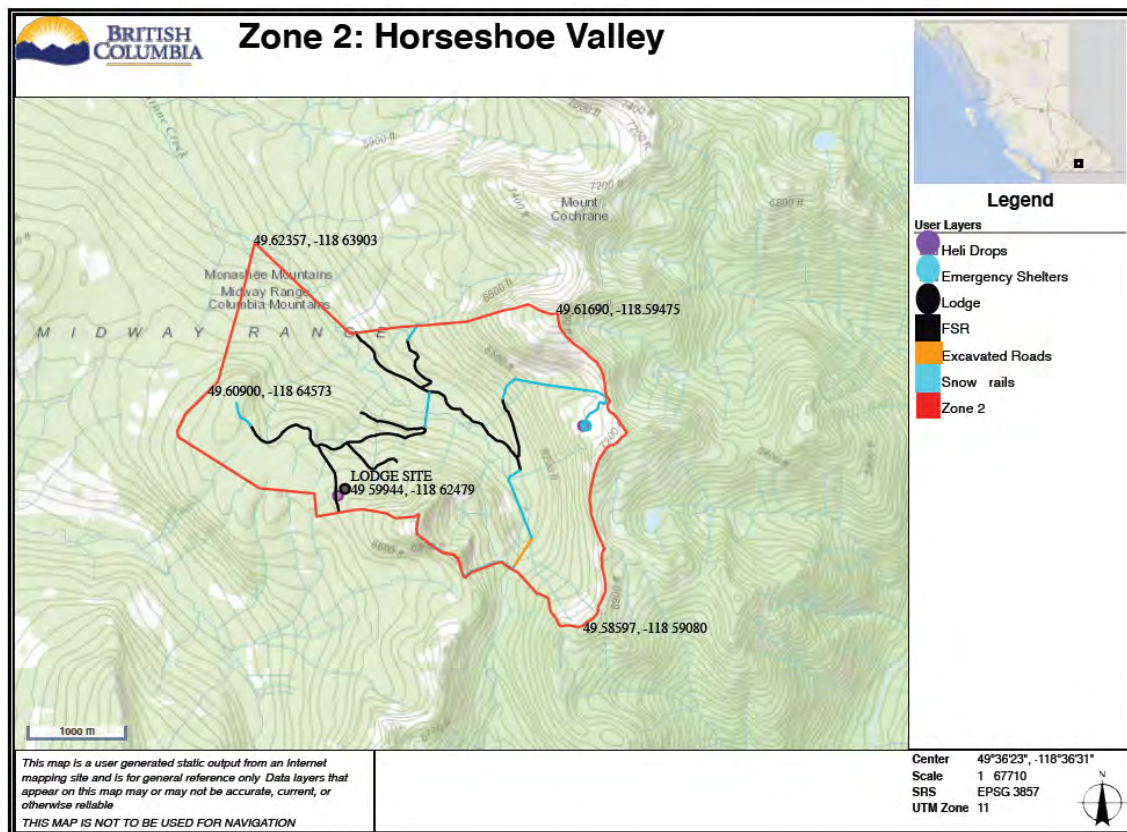
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2.3.2 Zone 2 - Horseshoe Valley (993 ha)

Horseshoe Valley begins where Tanner Cochrane ends, and extends south to the height of land above the lodge on the mountain ridge line. It is the smallest zone in the tenure. The terrain is composed of north and west aspect tree skiing. Our proposed lodge would be located in this zone at the 1952 meter level on an unnamed mountain near a pond, between Mt. Cochrane and Mt. Noren. The lease area is within this zone.

Figure 2-7 : Map of Zone 2



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Figure 2-8: Aerial View of “Horseshoe Valley” looking Northeast.



Figure 2-9: Aerial Image of unnamed mountain that lodge will be on, facing southeast



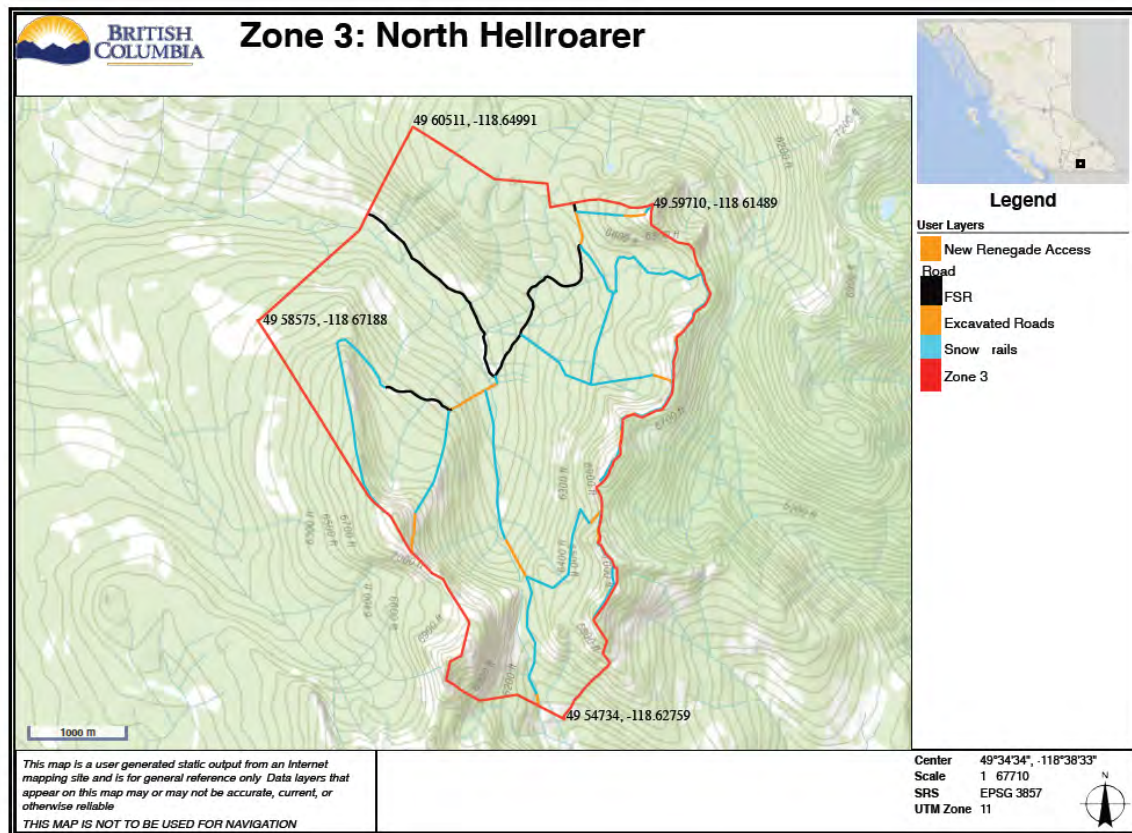
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2.3.3 Zone 3 - North Hellroarer (1640 ha)

This zone has a lot of north and west aspect tree skiing and will be more of a bread and butter zone during the storm days and unstable weather. It extends south to the height of land on the north ridge of Mt. Noren. It is the southern most dominant peak in this zone and features cut blocks and logging roads on its western shoulder, which will be excellent ski terrain.

Figure 2-10: Map of Zone 3



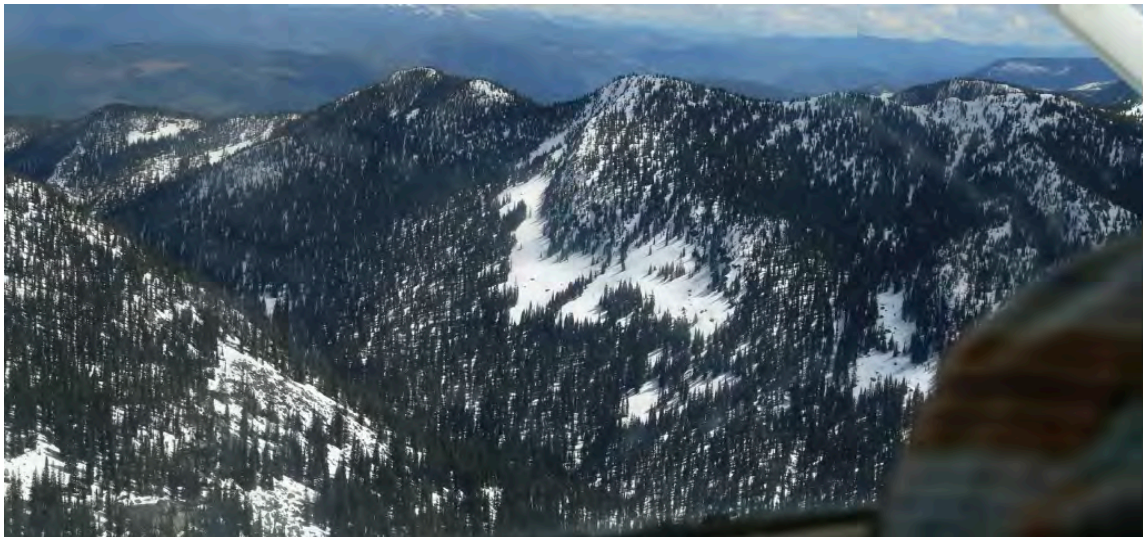
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Figure 2- 11: Aerial Image of Mt. Noren looking Southeast.



Figure 2-12: Aerial Image of peaks and ridge lines between lodge site & Mt. Noren, looking east



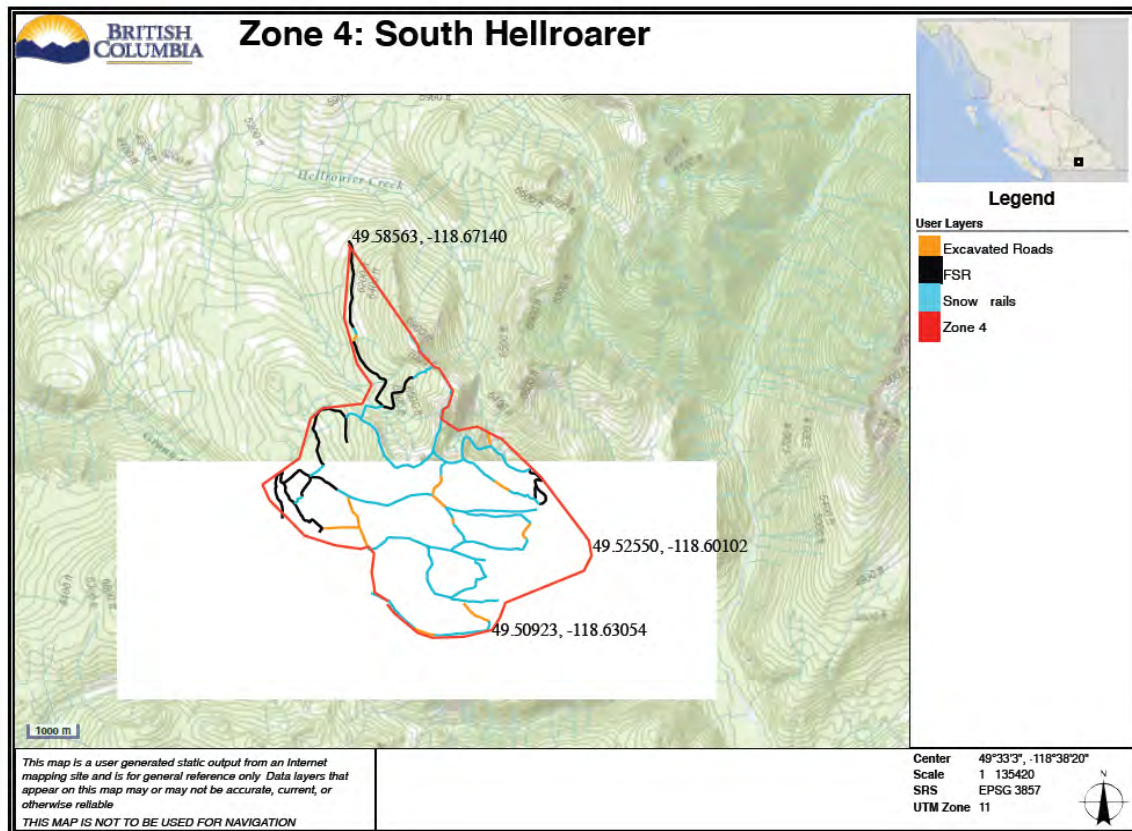
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2.3.4 Zone 4 - South Hellroarer (2553 ha)

This is the largest zone, extending down to the eastern ridge of Gable Mountain. It encompasses three drainages that present a significant amount of north aspect ski terrain which is vital to our operation, and lacking in other zones. It is the most dynamic zone, featuring north and south aspect skiing, a burn, numerous cut blocks, and steep trees. This zone also features the most kilometres of excavated roads.

Figure 2-13: Map of Zone 4



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Figure 2-14: Aerial Image of drainage looking southeast



Figure 2-15: Aerial Image of drainage looking Northwest showing an old burn



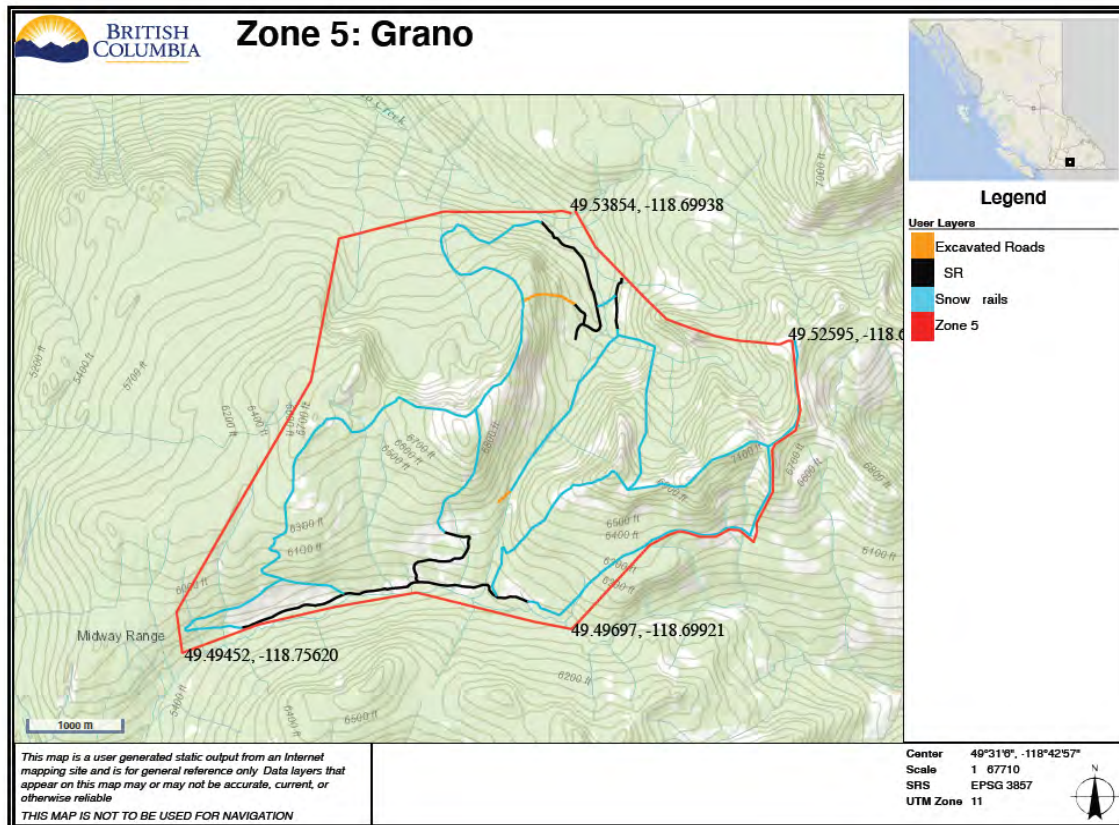
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2.3.5 Zone 5 - Grano (1940 ha)

The peaks and ridges are slightly lower elevation in this zone – with mostly ‘treeline’ and ‘below treeline’ ski runs. There are also many cut blocks. The Grano zone is the final and most southern zone, with the border stopping the tenure at the drainage on Mt. Gable’s south western corner.

Figure 2-16: Map of Zone 5



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Figure 2-17 : Aerial Image Looking northeast



Figure 2-18: Aerial Image looking south, mid zone



2.4 SEASONAL EXPECTATIONS OF USE

PRL's operational period would be from early December to early April, allowing for an approximate 120 day ski season. PRL is not requesting any summer activities, and will not be proposing any future applications for summer activities. The construction period for the lodge build is anticipated to be Summer/Fall 2021 into Summer 2022.

2.4.1 Levels of Use and Client Days

At the conclusion of each operating season, PRL will prepare an annual report reflecting the total number of skiers, or client days, taken to the operating area pursuant to the fee schedule requirement of the AT license agreement. This skier/day report will reflect diligent use of all ski zones.

The frequency and intensity of utilizing the operating area, zones and ski runs are dependent on several factors including safety, weather and snow conditions, skiing ability and quantity of guests, glading requirements/run development, proximity to lodge site, and wildlife avoidance. These variables can concentrate use or lack of use to specific zones and certain runs for long periods of time.

PRL's ability to complete glading projects prior to operation and throughout the years will play a big role in skiable terrain. Logistically, runs more centralized to the lodge site will be used more frequently based on access and getting guests skiing quickly upon leaving the lodge, and getting some runs in at the end of the day upon return.

Collectively and independently, the considerations described above contribute to a diverse and complex strategy that determines where skiing occurs within the operating area that will likely vary throughout the years.

PRL has prepared projected levels of use and client days within the operating area for the next 5 years based on existing industry trends and realistic growth rates for the company. PRL would begin as a one snowcat operation and add a second snowcat by year three. PRL has considered variable guest demand between low and high season to determine occupancy rates. Low season is from early December to mid January, then mid March to early April. High season is from mid January to mid March. Occupancy rates are considered 100% for high season, and 80-90% in low season initially, growing to 100% by year 5.

Occupancy rate projections may appear to be overly optimistic - and for most tourism industries that would be true. However, the heli-skiing, snowcat and ski touring industry occupancy rates for existing remote lodge, multi-day ski operations in British Columbia are at or near 100%. The PRL team has conducted extensive market research and discovered there is more demand than supply for cat skiing in this province.

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Table 2-1: Levels of Use and Client Days

YEAR	# DAILY GUESTS - LOW SEASON	# DAILY GUESTS - HIGH SEASON	# SNOWCATS	PROJECTED CLIENT DAYS - 120 DAY SEASON
2022/23	10	13	1	1290
2022/24	11	13	1	1440
2022/25	22	24	2	2760
2022/26	22	24	2	2760
2022/27	24	24	2	2880

3.0 INFRASTRUCTURE

PRL is proposing improvements including a lodge, machine workshop, fuel cache, staging areas and communication sites/emergency shelters. They are also proposing to use existing forestry roads, along with building new excavated roads and snow trails for improved connectivity and terrain accessibility. Minor glading and spacing throughout the tenure is also requested, and PRL will apply for an OLTC upon approval of this tenure management plan following adherence to best practices in forestry and land development.

Intensive Use Sites (IU Sites) are small areas of Crown land that are integral to the AT tenure holder's operation and typically contain improvements. There are two kinds of IU Sites - Primary and Secondary, which are based on the nature and scope of the improvements on the land use.

Primary sites often involve substantial improvements and require services considerable administrative attention. Secondary sites are relatively minor or non-permanent improvements that only require minimal attention. Minimal Impact Sites refer to small areas of Crown land that are intermittently used for non-exclusive, low impact recreation within an Extensive Use Area license that contain minimal and temporary improvements only.

3.1 Lease - Primary Intensive Use Sites

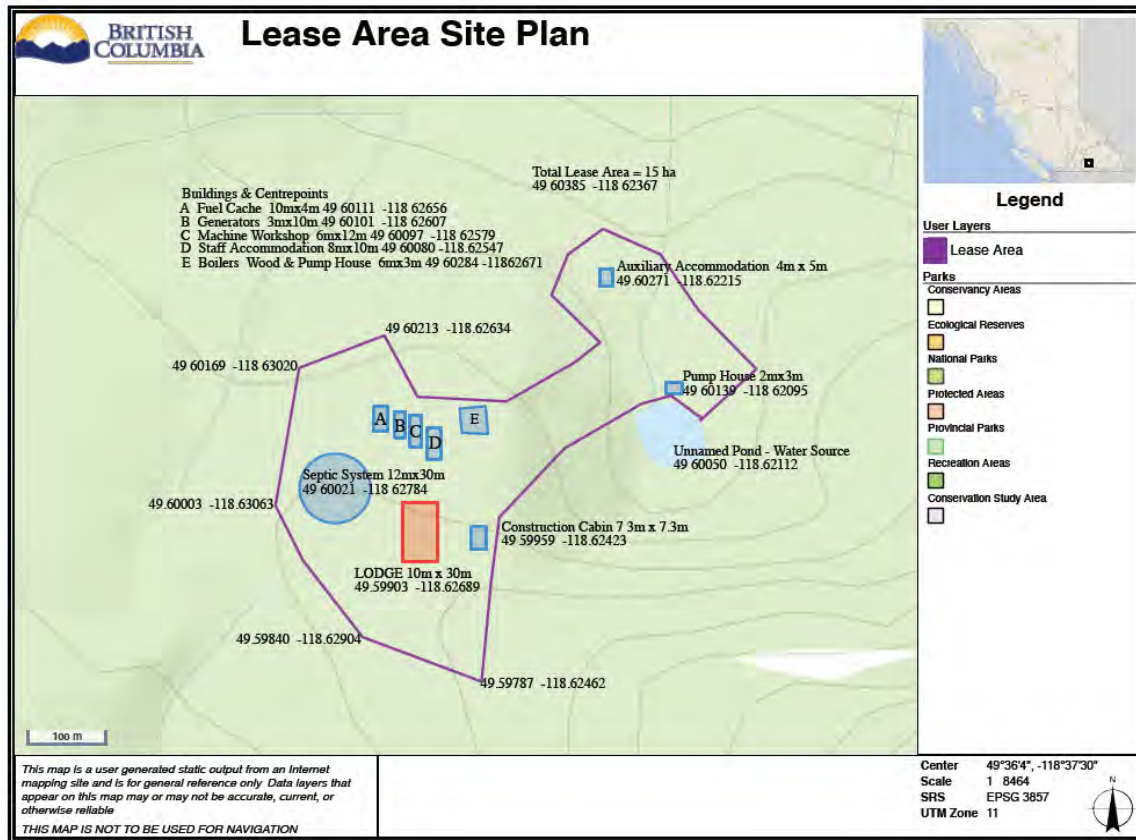
PRL is proposing a Primary Intensive Use Site for accommodation, fuel storage, and a machine workshop. Because substantial improvements are proposed, PRL is requesting a 15 hectare parcel of land surrounding the lodge and auxiliary structures to be registered as a 30 year lease. This would allow modification to the land, the construction of improvements, exclusive use and quiet enjoyment of the area. The proposed lease area is located on a nameless mountain between Mt. Cochrane and Mt. Noren (See *Figure 3-1* and *Figure 3-2*).

Upon approval of this management plan, if required, PRL will retain a professional registered surveyor to define the tenured area and to accompany the registration of the lease as an interest under the Land Title Act.

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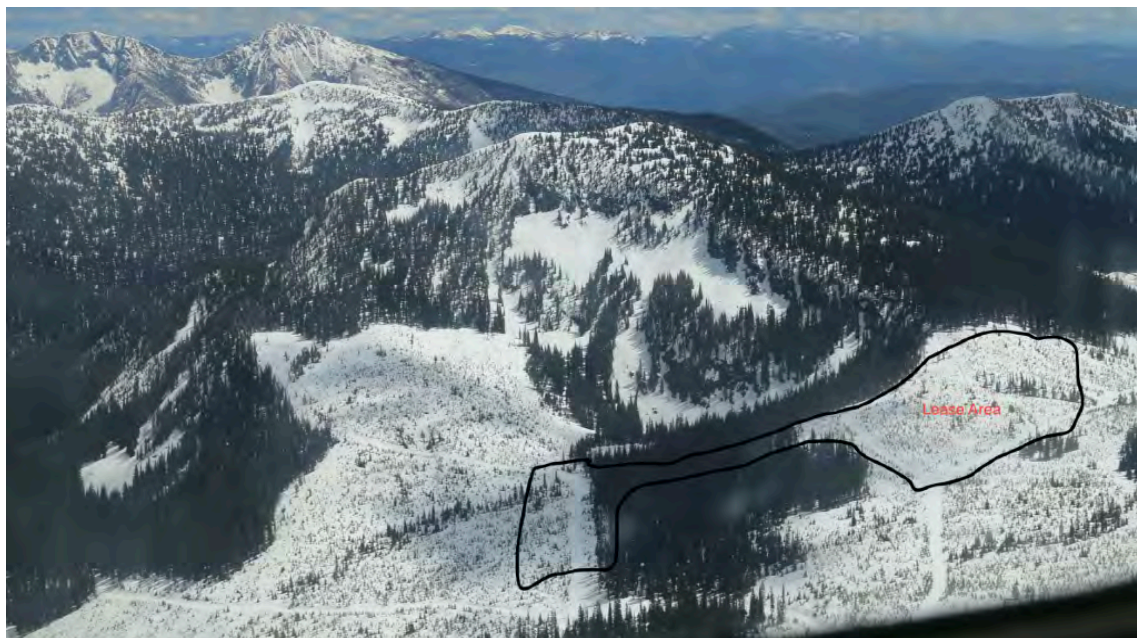
Figure 3-1: PRL Lease Site Plan



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Figure 3-2: Aerial Image of Lease Area



3.1.1 Lodge Facility

PRL is proposing a lodge facility to be situated within a lease area that includes the lodge, staff accommodation, snowcat workshop, ancillary buildings and a fuel cache. The proposed building site for the lodge facility is relatively clear and flat, located at the 1952 metre elevation. Some grading and land work will be required to create a level base to construct the lodge. Some excavation and minor tree cutting will be necessary throughout the building process. It will be snowbound from October to July.

The construction materials for the lodge will be primarily wood. PRL is proposing a timber frame post and beam lodge on a concrete foundation for the footprint of 300 square metres, with dimensions of 10m x 30m. The exterior of the building will also have some stone features, but will mainly be constructed of timber. The interior will boast the large beam structure ceiling and have a great room with wall to ceiling windows for guests to take in the beautiful views.

The lodge will have 24 bedrooms with a bathroom joining between 2 rooms as a jack and jill style (each guest has their own bedroom and shares a bathroom with 1 other guest). The staff members will be in a smaller staff accommodation building, for a total 17 staff members between the buildings at the completed business model of two snowcats. PRL will remain mindful of the long term goal of 24 guests and 17 staff when building the lodge and all services.

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The staff building will be an 8m x 10m A-frame constructed of wood and stone. It will have loft style sleeping quarters with a common washroom and basic kitchen area. It will be located in close proximity to the main lodge.

A machine workshop will be necessary to conduct any repairs and maintenance for the snowcats. PRL is proposing the installation of a 6m x 12m weather haven that is heated with a portable generator. This structure is not considered a “permanent” structure and will not require any substantial changes to the land minus a small amount of tree cutting and levelling the ground. By year 5 PRL would possibly consider replacing this structure with a 9m x 25m permanent snowcat workshop.

Any hazardous waste resulting from servicing machines and equipment will be stored in a secure tank while on premises and will be removed at the conclusion of each ski season. This waste will be disposed of at an appropriate location that complies with MOE standards and regulations.

All buildings and developments will be constructed according to the BC Building Code standards following provincial and municipal guidelines. All permits will be pulled where necessary, and architectural/engineering requirements of the Kootenay-Boundary Regional District will be satisfied.

Winter access to the lodge site will be via snowmobile or snowcat. Food and goods will be transported via snowcat from the staging area to the lodge on a bi-weekly basis. PRL will ensure they have extra meats and pantry items stored at the lodge for any delays in brining up these goods.

3.1.2 Utilities Requirements and Sources

The lodge will utilize radiant floor heating as the main heat source, which will be directed from an outdoor wood burning furnace. PRL is proposing a 6m x 3m woodshed for the storage of fire wood and the furnace.

The main power source for the lodge and workshop will be electrical power provided by a 55kw diesel generator located in a shipping container (3m x 12m) by the snowcat workshop. Another 55kw generator will be for backup, and a 10kw will be available for the offseason. The diesel power will be converted into electricity and will supply electricity to the lodge.

The lodge will have internet/wifi and satellite phones through a company such as Xplornet. Also, all the western aspects of the proposed tenure get cell service from a tower at the Big White Ski Resort based on the close proximity.

3.1.3 Fuel Cache

PRL is proposing the installation of a self contained 90,000 litre double walled Enviro tank for fuel storage. The tank will be divided into two compartments, one containing 85,000 litres of diesel for snowcats and generators and the other will contain 5,000 litres of gasoline for snowmobiles. Sealed metal lock boxes will house the pump and fueling gear. A 10m x 4m area is proposed for the fuel cache. The fuel cache will be filled up once a year by a fuel truck

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hauling in the fuel. This will happen in the months before PRL opens for their season to ensure there is enough fuel to support the needs of the operation.

The fuel cache will be used on a daily basis throughout the operating season. PRL maintenance staff and cat drivers will inspect the tanks and fuelling area for any visual indication of leaks during each fuel up. Regular soil testing will take place near the fuel tank, which will be documented as well as any fuel spills or leaks. PRL will have commercial spill kits on site in case of the unlikely event of a fuel spill. All fuel spills will be reported to the PRL head office and Ministry of Environment if necessary. The fuel cache will be not be located in proximity to water bodies.

All fuel handling will be conducted in accordance with “A Field Guide to Fuel Handling, Transportation and Storage”, published by FLNRO (3rd Edition, 2002), and “Fuel Management Best Practices” as outlined in the HeliCat Canada Best Practices for Sustainability Document.

3.1.4 Water Supply

The proposed lodge facility is in close proximity to a pond (see *Figure 3-2: PRL Lease Site Plan*) that would serve as the water source for the buildings. This water source is groundwater recharged and receives snow melt from the upper elevations. A pump is necessary to divert the water 212 metres up a cut block to a secondary pump that will pump the water to the purification system and service the lodge. PRL will install a 2m x 3m shelter over the pump adjacent to the pond, and the second pump will be located in the boiler building.

PRL has applied for a Water License for the use of this water body, as permission for its use is required under the Water Sustainability Act (WSA). The tracking number for this application is 100326061. PRL will also consult with Interior Health and local health authorities concerning filtration and purification requirements. PRL will ensure baseline monitoring activities will be conducted to ensure compliance with WSA regulations and conditions of use.

3.1.5 Waste Collection, Treatment and Disposal

Industry trends and guest reviews have concluded that the more primitive business model of a rustic mountain lodge with an outhouse is not acceptable to cat skiing guests in the modern era. Throughout the evolution of the cat skiing business model, an industry standard has been set and is required to be attractive to guests, and competitive with other operators.

PRL is proposing the installation of septic system for sewage disposal. This system would be connected to the lodge, and staff A-frame. This system will be designed to handle the maximum capacity of 24 guests and 17 staff (41 people). The *approximate* land use for the septic system will be an area of 12m x 30m.

Other heli and cat skiing lodges at high elevations have successfully engineered septic systems that factor in the higher elevation and colder temperatures. PRL will retain a qualified professional to ensure the design and engineering considers potential impacts of these conditions respective of microbial activity and decomposition rates.

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PRL will consult with the local health authority and follow the Waste Discharge Regulation Implementation Guide set out by the Ministry of Environment, Environmental Protection Division. PRL will retain professionals, authorizations and permits when necessary.

Garbage will be transported out of the lodge every two weeks via snowcat down the to the staging area on private land. The garbage will be stored in a locked garbage bin that will be emptied at the conclusion of each ski season.

3.2 License of Occupation - Secondary Intensive Use Sites

3.2.1 Communication Sites & Emergency Shelters

PRL is proposing the installation of a portable VHF radio repeater on the top of Cochrane peak. This repeater should allow the operation to have good radio communications throughout most of the operating area.

The lodge will be equipped with a two-way radio system to enable contact to the guides and snowcat drivers. Each guide will carry a portable two-way radio for contact with the snowcat and lodge. The lodge will keep a regular updated record of the locations of each skiing group. Communication will be made on a regular basis during the day between the cat driver and the base of operations. Failure to report to the lodge within a specified reporting time results in another snowcat dispatched to search the area of the last recorded location and surrounding sub area.

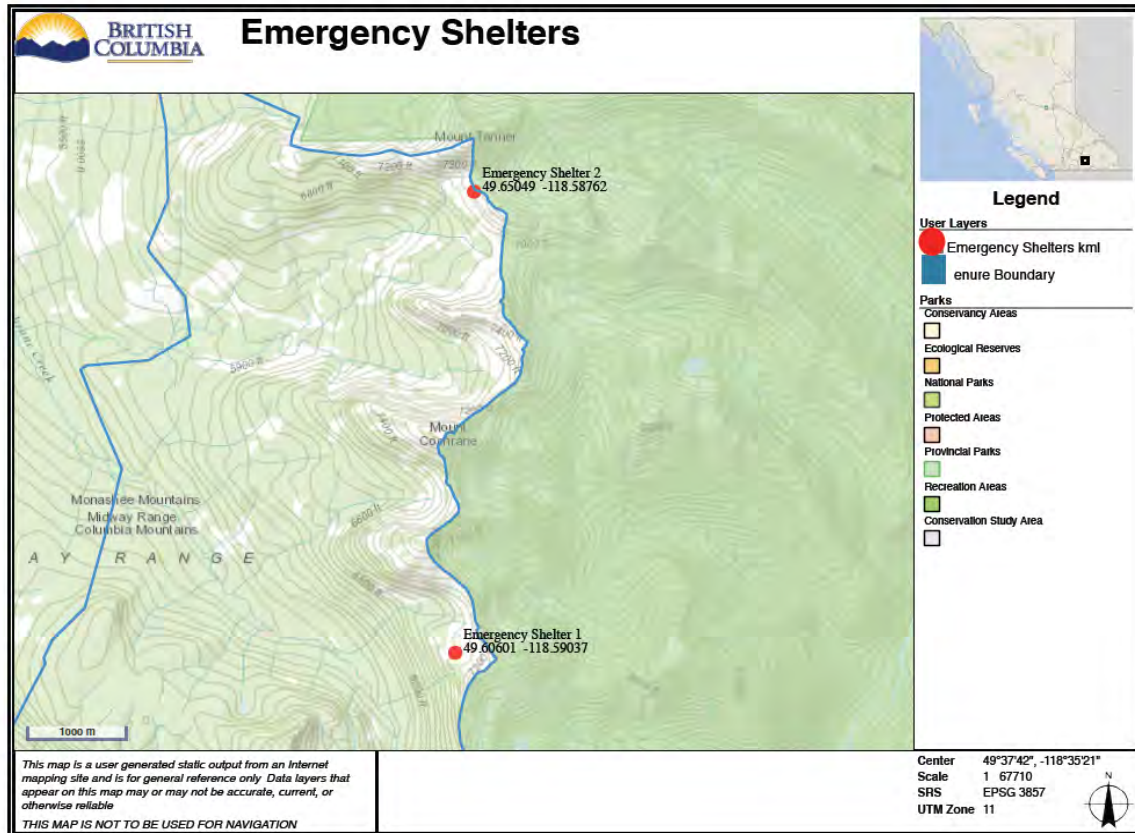
PRL is proposing the construction of two 6m x 6m cabins throughout the proposed tenure boundary to act as safety shelters (See Figure 3-3). They will not require septic systems or running water. These structures will serve as shelter for guests in case of emergency, and will also act as a place where we can take guests for lunch and/or a washroom break. PRL will utilize outhouse style bathrooms for these structures.

Building materials for the cabins will be delivered to the sites via snowcat in the snowbound months, as the existing logging roads do not reach these sites.

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Figure 3-3 : Emergency Shelters



3.3 Minimal Impact Sites

3.3.1 Construction Cabin & Auxiliary Accommodation

PRL is proposing two Minimal Impact Sites situated within the lease area. These structures will be installed and used before any other construction occurs, and will be used in accordance with the definition of a Minimal Impact Site as outlined in the AT Policy.

One will be a 7.3m x 7.3m A-frame cabin located in close proximity to the main lodge. This cabin will be used by contractors and trades throughout the construction period. During the construction phase PRL will use portable toilets, and once the septic system is installed, this cabin will be connected to the system and this building will serve as additional accommodation for guests and staff when PRL is operating.

The second structure will be a 4m x 5m A-frame cabin. This will be a back up accommodation for building crews and staff during the construction process. Unlike the other minimal impact

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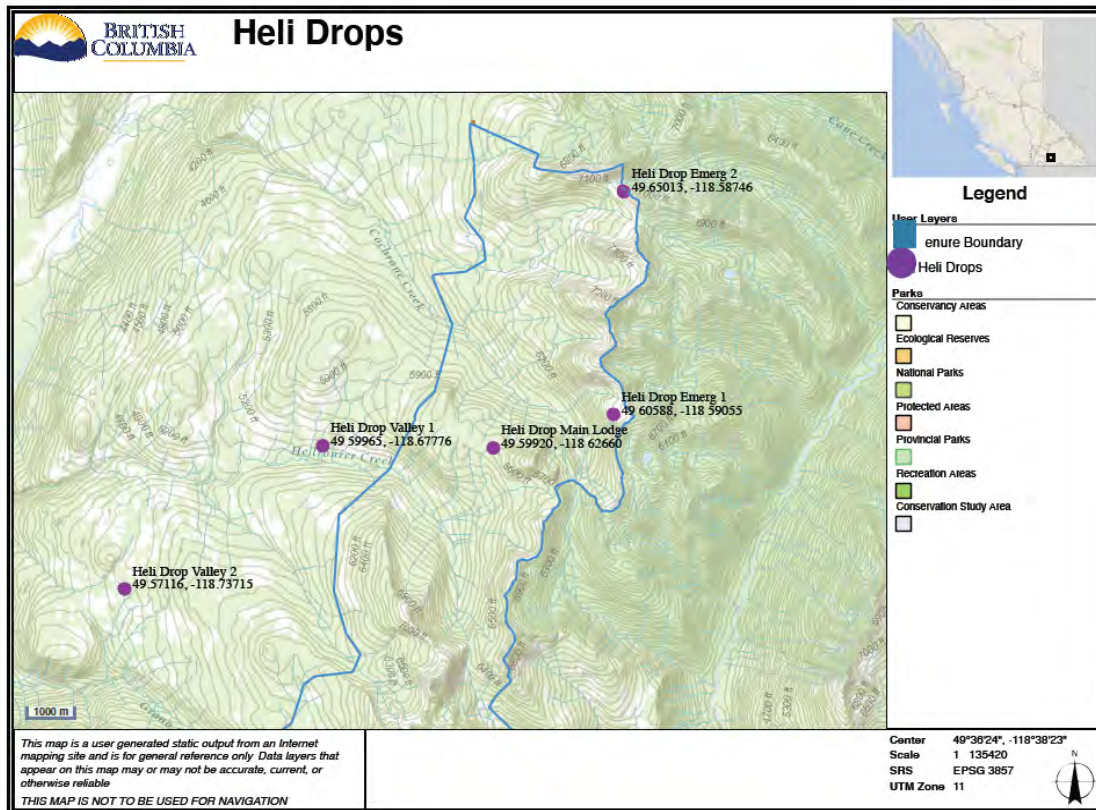
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site, this structure will permanently utilize an outhouse and non-permanent facilities. During operation, this cabin will primarily be used as an overflow building if additional people are staying at the tenure (ie, film crews).

3.3.2 Helicopter Landing Areas

PRL is proposing 2 helicopter landing areas along the FSR system entering the tenure. The purpose of these landing sites are for days the weather is not clear enough to fly guests directly to the lodge site. The helicopter will be able to drop guests off at these designated sites for our snowcat to pick them up and bring to the lodge. PRL is also proposing a helicopter landing area at the main lodge site, and at each emergency shelter for evacuation if an emergency situation occurs for extra guest safety.

Figure 3-4: Helicopter Landing Sites



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3.4 Road System

The proposed boundary of PRL encompasses a vast, pre-existing logging road network providing connectivity within the ski terrain. Along with utilizing the existing forestry road network system, PRL is proposing two other types of roads to develop for use in their cat skiing operation, excavated roads and snow trails. PRL has prepared a Roadway License of Occupation management plan that outlines specific details for each proposed road, and forms part of this tenure.

PRL is proposing 95 kms of snow trails, 10.7 kms of excavated roads, and the use of 49 kms of existing FSR, totalling a road network of 154.7kms.

Snow trails are constructed using snow, and do not necessitate the removal or disturbance of soil. The overwhelming majority of access will be done using snow trails. The trails are constructed in locations that use the natural terrain features such as benches and ridges to facilitate easy travel. They will be, for the most part, in exactly the same location each winter.

Once there is approximately 1.5 meters of snow settled on the ground, most areas intended for travel are passable simply by driving the snow cat over the snow. Most trails are created between a 12 and 18 degree (21 and 34 percent slope) incline to facilitate efficient upward movement yet not unduly strain the snow cat or cause need for an extensive road opening program. The snow trails completely melt by early summer with no impact to the underlying vegetation.

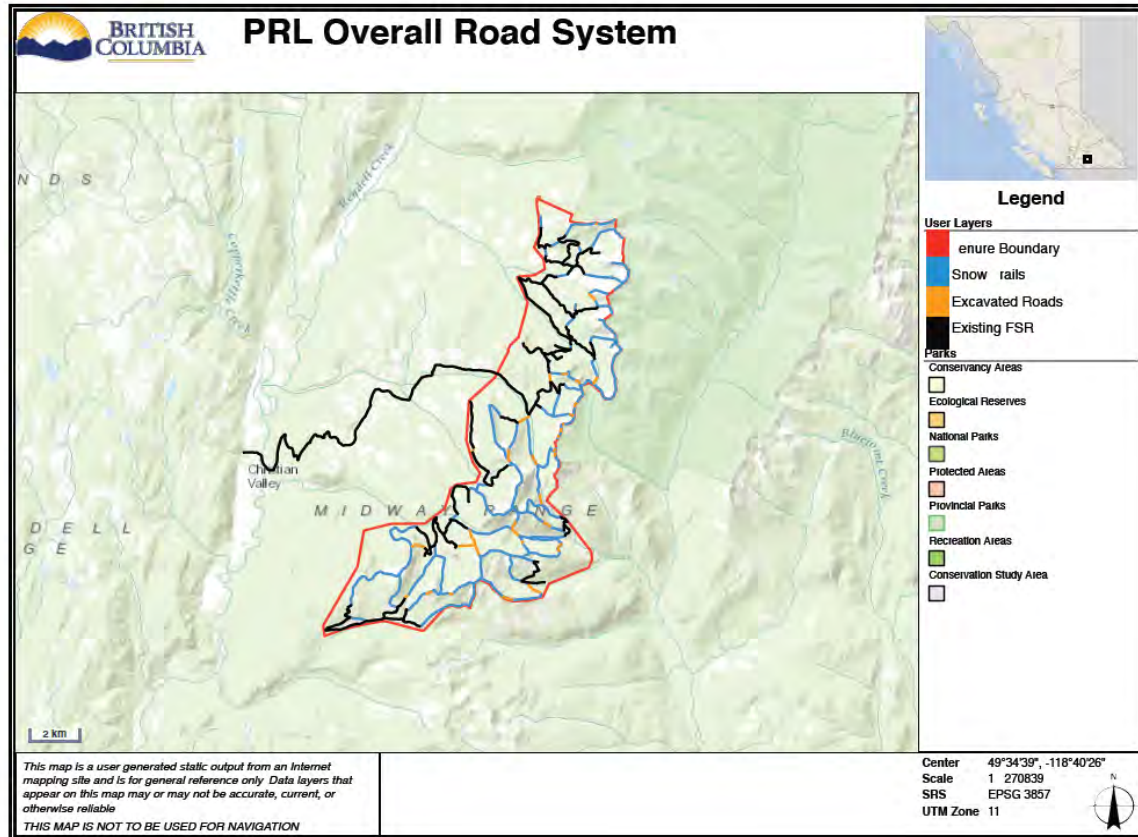
For use of the FSR's, PRL will apply for a road use permit from license holders and/or the Selkirk Forest District, and establish any necessary maintenance agreements to use these roads.

Please see the Roadway License of Occupation Management Plan for information about the excavated roads.

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Figure 3-5: PRL Proposed Road Network



3.5 Glading, Spacing, and Trail Right-of-Ways

Glading is defined as removing select, natural timber (from a stand of timber that has not previously been harvested) to improve the spacing between the trees. Spacing is defined as removing (thinning) regeneration trees (previously planted by the forest licensee) in “free to grow” cut blocks. Cutting trees in an established forest in order to open up locations of tight trees greatly improves the quality of the skiing.

PRL will continue to work closely with the forestry licensees to ensure their obligations for certain stand density post-harvest is not being impacted.

In glading areas, PRL will be falling minimal merchantable trees and focusing efforts on removal of smaller, non-merchantable timber, to achieve the optimal spacing between trees for skiing activities. If merchantable timber is cut during the glading program, stumpage will be paid for volume of trees felled.

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On the mountains between existing logging roads and the treeless alpine, a right of way approximately 7 meters wide is required in order to allow snow roads/trails to be built each winter. There are sections throughout the proposed tenure where new roads and right of ways are required.

Upon approval of this tenure management plan, PRL will apply for an Occupant License to Cut (OLTC) and develop a five year cutting plan. This application will include a Management Plan and will abide by the Selkirk Guidelines for glading and spacing in the heli and cat skiing industry. The company will follow strict adherence to policies and guidelines pursuant to the plan.

4.0 ENVIRONMENTAL

PRL acknowledges that ecosystems and wildlife values are within their proposed tenure boundary. In response to these values, PRL has retained a Registered Professional Biologist to conduct an Environmental Impact Assessment which identifies management and mitigation strategies respective of PRL's proposed activities.

Upon the approval of their license of occupation, PRL will become a member of the HeliCat Canada Association, and will be supportive of the associations's best management practices for addressing wildlife disturbance concerns (BCHSSOA 2003). The company understands and will comply with the Wildlife Guidelines for Backcountry Tourism/Commercial Recreation in British Columbia (BCMOE 2006).

PRL will follow government regulations and guidelines with respect to land use providing backcountry adventure tourism/commercial recreation, and will also monitor and avoid disturbing wildlife values and habitat.

Refer to *Appendix 1.0*.

5.0 IMPACTS ON OTHER USERS

PRL appreciates that a AT license of occupation refers to non-exclusive use of Crown Land for dispersed and non-exclusive guided AT activities. With that being said, PRL is keen and focussed to work with other users of this land to build strong, positive and collaborative relationships that benefit all users collectively.

5.1 Commercial Recreation Use and Access

5.1.1 Snowmobiling

In the south east corner of the proposed PRL tenure is a location that has some use by the Boundary Snowmobile Club. They are based out of Grand Forks, BC and have approximately 60 members. Although the club does not have a tenure, PRL has gained support from the club for this cat skiing operation. PRL and Boundary Snowmobile Club flew the tenure together so that they could understand each others interest in the land and terrain. No conflicts were identified that would prevent each user from operating.

Other public recreational snowmobilers local to the Rock Creek, Christian Valley and Grand Forks tend to stay more north and south of PRL's location. There is a very small chance PRL will have encounters with public recreational snowmobilers in the proposed boundary.

5.1.2 Powder Outfitters Commercial Recreation Tenure

There is an existing commercial recreation tenure overlapping the proposed boundary of Powder Renegade Lodge, called Powder Outfitters (File #3409453). This proponent offered guided heli-skiing, ski touring and snowshoeing for guests with accommodation at the Rendell Creek Ranch, and had occasional use of the Kilback Cabin in Granby Provincial Park.

This tenure has not been actively used for over a decade, and the proponent's company has since become insolvent. This tenure has been suspended, and the license of occupation has been escheated to the government. This tenure is also set to expire in December 2021, so the overlap would not be a concern upon the expiration of this already unused tenure. The Province has provided express written consent for PRL to apply for a commercial recreation tenure overlapping the existing Powder Outfitters tenure (see *Appendix 3.0*).

5.1.3 Public Users

PRL understands that this area receives a small amount of use in summer months for hiking purposes. In winter months, there may be rare occurrences of public snowmobilers or ski tourers throughout the tenure area, however, this location is quite difficult for access in mid winter with a deep snow pack. PRL does not anticipate any conflict with public users.

5.2 Resource and Industrial Users

5.2.1 Timber Tenures and Forestry Management

The company's operating area lies within the Selkirk Forestry District, specifically the Boundary Timber Supply Area. There are two active forest companies working within the proposed PRL tenure; BC Timber Sales and Interfor Corporation. PRL has been in communication with both companies to establish status of their logging roads, and to ensure that a cooperative relationship will be executed between the companies so that all parties can achieve their respective activities. These companies have expressed no fundamental opposition with this proposed operation, and have offered support and interest in learning about merchantable timber opportunities and potential for collaboration.

It will be necessary to know and understand their development plans for the future and how they will impact PRL. As well, there may be the requirement for removal of trees in order to develop snow roads or to allow skiers to ski through timber and restocked cut blocks. PRL will be completing a five year cutting plan upon approval and anticipates that this will be a cooperative arrangement with the forestry licensees.

PRL understands the importance of forest rehabilitation in this region and will follow operational best practices when proposing to use an area of reforestation. Immature trees can be skied over once they are sufficiently buried in the snow. When the tips of young trees in

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plantations are sliced by ski edges, it can result in the tree being unusable when harvested. PRL pledges to brief their guests to be careful when skiing in planted cut blocks.

Due to physiological growth patterns of different species of trees it is important to be able to depict the species to determine skiing potential and possible mitigation measures. For example, if the tops of young trees are more than one metre below the snow surface it is possible to ski over them. Strategies for skiing each cut block over time will vary as species are planted and trees grow.

PRL will continue to maintain a professional and cooperative relationship with forest licensees, and will work proactively to ensure all companies can achieve their targets.

5.2.2 Mineral and Energy Tenures

There are no existing mineral or energy tenures within the proposed PRL tenure boundary based on queried searches through FLNRO programs. PRL acknowledges that future mineral tenures may be located in the PRL operating area and will cooperate to coordinate access and activities with tenure holders.

5.2.3 Guide Outfitters and Trappers

PRL is aware of one guide outfitter and two traplines within their tenure boundary.

Melvin Kilback (Guiding Certificate No 80222) of Kettle River Guides & Outfitters is the guide outfitter. PRL has reached out to the Kilback family discussing their plans for this cat skiing operation. The Kilback's did respond and did not raise any opposition or concern.

The traplines are listed as TR0814T011 and TR0815007. Traplines are located at or near the valley floor so minimal impacts or overlap will occur between the activities.

5.2.4 Recreation Sites and Trails

There are no existing designated recreation sites or trails within the proposed tenure area.

5.3 Local Government & Existing Land Use Plans

PRL's proposed tenure lies within the Regional District of the Kootenay Boundary. In 1992, the B.C. government directed that a strategic land use plan be prepared to identify a comprehensive and integrated vision for land and resource use in the Kootenay Boundary region. In 1997, The Kootenay-Boundary Land Use Plan Implementation Strategy Plan (KBLUPISP) was completed, and is currently the governing land use plan for the region.

In 2001, the Kootenay Boundary Higher Level Plan Order was established for selected provisions in the strategy reflecting new resource management objectives to reflect the required balance of social, economic and environmental values. The majority of these objectives focus around forestry with respect to scenic areas and visual quality objectives.

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Reference to commercial tourism within the KBLUPISP states planning and resource allocation decisions should regard commercial recreation as a valid and appropriate use of Crown land, subject to conformance with legislation and policy. Furthermore, plans should identify areas with substantial potential to support commercial recreation on Crown land.

The KBLUPISP discusses that alpine and sub-alpine areas should be managed to achieve a Recreation Opportunity System (ROS) classification of semi-primitive, non-motorized. However, there is specific reference that in winter months, these areas may be used by snowmobiles and snowcats, subject to lower level strategic planning, local agreements and not in conflict with sensitive wildlife species.

Commercial tourism and outdoor recreation opportunities will benefit from implementation of the Kootenay-Boundary Land Use Plan. An initiative intended to enhance tourism stays and take advantage of new protected areas includes the Commercial Backcountry Recreation (CBR). As part of the Economic Strategy outlined in the 1995 Land Use Plan, accelerating new applications for commercial backcountry recreation development in the Kootenay-Boundary region was given a high priority. Government continues its commitment to this sector's development and recognizes its importance to communities. BC Lands has committed to the CBR process by adding one additional staff to manage the approval process.

With specific reference to the Kettle-Granby area, the KBLUPISP references implementing a program of road and trail deactivation and rehabilitation, along with applying connectivity corridors for habitat linkage for Grizzly bears and the seasonal migration of ungulates. For the majority of use, road deactivation is not a concern as the company will be using this road network in the winter months and can fill water bars and culverts with snow to access terrain. PRL will conduct business in a manner that is complementary to these strategies, and where necessary will consult with the Selkirk Forest District.

In summary, PRL's activities are consistent with the overall intent and specific land use designations set out in the plan. PRL will operate in a manner that satisfies the overall objectives and strategies outlined in this land use plan.

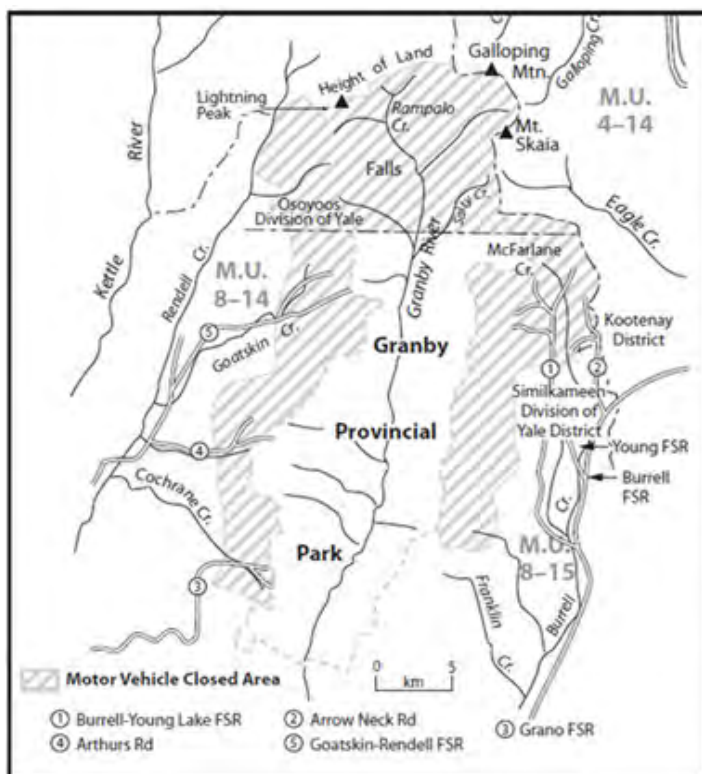
5.3.1 Motor Vehicle Closed Area

There is a Motor Vehicle Closure Act in place overlapping the northern portion of the proposed tenure. The Act defines in *Section 2, Motor Vehicle Closed Areas* - a person commits an offence if he or she uses or operates a motor vehicle in an area as described in Schedule 1 during the period specified in that schedule for each use.

Section 43 of this act is named "Granby", and references the PRL area of interest. *Closure is effective year round, in that portion of M.U.s 8-14 and 8-15 shown on the attached Map No. 1-43/05:*

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Section 8 of this Act describes exemptions. The following exemptions apply to the proposed PRL tenure;

8 (5) Section 2 does not apply to a person who uses or operates a snowmobile (a) in an area described in section 43 of Schedule 1 during the period November 1 to May 31 inclusive.

PRL understands that because they are applying for seasonal use in this closure area during the period of November 1 - May 31, where *snowmobile* use is permitted during this time frame, that this application is in alignment with the principle of the closure.

A snowmobile is defined under the MVCA as “a vehicle designed primarily for travel on snow or ice, having one or more steering skis, self propelled and using one or more endless belts or tracks driven in contact with the ground.” A snowcat is designed primarily for travel on snow or ice, is self propelled using one or more endless steering belts (vs skies) and driven in contact with the ground. PRL’s operating season falls within the existing exemption period for the MVCA, and will operate a vehicle meeting the criteria for this exemption.

PRL also understands that this Motor Vehicle Closed Area was established to limit disturbance to Grizzly Bears in the GBPU (which is considered threatened). The closure has an ancillary

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benefit of limiting disturbance for other ungulates and furbearers as well. As the closure is for grizzly bears, winter is less of a concern, and mitigations are in scope.

PRL has cross referenced the lodge location with other maps displaying the MVCA, and have concluded that the lodge site is outside of the MVCA.

5.3.2 Granby Provincial Park

The proposed PRL tenure is adjacent to the southwest corner of Granby Provincial Park (GPP). PRL has reviewed the mandates set out in the Granby Provincial Park Management Plan. PRL will ensure business is conducted in a manner that upholds the integrity and of park values of conservation.

PRL acknowledges that their proposed tenure boundary is in close proximity to the border of GPP, and will not cross the park boundary via mechanized use. PRL understands that a separate park permit is required for park use and is not applying for any park use at this time. Furthermore, the views and vistas of GPP are visible from the proposed PRL tenure and increase the beauty of the surroundings.

6.0 RISK MANAGEMENT AND SAFETY

The Heli and Cat industry has developed a set of Operational Safety Standards that are used by virtually all of the existing operators. Upon approval PRL of this application, PRL will retain a professional ski guide to create a Risk Management Plan that is comprehensive and addresses all known hazards of a remote lodge cat skiing company.

PRL will operate in a manner that is in accordance with its operating guidelines, as set out by the HeliCat Canada Association. PRL will adopt waivers, safety and rescue plans. These will be available upon request as well as the HeliCat Canada Operations Guidelines.

6.1 Insurance

PRL understands that a Tenure holder is required to purchase, and is responsible for maintaining during the term of the Tenure, a minimum level of public liability insurance specified in the Tenure document. PRL recognizes that the Authorizing Agency may make changes to the insurance requirements and request copies of insurance policies at any time during the term of the Tenure (EG - proof of insurance attached to the Annual Diligent Use Report or Statutory Declaration for Rent).

PRL will purchase a minimum of \$2 million third part liability insurance policy upon approval of this application, as this minimum is required for most AT Tenures. PRL further understands that Tenure holders may also require other types of insurance depending on the nature and scope of their operation. PRL also understands that waivers will not be accepted by the Authorizing Agency in place of the above minimum insurance requirement.

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6.2 Security of Performance Guarantee

PRL understands that a security deposit or bond may be required to be posted by the Tenure holder where any Improvements on, or changes to the land are proposed. The security deposit is collected to ensure compliance and completion by the Tenure holder of all the obligations and requirements specified in the Tenure.

PRL will pay the amount requested by the Designated Decision Maker as per the Tenure Administration Procedure upon approval of this application.

6.3 Guides and Snow Science

Professional guides hired by PRL will be fully certified and will operate by the well-established standards used in the heli and cat skiing industry in Canada. Each ski day will begin with a guide meeting. A snow technician will prepare for the guide's meeting by recording local weather and snow pack observations at the lodge study plot. They will also download, review and record the CAA Info-ex and Weather Forecast. Utilizing these information sources, the snow science technicians (ski guides) will prepare a preliminary hazard evaluation report to be discussed at the guides meeting.

The lead guide will facilitate and oversee the meeting. There will be a review of the previous day's observations along with current and forecasted weather and info-ex information to determine a hazard evaluation. Based on this information, group dynamics, logistical and operational parameters, guides will discuss possible runs to be skied during the day, based on a colour coded hazard rating.

Guides will meet again at the end of the day to discuss and analyze the day's events. They will then formulate a report to be submitted to the CAA – Infoex and PRL's avalanche forecasting system based on the current day's observations. A potential plan for the following day is also discussed.

6.4 Covid-19

In light of the recent Covid-19 pandemic, PRL understands the need for new measures and protocols to be implemented to ensure guest safety. Clients can be of a global nature and typically have to travel through airports or cross borders. PRL will adopt safety measures and protocols as they are established throughout the industry, and will ensure strict adherence to these policies.

PRL is also preparing for an opening season of December 2022, which by then there should be a vaccine, and the tight restrictions for international travel should be lifted or lightened.

7.0 BUSINESS OVERVIEW

7.1 Description of Operation

Upon arrival at Powder Renegade Lodge, the ski holiday will begin with guests being welcomed into our lodge. PRL will review their safety program with guests in an easy to understand, detailed manner. The safety program outlines avalanche hazards, skiing safety,

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environmental safety and snowcat safety. The first morning includes a hands-on lesson on the use of avalanche safety gear that all skiers must carry while skiing. Guests will commence each day with breakfast in the lodge. There will also be a variety of lunch items for guests to pack and bring with them as lunch will be eaten between runs.

The daily routine will start with a full breakfast between 7-7:45am. Between 8 and 9am, depending on time of year, skiers leave for skiing. Depending on weather, guest energy levels, ski conditions and time of year, return from skiing between 3:00 and 5:00 pm.

Après will be served in the lodge for approximately an hour while guests will have an opportunity to change and showered. Massages will also be offered throughout the evening. Dinner will be a four course gourmet meal. After dinner guests will be welcomed to relax in the lodge.

On the morning of the final ski day, guests will be asked to have their belongings packed so that when they return from skiing, they are ready to be taken to the designated staging area where they depart and the next group is received, repeating the cycle.

7.1.1 Staff

Initially for the one snowcat start up business model, PRL would require two lead guides (one guiding guests and one doing snow science), one tail guide, one snowcat driver, one cook, one baker/breakfast cook, one dishwasher/kitchen helper, one housekeeper, one administrator, one bartender, one mechanic/handyman and one practicum student, which totals 12 seasonal staff members. As the business expands to the 2 snowcat model, one more lead and tail guide would be required, another snowcat driver, along with an extra cook helper and housekeeper which would bring the staff total to 17.

The lodge will also have a full time, year round caretaker. This staff member would oversee the general maintenance and repair any issues for the lodges. They would be a lead or communication liaison for any other backcountry users, or independent contractors/personnel coming to or from the tenure area.

7.2 Business Plan & Marketing Strategy

PRL has conducted market research and analysis, along with construction parameters and projected cash flow to produce detailed financial and business projections. These documents are available upon request as supportive documentation respective to this business demonstrating long term sustainability.

PRL's marketing plan will primarily utilize digital and social media, primarily a facebook business page, instagram page and website. These outlets will assist in the acceleration of global knowledge of Powder Renegade Lodge.

The PRL website will have a link to request a booking, and if their desired dates are available they can proceed to booking at which time we will request a non-refundable deposit to secure their spot, and the balance will be paid in full before their ski holiday. Guests will also have the option to book a spot for the following year while they are staying at PRL, this will encourage pre-bookings and a repeat client basis, which is a strong concept utilized by this industry.

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Other advertising would include ski magazines (digital and paper), including PRL in local directories and private advertising that is relevant. Our goal with potential clients is to leave them feeling that they have just found the newest, best secret in the ski industry. The cat and heli ski community is relatively small and close knit between operators, ski guides and long term guests, so word of mouth is another highly effective way to promote PRL.

PRL is projecting that the majority of client acquisition would come from guests who are currently on waiting lists with other on tenure operators, and clients that are currently skiing operations that have a commute to lodging or a valley bottom lodge. Our price will be competitive and inline with the existing model.

7.3 Economic Benefits

The overall provincial economic benefits provided by Powder Renegade Lodge include stimulating the sectors of tourism, employment and construction. These sectors will experience stimulation during the build and operation of the company, creating perpetual continuity for the need of these services at a different threshold throughout the duration of the active business term. The local economies with respect to PRL is considered to be Grand Forks and Kelowna.

PRL is a part of the growing backcountry recreation industry that has the potential to bring global tourism to the province. Ski touring is experiencing a growth in demand for this activity, along with backcountry lodges. Clients will often fly into the Kelowna International Airport and find transportation to the staging area, so some clients may stay and sight see, ski at local hills prior to coming to our operation and utilize hotels and restaurants.

When PRL is operating they will employ between 10-15 full time positions, with one position as a caretaker on the off season that is year round. Whenever possible, PRL will hire from the local communities for these positions. The employment income paid out to these individuals would exceed \$350,000 annually.

During the construction of PRL construction materials, trades, crews and services will be sourced out as necessary to aid in the construction of the lodges. PRL will utilize local community sources whenever possible and practical for the business model. The need for maintenance and repairs on these developments, along with potential expansions of the structures will be a continual need of the business as well.

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APPENDIX 1.0 - ENVIRONMENTAL IMPACT ASSESSMENT

This Environmental Impact Assessment has been prepared by Karen Grainger, RPBio in support of the Powder Renegade Lodge application for a Commercial Recreation Adventure Tourism Tenure. The Wildlife Guidelines for Backcountry Tourism/Commercial Recreation in British Columbia (2006) require that wildlife and environmental values must be addressed in management plans that form part of the commercial recreation tenure document.

Lists of provincially red and blue listed, federally threatened and endangered vertebrates, invertebrates, plants and plan communities that have potential to occur within the proposed tenure boundary were generated from queries of BC Conservation Data Centre (CDC), BC Ecosystem Explorer, Wildlife Species Inventory (SPI Data System) and Sensitive Ecosystem Inventory (SEI) databases. Fish information was derived from Fish Information Summary System (FISS).



The following report has been prepared with intent to form part of the PRL Tenure Management Plan.

1.0 PROJECT OVERVIEW

This report is the final of several versions of this environmental assessment against the proposed PRL guided cat skiing and remote lodge operations. Locations of infrastructure have been moved or deleted based on environmental values resulting in this final version with least potential impact. This has been a desktop analysis only; the proposed land lease for the lodge site and the ski hut site will be followed-up with detailed field assessments to identify specific values for avoidance or mitigation.

Resultant environmental values that require avoidance or mitigation are:

1. Grizzly Bear occurrences and habitat
2. Migratory birds nesting activity and habitat
3. Riparian (no fish) ecosystems and habitat for several species
4. Mule Deer winter range (entrance of Grano Creek FSR)
5. Raptor and owl nesting potential
6. Whitebark Pine Federally-designated critical habitat (includes occurrences and regeneration/recovery zones)
7. Wolverine occurrences and habitat
8. Non-legal Old Growth Management Areas
9. Red- and blue-listed ecosystems

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2.0 DESCRIPTION OF VALUES

Values to be assessed against are ecosystems, Whitebark pine, aquatic, ungulate winter range and rare/endangered wildlife. There are no red- or blue-listed ecosystems in the ESSFdc variants, but some site series have been identified as critical Grizzly Bear habitat (not to be confused with Federally-designated critical habitat which for this Project Area only exists for Whitebark Pine). The rare/endangered wildlife species that occur in the ESSF x the Arrow-Boundary Forest District in habitats and elevations of the Project Area are:

Scientific Name	English Name	COSEWIC	BC List	FRPA	MBCA	SARA
<i>Accipiter gentilis atricapillus</i>	Northern Goshawk, <i>atricapillus</i> ssp	NAR (May 1995)	Blue			
<i>Anaxyrus boreas</i> (<i>Bufo boreas</i>)	Western Toad (calling and non-calling)	SC (Nov 2012)	Yellow			1-SC (Jun 2018)
<i>Contopus cooperi</i>	Olive-sided Flycatcher	SC (May 2018)	Blue		Y	1-T (Feb 2010)
<i>Gulo gulo luscus</i>	Wolverine, <i>luscus</i> subspecies	SC (May 2014)	Blue	Y (May 2004)		1-SC (Jun 2018)
<i>Myotis lucifugus</i>	Little Brown Myotis	E (Nov 2013)	Yellow			1-E (Dec 2014)
<i>Oreamnos americanus</i>	Mountain Goat		Blue			
<i>Oreohelix subrudis</i>	Subalpine Mountainsnail		Blue			
<i>Taxidea taxus jeffersonii</i>	American Badger	E (Nov 2012)	Red	Y (May 2004)		1-E (Jun 2018)
<i>Ursus arctos</i>	Grizzly Bear	SC (May 2012)	Blue	Y (May 2004)		1-SC (Jun 2018)

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2.1 Ecosystems

The Project Area is entirely within the ESSF (Englemann Spruce – Subalpine Fir) biogeoclimatic zone. The variants are ESSFmh (moist hot) at the lower elevations, ESSFdc1 (Okanagan dry cold) at mid-elevations and ESSFdcw/dcp (dry cold woodland/dry cold parkland) at the highest elevations. Red- (endangered, rare, threatened) and blue-listed (special concern) ecosystems within these variants are:

1. ESSFdc1/04 – Blue-listed – subalpine fir/white-flowered rhododendron/sitka valerian
2. ESSFdc1/Wf02 – Blue-listed – scrub birch / water sedge
3. ESSFdc1/Wf13 – Blue-listed – narrow-leaved cotton-grass – shore sedge
4. ESSFdc1/Wf11 – Blue-listed – tufted clubrush / golden-star moss
5. ESSFmh/Gg11 – Red-listed – Idaho fescue – bluebunch wheatgrass – silky lupine – junegrass

Descriptions of ESSF site series are available in the 2016 Temporary Supplement to Land Management Handbook 70. The Wf ecosystems are small patch wetlands with descriptions available in Wetlands of BC: A Guide to Identification (2004, Land Management Handbook No. 52). Additionally, ESSFdc1 site series 06 (subalpine fir/horsetails/leafy mosses) and 07 (water sedge/peat mosses) are identified in the Grizzly Bear Order 8-383 as requiring buffers and avoidance (see section 2.4 - Grizzly Bear).

Terrestrial Ecosystem Mapping (1:50,000 undated Kettle-Granby) is available on IMapBC for planning to avoid siting lodges/trails/cabins/roads within the site series of concern.

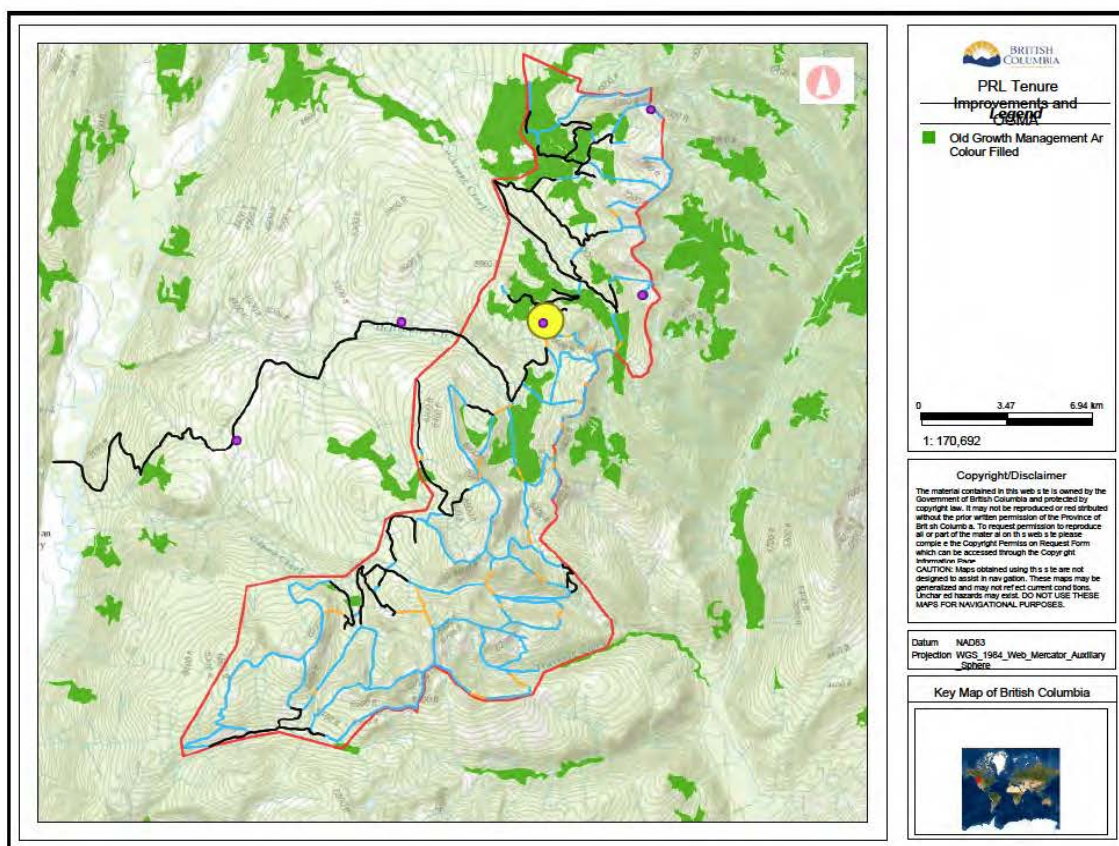
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2.1.1 Old Growth Management Areas

There are non-legal Old Growth Management Areas designated in the Project Area. These areas have been designated during Landscape Unit planning to meet biodiversity objectives but in theory could be amended if tree removal was required. Where tree removal is proposed, PRL will seek approval from the Forest District (if required).

Figure 2-1: Non-legal OGMA's vs PRL Improvements



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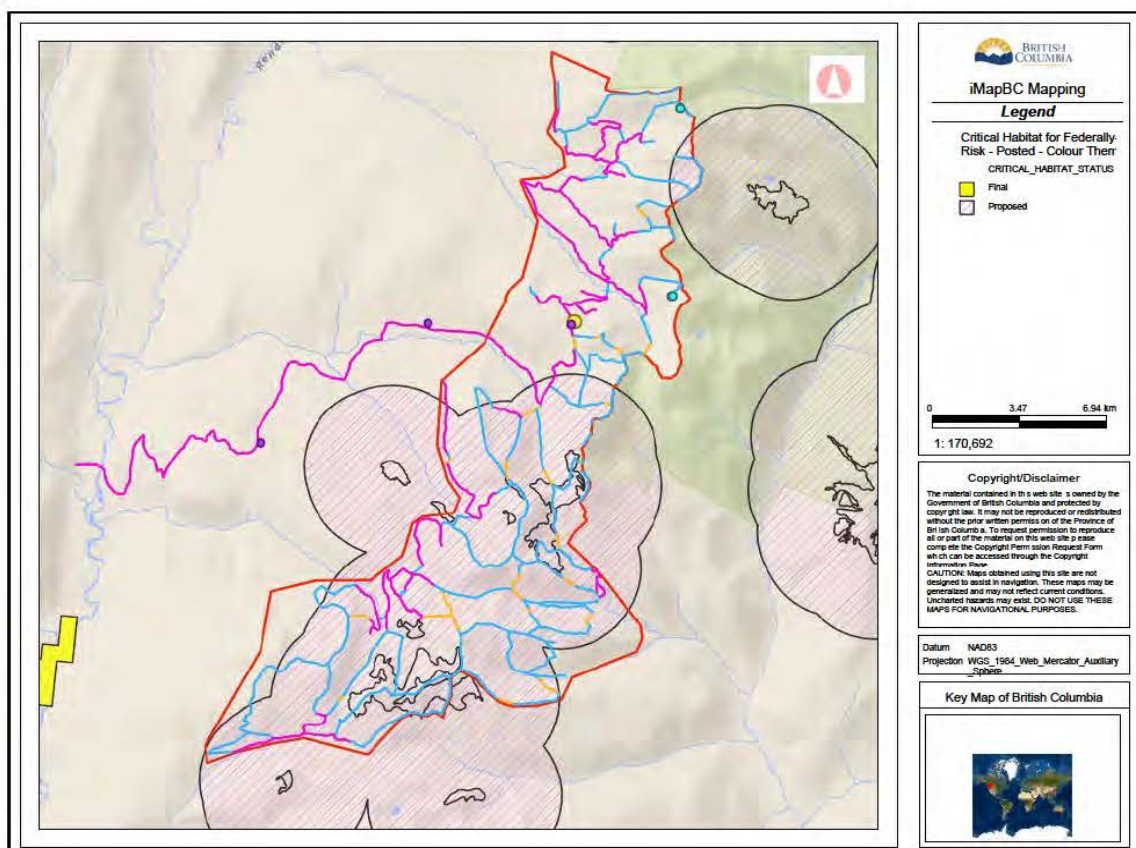
2.2 Whitebark Pine

The Whitebark Pine (*Pinus albicaulis*) is Provincially blue-listed, listed as Endangered by COSEWIC (2010) and a SARA Schedule 1 Endangered species (2012). The 2017 Recovery Strategy describes it as a high-elevation five-needled pine naturally limited by its reliance on the Clark's Nutcracker for seed dispersal to reproduce. It has egg-shaped purple closed cones that generally remain on the tree unless removed by animals. It produces cones at irregular intervals of 3-5 years so some years have little or no cone production.

The Recovery Strategy for this species lists the white pine blister rust as the primary threat while rating cat-ski operations and recreational activities as having a negligible impact. Critical habitat is defined as high density occurrences and also a 2km regeneration and recovery zone (the median dispersal distance of Clark's Nutcracker).

Within the Project Area, there is no proposed infrastructure within the high density occurrence areas (small black polygons), and any clearing for roads/trails in the 2km regeneration and recovery zones will be surveyed and any Whitebark Pine will be reserved.

Figure 2-2: Whitebark Pine Critical Habitat and 2km Recovery/Regeneration Zones (hatched)



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2.3 Aquatic Values

The proposed area is entirely within the Kettle River watershed. There is existing information for all of the streams with confirmed no-fish presence in all of the area.

The streams that run through the proposed area to the west are tributaries to Rendell Creek (WSC 320-72800). These streams (from north to south) are:

1. **Cochrane Creek** (WSC 320-72800-14800): There is no known fish presence above the falls near the confluence with Rendell Creek at 11U 357305 5502968.
2. **Hellroarer Creek** (WSC 320-717900): No known fish presence above confluence with Rendell Creek where RB are known.
3. **Grano Creek** (WSC 320-698300): No fish presence based on 1998 inventory by Dwight Shanner for Pope and Talbot.

The proposed area also includes the upper reaches of Traverse Creek (WSC 320-235400-57200) which flows east into the Granby River. Existing information (Masse Environmental Consultants 2014) confirms a 20m high waterfall at 11U 385845 5486776 with no fish above (therefore no fish in the proposed area).

Aquatic areas provide habitat for the following target species:

1. Western Toad: Spring breeding in a variety of temporary and permanent ponds and shallow littoral zones of lakes (and ditches) with some fidelity to breeding sites. Approximate 2 week egg-laying period in late April/May with tadpoles remaining in water until emergence in late summer when mass movement of toadlets from waterbodies to terrestrial foraging areas. Hibernates in terrestrial habitats.
2. Dusky Fossaria and Golden Fossaria: freshwater pond snails
3. Sinuous Snaketail: dragonfly with active occurrences in BC from May to August.
4. Eared Grebe: lakes and large ponds only
5. Herrington and Striated Fingernail Clams
6. Widelip Pondsnaill

2.4 Grizzly Bear

The Grizzly Bear is a habitat generally occurring from sea level to high-elevation alpine environments. Grizzly Bears den in winter and enter hibernation for up to 7 months and an average of 2.3 cubs are born in the den in January or February and stay with the mother typically for 2 years. Granby grizzly bear prey is expected to include elk, mule deer, hoary marmots, mountain goats, black bear and grizzly bears. Habitat associations are strongly seasonal and typically reflect regional plant phenology, timing of spring ungulate calving and runs of migratory fish (where available).

The Project Area is entirely covered by Order #8-373 (Grizzly Bear Arrow-Boundary Forest District). The Order focuses on protection of spring habitat and protection from disturbance. Some of the General Wildlife Measures included in the order apply to this development (access trails, lodge sites, construction) and are directly copied into the Mitigation Section.

The Kettle Granby Grizzly Bear Population Unit Preliminary Habitat Analyses 2006 (Gyug and Hamilton) provides habitat capability mapping that can be used in conjunction with Terrestrial

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Ecosystem Mapping (TEM) to determine lodge and cabin specific locations with the least impact (habitat-wise as well as least chances of encounters). The lodge site is not within high or moderate spring habitat (the time of most chance of overlap of operations).

2.5 Olive-sided Flycatcher

The Olive-sided Flycatcher is a medium-sized forest songbird with a wide distribution (including all of BC as breeding range) but populations have declined by 80% from 1973-2009.

The 2016 Recovery Strategy described Olive-sided Flycatcher habitat as:

- Primarily montane and northern coniferous or mixed wood forest (Altman and Sallabanks 2012).
- Open to semi-open areas within forested regions, mostly in early seral (Altman and Sallabanks 2012) (including clearcuts) or mature to late-seral forest.
- Presence of tall snags and/or residual live trees for nests, singing, and foraging perches (Wright 1997, Altman and Sallabanks 2012).
- Near water or wetlands supporting a high abundance of aerial insects (Altman and Sallabanks 2012).
- Areas where fire, especially intense burns, has created clearings (Robertson and Hutto 2007).

Nests are generally placed toward the tip of coniferous branches (although other tree types have been used), are constructed of twigs, rootlets, and arboreal lichens, and may be lined with grasses and pine needles (Altman and Sallabanks 2012). After fledging, young often remain close to the nest (and each other) for several days and may remain as a family unit until fall migration (Altman and Sallabanks 2012). Olive-sided Flycatcher most often feed on Hymenoptera (bees, wasps, flying ants, etc.), but also prey on a variety of other insects including flies (Diptera), moths (Lepidoptera), grasshoppers (Orthoptera), beetles and dragonflies.

Olive-sided Flycatcher is a migratory species, expected in the Project Area from April through September.

2.6 Wolverine

Wolverine use a variety of alpine and forested habitat that provide a year-round supply of food (rodents, snowshoe hare, ungulates). Females den under snow-covered rocks, logs or within snow tunnels where snow cover persists at least until April. Avalanche tracks and avalanche debris are important features. Disturbance of maternal den sites may lead to den relocation or litter abandonment. There is no wolverine trapping allowed in Region 8.

Potential denning sites are the only small-scale habitat attribute that can be identified. Ravines or avalanche tracks with downed trees or talus that can provide snow tunnels through late spring are preferred and would also be avoided by catskiing operations.

2.7 Mountain Goat

Mountain Goats are a Provincially blue-listed species. There is no Mountain Goat hunting allowed in Region 8 (Okanagan). Polygons of Approved Ungulate Winter Range for Mountain Goat (U-8-009) are south of the proposed Project Area and along the east boundary of Granby Park (both well outside of the proposed area). Ungulate winter range; the polygons to the east

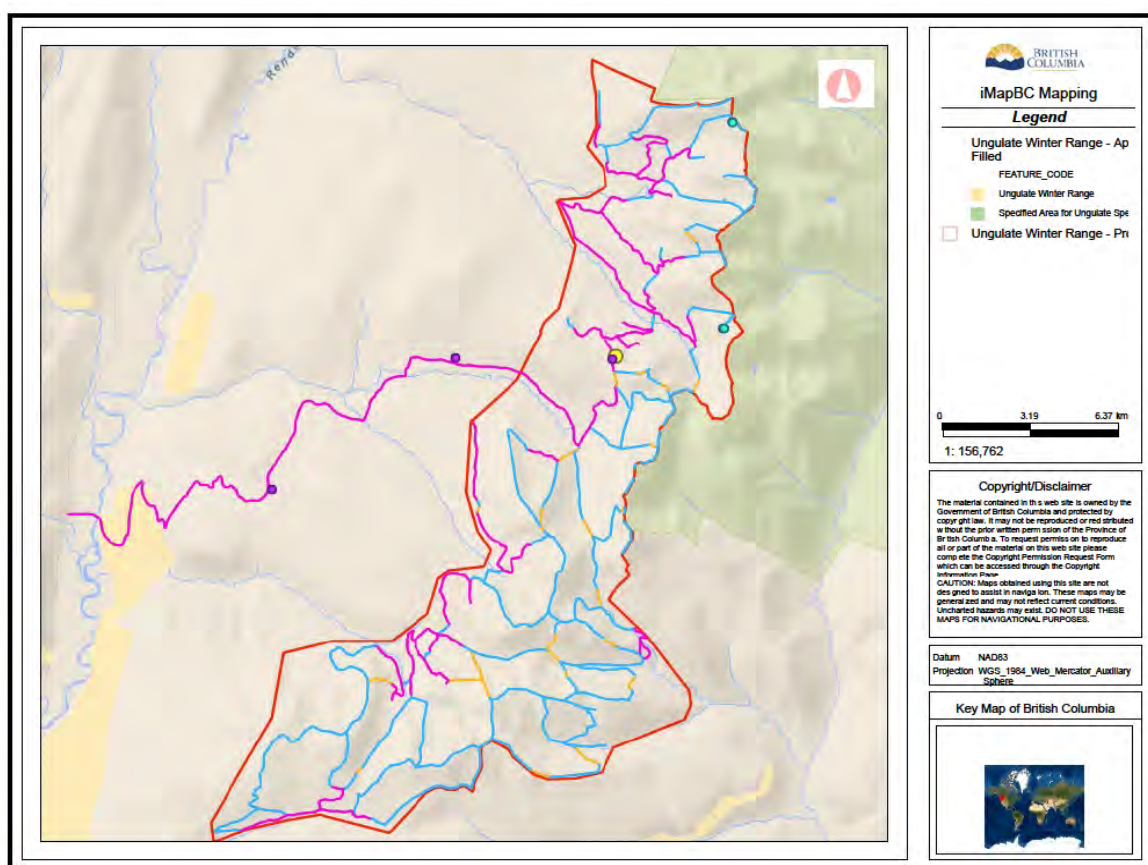
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of Granby Park and southeast of the proposed area are Mountain Goat winter range. The BC Management Plan for the Mountain Goat (2010) describes critical habitat features:

1. Mountain Goats require escape terrain for predator avoidance; generally steep rocky cliffs.
2. Foraging is within 500m of escape terrain.
3. Interior mountain goat wintering strategies are either on higher-elevation windswept slopes, or inhabiting rocky bluffs at and below treeline in areas of heavier snowfall.
4. Mineral licks are critical features and goats may have to travel to low elevation sites or areas distant from their usual home ranges to access them.

Figure 2-3: Approved Ungulate Winter Range



2.8 Northern Goshawk

Goshawks are interior forest raptors that build several stick nests within a nest area that covers approximately 40ha. They avoid edges and nests are generally >100m into contiguous forest cover. While nests are known within the ESSF, there are no known nests within the ESSFdc

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variants but the Project Area is at least expected to overlap with Post-Fledgling Areas (PFA). Nesting activity can begin in February. There is some potential to encounter Northern Goshawks in the Project Area and best management practices are readily available (disturbance buffers and timing restrictions).

2.9 Western Toad

Western Toads breed in a variety of temporary and permanent ponds, lakeshores and ditches, with some fidelity to breeding sites. Egg-laying occurs when daily temperatures reach 0°C daily average minimums and 10°C daily average maximums. Metamorphosed juveniles emerge to terrestrial habitats approximately 3 months later. Hibernation sites are terrestrial and usually communal, below the frost line in burrows, squirrel middens, cavities or pre-existing crevices. There is also potential for Columbia Spotted Frog, Pacific Chorus (Tree) Frog and Long-toed Salamander.

2.10 Badger

Badger habitat requirements are dig-able soils and prey (preferred prey are ground-dwelling rodents but they are very opportunistic). Badgers do not hibernate but will have periods of reduced activity in winter. Burrows are dug for resting and for maternal denning. Most burrows are used only once by badgers (82% of burrows used one according to Weir, Davis and Hoodicoff, 2003), but can be used by other species as well (including snakes, mid-sized mammals). The biggest threat to badgers in BC is being killed on roads; they are unfortunately attracted to road fills that often have prey colonies and dig-gable soils.

Badgers also inhabit forested areas, but in association with roads and openings (including grasslands, cut blocks, wetlands) that support prey populations. Badgers are known in the access area to the west of the Project Area; there is potential for badger foraging into the subalpine areas during summer, but not during winter or spring.

2.11 Little Brown Myotis

The Little Brown Myotis is the most widespread bat in Canada and can live up to 30 years. However, populations have declined and a further dramatic decline is expected due to white-nose syndrome, an often-fatal fungal infection and therefore the previously un-listed species had an emergency endangered listing and Recovery Strategy developed by the Federal government (2018). Habitat requirements of the Little Brown Myotis are:

1. Overwintering habitat: Hibernacula are subterranean features such as caves, abandoned mines, hand-dug wells, cellars, tunnels, rock crevices or tree root hollows where light and noise levels are low. Hibernacula typically contain sections that have relatively stable temperatures (2-10°C) and stable, high humidity levels (>80%).
2. Summer habitat that includes roosting habitat (for maternity roosts and males) and foraging habitat within commuting range of the roosts. Roosting habitat can include rock crevices, raised bark, foliage and tree cavities. Large dead trees near openings are particularly important. These features will be considered at lodge/cabin/new road sites.
3. Swarming habitat is used in the late summer and early fall for mating and socializing and is typically associated with hibernacula.

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2.12 Subalpine Mountainsnail

This blue-listed land snail only has recorded occurrences in the Fernie/Cranbrook area but the BC Conservation Data Centre shows a 'confident or certain' rating for occurrence in the Arrow-Boundary Forest District. Habitat is described as 'under logs, rocks and vegetation in forests and subalpine meadows'. There is little information available but consideration of this gastropod will overlap habitat requirements for other non-listed snails and slugs.

2.13 Mule Deer Winter Range

The main access to the proposed area goes through Mule Deer winter range u-8-008. Objectives of this winter range is to maintain snow interception cover and minimize road building and use. The access road to the proposed area crosses mule deer winter range east of the Kettle River. This location is also encumbered by majority of private land and on an existing FSR.

3.0 LODGE SITE

Powder Renegade Lodge:

1. a 15-acre lease is proposed at 11U 382544 5495482 at 1940m asl that will include the lodge site.
2. The lease is within a 24.6ha cutblock logged in 2004.
3. TEM mapping shows this location within a polygon labeled ESSFdc1 80% site series 03 and 20% talus.
4. Site series 03 is a yellow-listed ecosystem (Subalpine fir / grouseberry / clad lichens) which is equivalent to the 2016 LMH supplement site series 104 (subalpine fir / rhododendron / grouseberry).
5. The lodge site and waterline location are not within an OGMA or within whitebark pine critical habitat.
6. A water line will be constructed from the pond approximately 200m away. The pond is on an unnamed tributary to Cochrane Creek (WSC 320-728000-14800-82000). Cochrane Creek is not fish-bearing due to falls just upstream of the confluence with the Kettle River.
7. The site does not overlap with Grizzly Bear important ecosystems.
8. The site is accessed by the Grano road system which has a motor vehicle closure in place at 22km.
9. The talus near the pond is expected to contain small mammal prey for wolverine and grizzly bear.
10. The strip of mature timber between the cutblock and the pond (with a cutblock on the other side of the pond is approximately 200m wide on average. This is considered too narrow to be part of a Northern Goshawk nest area.
11. Potential impacts of the lodge site on environmental values include:
 - a. construction during breeding bird nesting could result in disturbance or destruction of nests including Olive-sided Flycatcher,
 - b. construction of the water line will require tree removal and ground disturbance,
 - c. grizzly bear encounters/disturbance during construction, and
 - d. disturbance/destruction of aquatic habitat at the pond during water infrastructure activities (amphibians, invertebrates, water quality).

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Figure 3-1: PRL Lease Area Site Plan

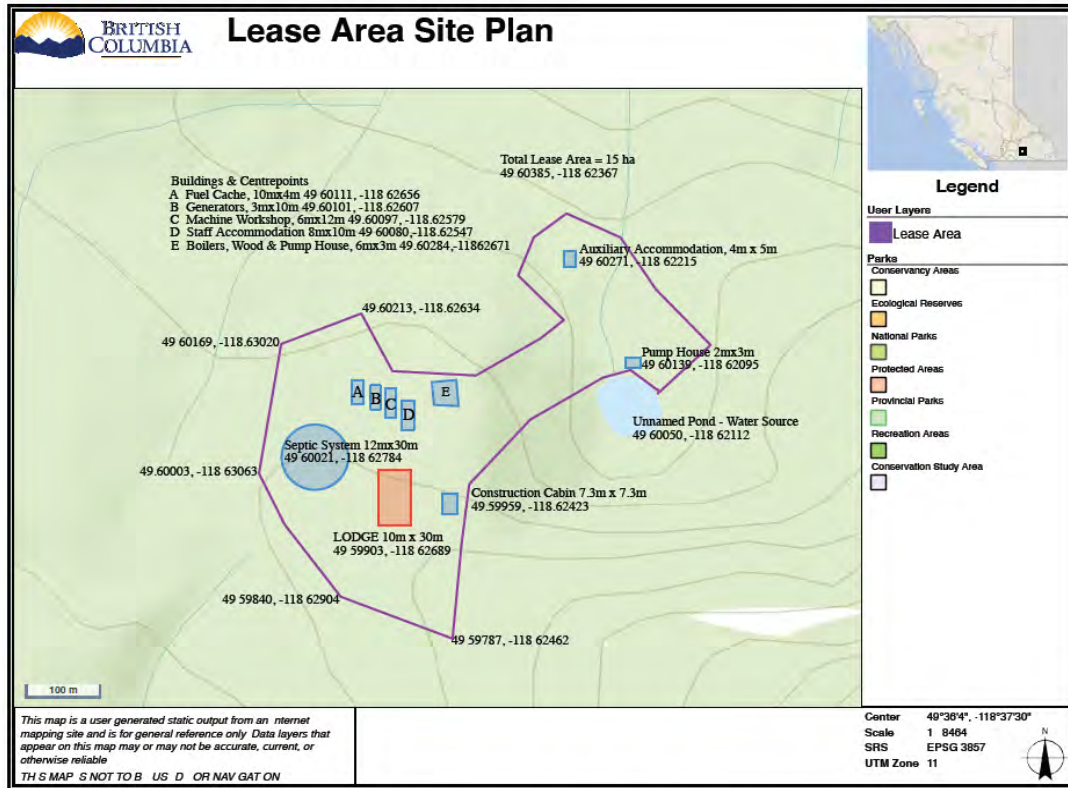


Figure 3-2 PRL Proposed Site in Cut Block with Water Line to Pond



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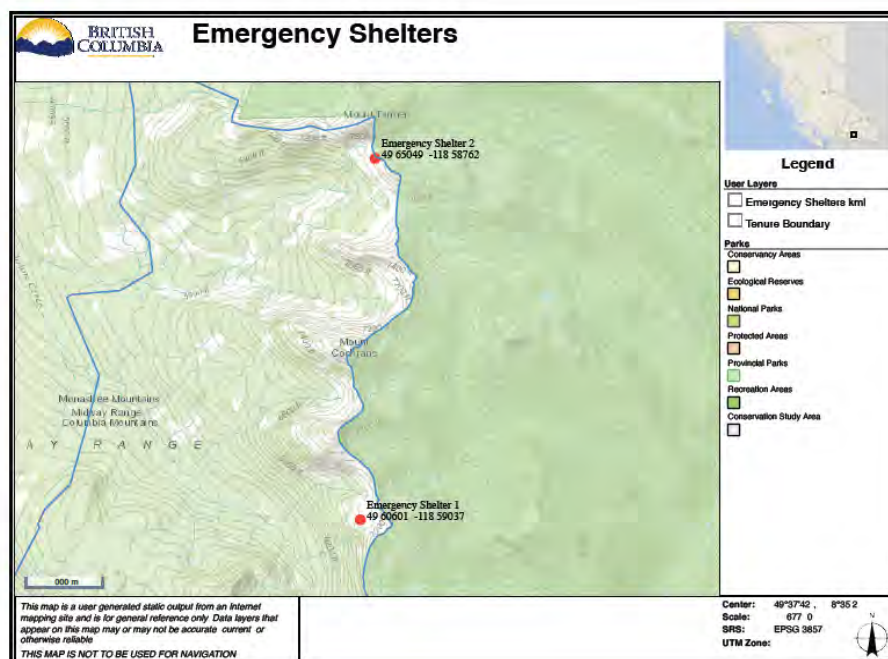
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3.1 Emergency Shelters and Heli Landings

The proposed emergency shelters/ heli drop locations are:

1. In the ESSFdcp in a TEM polygon labeled 5FC6 5FV6 (50% balsam fir - Merten's cassiope and 50% balsam fir - sitka valerian); these ecosystems are not available for ranking on the BC CDC website.
2. In the ESSFdcp in a TEM polygon labeled 5FC6 5FV6 (50% balsam fir - Merten's cassiope and 50% Tree/vegetation removal during construction is expected to be minimal.
3. The sites are considered subalpine parkland meadow, identified as a Grizzly Bear spring habitat type. While snow-free spring habitat will not overlap with operations, encounters are possible during construction activities. Wolverine spring encounters are also possible.
4. The location is south/west facing while "Dens are usually on steep north-facing slopes, with soils suitable for digging and where vegetation will stabilize the roof of the den and snow will accumulate for insulation (Vroom et al. 1977). Wet or seepage areas and areas with shallow soils or many boulders are avoided. Bears seldom reuse an excavated den but will often come back to the same vicinity to dig their new den (Ciarniello et al. 2001)" (from IWMS 2004 Accounts and Measures). Winter dens sites are not likely near this location.
5. Wolverine dens are strongly associated with avalanche tracks and are not expected near this site.
6. Subalpine Mountainsnail may occur at this site and could be subject to disturbance / destruction during construction.

Figure 3-3: Heli Drops/Emergency Shelters



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4.0 MITIGATION

Mitigation measures are grouped based on the following:

1. Sites requiring detailed assessment and CEMP's (Construction EMP's).
2. Avoidance areas including WHA's, OGMA's, Whitebark Pine critical habitat, mule deer winter range and site series critical for Grizzly Bear habitat.
3. Timing Restrictions including use of roads within Grizzly Bear Order area.
4. Construction practices for lodge, cabin, road and trail building including setbacks from riparian areas and active bird nests.
5. Operational Standard Operating Procedures including procedures for encounters with wildlife, discovery of wildlife habitat features and avoiding attracting wildlife.

4.1 Detailed Assessments

Infrastructure and new roads require detailed assessments. The assessment area of the lodge site will be approximately 500m in radius. Within that area, which includes the pond, wildlife habitat features and wildlife use sign will be documented. Findings could result in moving infrastructure locations or timing restrictions for construction activities that are could be disturbing to wildlife. Timing of the assessment will be best done in summer during nesting season, breeding season for amphibians (at the pond) and when vegetation is easiest to identify.

4.2 Avoidance Areas

1. Old Growth Management Areas (non-legal): no tree removal (trails, glading) is preferred. If any tree removal is proposed, approval from the Forest District may be required.
2. Ecosystems: avoid construction and operations within the red- and blue-listed ecosystems ESSFdc1/04, ESSFdc1/Wf02, ESSFdc1/Wf11, ESSFdc1/Wf13 and ESSFmh/Gg11.
3. Grizzly bear mitigation from Order #8-373:
 - a. Timing: avoiding highly disturbing activities from May 1 – June 20 on the entire Rendell Creek road system. The only allowed forestry activities during this time are road inspections and associated emergency works. The objective is to minimize disturbance including all vehicle traffic within 200m of spring habitat.
 - b. No roads or trails to be constructed within 50m (with exceptions of required stream crossings and 1 crossing of an avalanche track if unavoidable) of:
 - i. Avalanche tracks
 - ii. Hedysarum, glacier lily (Erythronium) and spring beauty complexes >0.5ha (preferably >0.2ha)
 - iii. Subalpine parkland meadows
 - iv. ESSFdc1 site series 06, 07 (1990) / 08, 09, 10 (2005).
 - c. Maintain Vaccinium spp productivity in ESSFdc1 site series 01, 04 (1990) / (01, 05, 07) (2005).
 - d. Retain non-merchantable vegetation, except where required for stream crossings to the extent practicable within 50m of wetlands >0.5ha (preferably >0.2ha) and in Riparian Management Areas where the contiguous canopy opening is >40ha.
4. From BC MOE Tourist Wildlife Guidelines: Grizzly Bear and Wolverine: protect den sites activities to remain at least 500m from known den sites. Potential den sites for wolverine are avalanche tracks or ravines with abundant woody debris or boulders that can provide

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- snow tunnels through the spring. These areas will be identified and avoided by 500m during field reconnaissance.
5. No vegetation removal within Whitebark pine critical habitat (high density occurrence areas); no removal of Whitebark pine during construction of roads/trails/lodge within the 2km critical habitat regeneration and recovery zone. Any vegetation removal within Whitebark Pine regeneration and recovery zones will require assessment by a QEP to avoid removal of whitebark pine as well as protecting root systems of individual trees.

4.3 Timing Restriction

1. Year-round closure area for motor vehicles on access routes will require authorization from the Province. Minimize trips and number of vehicles during construction. The proposed area covers the Granby Motor Vehicle Closed Area (see Hunting Synopsis, Region 8) which is closed year-round to motor vehicles except for snowmobiles from November 1 – May 31. The area of closure overlapping the Project Area is further defined as east of the 22km mark on the Grano FSR.
2. Migratory bird nesting – The nesting period for this zone (A2) is April 1 – August 15. No clearing (tree, shrub) removal should take place during this time without a pre-clearing nest survey. Active nests will have a temporary distance and timing buffer (unless the tree has a more permanent-type nest like a cavity or stick nest in which case it may be totally reserved) until the young have fledged. Nesting migratory birds are protected under the Migratory Birds Convention Act (1994).
3. No summer activities are proposed for operations. Any proposed activities outside of December-April will require a detailed assessment.
4. Construction activities are not allowed within 500m of spring bear habitat as defined in Order 8-373.

4.4 Construction Practices

Riparian setbacks for any vegetation clearing will follow the Provincial Riparian Areas Management Guidebook. No reserves are required on streams or the small lake near the lodge, but clearing will be minimized as there are 20m to 30m management zones.

1. A Construction EMP will be required for all structures. The CEMPs will include detailed assessments of the local areas, hazardous materials handling and restrictions, and erosion and sediment control plans.
2. Riparian setbacks for any vegetation clearing will follow the Provincial Riparian Areas Management Guidebook. No reserves are required on streams or the small lake near the lodge, but clearing will be minimized as there are 20m to 30m management zones.
3. During site prep/clearing for lodge and cabin sites, retain/replace CWD to extent possible as cover for invertebrates/amphibians of concern.
4. The Water Sustainability Act applies to all works in or around watercourses including stream crossings and water use. These works require notification or authorization. All new stream crossings will be constructed to forestry standards and will require construction mitigation including diversion during installation, and erosion and sediment control measures.

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5. Avoidance of high value specific wildlife habitat features: large dead trees near lodges and cabin to be retained always, everywhere for bat roosts, owls, furbearers and cavity nesters.
6. All disturbed soils will be seeded with an erosion control grass seed mix to avoid colonization of invasive weeds.

4.5 Operational SOP's

1. Containment of bear attractants (from Parks Canada guidelines): Avoiding wildlife interactions (habituation and food conditioning) of bears and wolves is a high priority for any activities in or near a Park.
 - a. All food, utensils, campstoves, scented items, garbage and visual attractants will be kept in bear-proof containers.
 - b. Wildlife attractants include (but are not limited to) BBQs, Hibachis or other cook stoves, coolers (full or empty), food and condiments, canned food (open or closed), garbage/wrapping/plastic bags, pet bowls, bottles/can (full or empty), toiletries/suntan lotion/insect spray, camp stoves/barbeques, food preparation or clean up times (pots, dishes, soap, dish clothes, table cloth, etc), used dish water (grey water) and plastic containers that may have contained food preparation or cleaning products. All minor attractants including generator, fuel and lubricants will be protected from wildlife with an electric fence when the camp is not occupied.
 - c. Report any wildlife observations or encounters with large carnivores (bears, cougars, wolves) to the Conservation Officer immediately. The reaction of the animal delivers important information about the level of habituation of the animal and thus informs any required management actions.
 - d. Report any injured animals or carcasses to the Conservation Officer immediately.
2. Encounters with Northern Goshawks during nesting season (February 15 – July 1 when chicks fledge) need to be followed up with a nest search. Activities expected from the operations are not considered to be high enough disturbance for avoidance buffers but known nest sites should be avoided as much as practical.
3. All waterbodies including seasonal ponds and water-filled ditches in the lodge areas must have natural hydrology maintained (ie., building sites and new roads cannot redirect flows) for potential amphibian breeding. Potential amphibian breeding sites within 100m of the lodges and new roads (grubbed down to exposed soil as opposed to new trails which are cleared vegetation only) will have buffers of 10m where no existing vegetation or cover (including woody debris) will be removed.
4. Storage of hazardous materials (eg. fuel) and spill preparedness will follow Provincial guidelines.
5. Mountain Goat: from MOE Tourist Wildlife Guidelines: for incidental encounters, stay at distances sufficient to prevent changes to the behaviour of animals (at least 500m in open areas).
6. Mountain Goat: from BC 2010 Management Plan for Mountain Goats: during occasional helicopter use, setbacks are to be 2000m and 400m vertical height above ground over areas known to support Mountain Goats (year-round).

7. Mountain Goat: from BC 2010 Management Plan for Mountain Goats: During critical periods (November 1 – April 30 and during kidding/early rearing May 1 – July 15), ground access should be restricted within 500m of mountain goat habitat by motorized vehicles (snowcats, snowmobiles, ATVs, etc) and by 100m by non-motorized activities (ski-touring, ice climbing, etc). This is only expected to occur incidentally as the identified winter range is well outside of the proposed area.

8. Encounters with Grizzly Bear, Wolverine or Mountain Goat: During operations, any encounters with these species or dens will result in an "avoid when seen" strategy. All activities will be ceased and appropriate no disturbance distances adhered to (a minimum 500 m buffer distance from the occurrence). Ski runs where bears or dens have been encountered will be avoided, location marked, and not be skied

9. Guides, snowcat operators and other field staff will be trained annually on the applicable components of the Wildlife Guidelines for Backcountry/Commercial Recreation Tourism in BC (2006), MOU and HCC training module materials, other applicable guidelines and practices (e.g., BCHSSOA, bear-aware C program and reducing bear-human conflicts, wildlife encounters practices and records, sensitive species in my area, etc.), the distribution, ecology and in-the-field identification of wildlife species, plants and plant communities most likely to occur within the tenure area, PRL procedures and best management practices to avoid disturbance to wildlife, recording sightings of wildlife, wildlife encounters, actions taken, animal response; and, annual staff review of previous years' management practices and monitoring results - discussion on successes and failures and suggested improvement.

10. Practical Monitoring will be undertaken in accordance with the Backcountry Wildlife Guidelines and/or as needed to evaluate the threat of risk of an activity to the sensitivity of the values, desired behaviours, indicators and limits identified.

11. PRL will become a member of HeliCat Canada and will comply with the best management practices for addressing wildlife disturbance concerns (BCHSSOA 2003). PRL is familiar and will comply with Wildlife Guidelines for Backcountry Tourism/Commercial Recreation in British Columbia (BCMOE 2006) PRL's primary objectives relative to wildlife values and habitat, are strict adherence to government regulations and guidelines, and to monitor and avoid disturbing wildlife values and habitat, wherever and whenever possible.

5.0 CLIMATE

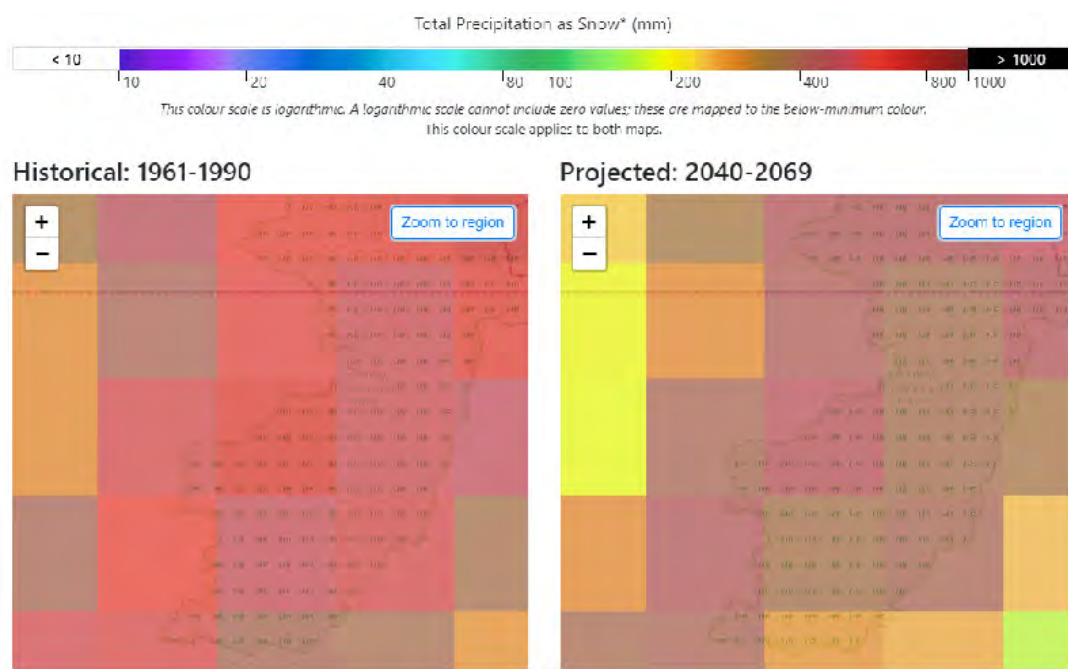
The Pacific Climate Impacts Consortium Plan2Adapt modelling tool shows an expect loss of approximately 1m of snow within 20 to 49 years. This may result in changes in timing of wildlife movement (for example emergence from hibernation), but will also result in cat skiing operations ending earlier in the spring in future decades.

Figure 5-1: Climate Modelling Comparison represents historical and projected total snow in Granby Park and Project Area according to Plan2Adapt modelling (<https://www.pacificclimate.org/analysis-tools/plan2adapt>).

Figure 5-1: Climate Modelling Comparison

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**5.0 MONITORING**

1. Detailed assessments are described above for construction of the lodge site and new roads.
2. High use areas (eg., access trails, glading areas) with potential as wildlife movement corridors will be monitored with trail cameras or track counts during one winter prior to clearing, construction or use.
3. Records of sightings of all wildlife species will be kept by the Proponent and submitted for review to a QEP on an annual basis.
4. Due to the rapidly changing information available on rare and endangered species (eg., Recovery Strategies for the species considered are within the last 5 years), a review will be required every 5 years to determine if additional mitigation is required.

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6.0 FIELD VISIT

Prior to finalizing construction plans for the lodge, new road sections, ski huts and helicopter landing spots, these areas require a field visit by a QEP to assess the areas of disturbance for point features requiring avoidance or mitigation. These point features can include:

1. Whitebark pine
2. Grizzly Bear habitat complexes and other site series to be avoided
3. Vernal pool/ aquatic potential amphibian breeding habitat
4. Olive-sided Flycatcher and other songbird nesting activity (if during nesting season)
5. Cavity or stick nests (persistent nests), dens, mineral licks
6. Red- or blue-listed ecosystems
7. Wildlife trails (especially Grizzly Bear)
8. Potential Wolverine denning areas.

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APPENDIX: DETERMINATION OF TARGET SPECIES

The BC CDC was searched using ESSF BEC zone and the Arrow Boundary Forest District. Listed species were then further considered based on range, habitat (eg., elevation) and/or known occurrences resulting in the **exclusion** of:

1. White-throated Swift
2. Immaculate Green Hairstreak
3. Hairy Necked Tiger Beetle
4. Alkali Bluet
5. Prairie Falcon
6. Fisher (not within BC Fisher Habitat Zones)
7. Viceroy
8. Lilac-bordered Copper
9. Magnum Mantleslug
10. Common Sootywing
11. Checkered Skipper
12. California Hairstreak
13. Caribou
14. Bull Trout
15. Sheathed Slug
16. California Bighorn Sheep – there was a transplant project in the 1980's to the Granby (Pass Creek) and Gilpin areas; the Gilpin herd persists but the Granby herd was not successful. Bighorn may have been considered for impacts along the access routes at lower elevations.
17. Rusty Blackbird – The BC Breeding Bird Atlas account for Rusty Blackbird shows no occurrences in surveyed units in the Kootenays.
18. Coeur d'Alene Oregonian – this riparian forest snail has no known occurrences in the Kettle/Granby area according to E-fauna records. Its habitat would be accommodated as aquatic values.

This concludes the Environmental Impact Assessment

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Adventure Tourism Management Plan

APPENDIX 2.0 - TABLE OF COMMITMENTS

The following table identifies all direct, indirect or perceived commitments that PRL has made in the Tenure Management Plan and the Environmental Impact Assessment.

#	PAGE	SECTION	TOPIC	COMMITMENT
Tenure Management Plan				
1	7	1.4 Aboriginal Interests Consideration	Communication and Opportunity	PRL will be diligent with establishing positive relationships with First Nation groups who establish interest in the project. PRL will work to find opportunities that can be implemented in an effective and meaningful way.
2		1.4 Aboriginal Interests and Consideration	Archaeological Sites	PRL acknowledges that in the event that a potential First Nations artifact or site is located, the location will be marked, left untouched and immediately reported to FLNRO and the appropriate First Nations group.
3	12	2.2 Access	Transportation	PRL will make agreements to fly from the Kelowna International Airport with their flight operator with respect to guest transport and staging areas. PRL will have back up ground transportation shall weather preclude helicopter transport, and will make arrangements with private land owners to rent land for their staging area.
4		2.4 Seasonal Expectations of Use	Use and Reporting	PRL is requesting winter activities only, with the exception of lodge construction. PRL will complete diligent use reporting as per requirements of the Adventure Tourism Policy guidelines.
5		3.0 Infrastructure	Intensive Use Sites	PRL will obtain permits where necessary. Municipal and provincial guidelines will be followed for all components of excavation, construction and installation of lodge facilities and components.
6		3.0 Infrastructure	Water Supply	PRL will apply for a water license through the Water Sustainability Act, supplementary to this tenure management plan. PRL will also consult with Interior Health for filtration requirements for this water system.
7		3.0 Infrastructure	Waste Collection, Treatment & Disposal	PRL will consult with proper authorities to develop a septic system that aligns with appropriate standards for a commercial remote lodge. PRL will obtain a permit from Interior Health for septic disposal.
8		3.0 Infrastructure	Emergency Cabins & Minimal Impact Sites	These cabins will not require services, and will be semi-permanent or non-permanent structures.

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9	3.0 Infrastructure	Fuel Cache	PRL's fuel storage and handling procedures will be in compliance with the Ministry of Environment's A Field Guide to Fuel Handling, Transportation and Storage. PRL will have commercial spill kits on site and will report all spills to the PRL head office and MOE if necessary.
10	3.0 Infrastructure	Main Access Road	The main access road is currently being maintained by Interfor. PRL will apply for a road use permit and share the maintenance responsibilities with the forestry licensee, and eventually assume the road shall Interfor's license or interest cease.
11	3.0 Infrastructure	FSR Network	The proposed PRL tenure has a vast existing FSR road network. PRL will utilizes this network in such a way to minimize impacts and to avoid re-creating new excavated roads.
12	3.0 Infrastructure	Snow Roads	Machinery will access the area via an existing snow road and only do dirt work on the required section thus eliminating a road being created connecting existing FSR's with the alpine.
13	3.0 Infrastructure	Glading, Spacing & Trail Right of Ways, OLTC	Upon approval of this tenure management plan, PRL will apply for an Occupant License to Cut (OLTC). If merchantable timber is cut during the glading program, stumpage is paid for volume of trees felled.
14	5.0 Impacts on Other Users	Snowmobiling	PRL has communicated with the local snowmobile club and has solidified an understanding of joint use for a small portion of the proposed operating area. PRL will continue working with the club to ensure a positive relationship that allows for benefit to both parties.
15	5.0 Impacts on Other Users	Timber Tenures & Forestry Management	PRL has communicated with both of the timber licensees overlapping the proposed PRL tenure. PRL will obtain road use permits when necessary, assume road maintenance where necessary and continue working in a positive manner with the companies.
16	5.0 Impacts on Other Users	Local Government & Existing Land Use Plans	PRL's proposed activities are consistent with the overall intent and specific land use strategies as set out in the Kootenay Boundary Land Use Plan Implementation Strategy.
17	5.0 Impacts on Other Users	Motor Vehicle Closed Areas	PRL's proposed operation takes place during the exemption period of the closure area. PRL will not propose activities that conflict with this closure.

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18	6.0 Risk Management & Safety	Safety and Rescue Plans	PRL will operate in a manner that is in accordance with operating guidelines set out by HeliCat Canada. PRL will adopt waivers, safety and rescue plans.
19	6.0 Risk Management & Safety	Worksafe BC	PRL will register with WorkSafe BC and its operation will compliance with WorkSafe BC regulations.
20	6.0 Risk Management & Safety	Insurance	PRL will obtain a minimum of \$2 million liability insurance policy, and other insurance as necessary, upon approval of this application.
21	6.0 Risk Management & Safety	Security of Performance Bond	PRL will deposit the requested amount for a Security of Performance Bond upon approval of this application.
22	6.0 Risk Management & Safety	Guides & Snow Science	PRL will only hire fully certified ski guides and will operate by the well-established standards used in the heli and cat skiing industry in Canada. Guides will conduct snow checks, identify hazards and evaluate other variables to achieve a daily ski program that is satisfactory for overall guest safety.
23	7.0 Business Overview	Business Model	The business model PRL will implement is a proven concept in the remote lodge, multi-day ski holiday industry. The PRL team is committed to achieving successful business practice that will propel the company into a long term, sustainable arrangement. PRL will conduct business in a manner that demonstrates high ethical standards and efforts to be a good corporate citizen.
24	7.0 Business Overview	Economic Benefits	PRL will buy local goods and services wherever possible, hire and train individuals from local communities and promote complementary local businesses and services.

Environmental Impact Assessment

1	2.0 Description of Values	Discovery	Values to be assessed against have been determined through the BC Ecosystem Explorer and are a reflection of current values.
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2	2.1 Ecosystems	Biodiversity and Sensitive Species	<p>PRL will review Terrestrial Ecosystem Mapping (1:50,000 undated Kettle-Granby) for planning to avoid siting lodges/trails/cabins/roads within site series of concern.</p> <p>PRL will comply or exceed Vegetation Communities Best Practices and Forest Harvesting and Trail Construction Best Practices in BCHSSOA Stewardship of Mountain Ecosystems Best Practices for Sustainability (2003).</p> <p>PRL will use existing roads and trails in low snow conditions to protect vegetative cover and root systems</p> <p>Staff will be familiar with the section titled "What are the Sensitive Species and Habitats in My Area?" (p.52) and other applicable practices from the Wildlife Guidelines for Backcountry Tourism/Commercial Recreation in BC.</p> <p>Biodiversity habitat elements will be considerations when planning ski run, pick-up/drop-off - sites, maintenance, other developments and/or expansion activities in forest ecosystems and habitats</p>
3	2.1 Ecosystems	OGMAs	<p>Non-legal OGMA's are within the PRL boundary. PRL will remain educated regarding existing and proposed OGMA's within the tenure area.</p>
3	2.3 Aquatic Values	Fish Values and Sensitive Streams	<p>There is confirmed no-fish presence in the watersheds and streams within the PRL tenure. PRL will act in compliance with the Fisheries and Watershed Best Practices in BCHSSOA Stewardship of Mountain Ecosystems Best Practices for Sustainability (2003) for conservation of these water bodies.</p>
4	2.3 Aquatic Values	Amphibians & Reptiles	<p>Six species have been identified in the PRL tenure that could potentially seek habitat in watersheds within the boundary. PRL will adhere to guidelines and best management practices as outlined in the Guidelines for Amphibian and Reptile Conservation during Urban and Rural Land Development in British Columbia (2014).</p>
5	4.1 Avoidance Areas	OGMA	<p>PRL will avoid tree removal in the non-legal OGMA within their proposed tenure, and understands approval from the Forest District may be required.</p>
6	4.1 Avoidance Areas	Ecosystems	<p>PRL will avoid construction and operations within the red and blue listed ecosystems ESSFdc1/04, ESSFdc1/Wf02, ESSFdc/Wf11, EDDFdc1/Wf13 and ESSFmh/Gg11</p>

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7	4.1 Avoidance Areas	Grizzly Bear	PRL commits to following measures outlined in Order #8-373 to protect the spring habitat of Grizzly Bears.
8	4.1 Avoidance Areas	Whitebark Pine	PRL will not remove vegetation within the Whitebark Pine critical habitat (high density occurrence areas), or remove Whitebark Pine itself during construction of roads/trails/lodge within the 2km critical habitat regeneration and recovery zone.
9	4.2 Timing Restriction	Motor Vehicle Closed Areas	The operational period of PRL is closed to motor vehicles year round with the exception of November 1 - May 31 for snowmobiling. PRL will request authorization from the Province where necessary.
10	4.2 Timing Restriction	Migratory Bird Nesting	No clearing activities will take place from April 1 - August 15 without completing a pre-clearing nest survey. Active nests will have a temporary distance and timing buffer until the young have fledged.
11	4.3 Construction Practices	Riparian Setbacks	Riparian setbacks for any vegetation clearing will follow the Provincial Riparian Areas Management Guidebook. During site prep/clearing for lodge and cabin sites, retain/replace CWD to extent possible as cover for invertebrates/amphibians of concern. Avoid high value wildlife features.
12	4.3 Construction Practices	Water Sustainability Act	PRL understands the Water Sustainability Act applies to all works in or around watercourses including stream crossings and water use. PRL will apply for a license under this act in conjunction with this application.
13	4.4 Operational SOP's	Park Proximity	PRL understands avoiding wildlife interactions of bears and wolves is a high priority for any activities in or near a Park. PRL will imply best management practices to contain attractants and report sightings to a Conservation Officer when necessary.
14	4.4 Operational SOP's	Northern Goshawk	Encounters with Northern Goshawks during nesting season (Feb 15 - July 1) will follow up with a nest search, and known nest sites will be avoided.
15	4.4 Operational SOP's	Waterbodies	Potential amphibian breeding sites within 100m of the lodges and new roads will have buffers of 10m where no existing vegetation or cover will be removed.

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16	4.4 Operational SOP's	Mountain Goat	<p>The winter range is well outside the PRL tenure - however for Incidental encounters, PRL will remain at least 500m distance and will adopt an "avoid when seen" strategy when goats are encountered, and will adhere to specific distance guidelines for mountain goats in the Tourism Wildlife Guidelines (2006)</p> <p>No activity will take place within a goat occupied area for a minimum 24 hours and until follow-up inspections confirm the absence of the goats.</p>
17	4.4 Operational SOP's	Den Sites and Encounters	<p>PRL will adopt an "avoid when seen" strategy when grizzly bears, wolverines or dens for these mammals are encountered.</p> <p>All activities will be ceased and appropriate no disturbance distances adhered to (a minimum 500 m buffer distance).</p> <p>Ski runs where bears or dens have been encountered will be avoided, location marked, and not be skied</p>
19	4.4 Operational SOP's	Staff & Training	<p>Guides, snow- cat operators and other field staff will be trained annually on:</p> <ul style="list-style-type: none"> - the applicable components of the Wildlife Guidelines for Backcountry/Commercial Recreation Tourism in BC (2006); - MOU and HCC training module materials; - other applicable guidelines and practices (e.g., BCHSSOA, bear-aware C program and reducing bear-human conflicts, wildlife encounters practices and records, sensitive species in my area, etc.); - the distribution, ecology and in-the-field identification of wildlife species, plants and plant communities most likely to occur within the tenure area; - PRL procedures and best management practices to avoid disturbance to wildlife; - recording sightings of wildlife, wildlife encounters, actions taken, animal response; and, - annual staff review of previous years' management practices and monitoring results <p>- discussion on successes and failures and suggested improvement.</p>
20	4.4 Operational SOP's	Practical Monitoring	<p>Practical monitoring will be undertaken in accordance with the Backcountry Wildlife Guidelines and/or as needed to evaluate the threat of risk of an activity to the sensitivity of the values, desired behaviours, indicators and limits identified.</p>

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21	4.4 Operational SOP's	Recognized Guidelines	<p>PRL will become a member of HeliCat Canada and will comply with the best management practices for addressing wildlife disturbance concerns (BCHSSOA 2003).</p> <p>PRL is familiar and will comply with Wildlife Guidelines for Backcountry Tourism/Commercial Recreation in British Columbia (BCMOE 2006)</p> <p>PRL's primary objectives relative to wildlife values and habitat, are strict adherence to government regulations and guidelines, and to monitor and avoid disturbing wildlife values and habitat, wherever and whenever possible.</p>
	5.0 Field Visit	Field Visit	<p>PRL recognizes that prior to finalizing construction plans for infrastructure, a field visit will be necessary be a QEP.</p>

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APPENDIX 3.0 - PERMISSION TO APPLY (POWDER OUTFITTERS)

From: **Kalischuk, Andrea FLNR:EX** Andrea.Kalischuk@gov.bc.ca 
 Subject: permission to submit winter AT application over existing tenure
 Date: February 20, 2020 at 3:35 PM
 To: Kerry and Cassandra Penney northcountrysnowcats@gmail.com
 Cc: Baker, Gena FLNR EX Gena.Baker@gov.bc.ca Krebs, John A FLNR EX John.Krebs@gov.bc.ca

AK

Hi Cassandra and Kerry,

Thank you for your patience.

I provide my permission for you to submit a winter adventure tourism tenure application over the existing Powder Outfitters tenure.

I sought some preliminary information in terms of wildlife and habitat concerns. Note, this information should not be considered as complete. And, your application will still have to go through a full review, referral and consultation process. As you suggested, Whitebark Pine is in the area and I will try to send you additional information soon as per your request. Grizzly bears are also of concern in the area and there is a Government Action Regulation (GAR) in place. I've attached an information document on bears. Goats may also be a consideration.

If you require further information, please let us know.

Best,
Andrea

Andrea Kalischuk
 Director of Resource Authorizations
 Kootenay Boundary Region
 Ministry of Forests, Lands, Natural Resource Operations & Rural Development
 1902 Theatre Road, Cranbrook, BC V1C 7G1
 Tel: (250) 426-1725
 Cell: (250) 421-0539



EN120 Grizzly
Web.pdf

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Roadway License Management Plan

ROADWAY LICENSE OF OCCUPATION MANAGEMENT PLAN



FILE #

LICENSE #

TRACKING # 100325390

DATE: October 17, 2020

ACCEPTED BY:

SIGNED on behalf of HER MAJESTY THE QUEEN IN THE RIGHT OF THE **PROVINCE OF BRITISH COLUMBIA** by Crown land Adjudication, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, authorized representative of the minister responsible for the *Land Act*.

The signature of the Province's authorized representative is solely for the purpose of acknowledging the Province's acceptance of this document as the Tenure Management Plan for the purposes of the Licenses and does not represent a certification by the Province or its signatory of any factual content of acceptance of professional responsibility by the Province's signatory for any advice or analysis contained in this document.

Authorized Signature

Crown Land Adjudication

Ministry of Forests, Lands, Natural Resource Operations and Rural Development

*Print Name*_____
Authorized Signature

Powder Renegade Lodge Inc

*Print Name**Contains pages (including this page)*_____
Powder Renegade Lodge Inc

1

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Roadway License Management Plan

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Roadway License Management Plan

1.0 INTRODUCTION

1.1 Project Overview

This Roadway Management Plan has been prepared by Cassandra and Kerry Penney, in support of Powder Renegade Lodge Inc's (PRL) request for a winter commercial recreation Adventure Tourism tenure. The purpose of this tenure is guided cat skiing with a remote lodge. This License of Occupation for Roadway is supplementary to the Licence of Occupation and Lease application, and PRL is requesting a 30 year term. The proposed tenure encompasses 8,847 ha of Crown land in the Midway Range of the Southern Monashee Mountains, between the Granby and Kettle rivers, 70 kms east of Kelowna, BC.

A well connected road network is a vital component of a cat skiing operation. Although this proposed tenure location already has an established and accessible pre-existing FSR network, some additional excavated roads are necessary to be built in order for the snowcat to have adequate access to the proposed ski terrain within the boundary. In this case, appropriate machinery such as an excavator will be used to create a dirt road that is more level. Below the alpine, some tree removal can also be required to establish these roads.

PRL is proposing to use the existing FSR system along with the construction of 10.7 kms of excavated roads and 95 kms of snow trails throughout the proposed boundary to access ski terrain and the lodge site. Excavated roads are defined as permanent tracks that may require some timber removal and necessitates the use of an excavator to construct side cuts into the mineral soils. Snow trails do not necessitate the removal or disturbance of soil, and have therefore been excluded from this Roadway Management Plan. See *Figure 1-1: PRL Overall Road System* for the entire proposed road and trail system.

The majority of the excavated roads proposed by PRL are connected to snow trails rather than FSR's. Only 4 of these proposed roads are directly connected to existing FSR's. This decreases the likelihood of public access or use because it eliminates road access being established to higher alpine areas (the snow trails melt in the spring and summer, so the excavated road segments will be inaccessible without snow). These roads are for the sole purpose of PRL's cat skiing operation and have been proposed only where necessary throughout the tenure.

This plan has been developed using desktop research, mapping and aerial imagery. Various terrain stability and other variables have been considered in this management plan. PRL will follow procedures and recommendations for the variable terrain requirements when building these roads described by the *Forest Road Engineering Guidebook*.

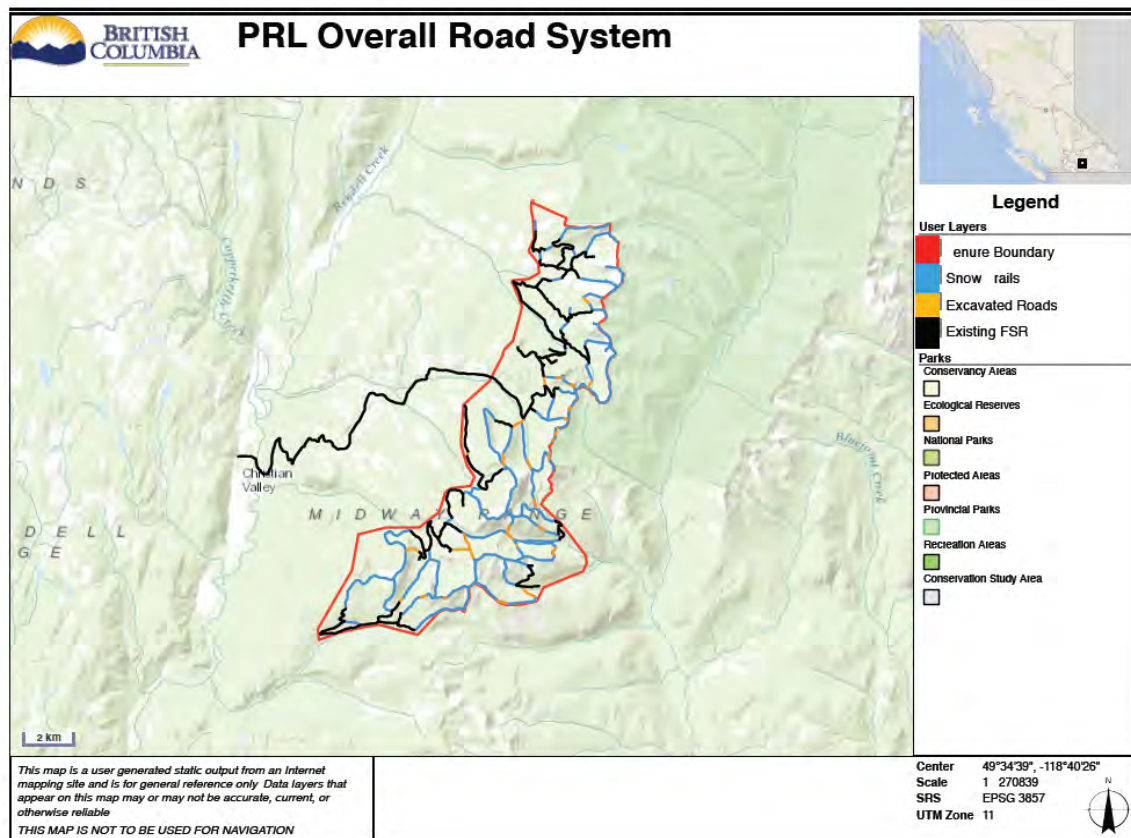
All maps included in this management plan are available in KML and digital spatial files upon request. A separate management plan for the Lease for an Intensive Use Site and License of Occupation for Extensive Use Area has been prepared and will form part of this tenure.

The proposed roads will not be upgraded to the Ministry of Transportation standards, and a gazette plan of the Right of Way will not be prepared for this project. The roads in this plan will have a minimum life expectancy to match the license term of 30 years.

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Figure 1-1 : PRL Overall Road System



1.2 Proponent

Powder Renegade Lodge Inc is a BC incorporated company based out of Kelowna, BC. The founders of PRL are Cassandra Penney, Kerry Penney and Nick Holmes-Smith. They share an enormous passion for creating cat ski tenures and truly make an excellent team with their unique and diverse skills. Nick is the owner of an existing cat skiing company, Mustang Powder Lodge, and the Penney's are passionate and committed entrepreneurs creating this operation to be their long term family business.

1.2.1 Corporate Summary

Incorporation # BC1255468

Business Address: 303-567 Yates Road, Kelowna, BC V1V 2V4

Corporate Officers: Cassandra Penney, President

Contact: Phone: (250)-423-1843

Email: powderrenegade@gmail.com

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2.0 GENERAL ROAD AND TERRAIN DESCRIPTION

2.1 Method of Construction

Roads will be constructed by conventional cut and fill techniques with shift into 3/4 bench and full bench cut through steeper sections. Considerations such as terrain stability, local fill, landslide risk and road compatibility with existing terrain slopes will be considered for each excavated road. Clearing widths will be between 5-7m, with ditching depths will be between 0.2-0.5m. The road running widths will be constructed between 4-5m, with shoulders being 0.4m on each side of the road. The total sub grade widths range from 6-7m including ditching, running road and road shoulders.

Measures such as down-sloping the road bench and installing water bars will be utilized at certain points along the road to shed water from the road surface and reduce surface erosion. Fill and minimal road surfacing will be sourced from local fill and debris related to the construction of the roads. The terrain is variable and rugged, with existing land cover predominantly forest with some grasslands, barren and shrubs.

The roads will cross variable terrain with slope gradients of mainly 53-68%. Some roads will cross steeper slopes to as much as 70-86%, and some more gradual slopes between 26%-50%. Rock blasting is not required for the construction of these roads.

The proposed roads have a range in slope between 5-18% and encounter variable cross terrain slopes ranging from 26% to 86%. PRL has prepared two cross sectional diagrams to reflect road construction.

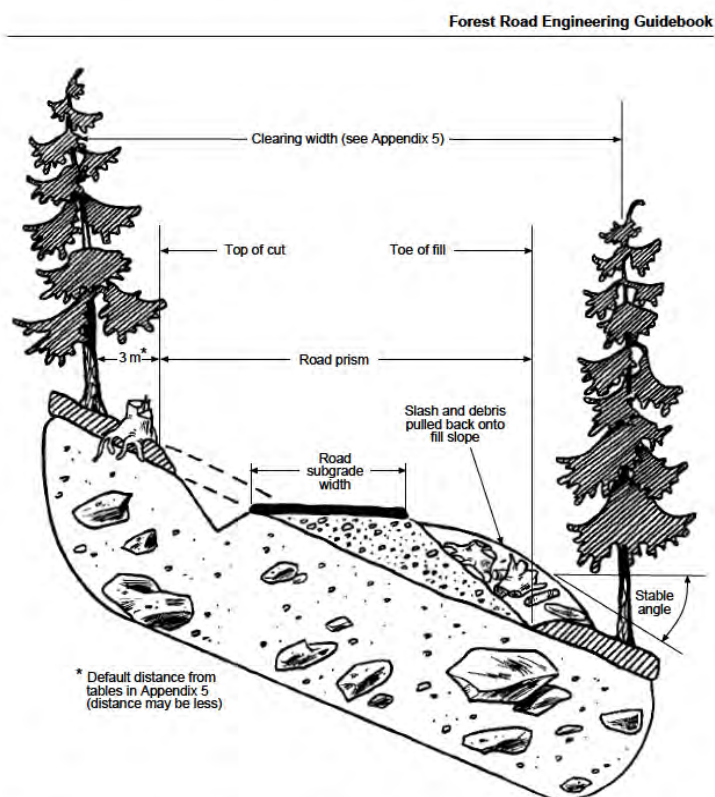


Figure 2. Typical roadway on moderate slopes with no additional clearing.

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Figure 2-2: Cross Section for Roads with 5-10% Slope and Cross Terrain Less Than or Equal to 50%

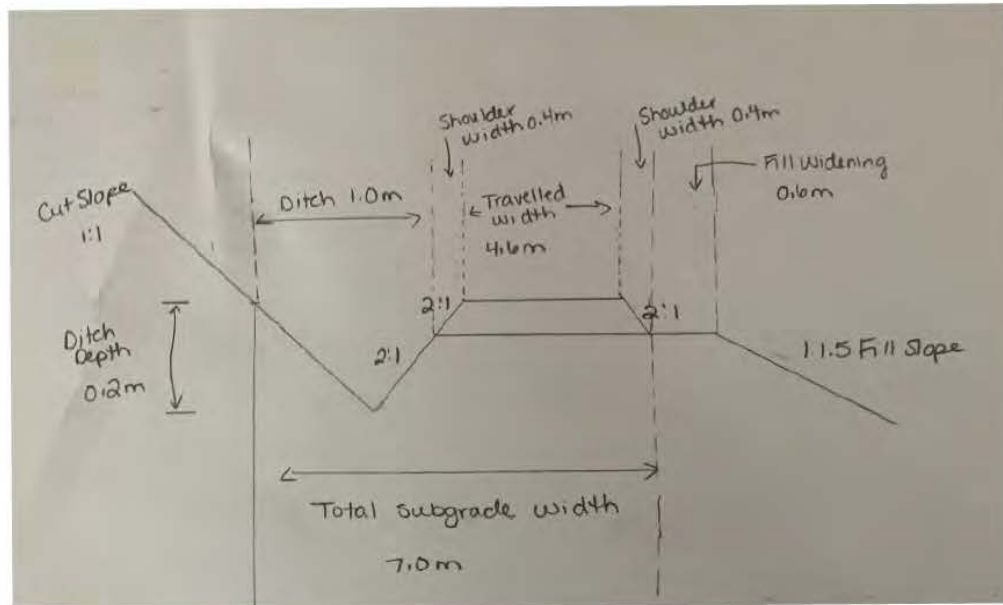
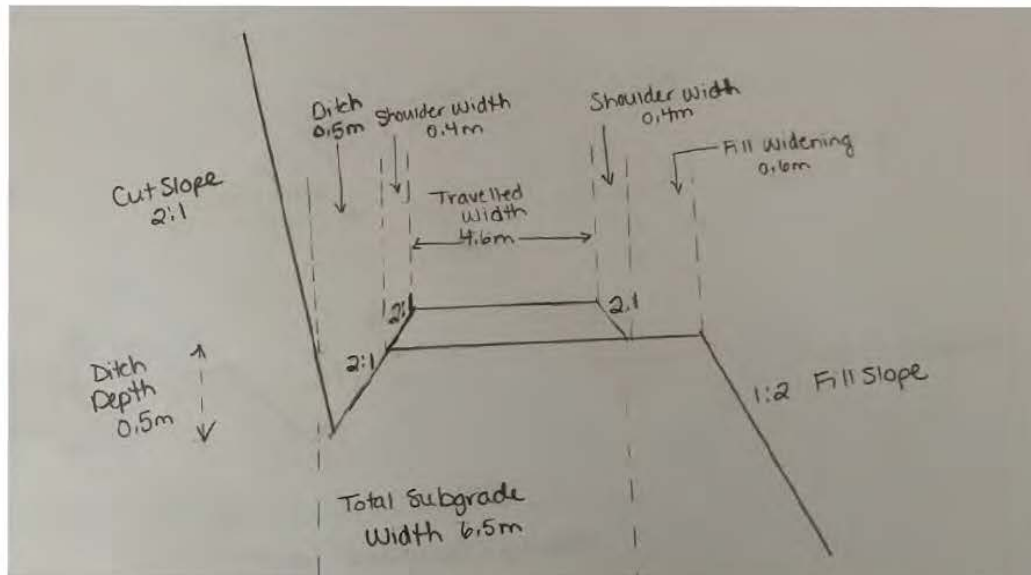


Figure 2-3 Cross Section for Roads with 6-18% Slope and Cross Terrain Greater Than 50%



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2.1.1 Cut & Fill Slopes

The design of cut slopes will consider and address factors such as types of cut slope materials, overall terrain stability, properties of soils, seepage conditions, construction methods, and maintenance. Cut slopes generally remain stable at slightly steeper angles than fill slopes constructed from like soil materials because undisturbed soil materials in a cut are often in a denser state than similar type materials placed in a fill, and may contain sources of cohesive strength that further increases the shearing resistance of the soil.

The stability of a fill slope depends on several variables, including the forces that tend to cause instability (gravitational and water pressure forces), and the forces that tend to oppose instability (e.g., shear strength resistance of the soil or rock materials expressed as an internal friction angle or cohesion). To ensure stability for fill slopes, flatter side slopes in all types of soil will reduce the gravitational forces that tend to cause slope instability. The fill materials will be compacted to make them more dense and increase the shearing resistance of the soil.

Furthermore, PRL understands the angle of internal friction depends primarily on the relative density (loose versus dense), the particle shape (round versus angular), and the gradation (uniformly graded versus well graded). Good drainage of fill will be employed where necessary to reduce the build-up of water pressure forces along potential planes of sliding within the fill.

2.1.2 Construction Schedule

Road building will occur when snow is still present so that equipment can access these locations using snow trails. Dirt works will only be completed on required sections, thus eliminating any road being created connecting existing FSR's with the alpine roads. This eliminates potentially new access for all terrain vehicles (ATVs) to the alpine.

2.1.3 Endhaul/Disposal and Borrow Areas

PRL does not anticipate substantial end haul, as most roads will be able to use the debris to build into our roads. Where debris or other unsuitable material cannot be disposed of outside the road prism or within the clearing width, PRL will end haul this to a suitable disposal site for debris. Endhaul debris from the road corridor can occur in steep or unstable terrain where this material is removed to maintain slope stability.

PRL will identify all disposal sites for debris before construction and ensure that approved disposal site(s) for debris is stable, well drained, and isolated from streams or wet sites; and does not have a material adverse effect on forest resources and other values. Debris will be piled and placed to maintain slope stability at all times and will take measures to control erosion and sediment transport.

PRL will dispose of the debris endhailed to an approved disposal site by piling and burning, scattering, or burying. Whichever disposal method is used, PRL will ensure that the top of any remaining debris material is below the road surface (to allow for snowplowing and sight distance) and placed in a manner to allow surface water to drain away from the road.

2.1.4 Seasonal Use and Volume

PRL's operational period will be from early December to early April. PRL is not requesting any summer activities, and will not be proposing any future applications for summer activities. The

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main lodge access road will be the highest traffic road out of all of the proposed roads in the tenure because of its nature being access to the lodge site. Use of these roads will be very light respective to existing in nature and will be respective to needs of the lodge and operation.

3.0 INFRASTRUCTURE & LOCATION

3.1 Main Access Road

Commencing at the 51km marker on the Christian Valley road is the Grano Creek FSR, which the entrance to the proposed tenure and main access road. Continue on this road 14.2 kms, staying right onto Charlie Road FSR road for 1.1 kms, and then stay right onto Noren FSR for 4.3 kms, which climbs a southwest aspect hillside. Stay right again on Grano 14640 which continues climbing and ends at 1900 m elevation. An excavated road 374 m long is required to connect to Grano 22830, at 1960 m elevation. This road is located in Zone 3.

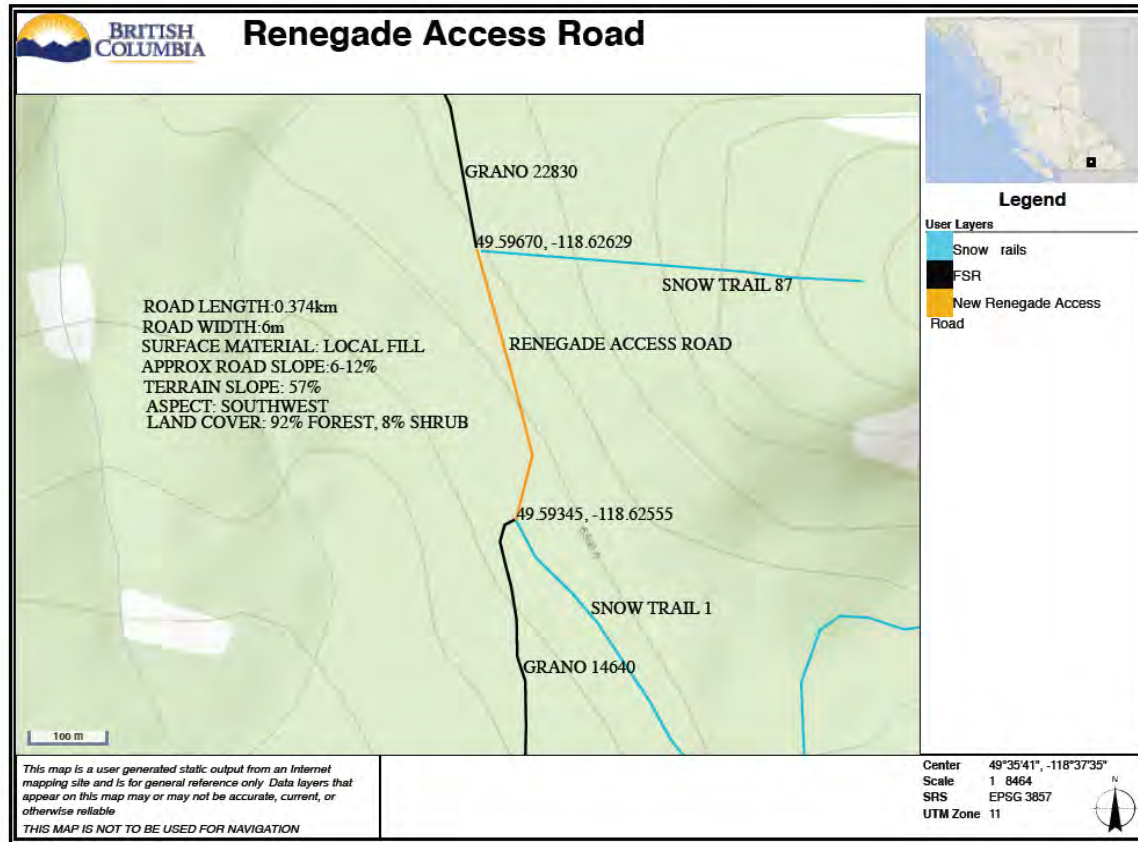
The road will cross variable terrain with slopes gradients of mainly 57%, and will necessitate the removal of trees. Planned use for the road is primarily for access to the Powder Renegade Lodge. This will include 4x4 pickups during snow free months, fuel trucks for a short window (2-3 weeks) during the late summer/fall and infrequent 5 tonne supply trucks. There will be no snow removal during winter other than minor plowing during early spring to get the road open and winter traffic will be restricted to snow cats and snowmobiles.

An approximately 0.3m deep ditch line will run for the length of the road and water bars will be installed throughout the road as necessary. Cross ditches and water bars may be infilled for short periods of time (2-3 weeks) when fuel trucks are required for fuel delivery.

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Figure 3-1: Main Access Road Site Plan



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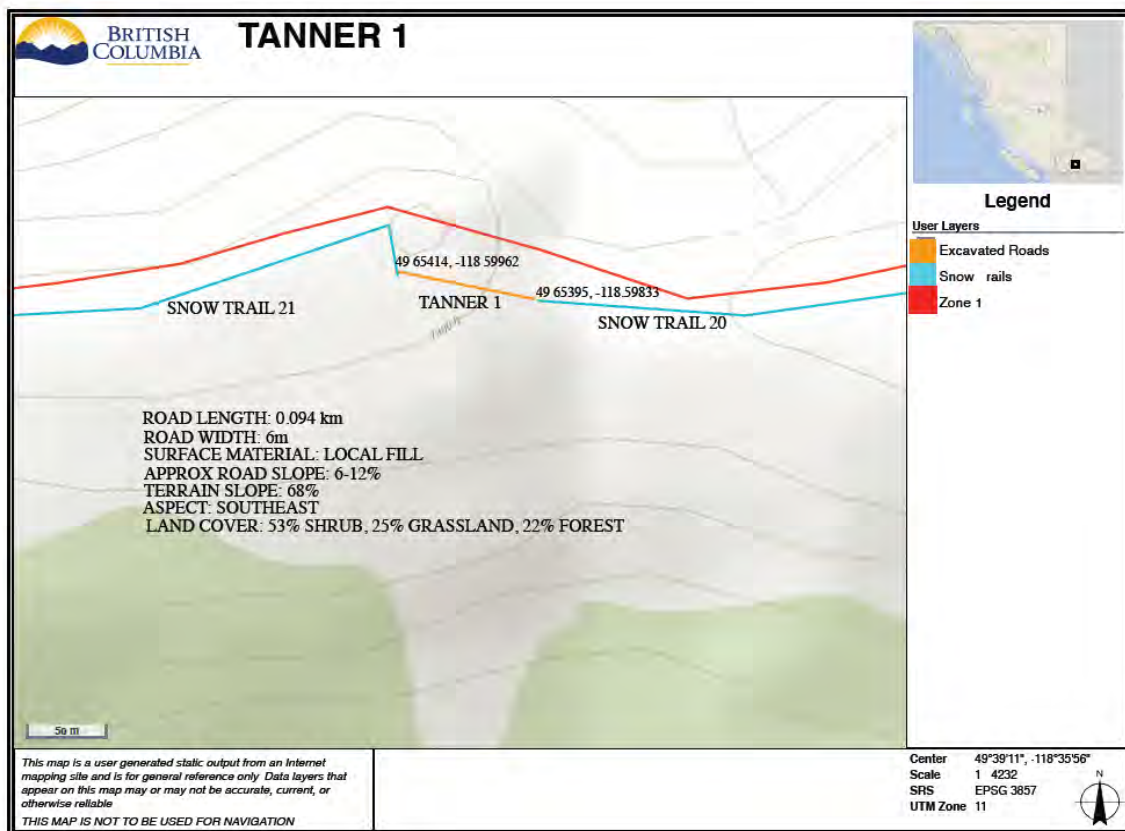
3.2 Snow Trail Connectivity Roads

The balance of the roads are located throughout the the proposed tenure to assist in road connectivity and terrain accessibility. The elevations range from 1572m to 2236m and the lengths range from 0.094km to 1.22km. Only 2 of these roads connect to FSR roads, and the others are all designed to connect into the snow trail system.

3.2.1. Tanner 1

Tanner 1 is proposed in the northwest region of Zone 1, following the border along the mountain ridge lines. The elevation range for this road is 2222-2236 m. This road will connect Snow Trail 21 and Snow Trail 20.

Figure 3-1: Tanner 1



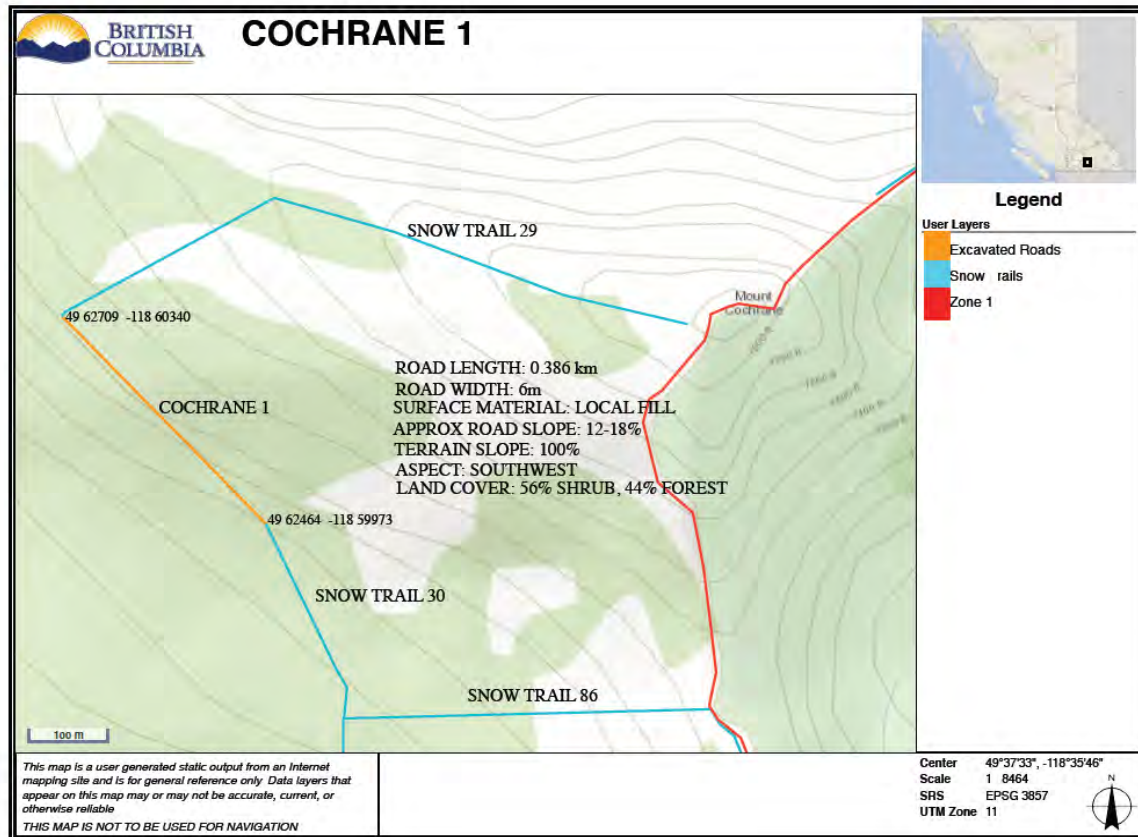
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3.2.2 Cochrane 1

Cochrane 1 is proposed in the southwest corner of Zone 1, on Mt. Cochrane. The elevation range for this road is 2121-2168 m. This road will connect Snow Trail 29 and Snow Trail 30.

Figure 3-2: Cochrane 1



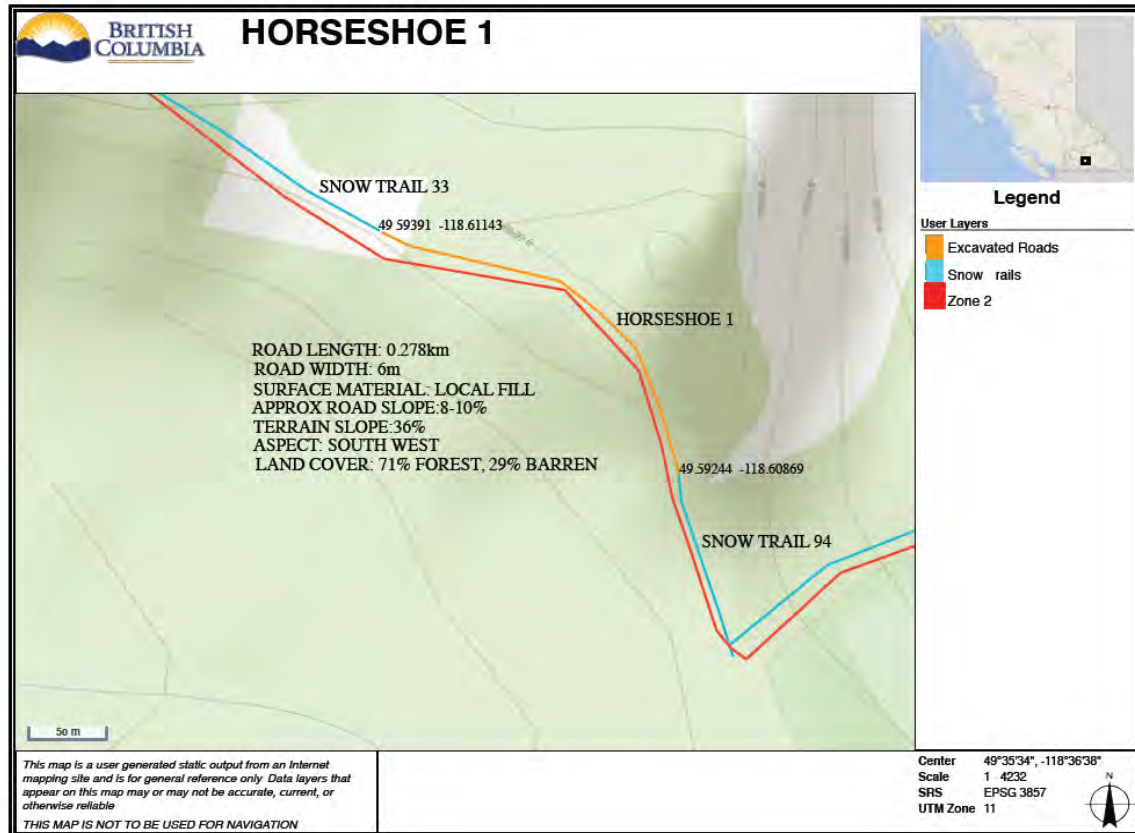
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3.2.3 Horseshoe 1

Horseshoe 1 is in the southeast end of Zone 2 to connect Snow Trail 33 and Snow Trail 94. The elevation range for this road is 2062-2094 m.

Figure 3-3: Horseshoe 1



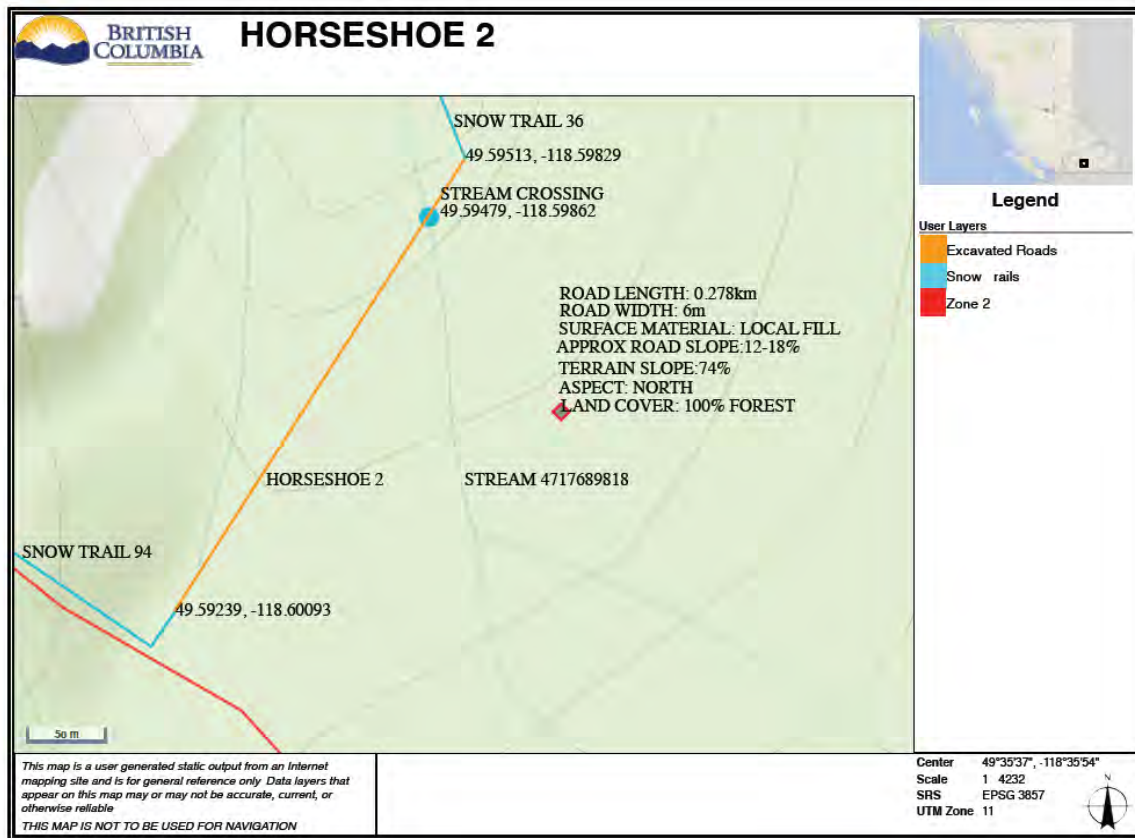
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3.2.4 Horseshoe 2

Horseshoe 2 is also in the southeast corner of Zone 2. It connects Snow Trail 36 & 94. The elevation range is 1802-1874m. This road also crosses stream 4717689818 which is a tributary of Cochrane Creek.

Figure 3-4: Horseshoe 2



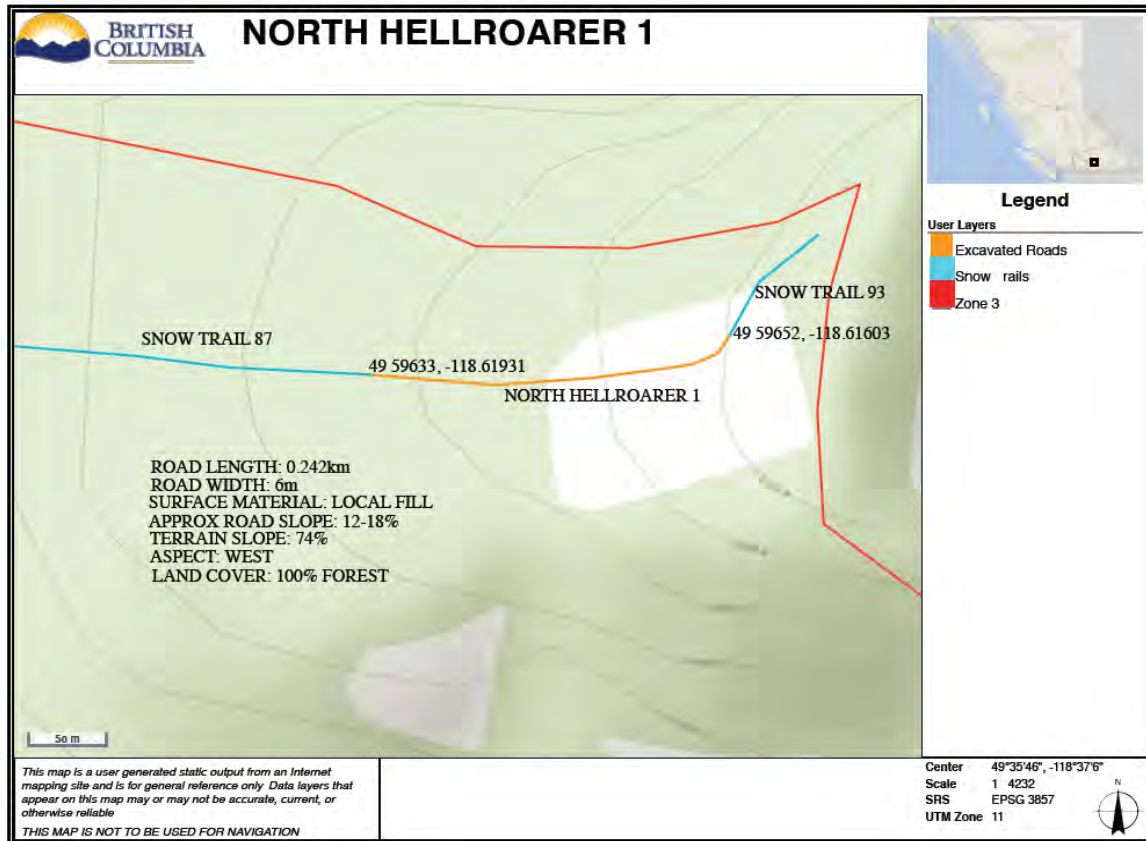
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3.2.5 North Hellroarer 1

North Hellroarer 1 is located in the northeast portion of Zone 3. This road will connect Snow Trail 87 and Snow Trail 93. The elevation range is between 2099-2160 m.

Figure 3-5: North Hellroarer 1



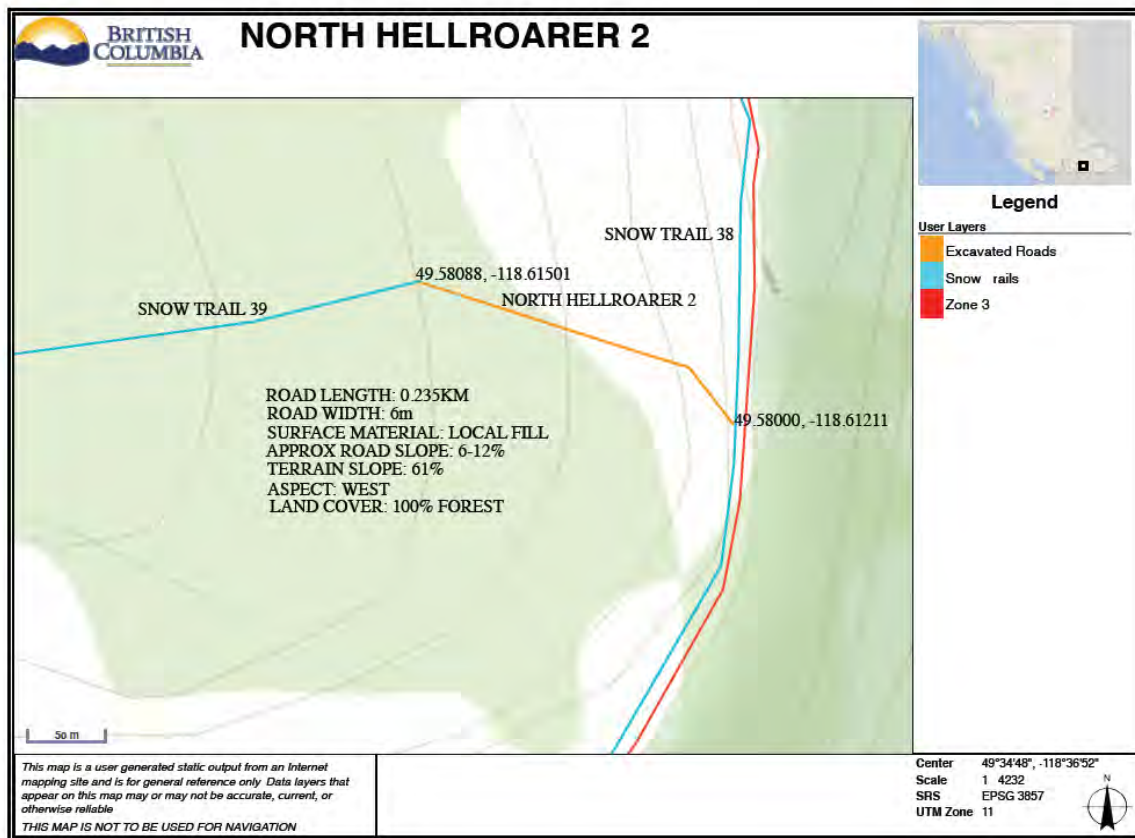
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3.2.6 North Hellroarer 2

North Hellroarer 2 is located by the eastern tenure border in Zone 3. This road will create a junction point for the road system, connecting between Snow Trail 38 and Snow Trail 93. The elevation range is between 2017-2102 m.

Figure 3-6: North Hellroarer 2



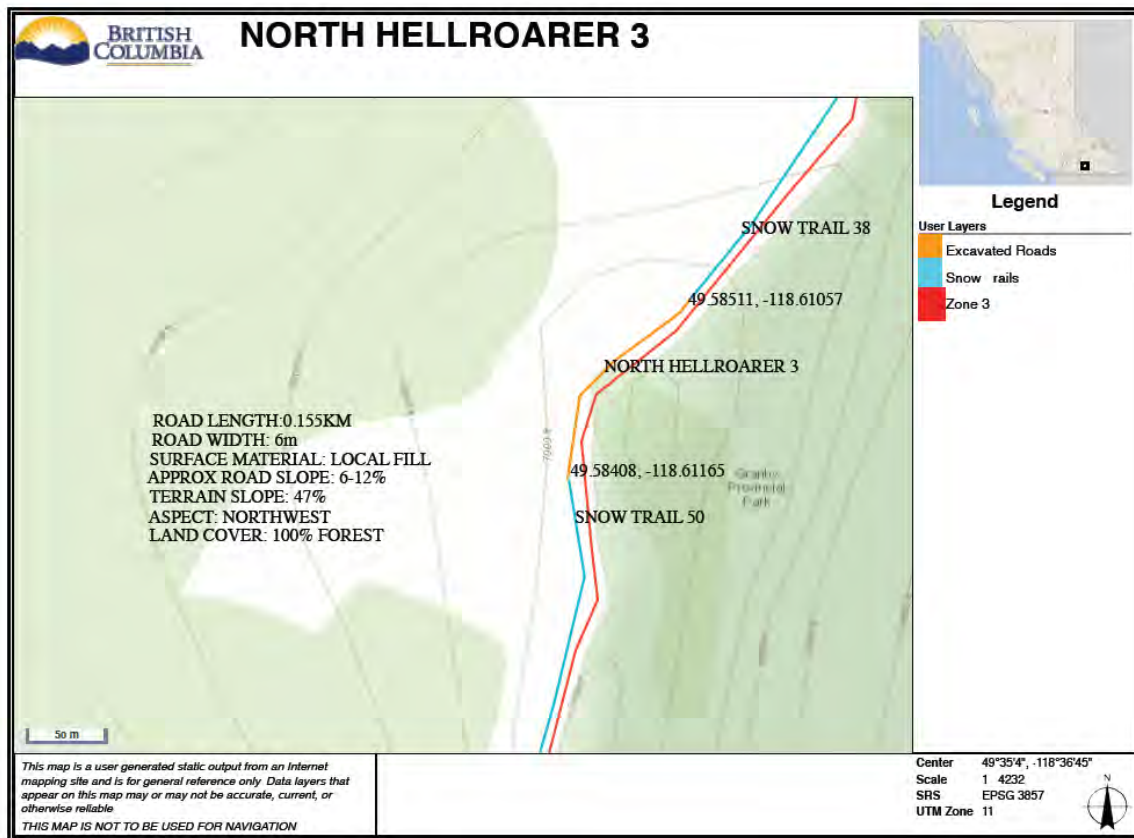
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3.2.7 North Hellroarer 3

North Hellroarer 3 follows the eastern tenure border in Zone 3. This road will create connectivity for the road system following the mountain top of an unnamed mountain, connecting between Snow Trail 38 and Snow Trail 50. The elevation range is between 2127-2151 m.

Figure 3-7: North Hellroarer 3



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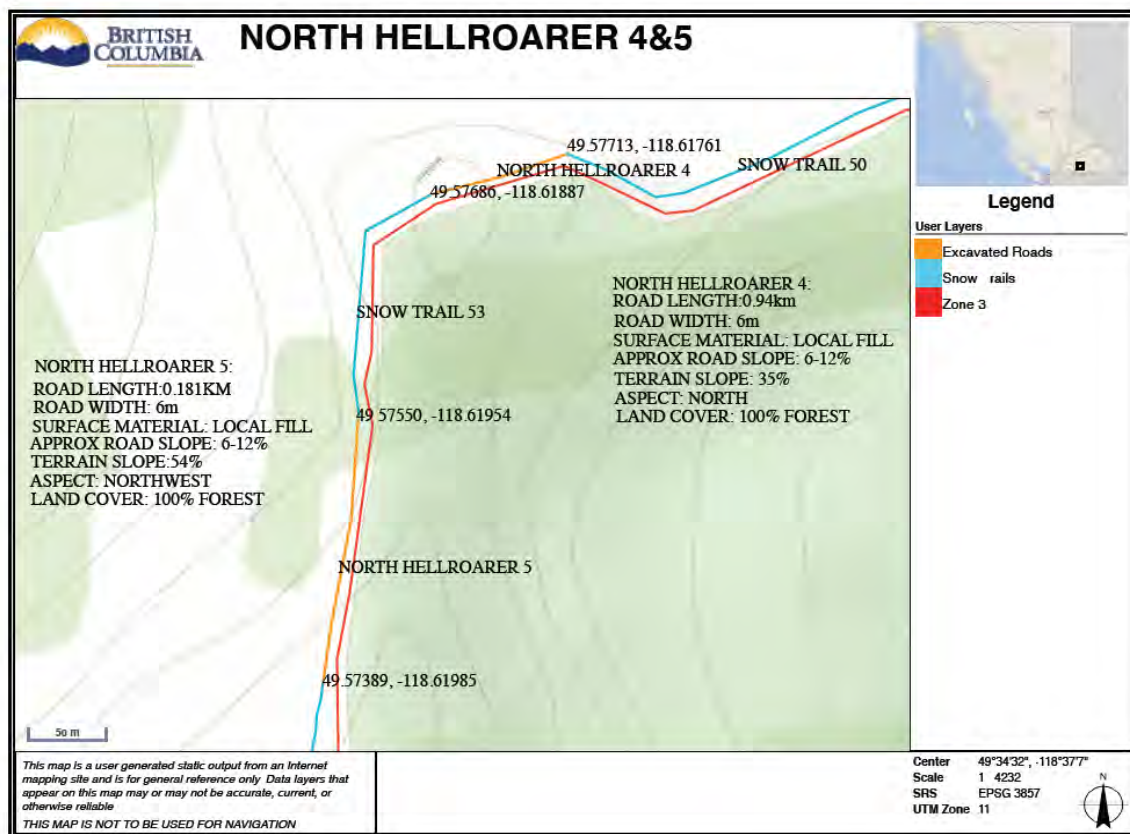
3.2.8 North Hellroarer 4

North Hellroarer 4 follows the eastern tenure border in Zone 3, and is located south of North Hellroarer 3. This road will create connectivity for the road system going up an unnamed mountain where the terrain is unsuitable for a snow trail. It will connect between Snow Trail 38 and Snow Trail 50. The elevation range is between 2093 - 2132m.

3.2.9 North Hellroarer 5

North Hellroarer 5 follows the eastern tenure border in Zone 3, and is located south of North Hellroarer 4. This road will create connectivity for the road system between two mountains (unnamed mountains), connecting between Snow Trail 53 and Snow Trail 65. The elevation range is between 2121-2164 m.

Figure 3-8: North Hellroarer 4&5



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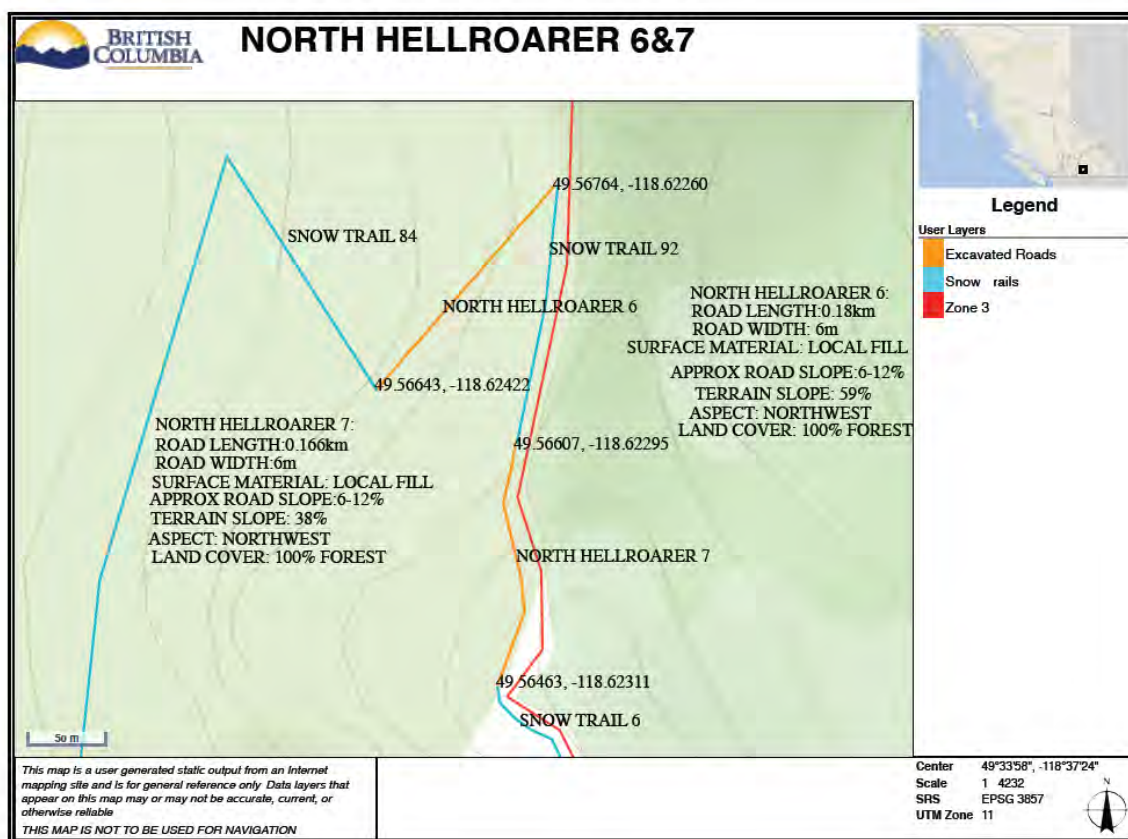
3.2.10 North Hellroarer 6

North Hellroarer 6 is in the mid-eastern portion of Zone 3. It will connect Snow Trail 84 to the upper elevation bordering the tenure boundary, connecting into Snow Trail 92 which follows the mountain ridge lines (unnamed mountains) at the upper elevation. The elevation range is between 2053-2083 m.

3.2.11 North Hellroarer 7

North Hellroarer 7 is south of North Hellroarer 6 and follows the tenure boundary connecting to the top of an unnamed mountain. It will connect Snow Trail 92 to Snow Trail 6. The elevation range is between 2098-2152 m.

Figure 3-9: North Hellroarer 6&7



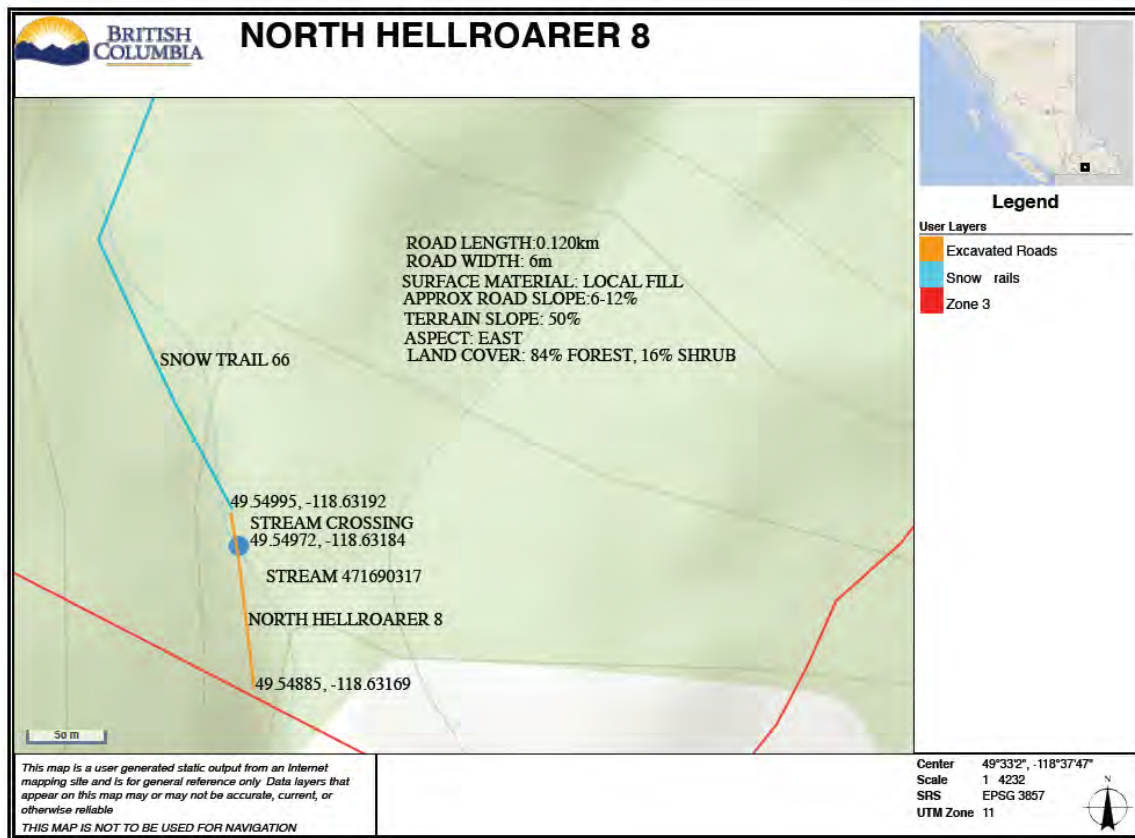
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3.2.12 North Hellroarer 8

North Hellroarer 8 stems off of Snow Trail 66 and crosses the southern border of Zone 3 to connects with South Hellroarer 2 in Zone 4. This road has a stream crossing over stream 471690317. The elevation range is between 1773 m-1780.

Figure 3-10: North Hellroarer 8



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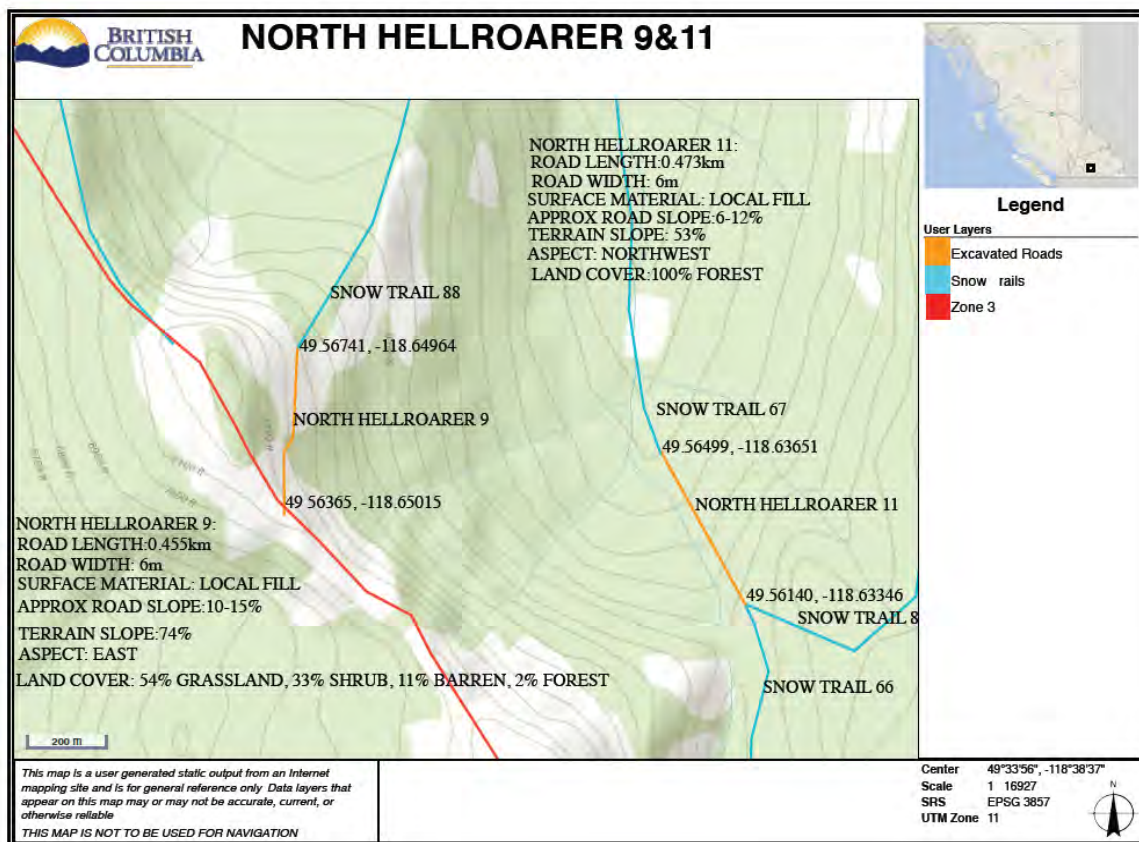
3.2.13 North Hellroarer 9

North Hellroarer 9 climbs the upper portion of Mt. Noren, connecting into South Hellroarer 11 in Zone 4, which transitions into a Snow Trail and follows the mountain top of Noren. It stems off of Snow Trail 88. The elevation range is between 2098-2164m.

3.2.14 North Hellroarer 11

North Hellroarer 11 will be constructed off of Snow Trail 67 and will create a junction point to Snow Trail 66 and Snow Trail 84. The elevation range is between 1767 and 1900m.

Figure 3-11: North Hellroarer 9&11



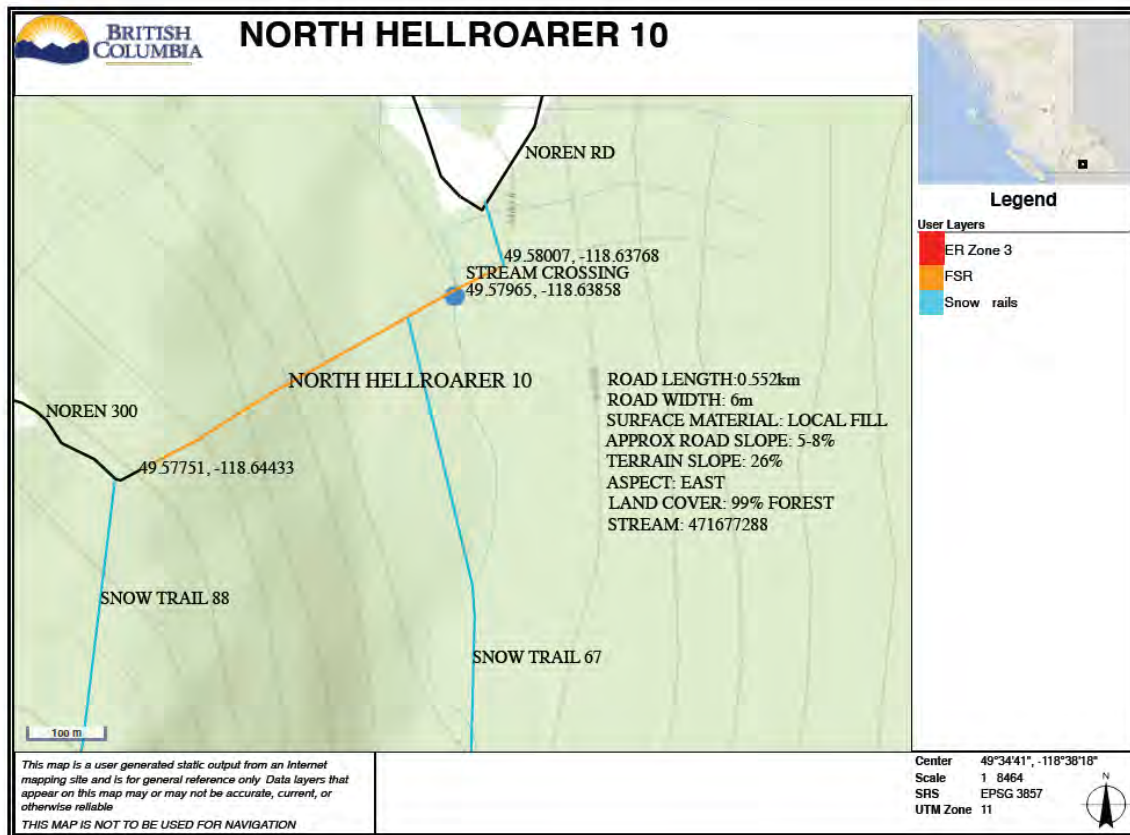
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3.2.15 North Hellroarer 10

North Hellroarer 10 is one of the roads that connects to an FSR (Noren 300) and creates a connection to another FSR (Noren Rd), via Snow Trail 41. The road will start at the end of Noren 300 and travels up be constructed off of Snow Trail 67 and will create a junction point to Snow Trail 66 and Snow Trail 84. The elevation range is between 1643 and 1787m.

Figure 3-12: North Hellroarer 10



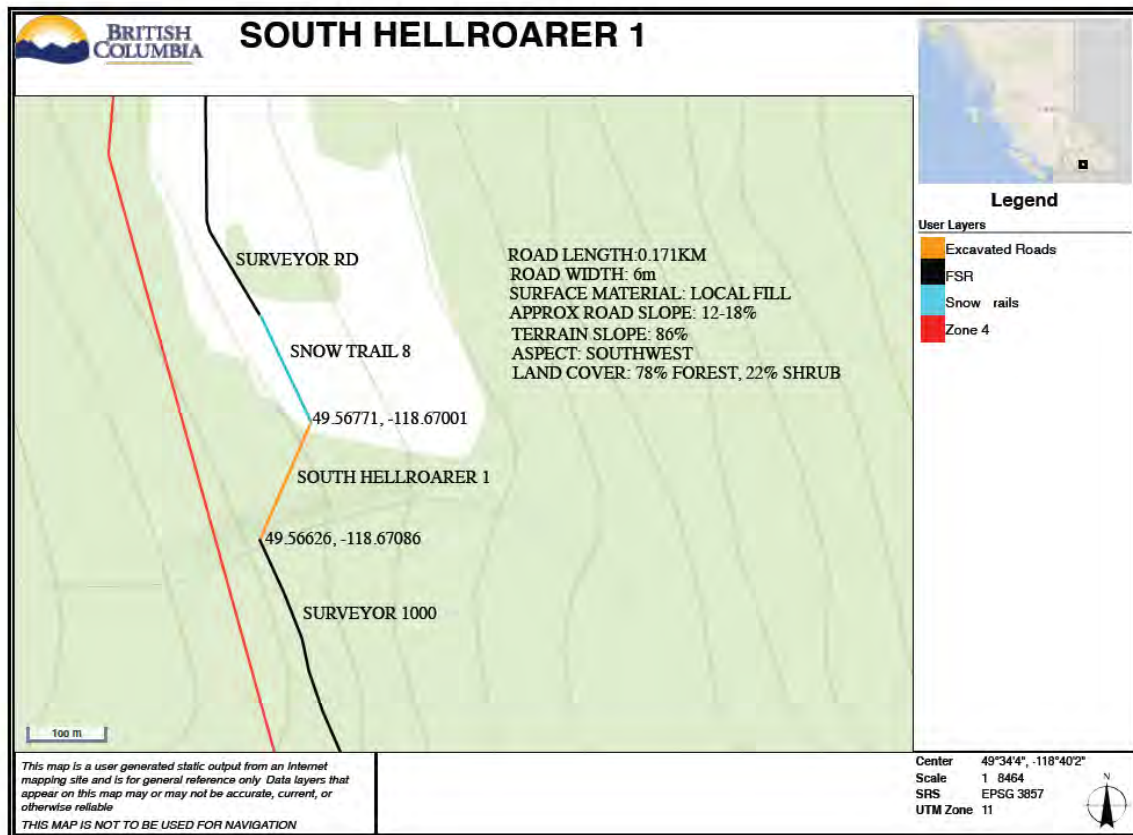
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3.2.16 South Hellroarer 1

South Hellroarer 1 also connects to an FSR (Surveyor 1000) and creates a connection to another FSR (Surveyor Rd), via Snow Trail 8. This is connecting a road system that is currently separated by forest. Tree removal will be necessary for this road. The elevation range is between 1796 and 1830m.

Figure 3-12: South Hellroarer 1



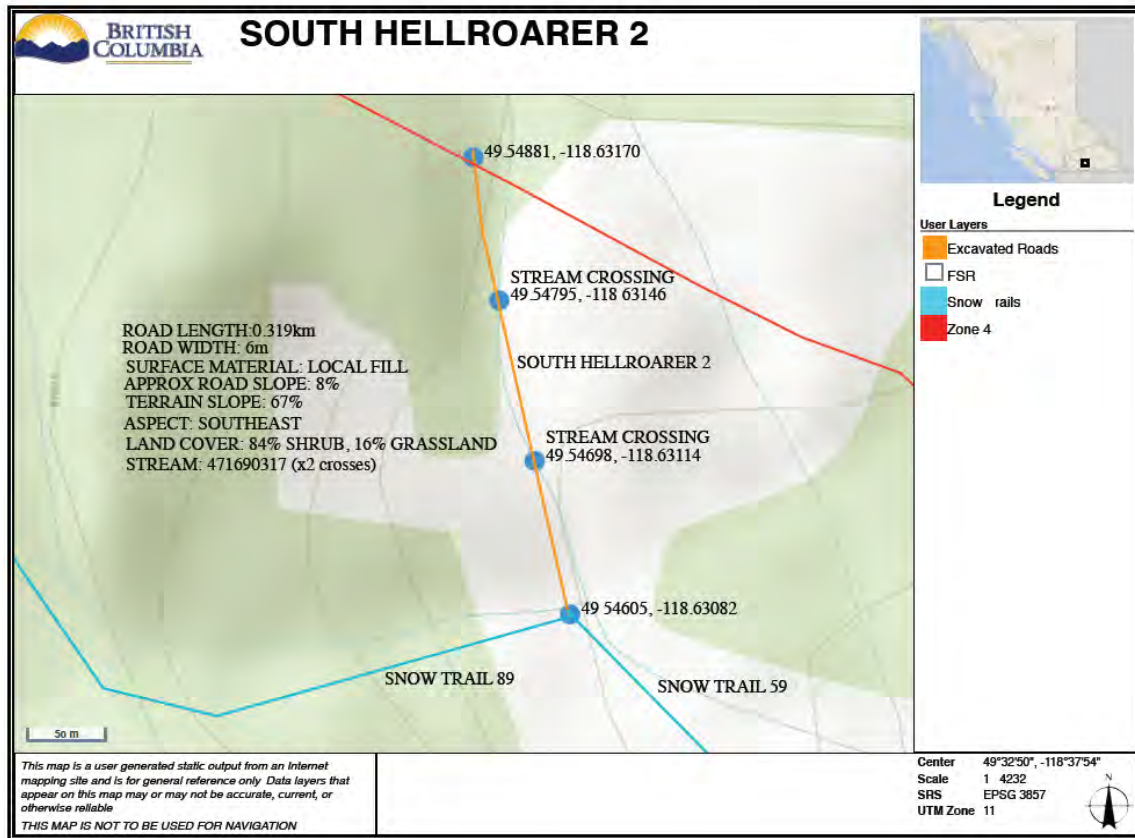
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3.2.16 South Hellroarer 2

South Hellroarer 2 will create a junction point between Snow Trail 89 and Snow Trail 59 within Zone 4, and also connects to North Hellroarer 8 in Zone 3. This road features steep cliffy terrain that will also necessitate tree removal. This road crosses stream 471690317 twice. The elevation range is between 1721-1773m.

Figure 3:13 - South Hellroarer 2



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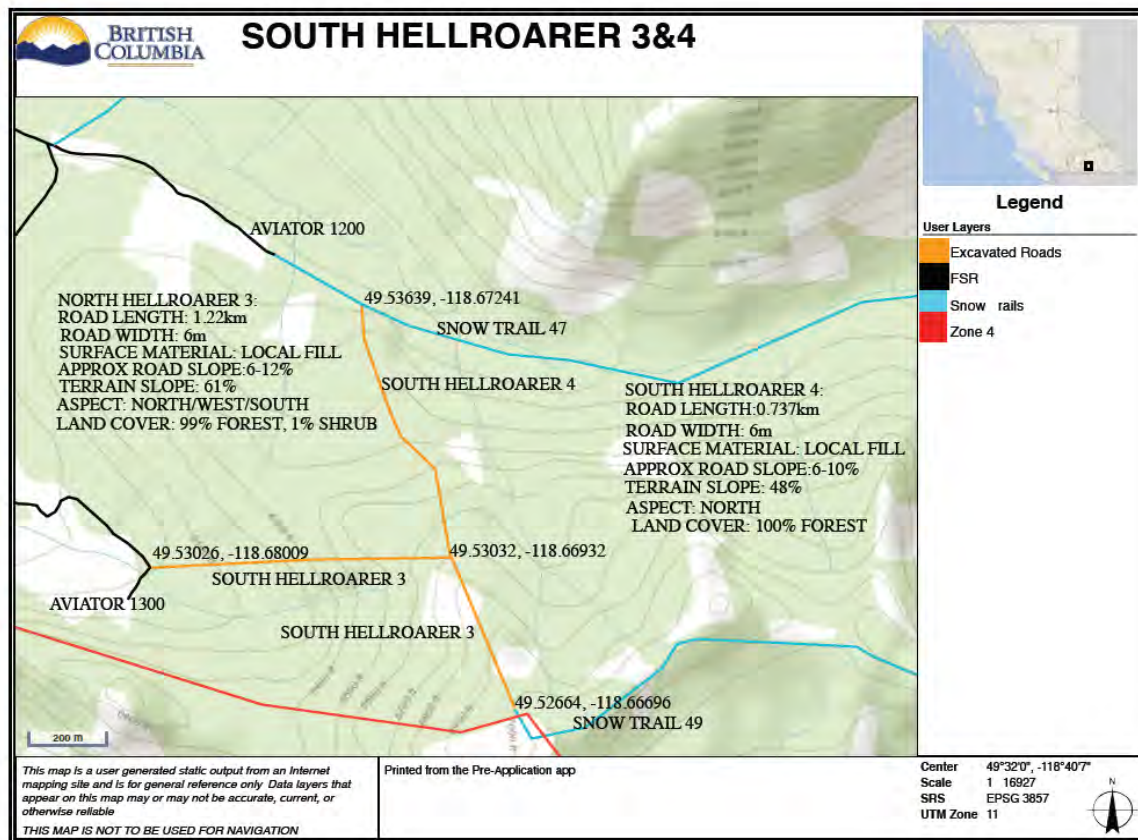
3.2.17 South Hellroarer 3

South Hellroarer 3 is the final road that connects to a FSR (Aviator 1300), and is also the longest of the proposed roads. This road serves as a major connector for this zone, beginning east from Aviator 1300 and traversing south up an unnamed mountain which is quite steep and cliffy to Snow Trail 49. This road also creates the junction point for South Hellroarer 4. The terrain is quite dense in trees so will necessitate tree removal. The elevation range is between 1830-2131m.

3.2.18 South Hellroarer 4

South Hellroarer 4 begins where South Hellroarer 3 pivots south. This road continues north into Snow Trail 47. Again, the land cover is predominantly forest and will necessitate tree removal. The elevation range is between 1822-2033m.

Figure 3-14: South Hellroarer 4



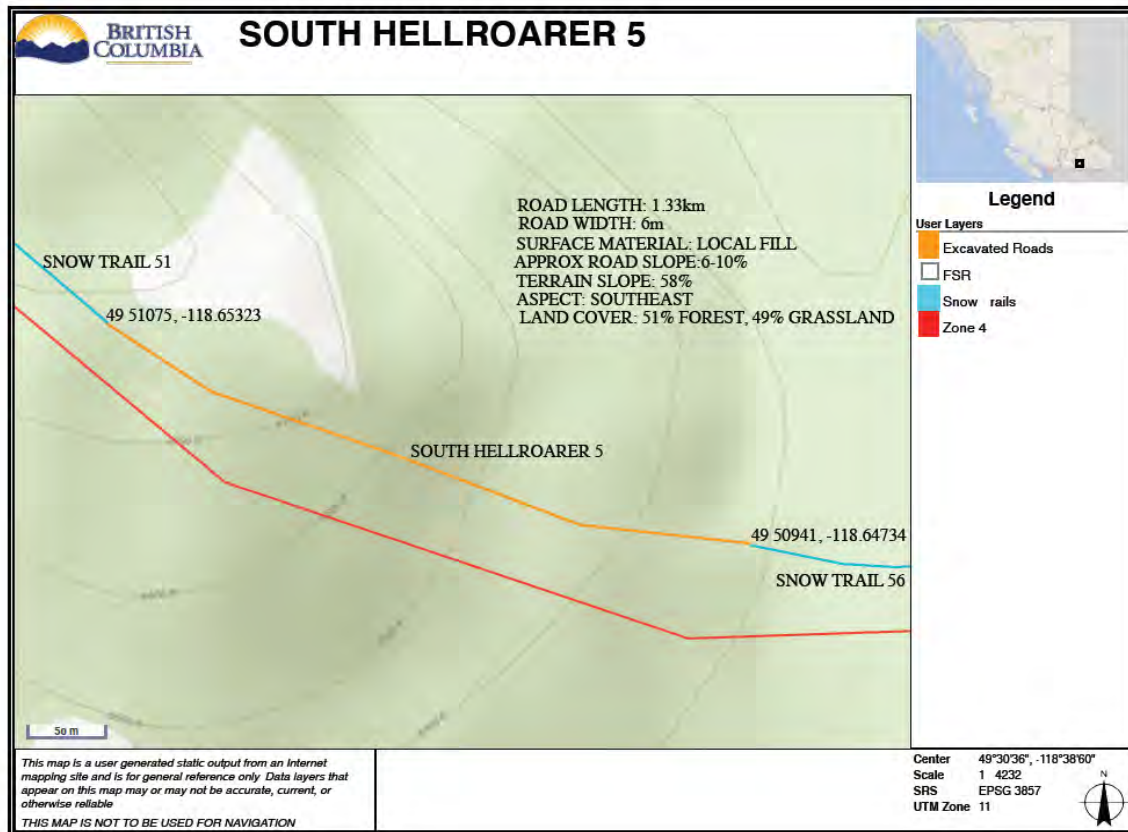
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3.2.19 South Hellroarer 5

South Hellroarer 5 is in the southern portion of Zone 4. It connects Snow Trail 51 to Snow Trail 56. The elevation range is between 1938-2081m.

Figure 3-15: South Hellroarer 5



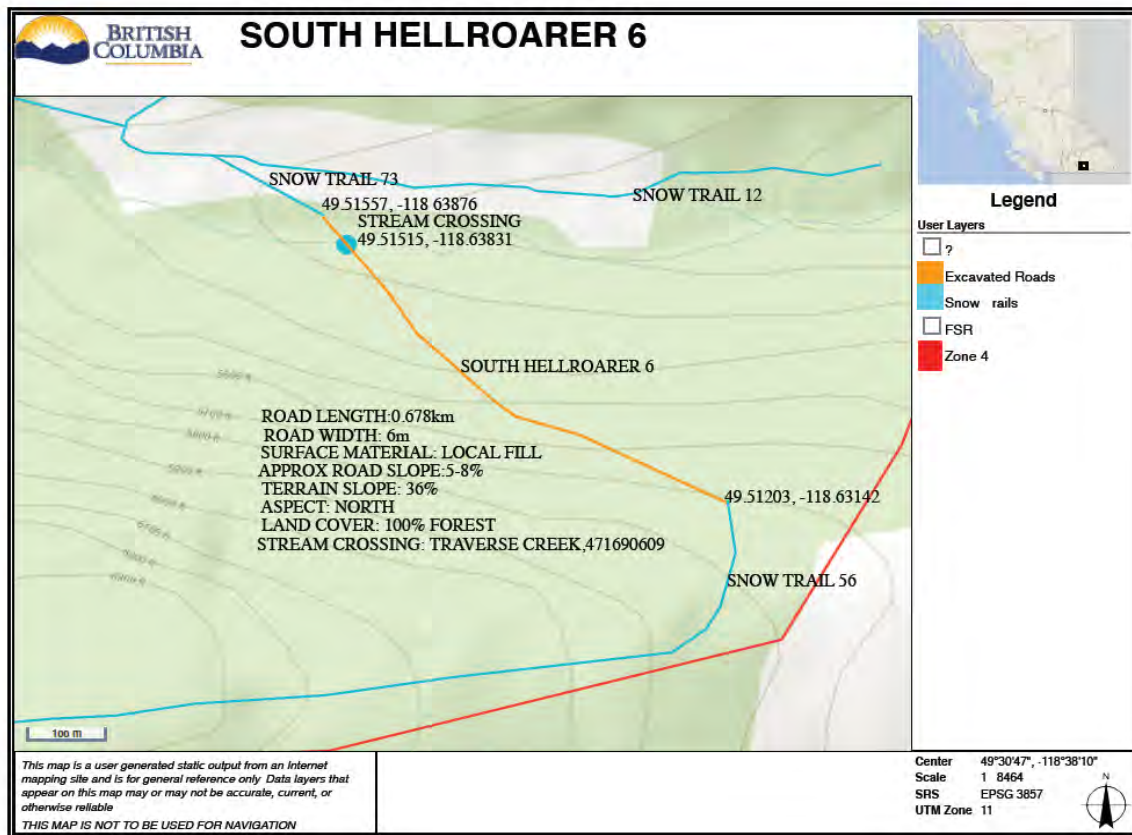
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3.2.20 South Hellroarer 6

South Hellroarer 6 is also in the southern portion of Zone 4. It is between Snow Trail 73 and Snow Trail 56 and crosses Traverse creek. It is at a lower elevation with the range between 1614-1738m. Tree removal will be necessary.

Figure 3-16: South Hellroarer 6



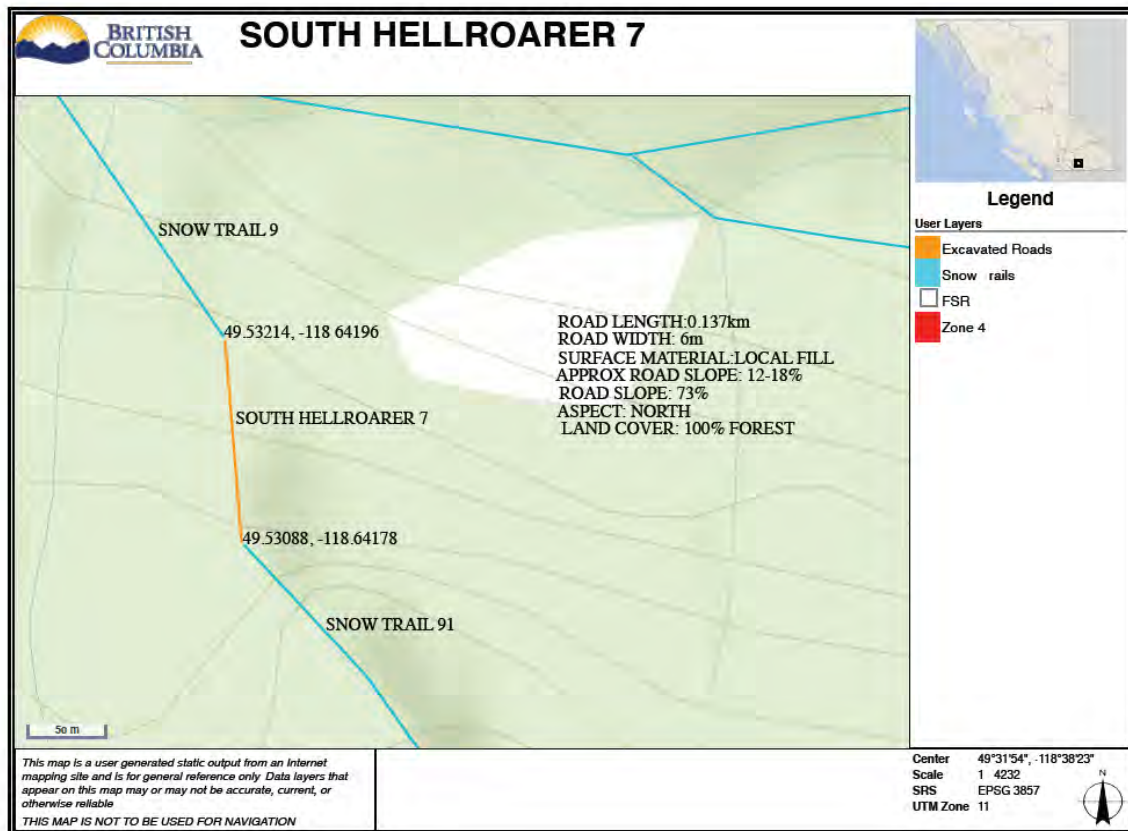
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3.2.21 South Hellroarer 7

South Hellroarer 7 climbs a steep cliff between Snow Trail 9 and Snow Trail 91. The elevation range is between 1696-1795m and land cover is predominately forest. Tree removal is required.

Figure 3-17: South Hellroarer 7



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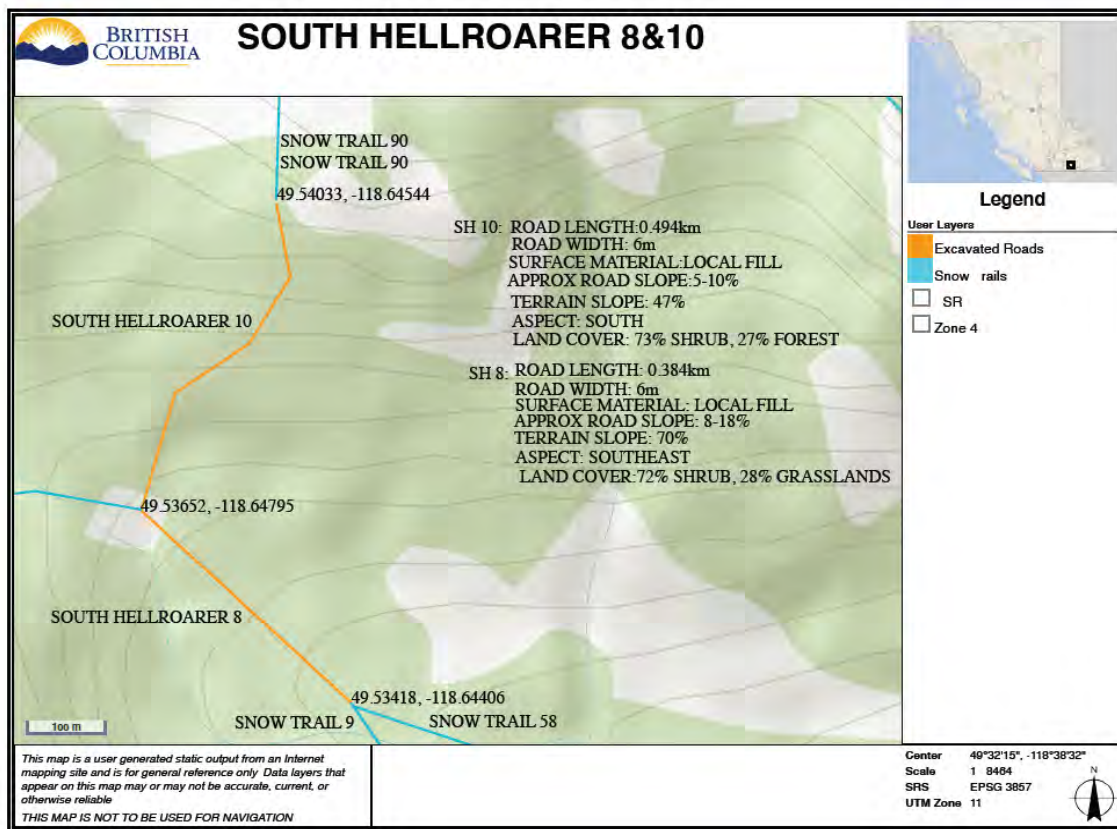
3.2.22 South Hellroarer 8

South Hellroarer 8 begins where Snow Trail 9 & 58 meet up at a junction. It ends where South Hellroarer 10 starts and also junctions with Snow Trail 47. The elevation range is between 1767-1857m. The trees are not super dense, but some removal will be necessary.

3.2.23 South Hellroarer 10

South Hellroarer 10 is essentially extends off South Hellroarer 8 and features similar terrain. The elevation levels range from 1767 to 1977m.

Figure 3-18: South Hellroarer 8&10



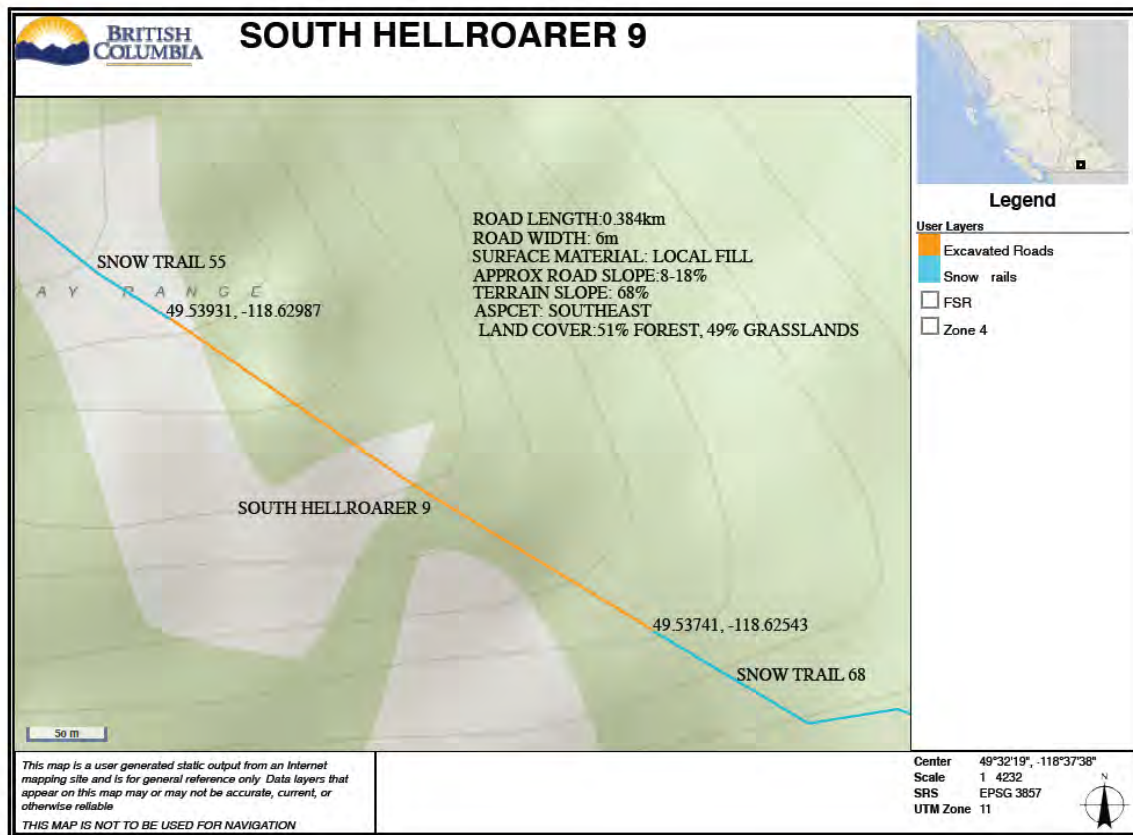
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3.2.24 South Hellroarer 9

South Hellroarer 9 connects Snow Trail 55 & 68 which climbs an unnamed mountain in the mid-eastern section of the tenure. The elevation range is between 1741-1903m and land cover is mixed between forest and grassland. Some tree removal is required to build this road.

Figure 3-19: South Hellroarer 9



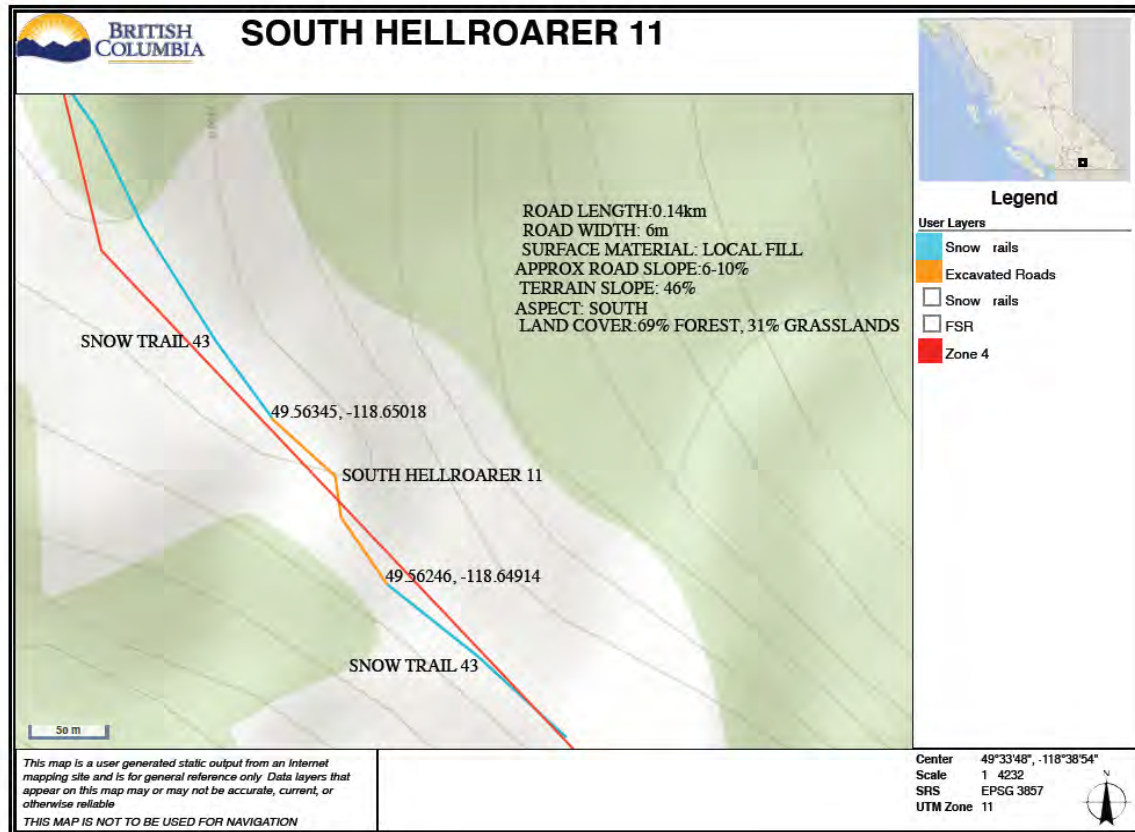
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3.2.25 South Hellroarer 11

South Hellroarer 11 connects into Zone 3 to North Hellroarer 9, and also with Snow Trail 43. The elevation 2142-2163m. This section of road has light tree removal.

Figure 3-20: South Hellroarer 11



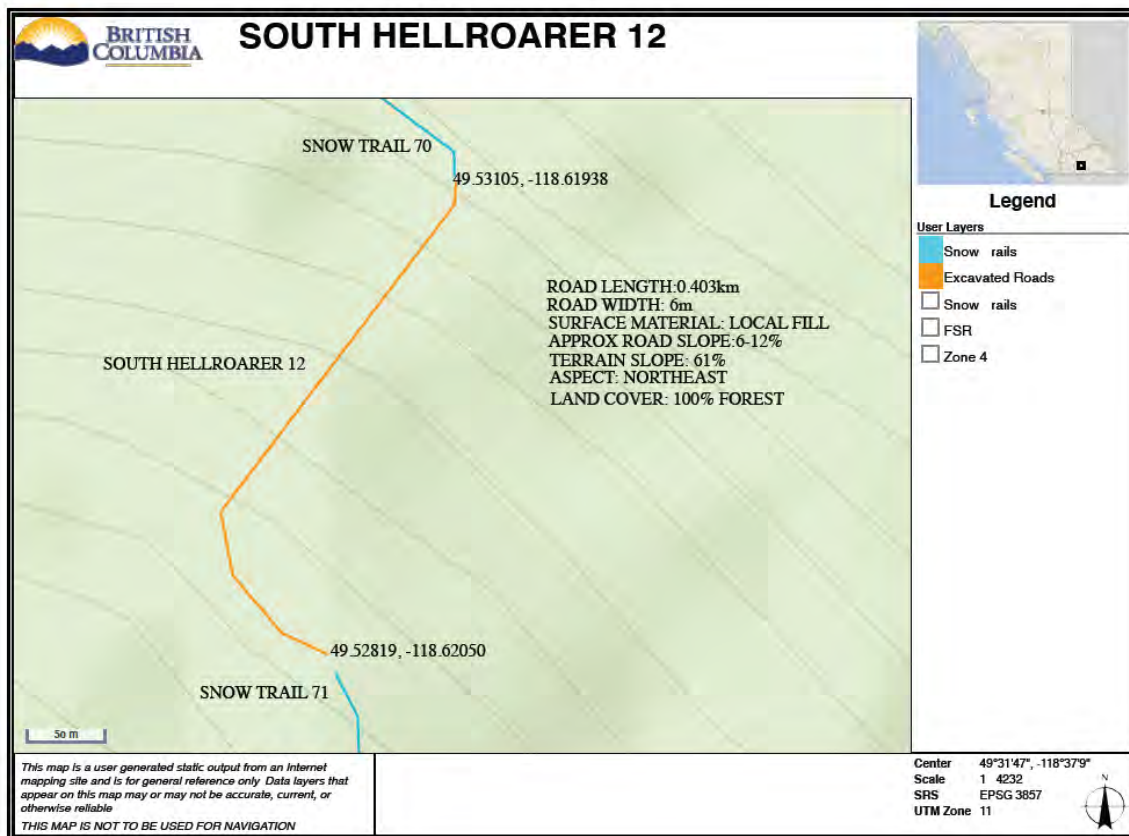
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3.2.26 South Hellroarer 12

South Hellroarer connects Snow Trail 70 which continues around the mountain ridges, and Snow Trail 71. It's elevation range is 1521-1713, so it is a lower elevation road in relation to others proposed by PRL.

Figure 3-21: South Hellroarer 12



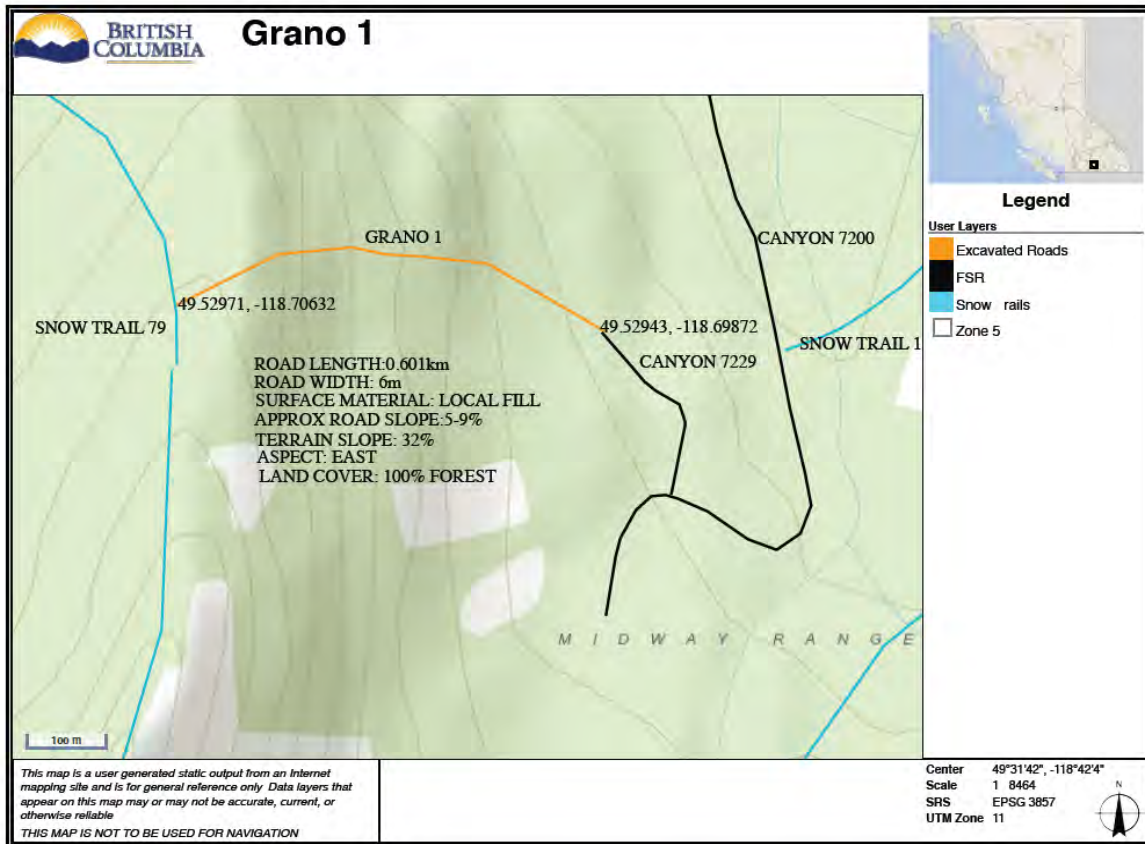
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3.2.26 Grano 1

Grano 1 is the final road that connects to an FSR (Canyon 7229). This road connects up into Snow Trail 79 and enables a crucial point of connectivity within the zone. It is located in the northern part of Zone 5 and has an elevation range of 1675-1894m.

Figure 3-22: Grano 1



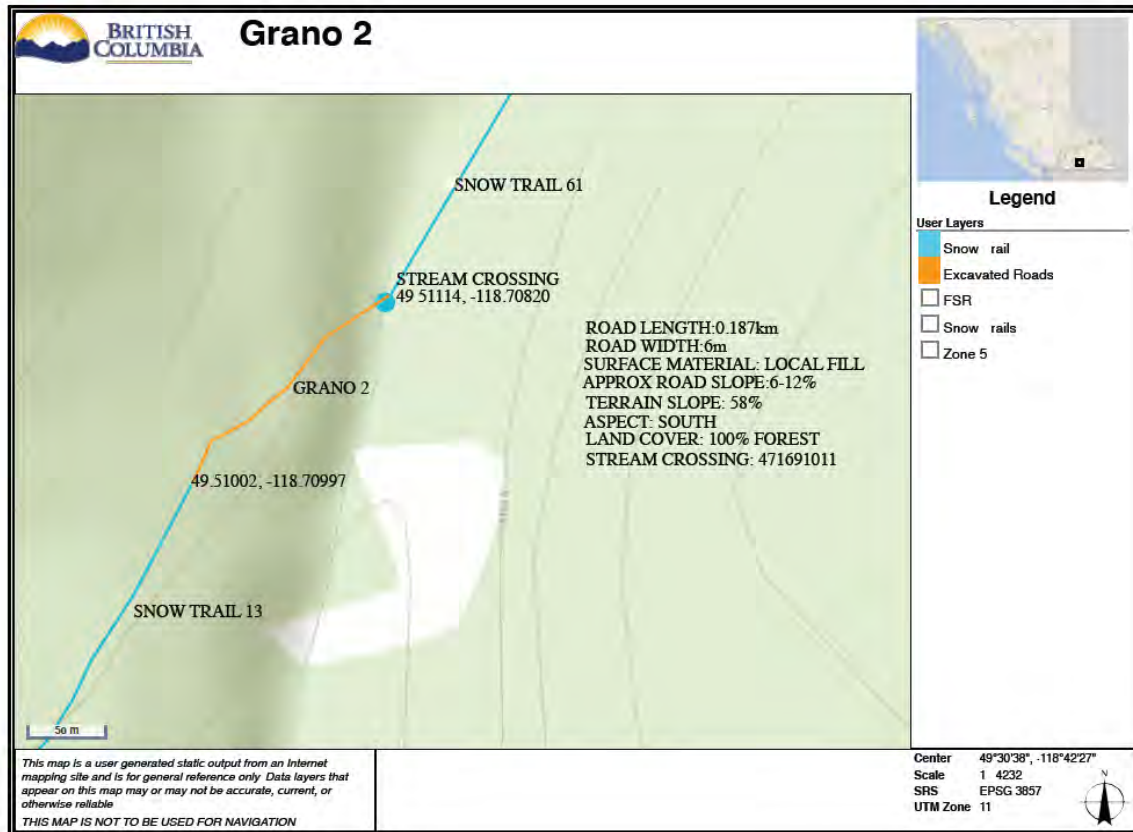
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3.2.27 Grano 2

Grano 2 is between Snow Trail 61 and Snow Trail 13. It is located in the central region of Zone 5 and has an elevation range of 1861-1884m. It also crosses stream 471691011.

Figure 3-23: Grano 2



4.0 ENVIRONMENTAL

PRL has a R.P Biologist prepared Environmental Impact Assessment for the proposed works within the tenure. This document is listed in *Appendix 1.0* of the Powder Renegade Lodge Adventure Tourism Commercial Recreation Tenure Management Plan. PRL has highlighted key areas of potential environmental impacts and mitigation strategies.

New roads will require detailed assessments. Findings could result in moving infrastructure locations or timing restrictions for construction activities that are could be disturbing to wildlife. Timing of the assessment will be best done in summer during nesting season, breeding season for amphibians (at the pond) and when vegetation is easiest to identify.

4.1 Stream Crossings

The proposed area is entirely within the Kettle River watershed. There is existing information for all streams with confirmed no-fish presence in all of the area. The streams that run through the proposed area to the west are tributaries to Rendell Creek (WSC 320-72800).

There are a total of 7 stream crossings necessary for the entire road network. The Water Sustainability Act applies to all works in or around watercourses including stream crossings and water use. These works require notification or authorization. PRL has reviewed Section 39 of the Water Sustainability Act and has determined that their proposal meets Section 39 (1) (a) criteria, and will submit an application for Notification for works in and about a stream for each stream crossing. As per the Forest Road Engineering Guidebook, a detailed site plan is usually not required for stream culverts not classified as major culverts or those installed on non-fish-bearing streams.

All waterbodies and water-filled ditches must have natural hydrology maintained (ie., building new roads will not redirect flows) for potential amphibian breeding. Potential amphibian breeding sites within 100m of new roads will have buffers of 10m where no existing vegetation or cover (including woody debris) will be removed.

All new stream crossings will be constructed to forestry standards and will require construction mitigation including diversion during installation, and erosion and sediment control measures.

4.1.1 Ford Design & Construction on Non-Fish Streams

A ford is a dip in a road constructed to facilitate crossing a stream. The objective of a ford is to maintain drainage and provide a safe, erosion-free, and storm-proof crossing that requires little or no maintenance. For a ford, the road profile dips into and out of the stream, creating a concave shape sufficient to ensure that the stream cannot be diverted away from its natural channel and down the road.

In isolated locations where maintenance equipment may not be available on a continuing basis, properly designed and constructed fords require little maintenance, and can be effective in reducing adverse impacts in drainage systems that are prone to debris flows or debris floods (Figure 3-16). Because these stream crossings are for areas of low traffic and intermittent use, a ford is a great alternative to bridges or culverts.

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Roadway License Management Plan

PRL is proposing the installation of a ford for each proposed stream crossing because of the seasonal, intermittent, isolated and non-fish bearing properties of the collective values considered.

Objectives of the ford road and corresponding design are to pass the design peak flow, minimize downstream erosion of the stream, prevent sediment input into the stream from the approaches and associated ditches, provide a suitable road profile to accommodate safe passage of the design vehicle, ensure that the stream remains in its channel and cannot be diverted down the road or ditches; and ensure that the ford will either pass channel debris-the preferable option-or trap it.

Figure 4-1 Ford Road Profile, Stream Cross-Section

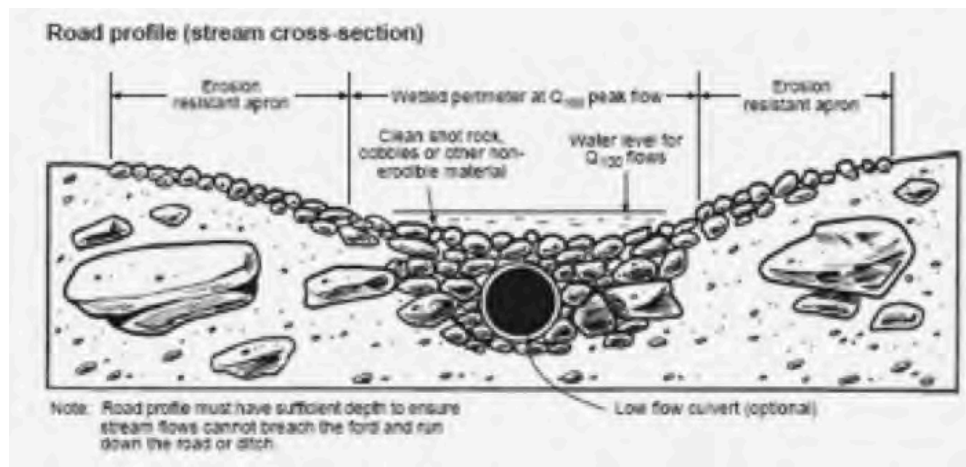
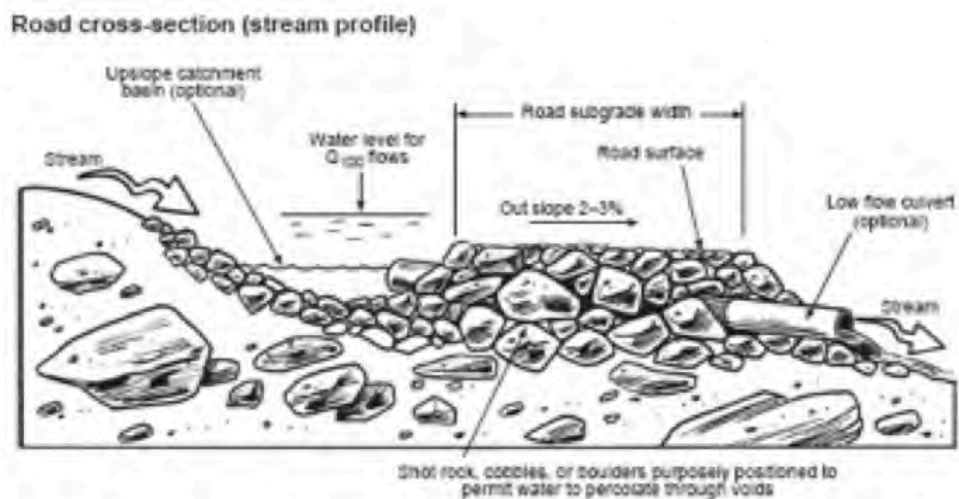


Figure 4-2 Stream Profile, Road Cross Section



October 2020

Roadway License Management Plan

4.2 Timber Removal Requirements

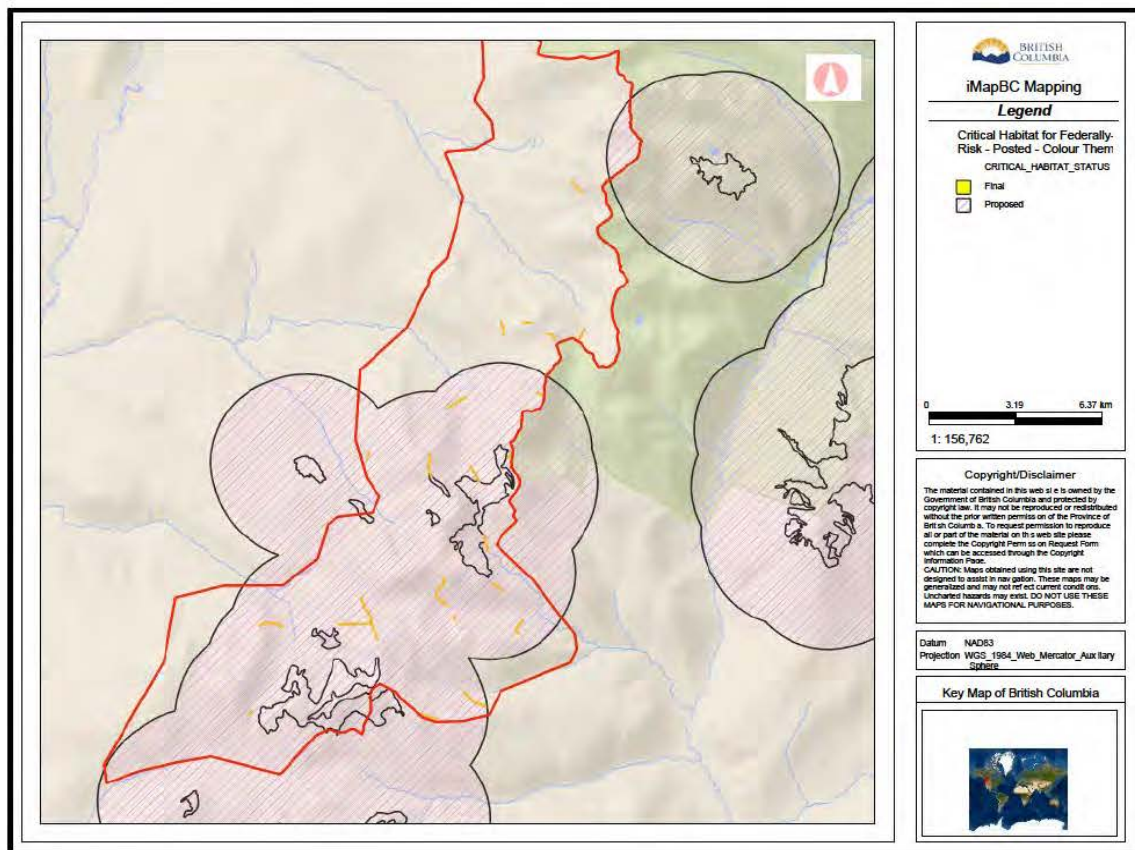
The removal of timber is necessary for the majority of proposed roads. Avoidance areas will include Wildlife Habitat Areas, OGMA's, Whitebark Pine critical habitat.

4.2.1 Whitebark Pine

PRL will ensure there is no vegetation removal within Whitebark pine critical habitat (high density occurrence areas), and no removal of Whitebark pine during construction of roads within the 2km critical habitat regeneration and recovery zone. Within the Project Area, there is no proposed infrastructure within the high density occurrence areas (small black polygons). Clearing for roads/trails in the 2km regeneration and recovery zones will be surveyed and any Whitebark Pine will be reserved.

Any vegetation removal within Whitebark Pine regeneration and recovery zones will require assessment by a QEP to avoid removal of whitebark pine as well as protecting root systems of individual trees.

Figure 4-3: Whitebark Pine and PRL Proposed Excavated Roads



Powder Renegade Lodge Inc

36

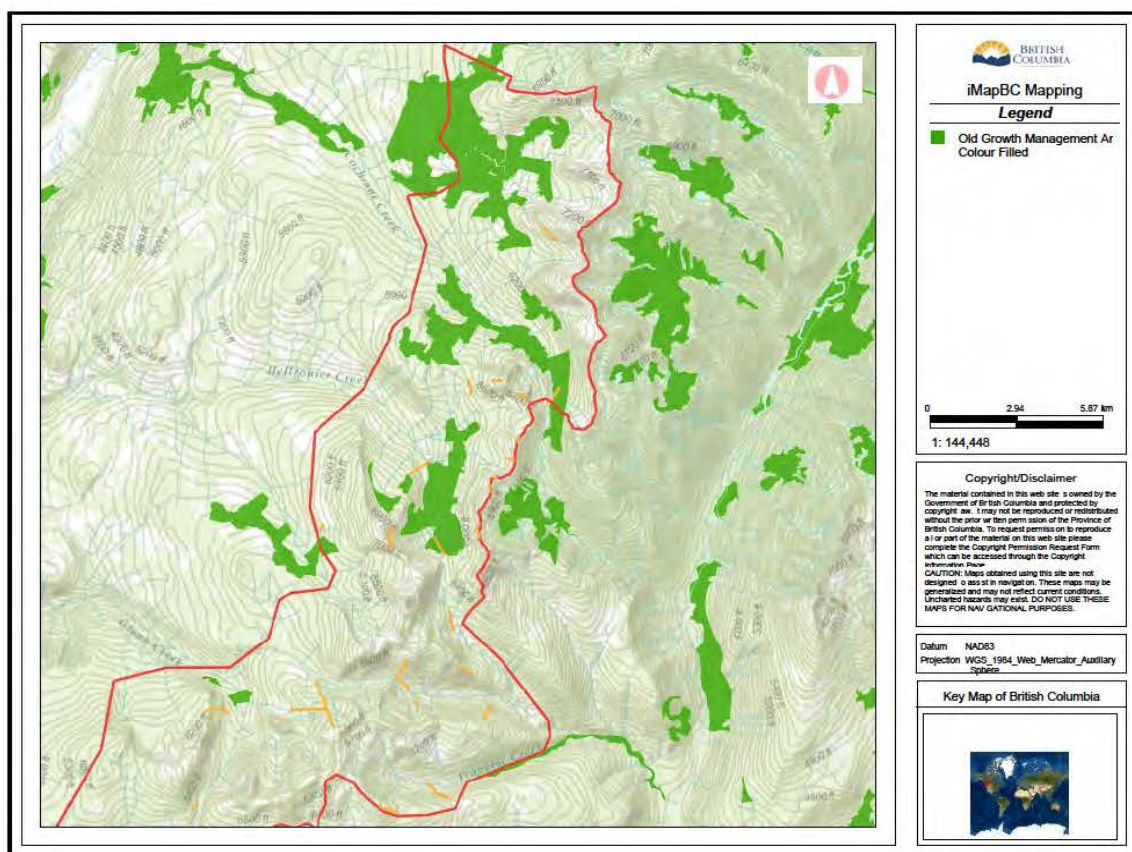
October 2020

Roadway License Management Plan

4.2.2 Old Growth Management Areas (OGMA)

There are non-legal Old Growth Management Areas designated in the Project Area. These areas have been designated during Landscape Unit planning to meet biodiversity objectives but in theory could be amended if tree removal was required. Where tree removal is proposed, PRL will seek approval from the Forest District (if required).

Figure 4-4: Non-legal Old Growth Management Areas vs PRL Excavated Roads



4.3 Soil Erosion and Invasive Species

To minimize surface soil erosion and invasive weed colonization after road construction, all disturbed soils will be seeded with an erosion control grass seed mix. A variety of erosion seed mixes are available that provide for rapid germination and long-term growth to create a solid layer. The seed species selected will be compatible with native species and soil.

October 2020

Roadway License Management Plan

4.4 Drainage Control Measures

Any permanent culvert materials will be fabricated in accordance with the current Canadian Standards Association specifications. To maintain surface drainage patterns, PRL will keep water in its own drainage area, unless moving it to another area is necessary to avoid unstable or sensitive soils. Before culvert locations and outlet controls are determined the potential for adverse upslope, downslope and downstream impacts will be considered. Measures to limit these impacts include: installing flumes or riprap; or carrying drainage flow farther along the ditch line to discharge it onto stable slopes.

Drainage systems are used to intercept and manage surface or subsurface drainage. If the soils are easily erodible, PRL will consider changing the ditch gradient, alignment, or cross-section, or adding extra culverts, to reduce the distance over which water will have to be carried. To minimize sediment delivery to streams, the water conveyed in ditches and cross-drain culverts will not be discharged directly into streams. These flows will be allowed to settle out through the natural vegetation on the forest floor before reaching any stream.

PRL will install drainage systems, permanent or temporary, concurrently with subgrade construction. Temporary structures, such as cross-ditches, swales, will be considered where water is encountered, to accommodate the peak flows likely to be encountered during construction.

If a storm takes place, the in-place drainage structures will be capable of handling the runoff without damage resulting to the road or other resources. These can accommodate surface and subsurface drainage runoff throughout the construction period.

4.5 Wildlife and Sensitive Habitats

Refer to *Appendix 1.0* in PRL's License of Occupation Tenure Management Plan for a full Environmental Impact Assessment and wildlife mitigation. With respect to road building, the main species of concern is Grizzly Bear habitat.

4.5.1 Grizzly Bear

No roads or trails to be constructed within 50m (with exceptions of required stream crossings and 1 crossing of an avalanche track if unavoidable) of:

1. Avalanche tracks
2. Hedysarum, glacier lily (*Erythronium*) and spring beauty complexes >0.5ha (preferably >0.2ha)
3. Subalpine parkland meadows
4. ESSFdc1 site series 06, 07 (1990) / 08, 09, 10 (2005).

October 2020

Roadway License Management Plan

5.0 ROAD INSPECTION AND MAINTENANCE

Road inspections will occur during spring freshet, as the majority of the higher elevation roads will not be accessible once the snow trails have melted. Recommended maintenance would be completed in the fall when the snow trails begin accumulation. If an inspection determines a drainage structure is compromised immediate steps need to be taken to mitigate problems.

4.0 IMPACTS ON OTHER USERS

The majority of PRL's proposed roads will be constructed between snow trails, with only 4 roads connecting to FSR's. These roads are being constructed for the sole purpose of PRL's cat skiing operation. PRL is avoiding connecting their roads to FSR's unless necessary to avoid opening up the high alpine terrain to summer users (ie, ATV's, dirt bikes and recreational hiking). The majority of these roads will not be accessible to other users.

The roads that connect to FSR's are smaller extensions, which are not high alpine. The main access road will provide year round access to the lodge site, which we do not anticipate many other users to be interested in using. PRL will remain open to discuss any possible road use agreements with other licensees in the area, if they wish to use the roads PRL is creating.

6.0 RECLAMATION

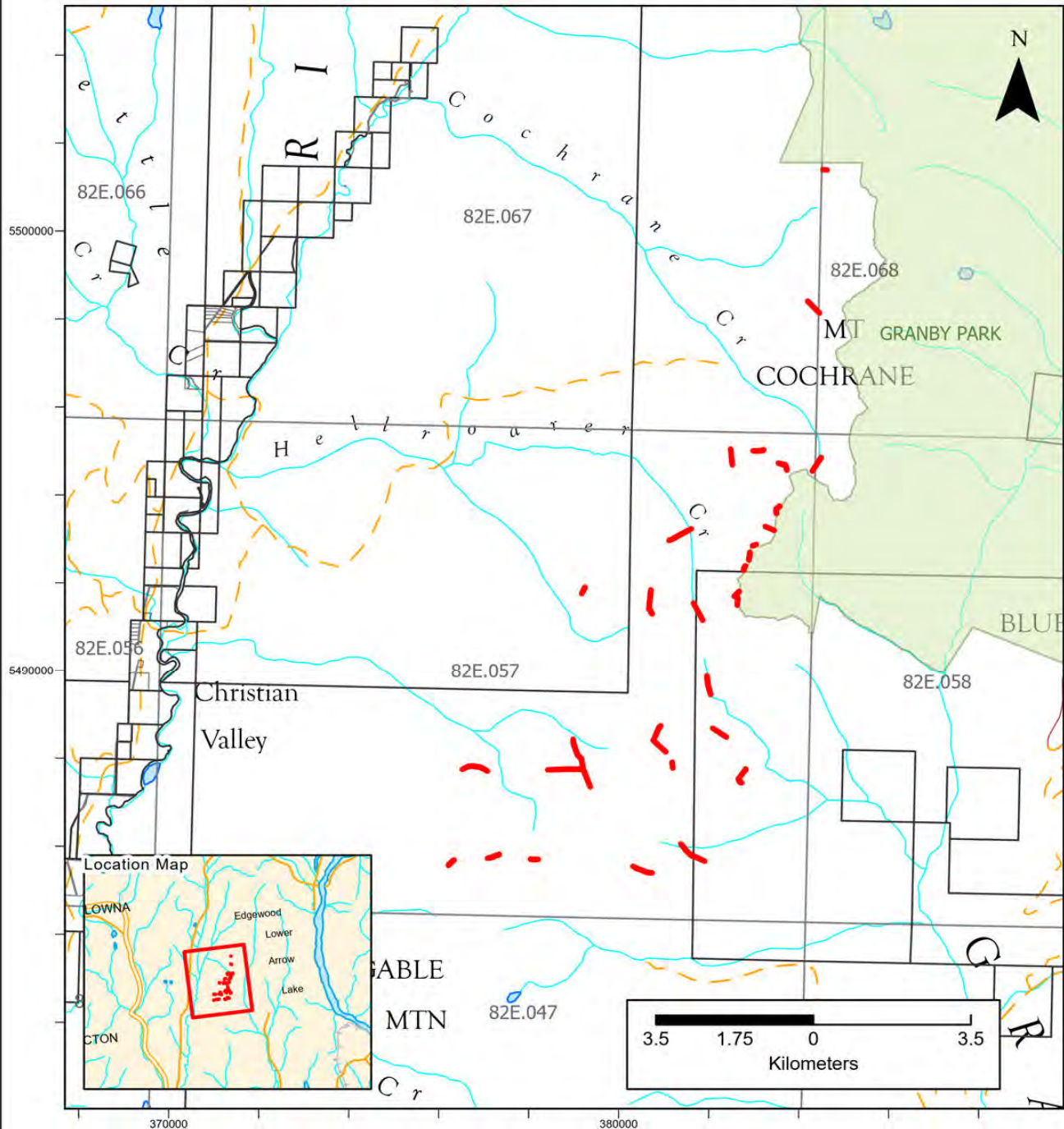
If PRL ceases to use a road, appropriate deactivation measures will be assessed and executed. PRL anticipates a minimum 30 year term for the use of these roads.

LICENCE

Legal Description Schedule

File No: 4406149
Disposition: 940444

That portion of Unsurveyed Crown Land in the vicinity of Mount Noren and Granby Park, SDYD, together with those parts of District Lots 2714 and 3635, SDYD, more particularly shown outlined in red, containing 7.78 hectares, more or less.



Scale: 1:120,000

 4406149

BCGS Mapsheet(s): 82E.057 and various

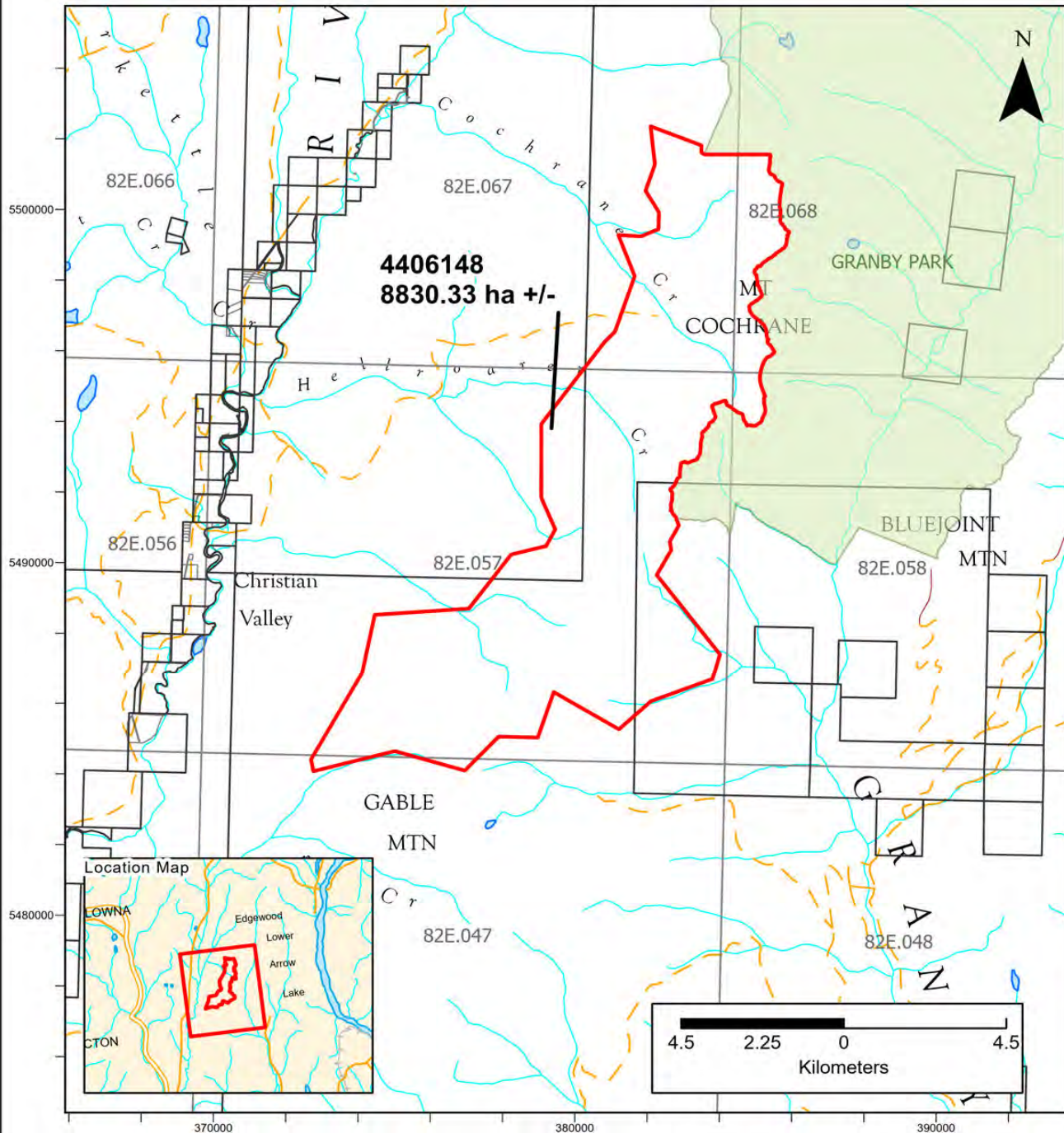
Page ____ of ____

LICENCE

Legal Description Schedule

File No: 4406148
Disposition: 940445

That portion of Unsurveyed Crown Land in the vicinity of Mount Noren and Granby Park, SDYD, together with those parts of District Lots 2714 and 3635, SDYD, more particularly shown outlined in red, containing 8830.33 hectares, more or less.



Scale: 1:150,000

 4406148

BCGS Mapsheet(s): 82E.047 and various

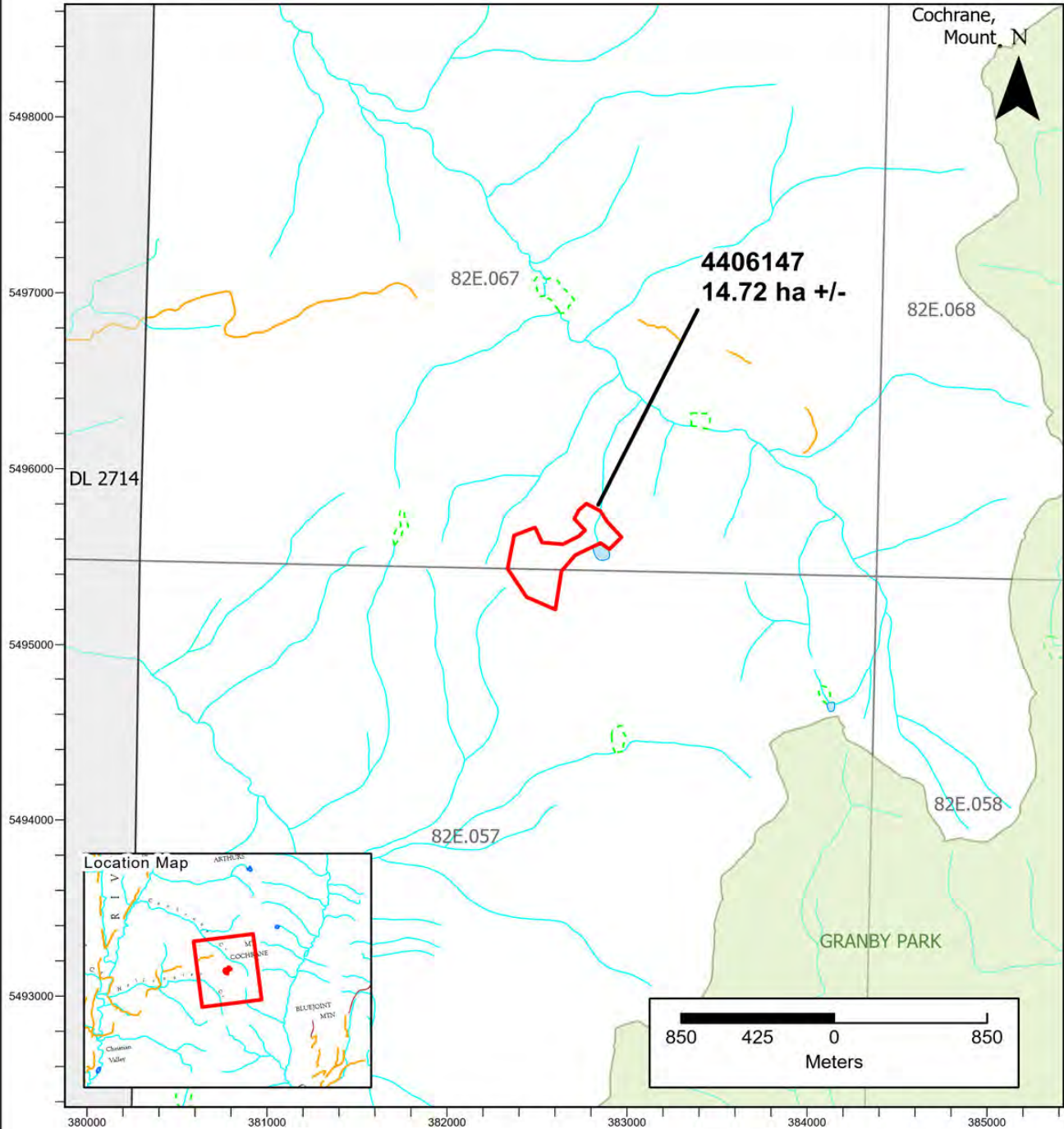
Page ____ of ____

LEASE

Legal Description Schedule

File No: 4406147
Disposition: 940443

That portion of Unsurveyed Crown Land in the vicinity of Granby Park, SDYD, more particularly shown outlined in red, containing 14.72 hectares, more or less.



...cranbrook\Status\mxd\2020\4406147.aprx LG Nov 5 2020

Scale: 1:30,000

 4406147

BCGS Mapsheet(s): 82E.057; .067

Page ____ of ____



Staff Report

RE:	Agricultural Land Commission Referral (Subdivision) – Kocsis		
Date:	January 28, 2021	File #:	E-1020-04509.000
To:	Chair Langman and members of the Board of Directors		
From:	Danielle Patterson, Planner		

Issue Introduction

The Regional District of Kootenay Boundary (RDKB) has received a referral from the Agricultural Land Commission (ALC) for an application to subdivide land within the Agricultural Land Reserve (ALR) in Electoral Area E/West Boundary, near Greenwood (see Attachment 1 – Site Location Map).

Property Information	
Owner(s):	Colleen Kocsis and George Kocsis
Applicant:	Colleen Kocsis
Location:	2725 Boundary Creek Road
Electoral Area:	Electoral Area E/West Boundary
Legal Description:	District Lot 1020, Similkameen Div. of Yale Land District
Area:	128.2 ha (316.9 ac)
Current Use(s):	Single Family Residential; Hay Crop; Vacant Land
Land Use Bylaws	
OCP Bylaw:	NA
DP Area:	NA
Zoning Bylaw:	NA
Other	
ALR:	Approximately 113 ha (279 ac) of 128.2 ha in ALR
Waterfront / Floodplain:	Boundary Creek

History / Background Information

The subject property is located on Boundary Creek Road, roughly 9 km north of the City of Greenwood (see Attachment 2 – Subject Property Map). The property is double-hooked, with Boundary Creek Road running through the northeast corner of the parcel and Boundary Creek running the length of the west side of the property. The subject property is surrounded by Crown land to the east and agricultural uses to the north, west, and south, including rangeland and a beef and hay ranch. An access easement located

on the northwest corner of the subject property is for the residents of 2745 Boundary Creek Road to access Boundary Creek Road.

Approximately 15 ha (37 ac) of the subject property located near the east and west parcel boundary are located outside of the ALR. The applicant states that 20 ha (49.4 ac) of the land is used for grazing, another 1.8 ha (4.4 ac) is used for hay crop, and 26 ha (64.2 ac) is vacant/unused. There are two single detached dwellings and multiple farm buildings on the portion of the property to the west of Boundary Creek Road. The portion of the property east of Boundary Creek Road is undeveloped on a hillside.

Proposal

The applicant is requesting a two-parcel subdivision within the ALR (see Attachment Attachment 3 – Applicant Submission). The proposal is to subdivide the subject property where it is intersected at Boundary Creek Road so that the larger 110.7 ha (273.5 ac) remainder parcel would be to the west of Boundary Creek Road and the smaller 16 ha (39.5 ac) parcel would be on the east side of Boundary Creek Road.

The applicant states that the proposed 16 ha (39.5 ac) parcel is undeveloped and hilly terrain. The applicant plans for an adult child to build a home on this smaller parcel. The adult child intends to operate a small hobby farm and complete land improvements, while providing nearby family support to the applicant in operating the farm on the larger 110.7 ha (273.5 ac) parcel.

Advisory Planning Commission (APC)

The Electoral Area 'E'/West Boundary APC supported the application at their January 4, 2021 meeting. Their rationale was as follows:

- “The portion in question was of marginal agricultural use itself; the part with the timber is steep,
- It was naturally divided by the road,
- Subdivision shouldn't negatively impact the larger farm.”

Implications

There are no land use, zoning or OCP bylaws within this portion of Electoral Area E/West Boundary. Due to this, there are no land use policies to reference regarding the proposed land use or parcel size.

The 2018 Boundary Area Agricultural Plan, includes goals that lend both support and non-support to the application. The proposal is consistent with the Goal 4, to “support multigenerational farms and emerging farmers.” However, Goal 1 of the Plan is to “protect and support farmland for future generations.” While the proposal may make farming activities more feasible for the current owners and expand the lands used in hobby farming, there is a risk associated with fragmenting ALR lands and allowing for increased residential density within the ALR.

In communications with staff, the applicant stated that due to a second detached dwelling existing on the subject property, the property owners are not able to apply to the ALC for

a Non-Adhering Residential Use for a Second Dwelling or install a mobile home (which is permitted without an ALC application until July 2021). An immediate family members resides in this second dwelling.

This subdivision proposal is exempt from the *Local Government Act* parkland provision requirements.

Recommendation

That the Regional District of Kootenay Boundary Board of Directors direct staff to forward the staff report, without a recommendation, to the Agricultural Land Commission for the subdivision application submitted by Colleen Kocsis for the property legally described District Lot 1020, Similkameen Division of Yale Land District at 2725 Boundary Creek Road, Electoral Area 'E'/West Boundary.

Attachments

1. Site Location Map
2. Subject Property Map
3. Applicant Submission

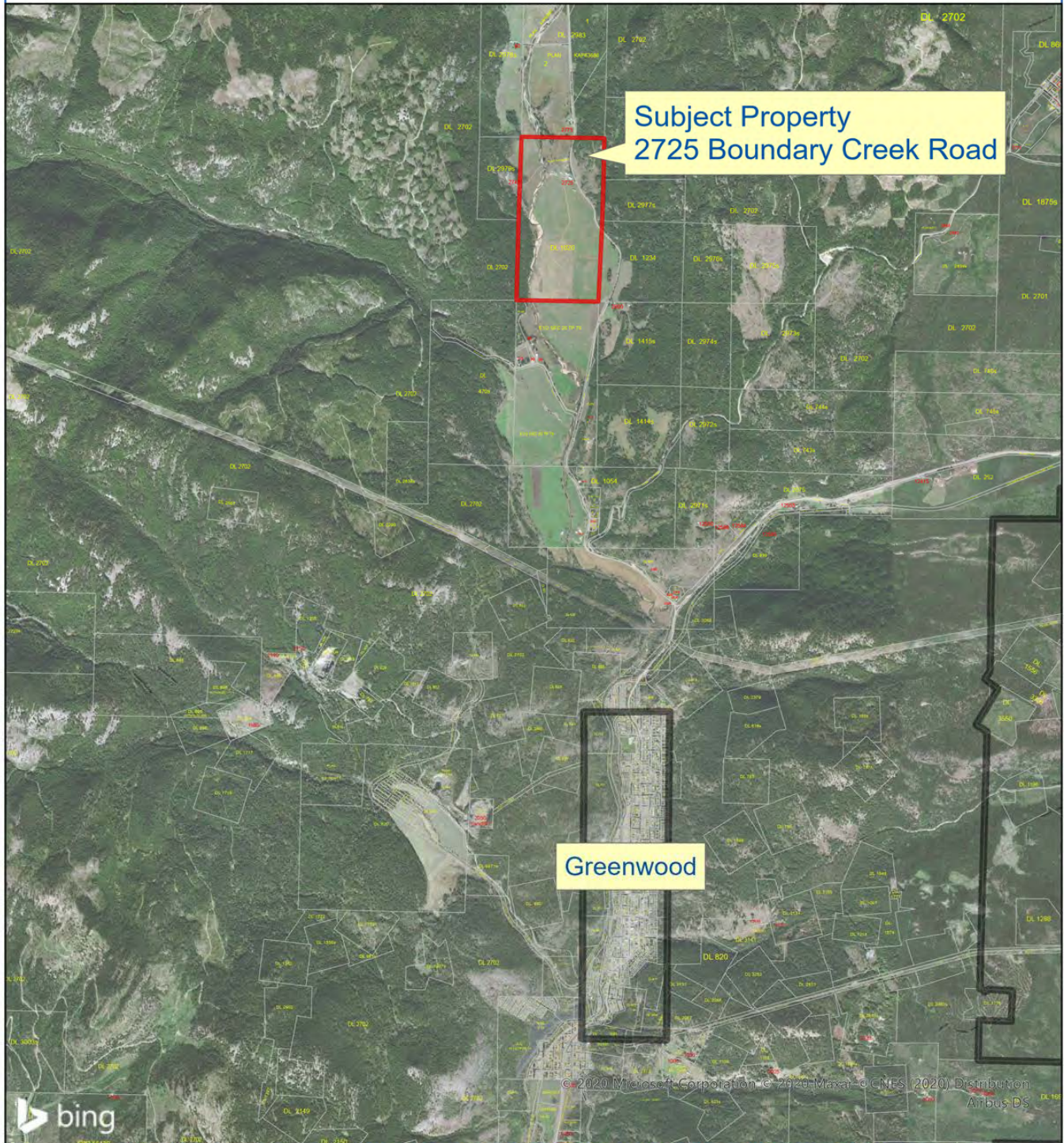
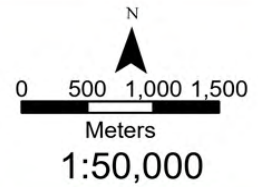


Regional District of
Kootenay Boundary

Date: 2020-12-03

Site Location Map

District Lot 1020,
Similkameen Div of Yale Land District



202-843 Rossland Ave, Trail BC V1R 4S8 | T: 250.368.9148 | T/F: 1.800.355.7352 | rdkb.com

Document Path: PD\EA 'E'\E-1020-04509.000_Kocsis\2021-January-ALC Subdivision\Maps

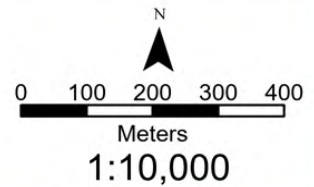


Regional District of
Kootenay Boundary

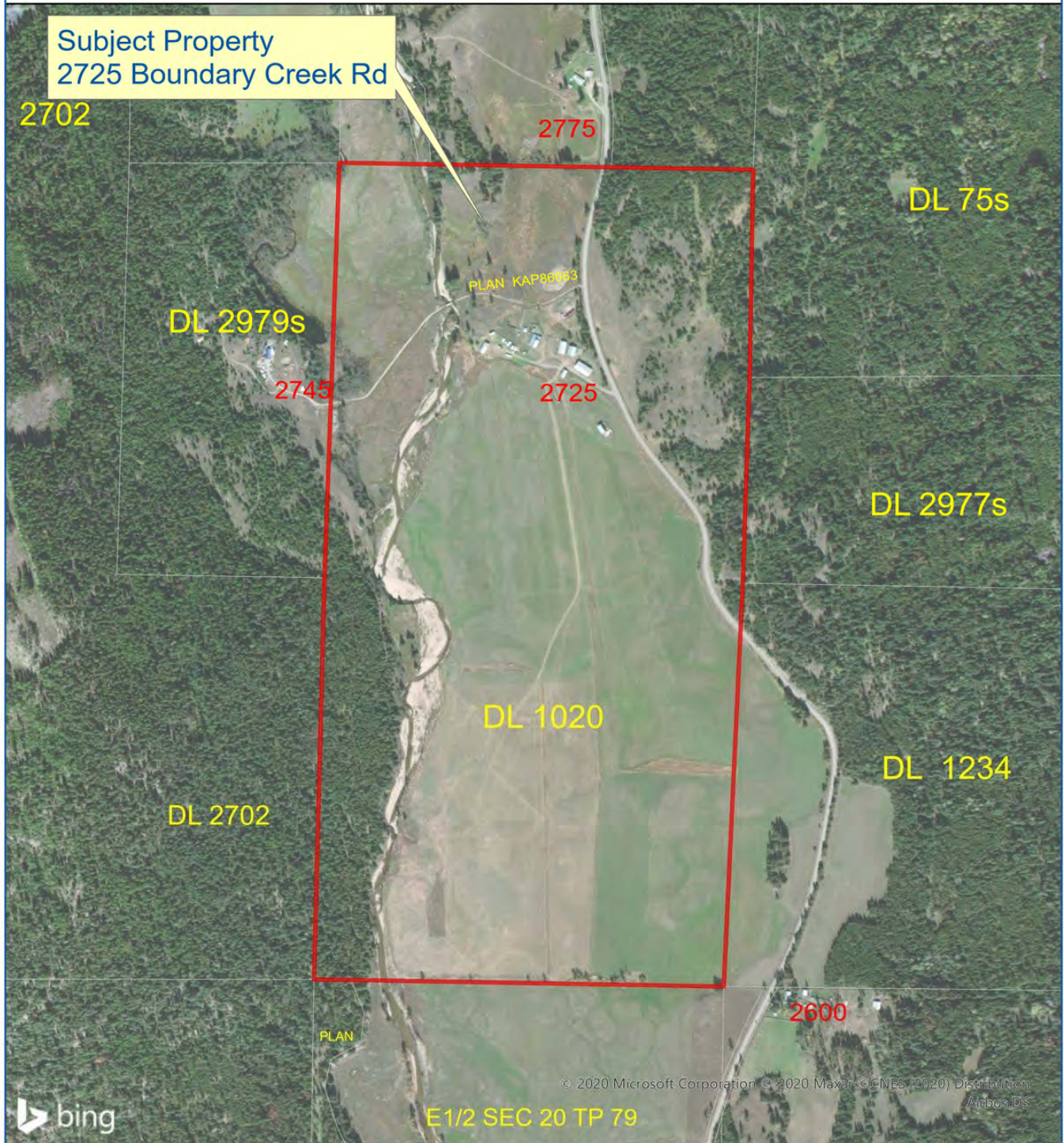
Date: 2020-12-03

Subject Property Map

District Lot 1020,
Similkameen Div of Yale Land District



Subject Property
2725 Boundary Creek Rd



202-843 Rossland Ave, Trail BC V1R 4S8 | T: 250.368.9148 | T/F: 1.800.355.7352 | rdkb.com

Document Path: PD\EA 'E\1020-04509.000_Kocsis\2021-January-ALC Subdivision\Maps

Provincial Agricultural Land Commission - Applicant Submission

Application ID: 61818

Application Status: Under LG Review

Applicant: Colleen Kocsis , George kocsis

Agent: Colleen Kocsis

Local Government: Kootenay Boundary Regional District

Local Government Date of Receipt: 11/19/2020

ALC Date of Receipt: This application has not been submitted to ALC yet.

Proposal Type: Subdivision

Proposal: The proposed 16 ha parcel would be for our daughter and her family. They plan to build a modest home and have a small cattle/horse operation as well as raise farm animals and garden. Homesteading is the overall goal.

Agent Information

Agent: Colleen Kocsis

Mailing Address:

[REDACTED]

Primary Phone: [REDACTED]

Mobile Phone: [REDACTED]

Email: [REDACTED]

Parcel Information

Parcel(s) Under Application

1. **Ownership Type:** Fee Simple

Parcel Identifier: 013-423-576

Legal Description: District lot 1020 Similkameen Division yale district

Parcel Area: 126.7 ha

Civic Address: 2725 Boundary Creek Road, Greenwood BC, V0h 1j0

Date of Purchase: 08/14/2020

Farm Classification: No

Owners

1. **Name:** Colleen Kocsis

Address:

[REDACTED]

Phone: [REDACTED]

Cell: [REDACTED]

Email: [REDACTED]

Applicant: Colleen Kocsis , George kocsis

2. **Name:** George kocsis

Address:



Phone:



Current Use of Parcels Under Application

1. Quantify and describe in detail all agriculture that currently takes place on the parcel(s).

parcel 1. 80 ha hay crop, 20 ha grazing land, 26 ha unused.

2. Quantify and describe in detail all agricultural improvements made to the parcel(s).

No Agricultural Improvments as the parcel was just purchased

3. Quantify and describe all non-agricultural uses that currently take place on the parcel(s).

No non-agricultural activity

Adjacent Land Uses

North

Land Use Type: Agricultural/Farm

Specify Activity: single family dwelling and small hobby farm type operations

East

Land Use Type: Unused

Specify Activity: crown land mountianside

South

Land Use Type: Agricultural/Farm

Specify Activity: Beef and Hay Ranch

West

Land Use Type: Residential

Specify Activity: single family dwelling on rangeland border.

Proposal

1. Enter the total number of lots proposed for your property.

110.7 ha

16 ha

2. What is the purpose of the proposal?

The proposed 16 ha parcel would be for our daughter and her family. They plan to build a modest home and have a small cattle/horse operation as well as raise farm animals and garden. Homesteading is the overall goal.

Applicant: Colleen Kocsis , George kocsis

3. Why do you believe this parcel is suitable for subdivision?

There are several reasons we feel this parcel is suitable for subdivision. The main reasons are that Boundary Creek road intersects the proposed property line and gives clear borders for the purposed parcels. The terrain of the proposed parcel does not lend itself to hay farming it is more of grazing and small farming operations due to the rough hillside nature. The land has been unused until now and if not subdivided will continue to be idle and unused. By subdividing we give our family the opportunity to establish roots close to our own farm which will be a very big asset to our main farm. We are ageing and will require some help with farm operations and maintenance, so having family close by will prove to be very beneficial for everyone involved. We would also like to see the land tamed and used for something instead of sitting vacant for more years to come.

4. Does the proposal support agriculture in the short or long term? Please explain.

Yes the proposal does support agriculture, the land has currently been unused in the past and if not subdivided will continue to be an idle parcel of land. If subdivided the family will be using it to its maximum capabilities given the rough terrain. With farm status and homesteading in mind the land will be optimized to the best of its capabilities

5. Are you applying for subdivision pursuant to the ALC Homesite Severance Policy? If yes, please submit proof of property ownership prior to December 21, 1972 and proof of continued occupancy in the "Upload Attachments" section.

No

Applicant Attachments

- Agent Agreement - Colleen Kocsis
- Proposal Sketch - 61818
- Certificate of Title - 013-423-576

ALC Attachments

None.

Decisions

None.

Applicant: Colleen Kocsis , George kocsis





**REGIONAL DISTRICT OF KOOTENAY BOUNDARY
BYLAW NO. 1747**

A Bylaw to amend Big White Zoning Bylaw No. 1166, 2001
of the Regional District of Kootenay Boundary

WHEREAS the Regional District of Kootenay Boundary may amend the provisions of its Zoning Bylaws pursuant to the provisions of the *Local Government Act*;

AND WHEREAS the Regional District of Kootenay Board of Directors intends to rezone the property legally described as Lot 3, District Lot 4190s, Similkameen Division Yale District, Plan 23412 from the 'Chalet Residential 1 Zone (R1)' to the 'Village Core 6 Zone (VC6)';

NOW THEREFORE the Regional District of Kootenay Boundary Board of Directors, in open and public meeting assembled, hereby enacts as follows:

1. CITATION:

- 1.1. This Bylaw may be cited as "Regional District of Kootenay Boundary Zoning Amendment Bylaw No. 1747, 2021" and takes effect as of the date of adoption.

2. ADMINISTRATIVE PROVISION:

- 2.1. If any section, subsection, sentence, clause or phrase in this bylaw is for any reason held to be invalid by a decision of any Court of competent jurisdiction, the decision shall not affect the validity of the remaining portion of the bylaw.

3. MAP AMENDMENT:

- 3.1. That Schedule "B" of Regional District of Kootenay Boundary's Big White Zoning Bylaw No. 1166, 2001 is amended by changing the zoning of the property legally described as Lot 3, District Lot 4190s, Similkameen Division Yale District, Plan 23412, as shown outlined in red on the attached Schedule Z attached to and forming part of this bylaw:

From: Chalet Residential 1 Zone (R1)
To: Village Core 6 Zone (VC6)

READ A FIRST AND SECOND TIME this 28th day of January, 2021.

Bylaw 1747, 2021

PUBLIC HEARING held on this _____ day of _____.

READ A THIRD TIME this _____ day of _____.

ADOPTED this _____ day of _____.

Theresa Lenardon
Manager of Corporate Administration

Diane Langman
Chair

I, Theresa Lenardon, Manager of Corporate Administration of the Regional District of Kootenay Boundary, hereby certify that this is a true and correct copy of Bylaw No. 1747, cited as "Regional District of Kootenay Boundary Zoning Bylaw Amendment Bylaw No. 1747, 2021".

Manager of Corporate Administration

Bylaw 1747, 2021

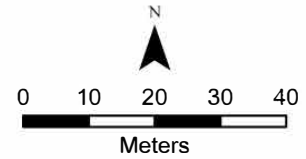


Regional District of
Kootenay Boundary

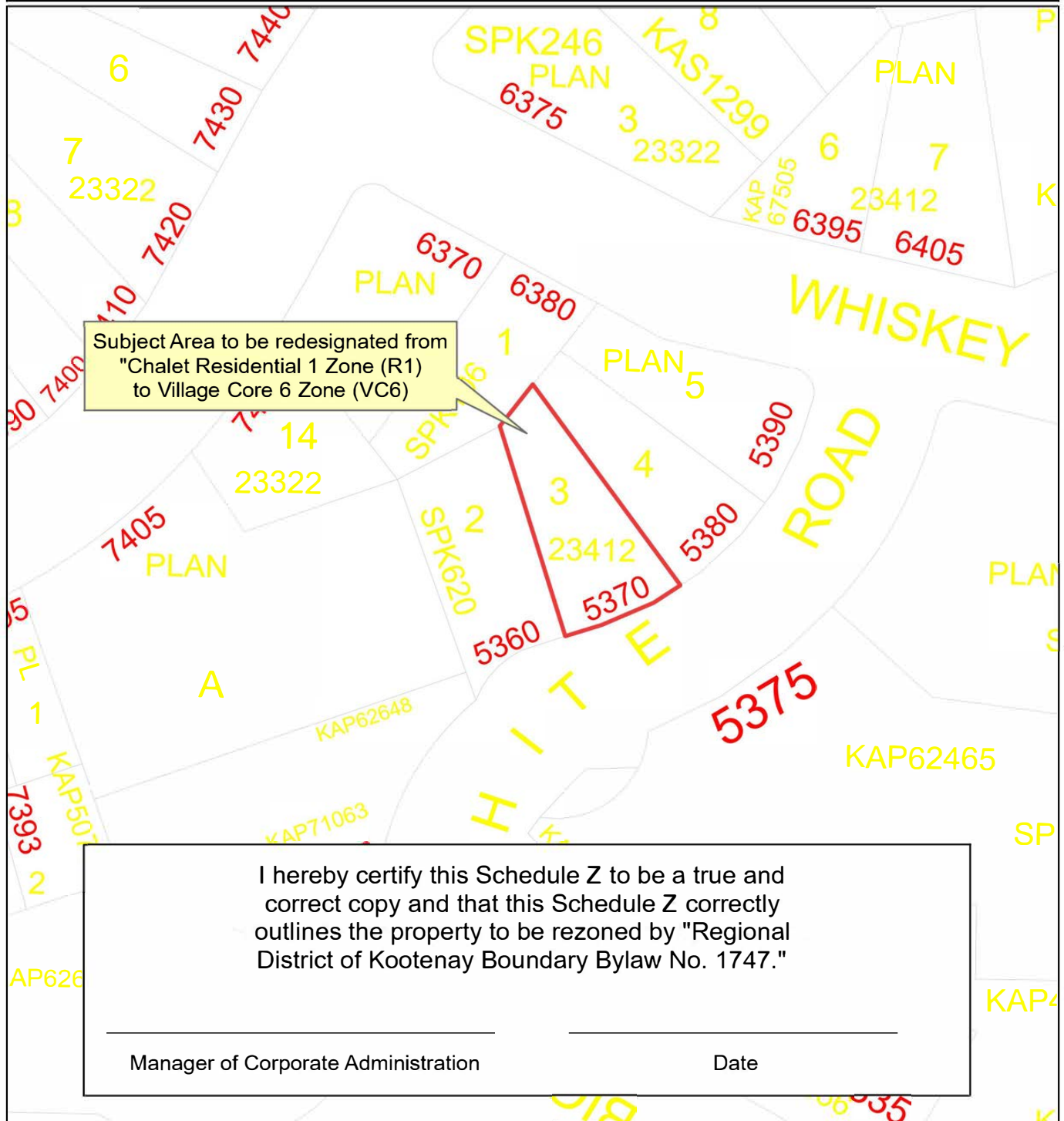
Date: 2020-12-17

Schedule Z

Lot 3, Plan KAP23412,
District Lot 4109S,
Similkameen Div of Yale Land District



1:1,000



Document Path: C:\Katie Working Files\PD\BW\BW-4109s-07412.000_BC LTD1247676\2020-12-17_SPM-SLM_BW-4109s-07412.000_5370BigWhiteRd.aprx

Regional District of Kootenay Boundary Cheque Register Summary for month of December 2020

Cheque Date	Supplier	Name	Amount
2020-12-04	AGS020	A & G SUPPLY LTD.	\$ 212.02
2020-12-04	ACE010	A.C.E. COURIER SERVICES	\$ 236.23
2020-12-14	ACE010	A.C.E. COURIER SERVICES	\$ 106.13
2020-12-22	ACE010	A.C.E. COURIER SERVICES	\$ 802.72
2020-12-24	ACE010	A.C.E. COURIER SERVICES	\$ 188.78
2020-12-22	ACM030	ACME VISIBLE FILING SYSTEMS LTD.	\$ 206.39
2020-12-22	AFD001	AFD PETROLEUM LTD.	\$ 2,086.51
2020-12-24	AGM001	AGM WEAR LTD.	\$ 289.80
2020-12-22	AIR001	AIR LIQUIDE CANADA INC.	\$ 165.34
2020-12-15	ALB040	ALBERT'S MECHANICAL LTD.	\$ 8,103.42
2020-12-22	ALP030	ALPINE DISPOSAL & RECYCLING	\$ 11,550.00
2020-12-24	ALP030	ALPINE DISPOSAL & RECYCLING	\$ 138,475.92
2020-12-14	ALP002	ALPINE SIGNS & GRAPHICS	\$ 50.40
2020-12-14	AMF010	AM FORD	\$ 288.70
2020-12-22	AND002	ANDERSON, KRISTINA	\$ 50.00
2020-12-22	AND040	ANDREW SHERET LTD.	\$ 2,525.49
2020-12-04	AND040	ANDREW SHERET LTD.	\$ 107.50
2020-12-04	ANN030	ANNUVA SOLUTIONS	\$ 140.80
2020-12-14	ANN030	ANNUVA SOLUTIONS	\$ 68.11
2020-12-22	ANN030	ANNUVA SOLUTIONS	\$ 159.51
2020-12-14	AON001	AON REED STENHOUSE INC.	\$ 7,500.00
2020-12-22	ARR020	ARROW PROFESSIONAL LANDSCAPING	\$ 13,387.50
2020-12-22	ASS040	ASSOCIATED FIRE SAFETY	\$ 2,896.95
2020-12-24	ASS040	ASSOCIATED FIRE SAFETY	\$ 9,019.50
2020-12-22	ATS001	AT SOURCE RECYCLING SYSTEMS CORP.	\$ 761.60
2020-12-14	AUS020	AUSTIN ENGINEERING LTD	\$ 1,597.51
2020-12-04	BFS010	B & F SALES & SERVICE LTD.	\$ 78.38
2020-12-14	BAB020	BA BENSON & SONS	\$ 383.95
2020-12-22	BAB020	BA BENSON & SONS	\$ 175.77
2020-12-24	BAB020	BA BENSON & SONS	\$ 338.23
2020-12-14	BAL020	BALDY BOBCAT SERVICES	\$ 698.26
2020-12-14	BCT030	BC TRANSIT	\$ 88,930.56
2020-12-15	BEA170	BEAVER VALLEY & PEND D'OREILLE HISTORICAL SOCIETY	\$ 499.22
2020-12-15	BEA620	BEAVER VALLEY BLOOMING SOCIETY	\$ 2,608.50
2020-12-15	BEA240	BEAVER VALLEY CROSS COUNTRY SKI CLUB	\$ 6,437.59
2020-12-14	BEA130	BEAVER VALLEY LIBRARY	\$ 17,326.50
2020-12-24	BEA640	BEAVER VALLEY MANOR SOCIETY	\$ 5,000.00
2020-12-22	BEL070	BELL MEDIA INC.	\$ 743.48
2020-12-14	BEL020	BELLA TIRE SERVICE CENTRE LTD.	\$ 360.10
2020-12-14	BEN015	BENEFITS BY DESIGN	\$ 2,450.05
2020-12-24	BEN015	BENEFITS BY DESIGN	\$ 2,172.27
2020-12-22	BHS010	BH SAFETY GEAR	\$ 196.06
2020-12-22	BIG011	BIG WHITE LOCK AND REPAIR	\$ 89.25
2020-12-22	BIG025	BIG WHITE UTILITIES	\$ 11,285.24
2020-12-15	BIL100	BILLY'S WATERWORKS	\$ 120.70
2020-12-24	BIL100	BILLY'S WATERWORKS	\$ 1,285.35
2020-12-15	GRA270	BLACK PRESS DBA GRAND FORKS GAZETTE	\$ 68.88
2020-12-14	BLA050	BLACK PRESS GROUP LTD.	\$ 686.02
2020-12-04	BMO001	BMO	\$ 9,618.04
2020-12-24	BOS080	BOSOVICH, MAURICE	\$ 1,500.00
2020-12-04	BOU070	BOUNDARY HOME BUILDING CENTRE	\$ 261.85

Regional District of Kootenay Boundary

Cheque Register Summary for month of December 2020

Cheque Date	Supplier	Name	Amount
2020-12-04	BOU017	BOUNDARY INVASIVE SPECIES SOCIETY	\$ 13,656.55
2020-12-14	BRE020	BRENNTAG CANADA INC.	\$ 2,968.55
2020-12-15	BRI001	BRINK'S CANADA LIMITED	\$ 637.08
2020-12-24	BRI001	BRINK'S CANADA LIMITED	\$ 763.82
2020-12-15	BRY020	BRYANT, LIL	\$ 405.00
2020-12-04	BVT010	BV TOOL RENTALS (2011) LTD.	\$ 24.53
2020-12-22	BVT010	BV TOOL RENTALS (2011) LTD.	\$ 1,545.60
2020-12-24	CSC020	C&S CONTRACTING	\$ 546.00
2020-12-22	CAN170	CANADA POST CORP	\$ 210.00
2020-12-22	CAN560	CANADIAN LINEN AND UNIFORM SERVICE	\$ 137.83
2020-12-14	CAN560	CANADIAN LINEN AND UNIFORM SERVICE	\$ 137.83
2020-12-14	CAN150	CANADIAN TIRE ASSOCIATE STORE #665	\$ 376.46
2020-12-04	CAN150	CANADIAN TIRE ASSOCIATE STORE #665	\$ 473.08
2020-12-22	CAN150	CANADIAN TIRE ASSOCIATE STORE #665	\$ 753.64
2020-12-24	CAR020	CARLILE, DOMINIC, M.	\$ 200.00
2020-12-22	CAR012	CARO ANALYTICAL SERVICES	\$ 2,386.65
2020-12-14	CAR015	CARVELLO LAW CORPORATION	\$ 3,760.97
2020-12-14	CAS016	CASCADES RECOVERY INC.	\$ 5,385.24
2020-12-14	CAS001	CASCADIA SPORT SYSTEMS INC.	\$ (295.68)
2020-12-04	CAS280	CASEWARE CLOUD LTD	\$ 2,403.63
2020-12-15	CHA030	CHALLENGER AUTO DETAILING	\$ 449.00
2020-12-22	CHA020	CHAMPION CHEVROLET	\$ 22.35
2020-12-22	CHE050	CHERRY HILL COFFEE INC.	\$ 194.25
2020-12-22	CHM010	CHMECHANICAL	\$ 759.77
2020-12-04	CHR440	CHRISTINA GATEWAY DEVELOPMENT ASSOCIATION	\$ 53,486.66
2020-12-04	CHR010	CHRISTINA LAKE COMMUNITY ASSOCIATION	\$ 470.00
2020-12-14	CHR010	CHRISTINA LAKE COMMUNITY ASSOCIATION	\$ 145.00
2020-12-22	CHR010	CHRISTINA LAKE COMMUNITY ASSOCIATION	\$ 310.00
2020-12-15	CHR120	CHRISTINA LAKE MECHANICAL	\$ 1,791.75
2020-12-04	CHR120	CHRISTINA LAKE MECHANICAL	\$ 4,492.30
2020-12-14	CHR002	CHRISTINA LAKE STEWARDSHIP SOCIETY	\$ 35,928.00
2020-12-22	CIE020	CI EXCAVATING	\$ 939.75
2020-12-22	CIA010	CIARDULLO, MARIA	\$ 50.00
2020-12-24	CIN001	CINTAS THE UNIFORM PEOPLE	\$ 69.00
2020-12-14	CIN001	CINTAS THE UNIFORM PEOPLE	\$ 69.00
2020-12-24	GRA010	CITY OF GRAND FORKS	\$ 196.97
2020-12-24	KEL030	CITY OF KELOWNA	\$ 158,753.00
2020-12-14	KEL030	CITY OF KELOWNA	\$ 3,865.00
2020-12-04	NAN010	CITY OF NANAIMO	\$ 840.00
2020-12-22	NAN010	CITY OF NANAIMO	\$ 351.75
2020-12-04	CIT060	CITY SPACES CONSULTING LTD.	\$ 15,372.00
2020-12-24	CIV040	CIVIC LEGAL LLP	\$ 2,738.97
2020-12-04	CLA006	CLARKE, PAUL	\$ 20.00
2020-12-14	COL021	COLBACHINI, RANDY, R.	\$ 178.49
2020-12-14	COL390	COLUMBIA BASIN BROADBAND CORPORATION	\$ 3,875.20
2020-12-04	COL240	COLUMBIA FILTER LTD.	\$ 529.25
2020-12-22	COL026	COLUMBIA WIRELESS INC.	\$ 610.40
2020-12-04	COM020	COMMISSIONAIRES BRITISH COLUMBIA	\$ 9,930.00
2020-12-14	COM020	COMMISSIONAIRES BRITISH COLUMBIA	\$ 9,930.00
2020-12-24	COM020	COMMISSIONAIRES BRITISH COLUMBIA	\$ 9,930.00
2020-12-14	COM060	COMPLETE CLIMATE CONTROL INC.	\$ 1,016.19

Regional District of Kootenay Boundary Cheque Register Summary for month of December 2020

Cheque Date	Supplier	Name	Amount
2020-12-22	CON006	CONCEPT CONTROLS INC.	\$ 543.20
2020-12-24	COO100	COOPER MEDICAL SUPPLIES LTD.	\$ 242.23
2020-12-22	COR010	CORAL CANADA WIDE	\$ 1,117.20
2020-12-04	COR010	CORAL CANADA WIDE	\$ 376.16
2020-12-15	CRA006	CRAWFORD TRUCK & EQUIPMENT REPAIR	\$ 83.17
2020-12-14	DAV003	DAVIES, RICK	\$ 140.00
2020-12-22	DEA060	DEAN, DONNA	\$ 404.05
2020-12-22	DEL070	DELL CANADA INC	\$ 5,436.73
2020-12-14	DEL100	DELTA T CONSULTANTS	\$ 940.05
2020-12-04	DER030	DERBY, DANIEL, J.	\$ 100.00
2020-12-14	DHC010	DHC COMMUNICATIONS INC.	\$ 4,308.71
2020-12-04	DIL003	DILIGENT CANADA INC	\$ 8,507.56
2020-12-14	DOM030	DOMINION GOVLAW LLP	\$ 1,092.28
2020-12-04	DON060	DONEGAN, CAMERON	\$ 36.50
2020-12-24	DUE020	DUECK, TIM	\$ 50.00
2020-12-14	DUN070	DUNSDON, RICHARD	\$ 567.00
2020-12-14	EBB010	EBBWATER CONSULTING INC	\$ 25,151.59
2020-12-22	EBB010	EBBWATER CONSULTING INC	\$ 11,235.00
2020-12-14	ECO030	ECO-CLEAN DRY CLEANING CENTRES	\$ 33.01
2020-12-22	ECO001	ECOLE DES SEPT-SOMMETS ASSOCIATION DES PARENTS	\$ 2,813.18
2020-12-24	ELL001	ELLIS, LYNN	\$ 200.00
2020-12-24	EPP020	EPPEL CONSTRUCTION LTD	\$ 122,921.13
2020-12-22	ERI001	ERICKSON, KATHERINE	\$ 50.00
2020-12-14	FED020	FEDERATED CO-OPERATIVES LTD.	\$ 253.08
2020-12-04	FER001	FERRARO FOODS	\$ 4,797.50
2020-12-04	FIS001	FISHER'S REGALIA	\$ 140.24
2020-12-22	FIV050	FIVE STAR UNIFORMS	\$ 35.74
2020-12-14	FLE015	FLEETCOR CANADA MASTERCARD	\$ 1,113.80
2020-12-04	FORGRA	FORTIS BC - FINANCIAL ACCOUNTING	\$ 257.25
2020-12-04	FOR040	FORTIS BC - NATURAL GAS	\$ 11,461.91
2020-12-14	FOR040	FORTIS BC - NATURAL GAS	\$ 2,533.55
2020-12-22	FOR040	FORTIS BC - NATURAL GAS	\$ 6,045.34
2020-12-24	FOR040	FORTIS BC - NATURAL GAS	\$ 1,024.65
2020-12-22	FOR010	FORTISBC - ELECTRICITY	\$ 6,836.89
2020-12-14	FOR010	FORTISBC - ELECTRICITY	\$ 8,935.25
2020-12-04	FOR010	FORTISBC - ELECTRICITY	\$ 9,807.15
2020-12-15	FOS010	FOSSEN AIR LTD	\$ 1,890.00
2020-12-22	FOU080	FOUR STAR COMMUNICATIONS INC.	\$ 203.77
2020-12-04	FRE030	FREEMAN'S COUNTRY SUPPLY	\$ 44.58
2020-12-22	FRO110	FRONTLINE OPERATIONS GROUP LTD.	\$ 3,577.88
2020-12-04	FRU020	FRUITVALE CO-OP	\$ 233.72
2020-12-24	FRU020	FRUITVALE CO-OP	\$ 60.41
2020-12-22	FRU020	FRUITVALE CO-OP	\$ 16.00
2020-12-24	FUN010	FUNK, DARRYL ALLAN	\$ 200.00
2020-12-24	MAG040	FVBS MAGLIO TRAIL	\$ 1,953.17
2020-12-22	MAG040	FVBS MAGLIO TRAIL	\$ 37.55
2020-12-04	MAG040	FVBS MAGLIO TRAIL	\$ 8.58
2020-12-14	MAG040	FVBS MAGLIO TRAIL	\$ 316.27
2020-12-22	FYF010	FYFFE, BART	\$ 50.00
2020-12-04	GAI010	GAIA PRINCIPLES IPM SERVICES	\$ 52.50
2020-12-24	GAR150	GARAVENTA (CANADA) LTD.	\$ 195.00

Regional District of Kootenay Boundary Cheque Register Summary for month of December 2020

Cheque Date	Supplier	Name	Amount
2020-12-14	GAT002	GATES, CAVAN	\$ 160.00
2020-12-14	GAU050	GAUDRY, MITCHELL	\$ 1,071.00
2020-12-14	GEE020	GEE, VICKI LYNN	\$ 436.70
2020-12-22	GES010	GESCAN - Division of Sonepar	\$ 25.39
2020-12-22	GFL001	GFL ENVIRONMENTAL INC 2020	\$ 23,100.00
2020-12-24	GFL001	GFL ENVIRONMENTAL INC 2020	\$ 80,826.50
2020-12-22	GLA060	GLACIER HEIGHTS REFRIGERATON INC.	\$ 5,914.32
2020-12-24	GRA049	GRANBY ECOLOGICAL	\$ 400.00
2020-12-22	GRA050	GRAND FORKS HOME HARDWARE	\$ 312.59
2020-12-14	GRA050	GRAND FORKS HOME HARDWARE	\$ 535.42
2020-12-15	GRA055	GRAND FORKS RENOVATION CENTRE	\$ 31.35
2020-12-22	GRA280	GRAND FORKS VOLUNTEER FIREFIGHTERS ASSOC.	\$ 2,349.00
2020-12-04	GRE570	GREATER TRAIL ACTIVITIES CENTRE FOR THE VISUAL AR	\$ 2,900.08
2020-12-14	GRE005	GREENWOOD & DISTRICT PUBLIC LIBRARY ASSOCIATION	\$ 1,000.00
2020-12-24	GRE037	GREENWOOD SAW TO TRUCK REPAIRS	\$ 3,542.56
2020-12-04	GRE111	GREYSTONE PROMOTIONAL PRODUCTS INC	\$ 3,562.79
2020-12-14	GRI010	GRIEVE, ALI	\$ 594.66
2020-12-24	GRI010	GRIEVE, ALI	\$ 19.00
2020-12-04	GUA010	GUARANTEED AUTOMOTIVE	\$ 795.73
2020-12-14	GUI001	GUILLEVIN INTERNATIONAL INC.	\$ 630.00
2020-12-15	HAG040	HAGEL, NICKI, R.	\$ 136.49
2020-12-22	HAL010	HALL PRINTING	\$ 298.86
2020-12-14	HAL010	HALL PRINTING	\$ 92.50
2020-12-22	HAM030	HAMILTON, CHARLENE, ELAINE	\$ 107.10
2020-12-04	HAN026	HANSON, BRAD AND/OR TRACY	\$ 70.00
2020-12-24	HAR300	HARDY, JEFFREY	\$ 230.99
2020-12-24	HAW008	HAWKTREE SOLUTIONS (DBA)	\$ 322.16
2020-12-22	HEA025	HEALTH ARTS SOCIETY	\$ 4,830.00
2020-12-15	HEN140	HENDERSON, DEREK	\$ 33.59
2020-12-14	HIR010	HIRAM, JANICE	\$ 325.00
2020-12-04	HOM030	HOMEGOODS FURNITURE	\$ 537.57
2020-12-14	HOM020	HOMERS HYDROVAC SERVICES	\$ 1,617.00
2020-12-22	HOM002	HOMEWOOD HEALTH INC.	\$ 525.53
2020-12-24	HOR070	HORNE, KEVIN	\$ 280.68
2020-12-04	HUB020	HUB FIRE ENGINES & EQUIPMENT LTD.	\$ 1,877.39
2020-12-14	INL070	INLAND ALLCARE	\$ 7,524.01
2020-12-22	INL070	INLAND ALLCARE	\$ 1,082.67
2020-12-22	INS010	INSURANCE CORPORATION OF BC	\$ 105,190.00
2020-12-04	IRL020	IRL INTERNATIONAL TRUCK CENTRES LTD.	\$ 248.82
2020-12-24	JLM010	J L MOBILE SERVICE	\$ 158.86
2020-12-24	JJH010	J.J.H. ENTERPRISES	\$ 82.50
2020-12-22	JJH010	J.J.H. ENTERPRISES	\$ 1,989.86
2020-12-14	JJH010	J.J.H. ENTERPRISES	\$ 1,010.85
2020-12-04	JAG001	JAGUAR MEDIA INC	\$ 689.85
2020-12-24	JOH240	JOHNSON, ROSANNE	\$ 22.00
2020-12-24	JUS010	JUSTICE INSTITUTE OF B.C.	\$ 150.00
2020-12-04	JUS010	JUSTICE INSTITUTE OF B.C.	\$ 63.00
2020-12-14	KEY010	KATE HARRISON WHITESIDE DBA KEY ADVICE	\$ 262.50
2020-12-22	KEY010	KATE HARRISON WHITESIDE DBA KEY ADVICE	\$ 262.50
2020-12-15	KEN110	KENDRICK EQUIPMENT (2003) LTD.	\$ 502.71
2020-12-15	KET240	KETTLE ECOLOGICAL	\$ 330.75

Regional District of Kootenay Boundary Cheque Register Summary for month of December 2020

Cheque Date	Supplier	Name	Amount
2020-12-22	KET016	KETTLE RIVER FOOD SHARE SOCIETY	\$ 6,000.00
2020-12-04	KIM020	KIMCO CONTROLS LTD.	\$ 220.50
2020-12-22	KIN100	KING OF KINGS NEW TESTAMENT CHURCH	\$ 1,000.00
2020-12-14	KON001	KONE INC.	\$ 316.97
2020-12-22	KON001	KONE INC.	\$ 31,155.23
2020-12-24	KON001	KONE INC.	\$ 418.91
2020-12-22	KOO011	KOOTENAY ROBUSTERS	\$ 2,500.00
2020-12-22	KOO210	KOOTENAY VALLEY WATER & SPAS	\$ 265.10
2020-12-04	KOO210	KOOTENAY VALLEY WATER & SPAS	\$ 39.75
2020-12-04	KOV010	KOVACS, MARGARET A.	\$ 300.00
2020-12-14	LAF020	LAFACE CONTRACTING	\$ 315.00
2020-12-04	LEV030	LEVELUP PLANNING & CONSULTING	\$ 16,734.38
2020-12-15	LEW010	LEWIS, LAURA	\$ 70.00
2020-12-04	LIF010	LIFESAVING SOCIETY	\$ 264.00
2020-12-04	LOR010	LORDCO PARTS LTD.	\$ 502.96
2020-12-14	LOR010	LORDCO PARTS LTD.	\$ 33.92
2020-12-24	LOR010	LORDCO PARTS LTD.	\$ 84.74
2020-12-22	LOR010	LORDCO PARTS LTD.	\$ 2,070.28
2020-12-22	MDC010	M.D. CHARLTON CO. LTD.	\$ 88.84
2020-12-22	MAI120	MAIKA, FRANCES	\$ 100.00
2020-12-24	MAL030	MALLACH, JANINA	\$ 200.00
2020-12-22	MAR006	MARINO WHOLESALE LTD.	\$ 8.95
2020-12-24	MAR006	MARINO WHOLESALE LTD.	\$ 172.70
2020-12-14	MAR006	MARINO WHOLESALE LTD.	\$ 163.38
2020-12-04	MAR006	MARINO WHOLESALE LTD.	\$ 8.95
2020-12-15	MAR220	MARSHALL, FRED	\$ 114.40
2020-12-24	MAX004	MAXIMENKO, DAWSHA J	\$ 283.50
2020-12-04	MAX040	MAXIMENKO, JOHN	\$ 100.00
2020-12-14	MCG002	MCGREGOR, GRACE	\$ 11.00
2020-12-24	MCG020	MCGREGOR, ROBERT D.	\$ 188.02
2020-12-24	MER120	MERIDIAN ONECAP CREDIT CORP	\$ 477.89
2020-12-22	MID070	MIDWAY PUBLIC LIBRARY	\$ 4,000.00
2020-12-22	MIL160	MILLS OFFICE PRODUCTIVITY	\$ 214.74
2020-12-14	MIL160	MILLS OFFICE PRODUCTIVITY	\$ 594.29
2020-12-04	MIL160	MILLS OFFICE PRODUCTIVITY	\$ 291.68
2020-12-14	MIL150	MILLWORKS MFG. LTD.	\$ 972.30
2020-12-04	MIN040	MINISTER OF FINANCE	\$ 485.31
2020-12-15	MIN040	MINISTER OF FINANCE	\$ 565.96
2020-12-15	MIN050	MINISTER OF FINANCE	\$ 341.67
2020-12-22	MIN040	MINISTER OF FINANCE	\$ 2,125.21
2020-12-22	MIN180	MINISTER OF FINANCE MINISTRY OF PUBLIC SAFETY & S	\$ 15,184.99
2020-12-24	MOO120	MOORE, ELIZABETH	\$ 921.19
2020-12-22	MOO120	MOORE, ELIZABETH	\$ 50.00
2020-12-04	MOT050	MOTIS FIRE RESCUE	\$ 2,347.18
2020-12-04	NOF010	NO FRILLS	\$ 511.56
2020-12-15	NUR010	NURNDY-FORFIRE EMERGENCY GRAPHICS LTD	\$ 294.14
2020-12-24	NUR010	NURNDY-FORFIRE EMERGENCY GRAPHICS LTD	\$ 4,236.72
2020-12-22	OKT020	OK TIRE AND AUTO SERV	\$ 240.80
2020-12-22	OKA160	OKANAGAN FILM COMMISSION	\$ 7,000.00
2020-12-24	OME040	OMEGA COMMUNICATIONS LTD.	\$ 558.88
2020-12-22	OME040	OMEGA COMMUNICATIONS LTD.	\$ 172.48

Regional District of Kootenay Boundary Cheque Register Summary for month of December 2020

Cheque Date	Supplier	Name	Amount
2020-12-24	OTT020	OTTING, KIM	\$ 15.40
2020-12-14	OTT020	OTTING, KIM	\$ 15.40
2020-12-14	PAA010	PAKKUNAINEN, JEFF	\$ 181.11
2020-12-04	PAC020	PACIFIC BLUE CROSS	\$ 36,576.70
2020-12-24	PAC220	PACIFIC WESTERN FIRE PROTECTION (2017) LTD.	\$ 110.25
2020-12-22	PAL005	PALADIN SECURITY GROUP LTD.	\$ 27,057.32
2020-12-24	PAR050	PARSLOW LOCK & SAFE	\$ 115.50
2020-12-22	JOH300	PAUL JOHNSON	\$ 850.00
2020-12-24	PEE010	PEERLESS BUILDING MAINTENANCE LTD.	\$ 1,323.00
2020-12-14	PEN015	PENNEY, JENNIFER	\$ 70.00
2020-12-24	PET004	PETIT, PHILIP	\$ 1,254.00
2020-12-04	PET010	PETRO CANADA	\$ 6,619.47
2020-12-15	PET010	PETRO CANADA	\$ 5,964.44
2020-12-24	PON010	PONY ESPRESSO	\$ 700.00
2020-12-24	POW100	POWER TECH ELECTRIC LTD.	\$ 419.32
2020-12-22	POW100	POWER TECH ELECTRIC LTD.	\$ 94.50
2020-12-04	POW100	POWER TECH ELECTRIC LTD.	\$ 3,414.00
2020-12-14	POW100	POWER TECH ELECTRIC LTD.	\$ 330.75
2020-12-14	PRA040	PRAXAIR DISTRIBUTION	\$ 88.76
2020-12-22	PRA040	PRAXAIR DISTRIBUTION	\$ 512.37
2020-12-24	PRA040	PRAXAIR DISTRIBUTION	\$ 241.55
2020-12-14	PRO060	PROLINE CUSTOM CLOTHING INC.	\$ 1,051.35
2020-12-22	PRO065	PROVINCE OF BRITISH COLUMBIA	\$ 46,371.13
2020-12-22	PUR020	PUROLATOR INC.	\$ 251.52
2020-12-24	PUR020	PUROLATOR INC.	\$ 47.69
2020-12-14	PUR020	PUROLATOR INC.	\$ 126.33
2020-12-24	QUA070	QUADIENT CANADA LTD.	\$ 1,358.34
2020-12-22	RAF001	RAFUSE, BRANDY	\$ 50.00
2020-12-22	RAL010	RALCOMM LTD.	\$ 26.68
2020-12-24	RAL010	RALCOMM LTD.	\$ 122.03
2020-12-14	RAL010	RALCOMM LTD.	\$ 200.48
2020-12-22	REC002	RECEIVER GENERAL	\$ 805.85
2020-12-24	REC010	RECEIVER GENERAL FOR CANADA	\$ 88,550.69
2020-12-15	REC010	RECEIVER GENERAL FOR CANADA	\$ 110,597.01
2020-12-04	RED190	RED DRAGON CONSULTING	\$ 10,500.00
2020-12-22	REA001	RED EARTH MEDICINE	\$ 1,825.00
2020-12-14	REI003	REILLY, BRIANNA	\$ 115.00
2020-12-04	REM040	REMPEL, KAREN	\$ 292.50
2020-12-14	RIC010	RICOH CANADA INC.	\$ 479.29
2020-12-24	RIC010	RICOH CANADA INC.	\$ 94.23
2020-12-14	RID010	RIDGETOP MEAT PIES	\$ 11,115.37
2020-12-04	RJA010	RJAMES MANAGEMENT GROUP	\$ 49.73
2020-12-22	RJA010	RJAMES MANAGEMENT GROUP	\$ 2,175.00
2020-12-14	ROC240	ROCHESTER MIDLAND CANADA CORP.	\$ 996.36
2020-12-24	ROC002	ROCK ISLAND RV	\$ 248.16
2020-12-04	ROC050	ROCKY MOUNTAIN ENERGY	\$ 2,556.18
2020-12-24	ROC030	ROCKY MOUNTAIN PHOENIX	\$ 4,026.82
2020-12-15	ROC030	ROCKY MOUNTAIN PHOENIX	\$ 330,321.47
2020-12-24	ROS350	ROSSLAND MOUNTAIN BIKING SOCIETY	\$ 889.03
2020-12-22	SAN130	SANTORI, KEVIN	\$ 246.39
2020-12-14	SAN130	SANTORI, KEVIN	\$ 1,622.75

Regional District of Kootenay Boundary

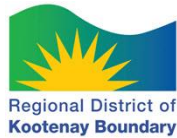
Cheque Register Summary for month of December 2020

Cheque Date	Supplier	Name	Amount
2020-12-04	SAV040	SAVE-ON-FOODS	\$ 41.41
2020-12-22	SAV040	SAVE-ON-FOODS	\$ 3,422.97
2020-12-24	SCO070	SCOUTS CANADA - CAMP TWEEDSMUIR	\$ 771.24
2020-12-24	SEL010	SELECT OFFICE PRODUCTS	\$ 37.97
2020-12-22	SEL010	SELECT OFFICE PRODUCTS	\$ 309.91
2020-12-04	SEL160	SELKIRK SECURITY SERVICE LTD	\$ 53.55
2020-12-14	SEL160	SELKIRK SECURITY SERVICE LTD	\$ 5,040.96
2020-12-22	SEL160	SELKIRK SECURITY SERVICE LTD	\$ 35.70
2020-12-04	SEX010	SEXAUER LTD.	\$ 1,218.56
2020-12-04	SHA030	SHAW CABLE	\$ 215.48
2020-12-24	SHA030	SHAW CABLE	\$ 123.20
2020-12-14	SIL003	SILVA, ROBERT	\$ 50.00
2020-12-24	SIL003	SILVA, ROBERT	\$ 25.00
2020-12-15	SPC010	SOCIETY FOR PREVENTION OF CRUELTY TO ANIMALS	\$ 7,437.00
2020-12-24	SOF020	SOFTCHOICE LP	\$ 29,893.04
2020-12-22	SOF020	SOFTCHOICE LP	\$ 21,621.72
2020-12-04	SOF020	SOFTCHOICE LP	\$ 592.04
2020-12-24	SPE030	SPEEDPRO SIGNS (TRAIL)	\$ 7,806.75
2020-12-22	SPE030	SPEEDPRO SIGNS (TRAIL)	\$ 448.00
2020-12-22	SPE150	SPEEDPRO SIGNS KELOWNA	\$ 273.54
2020-12-04	STA090	STAR AUTOMOTIVE INC.	\$ 1,311.52
2020-12-04	STO030	STOKES INTERNATIONAL	\$ 153.46
2020-12-24	STR130	STREDULINSKY, JODI	\$ 122.84
2020-12-15	STU002	STUDIO 9 ARCHITECTURE + PLANNING LTD.	\$ 9,606.22
2020-12-22	STU002	STUDIO 9 ARCHITECTURE + PLANNING LTD.	\$ 4,308.95
2020-12-24	SUP170	SUPER SAVE DISPOSAL INC.	\$ 13,110.91
2020-12-24	SUP030	SUPERIOR PROPANE INC.	\$ 1,365.16
2020-12-22	TEL001	TELUS COMMUNICATIONS (B.C.) INC.	\$ 1,592.35
2020-12-04	TEL001	TELUS COMMUNICATIONS (B.C.) INC.	\$ 7,690.76
2020-12-14	TEL001	TELUS COMMUNICATIONS (B.C.) INC.	\$ 379.08
2020-12-04	TEL002	TELUS MOBILITY	\$ 4,472.38
2020-12-15	TET010	TETRA TECH CANADA INC.	\$ 13,768.58
2020-12-22	ARL010	THE ARLINGTON HOTEL	\$ 105.74
2020-12-24	CAN031	THE CANADIAN PAYROLL ASSOCIATION	\$ 628.95
2020-12-24	GRE010	THE CITY OF GREENWOOD	\$ 6,000.00
2020-12-24	ROS010	THE CITY OF ROSSLAND	\$ 385.73
2020-12-04	ROS010	THE CITY OF ROSSLAND	\$ 486.28
2020-12-14	THO130	THOMPSON OKANAGAN TOURISM ASSOCIATION	\$ 46,459.43
2020-12-15	TIG020	TIGERTEL	\$ 1,777.64
2020-12-04	TIL010	TILLER, MEGAN	\$ 100.00
2020-12-24	TRA054	TRAIL & DISTRICT AFTER SCHOOL BAND PROGRAM SOCI	\$ 2,094.71
2020-12-14	TRA190	TRAIL & DISTRICT ARTS COUNCIL	\$ 5,000.00
2020-12-22	TRA020	TRAIL CLEANERS & LAUNDRY LTD.	\$ 22.66
2020-12-22	TRA029	TRAIL COFFEE CO.	\$ 22.00
2020-12-14	TRA029	TRAIL COFFEE CO.	\$ 110.00
2020-12-04	TRA029	TRAIL COFFEE CO.	\$ 110.00
2020-12-14	TRA046	TRAIL HAMMER AND BOLT CO. LTD.	\$ 105.80
2020-12-14	TRA240	TRAIL HOME HARDWARE BUILDING CENTRE	\$ 328.68
2020-12-24	TRA240	TRAIL HOME HARDWARE BUILDING CENTRE	\$ 73.43
2020-12-24	TRA005	TRAIL LIONS CLUB	\$ 2,205.00
2020-12-22	TRA051	TRAIL RINK COMPANY & FOUNDATION	\$ 525.00

Regional District of Kootenay Boundary Cheque Register Summary for month of December 2020

Cheque Date	Supplier	Name	Amount
2020-12-04	TRA099	TRAIL YOUTH BASEBALL	\$ 1,600.37
2020-12-22	TRA038	TRAILS TO THE BOUNDARY SOCIETY	\$ 6,000.00
2020-12-15	THE001	TRAVEL MEDICINE & VACCINATION CENTRE	\$ 931.00
2020-12-22	TRI090	TRICAN FILTRATION GROUP INC.	\$ 700.70
2020-12-14	TRO080	TROBAK, DAN	\$ 2,457.00
2020-12-24	TRO040	TROPHY DEN & GIFT SHOP	\$ 603.74
2020-12-22	TRO070	TROY LIFE & FIRE SAFETY LTD.	\$ 682.50
2020-12-04	TRO070	TROY LIFE & FIRE SAFETY LTD.	\$ 1,268.40
2020-12-14	TWI025	TWI SURVEYS INC.	\$ 2,257.50
2020-12-04	UNI007	UNION OF BC MUNICIPALITIES	\$ 315.00
2020-12-04	UPL020	UPLIFT EQUIPMENT LTD.	\$ 393.75
2020-12-22	VAB010	VAB ENTERPRISES	\$ 682.50
2020-12-22	VAL130	VALLEN	\$ 504.68
2020-12-04	VAL130	VALLEN	\$ 946.32
2020-12-14	VAL130	VALLEN	\$ 1,051.32
2020-12-04	VHS001	VH SPORT	\$ 479.95
2020-12-15	VIP010	VIPER FUELS	\$ 262.50
2020-12-22	VIS050	VISTA RADIO LTD.	\$ 960.75
2020-12-24	VIT002	VITAL CLEAN INNOVATIONS	\$ 399.84
2020-12-22	VIT001	VITALAIRE	\$ 130.70
2020-12-14	VMS020	VMS COMFORT PLUS INC	\$ 2,310.00
2020-12-15	VOY040	VOYKIN, ROD	\$ 714.00
2020-12-04	WAD010	WADE TECHNOLOGIES LTD.	\$ 2,753.66
2020-12-22	WAD010	WADE TECHNOLOGIES LTD.	\$ 726.39
2020-12-22	WAL090	WALKER, SARAH KELLY	\$ 100.00
2020-12-04	WAN050	WANETA AUTO AND EQUIPMENT REPAIR INC.	\$ 189.88
2020-12-15	WAN050	WANETA AUTO AND EQUIPMENT REPAIR INC.	\$ 427.15
2020-12-24	WEB040	WEBB, DAVID	\$ 194.24
2020-12-24	WEN002	WENINGER CONSTRUCTION & DESIGN LTD.	\$ 29,505.21
2020-12-15	WES100	WESCO DISTRIBUTION CANADA LP	\$ 18.37
2020-12-22	WES029	WEST BOUNDARY COMMUNITY SERVICES COOPERATIVE /	\$ 375.23
2020-12-14	WES029	WEST BOUNDARY COMMUNITY SERVICES COOPERATIVE /	\$ 8,500.00
2020-12-04	WES540	WEST KOOTENAY COMMUNITY ECO-SOCIETY	\$ 4,398.00
2020-12-22	WES021	WESTECH INDUSTRIAL LTD.	\$ 4,800.32
2020-12-15	WHI090	WHITLOCK INSURANCE SERVICES	\$ 82.00
2020-12-24	WHI090	WHITLOCK INSURANCE SERVICES	\$ 853.00
2020-12-14	WIE030	WIEBE, GABRIEL	\$ 25.00
2020-12-15	WIL060	WILD WAYS	\$ 585.47
2020-12-04	WOO001	WOOD WYANT INC.	\$ 776.16
2020-12-14	WOR100	WORLEY, LINDA	\$ 286.60
2020-12-24	WOR100	WORLEY, LINDA	\$ 97.35
2020-12-22	WOR090	WORSNOP, CATHERINE	\$ 209.95
2020-12-24	WSP020	WSP CANADA GROUP LTD.	\$ 1,315.13
2020-12-22	WSP020	WSP CANADA GROUP LTD.	\$ 44,062.71
2020-12-14	WSP020	WSP CANADA GROUP LTD.	\$ 13,874.70
2020-12-24	XER010	XEROX CANADA LTD.	\$ 73.04
2020-12-14	XLW010	XL QUALITY INDUSTRIAL SERVICES	\$ 43.46
Total Accounts Paid			\$ 2,367,726.80
Number of Supplier Payments			404

NB: Payments greater than \$100,000 related to Provincial Emergency Program (service 012) are marked with an asterisk.



**Utilities Committee
Minutes
Tuesday, November 10, 2020
Via Zoom Online Video Conferencing**

Committee Members Present:

Director R. Cacchioni, Chair
Director G. McGregor, Vice-Chair
Director A. Grieve
Director L. Worley
Director V. Gee
Director S. Morissette
Director D. Langman
Director A. Morel

Staff Members Present:

M. Andison, CAO Regional District of Kootenay Boundary
J. Dougall, General Manager of Environmental Services
G. Denkovski, Manager of Infrastructure and Sustainability
S. Surinak, Secretary/Clerk/Receptionist/Recording Secretary

CALL TO ORDER

The Chair called the meeting to order at 11:00 am.

LAND ACKNOWLEDGEMENT

We acknowledge and appreciate that the land on which we gather is the converging, traditional and unceded territory of the Sylix, Secwepemc, Sinixt and Ktunaxa Peoples as well as the Metis Peoples whose footsteps have also marked these lands.

ADOPTION OF AGENDA (ADDITIONS/DELETIONS)

The agenda for the November 10, 2020 Utilities Committee meeting was presented.

Moved / Seconded

That the agenda for the November 10, 2020 Utilities Committee meeting be adopted as presented.

Carried.

ADOPTION OF MINUTES

The minutes of the Utilities Committee meeting held on October 14, 2020 were presented.

Moved / Seconded

That the minutes of the Utilities Committee meeting held on October 14, 2020 be adopted as presented.

Carried.

UNFINISHED BUSINESS

**G. Denkovski, Manager of Infrastructure and Sustainability
Re: Grant Opportunity Tracking**

A report from Goran Denkovski, Manager of Infrastructure and Sustainability, on the tracking of grant opportunities was presented.

Director Cacchioni requested that any new grant opportunities be added to future agendas as a separate item near the beginning of the agenda.

Moved / Seconded

That the report from Goran Denkovski, Manager of Infrastructure and Sustainability, on the tracking of grant opportunities be received.

Carried.

G. Wiebe, Safety and Engineering Coordinator**Re: Rivervale Water and Streetlight Service Federation of Canadian Municipalities (FCM) Green Municipal Fund (GMF) Pilot Project**

A Staff report from Gabe Wiebe, Engineering and Safety Coordinator regarding RDKB's application to the Federation of Canadian Municipalities (FCM) Green Municipal Fund (GMF) Pilot project: Water conservation, Community Project program to help fund the Rivervale Water and Streetlight Service's Water Conservation Plan was presented.

The resolution for this item was altered slightly from the version that was included on the agenda for this meeting to include that any cost overruns are the responsibility of the related water service.

Moved / Seconded

That the Regional District of Kootenay Boundary Board of Directors direct Staff to proceed with the RDKB's Water Conservation Program application to the FCM GMF Pilot project: Water conservation, Community Project as presented to the Board on November 10, 2020. **FURTHER**, that the Board agree to contribute \$1,600 from 2021 to 2024 from the Rivervale Water and Streetlight Service to support the Rivervale Water and Streetlight Service Water Conservation Plan and that any cost overruns related to the project are the responsibility of the related service.

Carried.

G. Wiebe, Safety and Engineering Coordinator**Re: Christina Lake Water Utility Service Federation of Canadian Municipalities (FCM) Green Municipal Fund (GMF) Pilot Project**

A Staff report from Gabe Wiebe, Engineering and Safety Coordinator regarding RDKB's application to the Federation of Canadian Municipalities (FCM) Green Municipal Fund (GMF) Pilot project: Water conservation, Community Project program to help fund the Christina Lake Water Utility's Water Conservation Plan was presented.

The resolution for this item was altered slightly from the version that was included on the agenda for this meeting to include that any cost overruns are the responsibility of the related water service.

Moved / Seconded

That the Regional District of Kootenay Boundary Board of Directors direct Staff to proceed with the RDKB's Water Conservation Program application to the FCM GMF Pilot project: Water conservation, Community Project as presented to the Board on November 10, 2020. **FURTHER**, that the Board agree to contribute \$8,400 from 2021 to 2024 from the Christina Lake Water Utility Service to support the Christina Lake Water Utility Service Water Conservation Plan and that any cost overruns related to the project are the responsibility of the related service.

Carried.

G. Wiebe, Safety and Engineering Coordinator
Re: Beaver Valley Water Service Federation of Canadian
Municipalities (FCM) Green Municipal Fund (GMF) Pilot Project

A Staff report from Gabe Wiebe, Engineering and Safety Coordinator regarding RDKB's application to the Federation of Canadian Municipalities (FCM) Green Municipal Fund (GMF) Pilot project: Water conservation, Community Project program to help fund the Beaver Valley Water Service's Water Conservation Plan was presented.

The resolution for this item was altered slightly from the version that was included on the agenda for this meeting to include that any cost overruns are the responsibility of the related water service.

Moved / Seconded

That the Regional District of Kootenay Boundary Board of Directors direct Staff to proceed with the RDKB's Water Conservation Program application to the FCM GMF Pilot project: Water conservation, Community Project as presented to the Board on November 10, 2020. **FURTHER**, that the Board agree to contribute \$16,500 from 2021 to 2024 from the Beaver Valley Water Service to support the Beaver Valley Water Service Water Conservation Plan and that any cost overruns related to the project are the responsibility of the related service.

Carried.

NEW BUSINESS

G. Denkovski, Manager of Infrastructure and Sustainability

Re: Flow Meter Report for Volume Data Collected

Flow meter report summarizing volume data collected was presented.

Moved / Seconded

That the Utilities Committee receive the flow meter report summarizing volume data collected for the months of August to September 2020.

Carried.

G. Denkovski - Manager of Infrastructure and Sustainability

Re: 2021 Work Plan - Big White Street Lighting Service (101)

The draft 2021 Work Plan was presented for discussion.

The RDKB is working with Fortis BC to develop a strategy to replace the outdated lighting standards at Big White

Moved / Seconded

That the Utilities Committee receive the draft Big White Street Lighting Service (101) 2021 Work Plan. **FURTHER**, that the Work Plan be referred to a future meeting.

Carried.

G. Denkovski - Manager of Infrastructure and Sustainability

Re: 2021 Work Plan - Beaverdell Street Lighting Service (103)

The draft 2021 Work Plan was presented for discussion.

Moved / Seconded

That the Utilities Committee receive the draft Beaverdell Street Lighting Service (103) 2021 Work Plan. **FURTHER**, that the Work Plan be referred to a future meeting.

Carried.

G. Denkovski - Manager of Infrastructure and Sustainability
Re: 2021 Work Plan - Beaver Valley Water Service (500)

The draft 2021 Work Plan was presented for discussion.

Moved / Seconded

That the Utilities Committee receive the draft Beaver Valley Water Service (500) 2021 Work Plan. **FURTHER**, that the Work Plan be referred to a future meeting.

Carried.

G. Denkovski - Manager of Infrastructure and Sustainability
Re: 2021 Work Plan - Christina Lake Water Utility Service (550)

The draft 2021 Work Plan was presented for discussion.

Moved / Seconded

That the Utilities Committee receive the draft Christina Water Utility Service (550) 2021 Work Plan. **FURTHER**, that the Work Plan be referred to a future meeting.

Carried.

G. Denkovski - Manager of Infrastructure and Sustainability
Re: 2021 Work Plan - Columbia Gardens Industrial Park Water Service (600)

The draft 2021 Work Plan was presented for discussion.

Moved / Seconded

That the Utilities Committee receive the draft Columbia Gardens Industrial Park Water Service (600) 2021 Work Plan. **FURTHER**, that the Work Plan be referred to a future meeting.

Carried.

G. Denkovski - Manager of Infrastructure and Sustainability
Re: 2021 Work Plan - Rivervale Water and Street Lighting Service (650)

The draft 2021 Work Plan was presented for discussion.

Moved / Seconded

That the Utilities Committee receive the draft Rivervale Water and Street Lighting Service (650) 2021 Work Plan. **FURTHER**, that the Work Plan be referred to a future meeting.

Carried.

G. Denkovski - Manager of Infrastructure and Sustainability
Re: 2021 Work Plan - East End Regional Sanitary Sewer Service (700)

The draft 2021 Work Plan is presented for discussion.

Director Cacchioni requested that is work plan be emailed to him directly.

The Committee discussed the possibility of holding a meeting in December 2020 to discuss the work plans further.

Moved / Seconded

That the Utilities Committee receive the draft East End Regional Sanitary Sewer Service (700) 2021 Work Plan. **FURTHER**, that the Work Plan be referred to a future meeting.

Carried.

G. Denkovski - Manager of Infrastructure and Sustainability
Re: 2021 Work Plan - Oasis - Rivervale Sewer Service (800)

The draft 2021 Work Plan was presented for discussion.

Moved / Seconded

That the Utilities Committee receive the draft Oasis - Rivervale Sewer Service (800) 2021 Work Plan. **FURTHER**, that the Work Plan be referred to a future meeting.

Carried.

LATE (EMERGENT) ITEMS

The Committee discussed the ongoing advocacy for the CPCC Update grant. On the Provincial level, it is on hold until a new cabinet is in place.

DISCUSSION OF ITEMS FOR FUTURE MEETINGS

There were no items to discuss for future meetings.

QUESTION PERIOD FOR PUBLIC AND MEDIA

A question period for the public nor the media was not required.

CLOSED (IN CAMERA) SESSION

A closed (in camera) session was not required.

ADJOURNMENT

There being no further business to discuss, the Chair adjourned the meeting at 11:28 am.



**Electoral Area Services Committee
Minutes
Thursday, November 12, 2020
Via Zoom Video Conference**

Directors Present:

Director Ali Grieve
Director Linda Worley
Director Grace McGregor
Director Vicki Gee

Alternate Directors Present:

Michael Tollis

Staff Present:

Mark Andison, Chief Administrative Officer
Donna Dean, Manager of Planning & Development
Bart Fyffe, Senior Planning Technician
Sandra Surinak, Recording Secretary

Guests:

Brad Hanson

CALL TO ORDER

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

ACCEPTANCE OF AGENDA (ADDITIONS/DELETIONS)

That the November 12, 2020 Electoral Area Services Agenda be adopted as amended.

Moved / Seconded

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Electoral Area Services Committee meeting
November 12, 2020

Agenda Item 6A was moved to follow consideration of minutes since the applicant was in attendance.

The following four items were added to the agenda:

- Status of road maintenance in the rural areas of the RDKB.
- Time of future meetings.
- Inclusion of a land acknowledgement on future EAS agendas.
- APC appreciation.

Carried

MINUTES

That the October 15, 2020 Electoral Area Services Minutes be adopted as presented.

Moved / Seconded

Carried.

NEW BUSINESS

(Moved from a later portion of the agenda)

Tracy and Brad Hanson

RE: Development Variance Permit

270 Mayer Road, Electoral Area B/Lower Columbia-Old Glory

RDKB File: B-Twp-28-10998.290

Moved / Seconded

That the Development Variance Permit application submitted by Bradley Hanson and Tracey Hanson, to vary Section 302.2(g) of the Area 'B' Zoning Bylaw No. 1540, 2015 to increase the maximum gross floor area of storage buildings, including garages, that may be located on a parcel that does not have a principal use or building provided they are only being used for non-commercial/industrial storage of goods or vehicles belonging to the owner from 60 m² to 92 m² – a variance of 32 m², to build a workshop/storage space to store building materials in preparation for building a single family

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Electoral Area Services Committee meeting

November 12, 2020

dwelling, for the property legally described as Lot 3, Township 28, Kootenay District, Plan EPP100686, Electoral Area B/Lower Columbia-Old Glory, be presented to the Regional District of Kootenay Boundary Board of Directors for consideration, with a recommendation to approve.

Carried.

Mr. Hanson exited the meeting at 11:05 a.m.

DELEGATIONS

There we no delegations in attendance.

UNFINISHED BUSINESS

Sheri Doyle and Joseph Gagnon

RE: Development Variance Permit

7390 Porcupine Road, Big White, B.C.

RDKB File: BW-4109s-07405.000

Moved / Seconded

That the Development Variance Permit application submitted by Sheri Doyle, on behalf of Sheri Doyle and Joseph Gagnon, to vary Section 402.7 of the Big White Zoning Bylaw No. 1166, 2001 to reduce the minimum front lot line setback from 4.5 m to 0 (zero) m – a variance of 4.5 m, for the construction of an enclosed staircase on the property legally described as Lot 10, Plan KAP23322, District Lot 4109s, Similkameen Division of Yale Land District, Electoral Area 'E'/West Boundary be presented to the Regional District of Kootenay Boundary Board of Directors for consideration, with a recommendation to approve, subject to the following conditions:

1. That the staircase shall comply with the terms and conditions as outlined in Alpine Environmentally Sensitive Development Permit 649-20D;
2. That issuance of the Development Variance Permit be withheld until the property owner has provided clear evidence to the satisfaction of the Manager of Planning and Development that the development is in compliance the Ministry of Transportation and Infrastructure's Encroachment Permit for the subject property; and

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Electoral Area Services Committee meeting

November 12, 2020

3. That the staircase shall comply with any outstanding requirements of a Regional District of Kootenay Boundary Building Official, which may include changes to the built stairs to comply with B.C. Building Code or engineering reporting standards.

Carried.

NEW BUSINESS

Susie and Grant Stevens

RE: Development Permit

3035 East Lake Drive, Electoral Area C/Christina Lake, B.C.

RDKB File: C-963-04311.000

Moved / Seconded

That the staff report regarding the Development Permit application submitted by Dan Sahlstrom, WSA Engineering Ltd. On behalf of Grant Stevens and Susan Stevens to construct a single family dwelling with an onsite sewerage disposal system in the Environmentally Sensitive Waterfront Development Permit Area on the parcel legally described as Lot 1, District Lot 963, Similkameen Division Yale Land District Plan 6830, be received.

Carried.

1107439 BC Ltd., Ken Flett, Agent

RE: MOTI Subdivision

8930 Highway 33, Electoral Area E/West Boundary

RDKB File: E-1909s-04955.000

Moved / Seconded

Concerns were expressed regarding environmental impact and safe access off the highway.

That the staff report regarding the Ministry of Transportation and Infrastructure referral for a proposed 27 lot conventional subdivision, for the parcels legally described as the District Lot 1909s, Similkameen Division of Yale Land District, located in Electoral Area E/West Boundary, be received; And further, that staff be directed to work with the applicant to determine suitable parkland dedication.

Carried.

002 Electoral Area Administration Work Plan

Moved / Seconded

That the Electoral Area Services Committee receive the draft Electoral Area Services Administration (002) 2021 Work Plan. **FURTHER** that the Work Plan be referred to a future meeting.

Carried.

005 Planning and Development Work Plan

Bart Fyffe, Senior Planning Technician gave a verbal report regarding the pros and cons of having the Interactive Web Map hosted in-house.

Moved / Seconded

That the Electoral Area Services Committee receive the draft Planning and Development (005) 2021 Work Plan. **FURTHER** that the Work Plan be referred to a future meeting.

Carried.

120 House Numbering Area A and C Work Plan

Director McGregor requested that the staff review the house numbers in the Cascade area of Christina Lake.

Moved / Seconded

That the Electoral Area Services Committee receive the draft House Numbering for Areas A and C (120) 2021 Work Plan. **FURTHER** that the Work Plan be referred to a future meeting.

Carried.

Grant in Aid Report

Moved / Seconded

The Committee suggested a review to determine if COVID-19 is impacting how money is being allocated.

That the Grant in Aid report be received.

Carried.

Gas Tax Report

The Finance Department will be updating the formatting of this report and feedback should be forwarded to Carolyn Gillis, Financial Services Manager.

Moved / Seconded

That the Gas Tax report be received.

Carried.

LATE (EMERGENT) ITEMS

Road Maintenance in Rural Areas

Committee members discussed concerns about road maintenance within their electoral areas and concluded that they would direct constituents to forward complaints to both the contractor and the Ministry of Transportation and Infrastructure.

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Electoral Area Services Committee meeting
November 12, 2020

Start Time for the Next Electoral Area Services Meeting

It was suggested that the start time for 2021 meetings be 10:30 a.m. This will be confirmed at a future board meeting.

Land Acknowledgment on Future Agendas

The Committee requested that a land acknowledgement be included on future Electoral Area Services agendas.

APC Member Appreciation Dinners

The Directors discussed alternatives to in-person dinners that are normally held near year-end.

DISCUSSION OF ITEMS FOR FUTURE AGENDAS

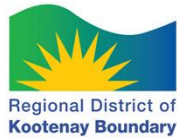
There was no discussion of items for future agendas.

CLOSED (IN CAMERA) SESSION

A closed (in camera) session was not required.

ADJOURNMENT

The meeting was adjourned at 12:15 p.m.



East End Services Committee

Minutes

Thursday, December 17, 2020
Held by ZOOM Online Video Conferencing

Committee members:

Director L. Worley - Chair
Director A. Grieve
Director A. Morel
Director R. Cacchioni
Director M. Walsh
Director S. Morissette
Alternate Director A. Parkinson

Staff present:

M. Andison, Chief Administrative Officer
M. Forster, Executive Assistant/Recording Secretary
J. Chandler, General Manager of Operations/Deputy CAO
S. Wright, Manager, Government Relations – BC Transit
S. Thomas, Trail Transit
T. Stach, Trail Transit

Call to Order

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

Land Acknowledgement

We acknowledge and appreciate that the land on which we gather is the converging, traditional and unceded territory of the Syilx, Secwepemc, Sinixt and Ktunaxa Peoples as well as the Metis Peoples whose footsteps have also marked these lands.

Acceptance of the Agenda (additions/deletions)

The agenda for the December 17, 2020 East End Services Committee meeting was presented.

Moved / Seconded

That the agenda for the December 17, 2020 East End Services Committee meeting be adopted as presented.

Carried.

Minutes

The minutes of the East End Services Committee meeting held on November 17, 2020 were presented.

Moved / Seconded

That the minutes of the East End Services Committee meeting held on November 17, 2020 be adopted as presented.

Carried.

Delegations

Seth Wright, Manager, Government Relations - BC Transit

Trevor Stach, Trail Transit

Sharman Thomas, Trail Transit

Seth Wright provided the Committee with a transit update. An overview of the following items was addressed:

- BC Transit partnership model,
- Safe Restart funding allocation,
- West Kootenay Transit System,
- Shelter program,
- Transit future service plan, and
- Update on the Trail Exchange.

Trevor Stach and Sharman Thomas provided an update on ongoing regional projects highlighting transit shelter and bus stop inventory and assessment update on the Rivervale stop completion and Cedar and Spokane Streets' awning replacement.

Discussions ensued on shelter improvements and maintenance and student ridership. The delegation left the meeting at 3:00 pm.

Unfinished Business

There was no unfinished business for discussion.

New Business

Director Cacchioni

Re: 2021 Budgets - Discussion

Director Cacchioni expressed his views on budget and other financial issues.

Late (Emergent) Items

There were no late (emergent) items for discussion.

Discussion of items for future agendas

Budget review.

Question Period for Public and Media

A question period for public and media was not required.

Closed (In camera) Session

Proceed to a closed meeting pursuant to Section 90 (1) (e) of the *Community Charter*.

Moved / Seconded

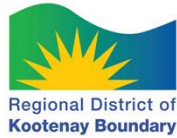
That the East End Services Committee proceed to a closed meeting pursuant to Section 90 (1) (e) of the *Community Charter* at 3:17 pm.

Carried.

The East End Services Committee reconvened to the open meeting at 3:24 pm.

Adjournment

The meeting was adjourned at 3:24 pm.



Beaver Valley Regional Parks and Regional Trails Committee

**Minutes
Tuesday, November 17, 2020
Held by Zoom Online Video Conferencing**

Committee members present:

Director A. Grieve, Chair
Director S. Morissette
Director M. Walsh

Staff present:

J. Chandler, General Manager of Operations/Deputy CAO
M. Forster, Executive Assistant/Recording Secretary
M. Daines, Manager of Facilities and Recreation

CALL TO ORDER

The Chair called the meeting to order at 9:00 am.

LAND ACKNOWLEDGEMENT

We acknowledge and appreciate that the land on which we gather is the converging, traditional and unceded territory of the Syilx, Secwepemc, Sinixt and Ktunaxa Peoples as well as the Metis Peoples whose footsteps have also marked these lands.

ACCEPTANCE OF THE AGENDA (additions/deletions)

The agenda for the November 17, 2020 Beaver Valley Regional Parks and Regional Trails Committee meeting was presented.

Moved / Seconded

That the agenda for the November 17, 2020 Beaver Valley Regional Parks and Regional Trails Committee meeting be adopted as presented.

Carried.

ADOPTION OF MINUTES

The minutes of the October 7, 2020, Beaver Valley Regional Parks and Regional Trails Committee meeting were presented.

Moved / Seconded

That the minutes of the October 7, 2020 Beaver Valley Regional Parks and Regional Trails Committee meeting be adopted as presented.

Carried.

DELEGATIONS

There were no scheduled delegations.

UNFINISHED BUSINESS

The Committee discussed the proposed Bike Pump Park and requested that staff reach out to the necessary contacts to move the project forward.

NEW BUSINESS

M. Daines, Manager of Facilities and Recreation
Re: 2021 Work Plan - Beaver Valley Arena Service - 011

The draft 2021 Work Plan was presented for discussion. The Committee discussed road access to Bike Bump Park and suggested that a communications strategy should be developed for homeowners living in the immediate vicinity of the Bike Park.

The Committee discussed the potential for arena upgrades and/or a small expansion. Director Grieve requested to have a review or examination of a master plan or strategy for expansion of the arena added to the work plan for 2021.

Moved / Seconded

That the Beaver Valley Regional Parks and Regional Trails Committee receive the draft Beaver Valley Arena Service (011) 2021 Work Plan. **FURTHER**, that the Work Plan be referred to a future meeting.

Carried.

M. Daines, Manager of Facilities and Recreation
Re: 2021 Work Plan - Beaver Valley Recreation Service - 013

The draft 2021 Work Plan was presented for discussion.

Moved / Seconded

That the Beaver Valley Regional Parks and Regional Trails Committee receive the draft Beaver Valley Recreation Service (013) 2021 Work Plan. **FURTHER**, that the Work Plan be referred to a future meeting.

Carried.

M. Daines, Manager of Facilities and Recreation
Re: 2021 Work Plan - Beaver Valley Regional Parks and Regional Trails Service - 019

The draft 2021 Work Plan was presented for discussion.

Moved / Seconded

That the Beaver Valley Regional Parks and Regional Trails Committee receive the draft Beaver Valley Regional Parks and Regional Trails Service (019) 2021 Work Plan. **FURTHER**, that the Work Plan be referred to a future meeting.

Carried.

M. Daines, Manager of Facilities and Recreation
Re: Committee Action Items Update

The Committee reviewed the Committee Actions Items Update.

Moved / Seconded

That the Beaver Valley Regional Parks and Regional Trails Committee receive the Committee Action Items update as presented.

Carried.

M. Daines, Manager of Facilities and Recreation
Re: Discussion - Train Station Museum Project

M. Daines reviewed the progress made on the project to date while speaking to the Beaver Valley Regional Parks and Regional Trails Service work plan.

Director A. Grieve
Re: Discussion - Clarify Approach to Joint Projects

Director Grieve spoke to the responsibility and the obligation of Committee members to report back to their respective Council members on key activities of the

Committees that members sit on. Support from the communities and generating excitement around new projects such as the replica train station are important.

Moved / Seconded

That the Beaver Valley Regional Parks and Regional Trails Committee receive the letter from the Village of Montrose for information.

Carried.

Newsletter Additions

There was a brief discussion about newsletter items.

LATE (EMERGENT) ITEMS

There were not late (emergent) items for discussion.

DISCUSSION OF ITEMS FOR FUTURE MEETINGS

Director Morissette will provide more information about parking around the arena at a future meeting.

QUESTION PERIOD FOR PUBLIC AND MEDIA

A question period for public and media was not required.

CLOSED (IN CAMERA) SESSION

A closed (in camera) session was not required.

ADJOURNMENT

The meeting was adjourned at 9:43 am.



Electoral Area C - Christina Lake Parks & Recreation Commission

Regular Meeting

Wednesday, November 18th, 2020

Christina Lake Community Hall

8:00 AM

Minutes

Commission Members Present:

Adam Moore
Brenda Auge
Erica McCluney
Joe Sioga
Josh Strzelec
Paul Beattie
Tara Bobocel

Absent:

Area Director

Grace McGregor

Staff Present:

Paul Keys
Melina Van Hoogevest

Alternate Area Director

Donna Wilchynski

Others Attending

1. Call to Order

- 1.a) The Chair called the meeting to order at 8:05am.

2. Land Acknowledgement

- 2.a) We acknowledge and appreciate that the land on which we gather is the converging, traditional and unceded territory of the Okanagan, Ktunaxa, Secwepemc Peoples as well as the Sinixt and Metis Peoples whose footsteps have also marked these lands.

3. Consideration of the Agenda (additions/deletions)

- 3.a) The agenda for the November 18, 2020 Electoral Area C - Christina Lake Parks & Recreation Commission meeting was presented.

The agenda was amended with the addition of a New Business Item; 9a) Recreation Commission Recruitment and a Late (Emergent) Item; 10.a) Community Accessibility Update (T. Bobocel)

30-20

Moved: Joe Sioga Seconded: Adam Moore
That the Agenda for the November 18, 2020 Electoral Area C - Christina Lake Parks & Recreation Commission meeting be adopted as amended.

Carried

4. Draft Minutes

- 4.a) The draft minutes of the Electoral Area C - Christina Lake Parks & Recreation Commission meeting held on October 14, 2020 were presented and it was;

31-20 Moved: Adam Moore Seconded: Tara Bobocel

That the draft minutes for the Electoral Area C - Christina Lake Parks & Recreation Commission meeting held on October 14, 2020 be adopted as presented.

Carried

5. Delegation

- 5.a) There were no delegations to be made.

6. Unfinished Business

- 6.a) There were no unfinished business to consider.

7. Communications-Information Only

- 7.a) There were no communications for information to consider.

8. Reports**8.a) Financial Report****i. Budget Review**

The budget for next year is under review. All Members of the Electoral Area C - Christina Lake Parks & Recreation Commission were in agreement to schedule a meeting on December 9, 2020 to discuss the budget.

8.b) Project Updates**i. Staff Report on:**

- Court Development Project

A written Staff Report was included in the agenda package and staff followed up with a verbal report.

Outland Design Landscape Architecture was onsite October 28, 2020 for an initial planning meeting. Initial drafts will be presented to the Recreation Commission on December 9, 2020. Vector Geomatics has also been onsite conducting a geotechnical survey of the property. The geotechnical survey has been received, and will serve to better inform cost estimates for development moving forward. The goal is to have the design portion of this project completed in time to inform the 2021 budget.

- **Osoyoos Indian Band Meeting**
A written Staff Report was included in the agenda package and staff followed up with a verbal report.
The Osoyoos Indian Band (OIB) meeting scheduled for October 28, 2020 was cancelled. The main contact with OIB had a family commitment and was unable to attend. Staff will try to reschedule the meeting in the spring of 2021 to ensure that we can conduct the needed archeological studies as soon as possible.
- **Viewing Dock Request for Information**
A written Staff Report was included in the agenda package and staff followed up with a verbal report.
A report was submitted to the Canadian Department of Fisheries and Oceans prior to the November deadline. Staff has received notification that the report was received. A concern was noted in the report that there is an endangered grass species located in this area.
- **Dog Park Clean Up**
A written Staff Report was included in the agenda package and staff followed up with a verbal report.
BC Wildfire was onsite November 5, 2020 to burn some of the remaining deadfall. The small crew was not able to get to all piles, and identified that some of the piles will have to be moved so existing mature trees are not harmed in the process. Staff will connect with BC Wildfire again in the spring to complete the project.
- **BC Park Meeting**
A written Staff Report was included in the agenda package and staff followed up with a verbal report.
Staff has attempted to meet with BC Parks Area Supervisor for the East Okanagan, Jonathan Finlay, since April 2020. Jonathan has indicated that he would be available to meet with the Members of the Electoral Area C - Christina Lake Parks & Recreation Commission in 2021.

8.c)**Sub Committee Report**

J. Strzelec gave a verbal report on trails in Christina Lake for the 2020 season. It was noted that the Gladstone Trail needs to be cleared in 2021. Volunteers will acquire a permit to stay at the North End of Christina Lake for two days to accomplish the clearing. The goal is to avoid the transport of volunteers and equipment back and forth over several days. J. Sioga suggested asking Forestry to assist with this project. Staff will contact Forestry and enquire.

8.d) Staff Monthly Report

A written Staff Report was included in the agenda package and staff followed up with a verbal report.

B. Auge thanked staff for reinstating fitness classes at the Christina Lake Community Hall.

8.e) Community Events Report

There was nothing to report.

The Reports of the Electoral Area C - Christina Lake Parks & Recreation Commission held on November 18, 2020 were presented and it was;

32-20

Moved: Adam Moore

Seconded: Tara Bobocel

That the Reports for the Electoral Area C - Christina Lake Parks & Recreation Commission meeting held on November 18, 2020 be adopted as presented.

Carried

9. New Business**9. a) Recreation Commission Recruitment**

Randy Gniewotta stepped down as a Member of the Electoral Area C - Christina Lake Parks & Recreation Commission as of October 14, 2020. Sandy Gniewotta will replace Randy and attend the December 9, 2020 meeting.

10. Late (Emergent) Items**10. a) Community Accessibility Update (Tara)**

T. Bobocel has received a quote for the mobi mat and mobi chair. The amount for both is approximately \$10,943 which is just over the \$10,000 maximum amount of Federal funding available. The challenges of purchasing the mobi chair is finding a suitable storage location for it, daily accessibility and determining who is responsible for liability. The mobi mat is a temporary structure secured by steel anchors. It requires approximately two days of maintenance per year to blow off the beach sand and ensure the anchors are securely in place. A permanent wood or acrylic paving structure could also be an option, however the pros and cons would need to be determined. T. Bobocel is pursuing the mobi mat for this year and will pursue the purchase of the mobi chair later on. T. Bobocel has been in contact with BC Parks Area Supervisor for the East Okanagan, Jonathan Finlay, and has shared all the information and installation requirements with him for the mobi mat. Jonathan is aware that this is time sensitive and will respond as soon as possible.

It was recommended that the Electoral Area C - Christina Lake Parks & Recreation Commission support the application that T. Bobocel is submitting and it was;

33-20

Moved: Paul Beattie

Seconded: Brenda Auge

That the Electoral Area C - Christina Lake Parks & Recreation Commission support the application that T. Bobocel is submitting.

Carried

11. Discussion of Items for Future Meetings

11. a) A discussion was not necessary.

12. Question Period for Public and Media

12. a) There weren't any questions from the public or media.

13. Adjournment

13. a) The next scheduled meeting will be held on December 9, 2020. There being no further business to discuss, the meeting was adjourned (time: 8:56am).

Melina Van Hoogevest,
Recording Secretary

Grace McGregor,
Chairperson



Electoral Area C - Christina Lake Parks & Recreation Commission

Regular Meeting

Wednesday, December 9th, 2020

Zoom Electronic Meeting

8:00 AM

Minutes

Commission Members Present:

Adam Moore
Brenda Auge
Joe Sioga
Josh Strzelec
Paul Beattie
Sandi Gniewotta
Tara Bobocel

Absent:

Erica McCluney

Area Director

Grace McGregor

Staff Present:

Paul Keys
Melina Van Hoogevest

Alternate Area Director

Donna Wilchynski

Others Attending

Fiona Barton – Outland Design Landscape Architect
Natalie Gauthier – Outland Design Landscape Architect
Rob Tambellini – Representative for the Christina Lake Tennis Players
Keith & Cassie Williams – Representatives for the Christina Lake Pickle Ball Club
Cliff & Holly Aschenbrenner – Representatives for the Christina Lake Pickle Ball Club

1. Call to Order

- 1.a) The Chair called the meeting to order at 8:01am.

2. Land Acknowledgement

- 2.a) We acknowledge and appreciate that the land on which we gather is the converging, traditional and unceded territory of the Okanagan, Ktunaxa, Secwepemc Peoples as well as the Sinixt and Metis Peoples whose footsteps have also marked these lands.

3. Consideration of the Agenda (additions/deletions)

- 3.a) The agenda for the December 9, 2020 Electoral Area C - Christina Lake Parks & Recreation Commission meeting was presented.

The agenda was amended with the addition of a Late (Emergent) Item; 10.a) Community Accessibility Update (T. Bobocel)

34-20 Moved: Joe Sioga Seconded: Tara Bobocel

That the Agenda for the December 9, 2020 Electoral Area C - Christina Lake Parks & Recreation Commission meeting be adopted as amended.

Carried

4. Draft Minutes

4.a) The draft minutes of the Electoral Area C - Christina Lake Parks & Recreation Commission meeting held on November 18, 2020 were presented and it was;

35-20 Moved: Tara Bobocel Seconded: Brenda Auge

That the draft minutes for the Electoral Area C - Christina Lake Parks & Recreation Commission meeting held on November 18, 2020 be adopted as presented.

Carried

5. Delegation(s)

5.a) Outland Design Landscape Architecture: Fiona Barton and Natalie Gauthier

Fiona Barton and Natalie Gauthier from Outland Design Landscape Architect attended the meeting to present the four concept options for the Court Development Project. These concepts have been developed based on initial input provided by the Christina Lake Pickleball Club and representatives of the local tennis playing community, via Administration.

Natalie and Fiona presented each concept and asked the Electoral Area C - Christina Lake Parks & Recreation Commission Members, the Pickleball Club representatives and the representative of the Christina Lake tennis players to provide feedback. The feedback provided will set direction for Outland Design to refine these preliminary concepts into one final concept. That final concept is scheduled to be completed in February 2021.

The following individuals left the meeting after presenting and/or providing feedback:

Fiona Barton – Outland Design Landscape Architect

Natalie Gauthier – Outland Design Landscape Architect

Rob Tambellini – Representative for Christina Lake Tennis Players

Keith & Cassie Williams – Representatives for Christina Lake Pickle Ball Club

Cliff & Holly Aschenbrenner – Representatives for the Christina Lake Pickle Ball Club

6.a) There were no unfinished business to consider.

7.a) There were no communications for information to consider.

8.a) Financial Report

RDKB Staff will meet with G. McGregor and D. Wilchynski in January 2021 to discuss the budget further.

There was nothing to report.

There was nothing to report.

There was nothing to report.

There was nothing to report.

The Reports of the Electoral Area C - Christina Lake Parks & Recreation Commission held on December 9, 2020 were presented and it was;

36-20 Moved: Joe Sioga Seconded: Tara Bobocel

That the Reports for the Electoral Area C - Christina Lake Parks & Recreation Commission meeting held on December 9, 2020 be adopted as presented.

Carried

9. a) There were no new business to consider.

10. Late (Emergent) Items**10. a)** Community Accessibility Update (Tara)

T. Bobocel has reported that her step-daughter, Jasmine McMullin, successfully submitted the Enabling Accessibility Application by the November 30th deadline, has received confirmation of receipt, and should have a response within 10 weeks. Jasmine is excited to work on new projects when the program re-opens in June. T. Bobocel has received an email from BC Parks Area Supervisor for the East Okanagan, Jonathan Finlay. Jonathan has written the following; “If you do secure funding, I will work with you to begin discussing the details of a “Letter of Authorization” or “Park Use Permit” in which we can layout the maintenance commitments and partnership details for seasonal installation within Christina Lake Park. (dates, locations, maintenance, etc) As I mentioned, we are working towards funding a Capital Project within that Park, which would include increasing accessibility options at that location, of which we view your application as aligning well with Park Values to see a variety of options come to fruition in the future. I thank you for reaching out, and excited to work with you as this proposal takes shape.”

11. Discussion of Items for Future Meetings**11. a)** A discussion was not necessary.**12. Question Period for Public and Media****12. a)** There weren't any questions from the public or media.**13. Adjournment****13. a)** The next scheduled meeting will be held on January 13, 2021. There being no further business to discuss, the meeting was adjourned (time: 9:59am).

Melina Van Hoogevest,
Recording Secretary

Grace McGregor,
Chairperson



Grand Forks & District Recreation Commission
Regular Meeting
Thursday, September 10th, 2020
Jack Goddard Arena - Viewing Room
8:45 AM
Minutes

Commission Members Present:

Brian Noble
 Bob MacLean
 Chris Moslin
 Eric Gillette
 Nigel James
 Roly Russell
 Susan Routley

Absent:

Jaime Massey
 Terry Doody

Staff Present:

Paul Keys
 Melina Van Hoogevest

1. Call to Order

- 1.a) The Chair called the meeting to order at 8:55am.

2. Consideration of the Agenda (additions/deletions)

- 2.a) The agenda for the September 10, 2020 Grand Forks & District Recreation Commission meeting was presented.

24-20

Moved: Susan Routley

Seconded: Nigel James

That the Agenda for the September 10, 2020 Grand Forks & District Recreation Commission meeting be adopted as presented.

Carried

3. Draft Minutes

- 3.a) The draft minutes of the Grand Forks & District Recreation Commission meeting held on June 11, 2020, were presented and it was;

25-20

Moved: Roly Russell

Seconded: Bob MacLean

That the draft minutes for the Grand Forks & District Recreation Commission meeting held on June 11, 2020, be adopted as presented.

Carried

Staff contacted RDKB to clarify the new Land Acknowledgment addition to the June 11, 2020 agenda and how it applies to Recreation Commission meetings, but did not receive a response as of September 10, 2020.

The Land acknowledgement is a new addition to the agenda as of June 11, 2020 and it was;

26-20

Moved: Bob MacLean

Seconded: Nigel James

That staff remove the Land Acknowledgment addition from the Grand Forks & District Recreation Commission agenda.

Defeated
(C. Moslin, E. Gillette, R. Russell, S. Routley)

- 3.b)** The draft minutes of the Grand Forks & District Recreation Commission special meeting held on July 9, 2020, were presented and it was;

27-20

Moved: Roly Russell

Seconded: Chris Moslin

That the draft minutes for the Grand Forks & District Recreation Commission special meeting held on July 9, 2020, be adopted as presented.

Carried

4. Delegation

- 4.a)** There were no delegations to be made.

5. Unfinished Business

- 5.a)** Recruitment to the Recreation Commission

The Grand Forks & District Recreation Commission encouraged members to recruit their neighbours, friends and family to consider becoming a member of the Grand Forks & District Recreation Commission. Five membership seats will be vacant as of January 1st, 2021 with the addition of two vacant seats that have remained vacant this past term. All potential names can be submitted to staff for review.

6. New Business**6.a) Fortis Energy Assessment Staff Report**

A written Staff Report was included in the agenda package and staff followed up with a verbal report.

The Grand Forks Aquatic Centre is the RDKB's largest energy consumer and green house gas emitter across our facilities. Fortis is currently offering 2 fully funded programs, a Recommissioning Program, and a Custom Energy Efficiency Program that is available until March 31, 2021. The recommissioning process is identifying "low cost/no cost" operational improvements given the building's current usage to obtain comfort and energy savings. A Custom Energy Study provides a detailed engineering analysis of the facility to find areas for cost-effective natural gas and/or electricity projects. Given the solar infrastructure already in place at the Aquatic Centre, RDKB decided to apply for a grant to pursue a custom energy study. To take advantage of this opportunity, Administration has partnered with the RDKB's Senior Energy Specialist to develop an RFP to find a professional engineer that will fill out the detailed Fortis grant application, and once approved, carry out the Custom Energy Study at the Grand Forks Aquatic Centre. The RFP was posted August 21, with the goal of having a firm in place before the end of September. Financially, the grant application will cost approximately \$1000 to prepare at RDKB's cost. Once the grant is approved by Fortis, RDKB will have to pay for the engineering report. Fortis will reimburse 100% upon completion of the report.

The Fortis Energy Assessment Staff Report was provided for the Grand Forks & District Recreation Commission and it was;

28-20

Moved: Susan Routley

Seconded: Nigel James

That the Grand Forks & District Recreation Commission accept the direction that is defined in the Fortis Energy Assessment Staff Report.

Carried

6.b) BCDC Work Plan Update and Look Forward Staff Report

A written Staff Report was included in the agenda package and staff followed up with a verbal report.

The purpose of this report was to provide an update on the 2020 Grand Forks and Christina Lake Work Plans, including Program Services, Christina Lake Parks and Trails, Grand Forks Aquatic Centre and Arena. It was noted that administrative time has been stressed due to Covid-19 complications in operations. The increased administrative time required throughout the operation has made it difficult to move forward with project based work. In 2021 staff will

attempt to complete unfinished 2020 projects, push forward with new studies to inform future capital work, while dedicating a significant amount of administrative time towards review of programs and fees.

There was a verbal request from a Grand Forks & District Recreation Commission Member to improve the sound system at the Grand Forks Aquatic Centre.

There was an informative discussion in regards to the new Community Club Project that Grand Forks & District Recreation has implemented. Utilizing the local newspaper, radio, and social media, staff has requested that all cultural and recreational clubs contact Grand Forks & District Recreation with their information so staff can include them in the new Leisure Activities 2020 Guide. This comprehensive guide will provide the community with a list of activities and the appropriate contact information, for those who are interested.

BCDC Work Plan Update and Look Forward Staff Report were provided for the Grand Forks & District Recreation Commission and it was;

29-20

Moved: Chris Moslin

Seconded: Susan Routley

That the BCDC Work Plan Update and Look Forward Staff Report of the Grand Forks & District Recreation Commission meeting held on September 10, 2020, be adopted as presented.

Carried

7. Communications-Information Only

- 7.a) There was no communications for information to present.

8. Reports

8.a) Supervisor Reports

The following Supervisor Reports for the month of June/July/August 2020 were presented:

- Aquatic Maintenance Coordinator
- Aquatic Program Coordinator
- Arena Maintenance Chief Engineer
- Recreation Program Services Supervisor

Susan Routley made a request that the Grand Forks Aquatic Centre Aquafit Moderate fitness class return to the historical forty-five minute duration opposed to the sixty minute duration that is currently scheduled.

Nigel James expressed recognition for the excellent organization of registered programs at Grand Forks & District Recreation highlighting that they make sense, are easy to understand and that the recreation staff has been excellent.

Staff provided a brief verbal report of the reopening of the Grand Forks Curling Rink and the programs available at the Aquatic Centre and Jack Goddard Memorial Arena. A Registered Program List for September 2020 was included in the agenda package for the Grand Forks Aquatic Centre.

The Supervisor Reports of the Grand Forks & District Recreation Commission held on September 10, 2020, were presented and it was;

30-20

Moved: Susan Routley

Seconded: Nigel James

That the Supervisor Reports of the Grand Forks & District Recreation Commission meeting held on June/July/August 2020, be adopted as presented.
Carried

It was noted that Roly Russell departed the meeting at 10:52am.

9. Round Table

9.a) School District #51

No report was provided.

9.b) Library and Arts Societies (Culture) – Vacant

9.c) Recreation and Culture Committee of City Council

Chris Moslin thanked the Grand Forks & District Recreation staff for providing the vulnerable population within our community an opportunity to utilize the showers at the Grand Forks Aquatic Centre this past summer.

Appreciation was expressed for staff who arranged the September 10, 2020 Grand Forks & District Recreation Commission meeting face to face ensuring that physical distancing measures were in place. It was requested that the Grand Forks & District Recreation Meeting scheduled for October 8, 2020 be held in the same location. It was reported that City Council meetings are still being held electronically over Zoom.

9.d) Community Members at Large

Susan Routley expressed great satisfaction with the progression of The Learning Garden located adjacent to the Grand Forks Aquatic Centre. Susan commended the president of the Learning Garden, Angela Nichols, for outstanding workmanship.

Eric Gillette requested confirmation that the Border Bruins would be charged full ice fees and be expected to pay this for the 2020-2021 season. Staff confirmed that the Border Bruins would be charged full ice fees and would be expected to pay that amount in full.

10. Late (Emergent) Items

There were no late emergent items to consider.

11. Discussion of Items for Future Meetings

A discussion was not necessary.

12. Question Period for Public and Media

There weren't any questions from the public or media.

13. Adjournment

There being no further business to discuss, the meeting was adjourned (time 11:07am).

Melina Van Hoogevest,
Recording Secretary

Brian Noble,
Chairperson



Grand Forks & District Recreation Commission
Regular Meeting
Thursday, October 8, 2020
Jack Goddard Arena - Viewing Room
8:45 AM
Minutes

Commission Members Present:

Brian Noble
 Bob MacLean
 Eric Gillette
 Jaime Massey
 Terry Doody

Absent:

Chris Moslin
 Nigel James
 Roly Russell
 Susan Routley

Staff Present:

Paul Keys
 Melina Van Hoogevest

1. Call to Order

- 1.a) The Chair called the meeting to order at 8:47am.

2. Consideration of the Agenda (additions/deletions)

- 2.a) The agenda for the October 8, 2020 Grand Forks & District Recreation Commission meeting was presented.

The agenda was amended with the addition of New Business items; 6.b) Community Garden, 6.c) Joint Use Agreement between RDKB and School District 51, and 6.d) Leisure Access & Inclusion Program.

31-20

Moved: Jaime Massey

Seconded: Eric Gillette

That the Agenda for the October 8, 2020 Grand Forks & District Recreation Commission meeting be adopted as presented.

Carried

3. Draft Minutes

- 3.a)** The draft minutes of the Grand Forks & District Recreation Commission meeting held on September 10, 2020, were presented and it was;

32-20

Moved: Bob MacLean

Seconded: Jaime Massey

That the draft minutes for the Grand Forks & District Recreation Commission meeting held on September 10, 2020, be adopted as presented.

4. Delegation

- 4.a)** There were no delegations to be made.

5. Unfinished Business

- 5.a)** Recruitment to the Recreation Commission

Bob MacLean has requested permission to invite Cheryl Ahrens, who is interested in becoming a Commission Member, to the Grand Forks & District Recreation Commission meeting scheduled for November 12, 2020. This request was granted by staff.

Jaime Massey will send an email to the School District Trustees for additional recruitment.

Staff will confirm with RDKB if Grand Forks & District Recreation Commission members are eligible for reappointment once they have served three consecutive terms according to Bylaw No. 927.

It was suggested that the Grand Forks & District Recreation Commission change the scheduled meetings from 8:45am to an evening start to possibly recruit potential members who are employed during daytime hours. It is scheduled to be discussed further at next month's meeting.

- 5.b)** Pumphouse Demolition – Staff Report

A written Staff Report was included in the agenda package and staff followed up with a verbal report.

Staff has reached out to an environmental consultant on an informal basis to discuss the process that will be needed to properly decommission the well located next to Jack Goddard Memorial Arena and remove the building. Rod Zielinski, new Utilities Manager for the City of Grand Forks wants to be extremely sure that there is no future need for the pump house prior to starting on the project. Rod will also be involved on behalf of the City of Grand Forks in dealing with

removal of the electrical structure located adjacent to the pump house. The goal remains to get the pump house removed before the end of the year.

Eric Gillette questioned why RDKB is involved in this process as the well is located on City land.

5.c) Fortis Energy Assessment Update – Staff Report

A written Staff Report was included in the agenda package and staff followed up with a verbal report.

Fortis is currently offering two fully funded programs, a Recommissioning Program, and a Custom Energy Efficiency Program that is available until March 31, 2021. Given the solar infrastructure already in place at the Aquatic Centre, RDKB decided to apply for a grant to pursue a custom energy study. To take advantage of this opportunity, Staff partnered with the RDKB's Senior Energy Specialist and developed an RFP to find a professional engineer that will fill out the detailed Fortis grant application, and once approved, carry out the Custom Energy Study at the Grand Forks Aquatic Centre.

Building Energy Solutions Ltd. (BES) was awarded the service contract on September 21, 2020. BES is the same company that carried out a smaller scale energy study at the Aquatic Centre in 2017. This study will review that existing data, update information to the current operating practices, and push forward to identify a number of opportunities to improve energy efficiency, reduce energy costs and greenhouse gas emissions.

The study is dependant on approval from Fortis to move forward. BES will be developing the application to Fortis on our behalf at no cost, opposed to the \$1000 we thought it would cost. The goal is to have the study completed before the end of 2020.

6. New Business

6.a) Arena Ice Schedule – Staff Report

A written Staff Report was included in the agenda package and staff followed up with a verbal report.

Approximately thirty percent of Grand Forks Border Bruin players this year are still in high school and have requested to move their practice time away from school hours and into a prime time scheduling spot. They specifically covet the slot immediately after school that the Grand Forks Figure Skating Club has traditionally held on Monday and Wednesdays. Staff has scheduled the Border Bruins on Tuesday and Thursdays immediately after school, Monday night after Minor Hockey for a 9pm start and Wednesday's during the school lunch hour.

The Bruins would have preferred a consistent practice time from day to day, but seem happy with the compromise. Staff has reached out to the Adult Rec League to request a schedule change on Wednesday's to avoid a school lunch hour practice for the Bruins. All other user groups are planning to return to the ice following Thanksgiving. The Boundary Adult Hockey League will be back, forming two Cohorts of four teams and forty-eight players each. The Black Betty's are returning on Thursday night's as well. We are working to form a local Boundary Cohort of up to fifty seniors to play Senior Not Drop-In Hockey this year. Players wanting to play will have to be registered members of the Cohort before they are able to reserve a spot to play hockey with our senior group. Minor Hockey is also returning under a similar cohort structure to what the Border Bruins will be using. The Figure Skating Club has received a grant to help cover ice time this year on Monday's and Wednesday's after school. They currently do not have an instructor certified through Skate Canada due to courses not being available during covid-19. Staff is working with them to find a solution. Staff has gathered a number of Facility Allocation municipal policies to compare and will begin working on a policy. Staff will present this policy to the Commission to help guide possible decisions in the future.

Eric Gillette suggested that for future ice allocations all clubs and teams engage in a meeting to determine the schedule for the season. It was also noted that ice allocations are historically done in the spring prior to each season, however, covid-19 delayed that process this year.

- 6.b)** Community Garden
Brian Noble spoke to Angela Nichols, President of the AG Society, in regards to opening the Learning Garden to the public. Staff met with the City of Grand Forks CAO, Duncan Redfearn, and both have agreed, with covid-19 procedures in place, the Learning Garden can be reopened to the public.
- 6.c)** Joint User Agreement between RDKB and School District 51
The Joint User Agreement between RDKB and School District 51 was provided for all Grand Forks & District Recreation Commission members that were present at the meeting. The last signed agreement on file is dated November 2, 2016. School District 51 has a draft version for 2017/18. It was submitted to the Trail RDKB office in May 2018 and not returned. Staff will work with School District 51 to establish a new agreement. It was also noted that the Board of Education passed a motion in September, 2020 to suspend all community rentals of their facilities until December 2020 due to COVID-19 and their health and safety protocols. It will be reviewed in January 2021.
- 6.d)** Leisure Access & Inclusion Program.
Staff provided members that were present at the meeting with a new Leisure Access & Inclusion Program pamphlet and a letter that was recently sent to all previous clients of this program. Staff provided a brief explanation as to what the program entails. The Leisure Access & Inclusion Program provides a fifty percent reduction in price for general admission and swimming lessons for low income

families whose gross income falls below the low income levels recognized by Statistic Canada. One of the changes made to the program was in regards to a language change from 'Special Needs' to 'Individuals with a Disability'. Staff also discussed the importance of a fee review in the near future, including the removal of 'Special Needs' pricing as individuals with a disability can apply for the Leisure Access & Inclusion Program to reduce their costs, if they qualify based on their annual gross income. In the spring of 2020 staff conducted a research project to determine what other aquatic centers are charging for general admission, lessons and leadership courses. This will be beneficial for our future fee review process.

33-20

Moved: Jaime Massey Seconded: Eric Gillette

That the Staff Reports for the Grand Forks & District Recreation Commission meeting held on October 8, 2020, be adopted as presented.

7. Communications-Information Only

- 7.a) There was no communications for information to present.

8. Reports

8.a) Supervisor Reports

The following Supervisor Reports for the month of September 2020 were presented:

- Aquatic Maintenance Coordinator
- Aquatic Program Coordinator
- Arena Maintenance Chief Engineer
- Recreation Program Services Supervisor

It was discussed that the Grand Forks & District Recreation Commission members would like to meet face to face with the Grand Forks & District Recreation Supervisors on an annual basis. It was agreed that the Aquatic Maintenance Coordinator would be invited to attend a meeting in September to verbally report on the Aquatic Centre shutdown project. The Aquatic Program Coordinator would be invited to attend a meeting in November and the Arena Maintenance Chief Engineer would be invited to attend in February near the end of the ice season.

34-20

Moved: Bob MacLean Seconded: Terry Doody

That the Supervisor Reports of the Grand Forks & District Recreation Commission meeting held on October 2020, be adopted as presented.
Carried

9. Round Table

9.a) **School District #51**

Jaime Massey has reported that the Superintendent, Ken Minette, indicated that there are presently ninety-two percent of students that have returned to in class learning, five percent are doing the SD51 Distance Learning Program, and three percent have enrolled in distance learning programs outside of SD51 or are homeschooling. SD 51 has had thirty new students enroll this fall which has brought them close to the anticipated student enrollment for SD51, despite a small number of students participating in other distance learning programs. Most parents of students enrolled in the SD51 Distance Learning Program have indicated that they plan to have their children return to in class learning. Children in elementary school classes, Kindergarten through to Gr. 7, can return after Christmas Break or after Spring Break. GFSS students in Grades 8-12 can return at the beginning of each new 1/4 semester.

The Director of Learning, Anna Lautard, has reported that Food Security Programs can facilitate support for students and families that are struggling with food at home. Taking care of basic needs can have an impact on individual student learning. The Board is discussing options going forward. Anna Lautard also spoke about wellness and the discussions with Amy Allan, a trained counsellor, for providing support and upcoming training in Trauma Informed Practice. Trauma Informed Practice is a way that educators can recognize signs of trauma and be knowledgeable of the effects. It is a way of working with students that emphasizes safety, trustworthiness, choice, connection, collaboration, strengths, skill building, and self-care. Amy Allan will facilitate two sessions with each Boundary school staff to explain things they might note in their own behaviour or their students behaviour as they manage student learning during a pandemic.

The Board Office Staff spent most of their summer working with the Ministry of Education for a return to school. It involved creating clear Guidelines for School Restart, coordinating individual school plans to manage regular full time student attendance, staffing, including adding a Distance Learning opportunity and busing, to name a few.

Jackie Schott, Principal of Perley Elementary, is keeping students safe using learning groups which include mustering stations to start the school day and staggered breaks and lunches so there is equitable access to different areas of the school.

Jaime Massey has indicated that the current SD 51 Board Office is not considered an inclusive space based on the poor layout for meeting room access. There are several sets of stairs to access any room/floor/space in the SD 51 Board Office. It was requested that RDKB consider a partnership with SD51 in regards to sharing office space within the new proposed Community Centre.

9.b) Library and Arts Societies (Culture) – Vacant

No report provided.

9.c) Recreation and Culture Committee of City Council

No report provided.

9.d) Community Members at Large

Bob MacLean asked Staff to outline the expectations for the Senior's Not-Drop In Hockey Program. Staff explained the procedures and indicated that there would be a copy of the updated rules and regulations available for the cohort as they emerged. Bob is concerned about mixing the 55+ and 65+ age groups as these were two separate programs in previous years.

Eric Gillette asked if RDKB has made a \$20,000 contribution towards The Phoenix Ski Hill. Staff has confirmed that all Community Association Grants have been paid out.

10. Late (Emergent) Items

There were no late emergent items to consider.

11. Discussion of Items for Future Meetings

A discussion was not necessary.

12. Question Period for Public and Media

There weren't any questions from the public or media.

13. Adjournment

35-20

Moved: Jaime Massey

Seconded: Eric Gillette

That there being no further business to discuss, the meeting was adjourned (time 10:24am).

Carried

The next Grand Forks & District Recreation Commission meeting will be held on November 12, 2020

Melina Van Hoogevest,
Recording Secretary

Brian Noble,
Chairperson



Grand Forks & District Recreation Commission
Regular Meeting
Thursday, November 12, 2020
Jack Goddard Arena - Viewing Room
8:45 AM
Minutes

Commission Members Present:

Brian Noble
 Bob MacLean
 Chris Moslin
 Jaime Massey
 Susan Routley

Absent:

Eric Gillette
 Nigel James
 Terry Doody

Staff Present:

Paul Keys
 Melina Van Hoogevest

Others Attending:

Cheryl Ahrens – Observing
 Marg Kovacs – Aquatic Maintenance Coordinator
 Megan Tiller – Aquatic Program Coordinator

1. Call to Order

1.a) The Chair called the meeting to order at 8:47am.

2. Land Acknowledgment

2.a) We acknowledge and appreciate that the land on which we gather is the converging, traditional and unceded territory of the Okanagan and Secwepemc Peoples as well as the Metis Peoples whose footsteps have also marked these lands.

3. Consideration of the Agenda (additions/deletions)

3.a) The agenda for the November 12, 2020 Grand Forks & District Recreation Commission meeting was presented.

The agenda was amended with the addition of a New Business Item; 7.d) R. Russell's Resignation.

36-20

Moved: Jaime Massey

Seconded: Susan Routley

That the Agenda for the November 12, 2020 Grand Forks & District Recreation Commission meeting be adopted as amended.

Carried

6.b) Pumphouse Demolition – Staff Report

A written Staff Report was included in the agenda package and staff followed up with a verbal report.

The City of Grand Forks is actively seeking an additional water source for the community. Before this existing well is fully decommissioned the City would like the opportunity to enter the well head in the spring of 2021 and develop it to the point of getting a representative sample of water to determine the quality.

Administration has included the pump house in the initial phases of the budgeting process for 2021, with an increased request for funds to ensure enough money is available to properly decommission and demolish the pump house if the City decides it is not needed moving forward.

Staff has reported that RDKB is involved in this process as the well belongs to the City, but is located on RDKB land.

6.c) Grand Forks Figure Skating Club Insurance – Staff Report

A written Staff Report was included in the agenda package and staff followed up with a verbal report.

The Figure Skating Club has not been able to secure insurance for their Club. Their new instructor is not currently certified as a Skate Canada Instructor and there are no courses available due to covid-19. Without that certified instructor, the Club cannot teach Skate Canada lessons, register skaters with Skate Canada, or take advantage of Skate Canada Insurance. They have approached Grand Forks Recreation requesting assistance with insurance. When informed of the various hurdles to overcome in gaining municipal insurance, the Skating Club decided to withdraw their request. The new president of the Club has informed us that their preference is to wait until they are able to find a Skate Canada program for their instructor to take so they are fully operational. The Figure Skating Club's afterschool ice time is being used by the Border Bruins for practice, with the understanding that once the Club is ready to resume activity they will get their two timeslots per week back from the Bruins.

7. New Business**7.a) Program Registrations – Staff Report**

A written Staff Report was included in the agenda package and staff followed up with a verbal report.

Due to Covid-19, participants in all programs at the Aquatic Centre are required to preregister. Staff are starting to see increased incidents of patrons not showing up for programs they have registered for, and therefore, programs are occasionally running at less than capacity. Financial penalties for not showing up to a class have been avoided to ensure that those experiencing symptoms of Covid-19 do not show up at class because of the money involved. Administration is currently working on a policy to address this situation without involving financial penalties, whereby patrons would progressively lose their ability to register for courses in advance after two “no show” infractions. Currently, patrons are permitted to register for programs one month at a time. Some members of the public are

having a tough time getting into programs due to capacity limits. The release of programs for registration will become more defined in 2021 to ensure everyone has a fair chance to access programs when they first become available.

- 7.b) Wintertime Use – Dick Bartlett park (N. James)**
 N. James was not able to attend the meeting and submitted a letter on his behalf outlining the request.
 It was suggested that the recreational facilities within Grand Forks create a one kilometer cross-country ski trail around the perimeter of Dick Bartlett Park. In addition, the central field area could be utilized for snow-shoeing, and snow-pitch casual games. Users might be interested in competition, instructional opportunities, casual outdoor exercise, or school outings. It was suggested that Staff request use of the park from the City of Grand Forks.
 C. Moslin indicated that permission is not needed from the City to create a cross country trail around the perimeter of the park. It was suggested that the Cross Country Ski Society could utilize the trail at Dick Bartlett Park for a Jack Rabbit Course to teach children how to cross country ski. Staff will reach out to the Cross Country Ski Society and enquire if there's any interest.
- 7.c) December Commission Dinner (B. Noble)**
 B. Noble has requested confirmation that RDKB Christmas gatherings are restricted due to Covid-19. He is under the impression that the APC is organizing a Christmas gathering in the month of December.
- 7.d) R. Russell's Resignation.**
 R. Russell submitted his resignation letter in person prior to the Grand Forks & District Recreation Commission meeting commencing on November 12, 2020.
 B. Noble has stated that the letter is available for information.
 B. Noble has requested that Staff write a letter to R. Russell expressing gratitude and appreciation for his service to the Grand Forks & District Recreation Commission.

8. Communications-Information Only

- 8.a)** There was no communications for information to present.

9. Reports

9.a) Supervisor Reports

The following Supervisor Reports for the month of October 2020 were presented:

- Aquatic Maintenance Coordinator
- Aquatic Program Coordinator
- Arena Maintenance Chief Engineer
- Recreation Program Services Supervisor

38-20 Moved: Susan Routley Seconded: Bob MacLean

That the Supervisor Reports of the Grand Forks & District Recreation Commission meeting held on November 12, 2020 be adopted as presented.

Carried

10. Round Table

10.a) School District #51

J. Massey has reported that there is a new Release of Framework for Enhancing Student Learning Policy and Enhancing Student Learning Reporting Order. The Framework for Enhancing Student Learning Policy states that districts must create and maintain a strategic plan, annually report on student outcomes, put systems in place to continuously improve educational outcomes for all students, ensure equity in learning for Indigenous students, child and youth in care and students with diverse abilities. Superintendent, Ken Minette, connected with Interior Health and has reports of greater than 10% illness showing up in SD51. This reporting is a normal annual procedure for flu season and with the addition of Covid-19, it is easier to reach the 10% mark they are now looking for both respiratory and gastrointestinal symptoms. The Deputy Minister has reported that cases of Covid-19 for children are at less than 10% provincially and despite the return to school, the province has not seen an increase for Covid-19 illness in BC children. BC School Sports is working with the Ministry of Education to align sport opportunities with community sports. Schools are currently practicing in class cohorts. SD 51 Administration Staff have had a demonstration on the Transportation Operations Management program that will support bus routing, fleet maintenance, activity trips, vehicle tracking and more. Senior management proposes the following additions to the 2020/21 budget; Literacy Support Teacher time, additional Speech & Language Pathologist (SLP) time, succession planning for senior management, strategic Planning Facilitator, 1:1 Counselling (West), Elementary classroom libraries, centralized dispatching, and IT department administration support. The Board also elected a new Chair, Rose Zitko, and Vice Chair, Jaime Massey.

10.b) Library and Arts Societies (Culture) – Vacant

No report provided.

10.c) Recreation and Culture Committee of City Council

C. Moslin reported that Grand Forks residents can expect a period of growth in the community for 2021. Some of the homes that were affected by the flood of 2018 have been, and will be, relocated into new neighbourhoods throughout the community. Developers are interested in the parcel of land behind the Station Pub and plan on building approximately seventy affordable homes. Tim Horton developers are preparing for an opportunity to open their franchise and break ground in the spring of 2021 on Central Ave. Developers are also looking at establishing an RV Park by Extra Foods for 100-150 sites. C. Moslin stated that

the demand on recreation facilities and programming will inevitably increase with growth.

10.d) Community Members at Large

B. MacLean has requested a division of the 55+ and 65+ senior hockey players during the Seniors' Not Drop-In Hockey program scheduled Monday to Thursday from 9-10am. B. Maclean has also enquired why showers are not permitted as other facilities are allowing the use of showers. Staff explained that the dressing rooms at the Jack Goddard Memorial Arena are not well ventilated and pose the highest level of risk for the transmission of Covid-19. B. MacLean asked if spectators were permitted during Junior B games held at the Jack Goddard Arena and Staff reported that only Junior B players, referee's, coaches, the press and medical staff are permitted during games.

S. Routley stated that she is proud of the staff at Grand Forks & District Recreation and emphasized what an amazing job they have done throughout a pandemic.

11. Late (Emergent) Items

There were no late emergent items to consider.

12. Discussion of Items for Future Meetings

A discussion was not necessary.

13. Question Period for Public and Media

There weren't any questions from the public or media.

14. Adjournment

39-20 Moved: Susan Routley Seconded: Jamie Massey

That there being no further business to discuss, the meeting was adjourned (time 11:02am).

Carried

The next Grand Forks & District Recreation Commission meeting will be held on January 14, 2020.

Melina Van Hoogevest,
Recording Secretary

Brian Noble,
Chairperson



**Regional District of
Kootenay Boundary**

ELECTORAL AREA 'A'
ADVISORY PLANNING COMMISSION
MINUTES

Tuesday, January 5, 2021 via tele-conference, commencing at 4:30 p.m.

PRESENT: Fred Buckley, Rob Ironmonger, Shelley Levick, Craig Stemmler,
Travis Mashford
ABSENT: Linda Green, Tyleen Underwood
RDKB DIRECTOR: Ali Grieve
RDKB STAFF:
GUESTS: Orest Leyland, Brandon Van dyk

1. CALL TO ORDER

The meeting was called to order at 4:30 PM

2. ADOPTION OF AGENDA

It was moved and seconded that the January 5, 2021 Electoral Area A APC agenda be adopted.

3. ELECTION OF CHAIR, VICE CHAIR AND SECRETARY

The committee agreed that the Craig Stemmler remain as the Chair, Rob Ironmonger remain as Secretary and the Vice Chair be appointed from the committee in the absence of the chair.

4. ADOPTION OF MINUTES

It was moved and seconded that the September 1, 2020 Electoral Area A APC minutes be adopted.

5. DELEGATIONS - None

6. UPDATES TO APPLICATIONS AND REFERRALS – None

Electoral Area A APC Minutes
January 5, 2021
Page 1 of 2

7. NEW BUSINESS**Orest Leyland and Heather Price****RE: ALC Non-Farm Use**

RDKB File: A-Twp7A-10522.002

Discussion/Observations: The applicants clarified that the proposed distillery would be a joint venture between Orest Leyland and Brandon Van dyk. The applicants were questioned to clarify the source of produce and waste disposal plans. The applicants acknowledged that the proposal was still in the early stage and the source of produce and waste disposal plans had not been established.

An email from Linda Green was read in which she provided her support for the proposal. The majority of the committee agreed that there was insufficient information as to the produce source and waste disposal to make a decision.

Recommendation:

It was moved, seconded, and resolved that the APC recommend to the Regional District that the application be: Postponed and be resubmitted when the applicants have details as to the source of produce and waste disposal plans.

8. FOR INFORMATION

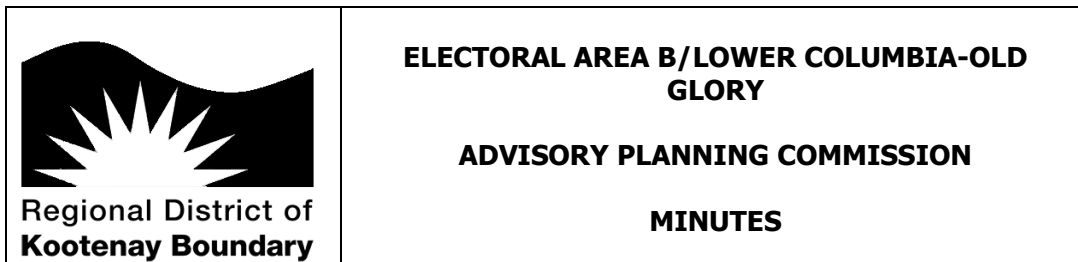
- 2021 Planning & Development Department Application Process and Meeting Schedule
- APC Guide

9. FOR DISCUSSION

Noise Bylaw: Director Ali Grieve provided an update on discussions concerning requests for a noise bylaw for Area A. The committee agreed that developing a bylaw would require public input. It was noted the current Official Community Plan is due for an update. The committee requested that the OCP be updated as soon as possible.

10. ADJOURNMENT

It was moved and seconded that the meeting be adjourned at 5:00 PM



Monday, January 4, 2021 via Zoom, commencing at 7:00 p.m.

PRESENT: Grant Saprunoff, Mary MacInnis, Fern Acton, Graham Jones,
Darlene Espenhain

ABSENT: Henk Ravestein

RDKB DIRECTOR: Linda Worley, Bill Edwards, Alternate.

RDKB STAFF:

GUESTS:

1. CALL TO ORDER

The meeting was called to order at 7:08 p.m.

2. ADOPTION OF AGENDA (Additions/Deletions)

It was moved and seconded that the January 4, 2021 Electoral Area B/Lower Columbia-Old Glory APC agenda be adopted. Done and done

3. ELECTION OF CHAIR AND VICE-CHAIR

Nominations called for Chair- Grant was nominated from the floor. Second call for nomination, being no other nominations Grant accepted. Acclaimed and passed.

Call for volunteers and/or nominations. Fern said she would continue as vice-chair, all in favour passed.

Nominations for Secretary, Mary said she would continue all in favour, passed. Linda thanked those who have let their names stand.

4. ADOPTION OF MINUTES

It was moved and seconded that the November 2, 2020, 2020 Electoral Area B/Lower Columbia-Old Glory APC minutes be adopted. An omission was noted in these minutes. Under item 4. DELEGATIONS Brad Hanson's name should have been noted. With this correction motion made to adopt corrected minutes, passed.

5. DELEGATIONS

6. UPDATES TO APPLICATIONS AND REFERRALS

7. NEW BUSINESS

A. Transrockies Inc.

RE: Front Counter Referral – Crown Land Tenure Special Event

RDKB File: B-24

Discussion/Observations:

We feel this is a good event for the area and are hopeful that they contact the environmental and wildlife people in this area to ensure no lasting damage done to wildlife or fauna. When the clean up is done that all flagging and signage is removed. We could see no mention of porta potties being used and hope this is not the case. So long as these items are addressed, we see no issues. Application accepted

Recommendation:

It was moved, seconded and resolved that the APC recommends to the Regional District that the referral be supported (see above comments)

B. West K Sand & Gravel

RE: Mine Plan Referral

RDKB File: B-7163-08839.025

Discussion/Observations:

It is felt that the mapping is weak. They are aware that the Genelle watershed is in proximity. Remediation will be done on the Fairview sight line area. If there is any blasting taking place could you, please post a notice at the Genelle Post Office prior to start.

Recommendation:

It was moved, seconded and resolved that the APC recommends to the Regional District that the referral be supported (See above)

8. FOR INFORMATION

- 2021 Planning & Development Department Application Process and Meeting Schedule
- APC Guide

9. FOR DISCUSSION

10. ADJOURNMENT

It was moved and seconded that the meeting be adjourned at 8:00 p.m.



ELECTORAL AREA D/RURAL GRAND FORKS
ADVISORY PLANNING COMMISSION
MINUTES

Tuesday, January 5, 2021 via tele-conference, commencing at 7:00 p.m.

PRESENT: Kathy Hutton, Brian Noble, Della Mallette, Lynn Bleiler
ABSENT: John Thomas
RDKB DIRECTOR: Michael Tollis
RDKB STAFF:
GUESTS: Margaret Steele – Friends and Residents of the North Fork
 Laurie Tritschler – Grand Forks Gazette
 Roy Schiesser – Boundary Forest Watershed Stewardship Society
 Al Grant – Boundary Alliance

1. CALL TO ORDER

The meeting was called to order at 7:02 p.m.

2. ADOPTION OF AGENDA (Additions/Deletions)

Recommendation: That the January 5, 2021 Electoral Area 'D'/Rural Grand Forks Advisory Planning Commission Agenda be adopted.

Moved: Noble

Second: Bleiler

Passed.

3. ELECTION OF CHAIR AND VICE-CHAIR

Moved to the end of the meeting.

4. MINUTES

Recommendation: That the October 6, 2020 Electoral Area 'D'/Rural Grand Forks Advisory Planning Commission Minutes be adopted.

Request to remove the word 'template' from the minutes

Moved: Noble

Second: Bleiler

Passed with requested change.

5. DELEGATIONS

All guests to speak/listen to Powder Renegade Proposal

6. OLD BUSINESS/UPDATES TO APPLICATIONS AND REFERRALS

None.

7. NEW BUSINESS

Powder Renegade

RE: Front Counter Referral – License of Occupation

RDKB File: D-6

Discussion/Observations:

- Al Grant brought up concerns from Boundary Alliance, included in document submitted to APC, summarized with:
 - o Grizzly bear/wolverine habitat, already heavily fragmented
 - o Number and density of roads an issue
 - o Limited time to adequately review proposal
- Bleiler mentioned Boundary Forest Watershed Stewardship Society's forthcoming report on watershed threats and mapping
- Roy Schiesser is on the BFWSS and spoke to the focus of that report being on logging's impact on the watershed, with some reference to wildlife, but will not encompass the entirety of concerns for this proposal
- Roy spoke to major concerns around Grizzly Bears
 - o Habitat areas left are minimal, few corridors create "islands of extinction"
 - o Helicopters and machinery will force bears out of habitat and increase human interactions that lead to deaths of bears
 - o Same impacts to wolverines will be felt
 - o There is no mitigation measure that can prevent these impacts
- Noble wanted participation from proponents, concern about dismissing without talking to them, sees potential economic benefit for the area
- Timelines for comments is short, January 14th deadline, might not be able to delay
- Bleiler – wilderness, watershed concerns in the Boundary, not sure if economic development will be felt here, we need a vision for tourism here

- Question on zoning, not zoned for cat-skiing, what is required?

Motion: Postponed to (date-unknown, but at least 6 months until BFWSS researchers are able to access the proposed Tenure location after snowmelt) for the following reasons:

Postpone comments until proponents talk with the APC, the BFWSS report is completed and presented to the affected APCs, and further, that the Provincial Government be notified that they will receive comments after the deadline of Jan. 14th.

Moved: Noble

Second: Bleiler

Carried

Brent and Olive Hummel
RE: Zoning Amendment
RDKB File: D-1735-07015.010

Discussion/Observations:

- It was noted that the Province (ALC) shouldn't have the level of power they do over the region

Recommendation:

Supported with conditions (state the conditions): Proponent/Applicant to provide a Section 219 covenant on title, limiting occupancy of manufactured home to immediate family.

Moved: Noble

Second: Bleiler

Carried

Peter Flett
RE: Small Scale Salvage
RDKB File: D-6

Discussion/Observations:

- What are their mitigation strategies for moose in the area?
- What are the comments from the Watershed Planner?
- Late and incomplete packages are not useful for APC to be making decisions on

Recommendation:

It was moved, seconded and resolved that the APC recommend to the Regional District that the referral be: (Select one of the following options)

1. Supported (with stated reasons if appropriate): Harvesting timber is an approved activity in all applicable zones
2. Supported with conditions (state the conditions): Watershed concerns and Moose Winter Range considerations (unfortunately reports were not available to this APC) must be adhered to.

Moved: Noble

Second: Mallette

Carried

8. FOR INFORMATION

- 2021 Planning & Development Department Application Process and Meeting Schedule
- APC Guide

9. DISCUSSION

- Zoom meetings are preferable to teleconference – Mike to ensure next meeting on Zoom
- More recruitment of APC members is required, the APC is down to 5 members

3. ELECTIONS

Chair: Kathy Hutton acclaimed.

Vice Chair: Della Mallette acclaimed.

Recording Secretary: Discussion was held for nominations of a recording secretary. It is a necessary role but no members were able to commit to the role. After discussion, it was decided that Lynn Bleiler and Brian Noble would share the role for the year 2021.

10. ADJOURNMENT

Moved: Mallette
Adjourned 8:23pm

WE ASK FOR TERMINATION or DELAY of POWDER RENEGADE LODGE PROPOSAL

THIS MASSIVE SKI-CAT OPERATION AND LODGE

WANTS TO OCCUPY AN AREA OF 8847 Ha

BETWEEN THE KETTLE & GRANBY DRAINAGES

It is an area that can be visualized better when imposed or imagined on other areas, 21 km long and up to 12.6 km wide.

As the Crow Flies:

Grand Forks to Midway 18.6 km

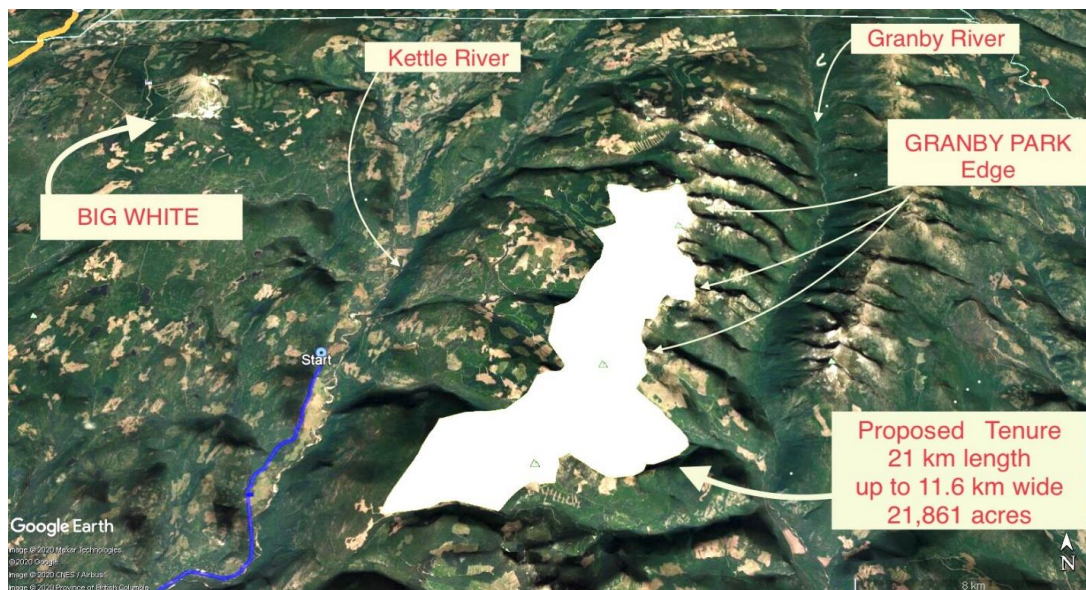
Grand Forks to Nth of Jewel Lake 20 km

Osoyoos to Oliver 17 km

Osoyoos to Bridesville 20.8 km

Osoyoos to Baldy 21 km

Rock Creek to Baldy 21 km



OUR CONCERNS

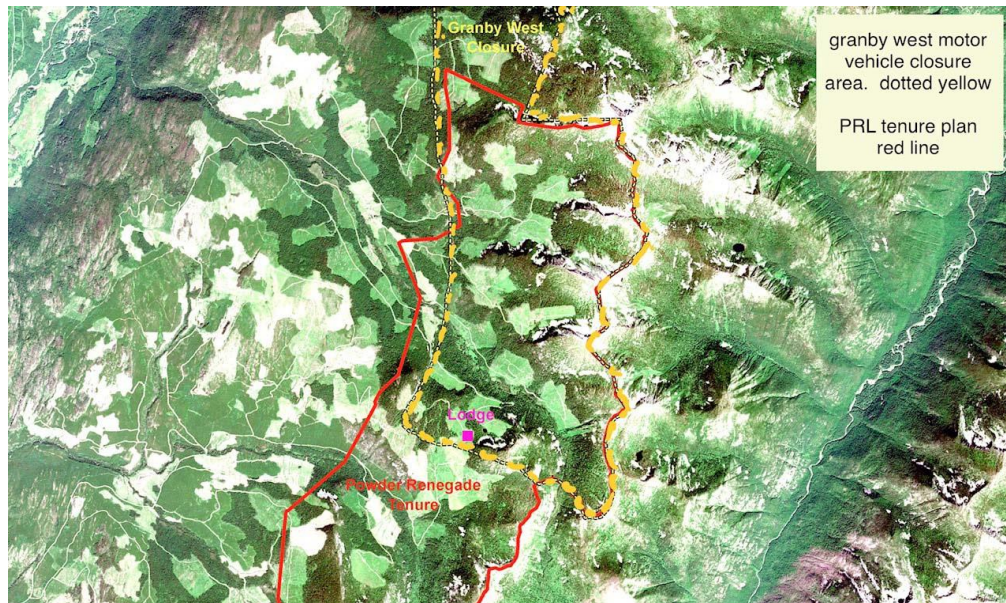
A Summary List.

Concerns are expanded on in detail on page 9

1. Completely inadequate public notification process and response period.
2. Overlap into Motor Vehicle Closed area, trashing intent of that closure.
3. Entire Proposal in Kettle Granby Grizzly Wildlife Habitat Area and GAR Order, trashing intent of that designation. see later maps.
4. Massive operation with ecological footprint far exceeding tenure footprint.
5. Completely inadequate "armchair" Environmental Assessment.
6. Due to application timing and season, no opportunity for interested parties including professionals to do the necessary on the ground assessments.
7. Loss of habitat in an already fragmented landscape with serious consequences for the threatened Kettle-Granby grizzly and other wildlife.
8. Accelerated runoff with attendant issues from roads and trails leading to increased flood risk downstream
9. Many new roads and trails with attendant tree removal, proposed in area in addition to excessive existing roads.
10. Highly mechanized operation with noise, air pollution in and out of tenure area.
11. Concerns as to Governments intent to favour this application in view of applicants failed application in another area.
12. Exaggerated economic benefits and no costing of environmental consequences. Irony of proposing high ecological harm, global warming enterprise of a type already deemed to be contributing to loss of ski seasons worldwide, amongst other harms

SEE THE EXPANDED, DETAILED LIST OF CONCERNS see page 9

OVERLAP INTO MOTOR VEHICLE CLOSED AREA



LARGE PORTION OF THE PROPSAL INTRUDES INTO THE GRANBY WEST MOTORIZED VEHICLE CLOSURE AREA and is

ALL IN THE KETTLE GRANBY CRIZZLY WILDLIFE HABITAT ZONE

The OVERLAP is about 2400 HA or 5930 acres and that is about 27% of the proposed tenure and a 19% bite into the Motor Vehicle Closed Area. This intrusion is also where the Lodge, other accommodations, service buildings, services and activity hub are planned.

THIS INTRUSION ALONE SHOULD HAVE DISQUALIFIED THE APPLICATION IN THAT IT COMPLETELY TRASHES THE INTENT OF THE MOTOR VEHICLE CLOSED AREA

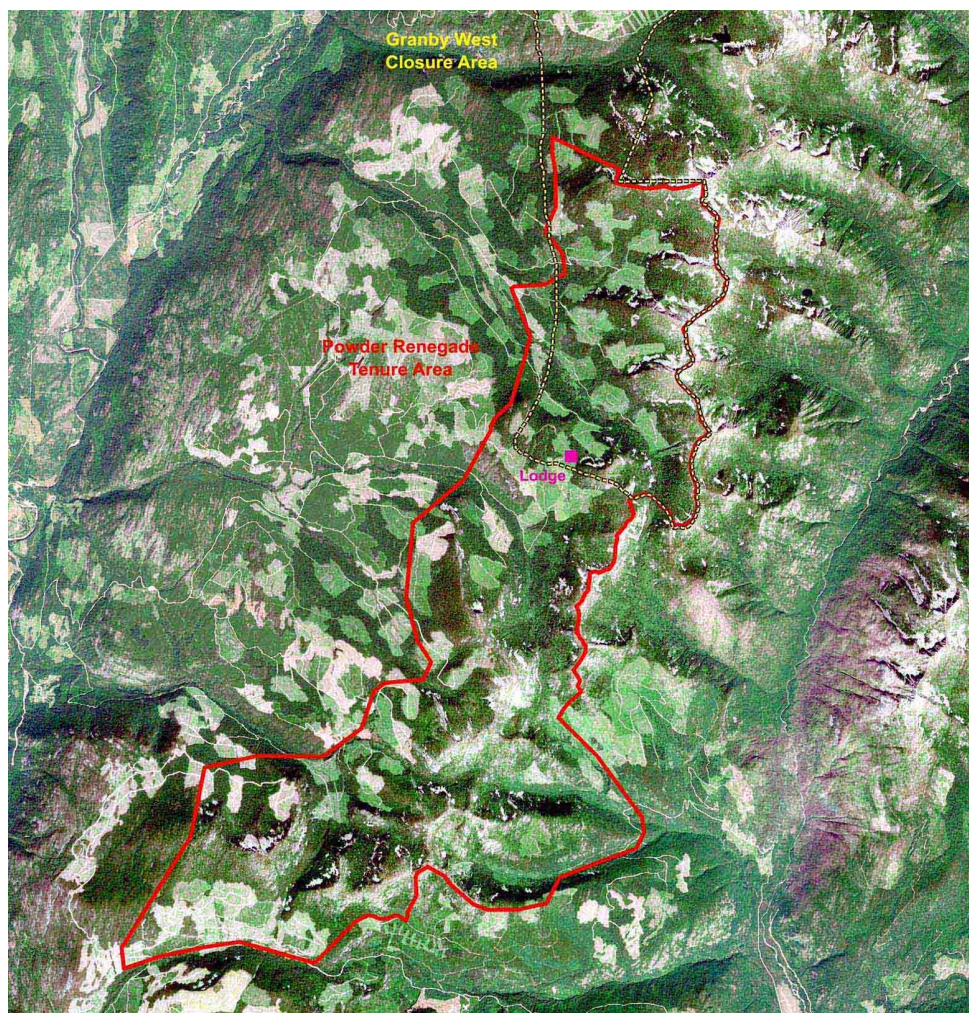
NOTE THE LEVEL of FRAGMENTATION AND DISTURBANCE ALREADY IN THIS GENERAL AREA.

THE FAILURE OF GOVERNMENT TO PROTECT THE NATURAL VALUES OF THIS AREA,

by removing this area from consideration, may have now imposed a statutory requirement that this application be considered. If Government is therefore unable to terminate the application at this point (as we recommend) then we say that it would be a travesty to proceed with this flawed application as is, that it is not possible to address the major concerns through any build out process.

WE RECOMMEND A DELAY of ONE YEAR BE IMPOSED

in order to address the multiple issues outlined in the CONCERNS section below

FULL PERIMETER VIEW

Full Perimeter view shows the already fragmented and disturbed areas in and around the Perimeter which is occurring despite the intent of the Motor Vehicle Closure Area and the bigger Grizzly Secure Core Areas that extends through this whole view.

More to come on the Secure Core Areas, mapping and more showing the continuing losses of Secure Core Areas. Insecure Areas might be more appropriate.

MOTOR VEHICLE CLOSED AREA

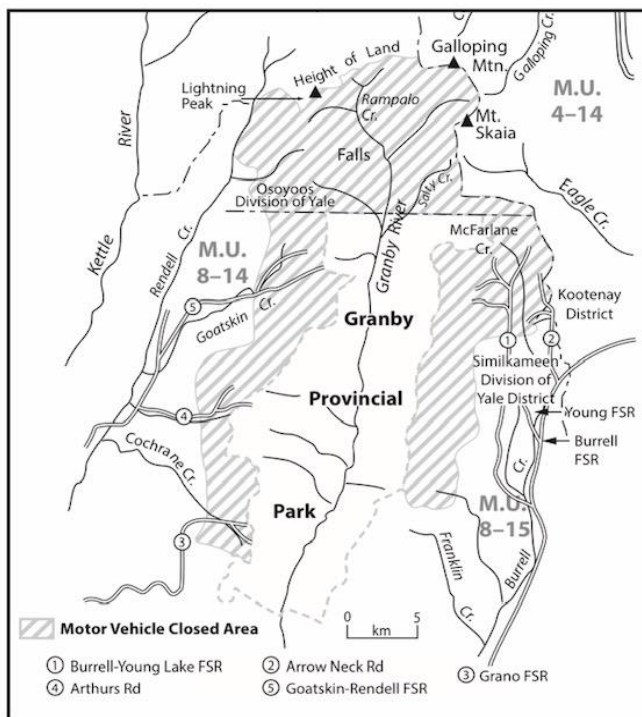
Extract from information provided by Government to the Grand Forks Gazette in 1997 as the closures were about to be implemented:

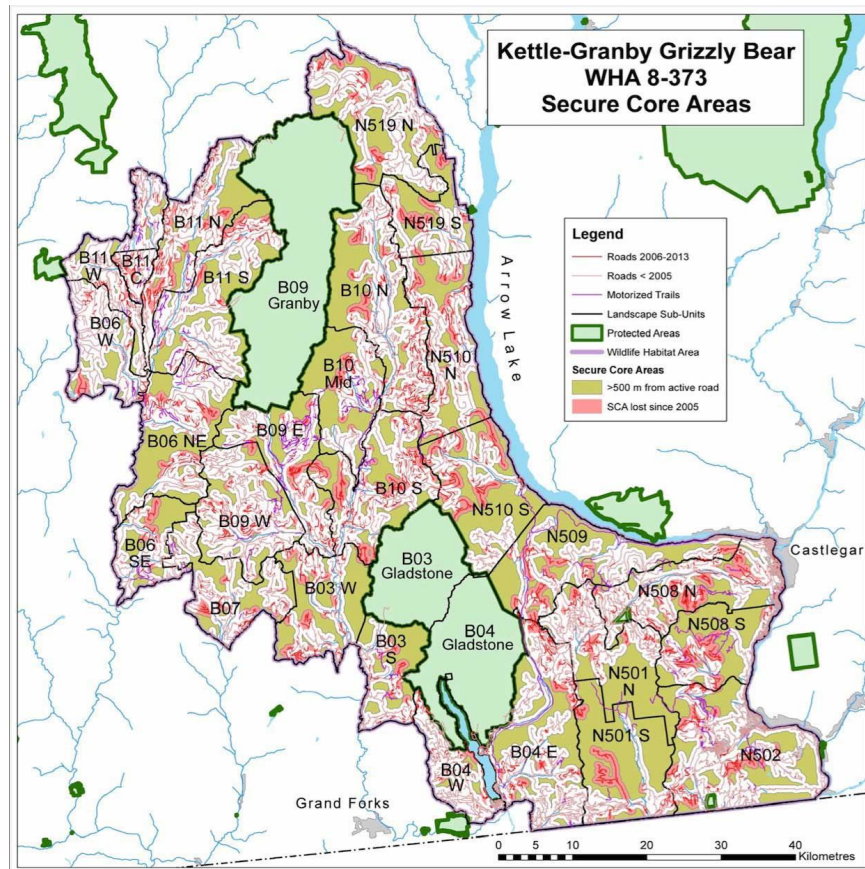
“ The habitat program is concerned that activities associated with ongoing forest development be mitigated such that any negative effects on grizzly bears and their habitats be minimized.

That concern centers on the need to maintain temporal and physical isolation of grizzly bears from human intrusion; to maintain habitat use

patterns; reduce the possibility of direct human-caused bear mortality (poaching or accidental death); and to lessen the likelihood of human interaction leading to human/bear conflict (ie.human defense kills) and/or habituation with humans (ie. campsite raids).

This proposal is to partially mitigate the negative and cumulative effects of impending road access due to timber harvesting on grizzly habitat in the Kettle-Granby drainages. Grizzly bears in wilderness situations are likely to become negatively associated with open roads and development activity and therefore may be displaced from important habitat where roads and/or frequent human activity occurs. An eventual “band” of forest development around the Granby Park may act as a barrier to elevational movement and may force bears to remain within the park boundaries, effectively reducing their currently available habitat area. The areas proposed for vehicle restriction are adjacent to the new Granby Park and are relatively inaccessible to motor vehicles at present. Exceptions are the Lightning Peak area; and the recently road construction will occur in virtually every watershed surrounding the Granby Park over the next few years. This proposal proactively addresses maintenance of the bear’s physical isolation from human influence while permitting legitimate commercial use of timber and mineral resources.”





Mapping by David Leversee, wildlife biologist and GIS Consultant

KETTLE GRANBY

GRIZZLY WILDLIFE HABITAT AREA

map indicates the area under supposed protections as per GAR Order 8-373 and shows the decline in Secure Core Areas from 2005 to 2013

Note the Secure Areas Lost (orange areas) since 2005

Approval of PRL proposal would further reduce Secure Core Areas, putting grizzlies at risk.

The GAR ORDER 8-373 can be viewed

[Here](#)

AN UPDATE ON THIS MAP ON THE FOLLOWING PAGE

2020 MAP SHOWING SHRINKING SECURE CORE AREAS AND PRLS's planned further intrusion.

Mapping by David Leversee wildlife biologist and GIS Consultant

WHAT TO DO

WE RECOMMEND YOU SUBMIT YOUR COMMENTS TO FRONT COUNTER BC

WRITE, EMAIL, CALL and/or CC other agencies as listed, plus Media. Please include the area MLA amongst those you CC. See Government email addresses [see page 12](#)

THE APPLICATIONS CAN BE VIEWED AT:

For additional information, review the adventure tourism commercial recreation tenure management plan which consists of location, infrastructure and impacts, as well as the roadway license of occupation management plan which consists of road & terrain description and environmental impacts.

To submit comments, please send your comments directly to Sharon Dailey, Senior Authorization Specialist, Crown Land Authorization, Kootenay Boundary Region. 250-420-6442 sharon.dailey@gov.bc.ca. Please mention that this is related to Crown Land File: 4406147, 4406148, 4406149

WE ARE INCLUDING COPIES OF SOME SENT LETTERS OR EMAILS. Here (page under construction)

Feel free to include, adapt any of the concerns.:

WILDLIFE CONCERNS REPORTS & LINKS COMMENTARY

We are providing articles and links to articles which focus on Grizzly and Wolverines.

[See page 14](#)

The common thread is the effect of too many roads on these and other species and this proposal has many more, not to mention the disturbances and emissions created by a cat-ski, helicopter delivered and supplied operation and other needed machinery.

OUR EXPANDED CONCERNS Summary of Concerns expanded.

- (1) **Completely inadequate Public notification process and response period** the application only came to “limited” public attention on Nov 19th 2020 following advertisement in the Boundary Creek Times and subsequent advertisements in the Grand Forks Gazette on Dec 2nd and 9th as per direction from Government to “advertise in local papers”. Due to late filing of the ads, the comment period was moved from Dec 31st to Jan 14th. Although the applicants were given guidance to proceed in Feb 2020, whatever processes the Proponent and/or Government were engaged in, the public only recently received notice. Furthermore the proponents declined to be interviewed for a story published in the Grand Forks Gazette on Dec 16th. This late season filing, and ridiculously short response period works to prevent adequate public discussion, review and comment. In this season, it is not possible for interested parties and professionals to do the on the ground assessments crucial for a project of this scale. Government needs to follow our recommendation for a 1 year delay to address the concerns.
The notion put forward by the proponents that “mitigation and diligent use measures” will solve deficiencies during the build-out is not credible. It joins a number of other claims by the Proponents that are not credible.
- (2) **Overlap into Motor Vehicle Closed Area, trashing the intent of that closure.**
This overlap and the Lodge, other accommodations, service buildings, services and more, all being built in the Motor Vehicle Closed area, trashes the intent of the MV closed area. Such closures were made years ago to provide some level of protection from disturbance around the Granby Park, with knowledge that Park boundaries alone do not provide the needed habitat and low disturbance benefits needed by a variety of species, particularly Grizzly and Wolverine.
Check our links to these reports. You will find many more online. The plan can be predicted to have spillover effects into Granby Park where the proponents had initially proposed operation. The possibility of similar intrusions in the larger Motor Vehicle Closed areas around the top and to the East of Granby Park should be a wakeup call. Our other pages show the possible areas under threat and the larger highly impacted area around the PRL proposal.
- (3) **Entire Area in Kettle Granby Grizzly Wildlife Habitat Area, GAR Order 8-373, trashing intent of that designation.** This designation is intended to provide various protections for Grizzly. Notwithstanding applicants claims of seasonal use only, maintenance needs and other servicing and the probability that **applicants will seek expanded season use** (despite current denials) trashing of the intent of the GAR is inevitable. Map of the Secure Core Area is in earlier pages along with link to the GAR Order.

- (4) **Massive operation with Ecological Footprint far exceeding the Tenure Footprint.**
Any Environmental Assessment of value, needs to include the Ecological Footprint and related economic and environmental costs.
- (5) **Completely inadequate “armchair” assessment** As discussed above. That a project of this size and consequence has been brought forward without full “on the ground” assessment is astonishing, but it also appears as though the proponents, in their own words, have planned the project based on google earth views, a couple of helicopter trips and some snow mobile forays. All not nearly adequate. Our own guidance on what is essential in an EIA to follow later.
- (6) **Due to application timing and season, no opportunity for interested parties to do the necessary ground assessments.** Plan rejection or a delay are essential to enable the on the ground review in spring and summer by interested parties and professionals.
- (7) **Loss of Habitat in an already fragmented landscape with serious consequences for the threatened Kettle-Granby grizzly and other wildlife,** by way of effective disturbance resulting in probable displacement of wildlife. See our links to Studies. An abundance of reports, many on grizzly and wolverine that share a commonality. Roads are a problem for these and other species, more roads and trails will increase the problem. The impacts are well documented and ignoring them will continue the trend in which wildlife largely continues to decline. Goat, caribou have been past occupants of this general area.
We urge Government to not continue to preside over the demise of more species.
- (8) **Accelerated runoff with attendant issues from roads and trails leading to increased flooding risk.** More roads, trails, tree removal, and a predictable increase in wind-blown, snow press damage will all contribute to the timing, and release of melt water and contribute to factors that result in flooding.
- (9) **Many new roads and trails with attendant tree removal proposed in areas in addition to already high existing road network** In addition to accelerated runoff mentioned above, terrain is further fragmented with consequences for a variety of wildlife including providing “improved” paths for wolves.
- (10) **Highly mechanized operation with noise and air pollution in and out of tenure.** in addition to heavy machinery needed for logging, trails, building and more, continuing operation using cat-ski machines, snowmobiles, helicopters for supplies and ferrying in clients, diesel generators and likely other gas using snow machines, plus the greenhouse gas impacts of clients flying in from wherever means that this project is not as claimed by the proponents. Namely, a project, “that will have minimal impact on the land and wildlife values” and “is not sustainable for the long term.” These comments are unsurprising from Proponents who celebrate “the legacy of logging roads (that have been) crucial to the creation of this industry.” and that these roads are “a great example of how existing forestry roads can all allow for the creation of a new and long

term sustainable operation.....”

Anyone concerned about habitat, wildlife and pollution, local and global, (Government ?) must reject the Proponents assertions.

- (11) Concerns as to Government intent to “favour” this application.** It has been startling to hear that Government might favour this application in view of the tale of “loss” of an earlier tenure as told by the Proponents. “That the Province has been very supportive of the (Proponents) in their pursuit of a replacement cat skiing tenure, as they understand the devastating loss.....”

Whatever risks the Proponents failed to recognize and however incomplete due diligence was for that earlier proposal, is all on the proponents. It is no reason to “favour” this bad plan.

Other comment has indicated that Government is ready to “favour” job creation over the environment. There is a long history of that, and the costs to the environment become more obvious every day. Employment, largely of the itinerant, transient kind, should be recognized as nothing that justifies environmental costs.

There are also indications that relevant information from some within Government with knowledge of the risks to wildlife have been excluded from or not invited to comment on this proposal. We expect that the new Minister should be tasked with investigating this and other issues related to policies, practices and legislation governing resource allocations.

We expect to post further on the frequent mantra that “we need to balance, social, economic and environmental issues”. Balance sounds reasonable in this context, except it invariably results in a “big bite” out of the environment with no consideration of cumulative effects and probable future effects.

- (12) Exaggerated economic benefits and no costing of environmental consequences.**
Irony of proposing high ecological harm, global warming enterprise of a type already recognized as contributing to loss of ski seasons world-wide, amongst other harms.

And no, the disturbances will not all take place “while the grizzlies are sleeping”.

The “Renegade” name is appropriate.

GOVERNMENT CONTACT for your emails or cc's

Katrine Conroy
Minister of Forests, Lands, Natural Resource Operations and Rural Development
FLNR.Minister@gov.bc.ca

Nathan Cullen
Minister of State for Lands and Natural Resource Operations
nathan.cullen.MLA@leg.bc.ca

Kelly Greene, MLA
Parliamentary Secretary for Environment
kelly.greene.MLA@leg.bc.ca

Roly Russell, MLA
Parliamentary Secretary for Rural Development
roly.russell.MLA@leg.bc.ca

George Heyman
Minister of Environment and Climate Change Strategy
ENV.Minister@gov.bc.ca

Premier John Horgan
Premier@gov.bc.ca

Paul Rasmussen, Assistant Deputy Minister
MFLNRORD Executive Admin Iris.Cadogan@gov.bc.ca
<Iris.Cadogan@gov.bc.ca>;

Mark Andison, RDKB Chief Administrative Officer
mandison@rdkb.com
202 - 843 Rossland Avenue, Trail, B.C. V1R 4S8

Donna Dean - RDKB Manager of Planning and Development
ddean@rdkb.com

Mike Tollis - Alternate RDKB Area D Regional Director
Tollis.ma@gmail.com

Vicki Gee, RDKB Area E Regional Director
vgee@rdkb.com

www.boundaryalliance.org

Grace McGregor, RDKB Area C Regional Director
gmcgregor@rdkb.com gmcgregor@rdkb.com

Deputy Ministers as well.

Lori Halls
Lands and Natural Resource Operations Secretariat, Ministry of Forests, Lands, Natural
Resource Operations and Rural Development

John Allan
Ministry of Forests, Lands, Natural Resource Operations and Rural Development

LINKS TO WILDLIFE STUDIES & COMMENTARY on following page.

www.boundaryalliance.org

Links & Reports re wildlife and habitat Grizzly focus

Clayton Lamb, Mowat et al Effects of Habitat Quality and Access.....Grizzly Bear Population
<https://besjournals.onlinelibrary.wiley.com/doi/full/10.1111/1365-2664.13056>

BC Forest Practices Board Report Aug 2017 Forest Roads and Grizzly Bear Management in the Kettle Granby Area <https://www.bcfpb.ca/reports-publications/reports/forest-roads->

grizzly-bear-management-kettlegranby-area/ Mowat/ lamb. Extension Note 120 2017
<https://www.for.gov.bc.ca/hfd/pubs/docs/en/EN120.pdf>

Michael Proctor, McLellan, Mowat, Lamb 2019 Effects of Roads and Motorized human access on Grizzly Bears <http://transbordergrizzlybearproject.ca/>

Michael Proctor, Lamb, MacHutchon, The Grizzly Dance between Berries and Bullets
[Proctor et al 2017.pdf \(transbordergrizzlybearproject.ca\)](#)

re above, transborder grizzly project website with various resources and reports <http://transbordergrizzlybearproject.ca>

Patrick Stent 2011 Kettle Granby & Central Monashee Grizzly Bear Population Review

resource roads and grizzly bears in bc and alberta proctor, mclellan, mowat , lamb
<http://transbordergrizzlybearproject.ca/>

pdf/Proctor%20et%20al%202018%20Grizzlies%20&%20Resource%20Roads%20Report.pdf

Brian Horejsi Endangered Granby-Gladstone Grizzly here

Brian Horejsi Lynch Creek report here

Brian Horejsi Reports, PDF's in Appendix

Wolverine focus

George Wuethner 2020. Political Science and the Fate of the Wolverine
<https://www.counterpunch.org/2020/12/21/political-science-and-the-fate-of-the-wolverine/>

GW also a prime author of Welfare Ranching: The Subsidized Destruction of the American West. Recommended Reading, it mostly happens here too.

Wolverines in Winter: Indirect Habitat Loss and Functional Responses to Backcountry Recreation. Heinmeyer et al 2019
https://www.fs.fed.us/rm/pubs_journals/2019/rmrs_2019_heinemeyer_k001.pdf

www.boundaryalliance.org

The Sustainability of Wolverine Trapping Mortality in Southern Canada. Mowat et al 2019
<https://wildlife.onlinelibrary.wiley.com/doi/full/10.1002/jwmg.21787>

Dr Brian Horejsi takes some exception to this one. See his comments in Appendix A

Abundance and Distribution of Wolverines in the Kootenay Region. 2013
https://idfg.idaho.gov/sites/default/files/final_report2013_final.pdf

Appendix A to follow

Appendix B

Horejsi, Sinking Lifeboat.

Comment from Dr Brian Horejsi, about the PRL Project and more: Our sinking lifeboat; environmental mismanagement and failure to protect 14 Dec 2020 There lurks a monster, largely out of sight, behind the Covid-19 news now distracting and preoccupying the media and we, the people. That monster is a “new” majority government settling comfortably, quietly, into the 5-year long seat of unchallenged power. Personally, I find that terrifying! British Columbia has always run a “sink the ship” forest and land management and environmental protection system, a system now decades into paralysis. Like the Titanic, the environmental conservation ship has sunk, and successive governments, including the most recent ones, have slyly crammed the Public Trust – forests, land, water, wildlife - or the fragments that remain – into a frail little life boat, and shoved off again, rowing frantically into the choppy waters of overconsumption and greed. The same practices that characterized a long succession of politicians, and a historically complicit civil service, incrementally punched so many industrial consumption holes in the “environmental” ships hull it sank in only forty years. Now they claim the life boat, run by people and a system born of the same management mentality, is still - really - a flag ship. But widespread, highly visible evidence says the provinces public landscapes and ecosystem have been vandalized by a list of ministers and premiers whose leadership style was characterized by no vision, no guts and no backbone. And it continues to allow private interests to punch holes in the environmental lifeboat; Take for example, Powder Keg, an attempt to grab 88 sq km of public land adjacent to the Granby “Protected” area in southern BC, place it in a private “tenure”, and make it a for-profit playground for snowmobilers in winter and off roaders and mountain bikers in summer. And right next door to it, Big White ski Resort, already the beneficiary of a huge public land grab, wants to add another 6000 users, an 18 hole golf course and “control of user access” over another 4000 ha, ! One ugly theme runs through this history of private interests exploiting public land for personal gain; the conspicuous absence of an Environmental Impact Assessment process. This is not accidental; it is a deliberate omission that has undermined environmental protection in BC for half a century. How could that be, you might wonder? Because a legislated EIA process demands written standards for land and wildlife protection, is based on use of the best available science evidence, guarantees public access to and involvement in the process, and has regulatory standards for civil service accountability. It draws lines in the sand beyond which government and industry cannot intrude without being exposed; and it protects the people and the public Trust. Its easy to see why legislated environmental impact assessment petrifies ideological

governments like the New Democrats, and the Liberals before them. It eliminates random choice and political expediency, like approving the Site C dam after promising not to do so. It allows someone like John Horgan to pick who wins, all while loading immense emotional pain and economic, environmental and social cost to the people. It allows people like Horgan, and former Premiers Clark and Campbell, to push ecological viability and integrity over the precipice, where caribou populations become extinct, wolverine are gone from huge parts of BC, and old growth forests are trashed until only 5% of historical area is left. It means extreme schemes to privatize public landscapes, like Powder Keg and Big Whites proposed invasion of the home of endangered Granby grizzlies – maybe only 40 bears remaining – are protected by privacy and secretly creep p to being almost done deals. Given the abysmal state of regulatory enforcement of tenures and land use permits and license's – clear government signals to the public that “we” dare not tarnish the holy grail - someone just “making a buck” - areas like the proposed Powder Keg and expanded Big White will be essentially a free-for-all by private interests exploiting public lands. We have the equivalent of a vaccine for this ongoing epidemic of environmental destruction; it is a vast body of knowledge clearly demonstrating our need to limit (and then reverse, even at this advanced stage) consumption and its growth - the ultimate causes of environmental destruction. But missing in action are political will and backbone. Partners in crime to political expediency, the Civil Service has deliberately chosen to stand on the sidelines, or worse, it has opted to aid and abet the widespread industrial degradation of landscape ecosystems by assiduously avoiding public accountability and ecological performance standards. We all condemn Trump for failing to deploy known measures to slow (and then stop) Covid 19. Yet, advancing environmental catastrophe, exemplified by global climate disruption, is now so deeply enmeshed in our lives we have come to tolerate incompetence, ineptitude, and failure in governments feeble efforts to save the land and ecological processes upon which we all depend. Today's NDP government, a frightening collection of people burdened by yesterday's thinking, are unlikely to be capable of dealing with today's intense ecological, social and economic pressures, all of which demand revolutionary measures that cannot help, were they to be implemented, but cause great pain among traditional, entitled special corporate and business interests. Dr. Brian L. Horejsi Wildlife ecologist Penticton, B.C



Regional District of
Kootenay Boundary

ELECTORAL AREA E/WEST BOUNDARY

ADVISORY PLANNING COMMISSION

MINUTES

Monday, January 4, 2021 in person at Riverside Centre and Zoom, commencing at 6:00 p.m.

PRESENT

Florence Hewer, Fred Marshall, Jamie Haynes

Via Zoom: Lynne Storm, Michael Fenwick-Wilson, Grant Harfman

ABSENT with
notification

Absent without
notification

RDKB DIRECTOR: Vicki Gee (in person), minute taker

RDKB STAFF:

GUEST: Al Grant (Boundary Alliance)

1. **CALL TO ORDER** The meeting was called to order at 6:00 PM.

2. **ADOPTION OF AGENDA**

Recommendation: That the January 4, 2021 Electoral Area E/West Boundary Planning Commission Agenda be adopted as presented. Moved by Flo, seconded by Jamie.

3. **ELECTION OF CHAIR, VICE-CHAIR and SECRETARY**

The Chair turned the meeting over to Director Gee to conduct elections.

After calling for nominations 3 times for the position of Chair, Fred Marshall was the only person nominated. He accepted the nomination and was acclaimed as the Chair.

After calling for nominations 3 times for the position of Vice-Chair, Flo Hewer was the only person nominated. She accepted the nomination and was acclaimed as Vice-Chair.

Electoral Area E/West Boundary APC Minutes
January 4, 2021
Page 1 of 6

The members decided to defer the election of a Secretary to the next meeting, since Director Gee is seeking additional APC members to replace the two that left in 2020.

4. ADOPTION OF MINUTES

Recommendation: That the November 2, 2020 Electoral Area E/West Boundary Planning Commission Minutes be adopted as presented. Moved by Flo, seconded by Jamie, carried.

5. DELEGATIONS

6. UPDATES TO APPLICATIONS AND REFERRALS

7. NEW BUSINESS

A. Colleen and George Kocsis

RE: ALC Subdivision

RDKB File: E-1020-04509.000

Discussion/Observations:

There was discussion about the basis under which the APC considers this kind of application. They do not consider the personal circumstances of current owners of the property, as these individuals won't always be the owners. They consider the effect on agriculture in general. The consensus was that:

- The portion in question was of marginal agricultural use itself; the part with the timber is steep
- It was naturally divided by the road
- Subdivision shouldn't negatively impact the larger farm

Recommendation:

It was moved by Flo, seconded by Jamie and resolved that the APC recommends to the Regional District that the referral be supported. Carried.

A. Powder Renegade
RE: Licence of Occupation

RDKB File: E-10

Discussion/Observations:

- There will be a challenge getting roads down to 7 m in width
- Up to 90% side hill slopes across which roads will be built
- Hydrological assessment is missing
- Need to make sure no negative impacts to snowshed and nearby snow measuring station
- Worried about Spring flooding and Fall drought
- Concern about land slides and erosion
- No information to support stream fording that's proposed (vs. traditional crossings using culverts)
- Jamie worked in that area; there are slides where logging has taken place and regen from plantings 12+ years ago hasn't returned; the soil is poor
- Not clear where sewage drainage will be
- The proposed Intensive Use Area is much larger than necessary
- They state "so they can modify the land"; this is the kind of thing that should be avoided
- Nothing to show effect of water use on pond
- Some residents have claimed that there are fish bearing streams; this should be checked
- Concern about disturbance and Winter access for wildlife
- No buffer for Granby Wilderness Park
- Wildlife will be impacted by noise from helicopters, which will carry further in Winter
- No provisions for oversight of wildlife encounters
- There is more to address
- The applicant acknowledges things but hasn't done all the assessments or provided plans for how they'll handle
- There used to be cat skiing there, but not as much infrastructure
- Suggest that applicant consult with Boundary Invasive Species Society about type of grass seed proposed
- Lots of questions remain
- Not clear how proposed plans overlap with logging
- Concern that it'll reduce volume on timber harvest, on which livelihoods depend
- Additional forest openings will lead to more flooding
- Not likely the Boundary will benefit economically
- The increased trash will end up in Grand Forks landfill
- Concern about indirect costs like in case of injuries, need for search & rescue
- Most of the analysis was from desk top; there needs to be boots on the ground

- There is comment from applicant about not opening up alpine to additional motorized use, but no plans to prevent
- No allowance for how climate change will affect their business plans (shorter Winters, less rainfall)
- Huge financial risk; will put pressure on to open up to Summer use
- Concern about short timeline indicated to start construction with no approvals yet given
- It should be slowed down and wait a year to get on the ground assessments done by professionals
- People go up there; the applicant isn't aware of them
- Other Crown tenures (e.g. Baldy and Big White) want to commercialize more and limit access to locals
- People in Area E don't know about the proposal; it hasn't been well advertised and it's too short a timeline
- Osoyoos Indian Band wasn't listed for referral

Recommendation:

It was moved by Jamie, seconded by Flo and resolved that the APC recommends to the Regional District that the referral be Not Supported for the following reasons:

- This is a high impact project with attendant high impacts on the landscape
- There is potential for impact on the Timber Harvest Land Base
- There is potential for negative impacts on hydrological regimes, Spring flooding and Fall droughts
- Detailed assessments have not yet been done on development in the Intensive Development Area (buildings, water development & septic systems)
- There is potential for negative impact of proposed road construction
- There is concern about the fiscal liability of the operation as a Winter only operation, especially with climate change, and concern about whether there will be pressure from the applicant in the future for Summer operations
- There is potential for negative impacts to wildlife that could possibly lead to extirpation
- There is concern about lack of public consultation and lack of understanding of the use that Area E residents make of the area
- There is concern that there has been practically no on the ground assessment
- There is concern with the timeline, which doesn't allow for the assessments that are needed
- The timeline needs to be slowed down in order to address these issues

Interfor
RE: RFL #8
 RDKB File: I-1-E

Discussion/Observations:

The members are disappointed that the Management Plan is software and data driven and isn't using spatial analysis verified by on the ground evaluations by a Qualified Person.

The members reviewed Interfor's responses to concerns previously expressed by APC and RDKB:

- Continue to be alarmed at the large number of very large cut blocks; large openings accumulate more snow, cause faster runoff in Spring, affect wildlife, affect bugs, raise stream temperatures, affect the local climate
- This is a Management Plan; they don't acknowledge road construction to be a part of management; all access structures are a significant part of landscape management
- Leaving the market and the licensee to drive utilization leaves taxpayers, not the company, to absorb the cost of the waste, and it impacts future sustainability and climate change
- They don't acknowledge increasing drought, which is documented by other sources; e.g. Forest Practice Board has been documenting difficulty of regeneration of dry belt Douglas Fir on southern aspects
- We think silviculture choices and operations are integral to a Management Plan, Annual Allowable Cut decisions and sustainability of our forests
- There are recent studies that are looking alternatives to stumping; they involve planting disease resistant larch nearby; it is so far showing to be nearly as effective, more cost efficient and reduces site degradation compared to destumping

Recommendation:

It was moved by Jamie, seconded by Flo and resolved that the APC recommends to the Regional District that the referral be Not Supported for the following reasons:

- The Plan relies on software modeling and doesn't take into consideration on the ground, spatial analysis
- The Plan doesn't robustly address management issues
- Silviculture practices don't take climate change into consideration

Carried

8. FOR INFORMATION

- 2021 Planning & Development Department Application Process and Meeting Schedule
- APC Guide

9. FOR DISCUSSION

10. ADJOURNMENT 7:50 pm



**ELECTORAL AREA E/WEST BOUNDARY
(BIG WHITE)**

ADVISORY PLANNING COMMISSION

MINUTES

Tuesday, January 5, 2021 via tele-conference, commencing at 1610.

Minutes taken by: John LeBrun

PRESENT: John LeBrun, Gerry Molyneaux, Deb Hopkinson, Rachelle Hawk,
Anastasia Byrne

ABSENT: Paul Sulyma

RDKB DIRECTOR: Vicki Gee

RDKB STAFF: None

GUESTS: Jeff Barber and Maria Kitsch

1. CALL TO ORDER

The meeting was called to order at 1610.

2. ADOPTION OF AGENDA (Additions/Deletions)

Recommendation: That the January 5, 2021 Electoral Area E/West Boundary (Big White) Advisory Planning Commission Agenda be adopted.

Motion to adopt by Gerry seconded by John

Carried

3. ELECTION OF CHAIR, VICE-CHAIR and SECRETARY

Call to the floor three times for nominations for each position.

CHAIR. Peter Hutchinson

VICE CHAIR. Rachelle Hawk

SECRETARY. John LeBrun

There were no other nominations all 3 nominations elected to respective positions.

4. ADOPTION OF MINUTES

Recommendation: That the November 24, 2020 Electoral Area E/West Boundary (Big White) Advisory Planning Commission Minutes be adopted.

Motion to adopt by Rachelle seconded by Gerry

Carried

5. DELEGATIONS. Jeff Barber and Maria Kitsch for zoning amendment 1247676 BC.**6. UPDATED APPLICATIONS AND REFERRALS**

None

7. NEW BUSINESS**A. 1247676 BC Ltd.****RE: Zoning Amendment**

RDBK File: BW-4109s-07412.000

Discussion/Observations:

Page 3 of the document indicates 10 parking stalls; 7 covered and 3 uncovered.

Page 7 indicates 9 total parking stalls.

For a building of this size with both residential and commercial space the parking seems insufficient.

The side setbacks from 5 meters to 4 meters leaves little room for snow storage.

The applicant indicated that there was lots of room in the rear of the building for snow storage or it could be trucked away.

There is also a concern due to the height of the building and resulting snow dispersal.

Applicant stated that they were thinking about heating the outside sidewalk which raised concerns among members about the resulting water run-off.

The applicants request for rezoning was not of concern to members.

Recommendation:

It was moved, seconded and resolved that the APC recommends to the Regional District that the Zoning Amendment 124767BC be;

Supported with the above comments as provided.

B. Interfor
RE: TFL #8
 RDKB File: I-1-E

Discussion/Observations:

Previous comments provided by the APC asked that an inspection be conducted if the operation required use of the Trans Canada Trail for their operation. No mention or requirement was added to this renewed application.

Comments were provided previously that the spacing between cut blocks was insufficient. Cut block size should be kept to 40 ha and decrease adjacency of cut blocks.

Recommendation:

It was moved, seconded and resolved that the APC recommends to the Regional District that the referral RE: TFL #8 be:

Supported with the above comments as provided.

8. FOR DISCUSSION

- A. Question was asked if the Regional District was going to ask the APC for comments on Big Whites Master Plan.
- B. Question was asked if there is a requirement when a wine/liquor store changes location.

9. FOR INFORMATION

None

10. ADJOURNMENT

It was moved and seconded that the meeting be adjourned at 1725.



**Regional District of
Kootenay Boundary**

STAFF REPORT

Date: January 21 2021
To: Chair Langman and Board of Directors
From: Mark Stephens, Manager of Emergency Programs
Re: Emergency Preparedness Service 012 Draft Proposed 2021-2025 Five Year Financial Plan

File

Issue Introduction

The purpose of this report is to provide an updated 2021 Emergency Preparedness Service budget.

History/Background Factors

The Emergency Preparedness Service presented the 2021 work plan and draft budget for review on January 18, 2021. The Board of Directors approved the 2021 Emergency Preparedness Service 012 work plan and noted that the requisition was too high in the 5-year financial plan.

Staff is presenting the revised 2021-2025 Five Year Financial Plan for the Emergency Preparedness Service 012 as detailed below.

Implications

Budget Summary

The budget for the Emergency Preparedness Service represents a 1.42% decrease for 2021, however, the budget for the Emergency Preparedness Service represents a 25.17% increase to the tax requisition for 2021 and is necessary to maintain the existing service levels, commitments, and contracts. The reduction was achieved through a combination of budget cuts, and the use of reserve funds to yield a reduction of 22% from the originally presented 47% increase. This maintains a reserve balance of \$92,145 at the end of 2021.

It has been the practice in previous years to use the surplus and or reserves to reduce the requisition level. This has led to the true cost of the service not being requisitioned. Upon review, staff feel that striving to maintain a reserve balance of no less than

\$100,000 is appropriate given the value of assets and liabilities held by the Service being in excess of \$750,000.

The following information identifies items from the budget that have been modified or removed to achieve the 22% reduction from the originally presented proposed 5-year financial plan, along with providing additional options for further reductions.

Option A		
Requisition Increase	Items removed or modified	Comments
22.17%	EOC Exercise	Removed \$5,000- Postponing EOC exercise until 2022, as the EM program is participating in a Teck full scale exercise in 2021.
	EOC Technology upgrades	Removed \$5,000- The EM program currently has a grant that will be able to cover the cost of EOC technology upgrades for 2021.
	EOC Floor Upgrade	Removed \$10,000- Postponed to 2024.
	ESRI GIS Agreement	Reduced by \$4,000- Removed consulting costs, this now reflects the cost of the agreement alone.
	Reserve	Added the use of \$20,000 of reserve funds.
Reserve balance: \$92,145 at the end of 2021. \$67,631 of reserve funds are committed in 2022 leaving a balance at the end of 2022 of \$24,514		
Option B		
Requisition Increase	Items removed or modified	Comments
18.43%	EOC Exercise	Removed \$5,000- Postponing EOC exercise until 2022, as the EM program is participating in a Teck full scale exercise in 2021.
	EOC Technology upgrades \$5,000	Removed \$5,000- The EM program currently has a grant what will be able to cover the cost of EOC technology upgrades for 2021.
	EOC Floor Upgrade	Removed \$10,000- Postponed to 2024.
	ESRI GIS Agreement	Reduced by \$4,000- Removed consulting costs, this now reflects the cost of the agreement alone.
	Reserve	Added the use of \$38,000 of reserve funds.
Reserve balance: \$74,145 at the end of 2021. \$67,631 of reserve funds are committed in 2022 leaving a balance at the end of 2022 of \$6,514. Staff do not recommend this option as there are some costs associated with the 2018 Boundary Freshet activation that are not eligible for reimbursement from EMBC. A staff report will come before the Board once all the costs are known. Additionally, this would leave no reserve for any unforeseen circumstances related to the assets the service holds.		

Staff have not recommend removing the Emergency Program Coordinator 24-month term position, doing so will impact the Emergency Preparedness Service work plan by reducing the total amount of projects completed along with increasing other costs to the

service budget. Additionally, there will likely be greater business continuity impacts to other RDKB departments and work plans should the Regional EOC be activated for freshet or wildfire in 2021.

Advancement of Strategic Planning Goals

We will review and measure service performance and we will continue to focus on good management and governance.

Background Information Provided

- 2021 Emergency Preparedness Service Workplan
- 2021 Emergency Preparedness Service Budget

Alternatives

1. That the RDKB Board of Directors receive the 2021 Emergency Preparedness service Budget Summary staff report for information and provide direction to staff for the 2021 budget.

Recommendation(s)

That the Regional District of Kootenay Boundary Board of Directors direct staff to proceed with the hiring process for the Emergency Program Coordinator position ahead of freshet 2021.

That the Regional District of Kootenay Boundary Board of Directors discuss the proposed Emergency Preparedness Service 012 2021-2025 Financial Plan as presented to the Board on January 28, 2021. **FURTHER** that the Board provides direction to staff as to the preferred budget option to proceed with and refer it to a future meeting for approval with any minor adjustments for year end.




REGIONAL DISTRICT OF KOOTENAY BOUNDARY SUMMARY INFORMATION

SERVICE NO 012 EMERGENCY PREPAREDNESS



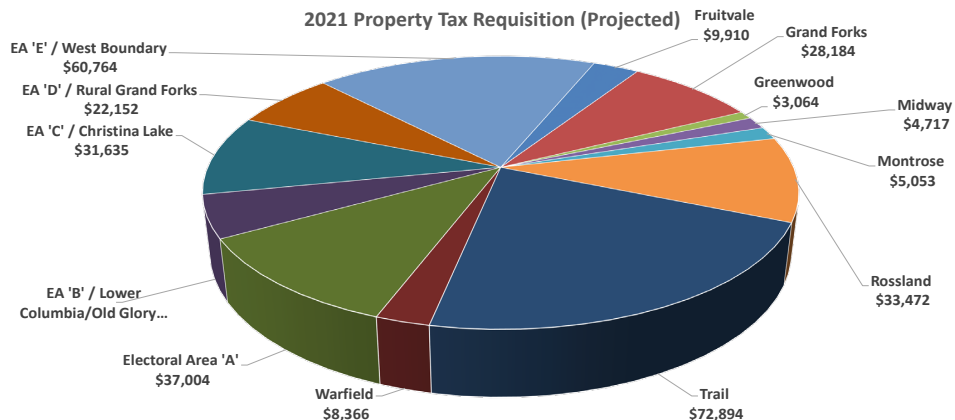
PARTICIPANTS: Grand Forks, Greenwood, Trail, Fruitvale, Midway, Montrose, Warfield, Rossland, Electoral Areas 'A', 'B', 'C', 'D', & 'E'



	PAGE	2020 BUDGET	2021 BUDGET	Increase(Decrease) between 2020 BUDGET and 2021 BUDGET		PRIMARY DRIVERS FOR CHANGE
				\$	%	
REVENUE						
Property Tax Requisition	3	266,894	334,078	67,184	25.17	
PEP Grants	6	179,209	100,000	(79,209)	(44.20)	
Previous Year's Surplus	8	0	64,559	64,559	0.00	
Revenue From Reserve	10	143,679	102,736	(40,943)	(28.50)	50% of the EPC Poistion, EOC Consultant
EXPENDITURE						
Salaries & Benefits	11	232,005	300,090	68,085	29.35	50% of the New EPC Position
Wages - Recovery	13	79,209	0	(79,209)	(100.00)	
Consulting Fees	22	5,000	25,105	20,105	402.10	Consulating During EOC Activation Not EMBC Fundable. Fundned from Reserve, will be maintained at \$20,000.
Staff Education & Training	23	10,513	5,513	(5,000)	(47.56)	
EOC Center Site Costs	25	57,300	31,552	(25,748)	(44.94)	New GIS software supplier.
SPU - Maintenance & Repairs	26	39,100	5,597	(33,503)	(85.69)	Completion of Capital upgrades
Contribution To Reserve	30	0	64,555	64,555	0.00	

KEY FACTS

Establishment Bylaw No.	1613; 2016
Max Requisition	No Maximum
Last Increase Requisition Limit	Not Applicable
Next Review Requisition Limit	Not Applicable
Reserve Balance	\$ 130,326.12
(@ December 31, 2020)	






REGIONAL DISTRICT OF KOOTENAY BOUNDARY
FIVE YEAR FINANCIAL PLAN

SERVICE NO 012
EMERGENCY PREPAREDNESS



PARTICIPANTS: Grand Forks, Greenwood, Trail, Fruitvale,
Midway, Montrose, Warfield, Rossland, Electoral Areas 'A', 'B',
'C', 'D', & 'E'

								Increase(Decrease)					
	PAGE	2019 ACTUAL	2020 BUDGET	2020 ACTUAL	(OVER) UNDER	2021 BUDGET	between 2020 BUDGET and 2021 BUDGET		20.55% 2022	-5.48% 2023	4.90% 2024	14.07% 2025	
							\$	%	BUDGET	BUDGET	BUDGET	BUDGET	
REVENUE													
Property Tax Requisition	3	259,111	266,894	266,894	(0)	334,078	67,184	25.17	402,739	380,682	399,330	455,517	
11 590 159 Miscellaneous Revenue	4	14,940	0	119,579	(119,579)	0	0	0.00	0	0	0	0	
11 759 080 Emergency Planning Grant	5	0	0	0	0	0	0	0.00	0	0	0	0	
11 759 083 PEP Grants	6	1,381,604	179,209	473,057	(293,848)	100,000	(79,209)	(44.20)	100,000	100,000	100,000	100,000	
11 210 100 Federal Grant In Lieu	7	808	800	658	142	800	0	0.00	800	800	800	800	
11 911 100 Previous Year's Surplus	8	140,659	0	0	0	64,559	64,559	0.00	0	0	0	0	
11 920 002 Capital - Borrowing	9	0	0	0	0	0	0	0.00	0	0	0	0	
11 921 205 Revenue From Reserve	10	0	143,679	143,679	0	102,736	(40,943)	(28.50)	67,631	0	0	0	
Total Revenue		1,797,121	590,582	1,003,867	(413,286)	602,173	11,591	1.96	571,170	481,482	500,130	556,317	
EXPENDITURE													
12 258 111 Salaries & Benefits	11	205,253	232,005	232,005	0	300,090	68,085	29.35	301,677	204,936	202,488	206,538	
12 258 224 O.T. Wages - Emergency F	12	545	0	76,524	(76,524)	0	0	0.00	0	0	0	0	
12 258 227 Wages - Recovery	13	224,639	79,209	80,452	(1,243)	0	(79,209)	(100.00)	0	0	0	0	
Total Salaries & Benefits		430,437	311,215	388,982	-77,767	300,090	(11,124)	(3.57)	301,677	204,936	202,488	206,538	
12 258 210 Travel & Conference	14	5,660	6,744	1,621	5,124	6,886	142	2.10	7,024	7,164	7,308	7,454	
12 258 211 Vehicle Operating	15	8,311	6,532	4,022	2,510	6,669	137	2.10	6,803	6,939	7,078	7,219	
12 258 213 Telephone	16	2,370	4,598	1,204	3,394	4,927	329	7.16	5,026	5,127	5,229	5,334	
12 258 214 Radio - Communications	17	214	3,948	0	3,948	4,031	83	2.10	4,112	4,194	4,278	4,363	
12 258 216 Equipment Replacement	18	2,931	2,040	21	2,019	2,083	43	2.10	3,124	3,167	2,210	2,255	
12 258 221 Advertising & Promotion	19	1,855	3,060	34	3,026	3,124	64	2.10	3,187	3,250	3,315	3,382	
12 258 225 PEP Task Claims	20	1,168,987	100,000	343,797	(243,797)	100,000	0	0.00	100,000	100,000	100,000	100,000	
12 258 230 Board Fee	21	5,486	5,572	5,572	0	6,205	633	11.37	40,195	40,999	41,819	42,656	
12 258 233 Consulting Fees	22	17,938	5,000	49,551	(44,551)	25,105	20,105	402.10	5,207	5,311	5,417	5,526	
12 258 234 Staff Education & Training	23	5,202	10,513	501	10,012	5,513	(5,000)	(47.56)	10,623	15,736	25,850	15,967	
12 258 251 Office Supplies	24	5,629	4,000	819	3,181	4,084	84	2.10	4,166	4,249	4,334	4,421	
12 258 252 EOC Center Site Costs	25	55,572	57,300	42,549	14,751	31,552	(25,748)	(44.94)	36,797	37,047	47,302	37,562	
12 258 253 SPU - Maintenance & Rep:	26	435	39,100	33,227	5,873	5,597	(33,503)	(85.69)	5,709	5,823	5,940	6,058	
12 258 716 Grants to SARS/ESS Grou	27	25,750	25,750	67,171	(41,421)	26,750	1,000	3.88	32,520	32,540	32,561	32,582	
Total Operating		1,306,340	274,157	550,088	-275,931	232,527	(41,630)	(15.18)	264,493	271,547	292,642	274,778	
12 258 610 Capital/Amortization	28	0	0	0	0	0	0	0.00	0	0	0	70,000	
Total Capital		0	0	0	0	0	0	0.00	0	0	0	70,000	
12 258 840 Vehicle Financing	29	0	0	0	0	0	0	0.00	0	0	0	0	
Total Debt		0	0	0	0	0	0	0.00	0	0	0	0	
12 258 741 Contribution To Reserve	30	60,554	0	0	0	64,555	64,555	0.00	0	0	0	0	
12 258 990 Previous Year's Deficit	31	0	210	239	(29)	0	(210)	(100.00)	0	0	0	0	
12 258 999 Contingencies	32	0	5,000	0	5,000	5,000	0	0.00	5,000	5,000	5,000	5,000	
Total Other		60,554	5,210	239	4,971	69,555	64,345	1,235.07	5,000	5,000	5,000	5,000	
Total Expenditure		1,797,331	590,582	939,309	(348,727)	602,173	11,591	1.96	571,170	481,482	500,130	556,317	
Surplus (Deficit)		(210)		64,559		-			-	-	-	-	
Reserve Balance						92,145			24,514	24,514	24,514	24,514	

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Property Tax Requisition		2021	2022	2023	2024	2025
2020		Budget	Budget	Budget	Budget	Budget
Actual	Description	Amount	Amount	Amount	Amount	Amount
7,917	11 830 100 012 Fruitvale	9,910	11,946	11,292	11,845	13,512
22,516	11 830 200 012 Grand Forks	28,184	33,977	32,116	33,689	38,429
2,448	11 830 300 012 Greenwood	3,064	3,694	3,492	3,663	4,178
3,768	11 830 400 012 Midway	4,717	5,686	5,375	5,638	6,432
4,037	11 830 500 012 Montrose	5,053	6,091	5,758	6,040	6,889
26,740	11 830 600 012 Rossland	33,472	40,351	38,141	40,010	45,639
58,234	11 830 700 012 Trail	72,894	87,875	83,062	87,131	99,391
6,684	11 830 800 012 Warfield	8,366	10,085	9,533	10,000	11,407
29,562	11 830 901 012 Electoral Area 'A'	37,004	44,609	42,166	44,232	50,455
13,473	11 830 902 012 EA 'B' / Lower Columbia/Old	16,864	20,330	19,217	20,158	22,994
25,273	11 830 903 012 EA 'C' / Christina Lake	31,635	38,137	36,048	37,814	43,135
17,697	11 830 904 012 EA 'D' / Rural Grand Forks	22,152	26,704	25,242	26,478	30,204
48,544	11 830 905 012 EA 'E' / West Boundary	60,764	73,252	69,240	72,632	82,852
266,894	Subtotal	334,078	402,739	380,682	399,330	455,517
	This Year Requisition	334,078	402,739	380,682	399,330	455,517
		334,078	402,739	380,682	399,330	455,517

Notes:

Bylaw No. 1286 Sept 22, 2005 to include all RDKB participants

ROSSLAND OPTED BACK IN THE SERVICE IN 2016

2021-01-22

Emergency Preparedness

Page 4

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name	Miscellaneous Revenue	2020	2021	2022	2023	2024	2025
Account	11 590 159 012	Prior Year	Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1		-	-	-	-	-	-
Current Year Budget		-	-	-	-	-	-

Notes:	Previous Year Budget	-
	Actual to December 31, 2020	119,579

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name	Emergency Planning Grant	2020	2021	2022	2023	2024	2025
Account	11 759 080 012	Prior Year	Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1							-
Current Year Budget		-	-	-	-	-	-

Notes:	Previous Year Budget	-
	Actual to December 31, 2020	-

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name Account	PEP Grants 11 759 083 - 012	2020 Prior Year	2021 Budget	2022 Budget	2023 Budget	2024 Budget	2025 Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Emergency Incident #1 - Response	30,000	30,000	30,000	30,000	30,000	30,000
	Emergency Incident #1 - Recovery	20,000	20,000	20,000	20,000	20,000	20,000
2	Emergency Incident #2 - Response	30,000	30,000	30,000	30,000	30,000	30,000
	Emergency Incident #2 - Recovery	20,000	20,000	20,000	20,000	20,000	20,000
3	Interim Manager of Emergency Programs - EMBC F	79,209					
Current Year Budget		179,209	100,000	100,000	100,000	100,000	100,000

Notes:	Previous Year Budget	179,209
	Actual to December 31, 2020	473,057
Response costs recovered 100%		
Recovery costs recovered at 80% less \$1,000		
See Page 17 & 18		

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name			0.00%	0.00%	0.00%	0.00%	0.00%
Account	Federal Grant In Lieu	2020	2021	2022	2023	2024	2025
	11 210 100 012	Prior Year	Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Federal Grant In Lieu	800	800	800	800	800	800
Current Year Budget		800	800	800	800	800	800

Notes:	Previous Year Budget	800
	Actual to December 31, 2020	658

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name Account	Previous Year's Surplus 11 911 100 012	2020 Prior Year	2021 Budget	2022 Budget	2023 Budget	2024 Budget	2025 Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Previous Year's Surplus	144,247	64,559	-	-	-	-
Current Year Budget		144,247	64,559	-	-	-	-

Notes:	Previous Year Budget	-
	Actual to December 31, 2020	-

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name Account	Capital - Short Term Borrowing 11 920 002 012	2020 Prior Year	2021 Budget	2022 Budget	2023 Budget	2024 Budget	2025 Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1		-					
Current Year Budget		-	-	-	-	-	-

Notes:	Previous Year Budget	-
	Actual to December 31, 2020	-

REGIONAL DISTRICT OF KOOTENAY BOUNDARY Five Year Financial Plan

[illegible]

Notes:		Previous Year Budget	143,679
		Actual to December 31, 2020	143,679
Item #2	New EPC Position with 2 Year Term (50% Reserve Redemption)		

Item #2	New EPC Position with 2 Year Term (50% Reserve Redemption)
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REGIONAL DISTRICT OF KOOTENAY BOUNDARY

Name	Salaries & Benefits	2020			2.00% 2021	2.00% 2022	2.00% 2023	2.00% 2024	2.00% 2025
Account	12 258 111 012	Prior Year			Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Hours	Rate	Amount	Amount	Amount	Amount	Amount
1	Corporate Communications Officer	8,607	10.0%	87,794	8,779	8,955	9,134	9,317	9,503
2	Manager of Emergency Programs	23,173	100.0%	87,794	87,794	89,550	91,341	93,168	95,031
3	Interim Emergncy Program Coordinator	86,073	100.0%	76,000	76,000	77,520			
4	Benefits @ 25.9% - Mgr Emer Prog/Comm Of	30,559		26.6%	45,905	46,823	26,726	27,261	27,806
5	Fire & Emergency Services Administration (20	31,773	983	33.15	32,567	33,218	33,883	34,561	35,252
6	Benefits @ 27.2% - Emer Serv Admin	8,655		27.9%	9,089	9,271	9,457	9,646	9,839
7	Regional Fire Chief - KBRFRS (2020 - 25%)	33,681			31,014	28,207	26,698	22,150	22,593
8	Benefits @ 27.2% - Regional Fire Chief	9,484		28.8%	8,941	8,132	7,697	6,386	6,514
	Current Year Budget	232,005			300,090	301,677	204,936	202,488	206,538

Salaries & Benefits	Previous Year Budget	232,005
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Notes:	Actual to December 31, 2020	232,005
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Item #1	54% - Admin, 36% - Electoral Area Admin, & 10% - Emergency Preparedness
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Item #3	New Position 2 Year Term: Full Year 2021, and Year 2022
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Item #5/6 50% - Emergency Preparedness, & 50% - Regional Fire Services

Item #7/8	2021 - 55% - KBRFR, 22.5% - Emergency Preparedness, & 22.5% - 911 Communications
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2022 - 60% - KBRFR, 20% - Emergency Preparedness, & 20% - 911 Communications

2023 - 65% - KBRFR, 18.5% - Emergency Preparedness, & 18.5% - 911 Communications

2024 - 70% - KBRFR, 15% - Emergency Preparedness, & 15% - 911 Communications

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name Account	O.T. Wages - Emergency Response 12 258 224 012	2020 Prior Year	2021 Budget	2022 Budget	2023 Budget	2024 Budget	2025 Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Emergency Incident #1 - Response	-	-	-	-	-	-
	Emergency Incident #1 - Recovery	-	-	-	-	-	-
2	Emergency Incident #2 - Response	-	-	-	-	-	-
	Emergency Incident #2 - Recovery	-	-	-	-	-	-
Current Year Budget		-	-	-	-	-	-

Salaries & Benefits	Previous Year Budget	-
Notes:	Actual to December 31, 2020	76,524
Response costs recovered 100%		
Recovery costs recovered at 80% less \$1,000		
See Page 5		

REGIONAL DISTRICT OF KOOTENAY BOUNDARY

Name	Wages - Recovery	2020			2021	2022	2023	2024	2025
Account	12 258 227 012	Prior Year			Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Hours	Rate	Amount	Amount	Amount	Amount	Amount
1	Deputy Recovery Manager	62,899							
2	Benefits @ 27% - Deputy Recovery Manager	16,310							
	Current Year Budget	79,209			-	-	-	-	-

Salaries & Benefits	Previous Year Budget	79,209
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Notes:	Actual to December 31, 2020	80,452
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Item #1	EAF 72 Estimated to be Depleted PP#19/20 2020
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REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name	Travel & Conference	2020	2.10%	2.00%	2.00%	2.00%	2.00%
Account	12 258 210 012	Prior Year	2021	2022	2023	2024	2025
Item No	Description	Amount	Budget	Budget	Budget	Budget	Budget
1	Annual PEP Conference	1,632	1,666	1,700	1,734	1,768	1,804
2	Registration & Per Diem	2,112	2,157	2,200	2,244	2,289	2,335
3	General Travel	3,000	3,063	3,124	3,187	3,250	3,315
Current Year Budget		6,744	6,886	7,024	7,164	7,308	7,454

Operating	Previous Year Budget	6,744
Notes:	Actual to December 31, 2020	1,621
Item #1/2	Two Attendees To EP Conference	

REGIONAL DISTRICT OF KOOTENAY BOUNDARY

Five Year Financial Plan

[illegible]

Operating	Previous Year Budget	6,532
Notes:	Actual to December 31, 2020	4,022

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name Account	Telephone 12 258 213 012	2020 Prior Year	2.10% 2021 Budget	2.00% 2022 Budget	2.00% 2023 Budget	2.00% 2024 Budget	2.00% 2025 Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Telephone Cost						
2	Trail EOC (250-368-9127)	1,020	1,041	1,062	1,083	1,105	1,127
3	Trail EOC Fax (250-368-9128)	-					
4	Toll Free (888-747-9119)						
5	Grand Forks EOC (250-442-3628)						
6	Cell Phone @ \$93 per month	1,958	2,232	2,277	2,322	2,369	2,416
7	Data Plan for three SPU iPads	1,620	1,654	1,687	1,721	1,755	1,790
Current Year Budget		4,598	4,927	5,026	5,127	5,229	5,334

Operating	Previous Year Budget	4,598
Notes:	Actual to December 31, 2020	1,204

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name	Radio - Communications	2020	2.10%	2.00%	2.00%	2.00%	2.00%
Account	12 258 214 012	Prior Year	2021	2022	2023	2024	2025
			Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Radio Communications - Preventative Maintenance	1,500	1,532	1,562	1,593	1,625	1,658
	On EOC radios/battery						
2	Communications Equipment	2,448	2,499	2,549	2,600	2,652	2,705
Current Year Budget		3,948	4,031	4,112	4,194	4,278	4,363

Operating	Previous Year Budget	3,948
Notes:	Actual to December 31, 2020	-
Item # 2	This is funded from reserve	

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name	Equipment Replacement	2020	2.10%	2.00%	2.00%	2.00%	2.00%
Account	12 258 216 012	Prior Year	2021	2022	2023	2024	2025
			Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	EOC Computer Replacement	2,040	2,083	2,124	2,167	2,210	2,255
2	EM Program Cell Phones			1,000	1,000		
Current Year Budget		2,040	2,083	3,124	3,167	2,210	2,255

Operating _____ Previous Year Budget 2,040
Notes: _____ Actual to December 31, 2020 21
Item #1 Information Services to replace one computer workstation annually. Funded from reserve.

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name	Advertising & Promotion	2020	2.10%	2.00%	2.00%	2.00%	2.00%
Account	12 258 221 012	Prior Year	2021	2022	2023	2024	2025
			Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Community Promotion & Awareness	3,060	3,124	3,187	3,250	3,315	3,382
Current Year Budget		3,060	3,124	3,187	3,250	3,315	3,382

Operating	Previous Year Budget	3,060
Notes:	Actual to December 31, 2020	34

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name Account	PEP Claims (Provincial Emergency Preparedness) 12 258 225 012	2020 Prior Year	2021 Budget	2022 Budget	2023 Budget	2024 Budget	2025 Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Emergency Incident #1 - Response	30,000	30,000	30,000	30,000	30,000	30,000
	Emergency Incident #1 - Recovery	20,000	20,000	20,000	20,000	20,000	20,000
2	Emergency Incident #2 - Response	30,000	30,000	30,000	30,000	30,000	30,000
	Emergency Incident #2 - Recovery	20,000	20,000	20,000	20,000	20,000	20,000
	Current Year Budget	100,000	100,000	100,000	100,000	100,000	100,000

Operating	Previous Year Budget	100,000
Notes:	Actual to December 31, 2020	343,797
Response costs recovered 100%		
Recovery costs recovered at 80% less \$1,000		
See Page 5		

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name	Board Fee	2020	2.10%	2.00%	2.00%	2.00%	2.00%
Account	12 258 230 012	Prior Year	2021	2022	2023	2024	2025
Item No	Description	Amount	Budget	Budget	Budget	Budget	Budget
1	Board Fee (2% increase for C.P.I.)	4,409	4,497	-			
2	Carbon Offset & Climate Change Initiatives	1,163	-				
3	Administration Support Allocation		-	30,088	30,690	31,304	31,930
4	General Admin Shared Credit		-	(19,391)	(19,779)	(20,174)	(20,578)
5	HR Allocation		-	1,090	1,112	1,134	1,157
6	IT Allocation		-	26,666	27,199	27,743	28,298
7	Building Allocation		1,708	1,743	1,777	1,813	1,849
Current Year Budget		5,572	6,205	40,195	40,999	41,819	42,656

Operating	Previous Year Budget	5,572
Notes:	Actual to December 31, 2020	5,572

REGIONAL DISTRICT OF KOOTENAY BOUNDARY

Name		2020	2.10%	2.00%	2.00%	2.00%	2.00%
Account	Consulting Fees	Prior Year	Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Consulting Fees	5,000	5,105	5,207	5,311	5,417	5,526
2	Consulating During EOC Activation Not EMBC Fundable		20,000				
	Current Year Budget	5,000	25,105	5,207	5,311	5,417	5,526

Operating	Previous Year Budget	5,000
Notes:	Actual to December 31, 2020	49,551

Item # 1	Fees to Cover Consultant Support.
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Item # 2	Consulating During EOC Activation Not EMBC Fundable. Restricted Reserve Will be maintained at \$20,000.
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REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name	Staff Education & Training	2020	2.10%	2.00%	2.00%	2.00%	2.00%
Account	12 258 234 012	Prior Year	2021	2022	2023	2024	2025
			Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	EOC Staff Development and Recertification	5,513	5,513	5,623	5,736	5,850	5,967
2	EOC Exercise	5,000		5,000	10,000	20,000	10,000
Current Year Budget		10,513	5,513	10,623	15,736	25,850	15,967

Operating	Previous Year Budget	10,513
Notes:	Actual to December 31, 2020	501
Item #1	Training cost for Emergency Operations Center staff	

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name	Office Supplies	2020	2.10%	2.00%	2.00%	2.00%	2.00%
Account	12 258 251 012	Prior Year	2021	2022	2023	2024	2025
			Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Includes Report Printing & supplies	4,000	4,084	4,166	4,249	4,334	4,421
Current Year Budget		4,000	4,084	4,166	4,249	4,334	4,421

Operating	Previous Year Budget	4,000
Notes:	Actual to December 31, 2020	819
Item #1	2020 amount includes allocation to produce EM plans, if needed	

REGIONAL DISTRICT OF KOOTENAY BOUNDARY

Five Year Financial Plan

Name	EOC Operations Centre Site Costs	2020	2.10%	2.00%	2.00%	2.00%	2.00%
Account	12 258 252 012	Prior Year	Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Greater Trail Community Centre office space	15,300	15,300	15,300	15,300	15,300	15,300
2	EOC Generator Repairs & Maintenance	2,000	2,042	2,083	2,124	2,167	2,210
3	EOC Generator Fuel	1,000	1,000	1,000	1,000	1,000	1,000
4	EOC Monitors / Wall Displays /Technology Upgrade	5,000		5,000	5,000	5,000	5,000
5	Trail EOC Flooring	10,000				10,000	
6	Public Alerting System (Email & Phone Notifications	10,000	10,210	10,414	10,622	10,835	11,052
	Emergencies)						
7	Lightship Agreement	14,000					
8	ESRI Agreement		3,000	3,000	3,000	3,000	3,000
	Charges calculated at 1,912 sq ft x \$8.00 per year						
	Current Year Budget	57,300	31,552	36,797	37,047	47,302	37,562

Operating	Previous Year Budget	57,300
Notes:	Actual to December 31, 2020	42,549
Item #1	Includes rental charges and janitorial services	
	GL Transfer to Misc Revenue Culture Arts & Recreation Lower Columbia	11 590 159 - 018
	Generators in Trail & Grand Forks	
Item #2	GF Generator Service 2019 = \$1900 / 2 = \$950 x 2 units (GF and Trail) = \$1900	

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name	Sprinkler Protection Units - Repair & Maintenance	2020	2.10%	2.00%	2.00%	2.00%	2.00%
Account	12 258 253 012	Prior Year	2021	2022	2023	2024	2025
			Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Maintenance & Repairs and Operating Costs	5,100	5,207	5,311	5,417	5,526	5,636
2	Upgrades to 2 SPUs to meet OFC deployment requi	34,000					
3	Avenza Pro App		390	398	406	414	422
Current Year Budget		39,100	5,597	5,709	5,823	5,940	6,058

Operating	Previous Year Budget	39,100
Notes:	Actual to December 31, 2020	33,227
Item #1	OFC has increased the amout of equipment needed to deploy a SPU	

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name	Grants to SARS/ESS Groups	2020	2.10%	2.00%	2.00%	2.00%	2.00%
Account	12 258 716 012	Prior Year	2021	2022	2023	2024	2025
			Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	South Columbia Search & Rescue - Operating Grant	5,250	5,250	5,500	5,500	5,500	5,500
2	Rossland Search & Rescue - Operating Grant	5,250	5,250	5,500	5,500	5,500	5,500
3	Grand Forks Search & Rescue - Operating Grant	5,250	5,250	5,500	5,500	5,500	5,500
4	Emergency Social Service Director West Side	-	-	-	-	-	-
5	ESS/Red Cross	10,000	10,000	15,000	15,000	15,000	15,000
6	ESS/CRC Supplies- Tech Kits, Reception Centre kits		1,000	1,020	1,040	1,061	1,082
Current Year Budget		25,750	26,750	32,520	32,540	32,561	32,582

Operating	Previous Year Budget	25,750
Notes:	Actual to December 31, 2020	67,171
Item #1-5	Grants are intended to supplement SARS operations (a retainer)	
Item #5	Agreement good through Dec 2021; increase forecast.	

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name Account	Capital 12 258 610 012	2020 Prior Year	2021 Budget	2022 Budget	2023 Budget	2024 Budget	2025 Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	EM Truck	-	-				70,000
Current Year Budget		-	-	-	-	-	70,000

Capital	Previous Year Budget	-
Notes:	Actual to December 31, 2020	-
Item #1	EM Truck- The truck will not meet the replacement criteria as per policy until at least 2025, baring any maintenance issues.	

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name Account	Vehicle Financing 12 258 840 012	2020 Prior Year	2021 Budget	2022 Budget	2023 Budget	2024 Budget	2025 Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1		-	-	-	-	-	-
Current Year Budget		-	-	-	-	-	-

Debt	Previous Year Budget	-
Notes:	Actual to December 31, 2020	-

REGIONAL DISTRICT OF KOOTENAY BOUNDARY

Name	Contribution To Reserve	2020	2021	2022	2023	2024	2025
Account	12 258 741 012	Prior Year	Budget	Budget	Budget	Budget	Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Contribution To Reserve		64,555				
2							
	Current Year Budget	-	64,555	-	-	-	-

Other	Previous Year Budget	-
Notes:	Actual to December 31, 2020	-
Item #1	Annual Contribution to Reserve	

\$ 130,326.12	Balance in Reserve December 31, 2020
	Account Numbers 34 700 012
	Restricted - Unmet Needs Committee Donations (Included in above)
\$ 130,326.12	Net Reserve (Unrestricted)

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name Account	Previous Year's Deficit 12 258 990 012	2020 Prior Year	2021 Budget	2022 Budget	2023 Budget	2024 Budget	2025 Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Previous Year's Deficit	-	-	-	-	-	-
Current Year Budget		-	-	-	-	-	-

Other	Previous Year Budget	210
Notes:	Actual to December 31, 2020	239

REGIONAL DISTRICT OF KOOTENAY BOUNDARY
Five Year Financial Plan

Name Account	Contingencies 12 258 999 012	2020 Prior Year	2021 Budget	2022 Budget	2023 Budget	2024 Budget	2025 Budget
Item No	Description	Amount	Amount	Amount	Amount	Amount	Amount
1	Miscellaneous	5,000	5,000	5,000	5,000	5,000	5,000
2							
Current Year Budget		5,000	5,000	5,000	5,000	5,000	5,000

Other	Previous Year Budget	5,000
Notes:	Actual to December 31, 2020	-



STAFF REPORT

Date: 28 Jan 2021 **File**
To: **Chair Langman and Board of Directors**
From: Freya Phillips, Senior Energy Specialist
Re: Kootenay Clean Energy Transition

Issue Introduction

A staff report from Goran Denkovski, Manager of Infrastructure and Sustainability and Freya Phillips, Senior Energy Specialist regarding the Kootenay Clean Energy Transition pilot project.

History/Background Factors

In March 31, 2020 the Regional District of Kootenay Boundary (RDKB) Board of Directors adopted resolution 157-20:

That the RDKB Board of Directors support the Community Energy Association (CEA) application for FCM funding through their Signature Project grant for \$500,000 for the Kootenay Clean Energy Transition Pilot Project. Further, that the Board direct Staff to allocate \$15,000 per year for 2020 and 2021 from the CARIP reserve fund to the General Administration (001) budget if the grant is successful.

The vision is "Through the Clean Energy Transition Pilot, the Kootenays will lead BC in reaching CleanBC's 2030 and 2050 GHG emission reduction targets, and will provide an approach that can be replicated in other regions across BC and Canada. The Pilot will develop a trained and capable workforce, creating capacity to support the promotion and installation of low carbon technologies beyond the project timeline. The project will support the growth of the clean energy industry, creating economic resilience and strength."

The initiative is being developed and facilitated by Kootenay Employment Services (KES) and Community Energy Association (CEA), drawing on their experience in market transformation, high-impact project development workforce capacity building. The Regional Districts of East Kootenay, Central Kootenay and Kootenay Boundary are collaborating to support this innovative initiative.

Fully implemented, the Kootenay Clean Energy Transition would be approximately \$1.2 Million project. The KES and CEA have been applying for funding for over a year and have secured discrete pieces and continue to work on the anchor funding from Federation of Canadian Municipalities. The KES and CEA are seeking to move forward on priority workplan activities summarized below, while continuing to pursue additional funds for pilot project implementation.

These priority activities are target trades and contractors across the region and customer education. These activities are complementary and will work in conjunction with new home and Energy Step Code activities being undertaken by the RDKB.

Year 1 Immediate Priority Workplan Activities

1. Insulation trade training - Increase program registered contractors for insulation to allow customers access to insulation rebates post April 1, 2021. This activity will take a dual approach, promoting the need with customers and the community, and targeting the insulators and builders.
2. Heat pump and mechanical systems training – Phase 1 will be via online best practice training platform in preparation for targeted heat pump pilots.
3. Home energy data app and decision making tool - explore the opportunity to work jointly with Vancouver municipalities to procurement for app development for home energy data and decision making tool.

The KES and CEA have secured funding from RDEK and RDCK for each of their \$30,000 contributions each in 2021.

Implications

Financial Implications

The funds would be allocated from the Carbon Action Reserve (CARIP) fund \$30,000 in 2021. The Carbon Action Reserve Fund has \$186,500 and the Carbon offset reserve has \$296,200.

Advancement of Strategic Planning Goals

Environmental Stewardship / Climate Preparedness

Background Information Provided

1. Kootenay Clean Energy Transition Backgrounder and Workplan
2. CEA Letter to Columbia Basin Trust

Alternatives

1. That the Regional District of Kootenay Boundary Board of Directors direct staff to allocate \$30,000 in 2021 from the CARIP reserve fund to the General Administration (001) budget to implement the Kootenay Clean Energy Transition pilot Year 1 workplan.
2. That the Regional District of Kootenay Boundary Board of Directors refer the Staff Report back to staff for further investigation as directed by Board.
3. That the Regional District of Kootenay Boundary Board of Directors direct staff to do nothing.

Recommendation(s)

That the Regional District of Kootenay Boundary Board of Directors direct staff to allocate \$30,000 in 2021 from the CARIP reserve fund to the General Administration (001) budget to implement the Kootenay Clean Energy Transition pilot workplan.



Regional District of
Kootenay Boundary

Beaver Valley Water

2021 Work Plan



RDKB ENVIRONMENTAL SERVICES DEPARTMENT
VERSION 2
JANUARY 10, 2021

Goran Denkovski, Manager of Infrastructure and Sustainability



Beaver Valley Water

2021 Work Plan

Service Name: Beaver Valley Water Service

Service Number: 500

Committee Having Jurisdiction: Utilities Committee

General Manager/Manager Responsible:

Goran Denkovski, Manager of Infrastructure and Sustainability

Description of Service:

The BVWS has approximately twenty-seven (27) kilometers of water main within its service area. Based on the 2014 BVWS Annual Report, the water mains deliver potable water to approximately 2,850 residents, comprising 1,181 connections. As well, the BVWS has ninety-eight (98) fire hydrants for fire protection and numerous standpipes which are used for annual flushing of the water system. The Beaver Valley Water Service system is currently classified as a Level II water distribution system and a Level III water treatment system. The main water supply is from Kelly Creek. The Kelly Creek supply is often augmented by two wells that are located within the main part of the village. Water that is drawn from Kelly Creek is settled out in a 2.7 megalitre (ML) open reservoir before being pumped through the Kelly Creek water treatment plant. The plant, which was completed in 2002, treats the raw water by coagulation, media filtration and then ultra violet disinfection. Chlorine is injected prior to delivery of the treated water from the treatment plant into the downstream distribution system.

The two wells have traditionally been used for emergency backup situations and during the summer months when water demands are higher and when the Kelly Creek source has reduced capacity. Recently, chlorine injection was added at the two well stations. Chlorination injection at the well sites

has given the Village the operational flexibility of utilizing the Kelly Creek source and the two well sources, simultaneously, without the need to isolate sections of the service area.

The Village currently has three reservoirs that store the treated water. These are:

- The clearwell
- The Mill Road reservoir
- The Fruitvale reservoir

Beaver Valley Water System						
Indicator	2019	2018	2017	2016	2015	Basin Wide 2016
Total Average Daily Demand (Litres/Capita/Day)	529	554	582	572	600	354 (residential) ¹
Average Outdoor Demand (Litres/Capita/Day)	178	210	215	180	181	Unknown
Average Indoor Demand (Litres/Capita/Day)	351	344	367	399	420	200 (estimate) ²
% Total Annual Outdoor Demand	34%	38%	37%	30%	30%	Unknown
Total Outdoor Demand (ML)	185	218	224	181	188	Unknown
Total Annual Demand (ML)	550	576	605	595	607	Unknown

Establishing Authority:

Regional District of Kootenay Beaver Valley Water Service Establishment Bylaw No. 1491, 2011

Requisition Limit:

\$600,000

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

\$480,600/\$2,607,691/\$400,982.00 to the end of September 2020

Regulatory or Administrative Bylaws:

Beaver Valley User Rate and Regulation Bylaw No. 1591

Beaver Valley Cross Connection Control Bylaw No. 1494

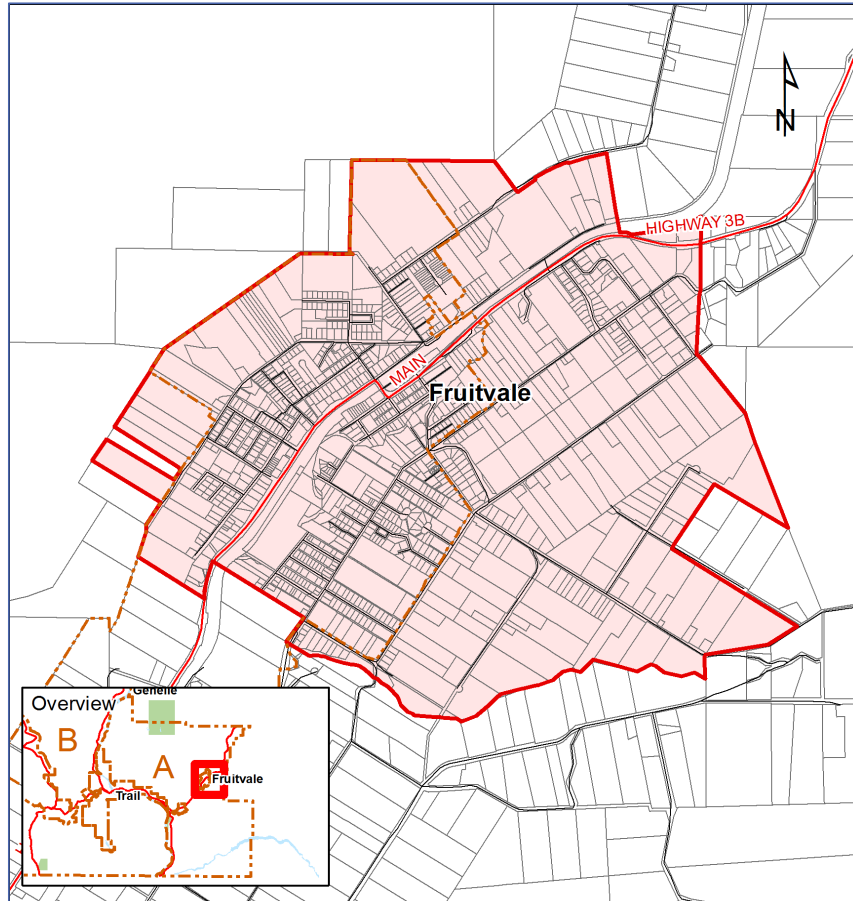
Beaver Valley Development Cost Charge Bylaw No. 1492

¹ Columbia Basin Trust Water Smart Summary 2016 – Average of 5 Basin communities with universal metering.

² From City of Rossland Water Smart Action Plan 2015-2020. Note: 350+ L/C/D is considered a "high use home"; 200 L/C/D would be the expected demand in a home built to current building code standards.

Service Area / Participants:

Properties in Electoral Area 'A' and The Village of Fruitvale

**Service Levels**

The service is contract operated by the Village of Fruitvale under agreement.

Human Resources:

- CAO

2021 Staffing

ES Staffing	Operational FTE	Operational Days	Project FTE	Project Days
Manager of Infrastructure and Sustainability	29%	6	71%	15

2020 Accomplishments:

These include:

- Completed feasibility study for Long Term Strategy project and applied for ICIP Rural and Northern Communities Grant
- Developed and started to implement Water Conservation Plan
- Applied for FCM grant for Water Ambassador and Irrigation Controller rebate program
- Worked with senior energy specialist to administer Fortis BC water conservation kits
- Provide general administration duties for the water service, prepare budgets and attend Committee meetings. Provide administrative support when and where required / appropriate.
- Regional / Collective Programs and Projects related to Infrastructure and Public Works
- Received and implemented Clean Water Wastewater grant for Davis Ave upgrade.
- Implementing significant Worksafe BC programs including: confined space, violence in the workplace, work alone, lock out, harassment and bullying, and orientation.

Significant Issues and Trends:

The service will do better job of having shovel ready projects for grant applications. Grant timelines are becoming more restrictive and are difficult to foresee.



2021 Projects:

Project: Asset Management Planning

Project Description:

Participation in the corporate-wide asset management planning process.

Project Timelines and Milestones:

Throughout 2021.

Project Risk Factors:

Departmental work will be guided by external sources (Corporate/Board plans for completion of Asset Management Plan)

Internal Resource Requirements: The corporate asset management plan is being led by the Finance Department, with participation by all other departments.

Estimated Cost and Identified Financial Sources: N/A

Relationship to Board Priorities:

This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”. It meets the strategic priorities of the RDKB’s strategic plan which is “We will continue to focus on good management and governance” & “We will ensure we are proactive and responsible in funding our services”.



Project: Implement Long Term Strategy Plan Project

Project Description:

Implement plan that was completed in 2016. Implementation will be dependent on grant funding. Intake for ICIP Green Infrastructure grant closed in October 2020.

Project Timelines and Milestones:

	2021											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bylaws												

Project Risk Factors:

Engineering not complete prior to closing of grant opportunities.

Internal Resource Requirements: The project will be administered by the Manager of Infrastructure and Sustainability

Estimated Cost and Identified Financial Sources: Total project \$4,400,000 with 100% funding from ICIP Rural and Northern Communities Grant.

Relationship to Board Priorities:



This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”.



Project: Water Conservation Program

Project Description:

The water conservation program consists of an irrigation controller rebate program, hiring of a water ambassador and access to FortisBC water Conservation Kits.

Project Timelines and Milestones:

	2021-2023											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bylaws												

Project Risk Factors:

The project is conditional of FCM grant. Fortis has already provided a grant for the home kits.

Internal Resource Requirements: The project will be administered by the Manager of Infrastructure and Sustainability and the Engineering and Safety Coordinator.

Estimated Cost and Identified Financial Sources: Total project cost is \$47,000 per year over three years.

Relationship to Board Priorities:

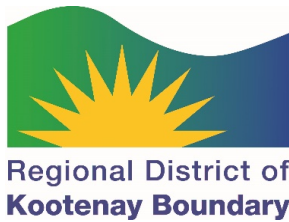


This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”.

Strategic Priority	Project name	Days to Complete	Internal/External	Budget (Est)	Risk/Priority
	Asset Management	5	Both	N/A	High
	Implement Long Term Strategy Plan	10	Both	\$4,400,000	High
	Water Conservation Program	30	Both	\$47,000	High

UTILITIES SERVICES			
Initiation Date	Action / Issue	Staff Resources	Comments
Jan 2016	<u>Regional Sewer – 2015-2019 Budget and Five-Year Financial Plan</u> Staff will create a reserve policy for the Committee's consideration.	Environmental Services Staff	The asset management plan is in progress. A capital reserve policy will be completed when the plan is complete.
September 2019	<u>Development Costs Charge</u> Staff to report to committee how many times DCC charged and standardize when DCC is used	Environmental Services Staff	Ongoing, will provide update at Feb 2021 Utilities Meeting.





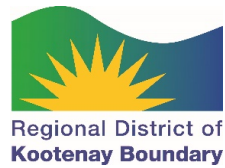
Rivervale Water and Street Light Utility

2021 Work Plan



RDKB ENVIRONMENTAL SERVICES DEPARTMENT
VERSION 2
JANUARY 10, 2021

Goran Denkovski, Manager of Infrastructure and Sustainability



Rivervale Water and Street Light Utility

2021 Work Plan

Service Name: Rivervale Water and Street Lighting Utility Service

Service Number: 650

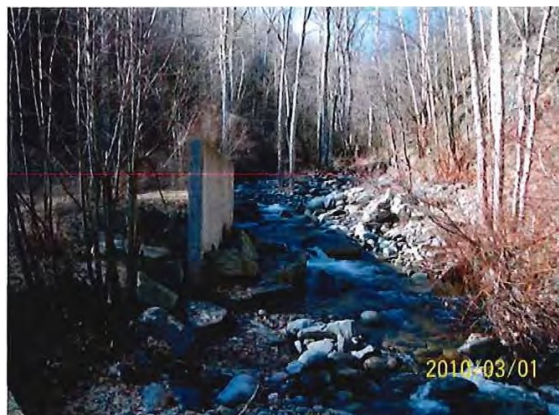
Committee Having Jurisdiction: Utilities Committee

General Manager/Manager Responsible:

Goran Denkovski, Manager of Infrastructure and Sustainability

Description of Service:

The Rivervale water system was constructed in the early 1950's, with its primary source of supply being an intake constructed on Hanna Creek. This intake is located to the west of Highway 22, above the Rivervale community and has almost 120 service connections



Additional supply sources were obtained from Dean/Durkin and McNally Springs in the 1960's and 1970's. Those springs were utilized until the late 1990's, at which time they were abandoned due to liability concerns of potential contamination by Teck Cominco's upland operations. In 2003, two new wells were drilled - with funding from Teck - in the vicinity of the Hanna Creek infrastructure.

Establishing Authority:

Regional District of Kootenay Boundary Rivervale Water and Street Light Service Area within Electoral Area 'B' / Lower Columbia – Old Glory Establishment Bylaw No. 1459, 2010.

Requisition Limit:

\$125,000

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

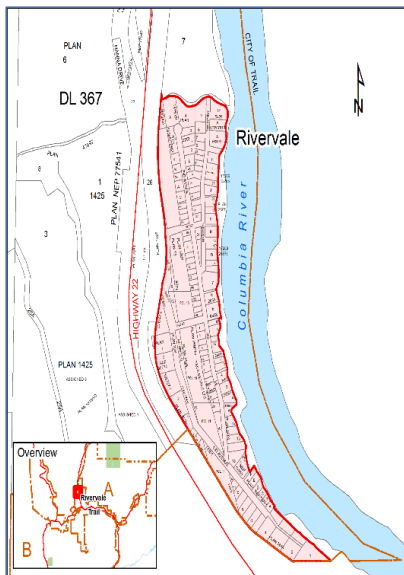
This service is 100% user fee funded/\$208,114/\$116,075.64 to end of September 2020

Regulatory or Administrative Bylaws:

Rivervale Waterworks Regulations and Rates Bylaw No. 1592, 2016

Service Area / Participants:

Area 'B' / Lower Columbia Old Glory



Service Levels

The water operator works eight hours a day, forty hours a week. The water service needs to have an operator on call 24 hours a day, operators may be required to work different shifts. They may rotate holiday and weekend work. In an emergency, such as an equipment failure, they often work overtime. The water operator operates the Warfield Water Treatment Plant under contract and the Columbia Gardens Industrial Park Water System.

Human Resources:

2021 Staffing

Environmental Services	Operational FTE	Operational Days	Project FTE	Project Days
Manager of Infrastructure and Sustainability	100%	6	0%	5
Warfield Contract Manager of Infrastructure and Sustainability	100%	10	0%	0
Water Operator 2	100%	78	0%	0
Water Operator 2 Warfield	100%	111	0%	0

2020 Accomplishments:

These include:

- Constructed turn around for safe operation of vehicles.
- Developed and started to implement Water Conservation Plan
- Applied for FCM grant for Water Ambassador and Irrigation Controller rebate program
- Worked with senior energy specialist to administer Fortis BC water conservation kits
- Creation and implementation of preventative maintenance plans, standard operating procedures and best management practices for all facilities.
- Implementing significant Worksafe BC programs including: confined space, violence in the workplace, work alone, lock out, harassment and bullying, and orientation.
- Extensive field work related to locating, mapping and identifying critical and sub-critical infrastructure related to the utility.
- Complete ERP for utility as per industry standards.
- Complete annual report for utility as per industry standards.
- Developed policies on water conservation.

**Significant Issues and Trends:**

Rivervale's current sources will meet long term water demands of the community. As is expected for many water systems throughout the province - longer/drier summers, lower aquifer levels, and smaller upland snowpacks will continue to result in years in which extreme water conservation measures (such as irrigation bans) will be necessary.

2021 Projects

Project: Asset Management Planning

Project Description:

Participation in the corporate-wide asset management planning process.

Project Timelines and Milestones:

Throughout 2021.

Project Risk Factors:

Departmental work will be guided by external sources (Corporate/Board plans for completion of Asset Management Plan)

Internal Resource Requirements: The corporate asset management plan is being led by the Finance Department, with participation by all other departments.

Estimated Cost and Identified Financial Sources: N/A

Relationship to Board Priorities: It meets the strategic priorities of the RDKB's strategic plan which is "We will continue to focus on good management and governance" & "We will ensure we are proactive and responsible in funding our services".

Project: Water Conservation Program

Project Description:

The water conservation program consists of an irrigation controller rebate program, hiring of a water ambassador and access to FortisBC water Conservation Kits.

Project Timelines and Milestones:

	2021-2023											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bylaws												

Project Risk Factors:

The project is conditional of FCM grant. Fortis has already provided a grant for the home kits.


Internal Resource Requirements: The project will be administered by the Manager of Infrastructure and Sustainability and the Engineering and Safety Coordinator.

Estimated Cost and Identified Financial Sources: Total project cost is \$7,600 per year over three years.

Relationship to Board Priorities:



This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”.

Strategic Priority	Project name	Days to Complete	Internal/External	Budget (Est)	Risk/Priority
	Asset Management	5	Both	N/A	High
	Water Conservation Program	30	Both	\$7,600	High

UTILITIES SERVICES			
Initiation Date	Action / Issue	Staff Resources	Comments
Jan 2016	<u>Regional Sewer – 2015-2019 Budget and Five-Year Financial Plan</u> Staff will create a reserve policy for the Committee's consideration.	Environmental Services Staff	The asset management plan is in progress. A capital reserve policy will be completed when the plan is complete.



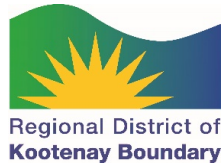
OASIS – RIVERVALE SEWER

2021 Work Plan



RDKB ENVIRONMENTAL SERVICES DEPARTMENT
VERSION 1
NOVEMBER 10, 2020

Goran Denkovski, Manager of Infrastructure and Sustainability



OASIS – RIVERVALE SEWER

2021 Work Plan

Service Name: Oasis – Rivervale Sewerage System

Service Number: 800

Committee Having Jurisdiction: Utilities Committee

General Manager/Manager Responsible:

Goran Denkovski, Manager of Infrastructure and Sustainability

Description of Service:

The Oasis – Rivervale Sewer system consists of approximately 108 connections. The collection system uses gravity to get to the wet well located at the pump house. The wastewater is then pumped into a forcemain that connects to the City of Trail collection system and then the effluent gets treated at the Columbia Pollution Control Center.

Establishing Authority:

Oasis – Rivervale Sewerage System Local Service Area Bylaw No. 1080. 1999

Requisition Limit:

- \$250,000

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

\$30,534/\$66,018/\$46,046 to the end of September 2020

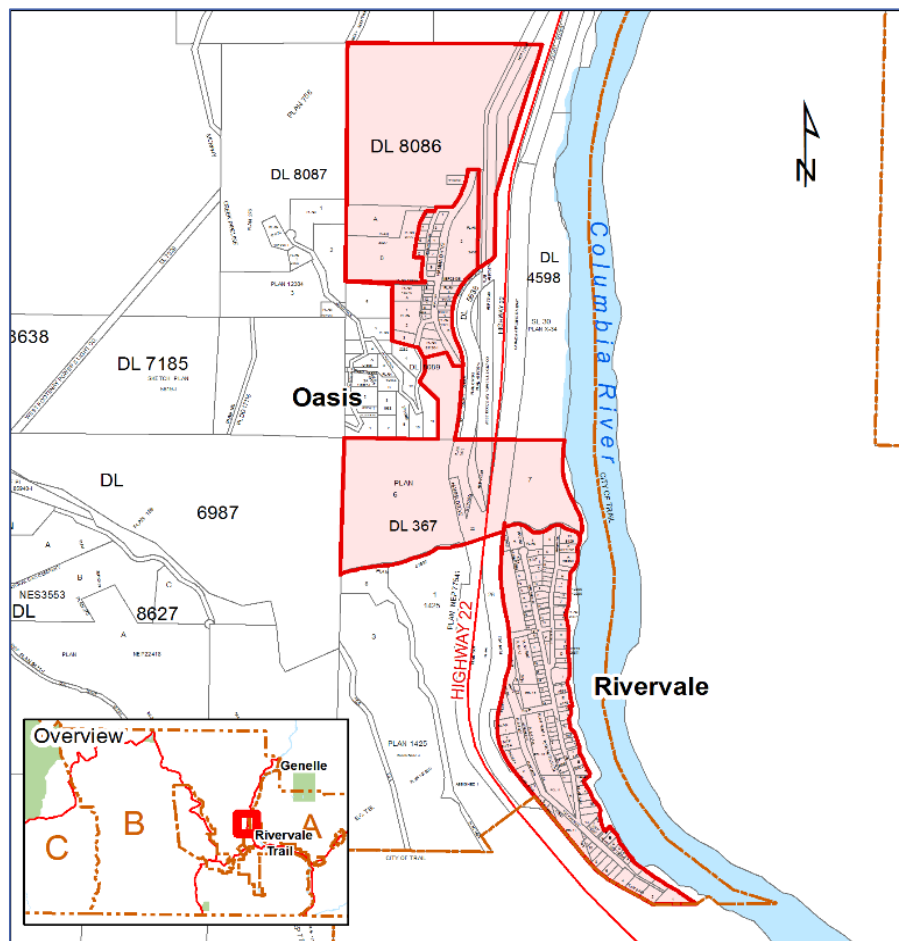
Regulatory or Administrative Bylaws:

Oasis – Rivervale Specified Area Sanitary Sewer Frontage Tax Bylaw No. 841, 1994

Oasis-Rivervale Sewer Regulations and Rates Bylaw No. 1569, 2015

Service Area / Participants:

Area 'B'/Lower Columbia- Old Glory

**Service Levels**

The service is operated with a Level 2 operator and is monitored 24 hours a day.

Human Resources:

- Manager of Infrastructure and Sustainability allocated through Board fee.

2021 Staffing

Environmental Services	Operational FTE	Operational Days	Project FTE	Project Days
Operator 2	100%	22	0%	0

2020 Accomplishments:

These include:

- Installed communications at grinder station
- Flushing of collection system.
- Implementing significant Worksafe BC programs including: confined space, violence in the workplace, work alone, lock out, harassment and bullying, and orientation.

Significant Issues and Trends:

The service is required to enter into a new operations agreement with the 700 service. It is anticipated that the agreement will be based on actual flows.

2021 Projects**Project:** Asset Management Planning**Project Description:**

Participation in the corporate-wide asset management planning process.

Project Timelines and Milestones:


Throughout 2021.

Project Risk Factors:

Departmental work will be guided by external sources (Corporate/Board plans for completion of Asset Management Plan)

Internal Resource Requirements: The corporate asset management plan is being led by the Finance Department, with participation by all other departments.**Estimated Cost and Identified Financial Sources:** N/A**Relationship to Board Priorities:**

This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”. It meets the strategic priorities of the RDKB’s strategic plan which is “We will continue to focus on good management and governance” & “We will ensure we are proactive and responsible in funding our services”.

Strategic Priority	Project name	Days to Complete	Internal/External	Budget (Est)	Risk/Priority
	Asset Management	5	Both	N/A	High

UTILITIES SERVICES			
Initiation Date	Action / Issue	Staff Resources	Comments
Jan 2016	<u>Regional Sewer – 2015-2019 Budget and Five-Year Financial Plan</u> Staff will create a reserve policy for the Committee's consideration.	Environmental Services Staff	The asset management plan is in progress. A capital reserve policy will be completed when the plan is complete.



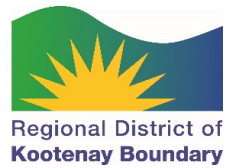
Columbia Gardens Industrial Park Water System

2021 Work Plan



RDKB ENVIRONMENTAL SERVICES DEPARTMENT
VERSION 1
NOVEMBER 10, 2020

Goran Denkovski, Manager of Infrastructure and Sustainability



Columbia Gardens Industrial Park Water System

2021 Work Plan

Service Name: Columbia Gardens Industrial Park Water System Service

Service Number: 600

Committee Having Jurisdiction: Utilities Committee

General Manager/Manager Responsible:

Goran Denkovski, Manager of Infrastructure and Sustainability

Description of Service:

The Columbia Gardens Industrial Park encompasses approximately 58 acres of land and is located in the Regional District of Kootenay Boundary (RDKB), Electoral Area 'A', southeast of the City of Trail. The service has expanded to include the City of Trail Airport.

Currently, the Industrial Park's Water System, which is owned and operated by the RDKB, provides potable water to 13 tenants of the industrial park, including businesses related to commercial/industrial recycling activities, metallurgy operations and general light industry.

The water infrastructure includes the following components:

- A 3.0 Million litre water reservoir, complete with all incidentals (i.e. access road, power feed for communications, etc.),
- Well and Pump House,
- New dedicated water supply and distribution mains (allowing for sufficient water flows for fire protection and future expansion of industrial activities in the Columbia Gardens Industrial Park).

Establishing Authority:

Regional District of Kootenay Boundary Columbia Gardens Industrial Park Water System Local Service Area Bylaw No. 985, 1997, and Amendment Bylaw No. 1618, 2016.

Requisition Limit:

\$125,000

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

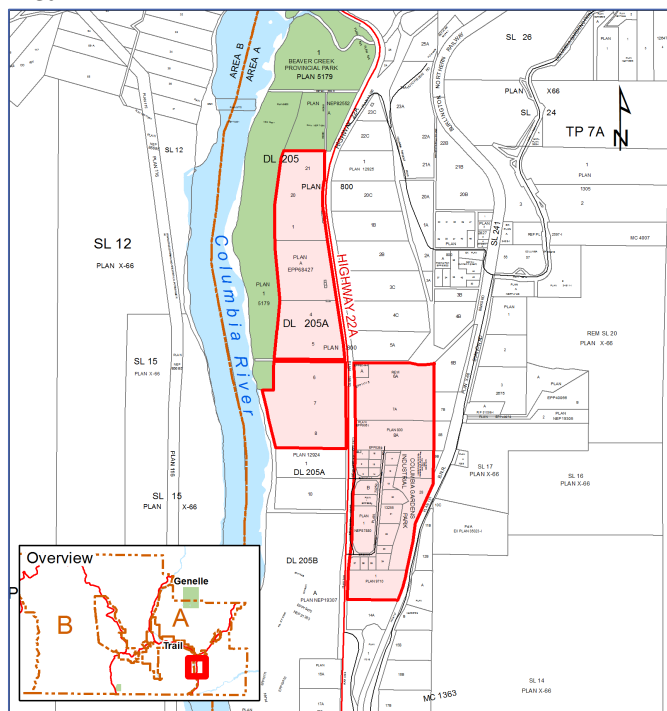
\$19,752/\$69,520/\$29,766.74 to the end of September 2020

Regulatory or Administrative Bylaws:

Columbia Gardens Industrial Park Specified Area Water Rates and Regulation Bylaw No. 1638, 2017

Service Area / Participants:

Area 'A'



Service Levels

The water operator works eight hours a day, forty hours a week. The water service needs to have an operator on call 24 hours a day, operators may be required to work different shifts. They may rotate holiday and weekend work. In an emergency, such as an equipment failure, they often work overtime. The water operator operates the Warfield Water Treatment Plant under contract and the Columbia Gardens Industrial Park Water System.

Human Resources:

- Manager of Infrastructure and Sustainability allocated through Board Fee
24 on – call operations with
- Water Operator Level 2 0.15 FTE

2021 Staffing

Environmental Services	Operational FTE	Operational Days	Project FTE	Project Days
Operator 2 Water	100%	33	0%	0

2020 Accomplishments:

These include:

- Modernize charge and regulation bylaw.
- Develop policies on water conservation.
- Water Utility Acquisition and Sustainability Policy
- Received grant to complete user fee study
- Implementing significant Worksafe BC programs including: confined space, violence in the workplace, work alone, lock out, harassment and bullying, and orientation.

**Significant Issues and Trends:**

The current service funding levels for the Columbia Gardens Water Supply Utility are somewhat adequate for Staff to complete required and routine daily, monthly and yearly operating activities in order to supply domestic water to its users. Additionally, as the water distribution infrastructure in the service is aging (none of existing was upgraded in the 2010 project), continuing to advance budgets with minimal increases in either user fees or property taxes will not allow for the capital replacement of infrastructure or build-up of service reserves, both of which will be required to address proper future asset management aspects of the water system.

2021 Projects:

Project: Asset Management Planning

Project Description:

Participation in the corporate-wide asset management planning process.

Project Timelines and Milestones:

Throughout 2021.

Project Risk Factors:


Departmental work will be guided by external sources (Corporate/Board plans for completion of Asset Management Plan)

Internal Resource Requirements: The corporate asset management plan is being led by the Finance Department, with participation by all other departments.

Estimated Cost and Identified Financial Sources: N/A

Relationship to Board Priorities:

"Exceptional Cost Effective and Efficient Services".

Strategic Priority	Project name	Days to Complete	Internal/External	Budget (Est)	Risk/Priority
	Asset Management	10	Both	N/A	High

UTILITIES SERVICES			
Initiation Date	Action / Issue	Staff Resources	Comments
Jan 2016	<u>Regional Sewer – 2015-2019 Budget and Five-Year Financial Plan</u> Staff will create a reserve policy for the Committee's consideration.	Environmental Services Staff	The asset management plan is in progress. A capital reserve policy will be completed when the plan is complete.



Regional District of
Kootenay Boundary

Big White Street Lighting

2021 Work Plan



RDKB ENVIRONMENTAL SERVICES DEPARTMENT
VERSION 1
NOVEMBER 10, 2020

Goran Denkovski, Manager of Infrastructure and Sustainability



Big White Street Lighting

2021 Work Plan

Service Name: Big White Street Lighting Service

Service Number: 101

Committee Having Jurisdiction: Electoral Area Services

General Manager/Manager Responsible:

Goran Denkovski, Manager of Infrastructure and Sustainability

Description of Service:

Provides Big White with street lighting. Covers cost of installation and monthly electricity.

Establishing Authority:

Regional District of Kootenay Boundary Big White Street Lighting Service Establishment Bylaw No. 760

Requisition Limit:

\$50,000

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

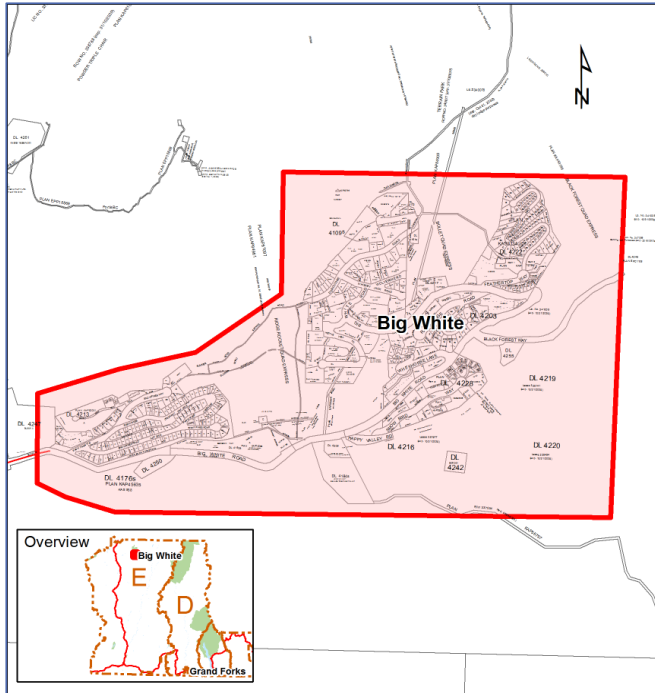
\$26,444/\$32,374/ \$10,902.16 to end of September 2020

Regulatory or Administrative Bylaws:

Not applicable

Service Area / Participants:

Part of Electoral Area "E" / West Boundary

**Human Resources:**

CAO, Executive Assistant

Project specific staff support is provided by the Environmental Services department and is allocated through the Board Fee.

2020 Accomplishments:

Staff has prioritizing repairing all lights in the service and completing a detailed inventory. The inventory allows the service to project future replacement costs and have quicker repair response from Fortis.

Staff is also working with Senior Energy Specialist and Fortis to develop a plan to replace old light standards to new more efficient lights.

Significant Issues and Trends:

Lighting is a significant trend in the Big White area as the resort continues to market year round activities. Specifically, there has discussion at the community level about the lighting of new trails.

2021 Projects

Project: Asset Management Planning

Project Description:

Participation in the corporate-wide asset management planning process.

Project Timelines and Milestones:

Throughout 2021.

Project Risk Factors:

Departmental work will be guided by external sources (Corporate/Board plans for completion of Asset Management Plan)


Internal Resource Requirements: The corporate asset management plan is being led by the Finance Department, with participation by all other departments.

Estimated Cost and Identified Financial Sources: N/A

Relationship to Board Priorities:



This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”. It meets the strategic priorities of the RDKB’s strategic plan which is “We will continue to focus on good management and governance” & “We will ensure we are proactive and responsible in funding our services”.

Strategic Priority	Project name	Days to Complete	Internal/External	Budget (Est)	Risk/Priority
	Asset Management	10	Both	N/A	High

UTILITIES SERVICES			
Initiation Date	Action / Issue	Staff Resources	Comments
Jan 2016	<u>Regional Sewer – 2015-2019 Budget and Five-Year Financial Plan</u> Staff will create a reserve policy for the Committee's consideration.	Environmental Services Staff	The asset management plan is in progress. A capital reserve policy will be completed when the plan is complete.



Regional District of
Kootenay Boundary

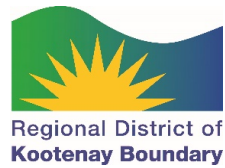
Beaverdell Street Lighting

2021 Work Plan



RDKB ENVIRONMENTAL SERVICES DEPARTMENT
VERSION 1
NOVEMBER 10, 2020

Goran Denkovski, Manager of Infrastructure and Sustainability



Beaverdell Street Lighting

2021 Work Plan

Service Name: Beaverdell Street Lighting Service

Service Number: 103

Committee Having Jurisdiction: Electoral Area Services

General Manager/Manager Responsible:

Goran Denkovski, Manager of Infrastructure and Sustainability

Description of Service:

Provides Beaverdell with street lighting. Covers cost of installation and monthly electricity.

Establishing Authority:

Regional District of Kootenay Boundary Beaverdell Street Lighting Service Establishment Bylaw No. 1423.

Requisition Limit:

\$5,000

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

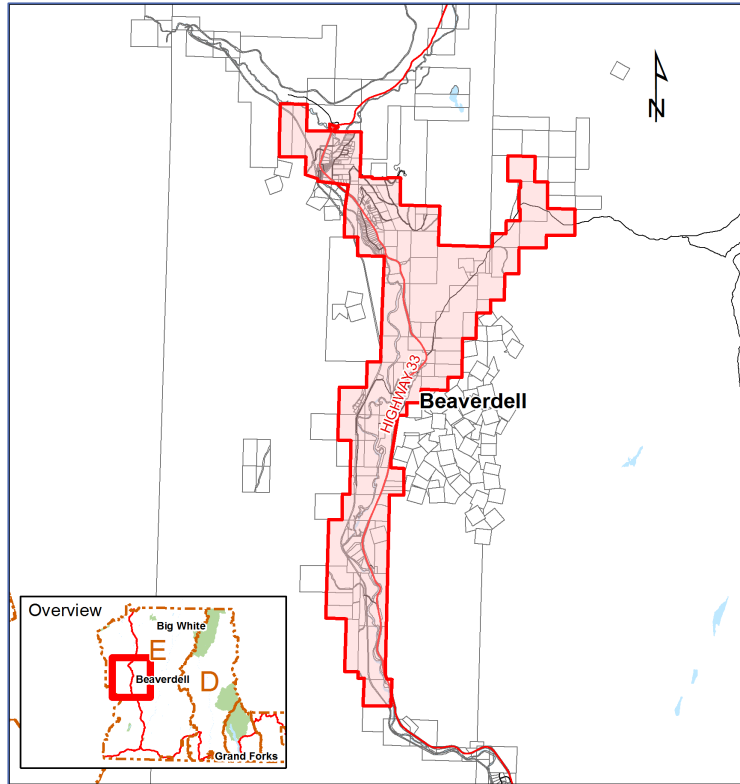
\$2,853/\$3,351/ \$2,214.32 to end of September 2020

Regulatory or Administrative Bylaws:

Not applicable

Service Area / Participants:

Part of Electoral Area "E" / West Boundary

**Human Resources:**

CAO, Executive Assistant

Project specific staff support is provided by the Environmental Services Department and allocated through the Board fee.

2020 Accomplishments:

Staff has prioritizing repairing all lights in the service and completing a detailed inventory. The inventory allows the service to project future replacement costs and have quicker repair response from Fortis.

Staff is working with Senior Energy specialist and Fortis to have lights replaced with more efficient LED.

2021 Projects

Project: Asset Management Planning

Project Description:

Participation in the corporate-wide asset management planning process.

Project Timelines and Milestones:

Throughout 2021.

Project Risk Factors:

Departmental work will be guided by external sources (Corporate/Board plans for completion of Asset Management Plan)

Internal Resource Requirements: The corporate asset management plan is being led by the Finance Department, with participation by all other departments.

Estimated Cost and Identified Financial Sources: N/A

Relationship to Board Priorities:



This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”. It meets the strategic priorities of the RDKB’s strategic plan which is “We will continue to focus on good management and governance” & “We will ensure we are proactive and responsible in funding our services”.

Strategic Priority	Project name	Days to Complete	Internal/External	Budget (Est)	Risk/Priority
	Asset Management	10	Both	N/A	High

UTILITIES SERVICES

Initiation Date	Action / Issue	Staff Resources	Comments
Jan 2016	<u>Regional Sewer – 2015-2019 Budget and Five-Year Financial Plan</u> Staff will create a reserve policy for the Committee's consideration.	Environmental Services Staff	The asset management plan is in progress. A capital reserve policy will be completed when the plan is complete.



East End Regional Sanitary Sewer

2021 Work Plan



RDKB ENVIRONMENTAL SERVICES DEPARTMENT
VERSION 2
JANUARY 10, 2021

Goran Denkovski, Manager of Infrastructure and Sustainability



East End Regional Sanitary Sewer

2021 Work Plan

Service Name: East End Regional Sanitary Sewer Service

Service Number: 700

Committee Having Jurisdiction: Utilities Committee

General Manager/Manager Responsible:

Janine Dougall, General Manager of Environmental Services

Goran Denkovski, Manager of Infrastructure and Sustainability

Description of Service:

The Regional District of Kootenay Boundary (RDKB) owns the Columbia Pollution Control Centre (CPCC), a primary level sewage treatment facility that provides regional wastewater treatment and disposal for approximately 14,000 people residing in the municipalities of Trail, Rossland and Warfield, as well as the two smaller adjacent communities of Oasis and Rivervale. Each of these areas retains the responsibility for wastewater collection at the local level.

The treatment plant consists of screening of the influent wastewater to remove trash and coarse solids, followed by gravity settling to remove grit, and primary sedimentation to separate crude solids from the raw wastewater. The treated water is then disinfected by using chlorine gas and then discharged to the Columbia River via an outfall. Waste solids from the primary clarifiers are stabilized in two anaerobic digesters and then dewatered using a belt filter press, with disposal of the dewatered biosolids to landfill. Future improvements to upgrade the existing plant to secondary treatment are currently being considered in the RDKB Liquid Waste Management Plan (LWMP).

Furthermore, the wastewater system is based on a trunk sewer that conveys wastewater to the CPCC. The trunk sewer includes a combination of gravity and pumped flows, with pump stations located at Glenmerry and Murray Park.

Establishing Authority:

East End Regional Sanitary Sewer Service Establishment Bylaw No. 1549, 2014

Requisition Limit:

- One million nine hundred and twenty thousand dollars (\$1,920,000) dollars; or
- (b) an amount equal to the amount that could be raised by a property value tax of one dollars and nineteen cents (\$1.19) per one thousand (\$1,000.00) dollars which when applied to the net taxable value of land and improvements within the service area will yield the maximum amount that may be requisitioned.

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

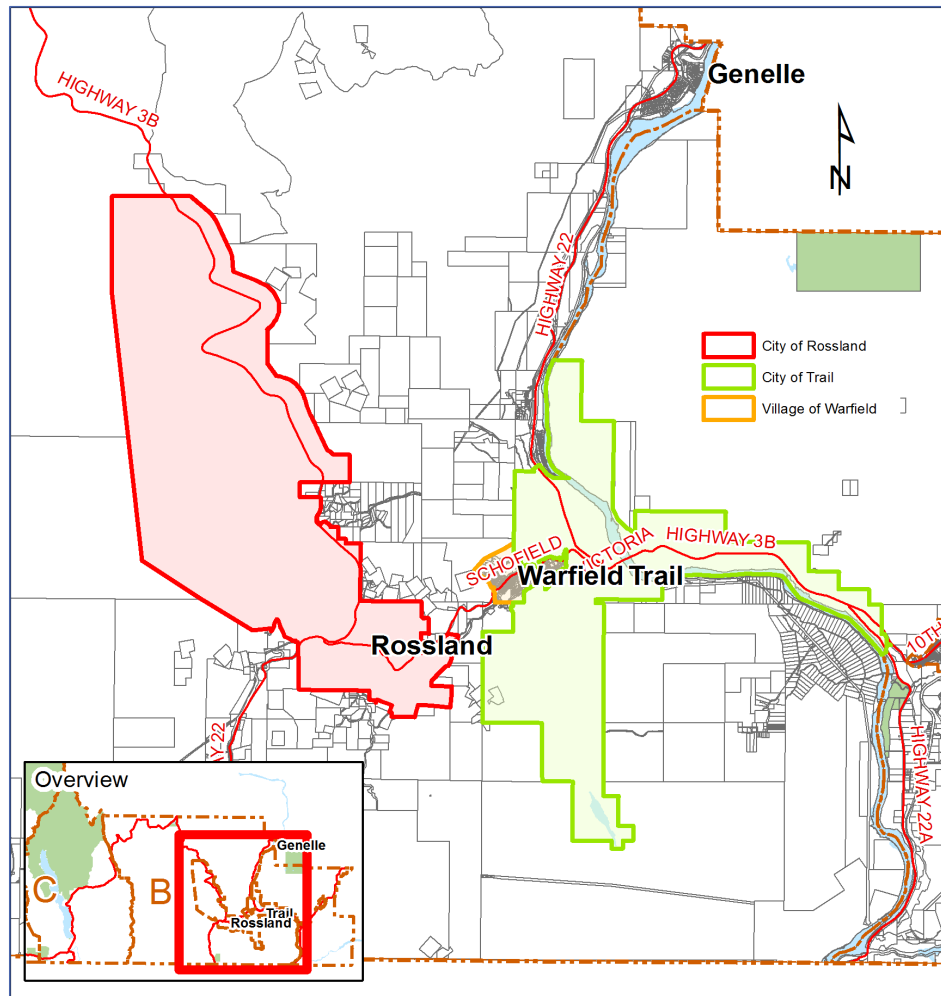
\$1,626,538/\$2,215,331/1,074,252.00 to the end of September 2020

Regulatory or Administrative Bylaws:

Not applicable

Service Area / Participants:

1. City of Trail
2. Village of Warfield
3. City of Rossland



Service Levels

The plant operators work eight hours a day, forty hours a week. The sewer service needs to have an operator on call 24 hours a day, operators may be required to work different shifts. They may rotate holiday and weekend work. In an emergency, such as an equipment failure, they often work overtime.

Human Resources:

- Manager of Infrastructure and Sustainability 0.50 FTE
- Engineering and Safety Coordinator 0.25 FTE
- Environmental Services Administrative Assistant 0.25 FTE

24 on – call operations with

- Chief Operator
- Level 2 Operator
- Level 1 Operator

2021 Staffing

Staff	Operational FTE	Operational Days	Project FTE	Project Days
Manager of Infrastructure and Sustainability	70%	43	30%	30
Chief Operator	75%	166	25%	66
Operator 2	100%	222	0%	0
Operator 2	100%	222	0%	0
Engineering Coordinator	75%	41	25%	20
Admin Assistant	100%	63	0%	0

2020 Accomplishments:

These include:

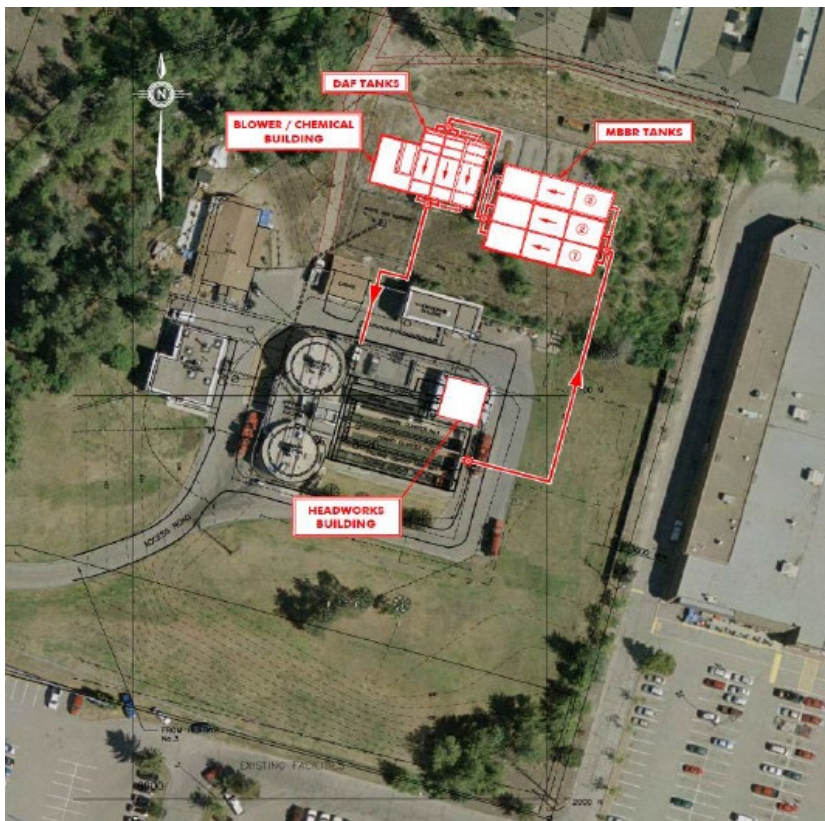
- Applied for ICIP Green Infrastructure Grant for CPCC Upgrade to Secondary Treatment in February 2020
- Completed Climate Resilience Study for CPCC Upgrade Project
- Creation and implementation of preventative maintenance plans, standard operating procedures and best management practices for all facilities.
- Implementing significant Worksafe BC programs including: confined space, violence in the workplace, work alone, lock out, harassment and bullying, and orientation.
- Ongoing assessment of current and future capital infrastructure, including evaluation of synergy projects, and carbon emission reduction projects

Significant Issues and Trends:

The overall regulatory environment is becoming more complex over time and poses a risk to increased operating costs in the future. The LWMP plan that is focusing on secondary treatment at the CPCC has to include provisions for potential expansion to tertiary treatment should the regulatory environment change.

The wastewater infrastructure in this area was put in place decades ago, and much of that infrastructure is now reaching or is past the end of its useful life. Capital improvements are becoming more and more expensive, and finding the money to fund these projects is difficult, especially in communities where raising rates can place a significant strain on customers.

If the RDKB receives funding to upgrade the CPCC to secondary treatment in 2021 the project would require significant resources as the project cost is estimated at \$63,000,000

2021 Project:

Project: Asset Management Planning

Project Description:

Participation in the corporate-wide asset management planning process.

Project Timelines and Milestones:

Throughout 2021.

Project Risk Factors:

Departmental work will be guided by external sources (Corporate/Board plans for completion of Asset Management Plan)

Internal Resource Requirements: The corporate asset management plan is being led by the Finance Department, with participation by all other departments.

Estimated Cost and Identified Financial Sources: N/A

Relationship to Board Priorities:



This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”.

Project Outcome: This project is in progress and will be worked on in 2020



Project: Install New Pump at Murray Park

Project Description:

Engineering assessment completed. Replacement required due to efficiency losses from new bridge.

Project Timelines and Milestones:

	2021											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Project												

Project Risk Factors:

Weather and finding contractors.

Internal Resource Requirements: This project would be administered by the Manager of Infrastructure and Sustainability

Estimated Cost and Identified Financial Sources: \$372,500

Relationship to Board Priorities:



This project is directly related to the provision of "Exceptional Cost Effective and Efficient Services".



Project: CPCC Plant Secondary Treatment Upgrade

Project Description:

Install secondary sewer treatment at current Columbia Pollution Control Center.

Project Timelines and Milestones:

	2021-2024											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Project planning and tendering												

Project Risk Factors:

Dependent on grant funding.

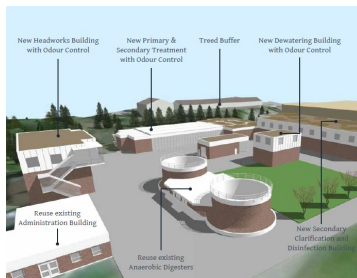
Internal Resource Requirements: This project would be administered by the Manager of Infrastructure and Sustainability

Estimated Cost and Identified Financial Sources: \$63,000,000

Relationship to Board Priorities:



Related to the strategic priority areas of “Environmental Stewardship/Climate Preparedness” as well as “Exceptional Cost Effective and Efficient Services”.



Project: Municipal Cover for Murray Park Wet Well

Project Description: Cover needs replacement due to age.

Project Timelines and Milestones:

	2021											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
RFQ												

Project Risk Factors:

None

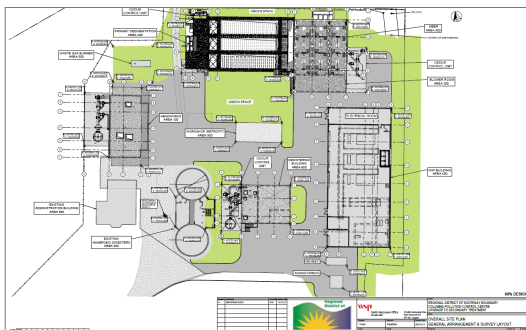
Internal Resource Requirements: This project would be administered by the Manager of Infrastructure and Sustainability

Estimated Cost and Identified Financial Sources: \$20,000

Relationship to Board Priorities:



This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”.



Project: New Laptops

Project Description: Replacement due to age for all Staff.

Project Timelines and Milestones:

	2021											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
RFQ												

Project Risk Factors:

None

Internal Resource Requirements: This project would be administered by the Manager of Infrastructure and Sustainability

Estimated Cost and Identified Financial Sources: \$7,500

Relationship to Board Priorities:



This project is directly related to the provision of "Exceptional Cost Effective and Efficient Services".

Project: Plow for Truck

Project Description: Replacement due to age of current plow.

Project Timelines and Milestones:

	2021											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
RFQ												

Project Risk Factors:

None

Internal Resource Requirements: This project would be administered by the Manager of Infrastructure and Sustainability

Estimated Cost and Identified Financial Sources: \$15,000

Relationship to Board Priorities:



This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”.

Project: Glenmerry Impellor Replacement

Project Description: Replacement due to age.

Project Timelines and Milestones:

	2021											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
RFQ												

Project Risk Factors:

None

Internal Resource Requirements: This project would be administered by the Manager of Infrastructure and Sustainability

Estimated Cost and Identified Financial Sources: \$15,000

Relationship to Board Priorities:



This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”.

Project: 1 Ton truck replacement

Project Description:

Vehicle replacement required.

Project Timelines and Milestones:

	2021											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
RFQ												

Project Risk Factors:

None



Internal Resource Requirements: This project would be administered by the Manager of Infrastructure and Sustainability

Estimated Cost and Identified Financial Sources: \$100,000

Relationship to Board Priorities:



This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”.

Strategic Priority	Project name	Days to Complete	Internal/External	Budget (Est)	Risk/Priority
	Asset Management	20	Both	N/A	High
 	CPCC Plant Secondary Treatment Upgrade	30	Both	\$63,000,000	High
	New Pump at Murray Park	30	Internal	\$372,500	High
	New Laptops	9	Internal	\$7,500	High
	Snow Plow for Truck	9	Internal	\$15,000	High
	Replace Glenmerry Impellor	9	Internal	\$15,000	High
	Municipal Cover for Murray Park wet well	9	Internal	\$20,000	High
	1 Ton Truck	9	Internal	100,000	High

Initiation Date	Action / Issue	Staff Resources	Comments
Jan 2016	<u>Regional Sewer – 2015-2019 Budget and Five-Year Financial Plan</u> Staff will create a reserve policy for the Committee's consideration.	Environmental Services Staff	The asset management plan is in progress. A capital reserve policy will be completed when the plan is complete.



Regional District of
Kootenay Boundary

Christina Lake Water Utility

2021 Work Plan



RDKB ENVIRONMENTAL SERVICES DEPARTMENT
VERSION 2
JANUARY 10, 2021

Goran Denkovski, Manager of Infrastructure and Sustainability



Christina Lake Water Utility

2021 Work Plan

Service Name: Christina Lake Water Utility Service

Service Number: 550

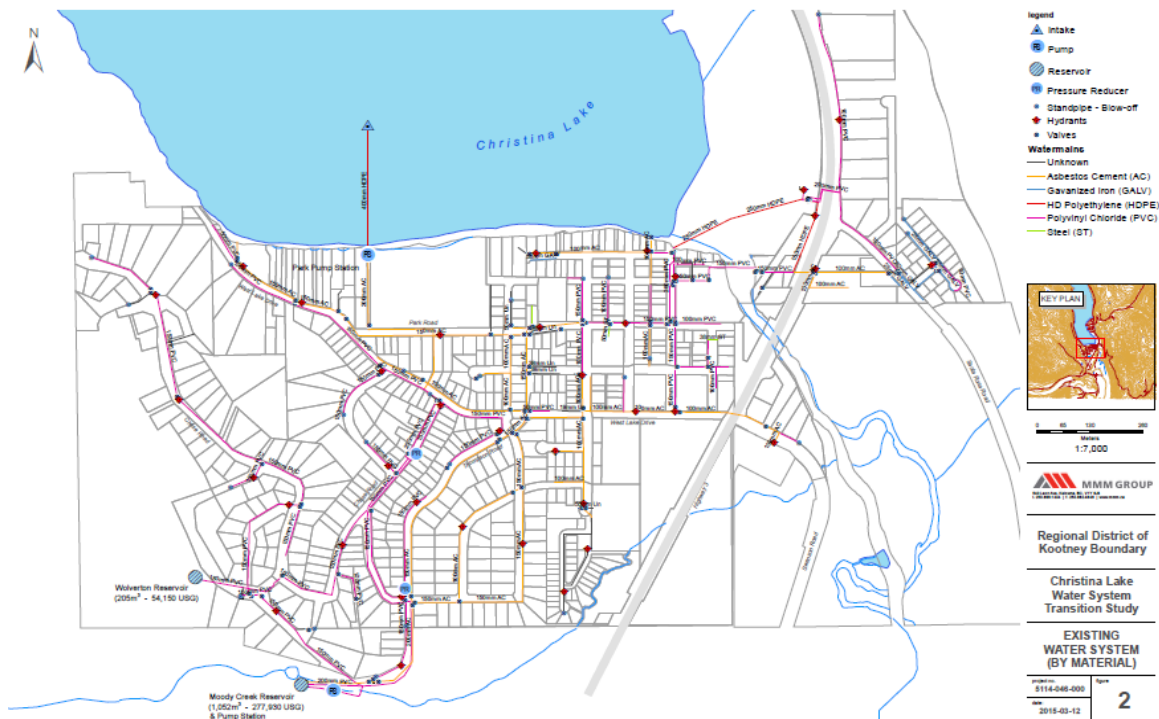
Committee Having Jurisdiction: Utilities Committee

General Manager/Manager Responsible:

Goran Denkovski, Manager of Infrastructure and Sustainability

Description of Service:

The area of Christina Lake is located on the Crowsnest Highway (Hwy 3) approximately 22 km east of Grand Forks within the Electoral Area 'C'/Christina Lake of the RDKB. The water system provides service to approximately 443 residential lots (1430 residents) and 23 commercial properties. It also provides water service for fire protection for the area. The community of Christina Lake is a popular tourist and vacation destination during the summer months. As such, the local population and water usage vary drastically throughout the year, with significantly higher consumption in the summer. Water supply is provided solely from Christina Lake where it is chlorinated in a wet well and then pumped to the Moody Creek Reservoir. From here, the lower town site distribution system of Christina Lake is fed by gravity. Additional water is pumped from the Moody Creek Reservoir to the Wolverton Reservoir which gravity feeds the distribution system to the upper town site of Christina Lake. There are 2 pressure zones within the upper town site which are controlled by 2 Pressure Reducing Valves (PRVs) at the intersection of Thompson Road and Olsen Road and at 25 Chase Road. There is also an area on Chase Road that is above the service elevation of the Wolverton Reservoir and is fed by pumping from the Moody Creek Reservoir.



Establishing Authority:

Regional District of Kootenay Boundary Christina Lake Water Utility Service Establishment Bylaw No. 1625, 2017

Requisition Limit: \$260,000

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

\$204,400/\$431,322/\$194,231.93 to the end of September 2020

Regulatory or Administrative Bylaws:

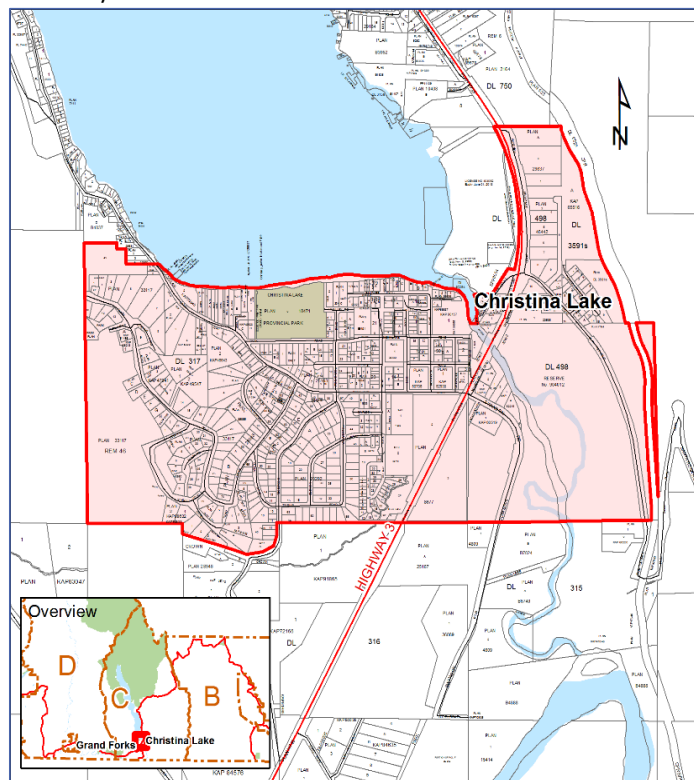
All bylaws under Christina Waterworks Improvement District are still valid under order in council. Until such time the RDKB develops bylaws for the service.

Regional District of Kootenay Boundary Christina Lake Water Utility Service Establishment Bylaw 1625
Jan 2017

Regional District of Kootenay Boundary Christina Lake Water Utility Parcel Tax Bylaw No. 1652, 2017

Service Area / Participants:

Area 'C' / Christina Lake



Service Levels

The water operator works three hours a day, 21 hours a week. The water service needs to have an operator on call 24 hours a day, operators may be required to work different shifts. They may rotate holiday and weekend work. In an emergency, such as an equipment failure, they often work overtime.

Human Resources:**2021 Staffing**

Environmental Services	Operational FTE	Operational Days	Project FTE	Project Days
Manager of Infrastructure and Sustainably	31%	10	69%	22
Operator 2 Lead hand	100%	20	0%	0
Operator 1	100%	20	0%	0

- Manager of Infrastructure and Sustainability 0.15 FTE
- 24 on – call operations with
- Water Operator Level 2 0.25 FTE
 - Water Operator Level 1 0.25 FTE

2020 Accomplishments:

These include:

- Developing UV Second Barrier disinfection and applying for ICIP Rural and Northern Communities Grant
- Developed and started to implement Water Conservation Plan
- Applied for FCM grant for Water Ambassador and Irrigation Controller rebate program
- Worked with senior energy specialist to administer Fortis BC water conservation kits
- Establish operational guidelines inline with RDKB standards
- Full compliance with IHA condition of permit
- Implementing significant Worksafe BC programs including: confined space, violence in the workplace, work alone, lock out, harassment and bullying, and orientation

Significant Issues and Trends:

Christina Lakes current sources will meet long term water demands of the community. As is expected for many water systems throughout the province - longer/drier summers, lower aquifer levels, and smaller upland snowpacks will continue to result in years in which extreme water conservation measures (such as irrigation bans) will be necessary.

2021 Projects

Project: Complete transition including all bylaws

Project Description:

The transition to RDKB ownership has to be completed. This includes all bylaws.

Project Timelines and Milestones:

	2021											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bylaws												

Project Risk Factors:

Not Applicable

Internal Resource Requirements: The project will be administered by the Manager of Infrastructure and Sustainability

Estimated Cost and Identified Financial Sources: There are no costs.

Relationship to Board Priorities:

This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”.

Project: Receive ICIP Grant for Design and Construction of Second Barrier Disinfection.

Project Description:

This the next capitol project as determined in the transition study and require engineering.

The water service received a filtration deferral that was based on Christina Lake water quality.

Project Timelines and Milestones:

	2021-2022											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Engineering												
Construction												

Project Risk Factors:

Should water quality change from source deferral would be cancelled and filtration would be required.

Internal Resource Requirements: The project will be administered by the Manager of Infrastructure and Sustainability

Estimated Cost and Identified Financial Sources: \$1,800,000 with 100% funding from ICIP grant.

Relationship to Board Priorities:



This project is directly related to the provision of "Exceptional Cost Effective and Efficient Services".

Project: Upgrade SCADA second phase 2 add chorine analyzer

Project Description:

This a regulatory requirement and allows for more effective operating.

Project Timelines and Milestones:

	2021											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Engineering												

Project Risk Factors:

None at this time

Internal Resource Requirements: The project will be administered by the Manager of Infrastructure and Sustainability

Estimated Cost and Identified Financial Sources: \$90,000 from current revenue.

Relationship to Board Priorities:



This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”.

Project: Water Conservation Program

Project Description:

The water conservation program consists of an irrigation controller rebate program, hiring of a water ambassador and access to FortisBC water Conservation Kits.

Project Timelines and Milestones:

	2021-2023											
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bylaws												

Project Risk Factors:

The project is conditional of FCM grant. Fortis has already provided a grant for the home kits.





Internal Resource Requirements: The project will be administered by the Manager of Infrastructure and Sustainability and the Engineering and Safety Coordinator.

Estimated Cost and Identified Financial Sources: Total project cost is \$24,000 per year over three years.

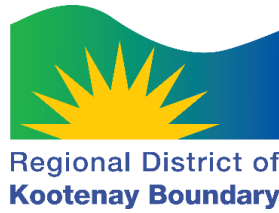
Relationship to Board Priorities:



This project is directly related to the provision of “Exceptional Cost Effective and Efficient Services”.

Strategic Priority	Project name	Days to Complete	Internal/External	Budget (Est)	Risk/Priority
	Complete transition including all bylaws	5	Both	N/A	High
	Receive ICIP Grant for Design and Construction of Second Barrier Disinfection.	10	Both	\$1,800,000	High
	Upgrade SCADA second phase 2 add chorine analyzer	10	Both	\$90,000	High
	Water Conservation Program	30	Both	\$24,000	High

UTILITIES SERVICES			
Initiation Date	Action / Issue	Staff Resources	Comments
Jan 2016	<u>Regional Sewer – 2015-2019 Budget and Five-Year Financial Plan</u> Staff will create a reserve policy for the Committee's consideration.	Environmental Services Staff	The asset management plan is in progress. A capital reserve policy will be completed when the plan is complete.



Electoral Area Administration

2021 Work Plan – Final Presented to EAS Committee January 14, 2021



ELECTORAL AREA ADMINISTRATION

2021
Mark Andison, CAO



Electoral Area Administration

2021 Work Plan – Final Presented to EAS Committee January 14, 2021

Service Name: Electoral Area Administration

Service Number: 002

Committee having jurisdiction:

Electoral Area Services

General Manager/Manager Responsible:

Mark Andison, CAO / Theresa Lenardon, Manager of Corporate Administration

Description of Service:

1. Provision of broad legislative, legal, financial, and administrative support to Electoral Area Directors.
2. Corporate obligations are similar to those of a “clerk”, which are legislatively required for this position in relation to Electoral Area Administration and includes the following powers, duties and functions:
 - a. ensure meeting agendas and minutes are prepared
 - b. keeping bylaws
 - c. acts as Commissioner for taking Oaths and Affidavits
 - d. certifying documents and custody of the Corporate Seal
 - e. processes and manages official documents related to land transactions and property transfers
 - f. corporate legal matters
 - g. Chief Elections Officer
 - h. Freedom of Information Protection of Privacy Officer
 - i. Paper and electronic records management

Establishing Authority:

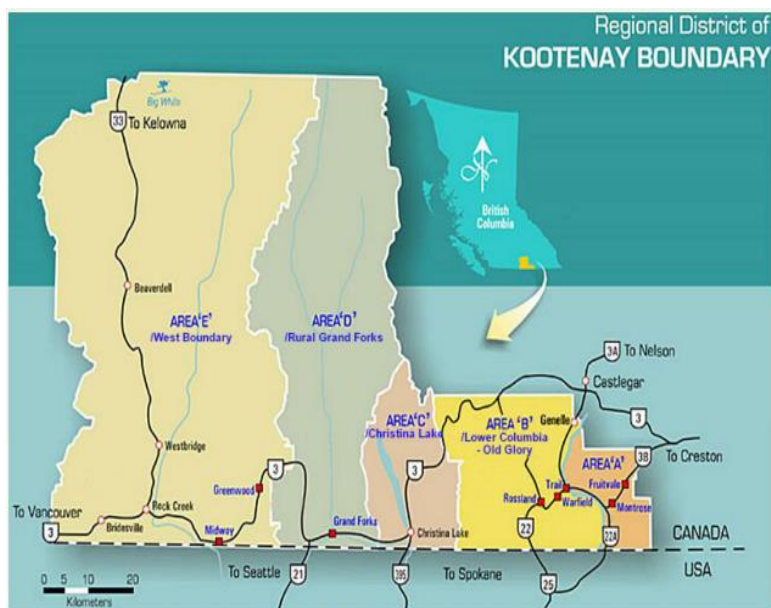
Local Government Act Sections 233, 234, 236, 263
 RDKB Officer Establishment Bylaw No. 1050, 1999

Requisition Limit:

Not applicable.

Regulatory/Administrative Bylaws:

- *Local Government Act*
- *Community Charter*
- RDKB Procedure Bylaw No. 1720, 2020
- *Freedom of Information and Protection of Privacy Act*
- RDKB Elections and Referendum Conduct Bylaw No. 1608

Service Area Map:**Service Participants:**

All electoral areas.

Service Levels:

1. Bylaws: Elections and Referendums Conduct Bylaw; Loan Authorization Bylaws; Member Municipality Security Issuing Bylaws; Conversion Bylaws (from Supplementary Letters Patent to Establishment); Taxation Exemption Bylaws; Service Establishment; and Service Establishment Amendment Bylaws.
2. Arrangement and management of Electoral Area Directors travel and registration for attendance at conferences, conventions, meetings etc. (e.g. Electoral Area Directors Forum, AKBLG, LGLA, UBCM, FCM).
3. Chief Elections Officer for General Local Government Elections, Bi-Elections, Alternative Approval Process and Referenda.

Human Resources:

1. CAO
2. Manager of Corporate Administration/Corporate Officer
3. Corporate Communications Officer
4. Executive Assistant
5. Clerk/Secretary Receptionist (1.8 FTE)
6. Bylaw Enforcement Officer (reports to the Manager of Planning and Development)

2020 Requisition/Budgeted Expenditures/Actual Expenditures:

\$272,982/\$663,921/Q4 \$461,194

Significant Issues and Trends:

1. Ongoing improvement in efficiency and effectiveness of action items, tasks, duties, etc.
2. Increasing involvement with non-profit, cultural, social and natural resource planning and initiatives requiring efforts with more partnership agreements and grant opportunities.


2020 Project Update: Engagement of a Bylaw Enforcement Officer

- Successful recruitment of a Bylaw Enforcement Officer, who started March 2, 2020
- Draft Bylaw Notice Enforcement Bylaw presented to the EAS Committee at their October 2020 meeting.
- Update to the bylaw complaint files 'inherited' by the new position as well as new complaint files were presented to the EAS Committee at their October 2020 meeting
- Tracking of complaints including non-enforceable noise and other nuisances
- Working with the Building Department regarding how to support enforcement activities to achieve compliance on Building Bylaw contraventions before they go before the Board of Directors

2021 Projects:**Project: Continuation of Bylaw Enforcement Implementation**

- Main task is to give the Bylaw Enforcement Officer the tools required to do her job including safety measures such as radio communication; and a mobile office set up in one of the fleet vehicles
- Presentation of the Bylaw Notice Enforcement Bylaw to the Board of Directors for consideration
- Presentation of a draft revised Bylaw Enforcement Policy to the Policy and Personnel Committee for consideration. The draft revised policy will reflect the new bylaw adjudication process
- Training of regional district screening officers
- Identification of an adjudicator
- Creation of a collections system for tickets
- Once the new bylaw has been adopted, along with revised policies and procedures, consideration can be given to additional nuisance bylaws as requested by electoral area directors.

Relationship to Board Priorities:

	<p>Cost Effective and Efficient Services – Having a dedicated bylaw enforcement resource within the organization will provide an opportunity for the RDKB to develop a Bylaw Notice Dispute Adjudication Process which offers a streamlined and more cost-effective approach to bylaw enforcement than court-directed approaches (i.e. seeking court injunctions)</p>
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Planning and Development

2021 Work Plan – Draft #2 to Electoral Area Services
January 14, 2021



005

Prepared by: Donna Dean, Manager of Planning and Development



2021 Work Plan – Draft #2 to Electoral Area Services January 14, 2021

Service Name: Planning and Development

Service Number: 005

Committee Having Jurisdiction: Electoral Area Services Committee

General Manager/Manager Responsible:

James Chandler, General Manager of Operations

Donna Dean, Manager of Planning and Development

Description of Service:

The Planning and Development Department fulfills the following functions:

- Clerical services – Services include: records management; preparation and distribution of agendas to the six Advisory Planning Commissions; preparation and distribution of the Electoral Area Services agenda; minute taking; and coordination of items for Board agendas.
- Current operations – Current operations involves responding to inquiries from the public; processing RDKB applications, which can include holding public hearings; and responding to referrals from other agencies.
- Long range planning – Long range planning involves the creation of new land use plans and comprehensive reviews of existing land use plans.
- Community Planning – Planning Department staff participate on a number of committees throughout the Regional District. Currently those include:
 - Lower Columbia Ecosystem Management Plan (LCEMP), which is part of the Trail Area Health and Environment Program;
 - Attainable Housing and the Sustainable Local Agriculture Committees of the Lower Columbia Community Development Team (LCDDT);
 - Species and Ecosystems at Risk (SEAR) Local Government Working Group;
 - Strategic Community Energy and Emissions Plan (SCEEP) implementation Committee; and
 - Climate Action Initiative.
- Geographic Information Services (GIS)/Mapping – Staff maintains the feature class data base for the mapping system and supports the Department's Current Operations and Special Projects. GIS staff keep the on-line mapping functioning; do regular downloads of BC Assessment data into ARC GIS; provide mapping for current applications and referrals and

long range planning projects and other special projects as required; and provide analysis of census data. GIS staff also provide support to other RDKB departments including: fire services, finance, administration, and recreation. GIS staff are also responsible to ensure current street address data is provided to the appropriate agency(s) that use the data for the 911 system.

- Administrative Support Services – Planning Department staff are involved in most RDKB property based transactions. Examples include: the applications for license of occupation and land purchases and transfer. GIS staff also regularly responds to inquiries from the Finance Department for assessment values for the Regional District's various services; voter counts for referendums and elections; mapping for service areas, bylaws and staff reports; and mapping for emergency services (evacuation zone maps and maps of areas impacted by emergencies).
- Special projects are described in greater detail below.

Establishing Authority:

Letters Patent

Requisition Limit:

Not applicable

Draft 2021 Requisition / Budgeted Expenditures:

\$808,856/ \$1,013,182

Regulatory or Administrative Bylaws:

The Planning and Development Department administers 24 regulatory and administrative bylaws:

Electoral Area 'A' OCP Bylaw No. 1410

Electoral Area 'A' Zoning Bylaw No. 1460

Electoral Area 'B'/Lower Columbia-Old Glory OCP Bylaw No. 1470

Electoral Area 'B'/Lower Columbia-Old Glory Zoning Bylaw No. 1540

Electoral Area 'C'/Christina Lake OCP Bylaw No. 1250

Electoral Area 'C'/Christina Lake Zoning Bylaw No. 1300

Electoral Area 'D'/Rural Grand Forks OCP Bylaw No. 1555

Electoral Area 'D'/Rural Grand Forks Zoning Bylaw No. 1675

Big White Ski Resort OCP Bylaw No. 1125

Big White Ski Resort Zoning Bylaw No. 1166

Mt. Baldy Ski Resort OCP Bylaw No. 1335

Mt. Baldy Ski Resort Zoning Bylaw No. 1340

Jewel Lake Land Use Bylaw No. 855

Bridesville Townsite Land Use Bylaw No. 1485

Heritage Designation Bylaw No. 1236

Advisory Planning Commission Bylaw No. 1535

Board of Variance Bylaw No. 1145 and 1146

Floodplain Bylaw No. 677

Delegation Bylaw No. 1567

Development Approvals Bylaw No. 1507

Fees and Procedures Bylaw No. 1231

Mobile Home Park Bylaw No. 97

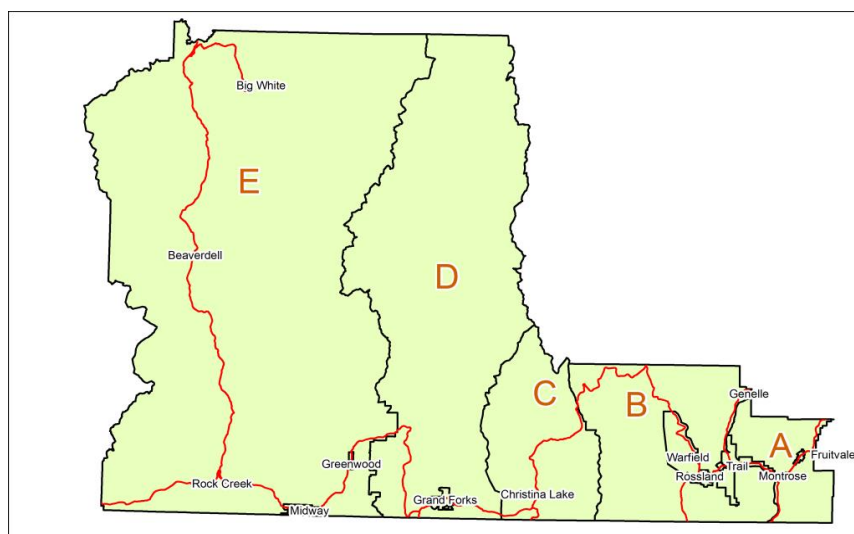
Service Area / Participants:

Entire Regional District.

Planning: 5 Electoral Areas – 75% of budget

Planning and Development: 5 Electoral Areas plus 8 member municipalities – 25% of budget

The above budget break-down is according to Board Resolution #461-92.



Service Levels

- Department staff are available to the public through direct emails, general emails, phone calls and via electronic meetings five days a week through the work day. Enquiries are of varying complexity and depending on the information requested can involve a freedom of information request.

- Production of agendas for Advisory Planning Commissions, Electoral Area Services Committee and submissions to the Administration Department for other agendas including Boundary Services Committee and East End Services Committee.
- Staff are also working on long range planning projects.

Human Resources:

- General Manager of Operations
- Manager of Planning and Development
- Two professional planners
- Two GIS/Mapping staff
- One GIS Intern position (temporary until March 31, 2021)
- One full time and one part-time administrative support staff

The 2021 staffing table, presented below, summarizes the number of potential workdays for each position in the Planning and Development Department (005) service. The table presents an assumed 260 potential workdays (52 weeks at 5 days per week). Subtracted from that are 12 statutory holidays, and an average of 40 days for vacation, sick, training and workshops for a total of 208 days. Work days have been further divided into operational days and project days. When averaged over all positions in the department, there are 910 operational days and 629 project days.

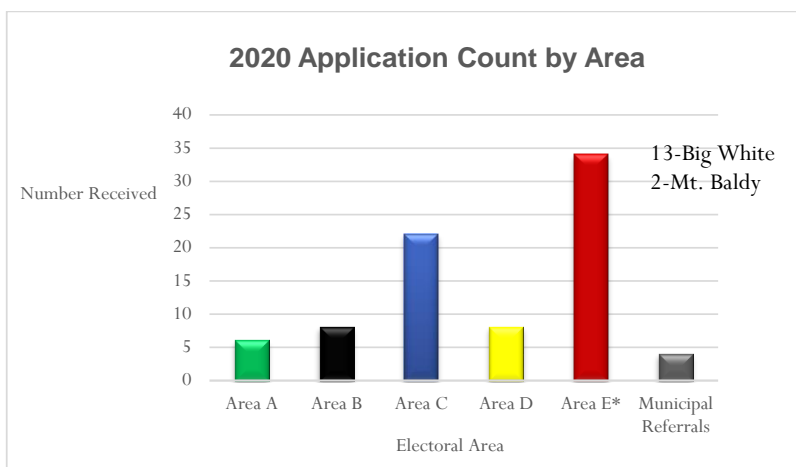
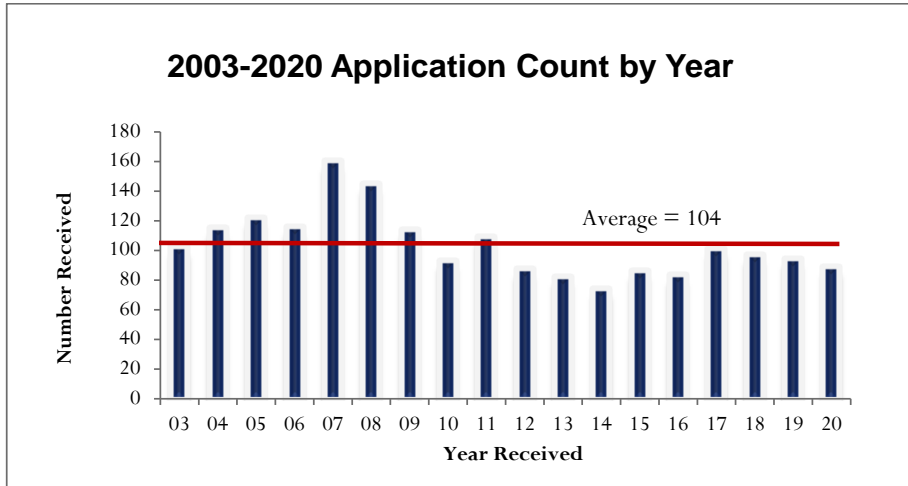
2021 Staffing

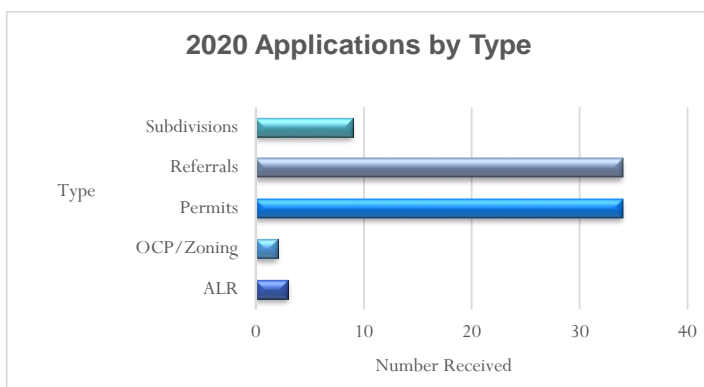
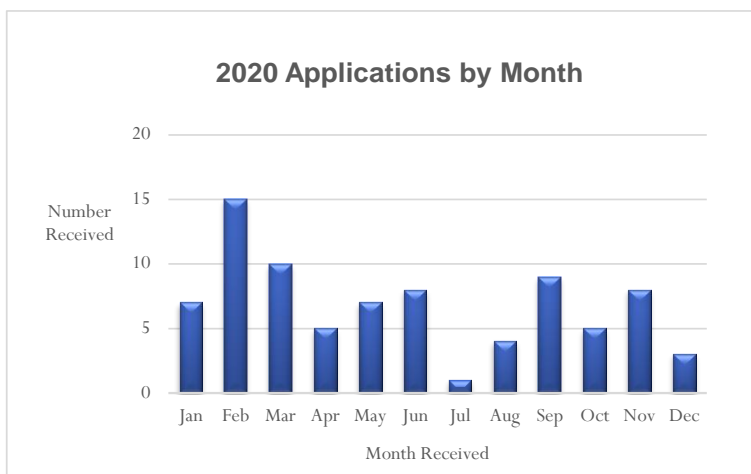
Position	Operational (full time equivalent)	Operational Days	Project (full time equivalent)	Project Days
Manager of P&D	80%	150	20%	37
Senior Planner	20%	42	80%	166
Planner	80%	166	20%	42
Senior Planning Technician	50%	104	50%	104
GIS Technician	70%	146	30%	62
GIS Intern	10%	21	90%	187
Senior Secretary	90%	187	10%	21
Clerk/Secretary/Receptionist	45%	94	5%	10
		910		629

Time for Manager of P&D adjusted to 90% of time since remainder of time is dedicated to the Boundary Integrated Watershed Service.

Summary of 2020 Applications and Referrals:

Summaries of 2020 applications and referrals are presented below:





Trends

Staff changes had a significant impact on the department in 2020. Staff changes included:

- Corey Scott, our Planner, resigned in May 2020, which left that position vacant until September 2020.
- Danielle Patterson, our new Planner started in September 2020.
- Our Senior Planning Technician, Bart Fyffe, was seconded to the Department of National Defence for 5 months to prepare local units for emergency response due to COVID-19 and natural disasters. Bart has resigned from the Regional District in November 2020.
- Heather Potter, our GIS Technician moved into the Senior Planning Technician position for the 5-month interval; and moved into the role permanently when Bart resigned.

- Katie Erickson, our GIS Intern moved into the GIS Technician position for the five-month interval; and moved into the role permanently when Heather moved into the Senior Planning Technician position.

The new federal regulations regarding cannabis production and sales has impacted staff time as well as changed to the *Agricultural Land Commission Act* and regulations. We are also planning to job description/classification reviews for the Senior Planning Technician, and GIS Technician in 2021.

The table below summarizes the projects that were identified in the 2020 work plan and their status:

Project Name	Status
Continuation of the Rural Bridesville Land Use Plan	A final draft is near completion and the next step will be public consultation.
Review of the Electoral Area C/Christina Lake Official Community Plan	This project will continue in 2021.
Continuation of the Boundary Area Agriculture and Food Project	Concluded Year 3 of the Community Food Action Initiative. All reporting to Interior Health is complete. A total of \$30,699 in grants was distributed to six organizations in the Boundary area to aid with the implementation of the Plan. Final reports from each organization have been received.
Review of the Board of Variance Bylaw	A draft bylaw was created by our solicitor; staff will review the bylaw in 2021.
Production of Application Guidelines for Public and Updated Web Content	Final drafts have been created and are being formatted by a graphics artist.
Asset Management Project	There were few demands on planning staff time on this project in 2020 but it will remain on the project list since GIS staff are an integral part of asset management.
GIS review	Postponed in 2020 but is included in the 2021 project list.
Wall map for the basement foyer	We are in the process of producing a final draft and production will take place in 2021.

Other work completed in 2020 included:

- Background work regarding the Kootenay Robusters permit for use of the Lavalley road right of way for a movable boat house for their dragon boats. The permit was granted by the

Ministry of Transportation and Infrastructure and the next step is a lease agreement between us and the Robusters.

- Staff continues to be involved in the Boundary flood recovery, primarily as it relates to the RDKB parcels that are still on evacuation order.
- Participation in the Agricultural Climate Action Initiative, project coordination
- Housing Needs Report was presented to the Board in November and presentations to member municipalities are on-going. This was accomplished by hiring and coordinating a consultant's work with funds from UBCM.
- We recently entered into a service agreement with a consultant to create a Poverty Reduction Plan for the Boundary Area.

2021 Projects

In addition to the projects listed below, staff is available for emergent planning and development matters that arise throughout the year. In general, the oldest land use bylaws are reviewed first. Appendix A lists the sequence of land use bylaw for review.

Legend – RDKB Board Strategic Priorities



Environmental Stewardship/Climate Preparedness



Exceptional Cost Effectiveness and Efficient Services



Responding to Demographic/Economic/Social Change



Improve and Enhance Communication

The table of projects follows on the next page.

Strategic Priority	Project name	Estimated Days to complete	Internal /External	Budget (Est)	Risk/priority
Core Services - Long Range Planning:					
   	Bridesville Land Use Plan - Finalize	20	Internal	NA	High
   	Area C/Christina Lake OCP Review - ongoing	100	Internal	NA	High
   	Big White Master Plan review - referral anticipated in the new year	10	Internal	NA	High
   	Big White OCP Review - Initiate upon completion of the Bridesville Plan	40	Internal	NA	High
	Sub-total	170			
Operational Strategic Initiatives - In Progress:					
   	Fees and Procedures Bylaw - Addition of liquor & cannabis to procedures	15	Both	NA	High
   	Big White OCP and Zoning regarding Retaining Walls; intensive residential development permit guidelines; phased developments	10	Both	NA	High
   	Poverty Reduction Plan for the Boundary Area	15	Both	100,000	High
   	Housing Strategies - Collaboration with Rural Development Institute	47	Both	TBD	High
   	GeoBC Dashboard for Emergency Management	20	Both	32,000	High
   	Transition to Parcel Map BC for our cadastral layer including feature class clean up	30	Internal	NA	High
	Sub-total	137			

Strategic Priority	Project name	Estimated Days to complete	Internal /External	Budget (Est)	Risk/priority	
Operational Strategic Initiatives - To be Determined						
   	Interactive Web Map Enhancement	25	Both	40,000	High	
   	Agriculture and Food Security Plan - Lower Columbia; funding dependent	25	Both	50,000		
   	GIS refinement of fire service area boundaries for east end to only areas that pay into the service	10	Internal	NA	Medium	
   	Heritage Designation - Cascade Cemetary and Franklin Trail; will be completed when time is available in 2021	6	Internal	NA		
   	Participation in Climate Change Initiative Project-Community and Corportate Climate Actions	10	Internal	NA	Medium	
   	Asset Management Project; Level of involvement is unknown at this time	Unknown	Internal	NA		
   	Determine procedures and fees for ALR exclusions, which only local governments can submit.	10	Internal	NA	High	
   	Housekeeping amendments to land use bylaws	20	Internal	NA		
Sub-total		106				
Total		413				

Appendix A

Estimated Sequence of Land Use Bylaw Reviews (2 are reviewed concurrently)

Bylaw Description	Adopted	Status
Rural Bridesville Land Use Plan (expansion of Bridesville Townsite, Bylaw No. 1485) ⁱ	May 2012	In progress
Area C/Christina Lake OCP (#1250)	September 2004	In progress
Big White OCP (#1125) ⁱⁱ	June 2001	Follows Bridesville Plan
Area C/Christina Lake Zoning Bylaw (#1300)	June 2007	Follows Area C OCP
Big White Zoning Bylaw (#1166)	January 2002	Follows Big White OCP
Area A OCP (#1410)	February 2011	
Area B/Lower Columbia-Old Glory OCP (#1470)	January 2013	
Area A Zoning Bylaw (#1460)	February 2014	
Area B/Lower Columbia-Old Glory Zoning Bylaw (#1540)	July 2015	
Area D/Rural Grand Forks OCP (#1555)	October 2016	
Area D/Rural Grand Forks Zoning Bylaw (#1675)	September 2019	

ⁱ This project was initiated when the Big White OCP review was postponed until a study was conducted regarding the creation of a resort municipality.

ⁱⁱ This project will be initiated upon completion of the Community Needs Assessment, which should coincide with completion of the Rural Bridesville Land Use Plan



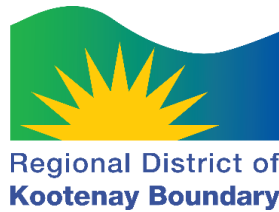
House Numbering – Electoral Areas A and C/Christina Lake

2021 Work Plan – Draft #2 to EAS January 2021



120

Prepared by: Donna Dean, Manager of Planning and Development



2021 Work Plan – Draft #2 to EAS January 2021

Service Name: House Numbering – Electoral Areas A and C/Christina Lake

Service Number: 120

Committee Having Jurisdiction: Electoral Area Services Committee

General Manager/Manager Responsible:

James Chandler, General Manager of Operations

Donna Dean, Manager of Planning and Development

Description of Service:

Planning and Development Department staff are responsible for assigning and maintaining street addresses for all five electoral areas. While the member municipalities are responsible for assigning and maintaining house numbers within their boundaries, collaboration is required between the Regional District and member municipalities for addresses along roads that straddle municipal boundaries. The same applies for roads between the RDKB and adjacent regional districts.

Consistency in delivery of electoral area and municipal street addresses is important for emergency management.

Establishing Authority:

Letters Patent

Requisition Limit:

Not applicable

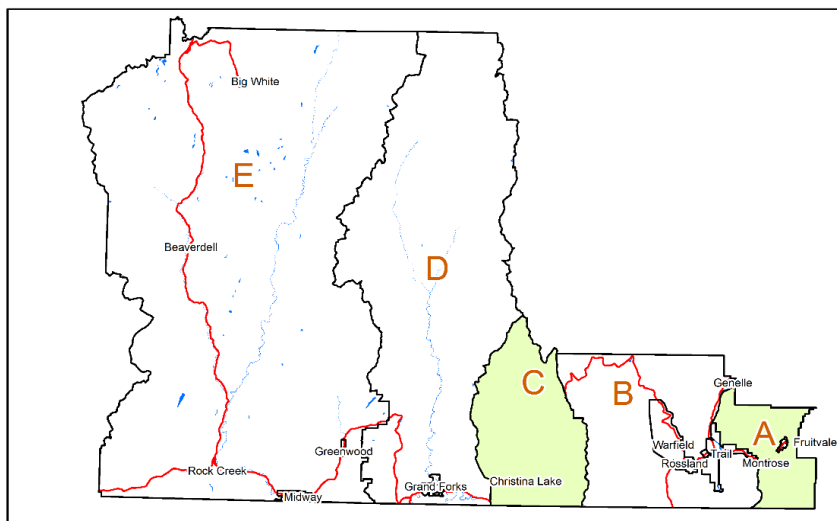
2021 Requisition / Budgeted Expenditures:

\$6000/ \$6000

Regulatory or Administrative Bylaws:

Not applicable

Service Area / Participants: Electoral Areas 'A' and 'C'/Christina Lake

**Service Levels**

House numbers are assigned as required, which is usually following the creation of new parcels and when new homes are built. The service involves communications with land owners and other agencies such as BC Assessment, various utilities, 911 service, RCMP, Elections BC, Canada Post and BC Ambulance to ensure accurate and consistent addresses are used. Address points are also forwarded to the Integrated Cadastral Information Society (ICIS) to include in the Provincial database.

Street addressing requires diligence to ensure accuracy since emergency services are dependent on it for locating individuals and properties, and for evacuation alerts and orders. Some house numbering is simple and straight forward; however, they sometimes require additional research to investigate numbering that is being used incorrectly and to make the necessary corrections. Staff are often required to work with Ministry of Transportation and Infrastructure as well to ensure street names are consistently used across organizations and that streets are correctly signed.

Human Resources:

Current staffing levels: two GIS/Mapping staff with support from Planning and Development Department administrative staff to issue letters.

2020 Accomplishments:

Ongoing issuance of house numbers and research and corrections where necessary.

The labeling of address points on mapped rooftops was completed. This project improved the accuracy of the number and location of homes that had to be placed on evacuation order and alert during the 2020 spring freshet and summer wildfires.

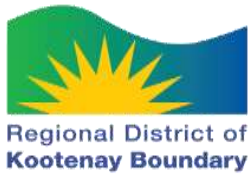
Staff has created an addressing application for our new website that will allow members of the public and staff to request a new address through our website. The application is now in the testing phase.

Staff initiated conversations with member municipalities to determine the best method by which we can ensure the address layer maintained in our GIS software incorporates the most up to date and accurate information from the member municipalities.

Significant Issues and Trends:

Depending on development activity, approximately 15 to 20 street address letters per Electoral Area are issued each year. Activation of the Emergency Operations Centre often reveals previously unknown construction in remote areas and the use of incorrect street addresses. During the 2020 spring freshet improvements were made for numbering of individual manufactured homes in mobile home parks.

Due to the migration from land-lines to cell phones, next generation 911 will switch from analogue to digital technology, thereby improving the communication of exact location of a caller to emergency services. This will elevate the importance of maintaining our street address layer and migration to matching address points to rooftops. The switchover is anticipated to take place by March 30, 2021.



Beaver Valley Arena Service

2021 Work Plan



BEAVER VALLEY ARENA SERVICE

2021

Mark Daines, Manager of Facilities and Recreation

Service Number 011

Draft: December 1, 2020



Beaver Valley Arena Service

Service Name: Beaver Valley Arena

Service Number: 011

Committee Having Jurisdiction: Beaver Valley Recreation Committee

General Manager/Manager Responsible:

James Chandler, General Manager Operations/DCAO

Mark Daines, Manager of Facilities and Recreation

Description of Service:

Provides for operations and maintenance of the Beaver Valley Arena for the communities in the Kootenay Boundary including Electoral Area A, Fruitvale and Montrose.

Establishing Authority:

Regional District of Kootenay Boundary Establishment Bylaw No. 1393, January 9, 2009.

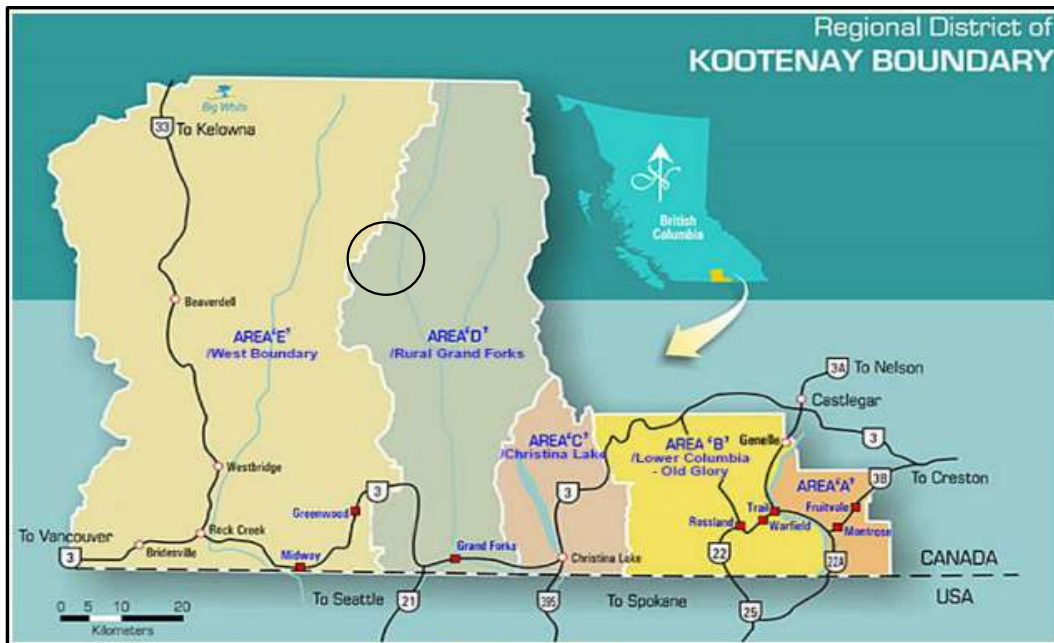
Requisition Limit: \$1,750,000

2020 Requisition / Budgeted Expenditures:

The Requisition is \$448,253 and the Expenditures are \$610,762

Regulatory or Administrative Bylaws: N/A

Service Area/ Participants: Electoral Area A, Village of Fruitvale, Village of Montrose.



Service Levels:

Ice Facility Operations: September to May, 7am-11pm, 7 days per week.

In managing the service, the Manager is responsible for:

- Overseeing human resource management
- Occupational Health and Safety,
- Asset management
- Project management
- Maintenance coordination
- Operations
- Communications
- RDKB staff inquiries and public inquiries.

Human Resources:**2020 Staffing**

Beaver Valley Arena 011	Operational FTE	Operational Days	Project FTE	Project Days
Manager of Facilities and Recreation	13%	30	13%	30
Recreation Secretary	50%	112	0%	0
RFA 3	60%	135	0%	0
RFA 2	60%	135	0%	0
RFA 1B	60%	135	0%	0
RFA 1B	60%	135	0%	0
RFA 1B Casual	26%	59.25	0%	0
RFA 1A	27%	60.25	0%	0
Secretary Relief	27%	61.25	0%	0

Manager's salary split 54% GTCC, 27% BV Arena, 9% Recreation, 10% General Admin

Rec Secretary salary split 20% GTCC, 50% BV Arena, 30% Recreation

2020/2021 Ice User Fees and Charges

- Adult Prime \$124.00/hr
- Youth Prime \$68.00/hr
- Youth Non-Prime \$50.00/hr
- JR B HOCKEY RATES: \$371.00/game
Practice is \$50.00 per hour (morning ice) or \$68.00 per hour (evening ice)

Regulations and compliance

Technical Safety BC, Work Safe, Municipal Insurance Association.

2020 Accomplishments:

A number of Capital Improvements were completed in the Beaver Valley Arena in 2020. These Capital Improvements were planned projects as part of the 2020-2025 financial plan.

- Upgrading of the main power distribution system
- Replacement of rubber flooring
- Installation of new surveillance system
- Replacement of public address system
- Purchase of new floor scrubber
- Installation of new propane tank.

Significant Issues and Trends:

Beaver Valley Arena was built in 1974 and the components and functionality of the building have outlived its needs and requirements by user groups of the Beaver Valley. Typically, Arenas typically have a life expectancy of 35 years.

During the Nitehawk playoffs, there is not enough seating capacity. Beaver Valley staff have to bring in extra seating to accommodate the overflow.

The concession is divided in to two services, one on the upper floor and the other on the ground floor. To run the concession requires at least 4 volunteers to operate it. If the two services were combined it would be a lot easier to manage and more economical for the operator.





In addition, there is not enough parking to handle the capacity of automobiles. Vehicles are parked on both side of Green road making it tight for emergency vehicles to travel through. The RDKB has provided overflow parking on the Village of Fruitvale lot behind the middle school.

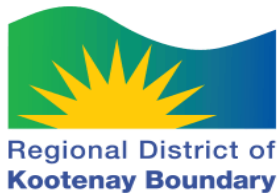
Minor Hockey Prime and non-prime bookings were cancelled early in March of 2020 due to the Covid 19 Pandemic. The Beaver Valley Nitehawk's cancelled their season for 2020/21. The arena resumed operations September 25, 2020.

Occupational Health and Safety

The RDKB is strongly committed to occupational health and safety and dedicates considerable staff and financial resources to fulfill our commitment. There is an active Joint Labour/Management OH&S Committee that meets and conducts inspections regularly. The OH&S Committee has participants from all departments. In addition, every department conducts regular safety meetings and inspections specific to the department.

2021 CAPITAL PROJECTS

2021 Projects							
Strategic Priority	Project name	Days to complete	Internal/External	Budget (Est)	Completed	Actual	Risk/priority
	Pump Park-Mazzochi Park	90	Both	\$45,000	I/P		Low
	Asset Management Planning	10	Internal	N/A	I/P	N/A	Medium
	Replica Train Station Project	2 years	Both	\$250,000	I/P		High
	Examine and review potential for expansion of the Arena.	N/A	Internal	\$80,000			Low



Beaver Valley Recreation Service

2021 Work Plan



BEAVER VALLEY RECREATION SERVICE

Mark Daines, Manager of Facilities and Recreation

Service Number 013

Draft: December 1, 2020



Beaver Valley Recreation Service

2021 Work Plan

Service Name: Beaver Valley Recreation

Service Number: 020-013

Committee Having Jurisdiction: Beaver Valley Recreation Committee

General Manager/Manager Responsible:

James Chandler, General Manager of Operations/DCAO

Mark Daines - Manager of Facilities and Recreation

Description of Service:

Beaver Valley Recreation provides recreation and special event programming services and facilities maintenance to the communities in the Kootenay Boundary including Electoral Area A, Fruitvale and Montrose.

The Beaver Valley Recreation Service was established in 1971 by the Village Councils of Montrose, Fruitvale, and Area A. The objectives of the Service are to strengthen community groups and organizations, improve the quality of community life, to co-ordinate programs and events, develop quality leadership, to provide facilities and the opportunity for people to use them and to equalize recreational opportunities among the communities.

Establishing Authority: Regional District of Kootenay Boundary Establishment Bylaw No. 1393, Nov 27, 2008.

Service Area/Participants: Electoral Area A, Fruitvale and Montrose.



Requisition Limit: \$1,750,000

2020 Requisition / Budgeted Expenditures: \$241,849/\$285,743

Regulatory or Administrative Bylaws:

N/A

Service Levels:

The Beaver Valley Recreation Committee meets once per month. The role of the committee is to encourage, assist and advise on the development of community recreation.

This department is responsible for the recreation programming for youth, adult and seniors for Beaver Valley.

Human Resources:

2020 Staffing				
Beaver Valley Recreation 013	Operational FTE	Operational Days	Project FTE	Project Days
Manager of Facilities and Recreation	18%	41	18%	40
Recreation Secretary	30%	68	0%	0
RFA 3	44%	99	0%	0
RFA 2	44%	99	0%	0
RFA 1B	44%	99	0%	0
RFA 1B	44%	99	0%	0
RFA 1B Casual	26%	59.25	0%	0
RFA 1A	27%	60.25	0%	0
Secretary Relief	27%	61.25	0%	0

Manager's salary split 54% GTCC, 27% BV Arena, 9% Recreation, 10% General Admin
 Rec Secretary salary split 20% GTCC, 50% BV Arena, 30% Recreation

Significant Issues and Trends:

In the spring of 2020 all recreation programs under the management of Beaver Valley Recreation were cancelled due the Covid 19 Pandemic. Some staff were laid off as result of the cancellation. Although RDKB staff were able to keep working with enhanced safety measures instituted.

2021 may continue to see substantial changes to service levels based on the Covid 19 Pandemic. The emerging trends we are seeing in Phase 3 of the 'Return to Play' program among user groups are ones that are smaller, less frequent or no longer existent due to closures of public facilities.

Beaver Valley Recreation will strive to open up programs once recreation enters Phase 4 of a 'Return to Open Plan' as per recommendations sent down from our PHO and BC Recreation and Parks Association guidelines.





Changes for BV Rec Programming

There may be significant changes to BV Recreation Programming for 2021 with the ongoing Covid 19 Pandemic.

Occupational Health and Safety

The RDKB is strongly committed to occupational health and safety and dedicates considerable staff and financial resources to fulfill our commitment. There is an active Joint Labour/Management OH&S Committee that meets and conducts inspections regularly. The OH&S Committee has participants from all departments. In addition, every department conducts regular safety meetings and inspections specific to the department. For 2021, the Facilities and Recreation Department will commit up to 4 full-time equivalent staff to OH&S responsibilities.

2021 Projects

Strategic Priority	Project name	Days to complete	Internal/External	Budget (Est)	Completed	Actual	Risk/priority
	Pump Park-Mazzochi Park	90	Both	\$45,000	I/P		Low
	Asset Management Planning	10	Internal	N/A	I/P	N/A	Medium
	Replica Train Station Project	2 years	Both	\$250,000	I/P		High
	Examine and review potential for expansion of the Arena.	N/A	Internal	\$80,000			Low



Beaver Valley Regional Parks and Regional Trails Service

2021 Work Plan



BEAVER VALLEY REGIONAL PARKS AND REGIONAL TRAILS SERVICE

Mark Daines, Manager of Facilities and Recreation

Service Number 019

First Draft September 24, 2020



Beaver Valley Regional Parks and Regional Trails Service

2021 Work Plan

Service Name: Beaver Valley Regional Parks and Regional Trails

Service Number: 019

Committee Having Jurisdiction: Beaver Valley Regional Parks and Regional Trails Committee

General Manager/Manager Responsible:

James Chandler, General Manager of Operations/DCAO
Mark Daines, Manager of Facilities and Recreation

Description of Service:

Provides capital asset management, maintenance and operations of the recreation facilities for the communities in the Kootenay Boundary including Electoral Area A, Fruitvale and Montrose.

Establishing Authority:

Regional District of Kootenay Boundary Establishment Bylaw No. 1393, January 9, 2009.

Requisition Limit: \$1,750,000.00 for Parks and Trails, BV Rec and BV Arena.

2020 Parks and Trails Requisition / Budgeted Expenditures: \$928,066/\$987,985

Regulatory or Administrative Bylaws:

N/A

Service Area Map / Participants: Electoral Area A, Fruitvale and Montrose.**Service Levels**

Provides maintenance and/or operations and asset management for the following facilities:



Mazzochi Park



Beaver Valley Family Park



Beaver Valley Library



Beaver Valley Skatepark



Park Siding School



Pend d'Oreille Cemetery



Beaver Valley Trails



Beaver Valley Arena



First Nations Arbor

Mazzochi Park is open from May until the end of October. It houses 2 soccer pitches, a playground and washroom facilities. BVR maintains the fields and coordinates soccer games and practice times.

Beaver Valley Arena operates from August to May. It's hours of operation run 7am-11pm Monday through Sunday.

Beaver Valley Family Park is open from May long weekend to Labour Day long weekend. An on site Park Attendant collects fees and maintains the sites and washroom facilities. The Recreation department takes care of bookings and operations staff look after the maintenance of the park.

Park Siding School House is open from June 1 to Labour Day Long weekend for tours. The Recreation Department schedules and provides tours which are free to the public.

Pend d'Oreille Cemetery is open year round to those who wish to pay their respects or do genealogy work. It is in inactive site. The recreation department provides landscaping upkeep in the spring and the fall as well as monthly inspections of the property.

Beaver Valley Skatepark located in Montrose is open from May to November. BV Rec oversees operations and maintenance of the park.

BV Library located in Fruitvale serves the residents of Fruitvale, Montrose and Area A. and is open Monday, Tuesday, Wednesday 11am-8pm, Thursday and Friday 11am-5pm, Saturday 1-5pm, and from November through March and are open Sunday 1-5pm

First Nations Arbor located in Beaver Creek Provincial Park is open May through to the end of September. BV Parks and Trails service oversees maintenance of the Arbor.

2020 Staffing					
Beaver Valley Recreation	Operational FTE	Operational Days	Project FTE	Project Days	
Manager of Facilities and Recreation	16%	41	18%	40	
Recreation Secretary	80%	200	0%	0	
RFA 3	100%	250	0%	0	
RFA 2	100%	250	0%	0	
RFA 1B	100%	250	0%	0	
RFA 1B	100%	250	0%	0	
RFA 1B Casual	24%	59.25	0%	0	
RFA 1A	24%	60.25	0%	0	
Secretary Relief	25%	61.25	0%	0	

2020 Accomplishments:

2020 saw a decrease in arena usage and recreation planning due to the Covid 19 pandemic.





However, major capital planned improvements were completed including:

- Installation of new flooring at Beaver Valley Arena
- Replacement of the main propane storage tank at the arena
- Replacement of utility poles for main electrical upgrade at Beaver Valley Arena
- Installation of new video surveillance system
- Purchase and installation of new speakers for the sound system
- Hardscape Improvements to Beaver Valley Skate park.

Significant Issues and Trends:

2021 will see changes in the continuation and completion of existing service levels due to the Covid 19 Pandemic. However, the RDKB will continue to work on a region wide asset management plan process.

2021 Projects:

2021 Projects							
Strategic Priority	Project name	Days to complete	Internal/External	Budget (Est)	Completed	Actual	Risk/priority
	Pump Park-Mazzochi Park	90	Both	\$45,000	I/P		Low
	Asset Management Planning	10	Internal	N/A	I/P	N/A	Medium
	Replica Train Station Project	2 years	Both	\$250,000	I/P		High
	Examine and review potential for expansion of the Arena.	N/A	Internal	\$80,000			Low



**Regional District of
Kootenay Boundary**

Greater Trail Victim Services

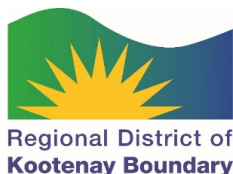
2021 Work Plan



GREATER TRAIL VICTIM SERVICES

2021

Brianna Reilly, Program Manager



Greater Trail Victim Services

2021 Work Plan

Service Name: Greater Trail Victim Services

Service Number: 009

Committee Having Jurisdiction: East End Services Committee

General Manager/Manager Responsible:

James Chandler , General Manager, Operations / DCAO
 Brianna Reilly, Program Manager

Description of Service:

Program staff works directly with the police to provide support, information, and referrals to victims of crime and traumatic events. The scope of the program includes:

Emotional Support

Staff and volunteers provide emotional support in person and via telephone to victims, witnesses, and their family members.

Information and Practical Assistance

Staff and volunteers provide information on the status of police investigations, the justice system and crime prevention. They can also assist with filling out Crime Victim Assistance Forms and Victim Impact Statements

Crisis Intervention

Program staff and volunteers are often asked to intervene directly during crisis situations to provide a range of support services, including: on-scene support; transportation; bereavement assistance; and emergency shelter arrangements.

Court Services

Staff and volunteers provide services to victims and witnesses regarding their involvement with the courts, such as: explaining their role as witnesses; providing a copy of their statement; providing tours of the court facilities; providing transportation to the courthouse; accompanying clients during the proceedings; and explaining sentencing and corrections processes.

Referrals

The Victim Services Program links victims and witnesses with a broad range of support services, including: counselling; trauma therapy; drug and alcohol treatment programs; legal services; specialized victims services; and the Crime Victim Assistance Program for financial assistance for counseling, lost wages, or other related expenses.

Establishing Authority:

Greater Trail Police-Based Victims Assistance Program Establishment Bylaw No. 1116, 2000 and amendments thereto (Regional District of Kootenay Boundary Victims Assistance Service Amendment Bylaw No. 1598, 2016).

Requisition Limit: Maximum taxation is \$87,000 (Bylaw 1598, 2016)

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

\$79,841/\$160,690/\$143,059

Regulatory or Administrative Bylaws:

N/A

Service Area / Participants:

Fruitvale, Montrose, Rossland, Trail, Warfield, Electoral Area 'A', Electoral Area 'B'/Lower Columbia/Old Glory

Service Levels

Not Applicable

Human Resources:

- General Manager, Operations /DCAO
- Program Manager, 37.5 hours/week, 82 hours of on call/week
- 1 Part Time Case Worker, 20 hours/week, 86 hours of on call/week 3 times a month
- 1 Volunteer, 86 hours of on call 1 a month

2020 Accomplishments:

- The program successfully supported approximately 500 clients in the Greater Trail area in 2020.
- The pro-active referral procedure continues as agreed to by the RCMP E Division Victim Service Manager, Heather Hildred, the greater Trail Victim Services Program manager, Brianna Reilly, and the Trail and Greater District RCMP detachment commander, Sgt. Mike Wicentowich. The community has responded positively to this process and support.

- The program staff maintained a Consistent presence with Community Groups and committees including: Violence Against Women in Relationships (VAWIR), the Integrated Case Assessment Team (ICAT), and the Restorative Justice Committee.
- Training program for violence against women was coordinated with Castlegar RCMP – Victim Services and offered to professionals within our community.

Significant Issues and Trends:

- 1) The program continues to work with the RCMP E Division Victim Services program director, on a pilot project that focuses on a restructure of our referral process. This pilot project has allowed us to bridge the gap in service and support more victims and community members in the Greater Trail area. As a result, the caseload of the program has increased significantly. The program, also continues to provide 24/7 on call support to the community.
- 2) The nature of this frontline work, along with increased program demands, on call requirements, and staffing limitations (1.5 position) continues to puts staff at direct risk for PTSD/other psychological injuries, and burnout. The 2020 budget allocated funds for psychological supports, which worked positively to support staff through difficult incidences and is seen as highly effective for the future well-being of staff.
- 3) The program is working collaboratively with the Trail FAIR Society's Community Based Victim Services program, and the number of domestic files has reduced significantly for our program.
- 4) Due to COVID-19, our services were reduced to phone support only for approximately 3 months. The program has been operating at full service and capacity since May 2020, and is currently offering face to face meetings, court support, and call out support. Although there has been a reduced number of incidents in the Trail and Greater area, the program statistical trend appears to be maintaining steady compared to 2019.

Quarterly Statistics

2020	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Staff count	2	2	2	2	2	2	2	2	2	2	2	2
Staff hours	230	230	230	230	230	230	230	230	230	230	230	230
Volunteer count	1	1	1	1	1	1	1	1	1	1	1	1
Volunteer hours	12	10	8	15	12	15	10	10	10	10	10	10
After hours Call-outs	0	1	1	0	2	1	0	0	0	0	0	0
New Clients	56	41	46	47	45	39	49	63	24	34	9	38
Closed Clients	76	35	53	39	41	23	45	80	48	26	24	18
Incidents	48	33	37	38	38	22	31	58	21	28	5	32



REGIONAL PARKS AND TRAILS – AREA B/LOWER COLUMBIA-OLD GLORY SERVICE

2021 Work Plan



REGIONAL PARKS AND TRAILS – AREA B/LOWER COLUMBIA-OLD GLORY SERVICE

2021

Mark Daines, Manager of Facilities and Recreation

Service Number 014

Draft: December 1, 2020



REGIONAL PARKS AND TRAILS – AREA B/LOWER COLUMBIA-OLD GLORY SERVICE

Service Name: Regional Parks and Trails – Area B

Service Number: 014

Committee Having Jurisdiction: East End Services Committee

General Manager/Manager Responsible:

James Chandler, General Manager of Operations/DCAO

Mark Daines, Manager of Facilities and Recreation

Description of Service:

The Regional Parks and Trails service for Area B/Lower Columbia-Old Glory provides capital asset management and reimbursement support to residents in Area B .

Establishing Authority:

Regional District of Kootenay Boundary Establishment Bylaw No. 1637, 2008, and amendments thereto (Bylaw No. 1517, excluding Electoral Area C)

Service Area Map:

Requisition Limit: \$270,000

2020 Requisition / Budgeted Expenditures:

The Requisition is \$227,676 and the Expenditures are \$402,680

Regulatory or Administrative Bylaws:

N/A

Service Area / Participants:

Electoral Area B (Lower Columbia) Casino, Genelle, Oasis, Paterson, Rivervale, Blackjack.

Service Levels:

Under the direction of the Area B Director, the Manager of Facilities and Recreation is responsible for overseeing project management for capital improvements.

2020 Staffing

Area B Lower Columbia	Operational FTE	Operational Days	Project FTE	Project Days
Manager of Facilities and Recreation	0%	0	22%	50

2020 Accomplishments:

- Installation of new multi use courts at Genelle Community Hall.
- Construction of new disc golf course at Oasis Community Park
- Installation of a new Gazebo at Oasis Community Park
- Installation of a new Gazebo and picnic tables at Rivervale Park
- Exterior renovation of Oasis Community Hall.





Significant Issues and Trends:

The Covid 19 Pandemic creates challenges in the procurement of construction services and supplies.

Occupational Health and Safety

The RDKB is strongly committed to occupational health and safety and dedicates considerable staff and financial resources to fulfill our commitment. There is an active Joint Labour/Management OH&S Committee that meets and conducts inspections regularly. The OH&S Committee has participants from all departments. In addition, every department conducts regular safety meetings and inspections specific to the department.

Projects:

2021 Projects							
Strategic Priority	Project name	Days to complete	Internal/External	Budget (Est)	Completed	Actual	Risk/priority
	Parking lot asphalt - Oasis Community Park	60	Both	\$35,000			Medium
	Asset Management Planning (Data Gathering)	10	Internal	N/A	I/P	N/A	Low
	Replacement of Roof on Rivervale Storage Shed	30	External	\$8,000			Medium
	Construction of Bocce Ball Court - Genelle	60	External	\$25,000			Low



Culture, Arts and Recreation for the Lower Columbia Service

2021 Work Plan



CULTURE, ARTS AND RECREATION FOR THE LOWER COLUMBIA SERVICE 018

Mark Daines, Manager of Facilities and Recreation
Service Number 018
Draft Updated December 1, 2020



Culture, Arts and Recreation for the Lower Columbia Service

Service Name: Culture, Arts and Recreation for the Lower Columbia

Service Number: 018

Committee Having Jurisdiction: East End Services Committee

General Manager/Manager Responsible:

James Chandler, General Manager of Operations/DCAO
Mark Daines, Manager of Facilities and Recreation

Description of Service:

Provides asset management and operations support to cultural, arts and recreation services to the communities in the Kootenay Boundary.

Establishing Authority:

Regional District of Kootenay Boundary Establishment Bylaw No. 1446, 2010.

Requisition Limit:

Limit of \$0.2987/\$1000 of net taxable value of land and improvements or \$996,970 whichever is greater.

2020 Requisition / Budgeted Expenditures:

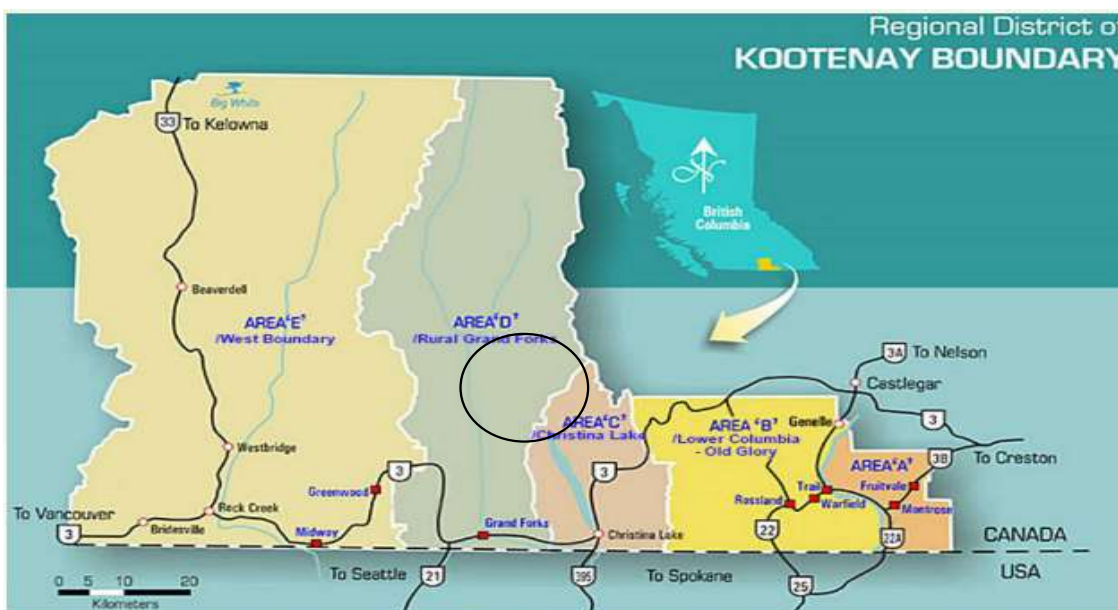
The 2020 Requisition is \$729,421 and the Expenditures are \$1,838,164.

Regulatory or Administrative Bylaws:

Regional District of Kootenay Boundary Establishment Bylaw No. 1389, Bylaws 2008, and amendments thereto (Bylaw No. 1517, excluding Electoral Area C)

Service Area / Participants:

Electoral Area A, Electoral Area B (Lower Columbia), Fruitvale, Montrose, Rossland, Trail, Warfield.

**Service Levels:**

The Greater Trail Community Arts Centre provides a facility for Selkirk College, RDKB Emergency Operations Centre, Visac Art Gallery, The Bailey Theatre and the Trail Gymnastics Club. In addition, this service oversees asset management, maintenance of the RDKB Administration Building, and assisting the Regional Fire Rescue Service with maintenance of the fire stations. The service operates 7 days a week except statutory holidays and Christmas break. In managing the service, the Manager is responsible for overseeing human resources, budgeting, Occupational Health and Safety, project coordination, maintenance coordination, fulfilling tenant requests for maintenance and small projects, communications, RDKB staff inquiries, public inquiries, and emergency services for equipment and building failures.

Human Resources:**2020 Staffing**

Culture Arts & Recreation 018	Operational FTE	Operational Days	Project FTE	Project Days
Manager of Facilities and Recreation	54%	122	27%	60
Recreation Secretary	20%	45	0%	0
Custodian 3 (Electrician)	33%	75	67%	150
Custodian 3* (Plumber)	33%	75	67%	150
Custodian 1	100%	225	0%	0
Custodian 1	100%	225	0%	0
Custodian 1 (Admin)	100%	225	0%	0
Custodian 1 PT	41%	92	0%	0
Custodian 1 Casual	40%	89	0%	0

* This position was recently upgraded from a Custodian 2 to Custodian 3 and is reflected in 2020 budget.

Manager's salary split 54% GTCC and Area B, 27% BV Arena, 9% Recreation, 10% General Admin.

Rec Secretary salary split 20% GTCC, 50% BV Arena, 30% Recreation

2020 Accomplishments:

- Assisted Regional Fire Rescue with capital and maintenance projects.
- Assisted Grand Forks Administration Building with capital improvement.
- Assisted Area B with capital and maintenance projects.
- Asset Management Planning
- Developed and implemented a Covid 19 Exposure Control Plan for Greater Trail Community Centre.
- Installation of EV Charging Station in Administration Building.

Significant Issues and Trends:**Emergency Operations Centre**

The trend of increasing EOC activations of longer duration and complexity has the potential for significant impacts on staff resources and Work Plans (including the Manager of Facilities and Recreation). Staff involvement in Emergency Management, EOC training and activations will continue to be a growing responsibility for Regional District staff.

Occupational Health and Safety

The RDKB is strongly committed to occupational health and safety and dedicates considerable staff and financial resources to fulfill our commitment. There is an active Joint Labour/Management OH&S Committee that meets and conducts inspections regularly. The OH&S Committee has participants from all departments. In addition, every department conducts regular safety meetings and inspections specific to the department

GTCC Roof Condition

The torch on roofing has exceeded its life expectancy of 20 years and is showing significant signs of wear and tear in certain areas.



Project Timelines and Milestones:

It is recommended that this project starts no later than the spring of 2021 as long as it is aligned with the 2021-25 financial plan to fund the project. This project should not be delayed beyond 2021.

Project Risk Factors:

The existing torch on roofing could leak and cause interior water damage in the building. The longer that we wait to replace the roof could also have financial implications.

Internal Resource Requirements:

- Corporate Administration
- Finance Department
- Facilities and Recreation
- RDKB maintenance staff







Estimated Cost and Identified Financial Sources:

In June of 2018 Trail Roofing and Heritage Roofing submitted quotes for the replacement of the torch on roofing at the Greater Trail Community Centre, with Trail Roofing coming in at \$474,000.00 (not including duct work or drain work), and Heritage Roofing coming in at \$507,607.00 (including the coordination of duct work and drain work). In addition, West Kootenay Mechanical provided an estimate of \$33,000 to crane the Chiller off the roof and disconnect and re-connect it.

With intentions from Selkirk College to purchase the GTCC they are open to cost sharing the roofing project and therefore, the Culture, Arts and Recreation for the Lower Columbia Service 018 budget reflects an allocation of \$100,000.00.

Relationship to Board Priorities:

It meets the strategic priorities of the RDKB's strategic plan which is to "Develop plans to address aging infrastructure in services to ensure sustainable services", and that "We will ensure we are proactive in funding our service".

2021 Projects							
Strategic Priority	Project name	Days to complete	Internal/External	Budget (Est)	Completed	Actual	Risk/priority
	Roof Replacement Contribution-GTCC	90	Both	\$100,000			High
	Theater Rigging - GTCC	30	Both	\$125,000	I/P		High
	Truck Bay Lighting Project-Genelle Fire Hall	30	Internal	\$10,000			Medium
	Replace furnaces-Fruitvale Fire Hall	30	Internal	\$10,000			High
	Elevator Upgrade - GTCC	7	Both	\$110,000	I/P		High
	Asset Management Planning	11	Internal	N/A	Ongoing		Medium



Kootenay Boundary Regional Fire Rescue Service

2021 Work Plan



KOOTENAY BOUNDARY REGIONAL FIRE RESCUE SERVICE

Dan Derby, Regional Fire Chief / Fire Dispatch Manager

Service Number 050

Updated: January 14, 2021



Kootenay Boundary Regional Fire Rescue Service

2021 Work Plan

Service Name: Kootenay Boundary Regional Fire Rescue (KBRFR)

Service Number: 050

Committee Having Jurisdiction:
East End Services Committee

General Manager/Manager Responsible:
James Chandler, General Manager Operations / DCAO
Dan Derby, Regional Fire Chief / Fire Dispatch Manager

Description of Service:

Kootenay Boundary Regional Fire Rescue Service (the “Department” or “KBRFR”) is a full service department created in 1982 as a regional fire service with six fire stations. The six fire stations provide overlapping coverage for our large fire protection area protecting approximately 25,000 residents.

The department is a composite fire service made up of paid-on-call and career firefighters that provide fire suppression, rescue, first responder medical and fire prevention services. Our fire prevention program includes public safety education for our local schools, fire and life safety inspection of all public buildings and fire investigations. Our firefighters train to full service NFPA 1001 Level II based on the British Columbia Structure Firefighters Competency and Training Playbook standards (as mandated by the Office of the Fire Commissioner), wildland firefighting and first responder medical services. Some members have specialty training in high angle rope rescue, auto extrication and swift water rescue services. Working together with the Justice Institute of BC and

other training providers, in house trainers continue to be developed, allowing for flexible, cost effective and local training of our members.

The Regional Fire Chief and Deputy Fire Chief aided by the Fire and Emergency Administrative Assistant, are responsible for all aspects of operations, fire prevention, occupational health and safety program, departmental payroll, human resource management for 90 paid-on-call and 15 career firefighters, procurement, accounts payable, meeting agendas / minutes and records management. The Fire and Emergency Administrative Assistant position is a shared resource with the Emergency Preparedness service.

In 2019 a review of Kootenay Boundary Regional Fire Rescue was completed. The goal of the review was to ensure that the levels of service and structure of the department meet the ongoing needs of the community and the future standards in legislation, training and service. The service review outcome was to:

- Maintain existing level of full service training, fire suppression, rescue, first responder medical and prevention services.
- Maintain existing six fire stations.
- Communicate outcome of KBRFR service review with public.

Establishing Authority:

Section 332, Local Government Act, RSBC 2015 (formerly Section 796, LGA, RSBC 1996, ch. 323)

The Department was established pursuant to Supplementary Letters Patent of the Regional District of Kootenay Boundary, Division XXV – Fire Protection (23 January 1982) (the “Supplementary Letters Patent”) and Regional Fire Services Fire Protection Bylaw No. 537 (23 July 1987) (the “Establishment Bylaw”).

Requisition Limit: N/A

2020 Requisition / Budgeted Expenditures/Actual to January 14, 2021:

\$3,681,262/ \$4,726,679/\$4,448,880

Regulatory or Administrative Bylaws:

Regional District of Kootenay Boundary Fire Safety & Prevention Bylaw No. 560 (1988).

Legislation & Regulations:

Provides authority for and governs operations and service delivery.

- Local Government Act
- Community Charter

- BC Fire Safety Act
- Workers' Compensation Act
- Emergency Health Services Act
- Emergency Program Act
- Motor Vehicle Act
- Societies Act
- Employment Standards Act
- Bill C-45 (Criminal Code sec. 217.1)
- Industry Canada regulations (communications)

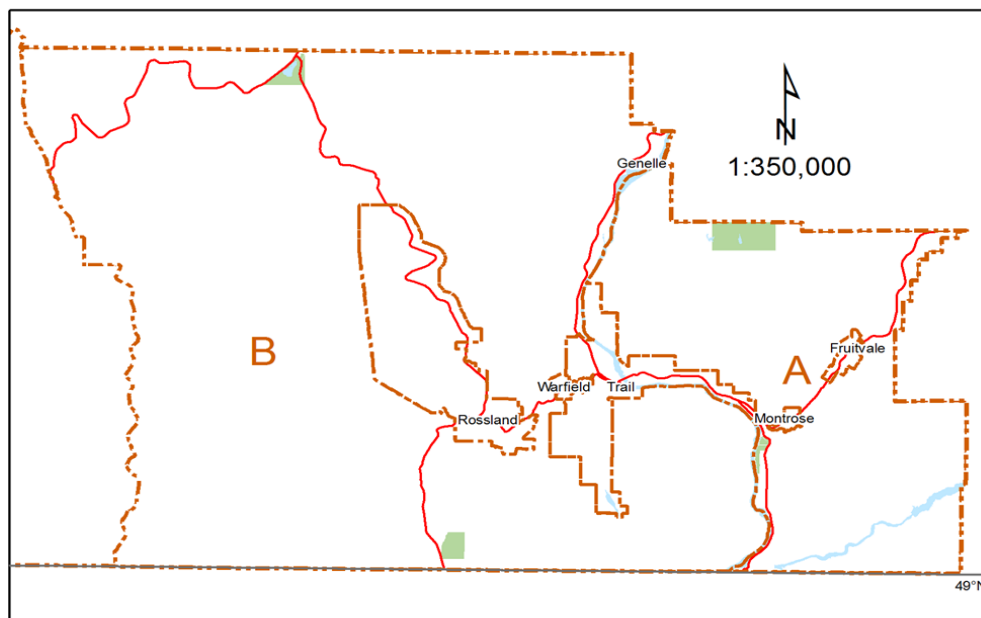
Codes & Standards:

Govern operations and service delivery.

- BC Fire Code
- BC Building Code
- NFPA Standards
- Labour Relations Code
- British Columbia Fire Service Minimum Training Standards: Structure Firefighters Competency and Training Playbook

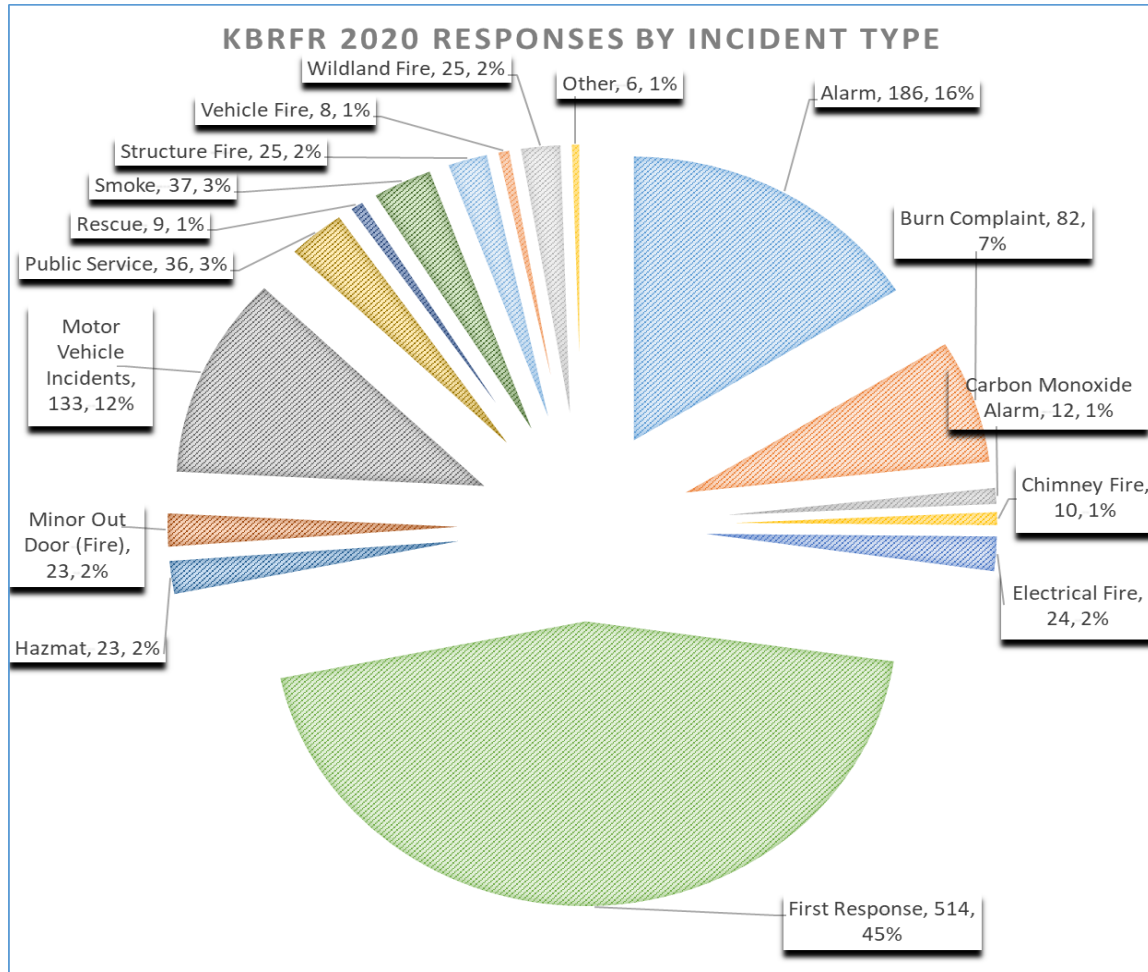
Service Area / Participants:

Electoral Area A, Electoral Area 'B'/Lower Columbia-Old Glory, City of Rossland, Village of Warfield, City of Trail, Village of Montrose and Village of Fruitvale.



Service Levels

Full Service as per RDKB Board resolution (British Columbia Structure Firefighters Competency and Training Playbook)



Human Resources:

- General Manager, Operations / DCAO
- Regional Fire Chief
 - Deputy Fire Chief
 - Manager of Emergency Programs
 - Fire & Emergency Services Administrative Assistant
 - 5 – Career Captains
 - 3 – Paid-on-call District Fire Chiefs
- 10 – Career Firefighters
- 90 – Paid-on-call Firefighters

2021 Staff Time Allocation for Public Safety Services

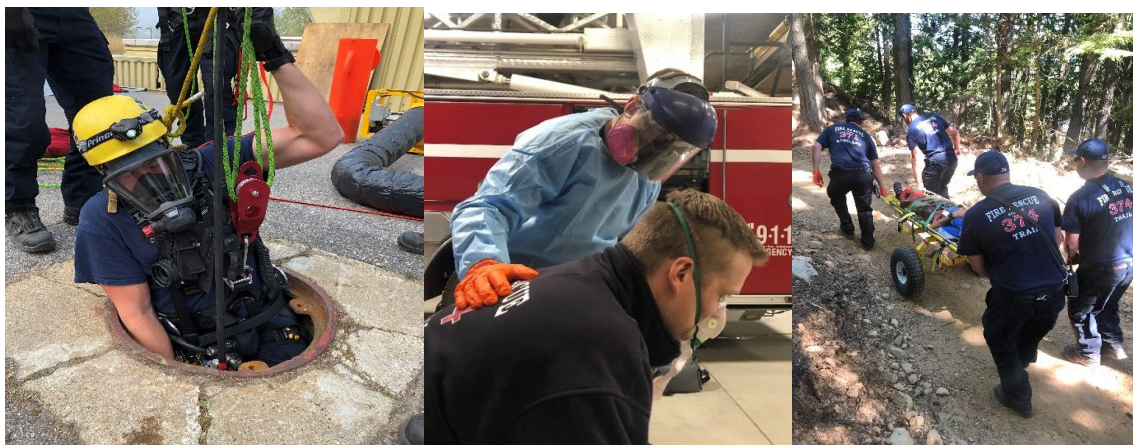
Position	KBRFR	Emergency Management	9-1-1 Emergency Communications
Regional Fire Chief	55%	22.5%	22.5%
Deputy Fire Chief	100%		
Fire & Emergency Services Administrative Assistant	50%		50%

2020 Accomplishments

- Promotion of Captain Glen Gallamore to Deputy Fire Chief, that resulted in Firefighter Rick Morris's promotion to Captain
- Purchase of Command Vehicle for Deputy Chief
- Completion of extrication tools purchase started in 2019
- Awarded purchase of new fire engine for Station 372 Warfield. The current Warfield fire engine, a 2009, will be transferred to Genelle and the Genelle fire engine will become a reserve truck.

2020 Training Courses	
Course	Type/Subject
NFPA 1001 Level II – Qualifications for Firefighter	Firefighting
Incident Command Training (ICS300)	Emergency Management
Hazardous Materials Operations (Christina Lake)	Firefighting
Alternative Fueled Vehicles (ONLINE)	Firefighting
Swift Water Awareness (ONLINE)	Firefighting/Rescue
Strike Team/Task Force Team Leader – BC Wildfire/OFC Command Training	Wildland Firefighting
S-290 Wildland fire behaviour (ONLINE)	Wildland Firefighting
Interagency Wildfire Training	Wildland Firefighting
First Responder Instructor & Certification Training	Medical Aid

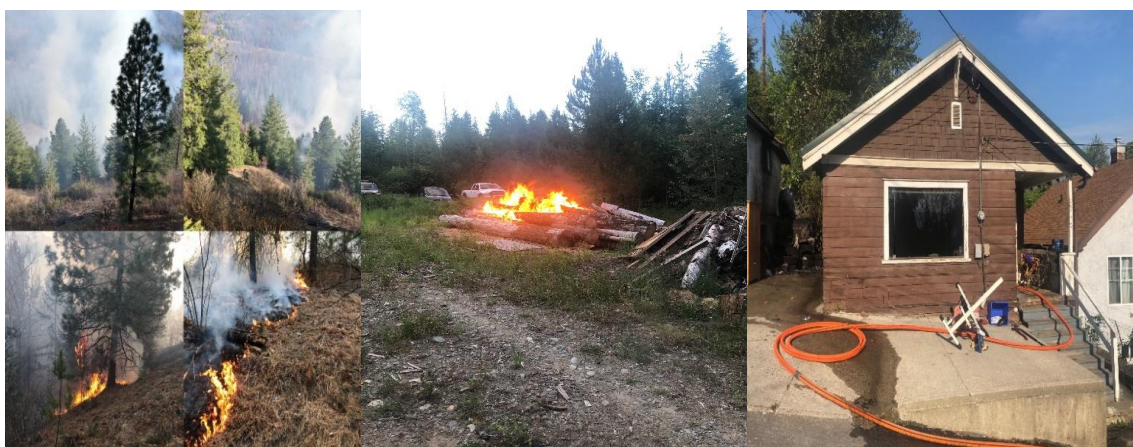
2020 Training and Response Photos



Confined space training

First responder PPE training

Rescue call Red Mountain



Wildfire responses in Montrose and Beaver Valley

Structure fire in West Trail

September 2020 KBRFR Workplan Update

Service Name	Project	Budget	Status
Kootenay Boundary Regional Fire Rescue Service	Engine 373 Replacement	\$450,000 (2021 capital purchase \$286,884 from restricted reserve)	RFP being posted to BC Bid in September for award of order/purchase in October.
	Command Vehicle – Deputy Chief	\$70,000	Vehicle is in service, canopy is on order.

	Extrication Tool (c/w ram support & protection shields)	\$25,000	Complete under budget – total cost was \$17,744.83
	Station 371 Kitchen Renovation	\$15,000	Project did not proceed in 2020. Looking to carry over to 2021.
	Extrication Tool – 2019 carry over	\$11,976	Complete - \$11,976 funded from 2019 surplus
	Post Traumatic Stress Disorder and Critical Incident Stress Management – Wellness Program	\$5,000	Work has started to identify goals, preparedness and response training needed to support physical and mental wellness.
	Recruitment of Deputy Fire Chief	\$1,000	Deputy Chief Glen Gallamore started on June 8, 2020
	Update KBRFR Bylaw & Service Area	\$5,000	COVID-19 and the challenges associated with delayed adoption of the Fire Safety Act will have an impact on this project.

Significant Issues and Trends:

The COVID-19 pandemic has had a significant impact on all our lives and the KBRFR service is no different. In March, in response to the pandemic first responder medical services was restricted. Paid-on-call training was suspended for 3 months and fire and life safety inspections were curtailed and access to fire stations continues to be restricted. We have learned a lot and implemented health and safety guidelines/policy to protect our firefighters. With these new procedures in place we have seen a resumption of modified fire and life safety inspections, first responder calls and training. Overall call volumes are down in 2020 in direct correlation to reduced activity in our communities.

The recruitment and retention of paid-on-call firefighters continues to be a challenge with the competing demands on people's time and the commitment required in today's fire services. Of our 90 paid-on-call firefighters thirty two percent have now completed their Fire Fighting Practices Level I & II NFPA 1001 certification. The challenge is to maintain their skills through recurrency training while we recruit and train new paid-on-call firefighters. Firefighter training will always be a corner stone of our work.

The recruitment of our Deputy Fire Chief enables us to have a renewed focus on fire & life safety, ensuring we have comprehensive inspection, investigation and education programs. Additionally the Deputy Chief is our department lead for Occupational Health & Safety responsible for implementing department wide safety programs. This has proved to be incredibly valuable as we balance inspections and enforcement with health protocols and implemented safety guidelines in response to the COVID-19 pandemic.

Though 2020 was an anomaly, the trend of previous years shows an increase in EOC activations. These activations were often longer in duration and complexity creating the potential for significant impacts on staff resources and Work Plans. Staff involvement in Emergency Management, EOC training and activations will continue to be a growing responsibility for Regional District staff.

2021 Projects				
Strategic Priority	Project name	Internal/External	Budget (Est)	Risk/priority
	Engine 373 Replacement	Both	\$511,000	High
	Station 371 Kitchen Renovation	Internal		Medium
  	Wellness Program - PTSD and Critical Incident Stress Management Strategy	Both	N/A	High
   	Update KBRFR Bylaw & Service Area (Fire Prevention & Burning	Both	\$5,000	High
  	Training Grounds	Both	\$125,000	High
  	2-1/2" Nozzles Replacement	Internal	\$35,000	Medium
2022 Projects				
   	Update KBRFR Bylaw & Service Area (Fire Prevention & Burning	Both	\$5,000	High
 	Extrication Air Bags Replacement	Internal	\$50,000	High
  	Ladder 374 Replacement - for delivery in 2024	Both	\$1,400,000	High
2023 Projects				
   	Pump Test Pit	Both	\$125,000	High
  	Positive Pressure Fans Replacment	Internal	\$25,000	Medium
  	Communications Equipment Replacement	Both	\$100,000	Medium
  	Engine 376 Replacement - for delivery in 2024	Both	\$600,000	High
2024 Projects				
  	Ladder 374 Replacement - finalization, delivery & training	Both		High
  	Engine 376 Replacement - finalization, delivery & training	Both		High

Legend – RDKB Board Strategic Priorities

Environmental Stewardship/Climate Preparedness



Exceptional Cost Effectiveness and Efficient Services



Responding to Demographic/Economic/Social Change



Improve and Enhance Communication

Conclusion:

From our six fire stations, Kootenay Boundary Regional Fire Rescue is well situated to meet our day to day administration, training, fire prevention and response requirements. As we adapt to the implications of COVID-19 there continues to be significant value in our first responder medical, all hazards rescue and fire and life safety services. Updating our fire service bylaw to reflect changing legislation and operational requirements will provide the administrative guidance and tools needed to enforce fire and life safety matters. Longer term working with elected officials, future projects have been identified to convey the longer-term needs of the community and department, including first responder medical services to a higher level of care, review our hazardous materials response capacity and update our Fire Underwriters Survey (Public Fire Protection Classification and Dwelling Protection Grades). The future is bright for our members with the right apparatus, equipment and training to meet the needs of our diverse communities.



**Regional District of
Kootenay Boundary**

East End Animal Control Service

2021 Work Plan-FINAL

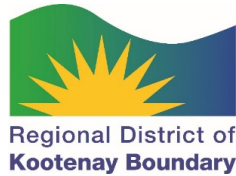


EAST END ANIMAL CONTROL SERVICE

2021

James Chandler, General Manager, Operations / Deputy CAO

Jan 2021 – Final



East End Animal Control Service

2021 Work Plan-FINAL

Service Name: East End Animal Control Service

Service Number: 070

Committee Having Jurisdiction: Electoral Area Services Committee

General Manager/Manager Responsible:

James Chandler, General Manager, Operations / DCAO

Description of Service:

The East End Animal Control Service provides animal control services Electoral Areas 'A' and 'B'. The service is operated under contract with the BC SPCA in partnership with the City of Trail, the Village of Fruitvale, and the Village of Montrose. Under the cost-sharing agreement, the municipalities contribute 75% of the contract fee (by requisition), while the East End Animal Control Service pays 25% of the contract fee.

Establishing Authority:

Supplementary Letters Patent dated March 4, 1981

Requisition Limit: \$0.117/\$1,000

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

\$93,279/ \$95,258/ Year end estimate Dec 2020 \$94,370

Regulatory or Administrative Bylaws:

RDKB Electoral Areas 'A' and 'B' Dog Control and Licensing Bylaw No. 1117, 2000

Service Area / Participants:

Electoral Area 'A' & Electoral Area 'B'/Lower Columbia / Old Glory

Service Levels

N/A

Human Resources:

- General Manager, Operations / DCAO
- Animal Control Contractor (BC SPCA)

2020 Accomplishments:

The animal control contractor, the BC SPCA, worked to administer the animal control contract by responding to calls and complaints, conducting regular patrols throughout the service area, enforcing the respective animal control bylaws, impounding animals as required, and promoting the issuance of dog licenses throughout the service area.

Throughout 2020 the service levels and response from the SPCA has continued throughout our service area without interruption, despite some operational restrictions from COVID-19. These restrictions were more related to the operations of the animal control building and the ability to open to the public. The annual statistics received to date are included below.

East End Animal Control Statistics

2020		Sub-area for response				
Month	Call Totals responded to	Trail	Montrose	Fruitvale	Area A	Area B
January	34	19	5	5	2	3
February	32	12	7	6	3	4
March	36	12	4	9	3	8
April	56	19	13	13	3	8
May	47	16	10	11	3	7
June	55	15	10	12	3	15
July	35	13	9	6	2	5
August	39	13	8	10	2	6
September	38	19	9	10	9	10
October	39	14	7	9	4	5
November	25	12	5	5	1	2
December	27	13	5	5	2	2
Totals	334	177	94	101	37	75

Statistics for September to December will be included in final report following year end

Significant Issues and Trends:

With over a year of occupancy and operation at the new SPCA facility in Castlegar, operations and service has continued to our area with no identified concerns.

Staff anticipate the continuation and renewal of the contract with the SPCA for another three year term from 2021 to 2023. Without the RDKB having an alternate animal control facility the SPCA are considered to remain as the preferred option at this time, maintaining the area knowledge and providing an appropriate facility for the short term rescue and shelter of animals.



Noxious Weed Control Specified Area 'A' - Columbia Gardens

2021 Work Plan



Noxious Weed Control Specified Area 'A' - Columbia Gardens

2021

Janine Dougall, General Manager, Environmental Services

Draft Version: EES Committee (Jan 19, 2021)



Noxious Weed Control Specified Area 'A' - Columbia Gardens

2021 Work Plan

Service Name: Noxious Weed Control Specified Area 'A' - Columbia Gardens

Service Number: 090

Committee Having Jurisdiction: Board of Directors

General Manager/Manager Responsible: Janine Dougall, General Manager of Environmental Services

Description of Service:

The service provides noxious weed control services to Area 'A' - Columbia Gardens. The program is coordinated by the Central Kootenay Invasive Species Society (CKISS).

The species of weeds controlled is extensive, however a few species detrimental to agriculture and ecology comprise the majority of the control activities. Targeted invasive species include hoary alyssum, spotted knapweed, sulphur cinquefoil, hawkweeds, thistles, hoary cress, and oxeye daisy.



Hoary Alyssum



Spotted Knapweed



Oxeye Daisy



Sulphur Cinquefoil



Hoary Cress

Weeds are controlled on private, public and industrial lands. The Central Kootenay Invasive Species Society also provides noxious plant control services on public and industrial lands, but this work is completed through direct contractual relationships between the province or industry with CKISS.

The monies collected through tax requisition for the service are utilized to provide noxious plant control on private properties as well as education and outreach programs. Education and outreach include activities such as generating media releases, face-to-face meetings with landowners and liaison with other noxious weed agencies/committees including the Invasive Plant Council of BC and the Boundary Invasive Species Society.

The main method of control is contracted herbicide spraying. Some manual control (hand pulling weeds) takes place in areas where spraying cannot be done, within 30 metres of a well for example. In some areas, bio-control agents (insects that kill targeted noxious species) have been utilized and success rates range from almost total eradication to little effect.

The program does not enforce noxious weed eradication requirements. Instead the focus has been on education and voluntary compliance.

Establishing Authority:

Authority to provide service is Bylaw 391 adopted September 30, 1982. Bylaw No. 1466, which converted Bylaw No. 391 to a service governed by a service establishment bylaw was adopted February 24, 2011. Bylaw No. 1466, establishes a service, to be known as "Electoral Area 'A' Noxious Weed Control" to provide noxious weed control services in Electoral Area 'A'.

Requisition Limit:

As outlined in Bylaw No. 1466 the maximum amount to be requisitioned annually shall be \$0.3167/\$1000 of net taxable value of land and improvements or \$30,000 (thirty thousand dollars) whichever is greater. The costs of the service shall be apportioned amongst the participants based on the participant's relative share of net taxable value of land and improvements. Maximum tax requisition is \$30,000.

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

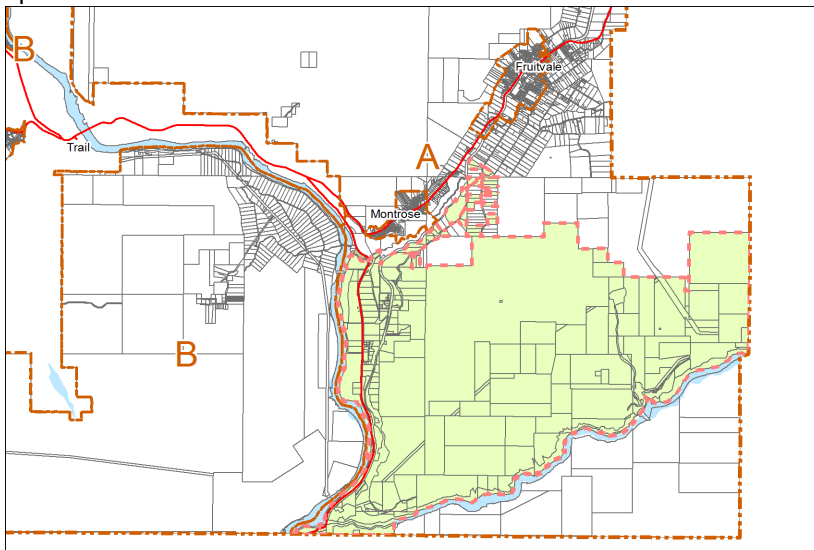
Requisition - \$24,437 / Budgeted Expenditures - \$27,670 / Estimated Actual Expenditures - \$27,670

Regulatory or Administrative Bylaws:

Not Applicable

Service Area / Participants:

Specified Area within Electoral Area 'A'

**Service Levels:**

Weed control as needed within resource and time limitations.

Human Resources:

GM of Environmental Services (0.7% FTE), contracted coordination and control services to Central Kootenay Invasive Species Society (CKISS).

2020 Accomplishments:

In 2020, CKISS coordinated the RDKB Area 'A' Noxious Weed Control program. The program commenced later than in previous years, due in part to the COVID-19 pandemic. The overall objective of the Noxious Weed Control program is to provide support for invasive plant management on private land.

In 2020, the program's delivery model was modified slightly from previous years due to increasing demand. The following changes were implemented to more equitably distribute services to as many landowners as possible within the program budget.

1. Each eligible property owner will now receive a maximum of half a day of services per year.
2. Services are booked on a "first come-first serve" basis, in order of requests received.
3. Any landowners who did not receive services due to over-subscription in the year of requested services will be prioritized for the following year, providing they are still eligible for the service.
4. Where the amount of invasive plants present on a property could not be treated within the half day of service allocation, treatment of high priority invasive plants, as listed on the Central Kootenay Invasive Plant Priority List, were prioritized with available funds.

5. In the event that the program was under-subscribed, remaining funds were to be allocated to additional treatments on properties that had submitted requests.

A total of 98 landowners received notification of the available program as well as information on invasive plants and alternative garden plants. A total of 36 property owners expressed interest in receiving invasive plant treatment, however there was only sufficient funding for 29 properties. The additional 7 property owners will be placed at the top of the list for treatment in 2021. A total of sixteen different species of invasive plants were surveyed with all of these receiving treatment in 2020. Of the sixteen species surveyed, eight are considered noxious under the BC Weed Control Act (landowners/managers are legally required to control), five are provincially noxious and three are regionally noxious. Treatment monitoring of selected sites showed good efficacy and no compliance issues.

Significant Issues and Trends:

Enforcement

The Province of BC *Weed Control Act* is enabling legislation that provides Regional Districts with an option to assume legal powers to compel property owners to remove noxious weeds and allows the imposition of financial penalties for non-compliance. Enforcement has been discussed for many years and to date, no significant work has been carried out in this area, with the preference on voluntary control and education. There will be continued calls from some for the RDKB to begin enforcement, however to accomplish this will require new bylaw development as well as the hiring of additional resources including bylaw enforcement capabilities.

Program Funding Limits

The maximum tax requisition for the service is currently \$30,000. Some landowners expressed concerns about not being able to receive treatment under the program, due to oversubscription. In 2020, the program was modified to allow those landowners requesting but not receiving treatment to be moved to the list of properties to be treated in 2021. Landowners were happy to hear about this change to the program.

Out of Service Area Requests

CKISS received several calls from landowners who were located in Area A regarding their eligibility for the program. These landowners had learned about the program from their friends and were interested in enrolling to use the invasive plant management services. These landowners however were not located within the specified service area and therefore were not eligible for invasive plant control services.

2021 Proposed Program

The proposed budgets for the years 2021-2025 will see an increase in tax requisition to provide additional funding to allow more properties to be treated in a given year. In future, investigations will occur regarding the ability to increase tax requisition limits and the potential for expansion of the service area.



House Numbering – Electoral Area B/Lower Columbia-Old Glory

2021 Work Plan – Draft #2 to East End Services January 2021



122

Prepared by: Donna Dean, Manager of Planning and Development



House Numbering – Electoral Area B/Lower Columbia-Old Glory

2021 Work Plan – Draft #2 to East End Services January 2021

Service Name: House Numbering – Electoral Area B/Lower Columbia-Old Glory

Service Number: 122

Committee Having Jurisdiction: East End Services Committee

General Manager/Manager Responsible:

James Chandler, General Manager of Operations

Donna Dean, Manager of Planning and Development

Description of Service:

Planning and Development Department staff are responsible for assigning and maintaining street addresses for all five electoral areas. While the member municipalities are responsible for assigning and maintaining house numbers within their boundaries, collaboration is required between the Regional District and member municipalities for addresses along roads that straddle municipal boundaries. The same applies for roads between the RDKB and adjacent regional districts.

Consistency in delivery of electoral area and municipal street addresses is important for emergency management.

Establishing Authority:

RDKB Bylaw No. 816 adopted in 1994

Requisition Limit:

\$10,000 per year

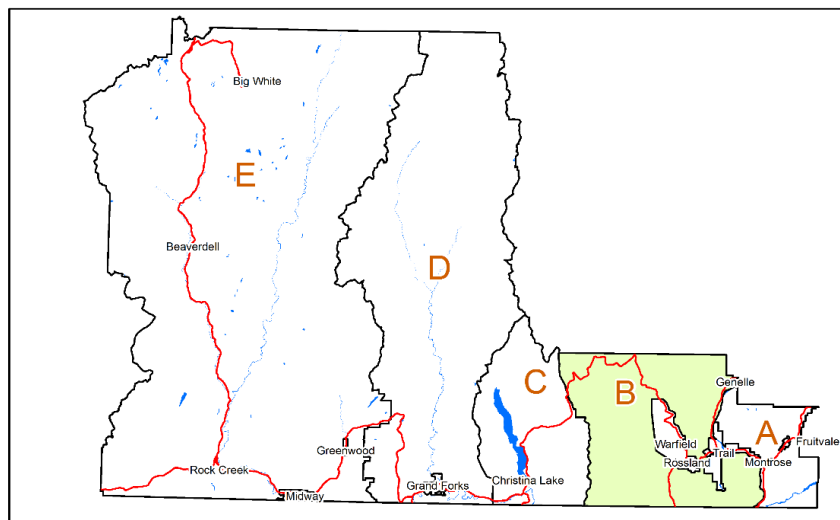
2020 Requisition / Budgeted Expenditures / Actual Expenditures:

\$3000/ \$3000 / \$3000

Regulatory or Administrative Bylaws:

Not applicable

Service Area / Participants: Electoral Area B/Lower Columbia-Old Glory

**Service Levels**

House numbers are assigned as required, which is usually following the creation of new parcels and when new homes are built. Other triggers include: identification of previously unknown construction, and corrections to addresses that were not issued by the RDKB. The service involves communications with land owners and other agencies such as BC Assessment, various utilities, 911 service, RCMP, Elections BC, Canada Post and BC Ambulance to ensure accurate and consistent addresses are used. Address points are also forwarded to the Integrated Cadastral Information Society (ICIS) to include in the Provincial database.

Street addressing requires diligence to ensure accuracy since emergency services are dependent on it for locating individuals and properties, and for evacuation alerts and orders. Some house numbering is simple and straight forward; however, they sometimes require additional research to investigate numbering that is being used incorrectly and to make the necessary corrections. Staff are often required to work with Ministry of Transportation and Infrastructure as well to ensure street names are consistently used across organizations and that streets are correctly signed.

Human Resources:

Current staffing levels: two GIS/Mapping staff with support from Planning Department administrative staff to issue letters.

2020 Accomplishments:

Ongoing issuance of house numbers and research and corrections where necessary.

The labeling of address points on mapped rooftops was completed. This project improved the accuracy of the number and location of homes that had to be placed on evacuation order and alert during the 2020 spring freshet and summer wildfires.

Staff has created an addressing application for our new website that will allow members of the public and staff to request a new address through our website. The application is now in the testing phase.

Staff initiated conversations with member municipalities to determine the best method by which we can ensure the address layer maintained in our GIS software incorporates the most up to date and accurate information from the member municipalities.

Significant Issues and Trends:

Depending on development activity, approximately 15 to 20 street address letters per Electoral Area are issued each year. Activation of the Emergency Operations Centre often reveals previously unknown construction in remote areas and the use of incorrect street addresses. During the 2020 spring freshet improvements were made for numbering of individual manufactured homes in mobile home parks.

Due to the migration from land-lines to cell phones, next generation 911 will switch from analogue to digital technology, thereby improving the communication of exact location of a caller to emergency services. This will elevate the importance of maintaining our street address layer and migration to matching address points to rooftops. The switchover is anticipated to take place by March 30, 2021.



**Regional District of
Kootenay Boundary**

East End Transit Service

2021 Work Plan – Final

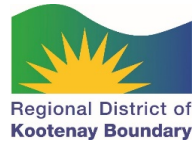


EAST END TRANSIT SERVICE

2021

James Chandler, General Manager Operations / Deputy CAO

Nov 2020- draft (1)



East End Transit Service

2021 Work Plan – Final

Service Name: East End Transit Service

Service Number: 900

Committee Having Jurisdiction: East End Services Committee

General Manager/Manager Responsible: James Chandler, GM Operations/Deputy CAO

Description of Service:

The service provides scheduled and demand custom (Handi-Dart) transit services to Lower Columbia communities in partnership with BC Transit.

Establishing Authority:

Requisition Limit:

N/A

2020 Requisition / Budgeted Expenditures / Actual Expenditures:

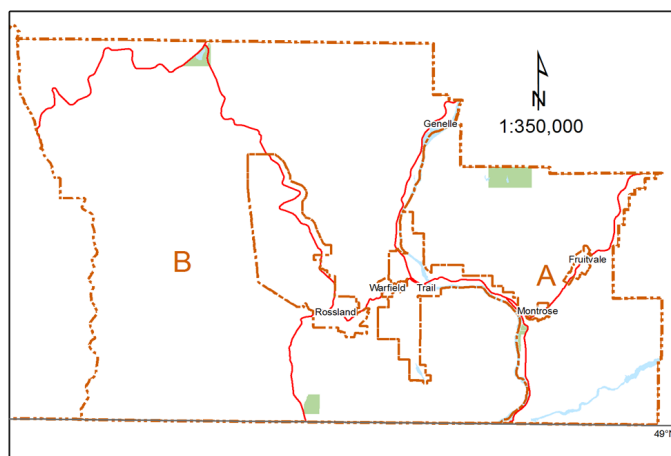
\$1,139,644 / \$1,777,563 / \$1,653,982 (as of Dec 2020)

Regulatory or Administrative Bylaws:

Not applicable.

Service Area / Participants:

Electoral Area A, Electoral Area 'B'/Lower Columbia-Old Glory, City of Roseland, Village of Warfield, City of Trail, Village of Montrose and Village of Fruitvale

**Service Levels**

In 2020 the East End Transit Service operated at the following levels:

- 20,000 service hours;
- Fleet size - 13

Human Resources:

- General Manager Operations
- BC Transit & operating contractor

2020 Accomplishments:

Projects

Trail Exchanging – Awning renewal project

With approval from the EES committee funding was provided to complete the installation and renewal of the existing Trail exchange canopy.

RDKB staff coordinated and contracted with Trail Transit operations to undertake the work. Trail Transit coordinated procurement and agreement with the building owner to refurbish the canopy and sub-contracted the supply and installation of new canvas.

The new material was delivered in early November and the installation completed by the end of November 2020.

This project provides a complete refresh to the canopy and guarantees the future weather protection for all transit users for the future, until such time the new downtown exchange is completed.

Lighting improvements have been completed with coordination by Trail Transit and support directly from the owner of the building.

The project was completed in at the end of November 2020.

Rivervale Bus Stop improvements

A second phase completed this summer was the paving the area and the addition of the concrete pad for the bus stop. Final layout of the barriers and signage was completed with coordination between Trail Transit and MOTI.

East End Service committee also supported the project funds to include the relocation of an existing shelter from Rivervale (no longer in service use) and the procurement and installation of a solar powered pedestrian activated signal light.

The shelter was installed in October 2020, the light signal system was installed, signage changed and completed by the end of November 2020.

This project supports the following pillars of our strategic plans:



Environmental Stewardship/Climate Preparedness:

Improving the quality of the rider experience and standard to help promote the use of transit, getting people out of their cars and leading to helping reduce GHG emissions.



Exceptional Cost Effectiveness and Efficient Services

Partnering with MOTI and using grant funding through the minor betterments program reduces impacts to our budget and supports a cost effective model to taxpayers.



Responding to Demographic/Economic/Social Change

Changing social, cultural and demographics trends will continue to increase reliance on improved transit systems in our Region.

Trail Transit Exchange

The RDKB, City of Nelson and BC Transit have entered into an agreement and three way project partnership led by BC Transit. The RDKB have provided \$20,000 in funding to support the planning, design and development of the new Trail transit exchange. The contract has now been awarded through BC Transit for engineering consultant services to lead the project and design work will continue in full in 2020. The schedule of work is targeting completion of design and approval of a construction budget for completion of the project in 2021.

Design meetings were delayed due to COVID-19 and BC Transit travel restrictions in 2020.

BC Transit present to the City of Trail in December 2020 via an online meeting, describing the priorities and timelines targeted to move the project forward through 2021.

A project design and 'kick-off' meeting is planned for January 2021 with the project steering committee.

This project supports the following pillars of our strategic plans:



Environmental Stewardship/Climate Preparedness:

Improving the quality of the rider experience and standard to help promote the use of transit, getting people out of their cars and leading to helping reduce GHG emissions.



Exceptional Cost Effectiveness and Efficient Services

Partnering with BC Transit reduces impacts to our budget and supports a cost effective model to taxpayers.



Responding to Demographic/Economic/Social Change

Changing social, cultural and demographics trends will continue to increase reliance on improved transit systems in our Region.

BC Transit**2019/2020 Annual Performance Summary****West Kootenay Transit System – Kootenay Boundary**

The Annual Performance Summary (APS) is a key component of the Annual Partnership Communications Calendar. It provides a snapshot of transit investment and performance within your community compared to previous years, to budget and to peer communities. This information supports local decisions on service priorities and potential investments into service and capital initiatives. Upon alignment of future initiatives through the Transit Improvement Program (TIP)/three-year Expansion MOU process, this information will support your three-year budget forecasts and inform BC Transit's Service and Capital Plan.

2019/20 Provincial BC Transit Initiatives

Update and summary information will be included following year end completion from BC Transit.
(Anticipated Jan 2021)

System Performance

Tables and data will be included in the 'final' 2021 work plan when received at year end from BC Transit.

Significant Issues and Trends:

COVID-19 pandemic has had significant effect on the progression of transit projects, programs and future expansion. At a high level, previous plans identified for 2021-2022 expansion have been put on hold one year and the annual Transit Investment Program (TIPS) is delayed and not yet issued in 2020. Further, the annual operating agreements (AOA) are also normally agreed and completed, however these are not yet completed as there are potential amendments currently under review. Recovery opportunities are supported through Provincial economic funding, assisting local government's recovery from financial impacts of the pandemic and transit operational costs. The outcome and financial impacts from 2020 to 2021 operating expenses are not yet know. (Nov 2020)

BC Transit will be continuing with the Future Transit service reviews for Nelson/Slocan/Castlegar and surrounding travel areas in the RDCK, similar to the service review undertaken recently within our Region. As part of the Regional Transit Committee staff and Directors will have the opportunity to be part of the reviews and understand how, if any, impacts may connect to services within our transit corridors. The current recommendations have highlighted potential changes and expansions that

may link to the Trail systems, connecting Salmo to Trail and also considering a new model for the 98/99 line services from Nelson to Trail.

Ridership capacity on buses and protocols remain restricted with ridership numbers still limited. Selkirk college student ridership is also down this year compared to 2019, previously causing over capacity issues. With Selkirk offering different learning models for students and the impacts of the pandemic still very much in effect, recovery to pre-pandemic levels for ridership and service demand may continue throughout 2021 and planning future service needs may not be fully understood until 2022.

BC Transit has continued developing a partnership contract with the East End Transit Service and the RDKB to design and plan the new downtown Trail transit exchange. Due to the pandemic the BC Transit design team have not be able to travel and advance the project in 2020 as anticipated in 2020. However, design work has now started for this project following the meeting with Trail City Council in December 2020.

Resources

With continued development of transit projects and possible grant investment in the transit system, further funding may be required to maintain capacity to deliver the projects and programs. Currently the transit operator, Trail Transit have been able to provide additional resource in support of the project. It is anticipated that this will continue in 2021 and will be included in the 2021 budget.

2021 Projects:

Project: Trail Transit Exchange – continuation from 2020

Project Description:

Planning, design for a new bus stop exchange in downtown Trail. With joint collaboration from BC Transit, RDKB, City of Trail, Trail Transit and selected consultants the design and budget is target for approval in 2021 to targeting construction in 2022.

The new exchange will be designed to better facilitate the user and transit / bus efficiency in and out of the downtown Trail centre. The exchange should be designed to provide shelter(s) lighting and ease of access for all users while accommodating traffic movements and access to all businesses.

Project Schedule (Draft)

Project Timelines and Milestones:	2021	2021	2021/2022	2022
Year				
Month	Jan – June	July – October	Nov - March	Summer
Planning and design				
Budget review				
Preplan and approval for construction				
Construction (based on budget approval BC Transit and RDKB)				

Project Risk Factors:

At this time risks for the planning and design is limited as contracts are in place along with RDKB/BC Transit funding agreements.

Future risks will be approval of budgets and funding to construction the project in 2022. Some risks do exist in the timely approval of the design with the City of Trail, however this is deemed to be more of a scheduling risk and assessed to be a low risk/impact.

Internal Resource Requirements:

The GM of Operations will remain connected to the project with BC Transit staff. As the project location is not within the jurisdiction of the RDKB there will be limited direct input required from RDKB staff.

City of Trail – Technical Liaison staff appointed to project team.

Estimated Cost and Identified Financial Sources:

The RDKB have currently committed \$20,000 from the transit service reserves. Future construction costs are not yet know. The project may be eligible for grant funding to help support the future capital costs.

Relationship to Board Priorities:

This project supports the following pillars of our strategic plans:



Environmental Stewardship/Climate Preparedness:

Improving the quality of the rider experience and standard to help promote the use of transit, getting people out of their cars and leading to helping reduce GHG emissions.



Exceptional Cost Effectiveness and Efficient Services

Partnering with BC Transit reduces impacts to our budget and supports a cost effective model to taxpayers.



Responding to Demographic/Economic/Social Change

Changing social, cultural and demographics trends will continue to increase reliance on improved transit systems in our Region.

Project: **Bus Stop shelter replacement and renewal program – Ongoing project multi-year**

Project Description:

The goal will be to develop a plan for the replacement and renewal of old and damaged shelters and to identify locations where new shelters may be required.

The project will cover long-term needs for shelters and annual budgeting required to maintain the assets throughout the service area. The work will include but not limited to:

- Inventory and condition assessment of all shelters throughout the service area
- Identify priorities for replacement
- Assess standard and options available
- Define a standard type for replacement for consistency and service – presenting options for approval by EES
- Define a budget for ongoing maintenance and renewals
- Align funding approvals and grant application with implementation schedule.

Project Schedule (Draft)

- Final report and recommendations (yr 1 implementation) Feb 2021
- Procurement for design services as applicable March 2021
- Design, procurement and installation (**Grant dependant**) Summer 2020
- Apply for funding where applicable through the Bus Stop shelter program with BC Transit in 2021 for 2022 matching budget.

Project Risk Factors:

Costs of replacements, standards of shelter available meet our needs
Resource limitations with internal and external resource

Internal Resource Requirements:

The GM of Operations.

Overall time impacts and staffing requirements are not yet known with the scope of work in progress. It is anticipated additional internal staff resource may be required or that work is contracted out to assist in the development of the plan and inventory/assessments of our existing shelters.

Estimated Cost and Identified Financial Sources:

Estimated at up to \$150,000 for procurement and construction.

Application to the ICIP program (Investing in Canada Infrastructure Program) has been applied to the 2021 draft budget at a 80/20 split. \$30,000 is included for the RDKB share

Design and engineering costs – up to \$20,000

An additional \$18,000 has been allocated for direct application to the BC Transit shelter program.

Total investment value for shelter improvement \$188,000, with **\$68,000**, budgeted as the RDKB contribution.

Relationship to Board Priorities:

This project supports the following pillars of our strategic plans:



Environmental Stewardship/Climate Preparedness:

Improving the quality of the rider experience and standard to help promote the use of transit, getting people out of their cars and leading to helping reduce GHG emissions.



Exceptional Cost Effectiveness and Efficient Services

Partnering with BC Transit reduces impacts to our budget and supports a cost effective model to taxpayers.



Responding to Demographic/Economic/Social Change

Changing social, cultural and demographics trends will continue to increase reliance on improved transit systems in our Region.



Staff Report

RE:	Agricultural Land Commission Referral (Non-Farm Use Application #61321) – Leyland-Price		
Date:	January 28, 2021	File #:	A-7A-TWP-10522.002
To:	Chair Langman and members of the Board of Directors		
From:	Danielle Patterson, Planner		

Issue Introduction

The Regional District of Kootenay Boundary (RDKB) has received a referral from the Agricultural Land Commission (ALC) regarding a Non-Farm Use application for land within the Agricultural Land Reserve (ALR) in Electoral Area A. (see Attachment 1 – Site Location Map).

Property Information	
Owner(s):	Orest Leyland and Heather Price
Applicant:	Brandon van Dyk
Location:	9128 Station Road
Electoral Area:	Electoral Area A
Legal Description:	Lot 2, Plan NEP2675, Township 7A, Kootenay District
Area:	4.15 ha (10.28 ac)
Current Use(s):	Single Family Residential; Hobby Farm
Land Use Bylaws	
OCP Bylaw 1410:	Agricultural Resource 1
DP Area:	NA
Zoning Bylaw 1460:	Agricultural Resource 1
Other	
ALR:	Yes
Natural Hazards:	High Interface Fire Hazard
Terrestrial Resources:	Deer Range
Area of Significant Archeological Potential:	Yes

History / Background Information

The subject property is located along Station Road, in the Columbia Gardens area (see Attachment 2 – Subject Property Map). To the east of the subject property is a vineyard; to the west, on the opposite side of the road, is a reload facility. North and south of the subject property are residential use properties.

Page 1 of 5

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The subject property is principally used as a residence. The property contains a single detached dwelling; a barn; a small garden for personal use; an animal pasture for two goats, two sheep, and some chickens; a large area of unfarmed land; and a garage.

Proposal

The applicant's Non-Farm Use proposal is for the creation of a vodka distillery on the subject property – a joint venture between Orest Leyland and Brandon van Dyk. The applicant proposes locating the distillery in an existing 9.3 m² (100 ft²) steel garage. The proposal states that all machinery, inventory, and product would be stored within the converted building. Waste disposal plans have not been established.

The applicant states that they intend to use locally farmed produce for the distillery but do not have any immediate plans of farming the property. The available land on the subject property would leave that option available for the future.

While the applicant acknowledges that their proposal could take place on lands outside of the Agricultural Land Reserve (ALR), they state that reducing start-up costs and the proximity to a winery have added business benefits at the current location.

Other than the existing garage, the operations shall require a still, a bottling machine, a mash turn, and storage containers for ingredients.

Advisory Planning Commission (APC)

The Electoral Area A APC reviewed the referral at their January 5, 2021 meeting and recommended that the application be "[...] postponed and be resubmitted when the applicants have details as to the source of produce and waste disposal plans."

Implications

If the applicant's Non-Farm Use application is successful, the applicant would require approval from two separate regulatory bodies prior to operating – the Liquor and Cannabis Regulation Branch (LCRB) and the Liquor and Cannabis Distribution Branch (LCDB). Staff have focused on craft distilleries in this report, as that use best aligns with the proposal described by the applicant. Implications to the zoning bylaw are also described below.

Provincial Approval Process for Craft Distilleries: Craft distilleries are subject to a variety of provincial regulations and must obtain approval from two separate regulatory bodies prior to operating in any local government in British Columbia (BC). The LCRB provides BC liquor manufacturers with a license to produce liquor products and can allow on-site sales of these products at the manufacturing facility through endorsements to the manufacturers' license. Under the *Liquor Distribution Act*, the LCDB authorizes sales of liquor by manufacturers within the province of BC through a sales agreement.

Classification: The LCDB classifies distilleries as "craft" based on the volume of alcohol being manufactured and the source of the products being distilled. A craft distillery produces less than 50,000 litres of packaged product annually and must source its materials from BC. Any facility producing beyond that limit, or unable to meet the sourcing requirements, is considered a commercial distillery.

Permitted Uses in Electoral Area A and Distilleries:

A distillery is not a permitted use in the Agricultural Resource 1 Zone unless it meets the definition of "Agriculture". To meet the definition of "Agriculture" used in the Zoning Bylaw, the distillery must be considered a farm use under Section 13 of the *Agricultural Land Reserve Use Regulation* of the *ALC Act*, which requires the following:

1. At least 50% of the farm product used to produce the spirits to be harvested onsite, or
2. If the property is larger than 2 ha, at least 50% of the farm product used to produce the spirits to be harvested onsite or a combination of on-site harvest of primary farm product and supplies obtained through an extended contract with a farm operation.

The proponent's proposal, submitted under a Non-Farm Use application, as presented, does not meet the ALC definition of farm use; therefore, the proposal does not comply with the Zoning Bylaw. If the applicant had details on the sourcing of the farm product and could confirm it met requirement 1 or 2 as noted above, the use would be a permitted use under the Agricultural Resource 1 Zone. The size and siting of the existing buildings conform to zoning regulations.

Any use not expressly listed in the permitted principal uses are only permitted if they meet one of two requirements 1) the definition of a home-based business, or 2) are approved as part of a Temporary Use Permit.

The Zoning Bylaw defines a home-based business to mean, "*an occupation carried on for gain by the **residents of the parcel**, where the occupation is an extension of a trade, profession, service, hobby, or similar undertaking which is an accessory use of the parcel for residential purposes, established and operated in accordance with Section 305 of this Bylaw.*"

Not all parties taking part in the proposed distillery operation live on the subject property. This is contrary to the regulations for home-based businesses.

Section 305 of the Zoning Bylaw lists all of the requirements of a home-based business, with the applicant's proposal contrary to sections D and E:

"d) The home-based business must not produce any odorous, toxic or noxious matter, noise, vibration, smoke, heat, dust, litter, glare or radiation other than that normally associated with a dwelling unit nor will it create or cause any fire hazard, electrical interference or traffic congestion on the highway;

e) The home-based business must not involve the use of mechanical equipment save as is ordinarily employed in purely private domestic and household use or for recreational hobbies, except for such equipment as may be used for a resident office, physician or dentist."

The use of a still, a bottling machine, and a mash turn are not forms of equipment "ordinarily employed for private domestic and house use or recreational hobbies," as distilleries are a regulated industry. Further, WorkSafeBC states that "[t]wo major hazards

of craft distilling [...] are fire and explosion," from the alcohol vapours and the risk of static electricity¹.

Staff Comments:

The hybrid nature of the craft distillery business model, which includes manufacturing and in some instances retail and patron consumption activities, results in a variety of potentially suitable zoning classifications for Craft distilleries throughout BC. BC local governments that permit craft distilleries, typically permit them in a range of commercial and light industrial zones.

A craft distillery in the Regional District of East Kootenay (RDEK) is permitted as it meets the RDEK's definition of a Farm Operation, including the requirement of the distilled spirits to be made from grain or fruit grown on the same property as the craft distillery. A craft distillery located in the Regional District of Okanagan Similkameen (RDOS) is zoned General Commercial, which permits breweries, cideries, distilleries, meaderies or wineries in Naramata.

The absence of "distillery" or any similar use in the Zoning Bylaw and the inability of distilleries to conform to home-based business regulations means that at this time, a distillery is not permitted anywhere in the Zoning Bylaw, unless it meets the definition of Agriculture. Staff have not been able to find any other local governments that permit commercial (Craft) distilleries as a home-based business.

If the applicant's Non-Farm Use application is approved, in addition to LCRB and LCDB requirements, the applicant will require an approved Temporary Use Permit or an approved zoning amendment, prior to operating. Without certainty of the source of product, waste management plans, the appropriate zoning or an approved Temporary Use Permit in place, the application the application appears to have been submitted prematurely.

Section 25 of the *Agricultural Land Commission Act* states that when a Non-Farm Use application is for lands zoned for agriculture or farm use, or if the proposal requires a bylaw amendment – as is the case with the proponent's application – the Board decides whether to authorize the application to proceed to the ALC.

If authorization is not granted, the application process ends and the local government returns a portion of the application fee to the applicant.

¹ WorkSafeBC and BC Craft Breweries Guild. *Health and Safety for Craft Breweries and Distilleries*. Available from <https://www.worksafebc.com/en/resources/health-safety/books-guides/health-safety-craft-breweries-distilleries-bk164?lang=en>. Last updated April 2020.

Recommendation

That Regional District of Kootenay Boundary Board of Directors defer the Agricultural Land Commission Non-Farm Use Application 61321, submitted by Brandon van Dyk on behalf of property owners Orest Leyland and Heather Price, for the property legally described as Lot 2, Plan NEP2675, Township 7A, Kootenay District, at 9128 Station Road in Electoral Area A, to allow the applicant an opportunity to submit a separate application to the Regional District of Kootenay Boundary to allow a distillery as a permitted use on the subject property.

Attachments

1. Site Location Map
2. Subject Property Map
3. Applicant Submission

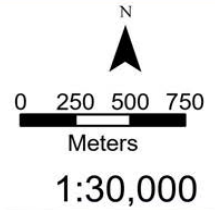


Regional District of
Kootenay Boundary

Date: 2020-12-16

Site Location Map

Lot 2, Plan NEP2675,
Township 7A,
Kootenay Land District



202-843 Rossland Ave, Trail BC V1R 4S8 | T: 250.368.9148 | T/F: 1.800.355.7352 | rdkb.com

Document Path: PD\EA 'A'\A-7A-Twp-10522.002_PricelMaps

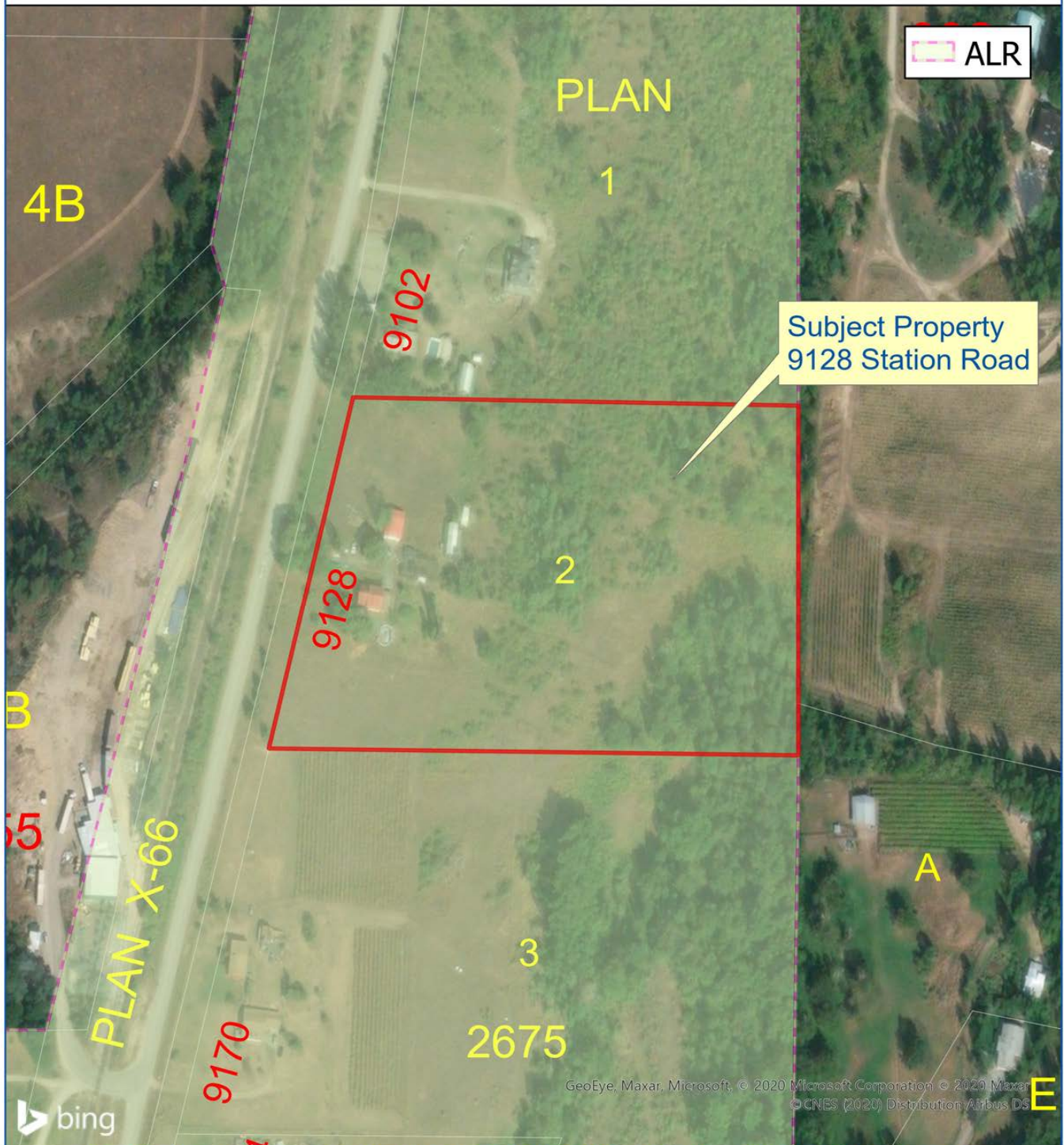
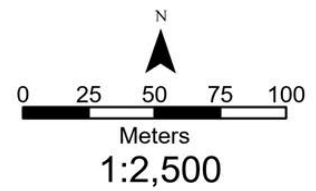


Regional District of
Kootenay Boundary

Date: 2020-12-16

Subject Property Map

Lot 2, Plan NEP2675,
Township 7A,
Kootenay Land District



202-843 Rossland Ave, Trail BC V1R 4S8 | T: 250.368.9148 | T/F: 1.800.355.7352 | rdkb.com

Document Path: PD\EA 'A'A-7A-Twp-10522.002_Price\Maps

Provincial Agricultural Land Commission - Applicant Submission

Application ID: 61321

Application Status: Under LG Review

Applicant: Orest Leyland , Heather Price

Agent: Brandon van Dyk

Local Government: Kootenay Boundary Regional District

Local Government Date of Receipt: 11/11/2020

ALC Date of Receipt: This application has not been submitted to ALC yet.

Proposal Type: Non-Farm Use

Proposal: The proposal for non-farm use is to utilize an existing structure (steel, 25 feet by 40 feet) on the property to create a distillery. There would be no effect to the land as it currently is, other than a need to find a way to recycle the distilleries waste product. All machinery, inventory and product would remain within the building. We would be using locally farmed produce for our product, but we don't desire to farm and maintain the Leyland property at this time. The property does give us flexibility should we desire to grow our own products at some point.

Agent Information

Agent: Brandon van Dyk

Mailing Address:

[REDACTED]

Primary Phone:

Email:

[REDACTED]

Parcel Information

Parcel(s) Under Application

1. **Ownership Type:** Fee Simple

Parcel Identifier: 015-157-571

Legal Description: L 2 TP 7A KOOTENAY DISTRICT PL 2675

Parcel Area: 4.1 ha

Civic Address: 9128 Station Road, Trail BC,

Date of Purchase: 05/14/2018

Farm Classification: No

Owners

1. **Name:** Orest Leyland

Address:

[REDACTED]

Applicant: Orest Leyland , Heather Price

Phone: [REDACTED]
[REDACTED]

2. **Name:** Heather Price

Address:
[REDACTED]
[REDACTED]
[REDACTED]

Phone: [REDACTED]

Email: [REDACTED]

Current Use of Parcels Under Application

1. Quantify and describe in detail all agriculture that currently takes place on the parcel(s).

Use of land is mainly for family dwelling. Livestock ownership includes 2 goats, 2 sheep, and chickens. Used as pets and for pasturizing surrounding fields. A small area is used for a personal garden consisting of vegetables and berries.

2. Quantify and describe in detail all agricultural improvements made to the parcel(s).

Work to property includes fencing lower half of the property; the construction and improvements of out buildings, including the chicken coop and barn; and expanding the personal garden.

3. Quantify and describe all non-agricultural uses that currently take place on the parcel(s).

Family dwelling only.

Adjacent Land Uses

North

Land Use Type: Residential

Specify Activity: family dwelling

East

Land Use Type: Agricultural/Farm

Specify Activity: Vineyard

South

Land Use Type: Residential

Specify Activity: family dwelling

West

Land Use Type: Industrial

Specify Activity: a road directly west. Across is a Light Industrial Business called Columbia Gardens ReLoad

Proposal

Applicant: Orest Leyland , Heather Price

1. How many hectares are proposed for non-farm use?

0.1 ha

2. What is the purpose of the proposal?

The proposal for non-farm use is to utilize an existing structure (steel, 25 feet by 40 feet) on the property to create a distillery. There would be no effect to the land as it currently is, other than a need to find a way to recycle the distilleries waste product. All machinery, inventory and product would remain within the building. We would be using locally farmed produce for our product, but we don't desire to farm and maintain the Leyland property at this time. The property does give us flexibility should we desire to grow our own products at some point.

3. Could this proposal be accommodated on lands outside of the ALR? Please justify why the proposal cannot be carried out on lands outside the ALR.

Indeed a distillery can operate on land outside the ALR. However, the spur for the business idea was heightened by the fact the building in question is relatively unused. This is an enormous benefit as it drastically reduces the startup cost for a distillery, which makes the business incredibly viable. The need to purchase of both land and/or a building would be inhibitive to the success of the business. We are also in proximity to the Columbia Gardens Winery, which we believe is an added business benefit.

4. Does the proposal support agriculture in the short or long term? Please explain.

The proposal does not decrease the status of agriculture on the property in the short term or long term. There would be no increase in agriculture behaviour on the land in the short term, but it is possible that as the business grows it becomes viable to increase agricultural products on the property. However, the distillery would increase and support local agriculture in both the short term and long term as the raw materials required for producing alcohol is entirely agriculture based and as a craft distillery we will be required to use 100% BC inputs.

5. Do you need to import any fill to construct or conduct the proposed Non-farm use?

No

Applicant Attachments

- Agent Agreement - Toadkiller Distillery
- Proposal Sketch - 61321
- Certificate of Title - 015-157-571

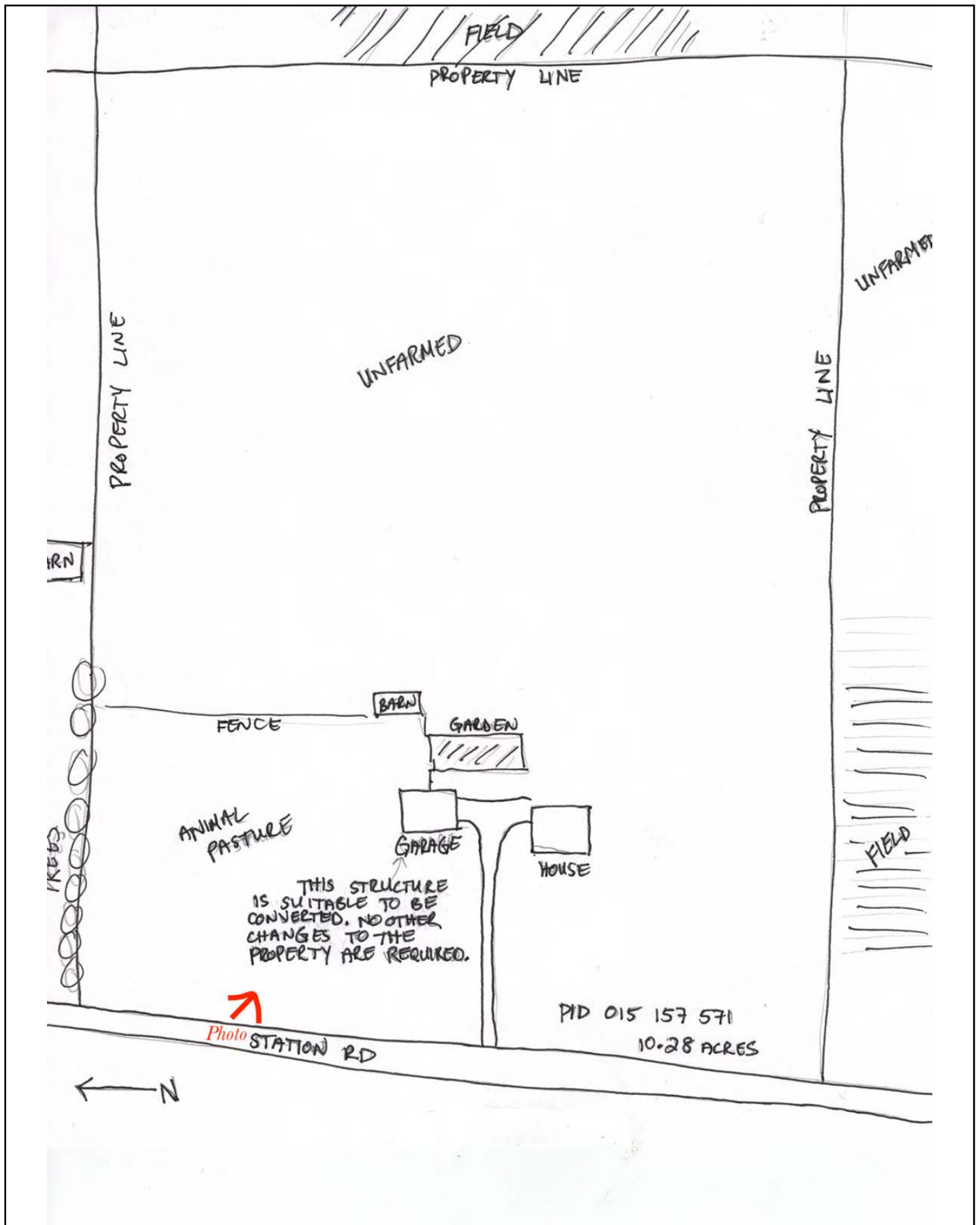
ALC Attachments

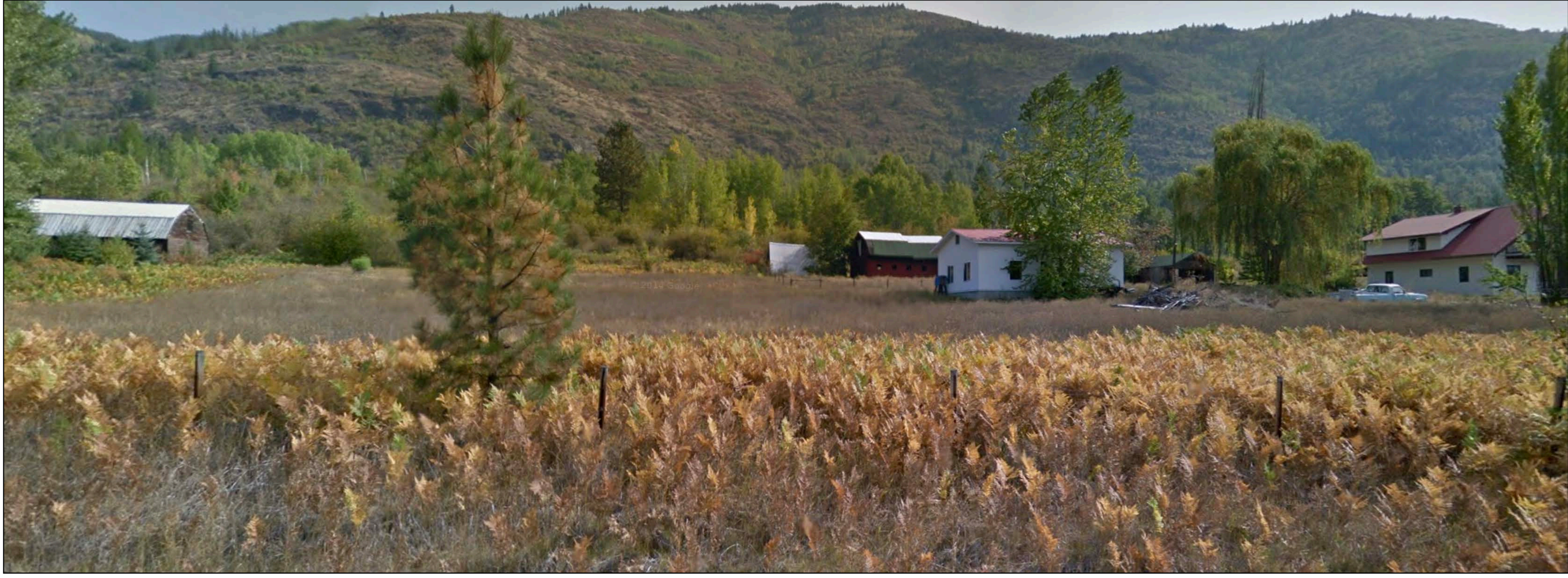
None.

Decisions

None.

Applicant: Orest Leyland , Heather Price





**PLAN OF SUBDIVISION OF PART OF
SUB LOT 19, 1/4 X 66, SECTION 20
TOWNSHIP 7A KOOTENAY DISTRICT
Scale 1 inch = 200 feet**

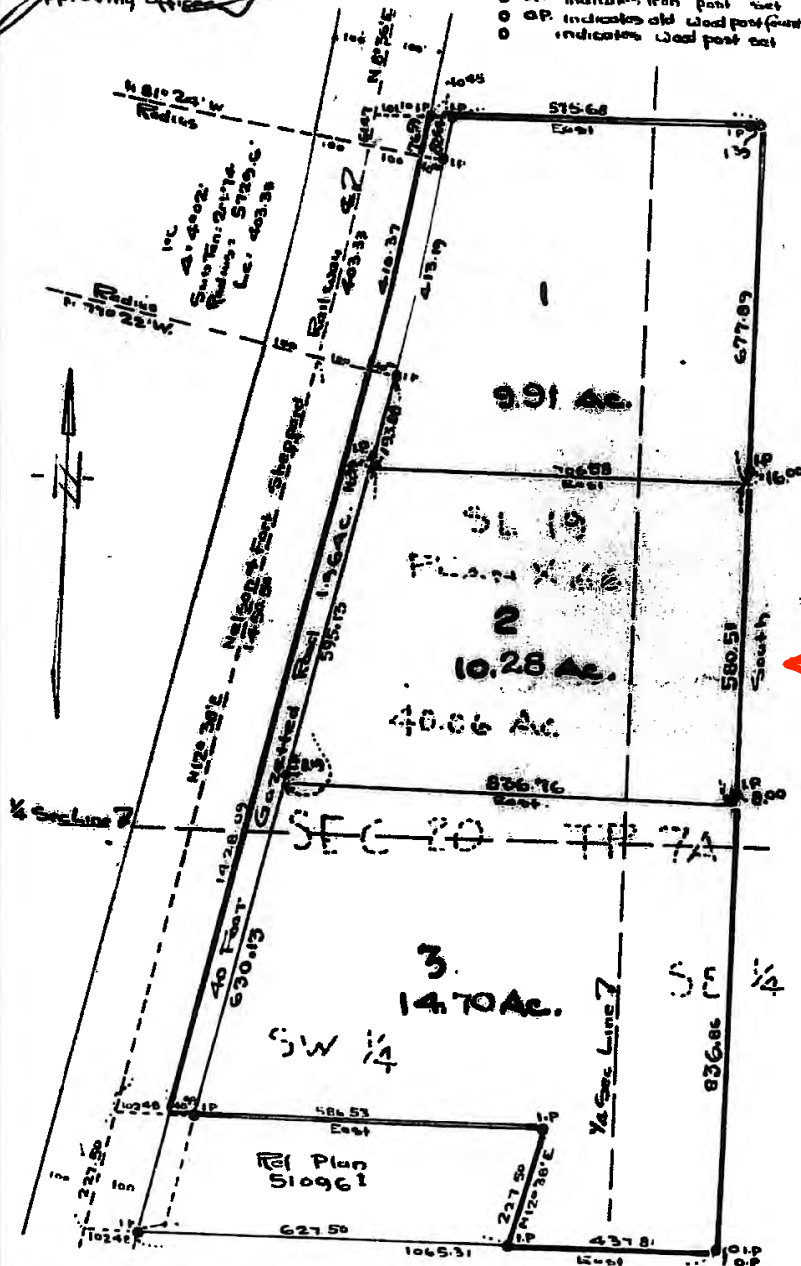
Approved under the Land Registry Act
dated this 28th day of NOVEMBER 1953.

A.J. Bowering
Approving Officer

Plan No. 2675.
Deposited in the Land Registry Office at
Nelson, B.C. this 21st day of April, 1954.

LEGEND
Bearings based on East Edm.
S.L. 19 Assumed due North
O.I.P. indicates old iron post found
I.P. indicates iron post set
O.P. indicates old wood post found
O indicates wood post set

L.A. McPhail
Deputy Registrar.



I, J.M. Campbell of Castlegar, B.C. British Columbia Land Surveyor, make oath and say that I was present at and did personally supervise the survey represented by this plan and that the survey and plan are correct, the said survey was completed on the 15th day of October 1953.

Sworn before this 18th day of October, 1953.

J.M. Campbell
Surveyor Public in and for the Province of British Columbia.

Owner *E. Edmondson*
Witness *Robert*
Owner
Witness

REAPPROVED
A.J. Bowering
CHIEF ENGINEER
MARCH 26th 1954.





Staff Report

RE:	FrontCounter BC Referral – Crown Land Adventure Tourism Temporary Licence Application for TransRockies Inc.		
Date:	January 28, 2021	File #:	B-24 (Electoral Area B General Ministry Referrals)
To:	Chair Langman and members of the Board of Directors		
From:	Danielle, Planner		

Issue Introduction

The Regional District of Kootenay Boundary (RDKB) received a referral from FrontCounter BC regarding an Adventure Tourism Temporary License application for a six-day mountain bike proposed for September 2021. The event includes two days in Electoral Area B/Lower Columbia-Old Glory, near Rossland (see Attachment 1 – Site Locations Maps).

Property Information	
Owner(s):	Crown Provincial; various private owners
Agent:	Transrockies Events Inc. c/o Aaron McConnell
Location:	Various surrounding Rossland
Electoral Area:	Electoral Area B/Lower Columbia-Old Glory
Legal Description(s):	Various
Current Use(s):	Recreation/Trails
Land Use Bylaws	
OCP Bylaw No. 1470	Various: Forest Resource, Rural Resource 1, Rural Resource 3, Agricultural Resource 1, Cluster Rural Residential, and South Belt Rural Residential
DP Area:	NA
Zoning Bylaw No. 1540:	Various: Forest Resource, Rural Resource 1, Rural Resource 3, Comprehensive Development, Agricultural Resource 1, and Rural Residential 3
Other	
ALR:	Partial
Waterfront / Floodplain:	NA
Service Area:	NA
Planning Agreement Area:	Rossland

History / Background Information

TransRockies Events Inc. are applying to the Province for their "Single track 6" six-day mountain bike race event from September 7-12, 2021, which would be the nineteenth year holding the event. Normally the event draws approximately 350 participants from over 15 countries. The event is split into six "stages" over the span of six days.

The applicant's June 2020 event was considered by the Electoral Area B/Lower Columbia-Old Glory APC April 6, 2020 meeting, with a recommendation to support. Due to the COVID-19 pandemic, the June 2020 event was cancelled. The organizer has submitted a new request to FrontCounter BC with the same event plans and site locations as those proposed for 2020.

Proposal

The applicant is requesting an Adventure Tourism Temporary Licence for a six-day mountain bike event. Stages 5 and 6 (September 11-12, 2021) are proposed to take place over the Rossland Southbelt and Red Mountain trail networks.

Races each day will be approximately 25-40 km long, over existing Kootenay Columbia Trail Society (KCTS) managed trails. General trail routes are shown on the attached maps; these routes will be further refined closer to the date of the event. The staging areas for base operations each day will take place at Rossland Centennial Field (Stage 5 – September 11th) and Red Mountain (Stage 6 – September 12th).

Advisory Planning Commission (APC)

The Electoral Area B/Lower Columbia-Old Glory APC recommended support at their January 4, 2021 meeting, with the following comment:

"We feel this is a good event for the area and are hopeful that they contact the environmental and wildlife people in this area to ensure no lasting damage done to wildlife or fauna. When the clean up is done that all flagging and signage is removed. We could see no mention of porta potties being used and hope this is not the case. So long as these items are addressed, we see no issues."

Implications

The applicant plans on managing the events through "staging operations" and "route operations". They have provided a full description in the application package (see Attachment 2). To summarize:

Staging operations addresses the event logistics, including:

- Locations of staging areas, which are to be on already leased, privately owned, or municipal land. The applicant is working with the various parties involved to reach agreements on the use of these lands;
- Access will be provided by bus for participants. Staging areas are accessible via public roadways for bystanders and support staff. In past events the organizers have noted there is typically a good mix of participants riding to the staging area

from their accommodations, using the busses provided, or taking their own vehicles;

- Checkpoints will be set up in 2-3 locations along each trail with a 10 ft² (0.93 m²) tent with drinks, food, and medical staff for the participants. Checkpoints are accessed through forestry service roads by truck or van for support and event staff;
- Forestry service roads will have signage posted to communicate that a race is in progress. There is no known overlap with active logging tenures. The applicant will contact commercial operators in the area to prevent user conflicts and course marshals will be used to control road crossings, where necessary;
- Accommodations for support staff, which includes approximately 25 volunteers, 38 event staff, 6 medical staff, 2 television staff, 8 massage therapists, 8 mechanics as well as for participants; and
- Catering, waste management, entertainment and bike services.

Route operations addresses the race related aspects of the event, including:

- Race format and routes. Each stage includes 1 to 3 checkpoints. Stages 5 and 6 are mass races that begin sometime between 8:00 am and 10:00 am. They begin with a climb to better disperse participants.
- Provincial highways will not be used in any of the courses; however, municipal roadways will be. It is the responsibility of the applicant to obtain permission from the municipalities for road use during each event;
- Each course will be marked with temporary markings up to two days in advance of the race.
- Minor trail maintenance and removal of deadfall is proposed for the event, with no timber removal required;
- Event staff will be present on the courses to ensure participants remain on course, markings remain up and any issues that could arise can be addressed promptly;
- The trails will remain open to the public. Course marshals will be situated along major access points to ensure recreational users are aware a race is in progress and providing alternative trail recommendations;
- There will be a medical crew of six, with access to the trails being available via truck or off-road vehicle;
- A limited number of camera operators may follow the race by bicycle. Other media will be limited to checkpoints; and
- Cleanup of the trails will be undertaken immediately after the last rider passes through.

The applicant will adopt the Ministry of Environment and Climate Change Strategy's "Wildlife Guidelines for Backcountry Tourism/Commercial Recreation, 2006." The race route will be designed consistent with these guidelines. Participants will be briefed on trail etiquette and safe bear practices when travelling through bear habitat areas.

Recommendation

That Regional District of Kootenay Boundary Board of Directors direct staff to forward the FrontCounter BC Referral – Crown Land Adventure Tourism Temporary Licence Application for TransRockies Inc. report, which includes comment from the Advisory Planning Commission, for TransRockies Inc.'s 2021 "Single track 6" event near the City of Rossland in Electoral Area B/Lower Columbia-Old Glory, for consideration by FrontCounter BC.

Attachments

1. Site Location Maps
2. Applicant Submission

REFERRALS COVER SHEET 4406144**Referrals information:**

This application was submitted last year under File 4406065, however the event was cancelled due to COVID and now is being re-applied for to run in 2021 under new File 4406144.

This application spans over multiple municipalities, regional districts, resource districts, and other boundaries. Please refer to your referral description for any specific information we may be looking for. Please state which "stage" or day of the race you are providing specific information on, or state that it is general information for the whole race, so we can clearly organize the information provided from all the agencies. Please only respond based on areas within your jurisdiction.

Proposal:

TransRockies Inc is proposing a 6 day single-track bike race. The race will be from September 7-12, 2021 in and around Fernie, Kimberley and Rossland. The race will draw up to 350 participants. Staging activities will take place on private and municipal land, and therefore are not the subject of this application. There are approximately 160,000 metres X 10 metres of existing trails and roads proposed in this application, with participants traveling between 25 and 40 kms per day. The course will be marked up to 2 days in advance and the markers and cleanup will be done immediately after the last rider passes. There will only be minor trail maintenance, like removing deadfall. No timber removal is required. Temporary improvements will include two 10X10 tents, some tables, possibly temporary fencing, and markers along the trail.



Crown Land Tenure Application

Tracking Number: 100322957

Applicant Information

If approved, will the authorization be issued to
an Individual or Company/Organization? Company/Organization

What is your relationship to the
company/organization? Owner

REFERRAL / PUBLIC COMMENT CONTACT INFORMATION

Company / Organization: TRANSROCKIES INC.
Contact Name: Aaron McConnell McConnell
Contact Address: 10-1435 40 Avenue NE
Calgary AB T2E8N6
Contact Phone: 403-860-9884
Contact Email: aaron@transrockies.com

APPLICANT COMPANY / ORGANIZATION CONTACT INFORMATION

Please enter the contact information of the Individual/Organization who is acting on behalf of the applicant.

Name: TRANSROCKIES INC.
Doing Business As:
Phone: 403-668-7537 ext. 3
Fax:
Email: aaron@transrockies.com
BC Incorporation Number:
Extra Provincial Inc. No: A0068183
Society Number:
GST Registration Number: 867442014RT0001
Contact Name: Aaron McConnell McConnell
Mailing Address: 10-1435 40 Avenue NE
Calgary AB T2E8N6

CORRESPONDENCE E-MAIL ADDRESS

If you would like to receive correspondence at a different email address than shown above, please provide the correspondence email address here. If left blank, all correspondence will be sent to the above given email address.

Email: aaron@transrockies.com
Contact Name: Aaron McConnell

ELIGIBILITY

Question	Answer	Warning
----------	--------	---------

Do all applicants and co-applicants meet the eligibility criteria for the appropriate category as listed below?	Yes	
---	-----	--

Applicants and/or co-applicants who are Individuals must:

1. be 19 years of age or older and
2. must be Canadian citizens or permanent residents of Canada. (Except if you are applying for a Private Moorage)

Applicants and/or co-applicants who are Organizations must either:

1. be incorporated or registered in British Columbia (Corporations also include registered partnerships, cooperatives, and non-profit societies which are formed under the relevant Provincial statutes) or
2. First Nations who can apply through Band corporations or

Indian Band and Tribal Councils (Band or Tribal Councils require a Band Council Resolution).

TECHNICAL INFORMATION

Please provide us with the following general information about you and your application:

EXISTING TENURE DETAILS

Do you hold another Crown Land Tenure? No

ALL SEASONS RESORTS

The All Seasons Resorts Program serves to support the development of Alpine Ski and non-ski resorts on Crown land. For more detailed information on this program please see the operational policy and if you have further questions please contact FrontCounter BC.

Are you applying within an alpine ski resort? No

WHAT IS YOUR INTENDED USE OF CROWN LAND?

Use the "Add Purpose" button to select a proposed land use from the drop down menu.

If you wish to use Crown land for a short term, low impact activity you may not need to apply for tenure, you may be authorized under the Permissions policy or Private Moorage policy.

To determine if your use is permissible under the Land Act please refer to either the Land Use Policy - Permissions or Land Use Policy - Private Moorage located here.

Purpose	Tenure	Period
Adventure Tourism	Temporary Licence	Two years or less
Special Events		

Are you planning any ground disturbance or construction? No

ACCESS TO CROWN LAND

Please describe how you plan to access your proposed crown land from the closest public road: All event venues are accessible from public roads via trailhead access.

ADVENTURE TOURISM

Adventure Tourism applies to tourism operators who provide outdoor recreation activities for a fee or other form of compensation. For more information visit the website.

Specific Purpose: Special Events
 Period: Two years or less
 Tenure: Temporary Licence

TOTAL APPLICATION AREA

Please give us some information on the size of the area you are applying for.

Specify Length: 160000 meters
 Specify Width: 10 meters

MECHANIZED / NON-MECHANIZED

Mechanized Activity means guided AT activities where mechanized or motorized transport of clients (e.g., helicopters, snowmobiles, All Terrain Vehicles, etc.) is an integral part of the recreation experience offered to the clients. Motorized use includes vessels that use power as an integral part of the guided operation. Vessels that use motorized propulsion only intermittently for control or safety purposes are considered non-mechanized (e.g. whitewater rafting). In addition, where a vessel simply provides a transport service to and from a kayak operation it will be considered a non-motorized activity.

Does your operation include motorized / mechanized activities? No

GUIDE OUTFITTER (COMMERCIAL HUNTING GUIDES)

Any improvements on Crown land for the purpose of guide outfitting must be approved and tenured under this program (e.g. lodges, cabins, camps).

Is your application related to a guide No

outfitting operation?**ANGLING GUIDE**

Any improvements on Crown land for the purpose of guided angling must be approved and tenured under this program (e.g. lodges, cabins, camps).

Is your application related to an Angling guide operation? No

ALL SEASONS RESORT

If your activities include more than one million dollars in Recreational Infrastructure and more than 100 Commercial Bed Units, your activities may fall under the All Seasons Resort Policy.

Are you applying to build an all season resort as defined under the All Seasons Resort Policy, including more than one million dollars in Recreational Infrastructure and more than 100 Commercial Bed Units? No

ADDITIONAL QUESTIONS

In many cases you might require other authorizations or permits in order to complete your project. In order to make that determination and point you in the right direction please answer the questions below. In addition, your application may be referred to other agencies for comments.

Is the Applicant or any Co-Applicant or their Spouse(s) an employee of the Provincial Government of British Columbia? No

Are you planning to cut timber on the Crown Land you are applying for? No

Are you planning to use an open fire to burn timber or other materials? No

Do you want to transport heavy equipment or materials on an existing forest road? No

Are you planning to work in or around water? No

Does your operation fall within a park area? Yes
You will be required to obtain a Park Use Permit. Please contact FrontCounter BC.

LOCATION INFORMATION**LAND DETAILS****DRAWINGS**

Please provide information on the location and shape of your Crown land application area. You can use one or more of the tools provided.

☒ I will upload a PDF, JPG or other digital file(s)

MAP FILES

Your PDF, JPG or other digital file must show your application area in relation to nearby communities, highways, railways or other land marks.

Description	Filename	Purpose
ST6 2021 Stage 1 Map	Stage 1.pdf	Adventure Tourism

ST6 2021 Stage 2 Map	Stage 2.pdf	Adventure Tourism
ST6 2021 Stage 3 Map	Stage 3.pdf	Adventure Tourism
ST6 2021 Stage 4 Map	Stage 4.pdf	Adventure Tourism
ST6 2021 Stage 5 Map	Stage 5.pdf	Adventure Tourism
ST6 2021 Stage 6 Map	Stage 6.pdf	Adventure Tourism

☒ I will upload files created from a Geographic Information System (GIS)

SPATIAL FILES

Do you have a spatial file from your GIS system? You can upload it here.

NOTE: When uploading a shapefile, we require the .dbf, shp and .shx files at minimum. Please ensure that it is a polygon that has been projected in BC Albers in NAD83 format. For more information, refer to Commonly Used Spatial File Formats.

Description	Filename	Purpose
Stage 1 shapefile	Stage_1_m1.shp	Adventure Tourism
Stage 2 shapefile	Stage_2_m1.shp	Adventure Tourism
Stage 3 shapefile	Stage_3_m1.shp	Adventure Tourism
Stage 4 shapefile	Stage_4_m1.shp	Adventure Tourism
Stage 5 shapefile	Stage_5_m1.shp	Adventure Tourism
Stage 6 shapefile	Stage_6_m1.shp	Adventure Tourism

ATTACHED DOCUMENTS

Document Type	Description	Filename
General Location Map	ST6 2021 Overview Map	Overview.pdf
Management Plan	ST62021 Management Plan	ST6 2021 Front Counter Mana...
Other	Fernie Alpine Resort Consent	FAR letter.pdf
Other	Kimberley Letter of Consent	Kimberley RE TransRockies S...
Other	Shred Sisters Consent	Shred Sisters - Letter Supp...
Other	Sinister Sports Letter of Consent	TransRockies ST6 Tenure Let...

PRIVACY DECLARATION

☒ Check here to indicate that you have read and agree to the privacy declaration stated above.

IMPORTANT NOTICES

- Once you click 'Next' the application will be locked down and you will NOT be able to edit it any more.

DECLARATION

☒ By submitting this application form, I, declare that the information contained on this form is complete and accurate.

OTHER INFORMATION

Is there any other information you
would like us to know?

Replaces original application for 2020 event cancelled due to COVID-19
Original Crown Land File #: 4406065

APPLICATION AND ASSOCIATED FEES

Item	Amount	Taxes	Total	Outstanding Balance
Crown Land Tenure Application Fee	\$250.00	GST @ 5%: \$12.50	\$262.50	\$0.00

OFFICE

Office to submit application to: Cranbrook

PROJECT INFORMATION

Is this application for an activity or project which
requires more than one natural resource
authorization from the Province of BC? No

OFFICE USE ONLY

Office Cranbrook	File Number	Project Number
	Disposition ID	Client Number

TransRockies Singletrack 6

2021

MANAGEMENT PLAN

Prepared by:

TransRockies Inc.
10-1435 40 Ave. NE
Calgary, AB T2E 8N6
Phone: (403) 668-7537

July 24, 2020

Replaces original application for 2020 event cancelled due to COVID-19
Original Crown Land File #: 4406065

Executive Summary

General Overview of Business (Existing or Proposed)

TransRockies Events Inc. is a well-respected event production company based out of Calgary, Alberta. We have produced numerous events in Canada and BC, including the TransRockies Challenge, TransRockies Classic and SingleTrack 6 stage races, all of which have required FrontCounter BC applications for numerous years.

This proposal is the Singletrack 6 occurring from September 7-12, 2021. Singletrack 6 will be located in the following locations: Fernie, Kimberley, and Rossland. This event will replace the event that was originally proposed for 2020 – file # 4406065.

Singletrack 6 is a 6-day endurance mountain bike race held in British Columbia. The event is expected to draw up to 350 participants from over 15 nations. The 2021 event will be the 19th annual event – starting with the TransRockies Challenge in 2002.

The event uses a pre-determined and marked route, with a designated stage start and finish for each day. The 2020 Route Outline is:

- Stage 1 – September 7 – Fernie
- Stage 2 – September 8 – Fernie Alpine Resort
- Stage 3 – September 9 – Kimberley
- Stage 4 – September 10 – Kimberley Alpine Resort
- Stage 5 – September 11 – Rossland South
- Stage 6 – September 12 – Rossland Red Mountain

The operations of Singletrack 6 can be divided into two major components: Route Operations and Staging Operations. Staging Operations will take place on land that is already leased, privately owned, or within municipal boundaries, and includes participant and support staff accommodations, catering, waste management, bike service, logistics and entertainment. This management plan will focus on route operations, because these are the activities that take place on crown land. The primary activities include:

- The Race – Participants compete solo or in teams over forestry roads and trails. Singletrack 6 stages may vary in distance from 25 to 40 km per day. The race is a mass start, or time trial start, each day, usually between 8 and 10 AM.
- Course Marking and Control – The course is marked up to 2 days in advance by bicycle using pin flags and coroplast arrow signs. Event staff are on course during the race to i) check markings ii) ensure that participants are on course iii) sweep the last riders and clean marking and any garbage from the course and iv) respond to any issues that arise during the course of the event. Course crew members are in communication by cell phone, satellite phone and/or radio. The course is cleared of markings and trash on the same day that the stage is raced.
- Medical Response – The race is covered by a medical crew which accesses various parts of the route by truck and/or off-road vehicle.
- Checkpoints – Each day will include 1-3 checkpoints where participants can get food and water, and other support as required.
- Media – A limited number of television cameras may follow the race by bicycle. Other media will typically attend check points by vehicle access.

Key Areas of Concern

- The event creates a generally minor impact in its operating areas, however, due to the distance travelled by participants and the entourage, there are a large number of parties that must be aware of the event and be prepared to accommodate it passing through, including land managers, commercial industrial operators, commercial recreation operators, and other interested parties.

Section 1: Description of The Operation & Activities Offered

General Description of Operation

General Area

- The general areas where the event is held are Fernie, Kimberley and Rossland
- Maps and GPS files attached.

Base Operation

The base operation moves each day as the event progresses from stage to stage. Base operations include the medical headquarters, race office, and race services such as catering and bike service. Base operations take place on private land and will be made up of temporary structures (tents) and vehicles.

- The daily bases in will be:
- Stage 1: Fernie Aquatic Centre
- Stage 2: Fernie Alpine Resort
- Stage 3: Kimberley Downtown
- Stage 4: Kimberley Alpine Resort
- Stage 5: Rossland Centennial Field
- Stage 6: Red Mountain

Access

- Clients will join the race at the start in each community and be bused from stage to stage.
- Support Vehicles (Trucks, Motorhomes, Cars) will use the public highway system to access staging area.
- Check points will be accessible by forestry roads to support personnel (trucks and vans).

Staff

Staff Category	# of Employees Singletrack 6	Experience and/or Certificates
Volunteers	25	18 or older
Event Staff	35	Event Experience
Medical Crew	6	First aid/Paramedics/MDs
Television Crew	2	
Timing Crew	3	
Massage Therapists	8	
Mechanics	8	

1.2 Commercial Recreation Activities Offered On Crown Land

Description of Experience Being Offered – Singletrack 6

The Singletrack 6 experience is unique in the world. Drawing from the traditions of both European cycle racing and Adventure Racing, and World Cup Mountain Bike Racing. The format is a mountain bike stage race. Solo and teams of two are permitted, and riders accumulate time over the course of six days to achieve an overall standing. The experience of the Singletrack 6 is an intense and powerful one, characterized by the following features:

- Community – Singletrack 6 is a showcase of premiere Western Canadian mountain bike communities, Singletrack 6 features a rider-built and maintained route that changes annually.
- Camaraderie – The experience of racing with hundreds of riders from around the world creates relationships that last a lifetime. The intensity of emotion increases over the course of the event. There is also camaraderie that develops between teams and within the support staff to become a cohesive group by the end of the event.
- Mixed Ability – A certain level of fitness is required to be able to complete the event, but we place no restrictions on who can enter the event. For this reason, it is possible for a sixty year old weekend warrior to line up next to a thirty year old Olympian. The slower riders may take up to 3 times as long to complete the distance, but they can compare their performance on a “level playing field”.

Laws, Bylaws, etc.

TransRockies Events Inc. will comply with all laws and bylaws as set out by the Governments of Canada and British Columbia, and the various municipalities. Further, TransRockies Inc. will abide by all permit regulations and directions

Detailed Listing of Activities & Level of Use

1. See Table 1.1 next page

Improvements

2. Minor trail maintenance (removal of deadfall) may be required for some areas of trail. Timber removal is not required
3. Temporary improvements to course are as follows:
 - Check Points 1 & 2
 - (2) 10x10 tents, tables, possible temporary fencing.

All improvements will be delivered by vehicle, no more than 12 hours prior to the event start and collected no more than 5 hours after the event completes.

Table 1.2 Extensive Areas of Use – Singletrack 6										
Activity Report						Client Days				
Extensive Area Map Reference	Activity /Activities	Specific References on Map	Frequency of Use	Period of use	Existing or Proposed Use	Current Year	Next Year	Year 3	Full Capacity	Year Full Capacity is reached
Stage 1 Route	Mountain Biking	Fernie, BC	Once	September 7, 2021	Proposed	350				
Stage 2 Route	Mountain Biking	Fernie, BC	Once	September 8, 2021	Proposed	350				
Stage 3 Route	Mountain Biking	Kimberley, BC	Once	September 9, 2021	Proposed	350				
Stage 4 Route	Mountain Biking	Kimberley, BC	Once	September 10, 2021	Proposed	350				
Stage 5 Route	Mountain Biking	Rosslund, BC	Once	September 11, 2021	Proposed	350				
Stage 6 Route	Mountain Biking	Rosslund, BC	Once	September 12, 2021	Proposed	350				

1.4 Intensive Use Sites

4. No Intensive use sites are planned for public land.

Table 1.2 Details of Intensive Use Sites							
Intensive Use Map Reference	Intended Use	Frequency of Use	Period of use	Desired Exclusivity	Existing or Proposed improvements	Environmentally Sensitive Area	Distance to Environ. Sensitive Area

Section 2: Overlap with Environmental & Cultural Values

As described in Section 1 of this Management Plan, the operation is a short-term event spanning 6 days in total, broken up over 6 different sections of trail. Each section of trail will only be seeing use in any given location, for two days of the year. One of the days is trail marking a few days prior to the event and the other is during the actual race. The terrain being traveled on, as shown on the Overview Map, covers a variety of ecosystems including valley bottoms, mid-slope forests and alpine meadows. Wildlife including black and grizzly bears, elk among others is found throughout the area.

The proponent welcomes the opportunity to work with government biologists to ensure that protection to local flora and fauna is maintained.

The proponent is familiar with, and will adopt, the new Ministry of Environment guidelines “Wildlife Guidelines for Backcountry Tourism/Commercial Recreation” dated May 2006.

Some specific environmental values are discussed in the following:

2.1 Fish Values

The race route will utilize existing structures to cross any fish bearing creeks and rivers.

2.2 Wildlife Values

On the trail, environmental risk occurs due to physical damage to the sensitive flora species. Therefore, all racers in our event will be instructed and reminded to stay on the existing trails through those areas. All travel through the areas will predominately be on mountain bike.

In terms of traveling through Grizzly habitat areas, the race will have a bear plan in place to ensure both the safety of the participants and the wildlife. A presentation will be given prior to the start of the race, to ensure all racers are aware of safe bear practices and are familiar with the race’s bear plan.

2.3 Water Values

The 2020 event passes through the Boardman Community Watershed in Fernie, the Matthew Community Watershed and the Mark Community Watershed in Kimberley, and the Topping Community Watershed in Rossland, but will use established trails and bridges over water crossings.

2.4 First Nations

The proponent is not aware of any archaeological sites in the area, nor has the proponent been made aware of any traditional First Nations activities that may have or are currently conducted in this area. None of the race activities require any soil disturbance and therefore risk to archaeological sites is minimal.

2.5 Public Use

While the trails will remain open to public use for the duration of the event, we will recommend other areas for cyclists to enjoy so as to minimize impacts on the event and maximize their experience. Course marshals will be posted at critical access points to communicate with the public – advising them of the event in progress and recommending alternative areas to ride.

2.6 Forest Service Roads

The race route occasionally utilizes forest service roads or resource roads when necessary. When forest service roads are used the race route will be sign posted with "Caution – Race in Progress" signs for traffic in both directions. Participants will be advised to follow the rules of the road. We will contact any commercial operators known to be actively using roads that are on our route to prevent conflicts. Course marshals will be used to control road crossings where required.

2.7 Provincial Highways and Municipal Roads

No Provincial Highway use is planned for the 2021 event. Our planned route does overlap with some MOTI (Ministry of Transportation and Infrastructure) Rights of Way south of Rossland on Stage 5. These will be managed similar to Municipal Roads (see below).

Municipal permission will be obtained for all portions of the route on municipal roads. Local police will be contacted, and course marshals or flag people will be used to control any road crossings of the course. When municipal roads are used the race route will be sign posted with "Caution – Race in Progress" signs for traffic in both directions. Participants will be advised to follow the rules of the road.

2.8 Wet weather alternate route – Stage 4

For Stage 4, in the case of wet weather or wet trail conditions (significant standing water on the trail), the trail "Thunder Turkey" near Kimberley will not be used. The trail "Front Boulevard" will be used in this case.

Section 3: Overlap With Existing Use

3.1 Mineral Tenure

The 2021 race route has no known overlap with any active mineral tenures or mining operations.

3.2 Timber Tenure & Forest Use

The 2021 race route has no known overlap with any active logging tenures or logging operations.

3.3 Land Use Planning, Local or Regional Zoning Requirements

Where applicable, the town councils have been contacted and will be working cooperatively with the event. Where applicable, trail groups in proposed areas have been consulted and have expressed their support by participating in the creation of each stage.

3.4 Commercial Recreation Tenure & Guide Outfitter Territories

We have identified overlaps with the following Commercial Recreation Tenure Holders:

Fernie Alpine Resort: Stage 2
 City of Kimberley: Stage 3,4
 Kimberley Alpine Reosrt: Stage 3,4
 Sacred Rides: Stages 2, 5, 6
 Shred Sisters: Stages 3,4
 Sinister Sports (Full Moon Adventure Company): Stages 3, 4
 Red Mountain Resort: Stage 6

We are in the process of obtaining feedback from these operators.

I acknowledge that my areas of use may overlap with a commercial recreation tenure and/or guide outfitting territory. I understand that I am required to contact these tenures holders have them complete an Operator Input Form.

Signed: 

Appendix 1 - Hazards and Safety Plan



I certify that I have prepared Hazards and Safety Plan which meets or exceeds Workers Compensation Board and approved industry standards and that my operation will meet the requirements of this plan.



 Signed

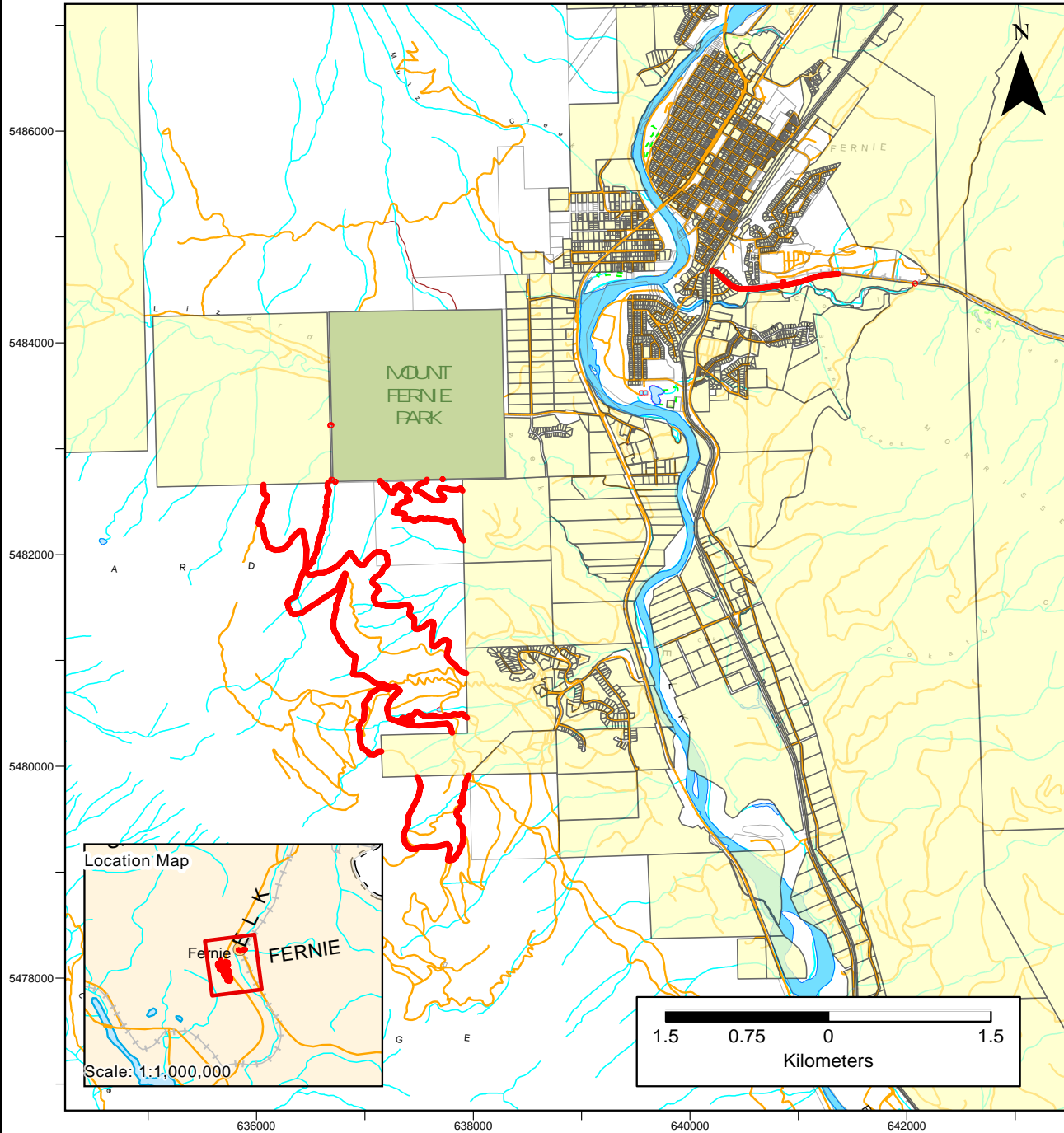
July 8, 2020

LICENCE

Legal Description Schedule

File No: 4406144
Disposition: 940301

(Fernie Area - Stage 1 and 2 Trails) All that Crown Land in the vicinity of North Star Hill, Rossland, King George VI Park, Mt Fernie Park, and Coal Creek, Kootenay District, more particularly shown outlined in red, containing 16.87 hectares, more or less.



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Scale: 1:50,000

4406144

BCGS Mapsheet(s): 82G.045

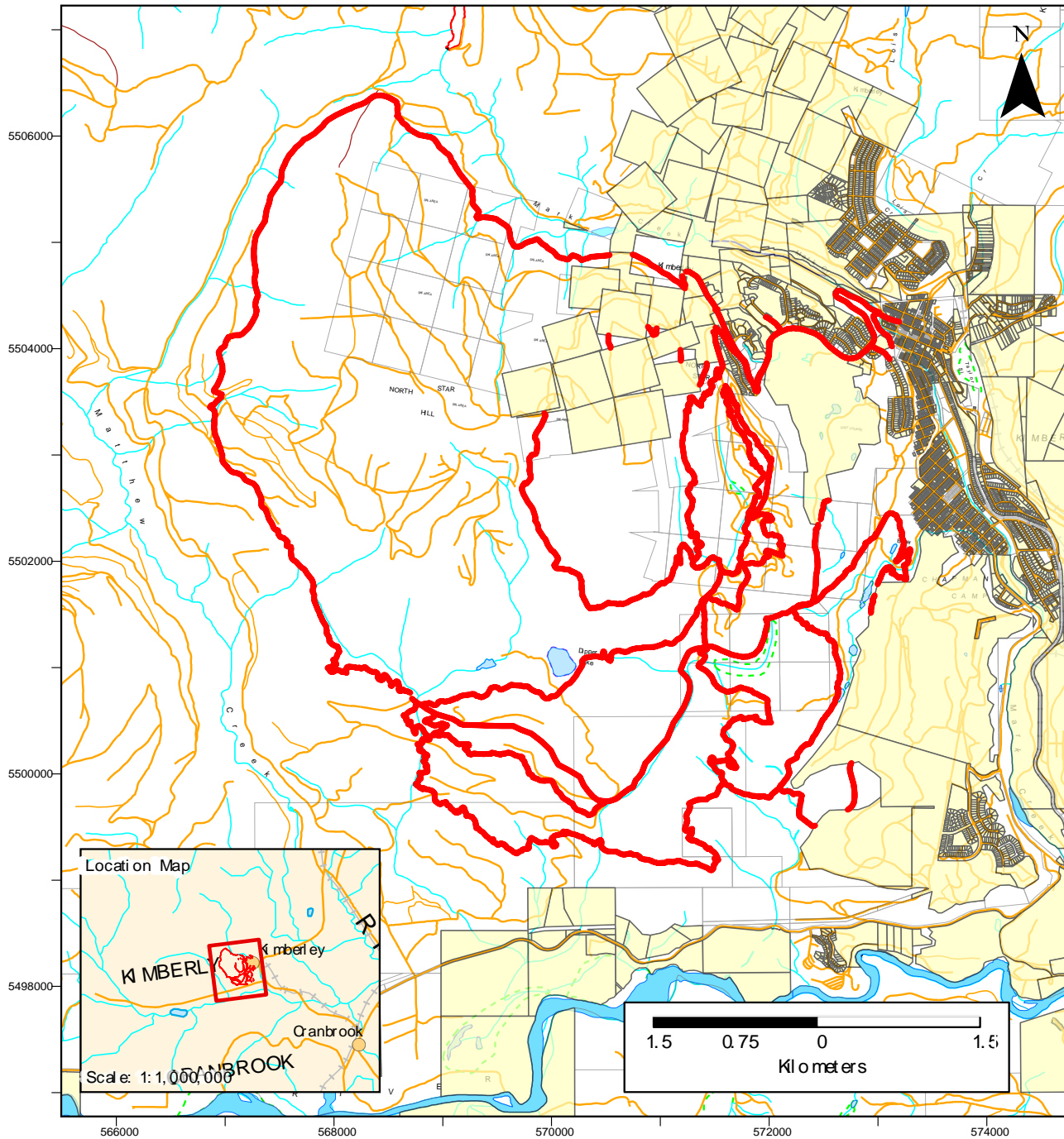
Page ____ of ____

LICENCE

Legal Description Schedule


File No: 4406144
Disposition: 940301

(Kimberley Area - Stage 3 and 4 Trails) All that Crown Land in the vicinity of North Star Hill, Rossland, King George VI Park, M. Ferrie Park, and Coal Creek, Kootenay District, more particularly shown outlined in red, containing 16.87 hectares, more or less.



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 4406144

BCGS Mapsheet(s): 82F.070/ 080, 82G.061

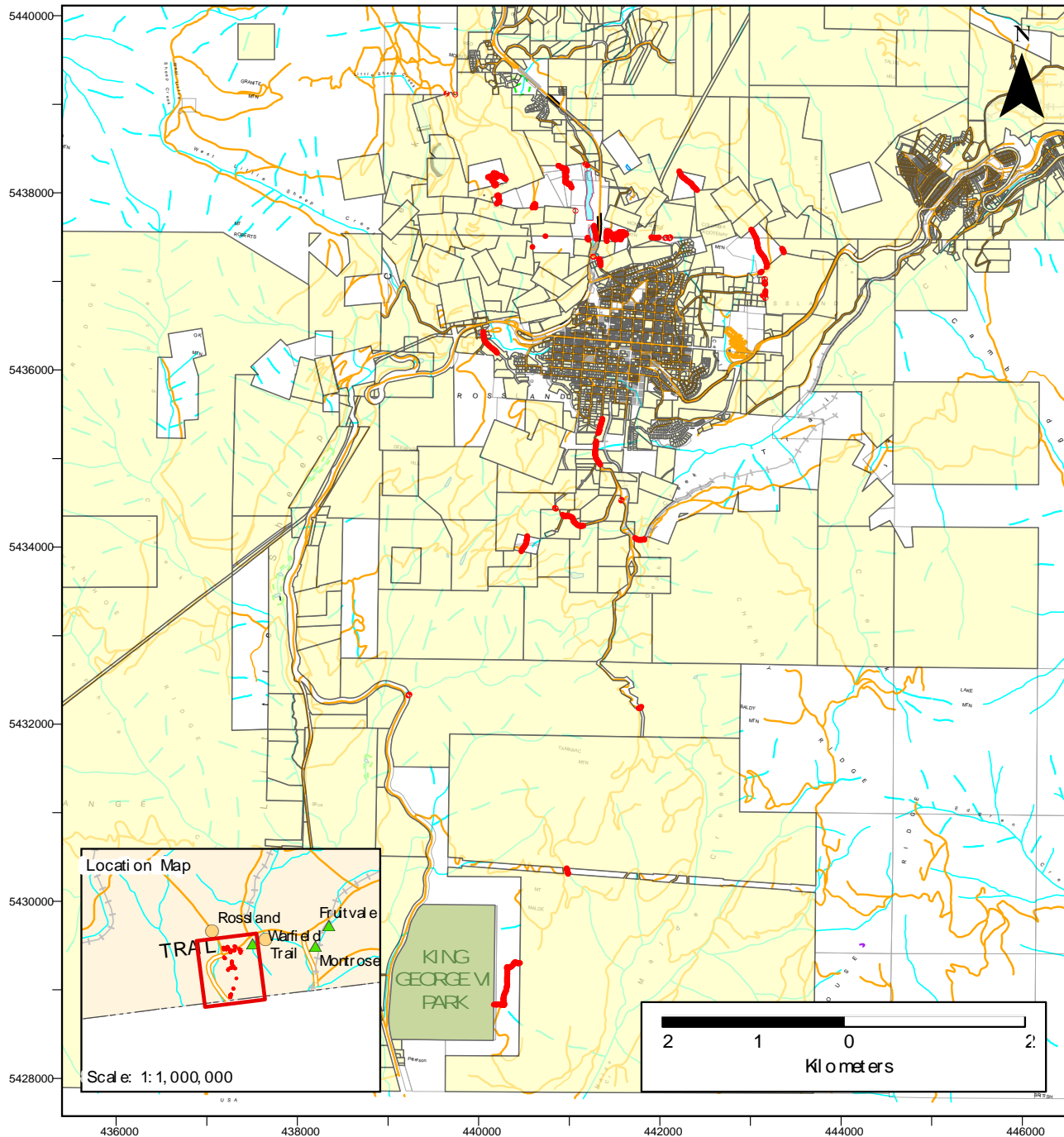
Page ____ of ____

LICENCE

Legal Description Schedule

File No: 4406144
Disposition: 940301

(Rossland Area - Stage 5 and 6 Trails) All that Crown Land in the vicinity of North Star Hill, Rossland, King George V Park, Mt Fernie Park, and Coal Creek, Kootenay District, more particularly shown outlined in red, containing 16.87 hectares, more or less.



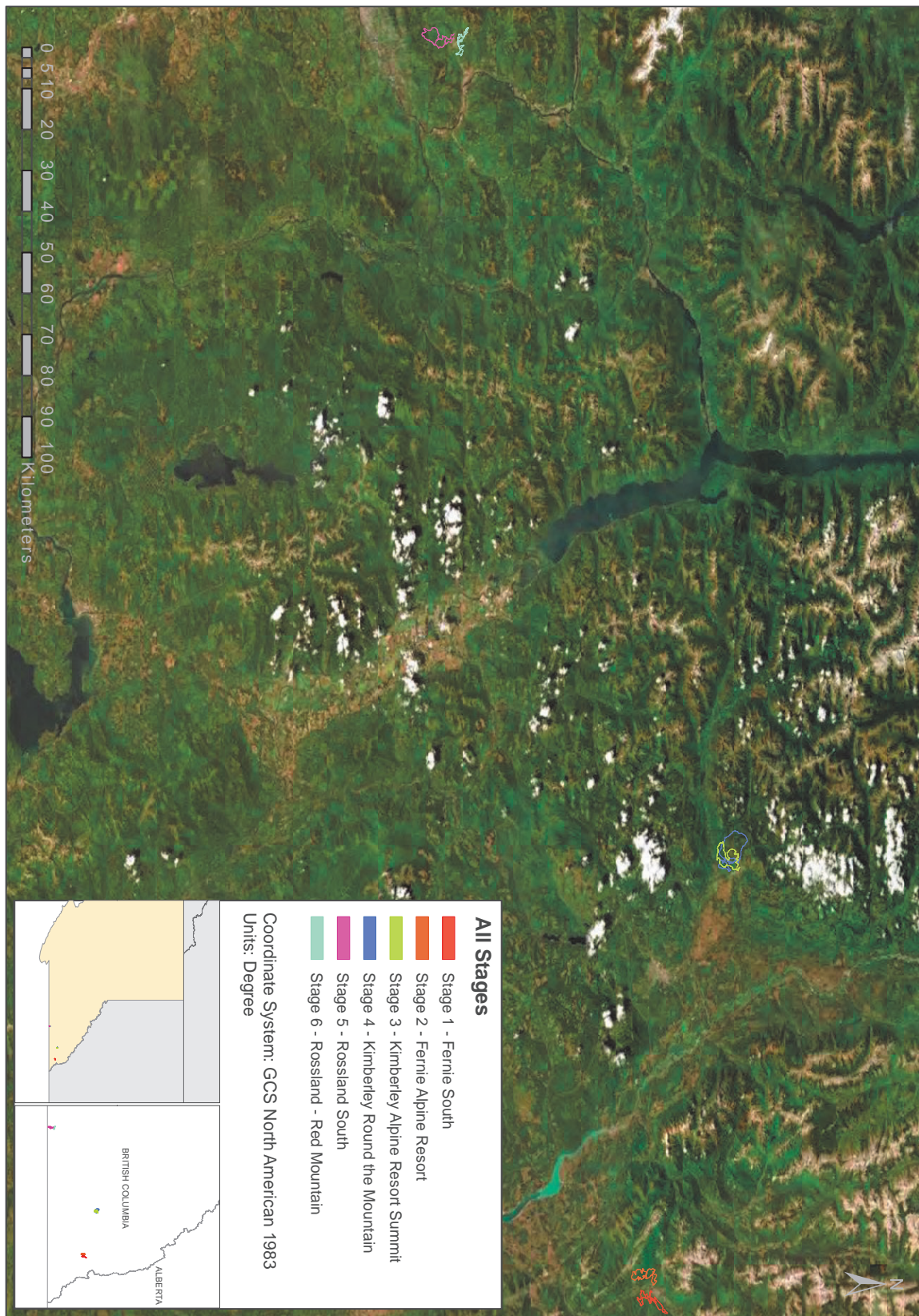
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Scale: 1:60,000

4406144

BCGS Mapsheet(s): 82F.001 / 002, 82F.011

Page ____ of ____





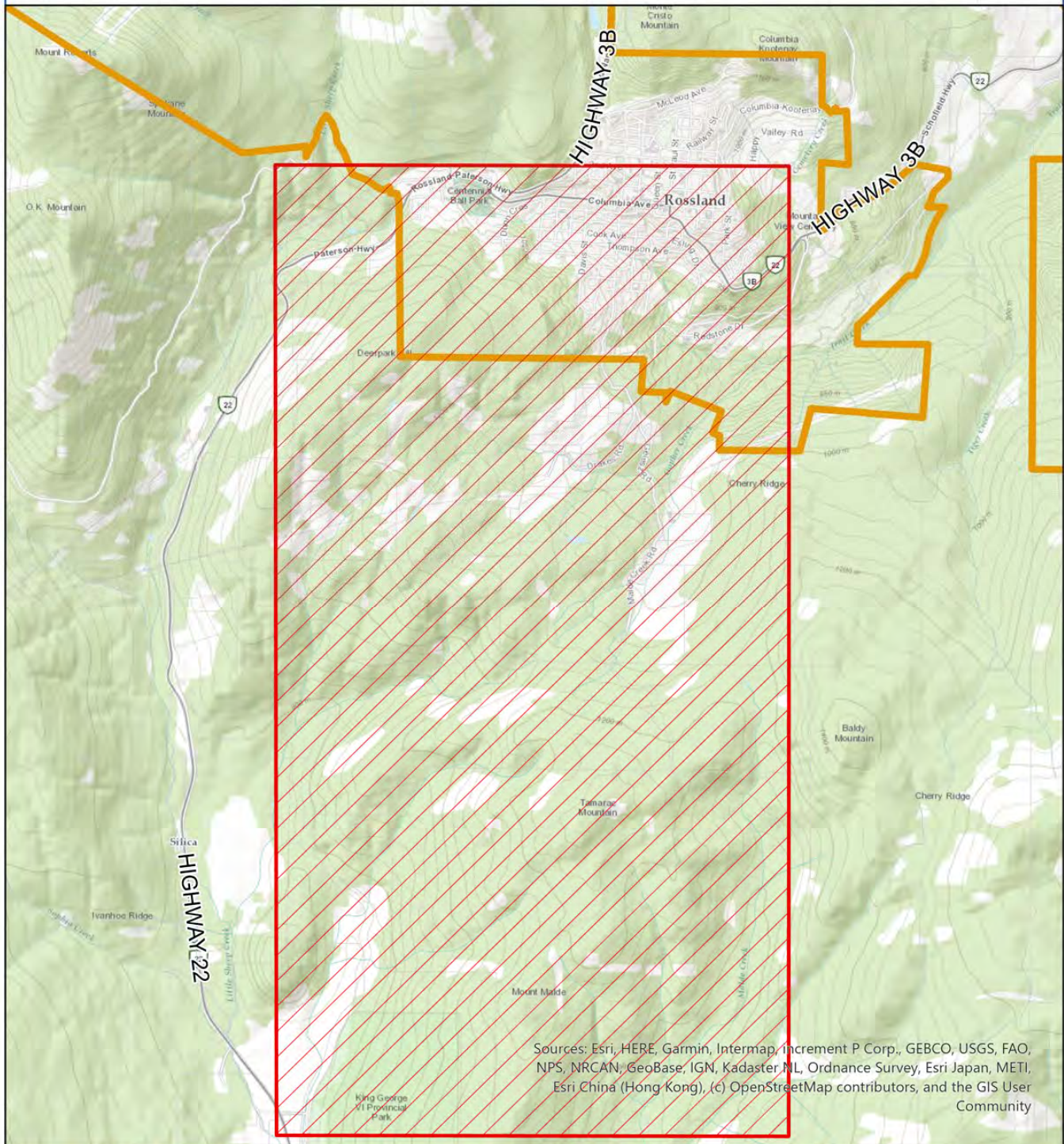
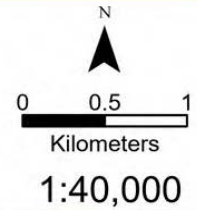


Regional District of
Kootenay Boundary

Date: 2020-03-16

Site Location Map

Stage 5
Rossland South



202-843 Rossland Ave, Trail BC V1R 4S8 | T: 250.368.9148 | T/F: 1.800.355.7352 | rdkb.com

Document Path: \\fs1.ad03.rdkb.local\planning\PD\General Files\B-24 Electoral Area 'B' General Ministry Referrals\2020-FrontCounter\April-Transrockies

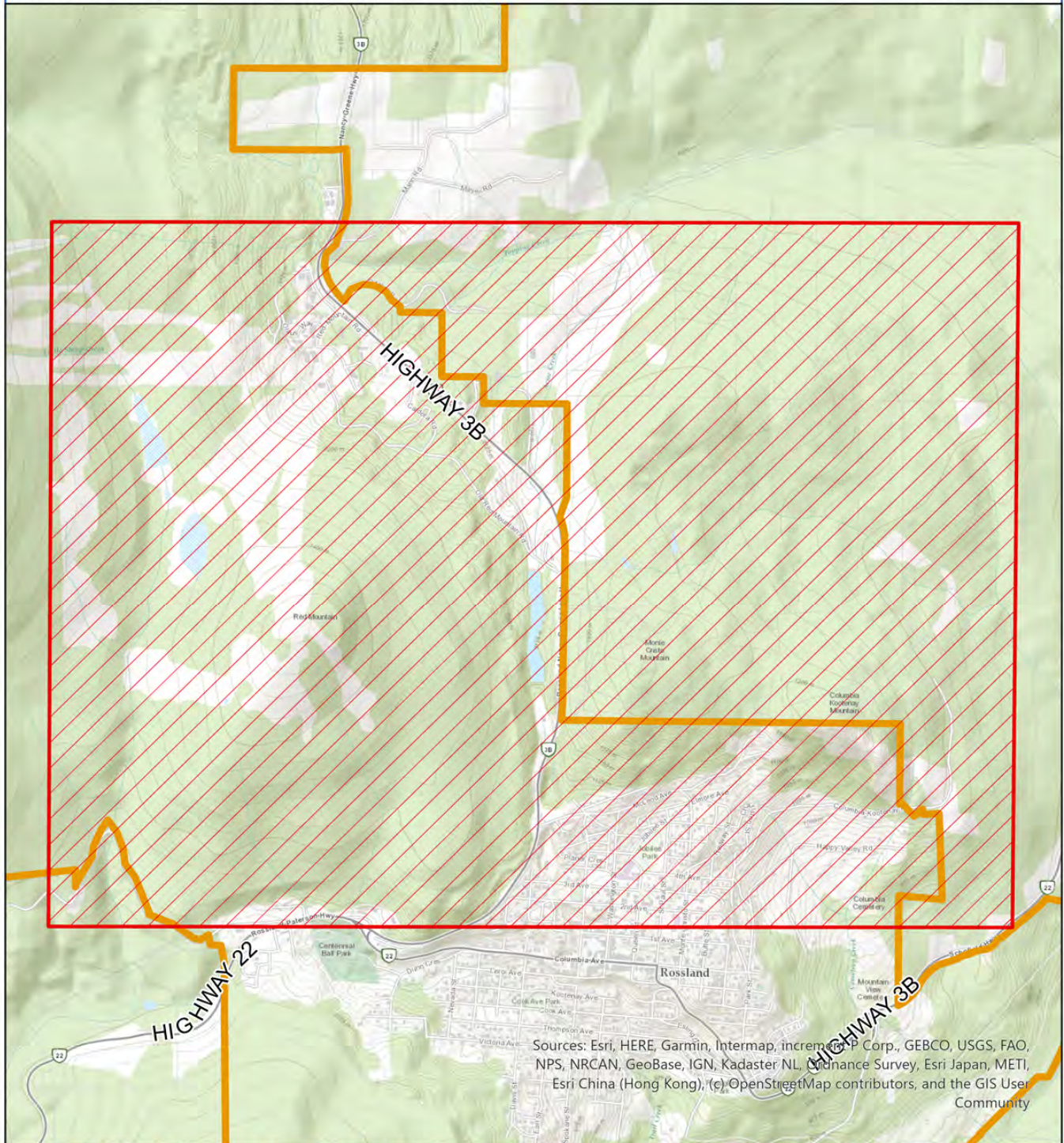
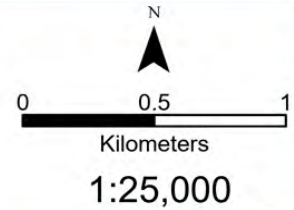


Regional District of
Kootenay Boundary

Date: 2020-03-16

Site Location Map

Stage 6
Rossland - Red Mountain



202-843 Rossland Ave, Trail BC V1R 4S8 | T: 250.368.9148 | T/F: 1.800.355.7352 | rdkb.com

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Staff Report

RE:	Ministry of Energy, Mines & Petroleum Resources – Notice of Work – Sand and Gravel Pit – West K Sand and Gravel Ltd.		
Date:	January 28, 2021	File #:	B-7163-08839.025
To:	Chair Langman and members of the Board of Directors		
From:	Danielle Patterson, Planner		

Issue Introduction

The Regional District of Kootenay Boundary (RDKB) received a referral for a Notice of Work Sand and Gravel Pit Application. The subject property is located along Highway 22, near Genelle with the property line abutting the boundary of the Regional District of Central Kootenay (RDCK) (see Attachment 1 – Applicant Submission for site location maps). Part of project is located in the RDCK.

The Ministry of Energy, Mines & Petroleum Resources (MEMPR) sent a referral request directly to staff rather than via the FrontCounter BC system as the original referral request was erroneously sent to only to the RDCK.

Property Information	
Owner:	West K Sand and Gravel Ltd.
Applicant	Ministry of Energy, Mines & Petroleum Resources
Location:	Hwy 22
Electoral Area:	Electoral Area B/ Lower Columbia – Old Glory
Legal Description:	Lot 1, Plan NEP91135, District Lot 7163, Kootenay Land District, & District Lot 7187
Area:	11.5 ha (28.5 ac)
Current Use(s):	Gravel pit and gravel processing
Land Use Bylaws	
OCP Bylaw No. 1470:	Rural Resource 1 and Drinking Water Resource 1
DP Area:	Drinking Water Resource Development Permit Area
Zoning Bylaw No. 1540:	Agricultural Resource 2
Other	
ALR:	NA
Waterfront / Floodplain:	China Creek Community Watershed
Service Area:	NA

History / Background Information

The subject property is accessed from Highway 22 via Pipeline Pit Road. An aggregate extraction (mining) operation as well as a concrete plant operate on the subject property. The parcel was excluded from the Agricultural Land Reserve (ALR) in 2013. In 2014 the property owner applied to the Province to expand their sand and gravel operations by 4.25 ha (10.5 ac).

Proposal

West K Sand and Gravel Ltd. has submitted a Notice of Work – Sand and Gravel Pit application to the Ministry of Energy, Mines & Petroleum Resources for a five year duration. The application is for mining activities to source aggregate for the “redi-mix” concrete plant. The proponent is applying to operate Monday to Friday, 7:00 am to 4:00 pm, on a seasonal basis.

Advisory Planning Commission (APC)

Staff present an “information only” report to the APC, as the referral response timeline did not allow time for review by the APC. The APC recommended the referral be supported at their January 4, 2021 meeting and requests the proponent post a notice at the Genelle post office prior to blasting occurring.

Implications

See Attachment 2 – Staff Referral Response, for details on implications related to the OCP designation, zoning, Development Permit Area, and Floodplain Bylaw.

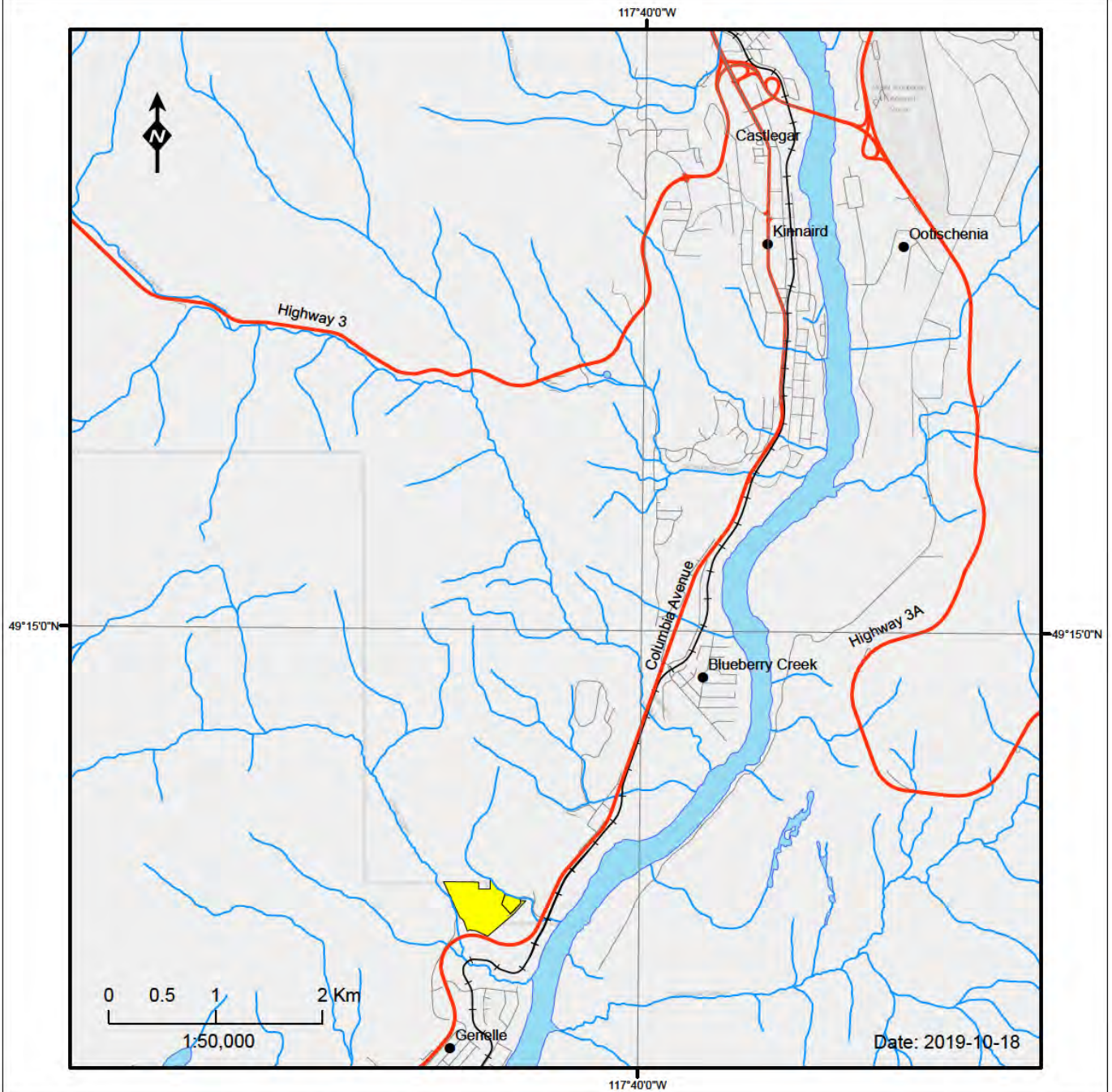
Staff note that although the proponent’s proposed use (mining) does not align with the property zoning, that mining activities are under Provincial jurisdiction. As such, the Zoning report regarding

Recommendation

That the staff report regarding the Ministry of Energy, Mines & Petroleum Resources – Notice of Work – Sand and Gravel Pit – West K Sand and Gravel Ltd. referral for works to take place on the property legally described as Lot 1, Plan NEP91135, District Lot 7163, Kootenay Land District, & District Lot 7187, in Genelle, Electoral Area B/Lower Columbia-Old Glory be received and that staff be directed to forward the Advisory Planning Commission’s request to have the proponent post a blasting notice at the Genelle post office to the Ministry of Energy, Mines & Petroleum Resources.

Attachments

1. Applicant Submission, including maps
2. Staff Referral Response to Ministry of Energy, Mines & Petroleum Resources



Location Map, West K Sand & Gravel

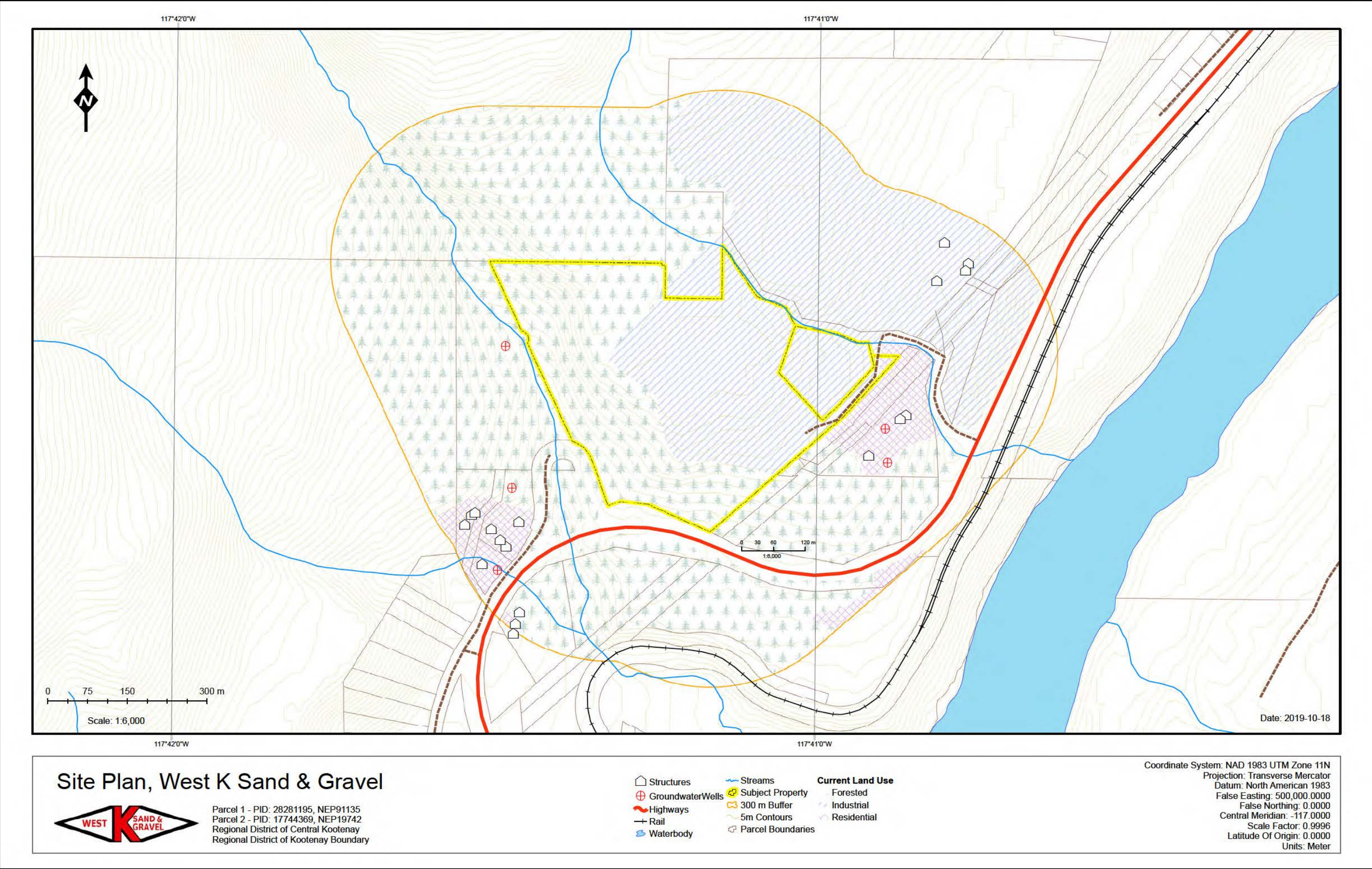


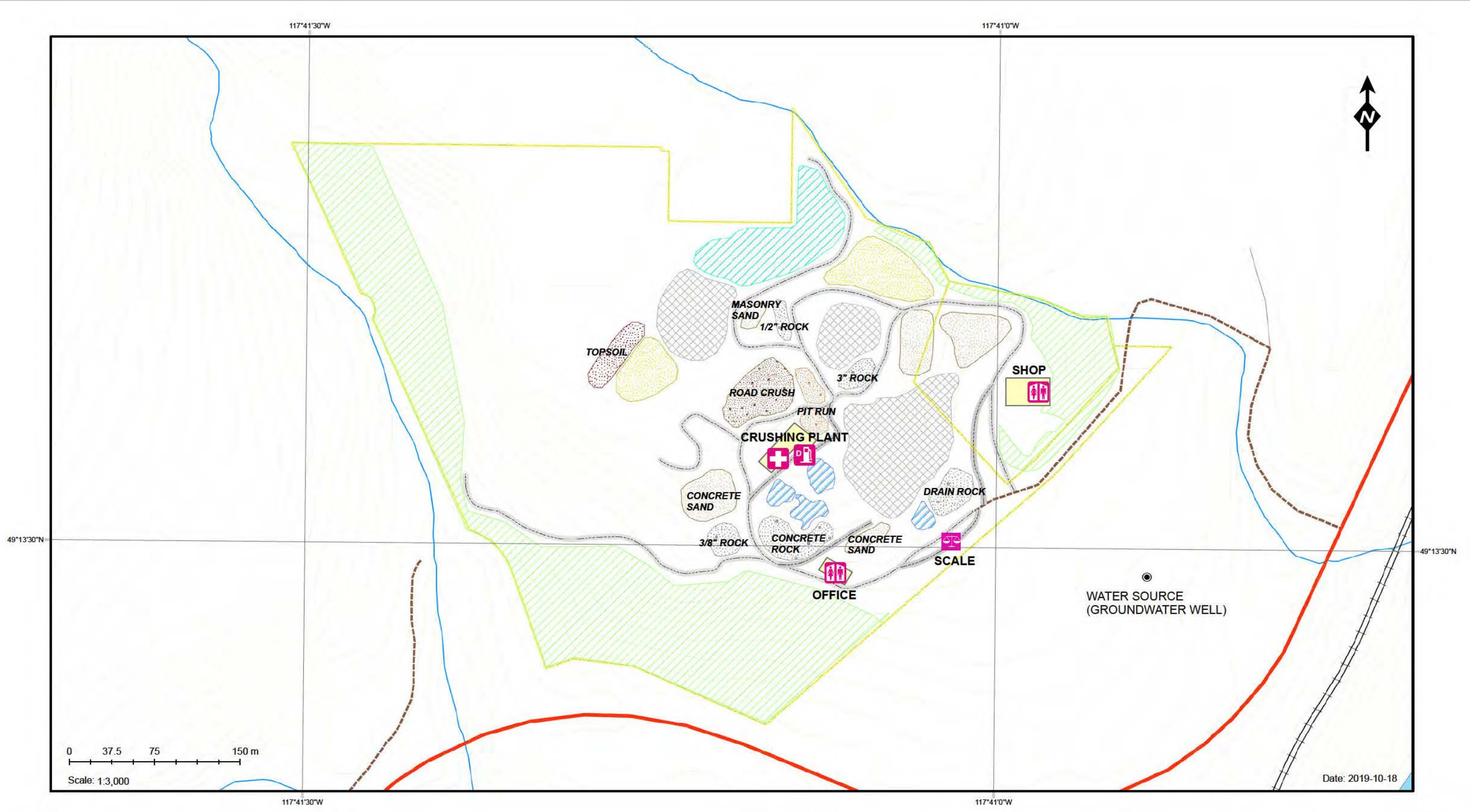
Parcel 1 - PID: 28281195, NEP91135
 Parcel 2 - PID: 17744369, NEP19742
 Regional District of Central Kootenay
 Regional District of Kootenay Boundary

- Highways
- Roads
- Rail
- Waterbody
- Streams
- Subject Property

Coordinate System: NAD 1983 UTM Zone 11N
 Projection: Transverse Mercator
 Datum: North American 1983
 False Easting: 500,000.0000
 False Northing: 0.0000
 Central Meridian: -117.0000
 Scale Factor: 0.9996
 Latitude Of Origin: 0.0000
 Units: Meter

Service Layer Credits: Esri, HERE, Garmin, (c)
 OpenStreetMap contributors, and the GIS user community





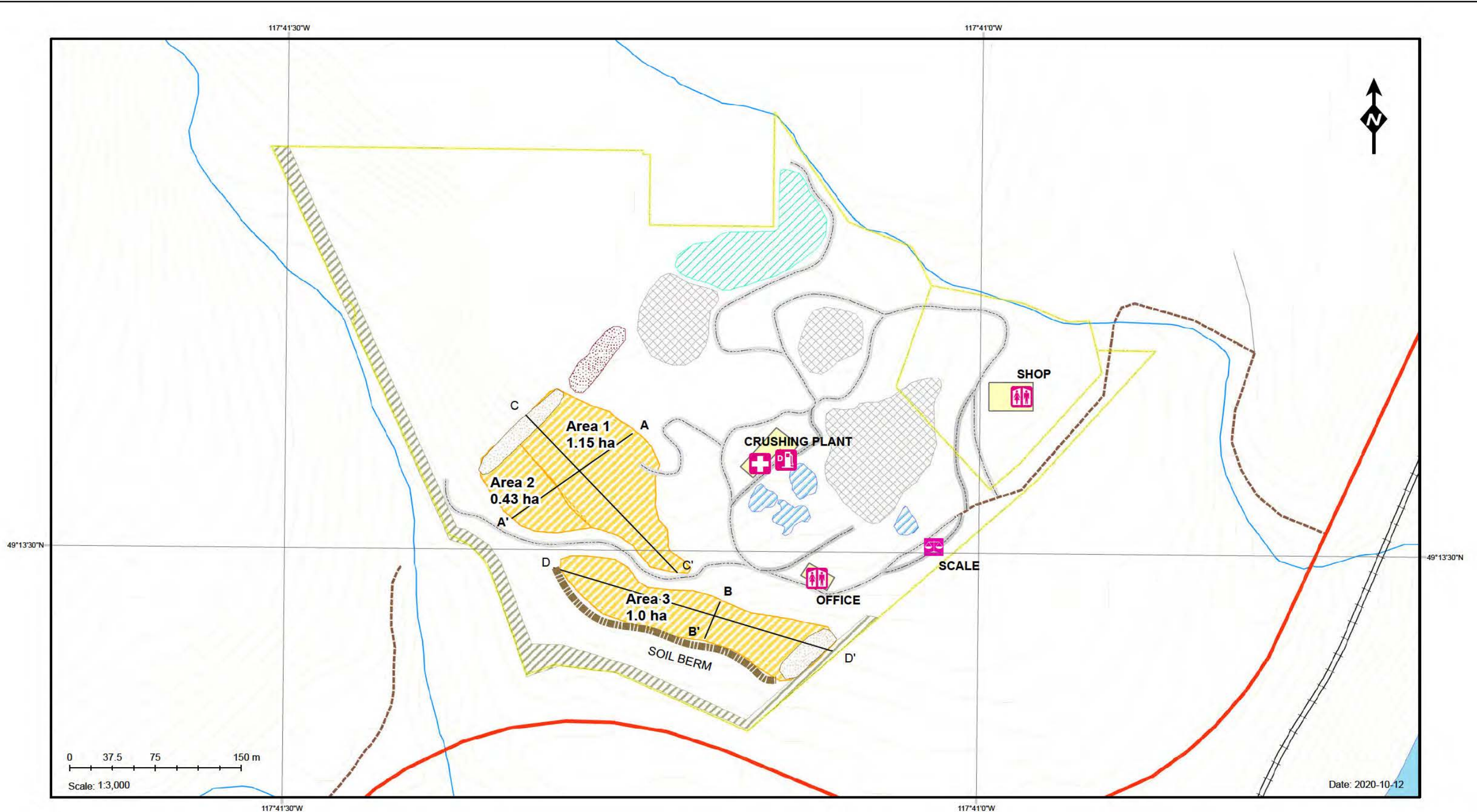
Locations Map, West K Sand & Gravel



Parcel 1 - PID: 28281195, NEP91135
Parcel 2 - PID: 17744369, NEP19742
Regional District of Central Kootenay
Regional District of Kootenay Boundary

- Subject Property
- 5m Contours
- Current Buffers
- Settling Ponds
- Backfill
- Overburden
- Active Reclamation
- Pit Roads
- Rail
- Waterbody
- Streams

Coordinate System: NAD 1983 UTM Zone 11N
Projection: Transverse Mercator
Datum: North American 1983
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: -117.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000
Units: Meter



5 Year Mining Plan, West K Sand & Gravel



Parcel 1 - PID: 28281195, NEP91135
Parcel 2 - PID: 17744369, NEP19742
Regional District of Central Kootenay
Regional District of Kootenay Boundary

- Subject Property
- Active Reclamation
- Settling Ponds
- Buffer_minimum
- Backfill
- Rail
- 5m Contours
- Planned Mining
- Waterbody
- Transects for X-Sec
- Topsoil Storage
- Streams
- Pit Roads

Coordinate System: NAD 1983 UTM Zone 11N
Projection: Transverse Mercator
Datum: North American 1983
False Easting: 500,000.0000
False Northing: 0.0000
Central Meridian: -117.0000
Scale Factor: 0.9996
Latitude Of Origin: 0.0000
Units: Meter



Notice of Work Sand and Gravel Pit

Application ID: 7094

APPLICANT COMPANY/ORGANIZATION CONTACT INFORMATION

Contact Name West K Sand and Gravel Ltd.
Phone [REDACTED]
Email [REDACTED]
Mailing address [REDACTED]

REPRESENTATIVE INFORMATION

Name: West K Sand and Gravel Ltd.
Contact Name Paul Adrain
Phone: [REDACTED]
Email: [REDACTED]
Contact Address: [REDACTED]
Letter(s) Attached: Yes (authorizationletter.pdf)

TECHNICAL INFORMATION

APPLICATION INFORMATION

Type of notice of work: Sand and Gravel Pit
Is this a New Permit or an Amendment to an existing permit for this property? Amendment

MINE INFORMATION

Do you have an existing mine number? Yes
Mine Number: [REDACTED]
Name of the Property: West K Sand & Gravel Ltd.
Tenure Numbers:
Crown Grant / District Lot numbers:
Detailed directions to the site: Located approximately 10 km south of Castlegar, B.C., near the community of Genelle. Access to the site is west off Columbia Ave (Highway 22) onto Pipeline Pit Road. Follow Pipeline Pit road to the end, approx. 700 m, where site office is located.
Geographic Coordinates of Mine: Latitude: 49.22516
 Long: -117.68399
Maximum Annual Tonnage Extracted: 96,000

PROPOSED ACTIVITIES

Activities to be undertaken: Sand and Gravel Quarry Operations
 Settling Ponds
 Water Supply

FIRST AID

Proposed First Aid equipment on site: Fire extinguisher, first aid kit, life buoys. First Aid equipment is located in the existing crusher shack and the main office and consists of a standard first aid kit and eye wash station. Life preservers are located near the

wash ponds.

Level of First Aid Certificate held by attendant:

Occupational First Aid Level 1

DESCRIPTION OF WORK PROGRAM

Please see attached document. Note that 'current' level of disturbance is included in values provided in this application; NEW excavation value for pit run and new trail equates to 2.6 ha and 100 m of new access road.

TIME OF PROPOSED ACTIVITIES**Proposed start and end date:**

Nov 01 2019 to Oct 31 2024

Please remember that you need to give 10 days notice to the Inspector of Mines of your intention to start work, and 7 days notice of your intention to stop work.

ACCESS**Is access presently gated?**

Yes

Key provided to the Inspector?

No

Be sure to provide the inspector with a key to the gate.

PRESENT STATE OF THE LAND**Present condition of the land:**

The subject property is located within the boundaries of both the Regional District Kootenay Boundary (RDKB) and Regional District Central Kootenay (RDCK). The size of the parcel on which an existing gravel pit, processing operations and redi-mix plant are located is approximately 24 hectares. Historical disturbance on the property resulted for borrow activities during construction of the highway over China Creek (prior to current ownership).

Type of vegetation:

Disturbed in the area of active mining, processing areas, and redi-mix plant. Surrounding vegetation is forested to the north, and west. Classified in the drywarm Interior Cedar â Hemlock biogeoclimatic zone (ICHdw), the dominant vegetation that occurs on site is Oregon grape (*Mahonia aquifolium*), Saskatoon (*Amelanchier alnifolia*), lady fern (*Athyrium filix-femina*), trembling aspen (*Populus tremuloides*), and wild rose (*Rosa acicularis*). Few paper birch (*Betula papyrifera*), douglas fir (*Pseudotsuga menziesii*) and western whitepine (*Pinus monticola*) are present on the property but hold no merchantable timber value.

Physiography:

Topography is benched, with intermittent sloped areas. There are no wetlands on the property, and China Creek is located west of the property boundary. Elevation ranges from approximately 505 - 580 m above sea level.

Current means of access:

West K has a system of roads consisting of temporary pit access roads and a permanent, paved road that currently provides access from Highway 22 to the main concrete plant.

Old equipment or buildings:

There are a number of facilities currently in use, including an active redi-mix plant, shop, crusher, and equipment staging areas

Recreational trails/use:

As it is private property owned by West K, no public access or activities are permitted.

ACCESS TO TENURE

Do you need to build a road, create stream crossings or other surface disturbance that will not be on your tenure?

No

LAND OWNERSHIP

Application area in a community watershed:

No

Proposed activities on private land:

Yes

Notice served to all parties on private lands:

Yes

Legal description of land:

Lot 1 District Lots 7163 & 7187 Kootenay District Plan NE91135.
Lot 1 District Lot 7163 Plan NE19742

Any proposed activities on Crown land:

No

Activities in a park: No

CULTURAL HERITAGE RESOURCES

Are you aware of any protected archaeological sites that may be affected by the proposed project? No

FIRST NATIONS ENGAGEMENT

Have you shared information and engaged with First Nations in the area of the proposed activity? No

SETTLING PONDS

Waste water treatment facility description: To protect adjacent watercourses and water quality a minimum 30 m buffer zone is established around permanent watercourses where no mining activity takes place. The porous, well-drained soil within the property negates the need for runoff management. There is no effluent from the processing operations that leaves the site. Water losses from the system occur from the process stream, in the way of wet materials, and from evaporative losses.

ACTIVITIES

Pond Id	Width (m)	Length (m)	Depth (m)	Disturbed area (ha)	Merchantable timber volume (m ³)
wash pond	15.00	30.00	3.00	0.05	0.00
Water Source:	wash plant				
Construction Method:	excavated				
Totals				0.05	0.00

Disposal of fines from clean out: Sediment is retained in settling ponds, where it is dredged regularly and disposed of on the property as subsoil material in backfill zones.

Water from ponds will be:

Recycled: Yes

Exfiltrated to Ground: No

Discharged to Environment: No

RECLAMATION PROGRAM

Reclamation and timing for this specific activity: When pond is no longer needed, water will no longer be discharged into the pond. Pond will be allowed to dry and sediment will either be excavated if not suitable for backfill, or mixed in place with imported backfill material. The surface reclamation will occur during reclamation of the surrounding land.

Estimated cost of reclamation of activities described above: 5,000.00

SAND & GRAVEL / QUARRY OPERATIONS

SOIL CONSERVATION

Average depth of overburden (m): 1

Average depth of topsoil (m): 0.3

Measures to stabilize soil overburden Topsoil stockpiles are monitored for presence of noxious weeds. If

stockpiles and control noxious weeds:

noxious weeds are observed, arrangements are made for a certified third party contractor to apply herbicide for control

LAND USE

Is the site within the Agricultural Land Reserve?

No null

Local government has a Soil Removal Bylaw?

Yes

Official Community Plan for the site is:

Official Community Plan Bylaw No. 1470 Electoral Area 'B' Lower Columbia/Old Glory, Kootenay-Columbia Rivers Official Community Plan Bylaw No. 1159 1996

Current land use zoning for the site is:

Q - Quarry

Proposed end land use is:

Natural Area

Estimate total minable reserves over the life of the mine:

1000000 m³

Estimate annual extraction from site:

50000 m³/year

Activities

Activity	Disturbed Area (ha)	Merchantable timber volume (m ³)
Excavation of Pit Run	15.00	0.00
Crushing	0.50	0.00
Mechanical Screening	0.50	0.00
Washing	0.50	0.00
Total	16.50	0.00

Is the work year round or only seasonal?

Seasonal

Brief description of operation, including proposed work schedule

The main purpose of the mining activities is to supply the associated redi-mix concrete plant with aggregate required for concrete supply. In addition to supplying aggregate to the concrete plant, standard and custom aggregate products are produced for supply to the local construction industry. Average production of the processing plant is 100 ton per hour, with the capability of producing specific screened and washed products. Standard work hours Monday to Friday, 7:00 to 4:00 pm, subject to change when production demands need to be met.

RECLAMATION PROGRAM

Reclamation and timing for this specific activity:

Reclamation activities take place continually, when mining activities are complete in a certain area within the pit. Activities include filling in excavations with overburden not suitable for processing, topdressing with suitable soil and contouring the land with machinery to match the surrounding area. When final contouring is complete, areas are to be seeded with a seed mix suitable for the area. Managing reclaimed areas will involve monitoring the seeded area, reseeding if necessary, watching for noxious weed establishment, and taking appropriate actions for control.

If backfilling of pits or pit slopes is proposed in the final configuration for reclamation, details of materials to be used and placement procedures:

See attached for proposed final land contour and details of placement. Section 1.1.1. Cross Sections

Will progressive reclamation be carried out?

Yes

Maximum unreclaimed disturbance at any given time:

16.50

Estimated cost of reclamation of activities described above:

██████████

GROUNDWATER PROTECTION

Average depth to the high groundwater table at the proposed excavation (m):

75.00

Elevation of the groundwater table was determined from:

Existing area wells; Test pits

Measures proposed to protect groundwater from potential impacts of the proposed mining activity:

During test pit advancements, historical excavations on the mine property, and well completion records, saturated soils indicative of the water table have not been encountered beyond the depth of proposed excavations, so the potential to encounter the water table is negligible. The information obtained from well reports drilled on adjacent lands provide guidelines for water table depth; nearing the surface at China Creek, and greater than 280 feet on the upper bench, where the main pit is located. West K's fuel management program includes the presence of spill kits in equipment working in the gravel pit and operators knowledgeable in their use. The fuel storage area have secondary containment and the tank contains a breakaway hose.

IMPACT MINIMIZATION

Shortest distance between proposed excavation to nearest residence (m):

150.00

Shortest distance between proposed excavation to nearest residential water source (m):

180.00

Measures to prevent inadvertent access of unauthorized persons to the mine site:

Signage and gates, which are locked during non-business hours

Measures to minimize noise impacts of the operation:

â€¢ Vegetative buffers consisting of mature trees, shrubs and grass are left intact to minimize noise
 â€¢ Standard hours of operation are Monday to Friday, from 7 am to 4 pm.
 â€¢ Speed limits are in place, so that trucks will be travelling at a low rate of speed which reduces noise generation.

Measures to minimize dust impacts of the operation:

â€¢ Vegetative buffers consisting of mature trees, shrubs and grass are left intact to minimize dust produced on site
 â€¢ Stockpiles that are slated for long term storage and conducive to vegetation growth (i.e. topsoil) are seeded to stabilize soil and control dust and erosion.
 â€¢ Dust control techniques are implemented for haul roads which includes the use of a water truck with sprayer attachment. Regular rounds are made to water the roads during periods when dust is generated.
 â€¢ The main access road from the Highway to the site is paved to minimize dust generation.
 â€¢ Speed limits are in place, so that trucks will be travelling at a low rate of speed which reduces dust generation.

Measures to minimize visual impacts of the operation:

The primary area where visibility is a concern is the south portion of the property, where the activities have potential to be viewed from travelers on Highway 22. The topsoil and overburden berms will be located along the south mine area boundary and will provide a visual barrier to most mine activities. Additionally, a vegetated buffer will remain inside the property boundaries.

WATER USE

Have existing Water Licence or Short-Term water use approval:

No

Water used to support oil and gas activity authorized by the Oil and Gas Commission:

No

Divert and use the water for more than two years:

Yes

WATER USE SITES

WATER SOURCE AND POINT OF DIVERSION

SITE

Name of Source:	Well
Source of the water:	groundwater
Water diverted using a well:	Yes
Well status:	Fully Constructed
Geographic coordinates of well:	Latitude: 49.225378 Longitude: -117.68156600000002
Method of location measurement:	Local Municipality Mapping Services (e.g., CRD)
Well is on:	Private Land
Parcel Identifier (PID) of well:	010-124-390
Well ID plate number:	
Well tag number:	47233
Date of construction:	1981-02-17
Aquifer Source:	
Depth of well:	286 feet
Diameter of well:	6 inches
Estimated yield:	20 US gallons/min
Is the well a flowing artesian well at any time of the year:	No
Is the well head in a pit or a sump:	No
Are there other wells on the property not in use:	No
Pump size in water (inches):	1.5
Location of intake relative to a known point:	From Pipeline Pit road, take access road (driveway) to pump house. Pump house is visible from Pipeline pit road.
Address:	110 PIPELINE PIT ROAD CASTLEGAR BC V1N 3H4 CANADA

Volume, duration and purpose of water use

Purpose for which the water will be used:	Processing & Manufacturing
Use of water:	Water supply for the aggregate wash plant
Total Annual Quantity:	6,822.00000 m ³ /day
Maximum Rate of Diversion:	37.90000 m ³ /day
Term Start Date:	
Term End Date:	
Date of Use Start:	
Date of Use End:	
Description of works:	

ENVIRONMENTAL ASSESSMENT

The *Environmental Assessment Act* requires that certain large groundwater extraction projects undergo an environmental assessment, and obtain an environmental assessment certificate, or obtain a formal determination that an environmental assessment certificate is not required. Criteria for determining whether a groundwater extraction project may require an Environmental Assessment certificate:

1. Constructed on **or after the year 1995** where one or more works, operated intermittently or continually for 1 year, diverted 75 Litres per second or greater.
2. **Modifications to projects constructed prior to 1995** that result in diversion reaching or exceeding 745 Litres per second.
3. Projects built prior to 1995 that divert 75 Litres per second or greater that have been modified on or after 1995 such that there is **an increase of 35% or more over the previous rate of diversion.**

Projects that meet the criteria above may require either an Environmental Assessment Certificate or a letter of exemption from the

Environmental Assessment Office.

Does your application require an
Environmental Assessment certificate, or
letter of exemption?

No

Letter(s) Attached

No

TIMBER CUTTING

Total merchantable timber volume (m³): 0.00

EQUIPMENT

Quantity	Type	Size/Capacity
2	Excavator	300 series / 3 yd
2	Truck	15 cubic yard
2	Loader	824 / 6.5 yd
1	Crusher	100 ton/hr
1	Bulldozer / Crawler Tractors	D9

SUMMARY OF RECLAMATION

Activity	Total Affected Area (ha)	Estimated cost of reclamation (\$)
Sand and Gravel etc.	16.50	
Settling Ponds	0.05	
Subtotal:	16.55	
Unreclaimed disturbance from previous year:		
Disturbance planned for reclamation this year	0.00	
Total	16.55	

OTHER CONTACTS**Contact Info**

Type of Contact: Mine Manager
Referral Point

Name: Patrick Adrain

Phone: [REDACTED]

Email: westkconcrete@xplornet.com

Mailing Address: 300 PIPELINE PIT ROAD
CASTLEGAR BC V1N 3H4
CANADA

LOCATION**LAND INFORMATION****Description**

Land Ownership Category: Private Land

MAPS

Description	Filename
Location	Map1_Location.pdf

Site Plan	Map2_SitePlan.pdf
Layout	Map3_Locations.pdf
Mine Plan	Map4_MinePlan.pdf
Cross Sections	CrossSectionsWestKMinePlan_DRAFT.pdf

DOCUMENTS

Document Type	Description	Filename
Other	5 year mine plan	WestKMinePlan_2020.pdf
Proof of authorization	Authorization letter	authorizationletter.pdf

Privacy Declaration**PRIVACY NOTE FOR THE COLLECTION, USE AND DISCLOSURE OF PERSONAL INFORMATION**

Personal information is collected under the legal authority of section 26 (c) and 27 (1)(a)(i) of the *Freedom of Information and Protection of Privacy Act (the Act)*.

The collection, use, and disclosure of personal information is subject to the provisions of the Act. The personal information collected will be used to process your inquiry or application(s). It may also be shared when strictly necessary with partner agencies that are also subject to the provisions of the Act. The personal information supplied in the application package may be used for referrals or notifications as required. Personal information may be used for survey purposes.

For more information regarding the collection, use, and/or disclosure of your personal information, please contact FrontCounter BC at 1-877-855-3222 or at

FrontCounter BC Program Director
FrontCounter BC, Provincial Operation
441 Columbia Street
Kamloops, BC V2C 2T3

☒ **This check indicates that you have read and agree to the privacy declaration stated above.**

REFERRAL INFORMATION

Some applications may be passed on to other agencies, ministries or other affected parties for referral or consultation purposes. A referral or notification is necessary when the approval of your application might affect someone else's rights or resources or those of the citizens of BC. An example of someone who could receive your application for referral purposes is a habitat officer who looks after the fish and wildlife in the area of your application. This does not apply to all applications and is done only when required.

Name: Patrick Adrain
Phone: [REDACTED]
Email: westkconcrete@xplornet.com
Mailing Address: 300 PIPELINE PIT ROAD
CASTLEGAR BC V1N 3H4
CANADA

☒ **I hereby grant permission for the public release of the information provided above. This information will be used to fulfill, if required, the referral and advertising requirements of my application.**

IMPORTANT NOTICES**DECLARATION**

☒ By submitting this application form, I, declare that the information contained on this form is complete and accurate.

OFFICE

Office handling the application: Cranbrook

PROJECT INFORMATION

Authorization Request Type:

Mines Notice of Work

West K Sand & Gravel Mine Plan 2019-2024

Rev. 1 (Oct 13, 2020)



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West K Sand & Gravel
2019-2024 Mine Plan



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Figure 1. Transect A – A', showing profile of mining Area 1 and Area 2. Refer to Map 4 – Mine Plan for transect location

Figure 2. Transect B – B', showing profile of mining Area 3. Refer to Map 4 – Mine Plan for transect location

Figure 3. Schematic of West K Sand & Gravel processing plant

Appendices

Appendix I: Maps

- Map 1 - Property Location
- Map 2 - General Site Plan
- Map 3 - Locations
- Map 4 - Mine Plan



1 Introduction

This Mine Plan was prepared for the Ministry of Energy, Mines and Petroleum Resources to meet the requirements of West K Sand and Gravel Ltd.'s (West K's) existing mine permit. The plan details the projected mining operations of West K for the time period of 2019 to 2023.

The subject property is located within the boundaries of both the Regional District Kootenay Boundary (RDKB) and Regional District Central Kootenay (RDCK). The size of the parcel on which the gravel pit, processing operations and redi-mix plant are located is approximately 24 hectares. The main purpose of the mining activities is to supply the associated redi-mix concrete plant with aggregate required for concrete supply. In addition to supplying aggregate to the concrete plant, standard and custom aggregate products are produced for supply to the local construction industry. Average production of the processing plant is 100 ton per hour, with the capability of producing specific screened and washed products.

West K Concrete is a family owned and operated business that has grown with the local community since 1990. Today we continue to provide quality ready-mix and aggregate products to the West Kootenays, and take pride in being an honest and reliable company. We strive to maintain compliance with applicable laws and regulations, while fostering a culture committed to employee and community health and safety.

Legal Property Description:

Lot 1 District Lots 7163 & 7187 Kootenay District Plan NEP91135.
Lot 1 District Lot 7163 Plan NEP19742

Registered Owner:

West K Sand and Gravel Ltd.
300 Pipeline Pit Road
Castlegar, B.C.
V1N 3H4
Phone: 250-365-2430
Email: westkconcrete@xplornet.com

Annual aggregate production takes place from April to December, and productivity is approximately 50,000 m³ of processed material per year. The annual raw material requirement is approximately 65,000 m³, sourced from the Main Pit, which is the subject of this mine plan.

Standard work hours Monday to Friday, 7:00 to 4:00 pm, subject to change when production demands need to be met.

1.1 Mapping

See Appendix I for maps.



Map 1 – Property Location

West K Sand and Gravel is located approximately 10 km south of Castlegar, B.C., near the community of Genelle. Access to the site is west off Columbia Ave (Highway 22) on Pipeline Pit Road.

Map 2 – General Site Plan

Components of the General Site Plan map include property boundaries, access roads, location of all structures and wells on neighboring properties within 300 metres of the property line, watercourses, current land uses adjacent to property and elevation contours (5 m increments).

Steep slopes and rocky outcroppings are found in the northwestern portion of the property, toward China Creek. The northeast portion of the property is relatively flat, with slopes ranging from 0 to 5 degrees. The remainder of the property is benched.

China Creek parallels the mid portion of the west property boundary.

There are five residences and a number of associated structures within 300 m of the property boundary. Three of these residences are southwest of the property, one is owned by West K and is within the property boundary, and one is east of the property boundary.

There are four groundwater wells within 300 m of the property on file with the BC Ministry of Water, Land and Air Protection. The first, #5064, is a spring (depth reported as 0 m) owned by the Genelle Improvement District. It was developed in 1950, is located very close to China Creek. The second, #43586, is associated with the residence at 110 Pipeline Pit Road. It was drilled in 1979 to a depth of 86 feet and deemed dry. The third well, #47233, was drilled in 1981 to a depth of 286 feet and is used by West K Sand and Gravel as the sole water source. The static water level is at a depth of 258 feet. Well #45597 was drilled in 1980 at the China Creek Service Station. The static water level is 50 feet deep and the total depth of the well is 320 feet.

Map 3 – Locations Map

The Locations map shows topsoil, subsoil and overburden storage areas, product stockpiles, processing sites, settling ponds, the weigh scale, fuel storage areas, sanitary facilities, buildings and the water source (well).

Subsoil and overburden are used to fill areas that have been previously excavated, as part of reclamation of the open pits. The three areas currently undergoing backfill are located in the north and centre portions of the gravel pit. Product stockpiles are outlined on the map; they are located within the central area of the gravel pit.

The processing site, consisting of a crushing and wash plant is located in the middle of the gravel pit. Settling ponds are situated adjacent to the processing site. They consist of a series of three ponds, designed for silt deposition and process water recycling. Water is supplied from a groundwater well. A truck wash-out pond is located on the map, across from the weight scale.



This is associated with the concrete operations and is used to collect effluent during the final wash down of concrete mixer trucks.

Weigh scales are located near the main entrance gate. The fuel storage location consisting of above ground tanks with secondary containment. Plumbed washroom facilities are located in the Office/Batch Plant, and the Shop.

Map 4 - Mine Plan, Specific Map

Components of the Mine Plan, Specific map include boundaries of proposed excavations, buffer zones and progression of mining over the next five years.

Three areas proposed for excavation during the next five years are represented on the map. The first area is currently undergoing mining activities and is 1.15 hectares in size. This area is at the current west edge of the mining extent, west of the crushing plant and area used for stockpiling material. Salvaged topsoil is currently situated north of the excavation area, and as mining progresses, will be stockpiled along the north edge of Areas 1 and 2. The second area slated for excavation is downslope of Area 1 and is approximately 0.43 hectares in size. Area 3 is 1.0 hectares in size and is located in the south portion of the property.

There is one flowing stream within 300 m of the property boundary. China Creek parallels the centre portion of the west property boundary. A 30m buffer around China Creek will be maintained. Within this 30m buffer, mining activities will be avoided. The proposed mining activities do not encroach on this buffer; the closest disturbance will be 75 m from the creek.

1.1.1 Cross Sections

Cross sections showing the original land surface and final configuration are shown in the Appendix. Reference Map 4 for the locations of transects A through D within the Mining Areas.

Figure 1. Transect A – A', showing profile of mining Area 1 and Area 2. Refer to Map 4 – Mine Plan for transect location.

2 Material Quality and Quantity

An excavator and dozer will be used to remove and pile brush and topsoil salvage. In Area 3, a dozer will be utilized to create a berm along the south excavation boundary with topsoil or overburden material. Excavation sequence will follow the order Area 1, Area 2, then Area 3.

In general, mining will start at the upper slope position, and progress in a series of benches toward the toe of the slope. Wall heights will not exceed 5 m, and the horizontal width will be a minimum of 8 m. Mined pit run will be loaded into dump trucks and hauled to a stockpile location near the crusher, where it will be fed into the plant. Any material not suitable for the production of aggregate products will be stockpiled adjacent to the mining area. This material will be used for backfill and establishing surface contour prior to reclamation activities. After active mining is complete in an area, walls will be sloped to provide stable faces, with a minimum 3 horizontal to 4 vertical slope.



2.1 Area 1, 1.15 ha

Topsoil will be salvaged and stockpiled in the area noted on Map 4. Approximately 3,400 m³ of topsoil is expected from this area, calculated from 0.30 m depth over 1.15 ha.

It is expected that an average 15 m depth of pit run material will be excavated over the 1.15 ha area, resulting in 172,000 m³ of excavated material. The area will be excavated in benches, wall height not exceeding 5 m while actively mining. Area 2, 0.43 ha

Approximately 1,300 m² of topsoil will be salvaged from this area and stockpiled along the north edge of the excavated area. Pit run will be excavated to an average depth of 12 m, resulting in 52,000 m³ of excavated material. Overburden will be used as backfill in the area adjacent to the excavation.

2.2 Area 3, 1.0 ha

Approximately 0.3 m of topsoil will be salvaged over 1.0 hectares, resulting in a volume of 3,000 m³. Most of the topsoil will be stripped using a dozer, and pushed to create berms at either the south or east edges of the excavation. An average 10 m depth of pit run material will be excavated over the 1.0 ha. Resulting volume of pit run will be 100,000 m³ of excavated material.

3 Roadways and Traffic Control

West K has a system of roads consisting of temporary pit access roads and a permanent, paved road. Map 3 outlines the system of roads in the pit and around the processing plant. The road system facilitates safe and efficient operation of mobile equipment while minimizing environmental impacts (noise, dust, water management). The entire road network within the property totals approximately 2.2 km in length. Traffic levels entering and exiting Highway 22 are expected to stay the same within the timeframe of this plan.

The following guidelines are used for the development of roads on West K property. Two-way road widths are approximately three times the width of the largest vehicle with extra distance across on curves. Road shoulder berms are installed on areas adjacent to banks, and are of sufficient height (¾ of the height of the largest tire on vehicles). Roads are designed so curves are kept to a minimum, and when it can't be avoided, curves are gradual, limiting sharp corners. Grades are a maximum of 8% for both temporary and permanent roads.

Roads are maintained regularly. For temporary roads, which are not surfaced, maintenance consists of daily grading when in use with a front-end loader, ensuring adequate drainage and berms are in place, and watering during periods with a high risk of dust generation.

The main road from the highway to West K property is paved to reduce the noise, dust and wear and tear on vehicles. When potholes develop, they are filled with concrete. When required, snow is plowed and sand is applied to reduce slippery conditions.

3.1 Construction of new haulage roads

Limited construction of new haulage roads is expected within the timeframe of this mine plan. To access mining areas, approximately 100 m of new access road is projected for dump



trucks hauling from the pit to the processing site. This temporary road will be constructed mainly for equipment and dump truck access and will not be surfaced. Grading will be done regularly with loaders during travel along the road.

3.2 Traffic control plan

The maximum allowable speed for vehicles within the pit is 10 km/hr. There is an entrance and exit to the gravel pit for haul trucks, to ensure one-way travel of large trucks. There is a designated parking area for personal vehicles. Right of way hierarchy is employed, with the highest priority given to loaders, gravel trucks then light trucks. Headlights must be turned on. As part of the general orientation for new employees, a description of the traffic control plan within the pit is provided. When non-West K vehicles are required to enter the pit, the main office notifies the equipment operators via radio communication.

4 Processing

4.1 Processing Plant

The average plant output is approximately 100 tonnes per hour. The processing plant consists of the following:

- 1) Hopper & Grizzly Feeder – A 12 m³ capacity hopper accepts raw material that enters the production stream. A grate size of 400 mm over the hopper provides static rejection of boulders. When boulders become entrapped, a hydraulic pump is used to lift the grate to facilitate removal. At the bottom of the hopper, a Mormak grizzly feed regulates the flow of material into the processing plant using a belt conveyor.
- 2) Jaw Crusher – The primary crusher in the operation is a 60 hp, 508 x 914 mm Kue-Ken jaw crusher with hydraulic adjust. Feeder and discharge conveyors are 914 mm (belt width). The jaw crusher closed size setting is set to 100 mm.
- 3) Screen Deck – Aggregate is screened with a 1.8 x 6.0 m, Metso screen deck. Screens on three decks can be changed according to product specifications.
- 4) Cone Crusher – The secondary crusher in the system is a Metso HP200 cone crusher. The crusher can be adjusted to produce final aggregate size of 9.5 to 76 mm.
- 5) Wash Plant – The Clemro wash plant has three-decks, is 1.5 x 4.8 m in size and contains a 1117 mm, single spiral Eagle sandscrew.
- 6) Control Tower – The control tower is situated within a 16 m control trailer. It provides unobstructed views of the entire operation, while the operator sits at the control panel. Electrical panels, document storage and sieve analysis lab are housed within the trailer.

West K Sand & Gravel
2019-2024 Mine Plan

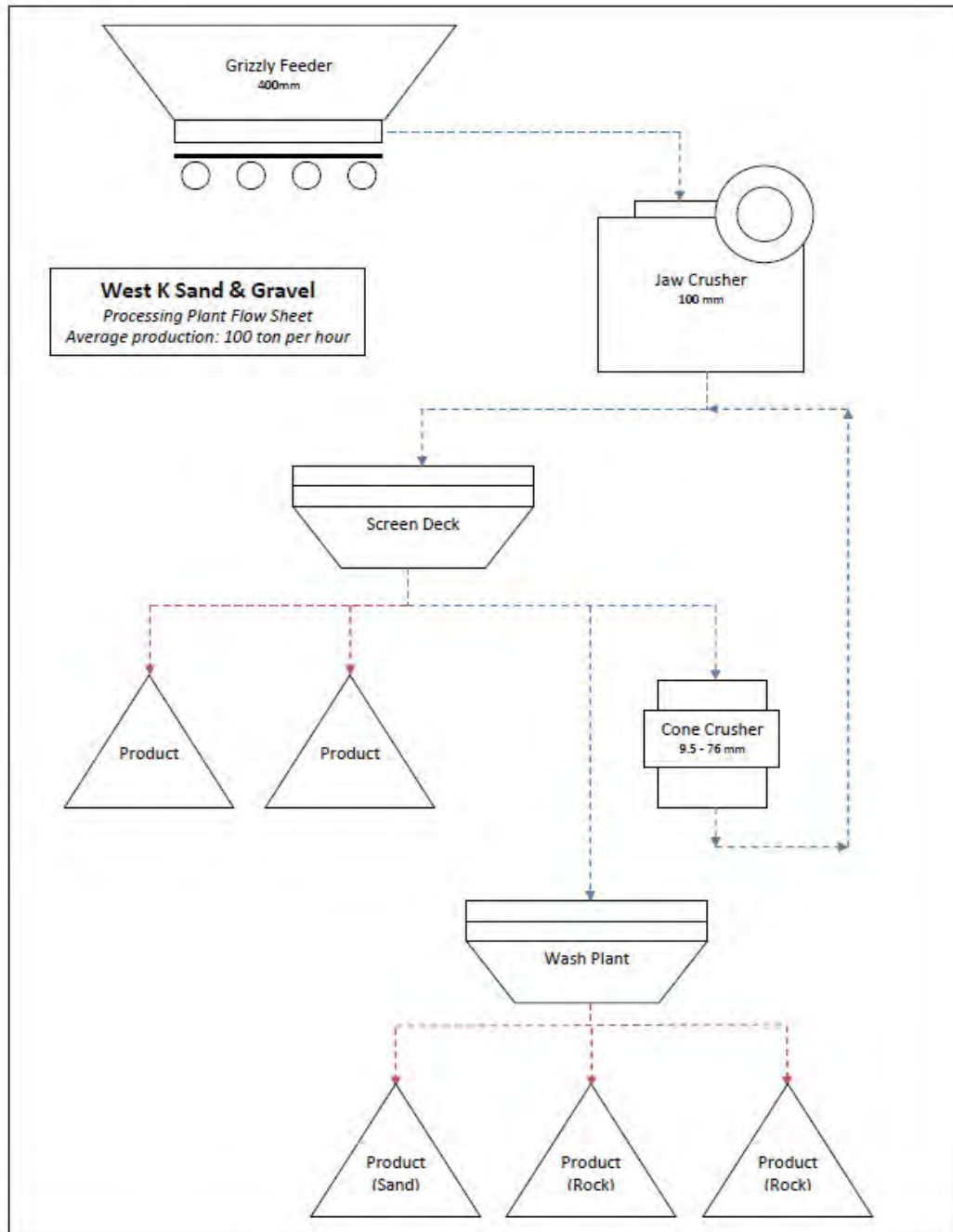


Figure 3. Schematic of West K Sand & Gravel processing plant

(6)



4.1.1 Screening/Crushing

Raw material (pit run) is stockpiled adjacent to the processing plant, where a front-end loader is used to move the material into the grizzly. The grizzly rejects oversized material (>400 mm) and the remaining material is conveyed to the jaw crusher. Typically, the jaw is set to reduce aggregate size to 100 mm. From the jaw, material enters the screen deck, where it is sorted for one of three destinations: 1) up to two different products can be segregated from the screen deck, 2) oversized material can be directed into the secondary (cone) crusher, and 3) material can be directed to the wash plant. Oversized material directed into the secondary crusher is reduced to final size, which can be set from 9.5 to 76 mm. The secondary crusher is in a closed loop, where material is directed back onto the screen deck for sorting. Product coming off the screen deck is directed into temporary piles by stationary conveyor belts, where a front-end loader is used to transport material to stockpile locations.

4.1.2 Washing

Material directed to the wash plant from the screen deck is subject to high pressure spray to remove fines. Material is spread in thin layers within the screen deck to improve washing efficiency. Two different rock products and one sand product can be produced concurrently. Wet processed material is placed in a way that water drains from the pile into settling ponds prior to moving to stockpile locations. Water is returned to the settling ponds where it is recycled for future use in the wash plant.

4.1.3 Stockpiling

When pit run is transported from the source location it is stockpiled with dump trucks adjacent to the grizzly feeder for immediate processing. Produced aggregates are stockpiled in the vicinity of the processing plant, taking into consideration spacing requirements between piles, drainage, accessibility, ground stability and safety. Stockpiles are mainly constructed using front-end loaders and occasionally with dump trucks. Sites used for stockpiling material are level and clear of debris or undesirable material. When removing material from the stockpile with a front-end loader, the lower 0.30 m of the pile is not disturbed to avoid the introduction of base material into the processed material.

4.1.4 Loading

Material is loaded into trucks using either a front-end loader or excavator. Drop height is minimized where possible to lessen dust generation and noise impacts. Careful monitoring of load sizes is conducted to ensure maximum weight limits are not exceeded. A scale is set up at the entrance to West K, where loaded trucks leaving the site are weighed.

4.2 Products

West K produces crushed, washed and screened products.

- Continuously produced washed products include:
 - Concrete aggregate, 20 mm,
 - Concrete aggregate, 10 mm,
 - Concrete sand, 10 mm minus,

(7)



- Masonry sand,
- Drain rock, 1 inch,
- Drain rock, 2 inch,
- Drain rock, 3 inch, and
- Filter sand for septic systems
- Continuously produced screened products include:
 - Road base, 19mm,
 - Road base, 25mm,
 - Road base, 75mm,
 - Bedding sand

West K works closely with clients to produce batches of specific products that are not commonly stockpiled. In these cases, the continuous production of standard products is suspended and the processing plant is reconfigured to meet given product specifications.

5 Overburden and waste rock dumps

Material that is not suitable for aggregate production is found at surface, and between layers of desirable sand and gravel deposits. Equipment operators are skillful in the identification and segregation of raw material at the source to ensure a minimal amount of overburden enters the process plant. When overburden is encountered in the mining area it is cast adjacent to the actively mined area and stockpiled where it eventually becomes part of the material used to reclaim the contour of the pit.

In the previously mined areas, encountering rock not suitable for crushing has not been an issue, therefore there has been no use of waste rock dumps.

6 Water systems and storage facilities

Fresh water is sourced from a well drilled adjacent to the property. Every attempt is made to recycle the water used in the processing operation. Process water cycles through a closed series of three ponds where fine particulates settle out of the water column. The clarified water is then cycled back through the wash plant during processing.

Water inputs to the processing operations include groundwater from a well drilled adjacent to the property and precipitation events. Because of the high hydraulic conductivity of the soil in the pit/processing area, there is limited input from surface runoff. Water outputs include losses during production and evaporation from settling ponds. There is one lined freshwater storage pond located adjacent to the plant, where water pumped from the well is stored, in addition to the recycled process water. Two unlined settling ponds are used to treat silt-laden water coming from the wash plant. As water flows from the wash plant through the settling ponds, fine particulate material settles out of the water column. The fine material deposits are regularly clean out using an excavator, and hauled to disposal area within the pit.



7 Groundwater Protection

During test pit advancements, and all historical excavations on the mine property, records of saturated soils indicative of the water table have not been encountered. The proposed excavations will not exceed the depths previously explored, so the potential to encounter the water table is very low. The information obtained from well reports drilled on adjacent lands provide guidelines for water table depth; nearing the surface at China Creek, and greater than 200 feet on the upper bench, where the main pit is located.

8 Surface Water Management

To protect adjacent watercourses and water quality a minimum 30 m buffer zone is established around permanent watercourses where no mining activity takes place. The porous, well-drained soil within the property negates the need for runoff management. There is no effluent from the processing operations that leaves the site. Water losses from the system occur from the process stream, in the way of wet materials, and from evaporative losses. Sediment is retained in settling ponds, where it is dredged regularly and disposed of on the property.

9 Noise and Dust Management

The following practices are in place to minimize the impact of noise and dust generation as a result of mining and processing activities:

- Vegetative buffers consisting of mature trees, shrubs and grass are left intact to minimize both noise and dust produced on site, as well as provide a visual barrier to the operation.
- Stockpiles that are slated for long term storage and conducive to vegetation growth (i.e. topsoil) are seeded to stabilize soil and control dust and erosion.
- Dust control techniques are implemented for haul roads which includes the use of a water truck with sprayer attachment. Regular rounds are made to water the roads during periods when dust is generated.
- Standard hours of operation are Monday to Friday, from 7 am to 4 pm. Extended hours are sometimes necessary due to production schedules.
- The main access road from the Highway to the site is paved to minimize dust generation.
- Speed limits are in place, so that trucks will be travelling at a low rate of speed which reduces dust generation.

10 Reclamation

Reclamation activities take place continually, when mining activities are complete in a certain area within the pit. Activities include filling in excavations with overburden not suitable for processing,

West K Sand & Gravel
2019-2024 Mine Plan



topdressing with suitable soil and contouring the land with machinery to match the surrounding area. When final contouring is complete, areas are to be seeded with a seed mix suitable for the area.

Managing reclaimed areas will involve monitoring the seeded area, reseeding if necessary, watching for noxious weed establishment, and taking appropriate actions for control.

West K Sand & Gravel
2019-2024 Mine Plan



Appendix I – Maps

RDKB File No. B-7163-08839.025

December 17, 2020
 Revised Referral Response

Sent Via Email

Lyn Konowalyk
 Mines Inspector, Permitting
 Ministry of Energy, Mines & Petroleum Resources
 Suite 202, 100 Cranbrook St. N.
 Cranbrook, BC V1C 3P9

RE: Referral Response request for Notice of Work Sand and Gravel Pit Application ID: 7094 - REVISED

On behalf of the Regional District of Kootenay Boundary, thank you for the opportunity to provide a referral response for the above noted application for Notice of Work (Sand and Gravel Pit). The portion of the project area legally described as Lot 1, Plan NEP91135, District Lot 7163, Kootenay Land District, & District Lot 7187 is located within Electoral Area 'B' of the Regional District of Kootenay Boundary (RDKB). Staff comments on RDKB's policies and regulations as they relate to the application are noted below.

The Official Community Plan (OCP), Land Use Designations & Development Permit Areas: The majority of the subject property is located in the Rural Resource 1 OCP designation, with the northwest corner located in the Drinking Water Resource 1 designation (shown in brown and blue, respectively, in the map below).

Rural Resource 1 designation: The 'Rural Resource 1' lands are located within approximately two kilometers of built up areas in adjacent municipalities and rural residential areas. The 'Rural Resource 1' lands are under the most pressure for expansion of higher density residential and rural residential subdivisions, particularly when the demand for recreational property is high.

Drinking Water Resource 1 Designation: The subject property is located in the China Creek Community Watershed. Degradation of these surface water sources of drinking water would be detrimental to the community of Genelle. The majority of the community of Genelle is reliant on groundwater, which is understood to be hydrologically connected to China Creek. The supply of reliable and clean water is an essential part of what makes those communities livable. As such, the portion of the property located in the Drinking Water Resource 1 designation shall require a Drinking Water Resource Development Permit if expanding operations on the subject property, unless the proposed project qualifies for an exemption. Details on the Drinking Water Development Permit requirements and potential exemption categories are attached to this referral response.

Main

202 – 843 Rossland Avenue
 Trail, BC V1R 4S8
 T: 250.368.9148
 T/F: 1.800.355.7352
 F: 250.368.3990

Grand Forks

2140 Central Avenue
 Grand Forks, BC V0H 1H0
 T: 250.442.2708
 T/F: 1.877.520.7352
 F: 250.442.2688

rdkb.com



a principal use are accessory buildings and structures, bed and breakfast, home-based business, and a secondary suite.

Floodplain Bylaw: the Floodplain Bylaw applies to the entire Regional District. The Flood Level for China Creek is a minimum of 1.5 m above the natural boundary of the Creek and the floodplain setback is a minimum of 15 m from the natural boundary of China Creek. Unless a site-specific exemption to the Floodplain Bylaw is approved by the Regional Board, the flood level and setback requirements apply to the following:

- The underside of any floor system, or the top of any pad supporting any space or room, including a manufactured home, that is used for dwelling purposes, business or the storage of goods which are susceptible to damage by floodwater shall be above the specified level, and
- Any landfill required to support a floor system or pad shall not extend within any setback from a watercourse or body of water specified by the bylaw or the Minister of Water, Land and Air Protection.
- Structural support or compacted fill or a combination of both may be used to elevate the underside of the floor system or the top of the pad above the Flood Levels* specified in Section 5(a). The structural support and/or fill shall be protected against scour and erosion from flood flows, wave action, ice and other debris.

*Flood Construction Level or Flood Level means a Designated Flood Level plus Freeboard, or where a Designated Flood Level cannot be determined, a specified height above a Natural Boundary, Natural Ground Elevation, or any obstruction that could cause ponding.

Please feel free to contact me at planner@rdkb.com or my direct line at 250-368-0228 if you have any questions or require clarification.

Sincerely,



Danielle Patterson, BA, BPI
Planner
Regional District of Kootenay Boundary

November 27, 2020
To: L. Konowalyk
Page 3 of 3

23 Drinking Water Resource Development Permit Area

The boundaries of the Drinking Water Resource Development Permit Area coincide with the Drinking Water Resource 1 and Drinking Water Resource 2 land use designations as shown on Map 1. Those land use designations include the following **community watersheds** as shown on Map 7 Community Water Service Areas:

- Casino Creek (serves Casino);
- McNally Creek (serves Oasis);
- Topping Creek (upper portion that serves the City of Rossland);
- Hanna Creek (lower portion serves Rivervale); and
- China Creek (serves a small residential area in Genelle on the west side of Highway 22).

The Drinking Water Resource Development Permit Area is designated pursuant to:

- Section 919.1(1)(a) of the *Local Government Act* – Protection of the natural environment, its ecosystems and biological diversity; and
- Section 919.1(1)(b) of the *Local Government Act* – Protection of development from hazardous conditions.

Justification

The drinking water sources for the unincorporated communities of Casino, Oasis, Rivervale, a small portion of Genelle, and the City of Rossland, are surface water from **community watersheds**. The majority of the community of Genelle is reliant on groundwater, which is understood to be hydrologically connected to China Creek. The supply of reliable and clean water is an essential part of what makes those communities livable.

Land use activities in **community watersheds** can cause negative impact(s) on water quality, quantity, and timing of flow. A purpose of the Drinking Water Resource Development Permit Area is to protect the riparian area ecosystem, which is sensitive to disturbance; and help to maintain its capacity to filter sediments and prevent their flow into streams. The introduction of sediments to watercourses increases turbidity, which impacts aquatic plant and animal species, and also increases the potential for bacterial and chemical contamination of drinking water sources. This designation aims to protect both existing and future development from the hazardous condition of unsafe drinking water; and to minimize the potential for erosion which leads to water quality degradation.

At the time this **Plan** was prepared the Casino Waterworks District and the China Creek Water Users Community had boil water notices on their systems indicating a significant health threat if water is not boiled prior to use. The boil water notices had been in place since 1994 and 1997 for the Casino and China Creek systems, respectively: the source of contamination was cited as “source water contamination” and “inadequate treatment/disinfection” for the Casino and China Creek systems, respectively.

The Casino **Community Watershed** is a small watershed at 1.8km² in size making it particularly vulnerable to disturbances in the riparian area. Clear cutting of the watershed during the winter of 1988-89 caused breaks and freezing of the supply main requiring that water be hauled by tanker truck from the City of Trail to the reservoir⁹. A report by Dayton and Knight prepared for the **Regional District** predicted that the Casino Waterworks District would experience poor water quality for a number of years due to the logging activities that took place.

⁹ RDKB Casino Water Supply Study: Stage 1 Preliminary Report, May 1990, Dayton and Knight Ltd.

The table below lists each of the **community watersheds** in the **Plan Area**, the population served, and the value of property in the areas they serve:

Watershed	Area (km ²)	Community Served	Population Served (est.)	Assessed value in \$millions (land & improvements - 2009)
Casino	1.8	Casino	60	4.7
McNally	6.0	Oasis	95	5.3
Topping	7.0	City of Rossland	See Note Below	
Hanna	22.8	Rivervale	282	24.8
China	26.4	Genelle	28	1.5

Note: The upper Topping Creek watershed provides a portion of the water supply for the City of Rossland. At the time this **Plan** was prepared the City of Rossland also used the upper Hanna Creek Watershed.

Exemptions

A Development Permit is not required for any of the following:

- a) Subdivision of land that creates two or fewer parcels;
- b) Land clearing or timber harvesting beyond 30 metres of the natural boundary of a stream¹⁰;
- c) The repair, maintenance or alteration of any public structure, facility or land, including park land, open space, and roads;
- d) Construction or maintenance of recreational trails with a width of less than two metres;
- e) The reconstruction, repair, or alteration of, or addition to, an existing permanent building or other structure, provided the footprint of the existing building or other structure is not thereby expanded within 30 metres of the natural boundary;
- f) The environmentally sensitive removal of trees and shrubs designated as hazardous by a professional forester registered in British Columbia, or in accordance with Provincial "Firesmart" standards; or those trees and shrubs designated as host trees by the Sterile Insect Release Program as recommended in a report submitted to the **Regional District**;
- g) Development and land alteration proposals for which an authorization by the Department of Fisheries and Oceans for Harmful Alteration, Disruption or Destruction (HADD) has been granted;
- h) Land assessed as Private Managed Forest Land under the *Assessment Act*;
- i) Crown land where a forest licensee is operating under the *Forest and Range Practices Act*; or
- j) The provision of, or works required for, the operation and maintenance of a public utility including sanitary sewer, storm water, natural gas, cable, hydro-electric, telecommunications works or community water supply systems.

¹⁰ A stream is defined as: (a) a watercourse whether it usually contains water or not; (b) a pond, lake, river, creek or brook; or (c) a ditch, spring or wetland that is connected by surface flow to something referred to in (a) or (b).

Guidelines

Land clearing in the riparian area is the primary concern to be addressed through an application for a Drinking Water Resource Development Permit. Alteration and disruption of natural features or conditions in a riparian area may have adverse impacts on aquatic habitat or community water systems.

Native vegetation, including most trees, must be preserved, protected and maintained in the riparian area. Deforestation and removal of vegetation can result in significant increases in the size, duration, and frequency of floods, can worsen bank erosion and can degrade sources of drinking water. Limited removal may be permitted on demonstration that disturbance will be minimized, mitigation or remedial measures will be implemented and existing and proposed development, on the development property and neighbouring properties in this area will be protected.

Water quality can be affected by excessive land alteration, erosion, and the improper use and storage of chemicals and hazardous materials. Incorporate erosion and sedimentation control measures to prevent ecosystem degradation and to protect development. No septic tank, drainage and deposit fields or irrigation or water systems may be constructed in areas that would, if such systems failed, result in degradation of the water supply. Such systems may be considered only if accompanied by secondary protection measures as recommended in writing by a qualified registered professional. Fuels and lubricants must not be stored or used in a riparian area during or after development.

The pattern of development should take into consideration the natural landscape and changes to existing terrain should be kept to a minimum. The configuration of new parcels and the siting of new buildings and other structures, as well as the additions and alterations to existing buildings and other development activities including but not limited to road-building, location of driveways, and location of services must work sensitively around established existing vegetation, must be located so as to minimize alterations to the riparian areas and other environmentally sensitive areas, and must consider protection of development.

Drainage flow rates off-site should be retained as close as possible to pre-development conditions and drainage retention is encouraged. In order to promote sustainable efforts in storm water drainage and ground water infiltration alternatives to impermeable surfaces such as blacktop and paving are encouraged. Consideration should be given to screening storm water drainage collected within this area for oil using oil separators.

While forestry activities on private managed forest land and Crown land are excluded from the Development Permit process, voluntary compliance with the guidelines of this section is encouraged for such activities.

Implementation Reports

An application for a Drinking Water Resource Development Permit must include a report from a qualified environmental professional (as defined by the Riparian Areas Regulation), which provides an opinion as to whether the natural features, functions or conditions in a riparian area will be altered or disrupted in such a manner that there could be adverse impacts on aquatic habitat or community water systems.

The report should include information demonstrating that the capacity of riparian areas to filter sediments and prevent their entry into receiving water bodies is maintained and assurance that the use and storage of fuels and lubricants is avoided in the riparian area. The report must also include details regarding:

- Retention of native vegetation including most trees in the riparian area. If trees are proposed to be removed from the riparian area, the report must include details regarding how the disturbance of other vegetation will be minimized;
- Proposed roads and stream crossings in the riparian area. Construction of roads and stream crossings in the riparian area should be avoided. If unavoidable, the report should outline the measures that will be taken to prevent erosion of stream banks; and
- Details regarding any proposed land clearing activities especially in areas with steep slopes, and areas identified as high hazard for landslides.

In cases where harmful or adverse effects are anticipated, the report must include recommendations as to how the impact of the works or activity proposed within the riparian area may be mitigated. The **Regional District** may specify development permit conditions based on the report of the qualified environmental professional.

Development should not result in further degradation or contamination of water sources. As a result areas of land may not be developable and must remain free of any activity or development; in other instances development may be permitted where measures can be implemented to prevent further degradation or contamination including through erosion and run-off, and, in areas of steep slopes, from landslip and landslide. In accordance with section 920(11) of the Local Government Act, the Regional District may require a report by a professional engineer with respect to protecting existing and proposed development, on the development property and neighbouring properties in this area, from the hazardous condition of water sources subject to degradation and contamination and, in area of steep slopes, from landslip, erosion and landslide. For certainty, the above reports may be combined.



Staff Report

RE:	Flett Environmental Services Referral – Small Scale Wood Salvage		
Date:	January 28, 2020	File #:	D-6
To:	Chair Langman and members of the Board of Directors		
From:	Danielle Patterson, Planner		

Issue Introduction

The Regional District of Kootenay Boundary (RDKB) received a referral from Flett Environmental Services regarding a small scale wood salvage operation in Electoral Area D/Rural Grand Forks, located near Highway 3, off Fisherman Creek Road.

Property Information	
Owner:	Provincial Crown
Applicant:	Peter Flett, Flett Environmental Services
Location:	Unaddressed Crown lands
Legal Description:	Various
Area:	Approximately 1.48 ha (366 ac)
Current Use:	Forestry
Land Use Bylaws	
OCP Bylaw No. 1555	Agricultural Resource 1 and Rural Resource 2
DP Area	NA
Zoning Bylaw No. 1675	Agricultural Resource 1 and Rural Resource 3
Other	
ALR:	Partial
Kettle River Watershed:	Granby River sub basin

History/Background Information

The subject lands are east of the City of Greenwood and south of Wilgress Lake, at Thimble Mountain (see Attachment 1 – Site Location Map). The subject lands border the area known as Summit City, which was surveyed near the turn of the century. There are existing cut blocks in the proposal area and the eastern portion of the proposal area is located in the Agricultural Land Reserve (ALR).

Northern Gooseberry, a Red Listed Species¹, is known to occur in the area and the most easterly section of the subject lands contain a small area of grassland/open forest, which is considered an environmentally sensitive area.

¹ A red listed species or ecosystem, is one where there is at risk of it being lost (extirpated, endangered or threatened).

Proposal

The applicant has submitted a request for a referral response for the subject lands on a voluntary basis, to obtain additional input on their proposed small scale salvage operations (see Attachment 2 – Applicant Submission). The applicant is using existing roads for hauling operations. The applicant notes they are operating in Moose Winter Range.

The proposal is for a local post and beam home builder to remove, by hand-falling and line-skidding, stems and small batches (up to 2000 m²) of dead and dying timber. This includes timber damaged by Douglas-fir beetle, wind, root disease and drought.

Advisory Planning Commission (APC)

The Electoral Area D/Rural Grand Forks APC reviewed the referral at their January 5, 2021 meeting and recommend the referral be supported with conditions: Watershed concerns and Moose Winter Range considerations.

Implications

The portion of the subject lands in the ALR are designated Agricultural Resource 1. The majority of the subject lands are outside of the ALR and are designated Rural Resource 2. Agriculture is permitted in both designations, which includes all farm uses as defined by the Agricultural Land Commission (ALC), including the processing and harvesting of timber. Resource extraction is also permitted in the Rural Resource 2 designation.

Agriculture, including processing and harvesting timber, are permitted uses in both the Agricultural Resource 1 Zone and Rural Resource 3 Zone.

There is an unnamed creek in the proposed salvage area. While the Floodplain Bylaw setback requirement of 15 metres from a watercourse does not apply when no structures or buildings are part of the proposal, careful attention should be paid by the applicant in extracting trees within this setback of the unnamed creek.

Staff Comments

The Watershed Planner commented that winter logging minimizes disturbance on the soil and undergrowth. Removal of dead and dying trees should support maintaining the local ecosystem processes, including water management.

Recommendation

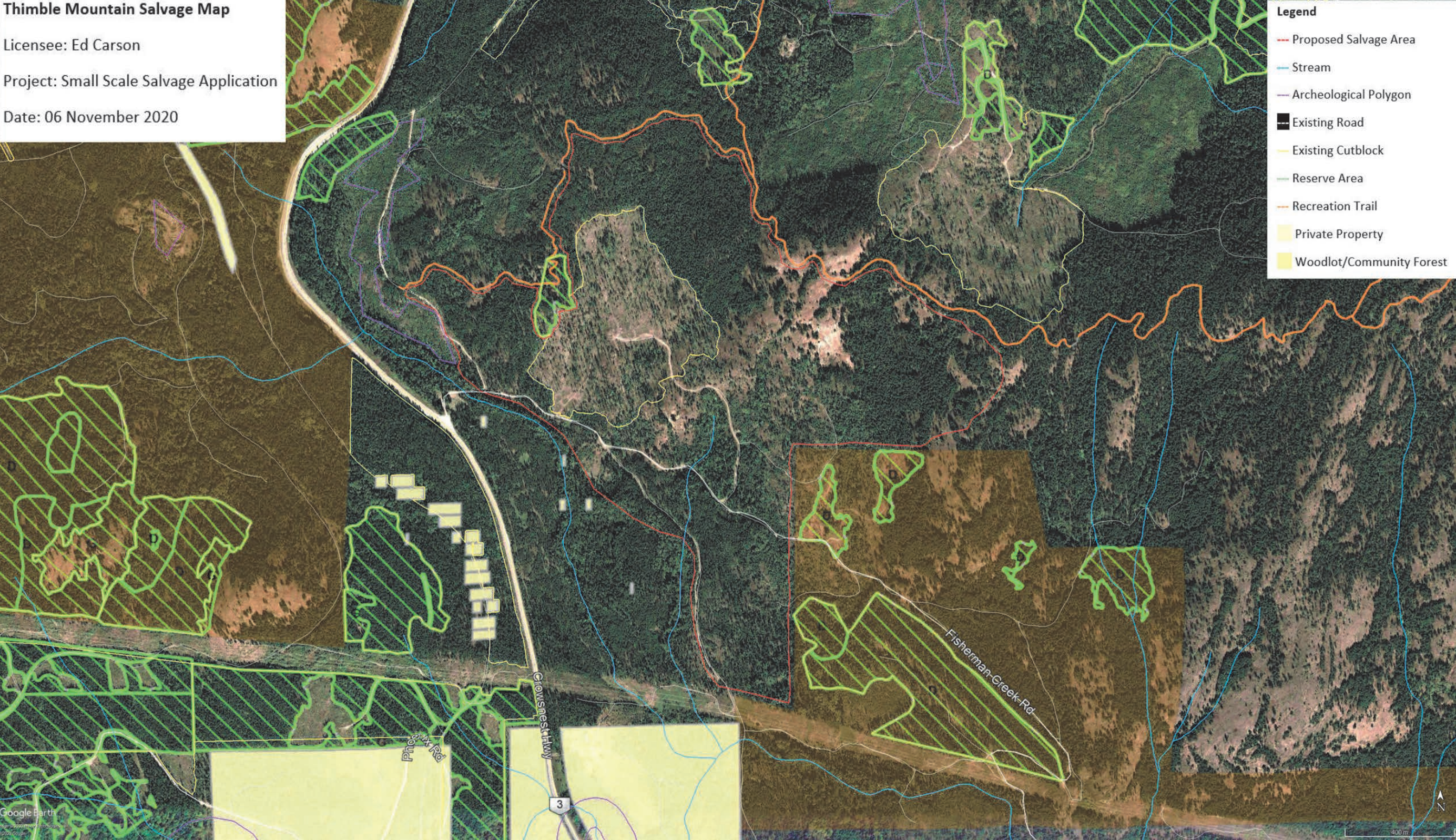
That Regional District of Kootenay Boundary Board of Directors direct staff to forward this staff referral report to Flett Environmental Services Referral for the Small Scale Wood Salvage, which includes the recommendation of the Electoral Area D/Rural Grand Forks Advisory Planning Commission, to Flett Environmental Services for consideration.

Attachments

1. Site Location Map
2. Applicant Submission

Thimble Mountain Salvage Map

Licensee: Ed Carson
Project: Small Scale Salvage Application
Date: 06 November 2020



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

From: Peter Flett <flettenvironmental@gmail.com>

Sent: October 24, 2020 1:52 PM

[REDACTED] Kristina Anderson <watershedplanner@rdkb.com>

Subject: Small Scale Salvage Inquiry

Hi Kristina and Lisa,

I am working on a Thimble Mountain small scale salvage application for Ed Carson, a local post and beam home builder out of Grand Forks.

The project would target the removal (hand-falling and line-skidding) of single

stems and small patches (<0.2ha) of dead and dying timber up to 2000m³, including timber damaged by Douglas-fir beetle, wind, root disease, and drought. There will be no road building and existing roads would be utilized for hauling.

Please see attached kmz shape and associated map. You will notice I have excluded areas adjacent to Fisherman Creek, recreation trails, archeology polygons, reserves, and OGMAs. I just wanted to gather some additional input regarding protection of water and wildlife values to ensure we have everything covered.

In the application I have addressed that we are operating within Moose Winter Range planning cell #13.

Thanks,
Peter

--

Peter Flett, RPF, MSFM
Flett Environmental Services





Staff Report

RE:	Interfor Referral – Tree Farm License 8 – Management Plan #11 version 2.2 Information Package		
Date:	January 28, 2021	File #:	I-1-E
To:	Chair Langman and members of the Board of Directors		
From:	Danielle Patterson, Planner		

Issue Introduction

The Regional District of Kootenay Boundary (RDKB) received a referral from Interfor giving the RDKB the opportunity to provide comments on Interfor's Information Package for Tree Farm License 8 – Management Plan #11, version 2.2, located in Electoral Area E/West Boundary (see Attachment 1 for Applicant Submission). This is the last review period before the applicant submits their final Management Plan to the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD).

Property Information	
Owner:	Crown
Agent:	Debbie Bhattacharya, RPF
Location:	Okanagan Highlands and Midway Range/Boundary Creek
Electoral Area:	Electoral Area E/West Boundary
Legal Description:	Unsurveyed Crown Land
Area:	77,189 ha (190,738 ac)
Current Use:	Forest
Land Use Bylaws	
OCP Bylaw No. 1255	Small portion: Recreation Resource & Black Forest Future Growth Area (Big White only)
DP Area:	NA
Zoning Bylaw No. 1166:	Small portion: Recreation Resource 1 (Big White Only)
Other	
ALR:	Majority of Plan Area: NA Lands near Beaverdell & Greenwood: Yes, small areas.
Waterfront / Floodplain:	Various in Kettle River Watershed Plan Area
Planning Agreement Area:	NA

History/Background Information

Tree Farm License 8 (TFL8) was approved in 2009 with an Annual Allowable Cut of 186,000 m³. Tree Farm Licenses (TFLs) are typically reviewed every ten years in order

to capture changes in data, practices, policy, or legislation influencing forest management in the TFL area. As part of this exercise, the Annual Allowable Cut is also reviewed to determine whether it is still appropriate.

Information on the review of TFL8 was previously referred to the RDKB on three separate occasions by Interfor in the last three years:

1. A 'Supply Analysis' for TFL8 considered by the Regional Board on March 27, 2018.
2. A Management Plan for TFL8 considered by the Regional Board on January 31, 2019.
3. A Management Plan information package for TFL8 was considered by the Regional Board on June 25, 2020.

The revised Management Plan Information Package currently under review will form part of the Management Plan that was previously considered. It reflects updates made in response to the comments received from both public review of the Plan and First Nation engagement done by Interfor.

TFL8 spans over two areas in the West Boundary; one in the Okanagan Highlands west of Beaverdell that extends north to Big White Ski Resort, and one north of Greenwood and Midway. The TFL consists of approximately 77,189 ha of Crown Land. The forests are predominantly mixtures of Douglas-fir, larch, lodgepole pine and ponderosa pine types at lower and mid elevations, and lodgepole pine and spruce/balsam types at the higher elevations.

There are small portions of the Management Plan area that are located in the Agricultural Land Reserve (ALR), near Carmi, north of Rock Creek, and near the City of Greenwood (see Attachment 2 – ALR lands, for approximate locations of ALR lands).

Purpose

The referral for Tree Farm License 8 – Management Plan #11 version 2.2 provides the RDKB an opportunity to review and comment on Interfor's updates to the Management Plan since its last review by the RDKB in June 2020.

Advisory Planning Commission (APC)

The Electoral Area E/West Boundary-Big White APC and the Electoral Area E/West Boundary APC reviewed the referral at their January 4, and January 5, 2021 meetings, respectively, with comments from both below.

Electoral Area E/West Boundary APC

The APC had the following comments:

- *"The members are disappointed that the Management Plan is software and data driven and is not using spatial analysis verified by on the ground evaluations by a Qualified Person.*
- *The members reviewed Interfor's responses to concerns previously expressed by APC and RDKB:*

- *Continue to be alarmed at the large number of very large cut blocks; large openings accumulate more snow, cause faster runoff in Spring, affect wildlife, affect bugs, raise stream temperatures, affect the local climate.*
- *This is a Management Plan; they do not acknowledge road construction to be a part of management; all access structures are a significant part of landscape management.*
- *Leaving the market and the licensee to drive utilization leaves taxpayers, not the company, to absorb the cost of the waste, and it impacts future sustainability and climate change.*
- *They don't acknowledge increasing drought, which is documented by other sources; e.g. Forest Practice Board has been documenting difficulty of regeneration of dry belt Douglas Fir on southern aspects.*
- *We think silviculture choices and operations are integral to a Management Plan, Annual Allowable Cut decisions and sustainability of our forests.*
- *There are recent studies that are looking alternatives to stumping; they involve planting disease resistant larch nearby; it is so far showing to be nearly as effective, more cost efficient and reduces site degradation compared to destumping."*

The Electoral Area E/West Boundary APC recommends the referral be not supported for the following reasons:

- *"The Plan relies on software modeling and does not take into consideration on the ground, spatial analysis;*
- *The Plan does not robustly address management issues;*
- *Silviculture practices do not take climate change into consideration."*

Electoral Area E/West Boundary-Big White APC

The Electoral Area E/West Boundary-Big White APC recommends the referral be supported with the following comments provided:

- Previous comments provided by the APC asked that an inspection be conducted if the operation required use of the Trans Canada Trail for their operation. No mention or requirement was added to this renewed application.
- Comments were provided previously that the spacing between cut blocks was insufficient. Cut block size should be kept to 40 ha and decrease adjacency of cut blocks.

Implications

Big White OCP

Resource Use is a permitted use within the Recreation Resource OCP designation. The Black Forest land use designation is a sub-area for the Future Growth Area. No specific uses are outlined for this land use designation in the OCP, other than it being set aside for future growth.

Lands Located in the ALR

Part 2 – Farm Uses of the *Agricultural Land Resource Use Regulation* lists “producing and harvesting timber, including engaging in silviculture and forest protection activities,” as farm uses that cannot be prohibited by a local government.

Previous Referral Comments

February 2018: The Timber Supply Analysis was forwarded to the RDKB in February 2018. It was considered by the Electoral Area E/West Boundary APC at their March 5, 2018 meeting. The APC had several concerns with the Analysis. These concerns included, but are not limited to:

- Inconsistencies with forest area figures;
- Wildlife range and habitat protection;
- Pine Beetle;
- Riparian areas, drainage, and waterways protection;
- Highway rights of way, recreation sites, and trail systems;
- Tree retention; and
- The absence of climate change discussion.

The APC did not support the Timber Supply Analysis due to the concerns raised.

October 2018: An updated plan was received in October 2018, and was considered by the Electoral Area E/West Boundary APC at their January 7, 2019 meeting. The following comments were provided:

- There was disappointment that the projected Annual Allowable Cut is not taking forest resiliency and sustainability into consideration;
- Members recalled that the 300 year plan did not mention climate change;
- There was discussion about the extraordinarily large cut block sizes, in spite of the Kootenay Boundary Higher Level Plan recommending a maximum size of 40 ha. One cut block at Boundary Creek was about 450 ha;
- One member drove past Chenier and stated one can now see all the way to Baldy after recent logging;
- Members questioned why 100% of logging was now clear cut; and
- Members noted that in the past, there was more selective logging.

The Electoral Area E/West Boundary APC provided the following recommendation in the Management Plan's consideration:

“It was moved by Frank and seconded by Jamie and resolved that the APC recommend to the Regional District that the Management Plan not be supported because we don't see any provision for climate change, insects, disease and increased fire events, and FURTHER, that we encourage the RDKB to advocate to government to improve plan/ operating standards and enforcement to address these issues in Forestry in general.”

June 2020: In a June 2020 staff report to the Electoral Area E/West Boundary and Electoral Area E/West Boundary-Big White APCs, staff highlighted changes made to

Interfor's Tree Farm License 8 – Management Plan #11. The new Management Plan Information Package appeared to contain more analysis and material than the two previous referrals. With respect to previous concerns raised by the APC, the Information Package contained additional detail on:

- Wildlife Habitat Areas, Riparian Management Areas, environmentally sensitive areas, Rights-of-Way, recreation sites and reserves, the Trans-Canada Trail, and Old Growth Management Areas (OGMAs);
- Mountain Pine Beetle infestation;
- Wildlife tree retention; and,
- Climate change considerations.

On June 1 and June 2, 2020, respectively, the Electoral Area E/West Boundary and Electoral Area E/West Boundary-Big White APC, reviewed the updated plan and had the following comments:

Electoral Area E/West Boundary APC Comments:

- a) The company should commit to keep the cut block size to 40 ha or less as suggested by the Chief Forester for the TSA;
- b) The company should attempt to manage to a net no new roads policy;
- c) The company should commit to utilize all logs to the provincial utilization standards (i.e. 10 cm tops). Current company log specifications exceed 10 cm. Timber is being cut and not properly utilized;
- d) The plan makes no appropriate allowance for expected droughts. This could be accommodated with more partial cutting on south facing slopes, smaller cut blocks and less optimistic yield tables for future volumes;
- e) There is no indication of the use of the precautionary principle in the plan. For example, 2 year regeneration delay for plantations and 5 years for naturals is optimistic. There are too many roads, blocks are too large, yield tables are overly optimistic and climate change is not well addressed;
- f) The silviculture section of the plan speaks about planting and should also discuss other topics including partial cutting, site preparation, brushing and weeding, thinning, and pruning;
- g) Stumping should be limited as it is causing the following problems – limiting access by cattle and wildlife, reducing grass growth, moisture retention, impacting drainage, negative visual impact, and increase weed infestations. Stumps should be turned upside down in the hole to reduce trafficability problems, speed up the stump decomposition and get more soil back in the hole; and
- h) The plan has no acknowledgement of other resource users.

Electoral Area E/West Boundary-Big White APC Comments (note: APC did not have quorum):

- a) Climate change inclusions in document only include species selection for planting and not how drought might affect growing time or potential;
- b) Cut blocks should be as small as possible;
- c) Trans Canada Trail buffer should be 12 m on both sides;
- d) Should the Province give permission for the trail to be used as a road at any time that the Trail be restored to original condition when Interfor is finished using it; and
- e) When the trail is restored there should be an inspection by local Trail coordinators, Trails to the Boundary Society.

Changes to Management Plan

After the last referral time period, changes were made to portions of Management Plan Information Package. Significant changes were made, as noted below, in response to questions made by FLNRORD's Forest Analysis Branch:

- Changes to the existing wildlife tree retention (established wildlife tree patches are assumed to fully meet the wildlife tree requirements for stands harvested since Wildlife Tree Retention became a requirement); and
- Snow interception cover requirements for mule deer were revised to be consistent with the Government Actions Regulation order, which calculates the required hectares of Snow Interception Cover based on gross hectares rather than forested hectares.

Recommendation

That Regional District of Kootenay Boundary Board of Directors direct staff to forward the staff report for Interfor Referral – Tree Farm License 8 – Management Plan #11 version 2.2 Information Package, which contains comments from the Electoral Area E/West Boundary and the Electoral Area E/West Boundary-Big White Advisory Planning Commissions, to Debbie Bhattacharya, on behalf of Interfor, for the Management Plan located in Electoral Area E/West Boundary.

Attachments

1. Tree Farm Licence 8 – Management Plan #11 ver. 2.2 Information Package
2. ALR Lands in TFL8

Tree Farm Licence 8 – Management Plan #11

INFORMATION PACKAGE

Version 2.2

September 11, 2020

Project 1320-2

Prepared for:

*Debbie Bhattacharya, RPF
Interfor Corporation
Grand Forks Division
PO Box 39, 570 68th Avenue, Grand Forks, BC V0H 1H0*



Prepared by:

*Forsite Consultants Ltd.
330 – 42nd Street SW
PO Box 2079
Salmon Arm, BC V1E 4R1
250-832-3366*



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- Robert Kennett, RPF (Strategic Planning Forester)

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List of Acronyms

AAC	Allowable Annual Cut
AOS	Aerial Overview Survey
AU	Analysis Unit
BEC	Biogeoclimatic Ecosystem Classification
ESSF	Engelmann Spruce Sub-alpine Fir
FAIB	Forest Analysis and Inventory Branch
FLNRO	Ministry of Forests, Lands, Natural Resource Operations and Rural Development
FPPR	Forest Planning and Practices Regulation
GAR	Government Actions Regulation
GIS	Geographic Information System
ICH	Interior Cedar Hemlock
IDF	Interior Douglas-Fir
IP	Information Package
KBHLPO	Kootenay Boundary Higher Level Plan Order
LU	Landscape Unit
MAI	Mean Annual Increment
MP	Management Plan
MS	Montane Spruce
NDT	Natural Disturbance Type
NRL	Non-Recoverable Losses
OAF	Operational Adjustment Factor
OGMA	Old Growth Management Area
PFLB	Productive Forest Land Base
PIB	Penticton Indian Band
SSS	Small Scale Salvage
TFL	Tree Farm Licence
THLB	Timber Harvesting Land Base
TIPSY	Table Interpolation of Stand Yields
TSR	Timber Supply Review
VDYP	Variable Density Yield Projection
VQO	Visual Quality Objective
VRI	Vegetation Resource Inventory
WHA	Wildlife Habitat Area
WTP	Wildlife Tree Patch
WTR	Wildlife Tree Retention

Document Revision History

Version	Date	Description
1.0	January 25, 2018	Initial Information Package
1.1	February 9, 2018	Revisions to address initial review by FLNRO prior to public review
1.2	March 9, 2018	Exclusion of additional hydro line right-of-way in land base summary, inclusion of managed stand site indices and growth and yield information (yield tables, existing volume check, and minimum harvest ages).
1.3	June 29, 2018	Updates to areas to reflect new resultant (watersheds and alternate stream buffers added). Minor text edits to reflect comments received.
1.4	September 21, 2018	Text updates to reflect changes made as result of completed analysis. <ul style="list-style-type: none"> • Landscape level biodiversity: Added reference to connectivity corridors and targets for mature plus old seral within connectivity corridors • Old seral sensitivity analysis: Provided additional detail on approach used • Enhanced riparian management sensitivity analysis added • Watershed health section added • Equivalent clearcut area sensitivity analysis added
2.0	March, 2020	Significant update to incorporate input from Penticton Indian Band, updates for additional depletions, roads, silviculture, etc.
2.1	July, 2020	Updates to reflect comments received during public review period <ul style="list-style-type: none"> • Changes to Section 3.1 (response to MPB infestations) to improve clarity • Spatial WTR assumed to meet all WTR requirements for stands < 33 years old (Section 8.18), with no additional aspatial component • Addition of S6 streams to riparian classification criteria (Table 15) • MDWR SIC requirements changed to be based on gross area, rather than forested area (Section 12.2.4.1). • Silviculture systems section updated to acknowledge use of partial cutting in Williamson's Sapsucker habitat, but modelled as clearcutting with additional THLB reductions (Section 12.3.3)
2.2	September, 2020	Updates to reflect changes made during the completion of the analysis report <ul style="list-style-type: none"> • Change to sensitivity analysis for old seral targets (Section 13.3.2 and Section 13.3.3)

1 Introduction

This Information Package has been prepared by Forsite Consultants Ltd. on behalf of Interfor Corporation, Grand Forks Division. The Information Package (IP) describes the information and assumptions used to prepare the timber supply analysis that will become part of Management Plan #11 for Tree Farm Licence 8 (TFL 8).

A review of this type is normally completed at least once every ten years in order to capture changes in data, practices, policy or legislation influencing forest management in the TFL. The previous analysis for TFL 8 was completed in 2007 with an Annual Allowable Cut (AAC) determination on April 1, 2009. An initial Information Package for MP #11 was completed and underwent public review beginning in February 2018 and was accepted by the Ministry of Forests, Lands, Natural Resource Operations & Rural Development (FLNRO) in late April, 2018.

In late September 2018 the Chief Forester approved a two-year postponement of the AAC determination for TFL 8 as a result of comments received from First Nations and a desire by Interfor to incorporate First Nations interests into the timber supply analysis. Accordingly, this Information Package includes revisions that reflect Interfor's work with First Nations since 2018.

The timber supply analysis will model timber harvest over a 300 year planning horizon. It will use forest inventory information that has been updated to reflect previous harvesting and reforestation activities, Interfor's current understanding of the land base where harvesting is likely to occur, and projected growth rates as the forest ages. The modelling will also consider non-timber objectives for the TFL, including indigenous food, social and ceremonial values, wildlife, biodiversity, visual quality, and requirements of the Kootenay Boundary Higher Level Plan Order (KBHLPO). The Base Case scenario will represent current management practices, legal requirements, and additional requirements from Interfor's environmental certification program that influence timber supply. Additional scenarios will examine sensitivity to factors where there is uncertainty, such as growth and yield estimates.

Once completed the timber supply analysis will provide information to assist the Chief Forester of BC in determining the Allowable Annual Cut (AAC) for TFL 8 which is expected to be in place by April 1, 2021.

1.1 TFL 8 LOCATION

TFL 8 consists of approximately 77,189 hectares of crown land and has two distinct units. The south block is located north of Greenwood in the Boundary Creek area, and the north block is located in the Trapping Creek and Carmi Creek drainages north of Beaverdell (Figure 1). The forests are predominately mixtures of Douglas-fir, larch, lodgepole pine and ponderosa pine types at lower and mid elevations, and lodgepole pine and spruce/balsam types at the higher elevations. Biogeoclimatic zones include the Montane Spruce, Interior Douglas-fir, Interior Cedar Hemlock, and Engelmann Spruce Subalpine Fir zones.

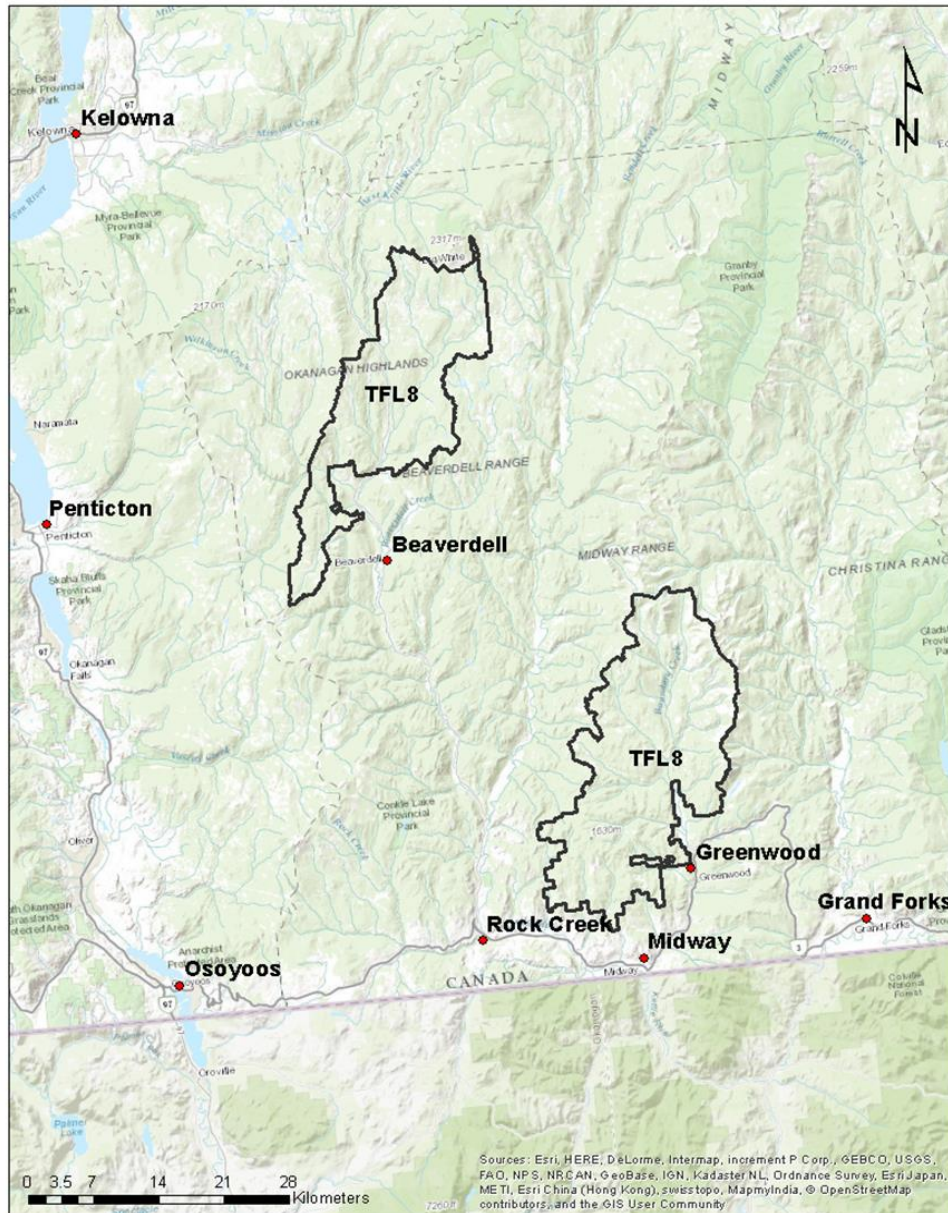


Figure 1 TFL 8 overview map

2 Process

This information package has been prepared to meet the requirements outlined in the draft “*Provincial Guide for the Submission of Timber Supply Analysis, Information Packages for Tree Farm Licences, Version 5, June 2013*” document. Current forest and non-forest inventories, legal requirements, and non-legal management direction were used to categorize the land base and outline proposed modelling parameters that will be used to complete a Base Case scenario and additional sensitivity analyses.

2.1 MISSING DATA

There is no missing data for this version of the data package.

3 Response to 2009 AAC Determination Implementation Requests

The Deputy Chief Forester requested that Interfor undertake a number of items in the April 1st, 2009 Rationale for Allowable Annual Cut (AAC) Determination. The responses to these requests are outlined below.

3.1 MOUNTAIN PINE BEETLE INFESTATION

Request: Track and report harvesting performance in Mountain Pine Beetle (MPB) infested stands.

Response: MPB infestation has not been a serious issue on TFL 8. Provincial beetle overview surveys from 2009 to 2018 were summarized and compared with harvested and planned blocks to determine the degree to which infestation in the THLB has been addressed through harvesting. Areas where the age of the trees is less than 40 years and not logged were assumed to be too young for harvest. Table 1 provides an overview of this analysis, and it can be seen that almost 94% of infestations since 2009 have been categorized as Light or Trace, with 10% or fewer of the trees killed. Only 201 hectares of Moderate and 10 hectares of Severe infestations were not logged.

Table 1 MPB infestation summary (2009 – 2018)

Severity Class	Description	Infested THLB Area (ha)	Logged THLB Area (ha)	THLB less than 40 years (ha)	Remaining THLB Area (ha)*
Severe	30 to 49% of trees killed	10	0	0	10
Moderate	11 to 29% of trees killed	338	95	42	201
Light	1 to 10% of trees killed	2,581	616	283	1,682
Trace	<1% of trees killed	2,456	733	112	1,611
Total		5,385	1,444	437	3,504

* Areas in aerial overview polygons that are > 40 years old and not logged

3.2 DENSE PINE STANDS

Request: Continue to track and record harvesting in dense pine stands that contribute to the timber harvesting land base and to make an informed assessment of which dense pine stands are economically operable in the short to long term.

Response: Interfor harvests in dense pine stands when market conditions allow, and has made significant progress in harvesting these stands and reforestation to current standards. The data set used for the 2007 timber supply analysis was used to summarize the harvesting history as of December 31, 2019 for pine stands that were defined as stocking class 3 and 4 in 2007. These stands represent the best estimate of dense stands on the landbase in 2007 that were old enough to be considered for harvest. Table 2 summarizes the total area of these stands, the area of these stands within the timber harvesting land base for the current analysis, and the area of these stands in the THLB that have been logged. It can be seen that over 38% of the mature dense pine stands in the inventory in 2007 that are part of the current THLB have now been harvested.

Table 3 summarizes the Grade 6 and Special Forest Products volumes delivered from TFL 8 since 2007. These volumes were primarily derived from dense pine stands and are another indicator of ongoing harvest.

Table 2 *Logging in mature dense pine stands*

Inventory Description in 2007	Total Area (ha)	2020 THLB Area (ha)	Logged Area (ha)	Proportion of THLB Logged
Stocking Class 3	2,399	2,111	745	35.2%
Stocking Class 4	697	555	276	49.7%
Total	3,096	2,666	1,021	38.3%

Table 3 *Summary of Grade 6 and Special Forest Products volume*

Year	Grade 6 (m³)	Special Forest Products (m³)
2007	3,277	
2008	1,386	
2009	0	
2010	371	
2011	798	
2012	5,530	
2013	14,994	
2014	8,080	13,827
2015	1,658	18,823
2016	1,100	6,267
2017	2,207	6,466
2018	5,327	27,762
2019	2,297	1,965
Total	47,025	75,110

Younger dense pine stands are more difficult to quantify accurately in the inventory. Using updated forest attributes with the same dense pine definition as that used in previous analyses results in a significant reduction to the dense pine estimates for younger stands (850 hectares versus 4,300 hectares). Therefore, the current analysis will use the same approach to account for dense pine stand as that documented in the 2011 data package for the Boundary TSA Timber Supply (see Section 8.12).

3.3 MANAGED STANDS

Request: Assess the assumptions regarding managed stands in support of the next timber supply analysis. This would include: (i) regeneration practices including reliance on natural regeneration, regeneration delay and stem density at time of planting and free-growing; (ii) quantity and quality of planting stock with genetic worth; and (iii) appropriate OAF reductions given root diseases and other pests in the TFL that impact managed stands.

Response: Silviculture records for from 2007 to 2017 were analyzed to determine proportions of natural and planted stock in stocking and free growing surveys, planting densities, and genetic worth. This information has been incorporated into the yield tables for managed stands established in the past 12 years. Interfor routinely uses stump removal as a means of addressing root disease. This practice supports the use of standard OAF reductions in the development of the yield tables.

3.4 AGGREGATION PROCEDURES – BLOCK SIZE

Request: Improve modelling approaches using stand aggregation to better represent actual harvest block sizes.

Response: The forest estate model used for this analysis will be configured to use cut block aggregation that reflects actual harvest block sizes. (See Section 12.3.2).

3.5 ADJACENCY AND GREEN-UP

Request: Model spatial adjacency for as long as possible (equal to or greater than 20 years) then use an aspatial approximation over the remainder of the planning horizon.

Response: The current analysis will implement adjacency using an aspatial approximation for the entire planning horizon (See Section 12.2.8), combined with the cut block size aggregation described above.

3.6 LANDSCAPE-LEVEL BIODIVERSITY

Request: Model attainment of the full older seral stage target for low biodiversity landscape units by the end of the third rotation or apply OGMA's if established at that time.

Response: Old Growth Management Areas have been identified within TFL 8 and will be removed from the THLB (see Sections 8.17 and 12.2.1) for the Base Case. A sensitivity analyses will evaluate the implementation of meeting full seral objectives by the end of the third rotation instead of removing Old Growth Management Areas from the THLB.

3.7 UNSALVAGED LOSSES

Request: Provide an up-to-date estimate of unsalvaged losses given any increases in the MPB, and an estimate regarding how small scale salvage is addressing unsalvaged losses and dead potential volumes.

Response: The allowance for unsalvaged losses has been estimated using aerial overview survey data and has increased from 984 m³/year to 1,575 m³/year. In addition, volume harvested under the Small Scale Salvage program that is not charged to the TFL 8 Allowable Annual Cut has been accounted for resulting in a total unsalvaged loss estimate of 3,646 m³/year.

4 Timber Supply Forecast / Options / Sensitivity Analyses

4.1 BASE CASE

The Base Case is considered to be representative of current management practice on TFL 8. Changes from TSR 3 completed in 2007 include:

- Incorporating Williamson's Sapsucker Wildlife Habitat Areas
- Incorporating Williamson's Sapsucker Best Management Practices
- Incorporating OGMA's for old seral requirements
- Revised silviculture regimes for managed stands
- Increased allowance for non-recoverable losses
- Use of a fully spatial model for the entire planning horizon

4.2 SENSITIVITY ANALYSES

Sensitivity analyses provide a measure of the reasonable upper and lower bounds of the harvest forecast, reflecting the uncertainty of assumptions made in the Base Case. The magnitude of the increase and decrease in the sensitivity variable reflects the degree of uncertainty surrounding the assumption associated with that given variable. By developing and testing a number of sensitivity analyses, it is possible to determine which variables most influence results. To allow meaningful comparison of sensitivity analyses, they are usually performed using the Base Case and varying only the assumption being tested. An overview of the sensitivity analyses that will be carried out are provided in Table 4, with further details found in Section 12.5.

Table 4 Sensitivity analyses

Category	Sensitivity
Land Base Definition	THLB Area +/- 10%
Growth and Yield	Natural Stand Yields +/- 10%
	Managed Stand Yields +/- 10%
	Managed Stand Site Index Source (Site Index Adjustment vs Provincial Site Productivity Layer)
	Minimum Harvest Ages +/- 10 years
Integrated Resource Management	Include Disturbance in the non-THLB
	Apply full old Seral Targets (BEC Version 4) by end of third rotation
	Apply full old Seral Targets using BEC Version 11 instead of BEC Version 4 by end of third rotation
	Limit ECA within watershed units
Timber Harvesting	First Nations Interests – enhanced riparian protection and other culturally important features
	Turn off cutblock aggregation (no minimum cutblock size)

4.3 ALTERNATIVE HARVEST FLOWS

Forest cover constraints and the growth capacity of the THLB will determine the harvest flow options that will be considered. In general, the choice of harvest flow for the Base Case will strive to balance current and future harvest rates using the following objectives:

- Avoid any large or abrupt disruptions in timber supply during transitions from short to mid to long-term periods (generally increases and decreases in steps of 10% per 10 year period)
- Achieve a stable long-term harvest level over a 300 year planning horizon.
- Ensure that the growing stock on the THLB does not decline during the last 50 years of the planning horizon.

Options for alternative harvest flows will become more evident after the initial timber supply model is built and the timber supply dynamics for the TFL8 land base become evident. Examples of potential options include maintaining the current allowable annual cut for as long as possible or minimizing the length of a mid-term harvest reduction if one exists. Interfor will explore and include alternative harvest flow options in the analysis report, and present the recommended option as the Base Case.

4.4 OTHER OPTIONS

Penticton Indian Band, Osoyoos Indian Band, Westbank First Nation, and Splatshin have reviewed a number of Interfor's proposed cutblocks in the field and have provided comments regarding desired changes to block configurations or prescriptions to address site specific cultural values identified by community members. The feedback received from these field reviews has been used to develop a sensitivity analysis that explores the timber supply implications from implementing these changes.

5 Model

The PATCHWORKS™ modeling software will be used for forecasting and analysis. This suite of tools is sold and maintained by Spatial Planning Systems Inc. of Deep River, Ontario (www.spatial.ca).

PATCHWORKS is a fully spatial forest estate model that can incorporate real world operational considerations into a strategic planning framework. It utilizes a practical goal seeking approach to simulate forest growth and schedule activities such as harvesting and silviculture across the land base to find a solution that best balances the targets/goals defined by the user. Realistic spatial harvest allocations can be optimized over long-term planning horizons because PATCHWORKS integrates operational-scale decision making within a strategic analysis environment.

The PATCHWORKS model continually generates alternative solutions until the user decides a stable solution has been found. Solutions with attributes that fall outside of specified ranges (targets) are penalized and the goal seeking algorithm works to minimize these penalties, resulting in a solution that reflects the user objectives and priorities.

Targets can be applied to any aspect of the problem formulation. For example, the solution can be influenced by issues such as desired mature/old forest retention levels, young seral disturbance levels, patch size distributions, conifer harvest volume, growing stock levels, and visual quality objectives. For this analysis, PATCHWORKS will be configured to consider the range of non-timber values that exist on TFL 8 while evaluating possible harvest flows.

6 Data Sources

Table 5 lists the spatial data and sources used for this analysis. In general, data was either downloaded directly from the Land and Resource Data Warehouse maintained by the provincial government, sourced from datasets maintained in Interfor's Forest Management System, or downloaded from other government websites. Two files relating to the previous timber supply analysis were obtained from Ecora Resource Group.

Table 5 Spatial data sources

Description	Source File Name	Source	Year
TFL Boundary	WHSE_ADMIN_BOUNDARIES_FADM_TFL_polygon	LRDW	2016
BEC v4	qbecv4_bc	LRDW	2001
BEC v6	abecv6_bc	LRDW	2006
BEC v11	WHSE_FOREST_VEGETATION_BEC_BIOGEOCLIMATIC_POLY_polygon	LRDW	2019
Fresh Water Atlas Lakes	FreshwaterAtlasLakes	Interfor	2017
Streams (operational dataset)	Interfor_Streams	Interfor	2017
Streams (TSR dataset)	tfl_str	Ecora	
Private Land	WHSE_CADASTRE_PMBC_PARCEL_FABRIC_POLY_SVW	Interfor	2017
Classified Operational Roads	Interfor_Roads_21DEC2017	Interfor	2017
Non-operational Roads	NonOperational_Roads_Clip	Interfor	2017
Hydro line right-of-ways	Powerline_ROW	Interfor	2018
OGMAs	Interfor_OGMA	Interfor	2017
Forest cover inventory	tfl08_vegcomp_poly_lyr_r1_updated	Interfor	2017
Harvested blocks	Interfor_Blocks_Harvested	Interfor	2020
Reserves	INTERFOR_STRATA_RESERVES_TFL8_ALL	Interfor	2020
Fire Maintained Ecosystems	FireMaintainedEcosystems	Interfor	2006
Terrestrial Ecosystem Mapping/SIA	sia_res	Ecora	2006
Provincial site productivity layer	sprod_02	FLNRO	2020
Landscape Units	LandscapeUnit	Interfor	2017
Connectivity Corridors	RegionalConnectivity	Interfor	2017
Williamson's Sapsucker Habitat	Wisa_bdy_fc_suitability_30mar2009	ftp.geob	2009
Williamson's Sapsucker	Wisa_obs_199_2016b	ftp.geob	2016
Wildlife Habitat Areas	WHSE_WILDLIFE_MANAGMENT_WCP_WILDLIFE_HABITAT_AREA_P	LRDW	2017
Recreation Polygon Features	WHSE_FOREST_TENURE_FTEN_RECREATION_POLY_SVW_polygon	Interfor	2017
Recreation Linear Features	FTEN_REC_LN_line	Interfor	2017
Visual Landscape Inventory	REC_VISUAL_LANDSCAPE_INVENTORY	Interfor	2017
Environmentally Sensitive Areas	TFL_esa1	Interfor	2006
Terrain Mapping "C"	TerrainC	Interfor	2003
Terrain Mapping "D"	TerrainD	Interfor	2003
LiDAR slope	Slope	Interfor	2017
LiDAR aspect	Aspect	Interfor	2017
Elevation < 1000 metres (from	Elev_1000m.	Forsite	2017
Trans Canada Trail	TransCanadaTrail	Interfor	2017
Mule Deer (U-8-008)	tuwra_u-8-008	MOE	2006
Moose (U-8-007)	tuwra_u-8-007	MOE	2006

7 Current Forest Cover Inventory

The base forest cover inventory for TFL 8 was completed to Forest Cover (FC1) inventory standards in 1994 from colour 1:15,840 scale aerial photographs flown in 1992. This inventory has been maintained and updated periodically by Interfor for changes resulting from logging, fires, regeneration status and other disturbances. In 2017, Interfor provided this inventory to FLNRO for conversion to the provincial digital standard so that subsequent updates can be completed by the province using the annual RESULTS data for harvesting and silviculture submitted by Interfor. The inventory was projected to January 1st, 2016 during the conversion.

Following the data conversion, Interfor reviewed the new inventory and identified 67 openings with spatial errors. These errors were corrected by Interfor and a procedure was established with FLNRO to ensure that subsequent updates would not result in similar errors.

As a result of changes made to the mapped location of the TFL 8 boundary to match TRIM mapping, there are areas within the revised boundary that were not covered by the original forest inventory. This was discussed with Forest Analysis Branch and it was agreed that Interfor would use information such as recent imagery and adjacent polygon attributes to “fill-in” missing areas (approximately 530 hectares) for use in this timber supply analysis.

7.1 UPDATES FOR HARVESTING AND PLANNED BLOCKS

The date chosen for the start of the harvest forecasts is January 1, 2020. All harvested blocks and blocks planned for harvest prior to December 31st, 2019 were used to update the inventory for depletions not already included in the inventory. A regeneration delay of 2 years was assumed when assigning ages to the updated inventory for these depletions.

The ages for all other polygons in the inventory were incremented by 4 years to adjust them from the January 1st, 2016 projection date in the initial inventory to January 1st, 2020.

7.2 UPDATES FOR STANDS CODED AS NOT SATISFACTORILY RESTOCKED

The inventory has a number of stands (approximately 671 hectares) coded as Not Satisfactorily Restocked (NSR). This is an artifact from the original inventory and represents stands that were identified to be current NSR at the time the inventory was completed. In the 2009 AAC determination, the Deputy Chief Forester discussed these and indicated that they should be assumed to be fully stocked within the first five years of the planning horizon. A review of recent imagery for a subset of these stands confirmed that these stands are currently forested.

For the current analysis, any of these stands without an assigned age in the inventory were assumed to be fully stocked within 5 years of the reference year, and the age was updated accordingly.

7.3 UPDATES FOR FIRES

Historical provincial forest fire data was reviewed to check for recent fires that occurred within TFL 8, up to and including 2019. It was found that there was minimal forested area (approximately 62 hectares) burned since 2008. Of this, the majority of burned area overlaps with blocks harvested at roughly the same time as the fire. As there was only 23 hectares (5 hectares of Timber Harvesting Land Base) burned that was outside harvested blocks, it was decided not to make any age adjustments to account for fires.

8 Description of the Land Base

This section describes the land base data and assumptions used to define the productive forest land base (PFLB) and timber harvesting land base (THLB) in TFL 8. The THLB is designated to support timber harvesting while the PFLB includes all productive forest land in the TFL. PFLB areas that are not part of the THLB may not be available for harvest because of non-timber objectives or because the timber characteristics or site productivity is not aligned with Interfor's commercial requirements. Nevertheless, these PFLB areas along with non-forested areas such as wetlands are an important component of the TFL and its ecosystem health. For example, they contribute to biodiversity and may provide critical wildlife habitat, trees and plants important to First Nations communities, and recreation opportunities for the public.

8.1 TIMBER HARVESTING LAND BASE

Table 6 provides a summary of the area reductions made to the total area of TFL 8 to determine the Timber Harvesting Land Base. Reductions are applied in the order presented in the table using a step wise process to ensure that area is only removed once. In the table, gross area refers to the total area covered by the item, and net area refers to the incremental reduction after considering areas that were removed in previous lines in the table. Detailed descriptions of these reductions are provided in subsequent sections of this Information Package. A map showing the resulting land base classification is provided in Figure 2.

TFL 8 covers a total area of approximately 77,189 hectares after private land is excluded. Of this total area, approximately 92.6 % is considered to be PFLB and 78.4 % is considered to be the current THLB.

In comparison with the previous Information Package completed in 2006, the PFLB is 482 hectares smaller. This is largely due to an increase in the amount of private land reflecting improved ownership information, and an increase in the amount of road resulting from additional harvesting operations. However, the future THLB is about 7,460 hectares less than in the previous Information Package. This is mainly due to reductions for Old Growth Management Areas and Wildlife Tree Retention which were modelled in the previous analysis but not treated as an explicit THLB reduction. There are also additional reductions for Wildlife Habitat Areas and live tree retention for Williamson's Sapsucker habitat.

Table 6 TFL 8 land base area summary

Land Base Element	Gross Area (ha)	Productive Area (ha)	Net Area (ha)	Percent of Total Area (%)	Percent of PFLB (%)
Total Land Base (incl. fresh water)	77,656		77,656	100.0%	
Less:					
Private land	467		467	0.6%	
Total TFL (incl. fresh water)			77,189	99.4%	
Less:					
Non-Forest	3,022		2,788	3.6%	
Non-Productive Forest	1,118		1,117	1.4%	
Existing Roads	1,420		1,347	1.7%	
Hydro line right-of-way	27		26	0.0%	
Productive Forest Land Base			71,911	92.6%	100.0%
Less:					
Non-commercial cover	212	208	208	0.3%	0.3%
Environmentally Sensitive Areas	1,619	1,474	1,474	1.9%	2.1%
Unstable Terrain	475	363	326	0.4%	0.5%
Low Site	1,030	755	383	0.5%	0.5%
Deciduous	236	231	229	0.3%	0.3%
Non-merchantable	473	397	335	0.4%	0.5%
Riparian Areas	2,326	2,050	1,919	2.5%	2.7%
Wildlife Habitat Areas	531	483	473	0.6%	0.7%
Recreation Sites/Reserves	209	118	89	0.1%	0.1%
Trans Canada Trail	48	11	7	0.0%	0.0%
Old Growth Management Areas	6,566	6,163	5,090	6.6%	7.1%
Existing Wildlife Tree Patches	1,187	1,130	892	1.1%	1.2%
Timber Harvesting Land Base - Current			60,484	78.4%	84.1%
Less:					
Future Wildlife Tree Retention (aspatial)			*1,943	2.5%	2.7%
Williamson's Sapsucker Retention (aspatial)			*305	0.4%	0.4%
Future Roads (aspatial)			**587	0.8%	0.8%
Future Timber Harvesting Land Base			57,649	74.7%	80.2%

* Aspatial netdowns applied in the model but are not reflected in the GIS dataset areas

** To be applied with a yield table reduction of 2.0% for future managed stands

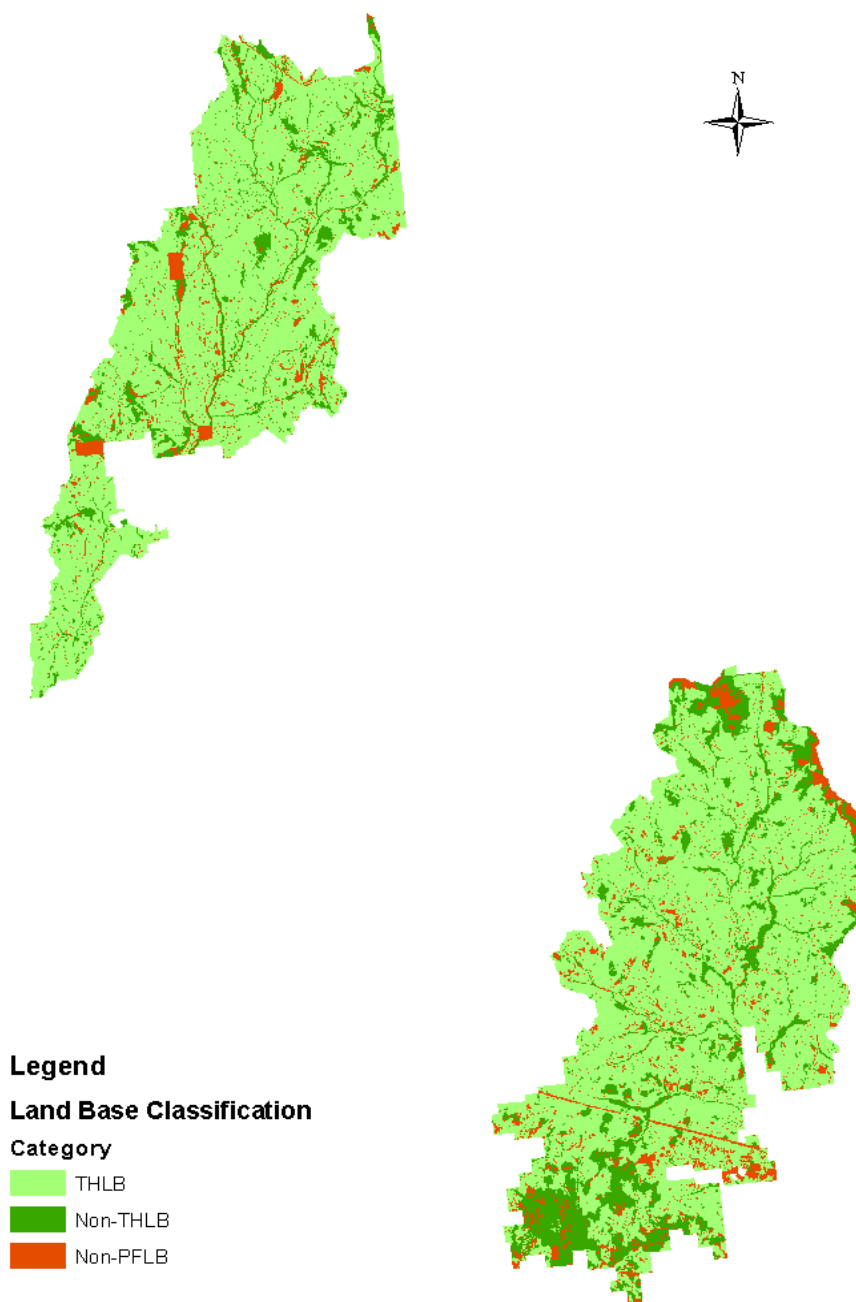


Figure 2 TFL 8 Land base classification

8.1.1 AGE CLASS DISTRIBUTION

The current age class distribution for TFL 8 is summarized in Table 7 and illustrated in Figure 3. Over half of the THLB (55%) is less than 50 years of age, reflecting the harvest history on the TFL. In contrast, almost half (47%) of the non-THLB is 200 years or older.

Table 7 Age class distribution

Age Class (years)	THLB Area (ha)*	Non-THLB Area (ha)	Total PFLB Area (ha)
< 10	8,464	357	8,821
10- 19	5,241	105	5,346
20- 29	7,604	253	7,857
30- 39	7,460	377	7,837
40- 49	4,302	239	4,542
50- 59	1,049	212	1,261
60- 69	740	161	902
70- 79	735	58	793
80- 89	3,897	589	4,486
90 – 99	3,515	421	3,936
100-109	1,896	203	2,098
110-119	1,254	220	1,474
120-129	1,588	247	1,835
130-139	1,645	441	2,086
140-149	1,085	301	1,385
150-159	638	312	950
160-169	774	371	1,144
170-179	862	648	1,510
180-189	650	280	930
190-199	892	311	1,203
200-209	835	653	1,488
210-219	678	400	1,077
220-229	1,712	1,563	3,275
230-239	576	288	864
240-249	833	556	1,389
>= 250	1,558	1,860	3,418
Total	60,484	11,426	71,910

* Prior to aspatial netdowns

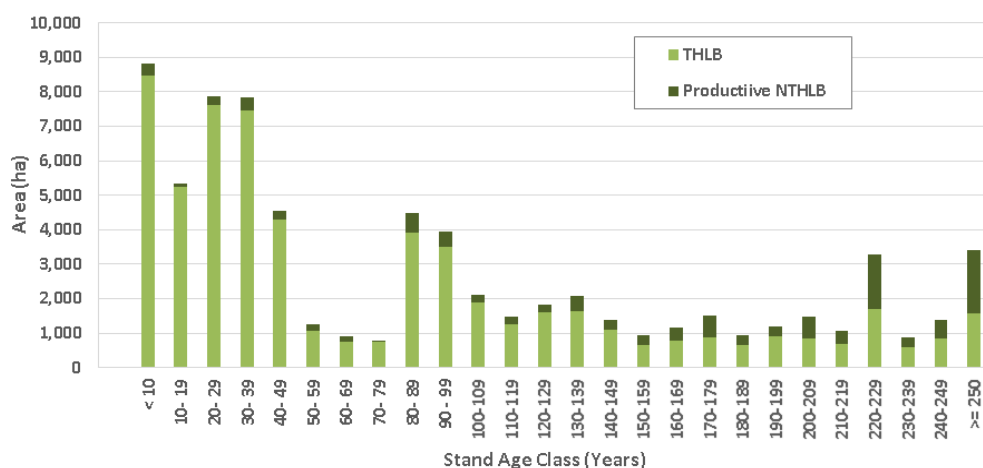


Figure 3 Age class distribution

8.1.2 SPECIES COMPOSITION

The individual species composition for the THLB and non-THLB are shown in Figure 4. The predominant species on the THLB is lodgepole pine (42.4%), with most of the remainder comprised of Douglas-fir, larch, spruce, and balsam. Minor proportions of cedar, ponderosa pine, and deciduous are also present. In comparison, the non-THLB is heavier to Douglas-fir.

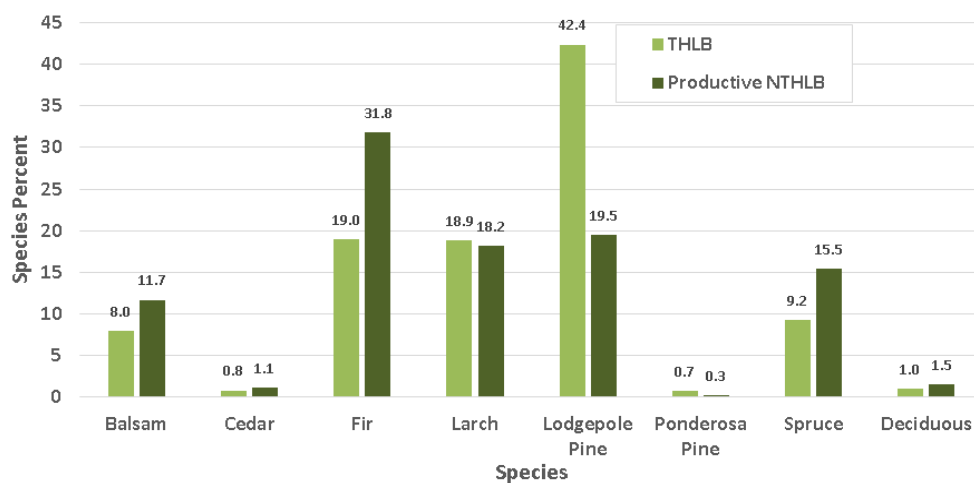


Figure 4 Overall species composition derived from individual stand composition percentages

8.1.3 BIOGEOCLIMATIC CLASSIFICATION

The distribution of the biogeoclimatic classifications (Version 11) for both the THLB and Non-THLB are shown in Figure 5. Almost half (49.6%) of TFL 8 is classified as MS dm1, followed by the IDF dm1 (19.2%), ICH mk1 (12.1%), ESSF dc1 (9.9%), ESSFmh (5.3%), ESSF dc2 (3.1%), and ESSF dcw (0.8%).

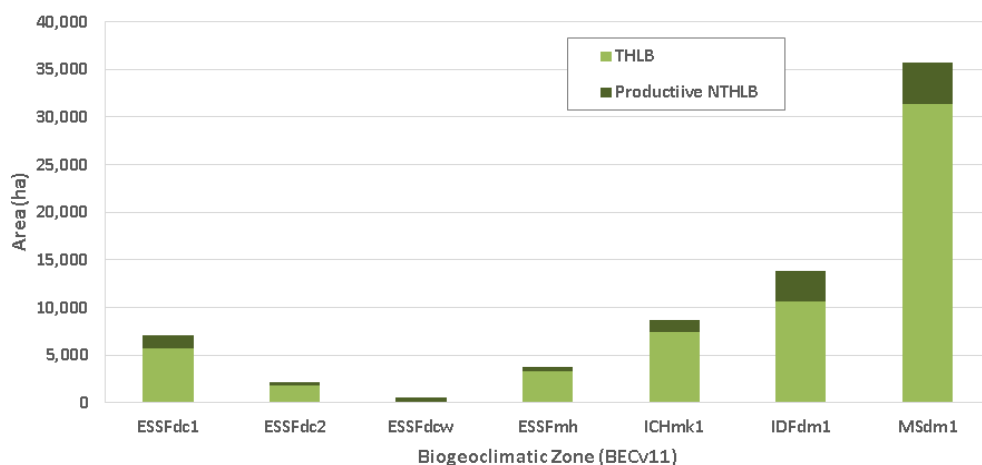


Figure 5 Area distribution of BEC variants

8.2 TOTAL AREA

The gross area within the mapped TFL 8 boundary is 77,656 hectares. There are 467 hectares of private land within this boundary that are not owned by Interfor and are not managed as part of the TFL (i.e. not Schedule A land). This results in a total TFL area of 77,189 hectares, all of which is Crown (Schedule B) land managed by Interfor.

8.3 NON-FOREST AND NON-PRODUCTIVE FOREST

Non-forest and non-productive forest was identified using the “Non_Productive_Cd” attribute contained in the VRI. Table 8 summarizes the areas removed from the land base for these categories. Some of these non-forest and non-productive forest polygons (e.g. meadows, swamps, etc.) may provide important indigenous or habitat values but are not considered to be forested for purposes of this timber supply analysis.

Table 8 Non-forest and non-productive forest area summary

Category	Description	Non_Productive_Cd	Gross Area (ha)	Removed Area (ha)
Non-forest	Alpine	2	27.3	27.3
	Clearing	42	4.6	4.6
	Gravel Bar	18	1.4	1.4
	Gravel Pit	6	6.4	6.4
	Lake	15	130.6	123.2
	Meadow	62	0.2	0.2
	Non-productive brush	11	101.5	101.5
	Open Range	63	1,360.8	1,341.4
	No Typing Available		243.0	91.9
	Rock	3	449.6	443.7
	River	25	46.8	41.4
	Swamp/wetland	35	288.3	288.3
	Urban	54	361.5	317.0
Non-forest Total			3,022.0	2,788.3
Non-productive forest	Alpine Forest	10	520.9	520.9
	Non-productive	12	597.6	595.8
Non-productive forest Total			1,118.5	1,116.7
Total			4,140.5	3,905.0

8.4 ROADS, TRAILS, AND LANDINGS

8.4.1 EXISTING ROADS, TRAILS AND LANDINGS

Permanent roads, trails and landings are not suitable for growing trees. Interfor maintains spatial data that identifies the location and classification of existing roads within TFL 8. Although wider roads are often delineated as polygons in the forest inventory, many roads are too narrow to be typed as non-forest. Therefore, buffers representing the right-of-way width of the roads are created and used to approximate the appropriate reduction to the forested land base.

In order to determine appropriate buffer widths to use for each road class, a Geographic Information System (GIS) was used by Interfor to display roads against a background of ortho-photo imagery and LiDAR hill shade and canopy height models. Sample roads were selected and average widths visually measured using the measuring tools within the GIS. Using this approach, highways ranged between 12 to 30 metres wide, Forest Service Roads between 7 to 15 metres wide, and Forest Roads between 5 to 13 metres wide. Average values for each road class were calculated based on the roads that were sampled. Table 9 summarizes the length, buffer widths, and area reductions for existing roads.

Almost all logging in TFL 8 is completed using roadside harvesting systems that do not require landings or trails. Therefore, no additional allowance for these features has been included in this Information Package.

Table 9 Existing road summary

Road Type	Length (km)	Road Width (m)	Gross Area (ha)	Removed Area (ha)
Highway	20.0	30	59.9	9.6
Forest Service Road	220.1	12	264.0	252.1
Forest Road	1,223.1	9	1,096.2	1,085.6
Total	1,463.2		1,420.1	1,347.3

8.4.2 FUTURE ROADS, TRAILS, AND LANDINGS

The permanent road network on TFL 8 is very well developed, with most of the TFL in close proximity to an existing road. Existing roads have been removed from the THLB, and it can be assumed that all managed stands (i.e. stands less than 45 years old) will need no further reduction made for future roads. These stands can be used as the basis for determining the approximate area required to account for future roads, as follows:

The current THLB area less than 45 years of age is 31,263 hectares. There are another 960 hectares within the permanent road buffers that do not overlap with another land base reduction and that have an indicated age less than 45 years. Therefore, the proportion of THLB removed for permanent roads in stands less than 45 years of age is 3.0%, calculated as:

$$\text{Permanent road proportion} = 960\text{ha} / (31,263\text{ ha} + 960\text{ ha}) = 3.0\%.$$

The remaining THLB area greater than or equal to 45 years of age is 29,221 hectares. However, there are already some existing access roads (i.e. roads between existing cut blocks) within this area. This area within permanent road buffers that does not overlap with another land base reduction and that has an indicated age greater than or equal to 45 years is 299 hectares. Therefore, the additional area required for future roads is 587 hectares calculated as:

$$\text{Total future roads} = 3.0\% * (29,221\text{ ha} + 299\text{ ha}), \text{ less } 299\text{ha} = 587\text{ ha}$$

This reduction will be applied as a yield table adjustment of 2.0% for future managed stands, calculated as:

$$\text{Reduction factor} = 587\text{ ha} / 29,221\text{ ha} = 2.0\%$$

8.5 HYDRO-LINE RIGHT-OF-WAY

There are two hydro lines that traverse TFL 8. One of these, located in the south TFL block has been delineated as a polygon feature classified as urban in the forest cover inventory and requires no further reduction to the land base. The other hydro line, located in the northern block of the TFL was constructed recently and is not accounted for in the inventory. A polygon feature representing the actual right-of-way boundary was obtained from the Land and Resource Data Warehouse and used to remove the right-of-way from the productive forest. The gross area of the right-of-way is 27.3 hectares, and the resulting net reduction after previous reductions are accounted for is 26.0 hectares.

8.6 NON-COMMERCIAL COVER

Non-commercial forest types are those parts of the productive forest land that are an important part of the forest ecosystem but do not contain trees to support industrial forestry. Non-commercial forest types were identified using the “NON_FOREST_DESCRIPTOR” attribute in the VRI. All “NCBR” (non-commercial brush) stands were removed from the THLB. The total area classified as non-commercial brush is 212.3 hectares, of which 207.6 hectares is considered to be within the PFLB. The net area removed from the THLB after account for areas removed as a result of previous netdown categories is 207.6 hectares.

8.7 INOPERABLE

Inoperable areas are those portions of the land base where harvesting is not feasible due to terrain or characteristics or lack of access. Interfor considers all of TFL 8 to be operable and accessible, so no reductions will be made.

8.8 ENVIRONMENTALLY SENSITIVE AREAS

Environmentally Sensitive Areas (ESAs) were identified within TFL 8 in 1993. These ESAs include P (potential regeneration problems), S (unstable soils), and SP (both unstable soils and regeneration). Harvesting in these areas could increase the risk of landslide (see Section 8.9) or make it difficult to achieve reforestation requirements.

Areas with high environmental sensitivity (ESA1) were fully excluded from the THLB, unless there was evidence of previous logging. Areas of moderate environmental sensitivity (ESA2) were not removed from the land base because terrain stability surveys (Section 8.9) are considered to be a more accurate representation of the areas of moderate environmental sensitivity with the TFL. Also, many previously harvested blocks intersect areas identified as ESA2 indicating that these areas are generally available for timber harvesting. Table 10 provides a summary of the reductions made for ESA1.

Table 10 Environmentally sensitive areas summary

ESA Code	Description	Gross Area (ha)	Productive Area (ha)	Removed Area (ha)
P	Potential regeneration problems	37.5	16.8	16.8
S	Unstable soils	612.9	574.2	574.2
SP	Unstable soils and potential regeneration problems	968.8	883.4	883.4
Total		1,619.2	1,474.4	1,474.4

8.9 UNSTABLE TERRAIN

Section 37 of the Forest Planning and Practices Regulation requires that a primary forest activity does not cause a landslide that has a material adverse effect. One of the tools that forest companies use to address this requirement is terrain stability mapping that identifies areas where there is potential for landslides.

Terrain stability mapping has been completed for the entire TFL 8 land base. This includes Level D (reconnaissance) mapping completed in 2003 and Level C (detailed) mapping completed in 2003. Areas with a reconnaissance mapping classification of Unstable (U) and detailed mapping classification of V (High likelihood of landslide initiation following timber harvesting) were fully deleted from the THLB unless there was evidence of

previous harvesting. These areas, summarized in Table 11 are in addition to the ESA1 reductions made for unstable soil types.

Areas with a reconnaissance mapping classification of Potentially Unstable (P) and detailed mapping classification of IV (Moderate likelihood of landslide initiation following timber harvesting) were not excluded from the THLB because harvesting often occurs within these polygons. Detailed terrain assessments completed during cutblock layout identify the specific areas that have terrain stability concerns. These areas are typically addressed through in-block retention or alternative harvesting approaches.

Table 11 Terrain stability area summary

Terrain Class	Description	Gross Area (ha)	Productive Area (ha)	Removed Area (ha)
U (from Level D)	Unstable	240.0	133.1	99.8
V (from Level C)	High likelihood of landslide initiation following harvesting	234.8	230.0	226.1
Total		474.8	363.1	325.9

8.10 LOW SITE

Site index in the VRI was used to identify low productivity stands, as outlined in Table 12. These site index values are consistent with historical limits of low site in the Boundary Timber Supply Area (TSA), and approximate the upper site index limit of the “Low” site class used in older inventories. These stands are not expected to achieve sufficient volume or piece size to be economically viable for harvest, and were removed from the THLB unless there was previous logging history. As discussed in Section 8, these stands may be very important for other values besides commercial forestry.

Table 12 Low site reductions

Leading Species Code	Description	VRI Site Index	Gross Area (ha)	Productive Area (ha)	Removed Area (ha)
PL, PLI, PA, PY, LW	Pine or larch leading	<7.5	50.0	40.7	26.3
SE, SX, S, B, BA, BL	Spruce or balsam leading	<8.0	972.2	706.5	349.6
FD, FDI	Douglas-fir leading	<8.5	7.6	7.6	7.6
Total			1,029.8	754.8	383.5

8.11 DECIDUOUS

Interfor does not currently utilize deciduous species from TFL 8 in its industrial facilities. Therefore, all deciduous leading stands (i.e. aspen, cottonwood, and birch) were deleted from the THLB unless there was previous logging history. However, these stands are an important, integral part of the forested land base as discussed in Section 8.

There are 235.6 hectares of deciduous stands in TFL 8, of which 230.8 hectares are productive forest land. There were 229.3 hectares removed from the THLB after accounting for stands previously removed from the land base for other reasons.

8.12 NON-MERCHANTABLE

Non-merchantable forest types have characteristics that make them unlikely to be economically viable for harvest by Interfor. As discussed in Section 8, they contribute to other values and are an important component of the overall forest in the TFL.

A review of the non-merchantable definitions used in the 2006 Information Package indicated that they did not accurately reflect stands that weren't being harvested on TFL 8. For example, many pine stands previously identified as stocking class 4 have been harvested.

Therefore, for this analysis, non-merchantable stands were defined using the same criteria used in the 2011 Boundary Timber Supply Review Data Package, and is intended to address high density pine stands. Natural stands containing greater than 70% pine that will not achieve 100 m³/hectare by age 120 were removed from the THLB unless there was previous logging history. The gross area of stands meeting this criteria is 472.5 hectares, of which 396.9 hectares is productive forest land base. After accounting for stands previously removed from the land base for other reasons, the net area removed from the THLB was 335.4 hectares.

8.13 RIPARIAN MANAGEMENT AREAS

Riparian management areas are designed to minimize the impacts of harvesting in areas immediately adjacent to water bodies, including streams, lakes, and wetlands. The Forest Planning and Practices Regulation (Sections 50, 51, and 52) specify the management restrictions for riparian areas.

A riparian management area consists of a riparian management zone in which harvesting activity is restricted through basal area retention requirements, and, depending on the water body classification may also include a riparian reserve zone immediately adjacent to the the water body. Harvesting is fully excluded within the reserve zone.

An equivalent riparian management area width was calculated for each riparian class by considering the widths of the riparian reserve zone and riparian management zone, along with the percentage basal area retention within the management zone. Buffers were then generated around the riparian features and removed from the THLB.

Current operational practice on TFL 8 results in a range of basal area retention levels in riparian management zones, from 0 to 60%, with a resulting average retention level of 25%. The average retention level was applied to all riparian management zones regardless of riparian classification.

Table 13 summarizes the buffer widths and area reductions for riparian features. Further details about the source riparian data and classification details is provided in Section 8.13.1 and Section 8.13.2.

Table 13 Riparian management area summary

Feature	Class	Feature Area or Length	RRZ* Width (m)	RMZ* Width (m)	RMZ Basal Area Retention (%)	Buffer Width for Modelling (m)	Gross Area (ha)	Productive Area (ha)	Removed Area (ha)
Lake	L1-B	99.1 ha	10	0	25	10	115.6	10.7	10.7
	L3	22.1 ha	0	30	25	7.5	26.8	3.1	3.1
Wetlands	W1	91.7 ha	10	40	25	20	51.3	44.5	44.4
	W3	104.2 ha	0	30	25	7.5	34.6	32.1	31.6
	W5	37.7 ha	10	40	25	20	27.5	26.0	25.7
Streams	S1-B	16.1 km	50	20	25	55	93.8	76.2	75.8
	S2	74.1 km	30	20	25	35	467.2	432.9	406.0
	S3	162.7 km	20	20	25	25	784.2	737.0	667.7
	S4	241.0 km	0	30	25	7.5	343.4	323.1	304.3
	S5	27.6 km	0	30	25	7.5	40.6	38.6	38.0
	S6	346.0 km	0	20	25	5	340.6	326.0	311.8
Total							2,325.6	2,050.2	1,919.1

* RRZ = Riparian Reserve Zone, RMZ = Riparian Management Zone

8.13.1 LAKES AND WETLANDS

Lakes and wetlands were extracted from the forest cover layer by selecting polygons classified as lakes or swamps (i.e. non-productive code equal to 15 for lakes and non-productive code equal to 35 for swamps). These polygons were compared with lakes from the provincial Fresh Water Atlas to ensure that all lakes were captured. Lakes or wetlands greater than or equal to one hectare in size were classified using the definitions provided in the Forest Planning and Practices Regulation. Table 14 summarizes the criteria used for classification of lakes and wetlands.

Table 14 Classification criteria for lakes and wetlands

Feature	Class	Criteria
Lake	L1-B	> 5 ha and < 1000 ha
	L3	>= 1 ha and <= 5 ha
Wetlands	W1	> 5 ha
	W3	>=1 ha and <= 5 ha
	W5	Two or more wetlands with overlapping riparian management zones and combined area >= 5 ha

8.13.2 STREAMS

Streams are classified using the definitions provided in the Forest Planning and Practices Regulation, based on their width in combination with the presence or absence of fish. Table 15 summarizes these criteria.

In 2000, a stream layer for timber supply review purposes was developed by Interfor and Forsite that retained all known stream classifications, and inferred a classification for all other streams using relevant data sources and the expertise of a fisheries specialist. Interfor also maintains a stream layer for operational purposes that has updated stream classifications and locations based on additional field work or studies. For purposes of this timber supply analysis, the operational stream layer was supplemented with information from the 2000 project to assign stream classes to all streams in the operational layer.

Table 15 Classification criteria for streams

Class	Fish Present	Width
S1-B	Yes	> 20 m and < 100 m
S2	Yes	>= 5 m and <= 20 m
S3	Yes	>= 1.5 m and < 5 m
S4	Yes	< 1.5 m
S5	No	> 3 m
S6	No	<= 3 m

8.14 WILDLIFE HABITAT AREAS

Sections 9 and 10 of the Government Action Regulation permit the government to establish General Wildlife Measures and Wildlife Habitat Areas (WHA). Section 69 of the Forest Planning and Practices Regulation specifies that primary forest activities on an area must comply with each General Wildlife Measure that applies to the area.

WHAs within TFL 8 were identified and excluded from the THLB where harvesting would not be possible. This included a very small portion of a WHA for Lewis's Woodpecker, and fifteen WHAs for Williamson's Sapsucker.

Although there is a WHA and Government Actions Regulation (#8-373) for Grizzly Bear within TFL 8, it is expected that the General Wildlife Measures (timing of operations, road screening, protection of habitat features, coarse woody debris requirements, stocking standards) can be met operationally without requiring a reduction to the timber harvesting land base or timber supply. The General Wildlife Measures for Badger and the implications for timber supply are discussed in Section 12.2.4.

Table 16 summarizes the areas and land base reductions due to WHAs.

Table 16 Wildlife habitat area summary

Species	WHA Identifiers	Gross Area (ha)	Productive Area (ha)	Removed Area (ha)
Lewis's Woodpecker	8-301	0.6	0.6	0.6
Williamson's Sapsucker	8-215, 8-216, 8-217, 8-218, 8-219, 8-220, 8-221, 8-222, 8-223, 8-224, 8-225, 8-315, 8-316, 8-366, 8-392	530.1	482.8	472.4
Grizzly Bear*	8-373	8,352.7	7,628.4	
Badger*	8-329	29.0	27.4	
Total		8,912.4	8,139.2	473.0

* No area was deleted for Grizzly Bear or Badger. The WHA identifier and gross area are included here for completeness of documentation

8.15 RECREATION SITES AND RESERVES

Section 16 of the Forest Recreation Regulation specifies that recreations sites, trails, or interpretive forest sites must not be used for industrial activities unless authorized by a recreation officer. Five recreation sites/reserves located within TFL 8 that were removed from the land base, as summarized in Table 17.

Table 17 Recreation sites and reserves

Name	Type	Gross Area (ha)	Productive Area (ha)	Removed Area (ha)
Arlington Lakes	Recreation Site	64.8	36.4	28.9
Buck Lake	Recreation Site	4.8	3.5	3.0
Solitude Lake	Recreation Reserve	134.7	74.0	53.8
Trapping Creek	Recreation Site	0.5	0.5	0.5
Windfall Creek	Recreation Reserve	4.0	3.6	3.0
Total		208.8	118.0	89.2

8.16 TRANS-CANADA TRAIL

Approximately 20 kilometres of the Trans-Canada trail intersects the northern block of the TFL. Section 16 of the Forest Recreation Regulation specifies that recreations sites, trails, or interpretive forest sites must not be used for industrial activities unless authorized by a recreation officer for industrial activities. Therefore, a twelve metre buffer was applied to each side of the trail and excluded from the land base. The total area contained within the buffer is 48.1 hectares of which 10.8 hectares is productive forest. After accounting for other reductions to the land base, the net area removed from the THLB was 6.9 hectares.

8.17 OLD GROWTH MANAGEMENT AREAS

Non-legal, spatial Old Growth Management Areas (OGMAs) have been established in order to manage for the old growth requirements outlined in the Kootenay Boundary Higher Level Plan Order. All OGMAs within the TFL 8 boundary were excluded from the THLB. The gross area of OGMAs within TFL 8 is 6,566.4 hectares, of which

6,163.3 hectares is productive forest. After accounting for other reductions to the land base, the net area removed from the THLB was 5,090.4 hectares.

8.18 WILDLIFE TREE RETENTION

Section 66 of the Forest Planning and Practices regulation requires that on average, 7% of the total cutblock area harvested must be retained as wildlife tree retention (WTR). Wildlife tree patches (WTPs) are defined during layout and are maintained spatially in Interfor's forestry management system. Existing WTPs with a gross area of 1,187 hectares within this dataset were excluded from the THLB. Of this, 1,130 hectares were productive forest, with a resulting net reduction to the THLB of 892 hectares after previous land base reductions are considered. Approximately 75.1% (i.e. 892ha / 1,187 ha) of the gross WTP area is considered to be THLB.

Interfor's Forest Stewardship Plan (FSP) is consistent with the FPPR and specifies that on average, 7% of each harvested cutblock will be retained as wildlife trees, either in single trees or patches. When the non-THLB component of WTPs is taken into account this means that on average, 5.3% (i.e. 75.1% x 7%) of the THLB in each cutblock will be designated as wildlife tree retention.

For this analysis, it is assumed that existing WTPs are associated with previously harvested stands that are currently 32 years or younger in age (23,830 ha). For the remainder of the THLB that is greater than 32 years old (36,654 ha), an aspatial netdown of 5.3%, (1,943 ha) will be applied in the model.

8.19 WILLIAMSON'S SAPSUCKER HABITAT BEST MANAGEMENT PRACTICES

Williamson's Sapsucker (WISA) is listed under Schedule 1 of the federal *Species at Risk Act*, and is on the provincial Blue list in British Columbia. WHAs have been created for Williamson's Sapsucker and have been excluded from the THLB as outlined in Section 8.14. This analysis will include additional requirements for WISA as follows.

Best Management Practices (BMP) have been identified as an essential action in the provincial recovery plan. These BMPs apply nest tree retention and recruitment targets within low, moderate and high suitability habitat classes and within 500 metres of known nest sites in very low suitability habitat. These retention targets range between 85 and 225+ live trees per hectare as outlined in Table 18.

Table 19 summarizes the calculation of equivalent THLB retention areas required to meet the live tree retention targets. After allowing for 5.3% wildlife tree retention, an additional 32.8% retention is required in High Suitability habitat, and 8.2% additional retention is required in Low/Moderate suitability habitat or Very Low Suitability habitat within 500 metres of a nest. This will be addressed in the timber supply model as an aspatial netdown.

Table 18 WISA habitat suitability area summary

Habitat Suitability Rating	Average Live Tree Retention Target (sph)	% Area of New Cutblocks
High	225	100
Low/Moderate, plus	85-125	5-15
Very Low within 500 metres	126-175	25-35
Of a nest	176-225	40-50
	>225	10-20
Low/Moderate Weighted Average	180	

Table 19 WISA retention requirements

Habitat Suitability Rating	Gross Area (ha)	Productive Area (ha)	THLB Area (ha)	THLB SPH from VRI*	Overall Retention %	Adjusted Retention %	Retention Area (ha)
High	307.4	296.2	70.4	591	38.1	32.8	23.1
Low/Moderate or Very Low within 500 metres of a nest	6,626.8	6,194.3	3,438.4	1,329	13.5	8.2	281.9
Total	6,934.2	6,490.5	3,508.8	1,314	14.0	8.7	305.0

* Stands \geq 80 years old

9 Inventory Aggregation

Aggregation of individual forest stands is used to reduce complexity of the inventories for purposes of timber supply modelling.

9.1 ANALYSIS UNITS

Stands are grouped into analysis units (AUs) to reduce the number of yield tables required within the model. For this analysis, base AUs were assigned using ecological units (i.e. combinations of BEC and leading site series) corresponding to those where silviculture information is available for regeneration activities occurring in the past 10 years. The source of the ecological units is the 2006 TEM used for the site index adjustment project. Table 20 summarizes these base analysis units.

Analysis units within the model will be assigned by considering these base AUs and whether the stand is natural or managed and its land base status (THLB/Non-THLB). Table 21 summarizes the analysis units that will be used in the model.

Table 20 Base analysis units

Base Analysis Unit	Description (BEC & Site Series)	THLB Area (ha)	Non-THLB Area (ha)
1	ESSFdc1/dcu1 – 01	4,622	717
2	ESSFdc1/dcu1 – 03	3,561	707
3	ESSFdc1/dcu1 – 04	952	188
4	ESSFdc1/dcu1 – Others	521	771
5	ICHmk1/mw2 – 01	1,782	196
6	ICHmk1/mw2 – 03	1,493	137
7	ICHmk1/mw2 – 04	1,377	95
8	ICHmk1/mw2 – Others	382	193
9	IDFdm1 – 01	3,879	670
10	IDFdm1 – 04	2,818	526
11	IDFdm1 – 05	473	235
12	IDFdm1 – Others	521	382
13	MSdm1 – 01	19,540	2,128
14	MSdm1 – 03	2,143	456
15	MSdm1 – 04	12,124	2,143
16	MSdm1 – 05	685	228
17	MSdm1 – Others	2,826	1,533
18	MSdm1a - All	784	122

Table 21 Modelling analysis units

Analysis Units	Description	Land Base	Regeneration Analysis Unit
1 – 18	Existing Natural Stands (>= 45 yrs)	THLB	1001 – 1018
101 – 118	Existing Managed Stands (33 to 44 yrs)	THLB	2001 – 2018
201 – 218	Existing Managed Stands (19 to 32 yrs)	THLB	2001 – 2018
301 – 318	Existing Managed Stands (13 to 18 yrs)	THLB	2001 – 2018
401 – 418	Existing Managed Stands (<= 12 yrs)	THLB	2001 – 2018
1001 – 1018	Future Managed Stands (with road Reduction)	THLB	1001 - 1018
2001 – 2018	Future Managed Stands (no road reduction)	THLB	2001 - 2018
3001 – 3018	Existing Stands	Non-THLB	3001 – 3018*

* Regen AU is for purposes of disturbance in the non-THLB

9.2 NON-TIMBER RESOURCES

The forest estate model used for this analysis (PATCHWORKS™) does not require that unique, mutually exclusive zones be established to model non-timber resource requirements. Rather, stands are assigned to non-timber values based on their geographic location to allow constraints to be formulated for those values in the modeling framework. In general, a single stand will often belong and contribute to the status of more than one non-timber resource.

Table 22 provides an overview summary of the aggregations that will be used in this analysis to model non-timber resource objectives. Further details concerning the aggregation and model formulation are found in the sections of this report cross referenced in the table.

Table 22 Aggregation for non-timber resources

Non-timber Resource	Aggregation Level	Objective Type	Section Cross Reference
Williamson's Sapsucker	Habitat Suitability/Nest Buffers	Aspatial retention	Section 8.19
Landscape-Level Biodiversity	Landscape Unit, BEO, BEC, Connectivity Corridor	Min. Retention/Max. Disturbance	Section 12.2.1
Visual Quality	Visual Landscape Inv. Polygon	Max. Disturbance	Section 12.2.3
Mule Deer Winter Range	Mule Deer Planning Cell	Min. Retention/ Max. Disturbance	Section 12.2.4
Moose Winter Range	Moose Planning Cell	Min. Retention/Max. Disturbance	Section 12.2.5
Badger	Badger WHA	Future Harvest Limitation	Section 12.2.6
Watershed health	Surrogate Watersheds	Max. Disturbance (ECA)	Section 12.2.9

10 Growth and Yield

Forest estate modelling requires estimates for attributes such as net volume, species composition, and diameter for different stand types over time as the stands age. Growth and yield assumptions describe how these attributes are developed and incorporated in the model for natural and managed stands.

This section describes the information, data sources, assumptions, and methods for generating growth and yield estimates for TFL8.

10.1 SITE INDEX

Site index is an estimate of site productivity for tree growth and provides a common base for comparing the productivity of different sites. Site index is species-specific and is expressed as the height of the dominant trees at the reference age of 50 years.

A site index adjustment project was completed by J.S. Thrower & Associates Ltd. in 2006. This project provides ground-based estimates of potential site index for second growth stands of Lodgepole pine and western larch using data localized to TFL 8. Site index estimates for spruce, balsam and Douglas-fir are also provided using Ministry of Forests, Lands, Natural Resource Operations & Rural Development (FLNRO) site index conversion equations. The results from this 2006 Site Index Adjustment project will be used for managed stands in the Base Case.

A site productivity layer containing managed stand site index estimates throughout British Columbia is maintained by FLNRO, and includes data for the TFL 8 area. This provides an alternate estimate of managed stand site index, and will be used to complete a sensitivity analysis.

Figure 6 provides a comparison of inventory site index with the 2006 site index adjustment project site index and the provincial site productivity tile site index.

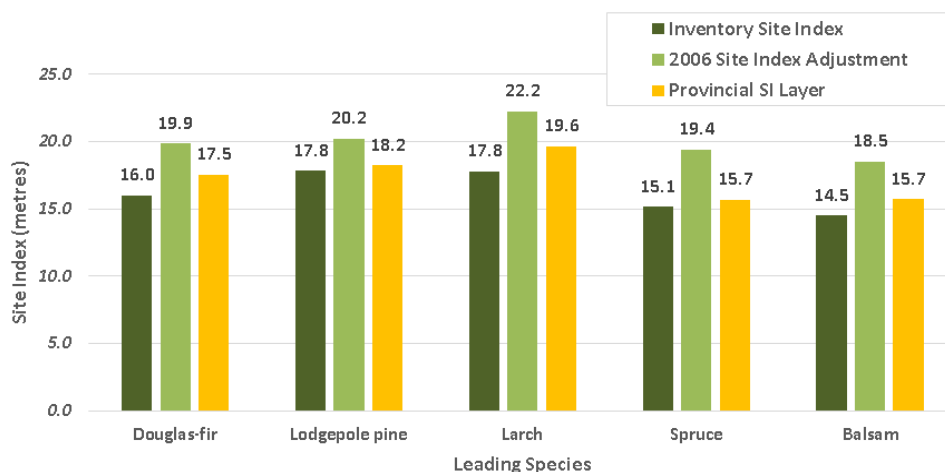


Figure 6 Site index comparison by species

10.2 UTILIZATION LEVELS

Utilization levels define the portion of the tree that is considered to be merchantable volume. Standards for utilization are specified in the cutting authority for the licence, and volume that meets these standards is charged against the allowable annual cut. The minimum merchantable timber specifications for TFL 8 are shown in Table 23. These will be used for all species and analysis units (natural and managed) when developing the yield tables for this analysis.

Table 23 Utilization levels

Species	Minimum Diameter at Breast Height	Maximum Stump Height	Minimum Top Diameter Inside Bark
Lodgepole pine	12.5 cm	30.0 cm	10.0 cm
Other conifer	17.5 cm	30.0 cm	10.0 cm

10.3 DECAY, WASTE, AND BREAKAGE

For natural stands, default reductions to stand volume for decay, waste and breakage will be applied in the Variable Density Yield Projection (VDYP 7) model. Within the TIPSy model used for managed stands, the default Operational Adjustment Factor 2 (OAF2) will be applied to account for merchantable volume losses due to decay, waste, and breakage (Section 10.4).

10.4 OPERATIONAL ADJUSTMENT FACTORS FOR MANAGED STANDS

The TIPSy projection model reports the potential yield of a specific site, species and management regime.

Operational adjustment factors (OAFs) were applied to reflect the operational environment accordingly:

- OAF1 of 15% to address a constant reduction for unmapped stocking gaps (e.g., non-productive areas, management effects, and losses due to forest health and random risk factors).
- OAF2 of 5% to address dynamic reductions over the life of the stand such as decay, waste and breakage and some forest health concerns.

10.5 VOLUME REDUCTIONS

Deciduous volumes were removed from all yield tables. For natural stands, this was done directly using the VDYP output by not including reported deciduous volumes in total merchantable volume. For managed stands, a percent reduction to total volume was applied based on the proportion of deciduous in the TIPSy inputs.

In addition, future managed stand yield tables for existing natural stands will be reduced by 2.0% in the model to account for future roads (see Section 8.4.2).

10.6 YIELD TABLES FOR NATURAL STANDS

Natural stands for purposes of this analysis are stands that are greater than 44 years of age, which reflects an approximation of the year (1975) when planting and density control were commonly implemented. Yield tables for natural stands were generated as follows:

- VDYP 7 was used to create a yield table for each individual natural stand in the inventory
- The individual yield tables that represent the stands in an analysis unit were area-weighted to create a composite table for the analysis unit

The required attributes for input into the VDYP 7 model were obtained from FLNRO as part of the project to convert the TFL 8 inventory to the provincial digital standard. Table 24 provides a summary of the natural stand inventory attributes, and the full yield tables are provided in Appendix 1.

Table 24 Average natural stand attributes by AU

AU	Description	Area (ha)	Inventory SI	Species Composition
1	ESSFdc1/dcu1 – 01	2,032	14.5	PI40 BI30 Sx26 Lw3 Fd 1
2	ESSFdc1/dcu1 – 03	1,890	14.0	PI66 BI17 Sx13 Lw2 Fd2
3	ESSFdc1/dcu1 – 04	672	13.5	Sx44 BI41 PI15
4	ESSFdc1/dcu1 – Others	356	12.9	PI48 BI26 Sx23 Lw2 Pa1
5	ICHmk1/mw2 – 01	948	15.8	Fd29 Lw22 Sx16 Cw11 BI11 PI10 At1
6	ICHmk1/mw2 – 03	967	14.9	Fd40 Lw33 PI14 BI5 Sx4 Cw4
7	ICHmk1/mw2 – 04	849	15.3	Lw35 Fd24 PI21 Sx7 BI7 Cw5 At1
8	ICHmk1/mw2 – Others	201	15.2	Fd28 Lw20 Sx19 Cw14 PI9 BI8 At2
9	IDFdm1 – 01	1,793	16.7	Fd48 PI23 Lw23 Sx4 Cw1 At1
10	IDFdm1 – 04	1,686	15.9	Fd52 PI24 Lw21 Sx2 At1
11	IDFdm1 – 05	289	16.6	Fd43 Lw22 PI19 Sx12 BI2 At1 Ac1
12	IDFdm1 – Others	310	15.7	Fd53 Lw19 PI14 Sx7 Py5 BI1 At1
13	MSdm1 – 01	7,099	16.4	PI40 Lw26 Fd20 Sx7 BI6 Cw1
14	MSdm1 – 03	1,587	15.1	PI49 Lw24 Fd21 Sx3 BI3
15	MSdm1 – 04	6,442	15.6	PI40 Fd29 Lw26 Sx3 BI2
16	MSdm1 – 05	271	17.7	PI 43 Sx17 Lw16 Fd 15 BI8 At1
17	MSdm1 – Others	1,528	16.2	Fd32 Lw26 PI25 Sx10 BI6 Cw1
18	MSdm1a - All	301	16.8	Lw31 PI31 Fd23 Sx9 BI4 Cw2
Total		29,221		

10.6.1 EXISTING TIMBER VOLUME COMPARISON

The total volume of the current inventory using polygon specific inventory volumes was compared to the total volume using the natural stand (i.e. generated by VDYP) yield table volumes assigned on the basis of age and analysis unit. This step is undertaken to ensure that no errors were made in aggregation and that no significant aggregation bias exists. Managed stand analysis units were not included in this comparison because volume comparisons with VDYP have little value. Table 25 shows the results of this comparison for the timber harvesting land base. It can be seen that there is very good agreement between the inventory volumes and yield table volumes for existing natural stands. Although there is less agreement for managed stands, they will be modelled using different yield tables generated by TIPSy.

Table 25 Existing timber volume check for the THLB

Polygon Description	AU Range	Inventory Volume (m ³)	Yield Table Volume (m ³)	Percent Agreement (yield table/inventory)
Existing Natural Stands (>= 45 yrs)	1 – 18	5,994,971	6,016,555	100.4
Existing Managed Stands (33 to 44 yrs)	101 – 118	171,116	172,616	100.9
Existing Managed Stands (19 to 32 yrs)	201 – 218	44,121	22,987	52.1
Existing Managed Stands (13 to 18 yrs)	301 – 318	-	-	100.0
Existing Managed Stands (<= 12 yrs)	401 – 418	-	-	100.0
Total		6,210,208	6,212,158	100.0

10.7 YIELD TABLES FOR MANAGED STANDS

Managed stands for this analysis are all stands that are 44 years of age and younger. TFL 8 has a rich history of artificial reforestation efforts dating back to the late 1950s, including research into Douglas-fir and larch restocking, and fertilization of Lodgepole pine sites that were clearcut harvested and mechanically treated. (Tree Farm Licence No. 11 (Carmi) - Working Plan Number Three – Olinger Lumber Company Ltd.). Spruce seed collection programs were initiated in 1965 and planting was commonly used on the TFL by the late 1970's. Density control treatments originated in the early to mid- 1980's on stands harvested in the preceding decades. Yield tables were created for these stands using the Table Interpolation for Stand Yields (TIPSY) model, version 4.4.

10.7.1 SILVICULTURE MANAGEMENT REGIMES

Managed stands were divided into four historic eras that reflect changes in silviculture practices and available data sources for the required TIPSY inputs (i.e. regeneration method, species, density, and genetic gain), plus an additional era for future managed stands. The age of existing stands will be used as a surrogate for the silviculture era. Table 26 lists the silviculture eras and age ranges that were used for this analysis.

Table 26 Silviculture eras

Silviculture Era	Age Range	Area (ha)
1975 – 1986	33 to 44 years	7,433
1987 – 2000	19 to 32 years	10,632
2001 – 2006	13 to 18 years	3,475
2007 – 2019	<= 12 years	9,723
Future Managed		60,484

10.7.1.1 SILVICULTURE ERA (1975 TO 1986)

Between 1975 and 1986, planting was used in small proportions in the ESSF, IDF, and MS zones. For these stands, information provided in the November 2001 report “*Yield Tables for Natural and Managed Stands: Management Plan 10 on TFL 8*” by J.S. Thrower and Associates Ltd. was used to create the regimes by area weighting the regimes listed in the report by the areas in each analysis unit. Table 27 summarizes the regimes that will be used in the current analysis for this silviculture era.

Table 27 Silviculture regimes for Era 1 stands (1975 to 1986)

AU	Description	Area (ha)	Site Index	Regen Method	Density	Species Composition	Regen Delay
101	ESSF – 01	453	19.1	Plant: 15%	850	Pl100	2
				Nat: 85%	4,150	Bl38 Pl33 Sx26 Cw3	5
102	ESSF – 03	290	17.9	Nat: 100%	6,600	Pl69 Bl26 Sx4 Lw1	5
103	ESSF – 04	10	19.3	Plant: 15%	750	Pl100	2
				Nat: 85%	4,150	Bl38 Pl33 Sx24 Cw5	5
104	ESSF – Others	17	18.3	Plant: 50%	700	Pl100	2
				Nat: 50%	5,170	Bl67 Pl20 Sx13	5
105	ICH – 01	232	21.8	Nat: 100%	1,950	Fd44 Pl29 Lw21 Sx6	5
106	ICH – 03	31	21.4	Nat: 100%	3,100	Pl38 Bl34 Sx18 Fd 9 Lw1	5
107	ICH – 04	86	21.8	Nat: 100%	4,050	Pl40 Bl40 Sx20	5
108	ICH – Others	33	22.6	Nat: 100%	1,800	Pl40 Sx26 Fd 16 Lw10 Bl8	5
109	IDF – 01	695	21.3	Plant: 8%	700	Pl74 Sx21 Lw5	2
				Nat: 92%	4,100	Pl66 Fd19 Lw9 Sx4 At2	5
110	IDF – 04	376	19.9	Plant: 12%	1,035	Pl62 Fd35 Sx3	2
				Nat: 88%	3,800	Pl70 Fd13 Lw10 Sx4 Cw3	5
111	IDF – 05	65	21.6	Plant: 20%	785	Pl66 Sx33 Fd1	2
				Nat: 80%	3,480	Pl57 Sx14 Lw13 Fd12 At4	5
112	IDF – Others	56	20.7	Plant: 7%	1,035	Pl62 Fd35 Sx3	2
				Nat: 93%	4,250	Pl53 Fd19 Sx12 Lw12 Bl2 Cw2	5
113	MSdm1 – 01	3,208	21.0	Plant: 12%	1,000	Pl83 Sx14 Lw3	2
				Nat: 88%	3,650	Pl70 Lw11 Fd7 Bl6 Sx5 At1	5
114	MSdm1 – 03	58	20.4	Plant: 16%	550	Pl91 Sx9	2
				Nat: 84%	3,850	Pl84 Lw7 Fd6 Sx3	5
115	MSdm1 – 04	1,248	20.8	Plant: 8%	700	Pl77 Sx22 Fd1	2
				Nat: 92%	3,800	Pl69 Fd11 Lw7 Sx6 Bl6 Ac1	5
116	MSdm1 – 05	217	21.3	Plant: 3%	800	Pl100	2
				Nat: 97%	4,570	Pl67 Bl12 Lw11 Fd7 Ac3	5
117	MSdm1 – Others	357	21.6	Plant: 12%	700	Pl60 Sx40	2
				Nat: 88%	3,950	Pl85 Sx7 Bl3 Lw3 Fd1 At1	5
118	MSdm1a – All	1	22.5	Nat: 100%	2,075	Fd33 Pl30 Lw28 Sx7 Bl2	5
Total		7,433					

10.7.1.2 SILVICULTURE ERA 2 (1987 TO 2000)

The proportion of planting increased in all biogeoclimatic zones between 1987 and 2000. Genetically improved stock was also available, but was planted in relatively small proportions resulting in an overall gain of 0.9 (spruce), 0.3 (Douglas-fir), and 0.1 (pine). Similar to Era 1 stands, information provided in the November 2001 report “*Yield Tables for Natural and Managed Stands: Management Plan 10 on TFL 8*” was used to create the regimes by area weighting the regimes listed in the report by the areas in each analysis unit. Table 28 summarizes the regimes that will be used in the current analysis for this silviculture era.

Table 28 Silviculture regimes for Era 2 stands (1987 to 2000)

AU	Description	Area (ha)	Site Index	Regen Method	Density	Species Composition	Regen Delay
201	ESSF – 01	1,038	18.7	Plant: 50%	1,050	PI52 Sx48	2
				Nat: 50%	6,400	PI44 Sx28 BI22 Lw6	5
202	ESSF – 03	676	17.6	Plant: 50%	800	PI77 Sx22 Lw1	2
				Nat: 50%	6,200	PI69 Sx19 BI11 Lw1	5
203	ESSF – 04	101	18.9	Plant: 50%	1,200	PI70 Sx29 Lw1	2
				Nat: 50%	4,500	PI54 BI25 Sx21	5
204	ESSF – Others	49	16.7	Plant: 50%	900	PI52 Sx45 Lw3	2
				Nat: 50%	4,650	PI46 Sx29 BI20 Lw5	5
205	ICH – 01	158	22.0	Plant: 36%	1,065	PI64 Lw21 Sx14 Py1	2
				Nat: 64%	4,375	PI42 Sx14 BI13 Fd13 Lw13 Cw5	5
206	ICH – 03	156	20.6	Plant: 50%	1,070	PI 58 Lw28 Sx8 Py6	2
				Nat: 50%	5,350	PI54 Lw27 Fd9 Sx7 Py3	5
207	ICH – 04	95	21.9	Plant: 50%	1,130	PI57 Sx23 Lw20	2
				Nat: 50%	2,950	PI51 Lw26 Sx19 At3 BI1	5
208	ICH – Others	32	21.8	Plant: 50%	559	PI58 Sx27 Lw14 Py1	2
				Nat: 50%	3,900	PI48 Sx27 Lw12 BI8 Fd5	5
209	IDF – 01	428	21.2	Plant: 28%	950	PI55 Lw30 Py8 Sx4 Fd3	2
				Nat: 72%	4,150	PI53 Fd27 Lw14 Sx3 Py2 Ac1	5
210	IDF – 04	197	19.7	Plant: 30%	900	Lw39 PI33 Py14 Fd11 Sx3	2
				Nat: 70%	3,000	PI42 Fd28 Lw23 Sx4 Py3	5
211	IDF – 05	32	22.8	Plant: 50%	900	Lw49 PI48 Sx3	2
				Nat: 50%	1,650	Lw47 PI43 Fd7 BI3	5
212	IDF – Others	83	22.8	Plant: 50%	775	Lw48 PI46 Sx3 Py2 Fd1	2
				Nat: 50%	1,550	PI44 Lw44 Fd8 BI2 Sx1 Py1	5
213	MSdm1 – 01	4,921	21.0	Plant: 35%	925	PI67 Sx25 Lw8	2
				Nat: 65%	4,900	PI69 Sx14 Lw10 BI4 Fd3	5
214	MSdm1 – 03	170	20.1	Plant: 33%	650	PI65 Sx26 Lw9	2
				Nat: 67%	5,900	PI54 Lw17 Fd11 BI9 Sx7 Ac2	5
215	MSdm1 – 04	1,706	20.7	Plant: 35%	900	PI58 Lw22 Sx19 Fd1	2
				Nat: 65%	6,875	PI64 Lw21 Sx7 BI3 At3 Fd2	5
216	MSdm1 – 05	126	21.1	Plant: 50%	950	PI66 Sx33 Lw1	2
				Nat: 50%	2,850	PI60 Sx26 Lw5 BI7 Fd1 Ac1	5
217	MSdm1 – Others	427	21.4	Plant: 11%	725	PI63 Sx33 Lw4	2
				Nat: 89%	7,575	PI91 Lw6 Sx1 BI1 Fd1	5
218	MSdm1a – All	236	22.6	Plant: 36%	2,075	PI64 Lw20 Sx15 Py1	2
				Nat: 64%	4,350	PI42 Sx15 Fd13 Lw13 BI12 Cw5	5
Total		10,632					

10.7.1.3 SILVICULTURE ERA 3 (2001 TO 2006)

There is limited information available for silviculture practices during this period as a result of changes to Interfor's forest management system. The information package completed in 2006 for the previous timber supply analysis assumed that 100% of stands were planted. However, based on the work completed by Interfor for Era 4 stands (see Section 10.7.1.4), and the assumptions for future managed stands provided in the November 2001 report "Yield Tables for Natural and Managed Stands: Management Plan 10 on TFL 8" it appears that there was likely still a reliance on natural regeneration. Therefore, this analysis will assume the same silviculture regimes as those used for Era 4 (2007 to 2019) stands. Table 29 summarizes the silviculture regimes that will be used in the current analysis for this silviculture era.

Table 29 Silviculture regimes for Era 3 stands (2001 to 2006)

AU	Description	Area (ha)	Site Index	Regen Method	Density	Species Composition	Regen Delay
301	ESSF – 01	259	18.0	Plant: 64% Nat: 36%	1,200 3,600	Sx46 Pl41 Bl13 Pl56 Bl41 Sx3	2 5
302	ESSF – 03	238	17.0	Plant: 60% Nat: 40%	1,250 5,000	Pl55 Sx42 Bl3 Pl69 Bl26 Sx4 Lw1	2 5
303	ESSF – 04	35	18.1	Plant: 84% Nat: 16%	1,200 2,800	Sx60 Pl38 Bl2 Bl52 Pl25 Sx23	2 5
304	ESSF – Others	33	16.4	Plant: 64% Nat: 36%	1,230 4,100	Pl46 Sx46 Bl8 Pl61 Bl34 Sx5	2 5
305	ICH – 01	105	22.2	Plant: 100%	1,300	Sx34 Fd33 Lw31 Cw1 Py1	2
306	ICH – 03	73	20.5	Plant: 100%	1,300	Fd54 Pl39 Sx7	2
307	ICH – 04	78	21.0	Plant: 100%	1,400	Fd39 Lw27 Pl12 Sx11 Py10 Cw1	2
308	ICH – Others	29	21.4	Plant: 100%	1,350	Fd37 Lw27 Sx26 Pl6 Py3 Cw1	2
309	IDF – 01	365	20.2	Plant: 100%	1,250	Fd53 Lw22 Pl11 Sx10 Py4	2
310	IDF – 04	239	19.4	Plant: 100%	1,250	Fd49 Py32 Pl15 Lw3 Sx1	2
311	IDF – 05	52	20.8	Plant: 100%	1,200	Sx33 Lw26 Fd23 Pl18	2
312	IDF – Others	29	19.0	Plant: 100%	1,300	Fd53 Lw20 Pl12 Sx9 Py6	2
313	MSdm1 – 01	892	20.9	Plant: 69% Nat: 31%	1,250 3,200	Fd34 Lw30 Sx26 Pl9 Py1 Pl69 Bl14 Lw11 Fd4 Sx1 Ac1	2 5
314	MSdm1 – 03	71	20.4	Plant: 56% Nat: 44%	1,250 6,700	Pl76 Sx24 Pl67 Bl33	2 5
315	MSdm1 – 04	706	20.6	Plant: 51% Nat: 49%	1,250 3,100	Lw33 Fd32 Pl27 Sx8 Pl83 Bl9 Lw5 Fd3	2 5
316	MSdm1 – 05	3	21.2	Plant: 33% Nat: 67%	1,250 9,000	Sx36 Fd31 Lw23 Pl6 Py4 Pl87 Bl10 Fd1 Lw1 Sx1	2 5
317	MSdm1 – Others	157	21.1	Plant: 62% Nat: 38%	1,250 3,700	Fd33 Lw31 Sx19 Pl17 Pl76 Bl11 Lw7 Fd3 Sx1 Ac1 At1	2 5
318	MSdm1a – All	113	22.7	Plant: 100%	1,100	Sx52 Fd36 Lw6 Cw6	2
Total		3,475					

10.7.1.4 SILVICULTURE ERA 4 (2007 TO 2019)

Interfor analyzed silviculture records from 2007 to 2017 to develop the inputs for existing managed stands less than or equal to 12 years of age. All ICH, IDF, and MSdm1a stands were planted, with a combination of planting and natural regeneration on ESSF and MSdm1 stands. Table 30 lists the silviculture regimes used to develop the yield tables for existing era 4 managed stands (AUs 401 to 418). These regimes will also be used for all future managed stands.

Table 30 Silviculture regimes for Era 4 stands (2007 to 2019)

AU	Description	Area (ha)	Site Index	Regen Method	Density	Species Composition	Regen Delay
401	ESSF – 01	841	17.8	Plant: 64% Nat: 36%	1,200 3,600	Sx46 Pl41 Bl13 Pl56 Bl41 Sx3	2 5
402	ESSF – 03	468	17.8	Plant: 60% Nat: 40%	1,250 5,000	Pl55 Sx42 Bl3 Pl69 Bl26 Sx4 Lw1	2 5
403	ESSF – 04	133	18.2	Plant: 84% Nat: 16%	1,200 2,800	Sx60 Pl38 Bl2 Bl52 Pl25 Sx23	2 5
404	ESSF – Others	65	17.3	Plant: 64% Nat: 36%	1,230 4,100	Pl46 Sx46 Bl8 Pl61 Bl34 Sx5	2 5
405	ICH – 01	338	21.8	Plant: 100%	1,300	Sx34 Fd33 Lw31 Cw1 Py1	2
406	ICH – 03	266	20.2	Plant: 100%	1,300	Fd54 Pl39 Sx7	2
407	ICH – 04	270	20.7	Plant: 100%	1,400	Fd39 Lw27 Pl12 Sx11 Py10 Cw1	2
408	ICH – Others	87	20.8	Plant: 100%	1,350	Fd37 Lw27 Sx26 Pl6 Py3 Cw1	2
409	IDF – 01	599	20.4	Plant: 100%	1,250	Fd53 Lw22 Pl11 Sx10 Py4	2
410	IDF – 04	321	19.1	Plant: 100%	1,250	Fd49 Py32 Pl15 Lw3 Sx1	2
411	IDF – 05	35	21.2	Plant: 100%	1,200	Sx33 Lw26 Fd23 Pl18	2
412	IDF – Others	43	19.1	Plant: 100%	1,300	Fd53 Lw20 Pl12 Sx9 Py6	2
413	MSdm1 – 01	3,420	20.9	Plant: 69% Nat: 31%	1,250 3,200	Fd34 Lw30 Sx26 Pl9 Py1 Pl69 Bl14 Lw11 Fd4 Sx1 Ac1	2 5
414	MSdm1 – 03	257	19.9	Plant: 56% Nat: 44%	1,250 6,700	Pl76 Sx24 Pl67 Bl33	2 5
415	MSdm1 – 04	2,022	20.5	Plant: 51% Nat: 49%	1,250 3,100	Lw33 Fd32 Pl27 Sx8 Pl83 Bl9 Lw5 Fd3	2 5
416	MSdm1 – 05	69	20.9	Plant: 33% Nat: 67%	1,250 9,000	Sx36 Fd31 Lw23 Pl6 Py4 Pl87 Bl10 Fd1 Lw1 Sx1	2 5
417	MSdm1 – Others	357	21.0	Plant: 62% Nat: 38%	1,250 3,700	Fd33 Lw31 Sx19 Pl17 Pl76 Bl11 Lw7 Fd3 Sx1 Ac1 At1	2 5
418	MSdm1a – All	132	22.6	Plant: 100%	1,100	Sx52 Fd36 Lw6 Cw6	2
Total		9,723					

10.7.1.5 FUTURE MANAGED STANDS

Future managed stands will use the silviculture regimes outlined in Table 30 for existing managed stands less than or equal to 12 years of age. AUs 1001 to 1018 will be used when existing natural stands (AUs 1 to 18) are harvested and will have a reduction applied for future roads as outlined in Section 8.4.2. AUs 2001 to 2018 will be used when existing managed stands are harvested and will not have a reduction for future roads applied. Table 31 summarizes the area and site index for the future managed stands.

Table 31 Areas and site index for future managed stands

Description	Analysis Units 1001 to 1018			Analysis Units 2001 to 2018		
	AU	Area (ha)	Site Index	AU	Area (ha)	Site Index
ESSFdc1/dcu1 – 01	1001	2,032	17.9	2001	2,590	18.1
ESSFdc1/dcu1 – 03	1002	1,890	17.1	2002	1,671	17.6
ESSFdc1/dcu1 – 04	1003	672	18.3	2003	279	18.4
ESSFdc1/dcu1 – Others	1004	356	16.0	2004	165	17.0
ICHmk1/mw2 – 01	1005	948	22.0	2005	834	22.0
ICHmk1/mw2 – 03	1006	967	19.9	2006	526	20.2
ICHmk1/mw2 – 04	1007	849	20.8	2007	529	20.9
ICHmk1/mw2 – Others	1008	201	21.5	2008	181	21.2
IDFdm1 – 01	1009	1,793	20.3	2009	2,086	20.5
IDFdm1 – 04	1010	1,686	18.7	2010	1,133	19.3
IDFdm1 – 05	1011	289	21.3	2011	184	21.2
IDFdm1 – Others	1012	310	18.1	2012	211	20.1
MSdm1 – 01	1013	7,099	20.8	2013	12,441	21.0
MSdm1 – 03	1014	1,587	19.5	2014	555	20.1
MSdm1 – 04	1015	6,442	20.4	2015	5,682	20.7
MSdm1 – 05	1016	271	21.1	2016	415	21.2
MSdm1 – Others	1017	1,528	20.7	2017	1,298	21.3
MSdm1a – All	1018	301	22.0	2018	483	22.6
Total		29,221			31,263	

10.7.2 REGENERATION DELAY

Regeneration delay is the time elapsed between harvesting and the establishment of a new stand of trees, taking into account the age of the planted trees. For this analysis, regeneration delays will be applied in the yield tables when they are created using TIPSYS. Interfor typically experiences regeneration delays of 2 years or less for planted stands, and 5 years when stands regenerate naturally. These regeneration delays will be used for this analysis.

10.7.3 REGENERATION ASSUMPTIONS

As discussed in Section 9.1, analysis units are based on ecological units (BEC/leading site series) from the 2006 TEM used for the site index adjustment project. Existing stands will regenerate to the corresponding future managed stand analysis unit with the species composition and other regeneration parameters outlined previously.

Natural stands (AUs 1 to 18) will regenerate to future managed stands (AUs 1001 to 1018) with a volume reduction for future roads. Existing managed stands (AUs 101 to 118, 201 to 218, 301 to 318, and 401 to 418) will regenerate to future managed stands (AUs 2001 to 2018) that do not have a reduction for future roads. Yield tables for future managed stands will use the area weighted managed stand site indices for the individual regenerated species within the analysis unit.

10.7.4 GENETIC IMPROVEMENT

Genetic gains for Era 2 (1987 to 2000) were determined from the analysis completed in the November 2001 report *“Yield Tables for Natural and Managed Stands: Management Plan 10 on TFL 8”* by area weighting the reported genetic gain for planted stock in each analysis unit.

Genetic gains for Era 3 (2001-2006) were determined from the information package produced in 2006, unless they were greater than those calculated for Era 4 (2007-2017) in which case the Era 4 numbers were used.

Planting records from 2007 to 2017 were combined with the genetic gain for each seedlot to produce weighted estimates of genetic gain for Era 4 and future managed stands. Table 32 summarizes the genetic gain that will be used in this analysis for planted stock

Table 32 Genetic gain

Silviculture Era	Spruce	Pine	Douglas-fir	Larch
Era 1 (1975 – 1986)	0.0	0.0	0.0	0.0
Era 2 (1987 – 2000)	0.9	0.1	0.3	0.0
Era 3 (2001 – 2006)	10.0	7.0	0.0	21.5
Era 4 (2007 – 2019)	12.7	7.0	6.5	21.5
Future	12.7	7.0	6.5	21.5

10.7.5 NOT SATISFACTORILY RESTOCKED

Not satisfactorily restocked (NSR) is defined as a forested area that does not have a sufficient number of well-spaced trees of desirable species. Backlog NSR refers to stands disturbed prior to 1987 that are not declared as satisfactorily restocked. Backlog NSR is not considered to be an issue in TFL8 and was therefore not addressed in this analysis. Current NSR typically refers to stands recently disturbed (i.e., since 1987) that are not yet declared as being stocked.

Current NSR is addressed in the analysis as part of the regular regeneration assumptions described in Section 10.7.1, and through the inventory update undertaken during the data preparation for the analysis as described in Section 7.2.

11 Protection

Damage to timber caused by fire, wind, insects, diseases and other pests contribute to loss in harvestable volumes. This volume loss is difficult to quantify, although losses to insect and disease that are normally found in stands (i.e. endemic losses) are accounted for in yield table estimates. Depending on the type of damage and stand accessibility, losses due to catastrophic or epidemic events may be either salvageable or unsalvageable, and are not accounted for in the yield tables.

TFL 8 has good road access virtually throughout which allow occurrences of catastrophic stand damage to easily be detected and accessible for salvage harvesting. Salvage operations are normally carried out using amendments to existing cutting authorities, developing new cutting permits, or through the FLNRO Small Scale Salvage (SSS) program. Stands within the THLB that are damaged and not recovered are usually small, isolated, or of marginal quality.

11.1 UNSALVAGED LOSSES

There is a very effective Small Scale Salvage (SSS) program that salvages damaged timber from within TFL 8, particularly during periods of low lumber prices that make it difficult for Interfor to salvage the timber economically. In the past, volume harvested under the SSS program was charged to the Forest Service Reserve attached to the Boundary TSA. If not harvested, this volume would normally be considered as part of the TFL 8 unsalvaged losses. Although it has been harvested, the volume was not charged to the TFL 8 AAC and should be still be considered as an unsalvaged loss for purposes of the TFL 8 timber supply analysis.

Table 33 summarizes the SSS and other volumes charged to the Forest Service Reserve from 2007 to 2019 based on Harvest Billing System records for timber marks within TFL 8. Interfor had reduced harvest activity during the period from 2009 to 2012, a portion of the volume harvested in 2007 was to clear a hydro right-of-way by Fortis BC, and a portion of the volume harvested in 2019 was to clear a right-of-way for a sewer project at Big White. Because these harvest volumes are not representative of the ongoing salvage within TFL 8, they have been excluded from the annual average volumes to be used in this analysis. Therefore, the SSS harvest volume that is not charged to the TFL 8 AAC is estimated to be 2,071 m³/year (i.e. 1,414 m³ + 17,229 m³ divided by 9 years).

There is also damaged timber that is not salvaged by either Interfor or the SSS program. Provincial aerial overview survey (AOS) was used to estimate that these annual losses are 1,575 m³/year as summarized in Table 34. Additional information describing the process used to determine these estimates is provided in Appendix 2. Accordingly, the total allowance for unsalvaged losses for this analysis will be 3,646 m³/year. Annual harvest volumes resulting from the timber supply model will be reduced by this amount for reporting harvest flows.

Table 33 Volume charged to Forest Service Reserve

Period/Description	Total Volume (m ³)	Annual Volume (m ³)
2007 (Hydro-line)*	4,265	-
2007-2008 (Salvage)	1,414	707
2009-2012 (Salvage, Interfor Reduced Activity)*	34,870	-
2013-2019 (Salvage)	17,229	2,461
2019 (Big White Sewer Utility)*	835	-
Total	58,613	2,071

* Not considered for average annual volume calculations

Table 34 Unsalvaged losses

Loss Category	Annual Volume (m ³ /year)
Mountain pine beetle	1,358
Balsam bark beetle	71
Douglas-fir bark beetle	41
Wildfire	81
Windthrow	0
Slides	24
Total	1,575

11.2 GRADE 4 CREDIT

Grade 4 logs are low quality logs that are generally not suitable for lumber production. Under the Cut Control Regulation, Grade 4 volume delivered to a facility other than a sawmill or veneer plant (i.e. pulp, bioenergy, etc.) is not counted against cut control (i.e. AAC) if an application is submitted to and approved by the government. This is known as the Grade 4 credit and the intent is to increase the utilization of low quality logs. The Grade 4 credit on TFL 8 has been minimal since 2007, as summarized in Table 35.

Table 35 Grade 4 credit

Period	Grade 4 Credit (m ³)
2007-2014	-
2015	684
2016-2017	-
2018	3,598
Annual Average	357

12 Integrated Resource Management

This section describes the criteria and considerations used to model non-timber resources.

12.1 FOREST RESOURCE INVENTORIES

The status of the non-timber resource inventories used in this analysis has previously be described in Section 6. If required, additional details will be provided in the individual sections below.

12.2 NON-TIMBER FOREST RESOURCE MANAGEMENT

Forest cover requirements and maximum disturbance objectives are applied within the timber supply model to recognize timber and non-timber resource objectives. These requirements maintain appropriate levels of specific

forest types needed to satisfy the objectives for wildlife habitat, biological diversity, etc. Forest cover requirements are used by the model to limit harvesting within the THLB.

12.2.1 LANDSCAPE-LEVEL BIODIVERSITY

The Kootenay-Boundary Higher Level Plan Order signed October 26, 2002 specifies the required retention of old seral stage by landscape unit, biodiversity emphasis option, and biogeoclimatic zone. The BEC version in place at the time of the Order (BEC V4) is used for the purpose of determining the old seral requirements. Table 36 summarizes the old seral requirements specified in the Order. Note that for units with a low biodiversity emphasis option, the initial KBHLPO old seral targets are based on a 2/3 drawn as per the Landscape Unit Planning Guidebook. The full targets must be met by the end of the third rotation, or 240 years from the date of the Order.

Spatial OGMA's have been developed cooperatively by Interfor and government as a means to meet the old seral requirements operationally. These OGMA's have been removed from the THLB as outlined in Section 8.17, and no additional seral requirements will be implemented for the Base Case. However, a sensitivity analysis will explore the effect of implementing the requirements outlined in Table 36 as forest cover objectives.

Table 36 Old seral requirements

LU	Bio-diversity Emphasis	BEC (v4)	Productive Forest Area (ha)	Old Seral Age (years)	Initial Old Seral Required (%)	Old Required by End of 3 rd Rotation (%)
BO1	High	IDFdm1	2,954	>250	19	19
	Intermediate	ICHmk1	832	>140	14	14
		MSdm1	2,531	>140	14	14
BO7	Low	ESSF dc1	7,232	>140	4.7*	14
		ICH mk1	8,239	>140	4.7*	14
		ICH mw2	88	>250	3*	9
		IDF dm1	4,110	>250	4.3*	13
		MS dm1	14,693	>140	4.7*	14
BO8	Low	ESSF dc1	3,119	>140	4.7*	14
		IDF dm1	7,877	>250	4.3*	13
		MS dm1	19,931	>140	4.7*	14

* Initial target drawn down by 2/3

12.2.2 STAND-LEVEL BIODIVERSITY

Wildlife tree retention targets consistent with Interfor's FSP have been addressed through a THLB reduction as specified in Section 8.18. Therefore, no additional requirements will be implemented in the analysis.

12.2.3 VISUAL QUALITY

Section 7 of the Government Actions Regulation permits the government to establish scenic areas and Visual Quality Objectives (VQOs), and Section 1.1 of the Forest Planning and Practices Regulation prescribes the extent of alteration resulting from the size, shape and location of cutblocks and roads within each VQO category.

A Visual Landscape Inventory (VLI) has been completed for TFL 8, and establishes VQOs that must be met for each VLI polygon. Visually effective green-up (VEG) heights and plan-2-perspective (P2P) ratios will be used to determine the maximum disturbance allowed for each polygon within the model.

The area by 5 percent slope classes within each VLI polygon was determined using LiDAR data. These areas were then used to calculate an area weighted P2P ratio and VEG height for each VLI polygon using the specified values by slope class provided in Table 37. The P2P ratios were then multiplied by the allowable disturbance in perspective view to determine the maximum proportion of the polygon that can be below the VEG height. For purposes of this analysis, the maximum allowable disturbance in perspective view is assumed to be equivalent to that for polygons with a high Visual Absorption Capability (VAC).

Table 38 summarizes the results of the calculations, and provides the maximum proportion of each VLI polygon that can be less than the indicated VEG height at any given time.

Table 37 Slope classes for calculating P2P ratio and VEG height

	0- 5%	5- 10%	10- 15%	15- 20%	20- 25%	25- 30%	30- 35%	35- 40%	40- 45%	45- 50%	50- 55%	55- 60%	60- 65%	65- 70%	75+ %
P2P	4.68	4.23	3.77	3.41	3.04	2.75	2.45	2.22	1.98	1.79	1.60	1.45	1.29	1.17	1.04
VEG	3.00	3.50	4.0	4.50	5.00	5.50	6.00	6.50	6.50	7.00	7.50	8.00	8.50	8.05	8.50

Table 38 Maximum allowable proportion below VEG height by VLI polygon

VLI Polygon	VQO	Productive Forest Area (ha)	Maximum Perspective Disturbance (%)	P2P Ratio	Maximum Planimetric Disturbance (%)	VEG Height (m)	Average Slope (%)
34	Modification	223.1	18	3.23	58.1	4.9	21.8
37	Modification	3,882.1	18	2.95	53.1	5.3	27.1
51	Partial Retention	71.8	7	2.60	18.2	5.9	34.9
72	Modification	887.1	18	2.69	48.4	5.7	32.3
84	Modification	415.3	18	2.34	42.1	6.3	37.9
95	Partial Retention	102.9	7	2.03	14.2	6.9	46.4
99	Modification	9.6	18	3.77	67.9	4.1	14.2
103	Modification	137.9	18	2.67	48.0	5.7	32.0
109	Modification	75.6	18	2.34	42.2	6.2	37.6
118	Modification	230.1	18	2.27	40.8	6.4	39.4
254	Partial Retention	192.6	7	2.71	18.9	5.7	31.2
331	Partial Retention	174.5	7	2.60	18.2	5.8	33.0
345	Partial Retention	19.6	7	2.25	15.8	6.4	40.6
366	Retention	3.4	1.5	4.00	6.0	3.8	10.5
424	Partial Retention	11.4	7	2.59	18.2	5.9	33.6
428	Retention	2.9	1.5	2.55	3.8	6.0	35.2
438	Partial Retention	3.9	7	3.97	27.8	3.8	10.8
441	Modification	73.8	18	2.38	42.9	6.2	36.5
459	Modification	28.2	18	2.63	47.3	5.7	30.7
477	Partial Retention	4.4	7	3.22	22.5	4.8	21.4
Total		6,550.3					

12.2.4 MULE DEER WINTER RANGE

Government Actions Regulation (GAR) Order #u-8-008 signed May 8th, 2006 outlines the requirements for management of mule deer winter range within TFL 8. This includes limits on the amount of road construction and open road access, maintenance of snow interception cover by planning cell and snowpack zone, as well as limits on the amount of forest less than 21 years in moderate snowpack zone planning cells. Road requirements of the GAR Order are addressed operationally and are not included in the timber supply modelling as they do not influence timber supply.

12.2.4.1 SNOW INTERCEPTION COVER

Snow interception cover (SIC) is specified in the GAR Order as a minimum stand age by snowpack zone, with snowpack zones defined using biogeoclimatic zone, elevation, and aspect. BEC version 6 was published in January 2006 and was used to determine the snowpack zones for the MDWR areas within TFL 8 using the definitions in Table 39.

The GAR Order provides the percent retention above SIC age by planning cell, based on the gross area of the planning cell outside areas identified as fire maintained ecosystems (FMER). Area weighted minimum SIC ages were calculated using the productive forest area for each planning cell using the definitions from Table 39. The results of these calculations, along with the minimum retention requirements are summarized in Table 40. These retention requirements (i.e. hectares of SIC) will be applied in the analysis for the productive forest land (excluding FMER areas) for each MDWR planning cell.

Table 39 Snowpack zone and SIC definition

Snowpack Zone	Biogeoclimatic Zone (Version 6)	Minimum Stand Age (years)
Shallow	PP xh	101
	IDF xh	101
	IDF dm1*	101
Moderate	ICH dw	121
	IDF dm1**	101
	MS (all)	101
Deep	ICH mk1	121
	ICH mw2	121
	ESSF (all)	121

* < 1000 m elevation with aspects 135-275 °

** All other IDF dm1

Table 40 MDWR SIC requirements summary

MDWR Planning Cell	Gross Area (ha)	FMER Area (ha)	Net Area (ha)	Retention (%)	Required SIC (ha)	Shallow Snowpack Area (ha)*	Moderate Snowpack Area (ha)*	Deep Snowpack Area (ha)*	Average SIC AGE (years)
4	855.7	249.1	606.6	19.5	118.3	13.1	550.0	-	101
5	2,083.4	894.9	1,188.5	20.0	237.7	21.1	1,070.1	-	101
8	70.9	32.1	38.8	16.8	6.5	-	31.2	-	101
38	177.1	54.3	122.8	20.0	24.6	-	120.2	-	101
40	147.2	89.4	57.8	20.0	11.6	0.1	57.3	-	101
41	527.9	225.2	302.7	18.0	54.5	4.2	223.5	-	101
42	488.9	203.3	285.6	20.0	57.1	10.6	235.2	-	101
43	464.2	177.5	286.6	18.2	52.2	34.1	234.2	-	101
46	923.9	347.8	576.1	20.0	115.2	64.0	458.5	18.7	102
47	624.4	109.6	514.8	21.5	110.7	44.0	394.5	39.1	103
48	537.7	0.0	537.7	20.0	107.5	-	513.8	-	101
49	751.8	138.8	613.0	17.9	109.7	183.4	406.6	-	101
50	180.9	53.5	127.4	17.3	22.0	57.5	67.2	-	101
52	1,040.4	430.1	610.3	19.9	121.4	128.4	287.3	72.8	104
Total	8,874.3	3,005.7	5,868.6		1,149.0	560.4	4,649.6	130.6	

* PFLB area used to calculate weighted SIC age

12.2.4.2 MDWR MAXIMUM DISTURBANCE

GAR Order #u-8-008 also specifies that within the Moderate Snowpack Zone, a maximum of 33% of the net MDWR area within each planning cell can be less than 21 years of age. Table 41 summarizes the area weighted maximum disturbance that will be applied to each MDWR planning cell in the analysis.

Table 41 MDWR maximum disturbance levels

MDWR Planning Cell	Shallow Snowpack Area (ha)	Moderate Snowpack Area (ha)	Deep Snowpack Area (ha)	Total MDWR Productive Area (ha)	Maximum Proportion < 21 years*
4	13.1	550.0	-	563.1	32.2%
5	21.1	1,070.1	-	1,091.3	32.4%
8	-	31.2	-	31.2	33.0%
38	-	120.2	-	120.2	33.0%
40	0.1	57.3	-	57.4	32.9%
41	4.2	223.5	-	227.7	32.4%
42	10.6	235.2	-	245.8	31.6%
43	34.1	234.2	-	268.3	28.8%
46	64.0	458.5	18.7	541.2	28.0%
47	44.0	394.5	39.1	477.6	27.3%
48	-	513.8	-	513.8	33.0%
49	183.4	406.6	-	590.0	22.7%
50	57.5	67.2	-	124.6	17.8%
52	128.4	287.3	72.8	488.5	19.4%
Total	560.5	4,649.6	130.6	5,340.7	

* Calculated as (Moderate Snowpack Area * 0.33)/ Total Area

12.2.5 MOOSE WINTER RANGE

GAR Order #u-8-007 signed May 8th, 2006 outlines the requirements for management of moose winter range within TFL 8. It does not apply to areas that are identified as mule deer winter range as specified in Section 12.2.4. Table 42 summarizes the areas where the GAR Order applies.

The GAR Order includes retention and disturbance objectives for planning cells that will be modelled for this timber supply analysis. At least 20% of each planning cell must be greater than 16 metres in height, and no more than 40% of each planning cell can be less than 31 years of age. For this analysis, the age at which stands achieve 16 metres in height will be determined for each analysis unit individually, and the model will be configured to ensure that 20% of each planning cell is greater than the required age.

A third objective that specifies minimum retention within riparian management areas of S1, S2, S3 and S5 streams and W1, W3 and W5 wetlands will not be directly modelled as it is assumed that the land base reduction for riparian management outlined in Section 8.13 combined with the wildlife tree retention outlined in Section 8.18 will address these requirements.

Table 42 Moose winter range areas

Moose Planning Cell	Productive Forest Area (ha)
1	3,476.2
2	5,821.6
3	314.4
4	2,846.7
7	7,239.7
8	1,451.7
10	1,934.4
12	4,895.1
Total	27,979.7

12.2.6 BADGER

The General Wildlife Measures for the Badger WHA (WHA #8-329) only allow harvesting for purposes of ecological restoration to create future stands with a target density of 20 stems per hectare. Therefore, this analysis will allow a one-time harvest within the WHA, with the regenerated stand not being available for subsequent harvest.

12.2.7 OTHER RESOURCE FEATURES

Although there are no known archaeological sites requiring reserves with the TFL, reserves will be established if sites are encountered. There are approximately 70 permanent sample plot or growth and yield installations within the TFL that are typically buffered by 50 metres from the outer radius of the plot. Additional resource features include nine Map Notations for uses ranging from research site to Ministry of Transportation and Infrastructure gravel pits.

Protection for these features is normally accomplished within reserve areas (i.e. wildlife tree retention) during operational planning. Accordingly, no further modelling assumptions will be applied for other resource features in this analysis.

12.2.8 CUTBLOCK ADJACENCY

The KBHLPO specifies that the required green-up height before adjacent cut blocks can be harvested is 2.5 metres. This requirement will be modelled by ensuring that no more than 25% of the THLB area not overlapping another constraint (e.g. ungulate winter range, visual quality, etc.) in each landscape unit can be less than 2.5 metres in height at any time.

12.2.9 CULTURAL HERITAGE RESOURCES

A cultural heritage resource is defined in the Forest Act as an object, site, or location of a traditional societal practice that is of historical, cultural or archaeological significance to the province, a community, or an aboriginal people. Cultural heritage resources are post-1846 and include archaeological sites, structural features, heritage

landscape features and traditional use sites. Older cultural heritage resources are considered to be an archaeological resource and are protected under the Heritage Conservation Act.

First Nations have indicated that TFL 8 contains culturally important plants, animals, lands, waters and other areas. Interfor has been working with First Nations to identify these areas on a site specific basis during the field review of proposed cutblocks, as discussed in Section 12.2.9.1 below. A sensitivity analysis will be included that explores the implications for timber supply to provide increased protection for these culturally important resources (see Section 13.3.5).

12.2.9.1 FIRST NATIONS INTERESTS IDENTIFIED DURING FIELD REVIEWS

Penticton Indian Band (PIB) reviewed a large number of Interfor's proposed cutblocks during the 2018 and 2019 field seasons. Interfor recognizes that PIB does not speak for all First Nations. However, it is believed that information from these field reviews can be used to gain an understanding of First Nations interests on the land base.

Although most of the field reviewed blocks were on Interfor's Forest Licence tenure, they are believed to be representative for cutblocks in TFL 8. The field review reports for 48 blocks totalling 1,159 hectares were reviewed and the PIB comments used to develop estimates of desired riparian retention and other areas recommended to be reserved for features such as wildlife, food, social, or ceremonial purposes. PIB also indicated that a number of these blocks should be dropped. Approximately 8.6% of the total block area fell into this category, but the impact of this recommendation was not considered for this analysis as it is not known if these blocks would be available for harvest in the future. These blocks were also not considered in calculation of the retention requirements.

There was increased retention identified for all waterbodies, wetlands and streams including non-classified drainages when compared with FRPA and the Interfor FSP requirements. It is also evident that there are differences in the retention requirements between the ESSF biogeoclimatic zone and the lower elevation MS, ICH, and IDF zones. Table 43 summarizes the retention levels for the blocks that were field reviewed, as well as an adjustment to account for potential overlap with wildlife tree retention as discussed below.

These retention areas are gross reductions to the productive forest land base area within the cutblock. In practice, there will be some overlap with areas considered to be non-THLB for other reasons. It was not possible to quantify this overlap as a THLB layer was not available for the cutblocks that were in the Forest Licence tenure. However, areas within proposed cutblocks likely have a higher THLB to non-THLB ratio than the land base as a whole because many of the non-THLB areas should already be considered and excluded when designing the cutblocks. This may result in an underestimation of the true THLB impact in this analysis.

As indicated in Section 8.18, a 5.3% THLB reduction was included in the Base Case to account for wildlife tree retention. It is likely that the wildlife tree retention can be co-located with "other" retention areas to some degree. For this analysis, it is assumed that up to 80% of the "other" retention can be addressed through the 5.3% THLB reduction for WTR.

It is less likely that riparian retention can be co-located with wildlife tree retention given that many of the riparian retention areas will be in the form of relatively thin buffers running through the cutblocks, and that many of the riparian areas were observed to be scattered throughout the blocks during the data review. Because of this, and the potential that the true THLB impact of the riparian retention is underestimated as discussed above, no allowance will be made for overlap of riparian areas with WTR.

Table 43 Retention identified during PIB field reviews

Biogeoclimatic Zone	Gross Block Area (ha)	Riparian Retention (%)	Other Retention (%)	Other Retention after WTR Adjustment (%)	Total Retention after WTR Adjustment (%)
ESSF	501	11.0	1.4	-	11.0
MS/IDF/ICH	522	7.5	6.5	1.3	8.7
Total	1,023				

The following approach was used In order to develop parameters that can be used in the proposed sensitivity analysis:

- Lakes and wetlands were buffered based on size according to information provided by PIB.
- All streams in Interfor's stream database, including non-classified drainages, were buffered using widths determined during the review of the PIB field reports.
- The area within the above buffers was considered as an incremental spatial netdown the Base Case and removed from the THLB if it had not been previously removed in the Base Case. This spatial netdown will account for overlap with areas removed from the THLB for other reasons.
- An additional aspatial netdown will be applied by BEC zone in order to meet the total values outlined in Table 43, with an allowance for co-location with wildlife tree retention.

Table 44 summarizes the riparian buffer widths used for the spatial component of the FN interests sensitivity analysis in comparison with those used for the Base Case.

The resulting spatial retention and additional aspatial retention after accounting for the area contained within the spatial riparian buffers is summarized in Table 45.

Table 44 Buffer widths for the spatial riparian component of the FN interests sensitivity analysis

Feature	FRPA Classification	Base Case Buffer Width for Modelling (m)	FN Sensitivity Buffer Width for Modelling (m)
Lake	L1-B	10	20
	L3	7.5	14
Wetlands	W1	20	45 or 50*
	W3	7.5	25 or 30*
	W5	20	25, 30, 45, or 55*
	Unclassified	-	15
Streams	S2	35	50
	S3	25	30
	S4	7.5	20
	S5	7.5	20
	S6	5	14
	NCD	-	14

* Widths depend on PIB wetland size classifications that do not match FRPA classifications

Table 45 Summary of spatial and aspatial retention for the FN interests sensitivity analysis

BEC Zone	PFLB Area (ha)	THLB Area* (ha)	FN Interests Riparian Required in PFLB (ha)	FN Interests Spatial Riparian in PFLB (ha)	Incremental Aspatial Riparian Required in THLB (ha)	Incremental Aspatial Retention for Other Values in THLB (ha)**
ESSF	13,713	11,049	1,508	1,021	487	-
MS/IDF/ICH	58,197	49,435	4,365	4,310	55	643
Total	71,910	60,484	5,654	5,331	542	643

* THLB area prior to aspatial netdown

** Calculated as required % from Table 43 multiplied by THLB area

Table 46 summarizes the change to the the current timber harvesting land base area relative to the Base Case (see Table 6 in Section 8.1) when the spatial riparian buffers and additional aspatial factors to account for riparian and other features are applied. Although there are 5,331 hectares of productive forest within the spatial FN enhanced riparian buffers, there is a net THLB reduction of 2,751 hectares as a result of overlap with areas already removed from the timber harvesting land base for other reasons. As indicated in Table 45, additional aspatial reductions to the THLB for riparian (542 hectares) and other values (643 hectares) area required, resulting in an overall THLB reduction of 3,936 hectares (6.6%) when compared with the Base Case.

Table 46 Change to the THLB as a result of including First Nations interests

Land Base Element	Productive Area (ha)	Net Area (ha)	Percent of Total TFL Area (%)	Percent of PFLB Area (%)
Productive Forest Land Base	71,911	71,911	92.6%	100.0%
Current Timber Harvesting Land Base – Base Case		60,484	78.4%	84.1%
Less:				
FN enhanced riparian buffers (spatial)	5,331	2,751	3.5%	3.8%
FN enhanced riparian (aspatial)		542	0.7%	0.8%
FN other values (e.g. food, ceremonial, social, wildlife)		643	0.8%	0.9%
Current Timber Harvesting Land Base – FN Interests		56,548	73.3%	78.6%

12.2.10 WATERSHED HEALTH

The level of disturbance in a watershed can impact stream flows, sediment delivery, channel stability, riparian function and aquatic habitat. Assessing equivalent clearcut areas (ECA) is a coarse-level indicator of forest disturbance and recovery in a watershed. ECAs can help identify when a professional hydrologist should be consulted for management recommendations, and individual watersheds often have different ECA disturbance limits before harvesting is affected.

Interfor used the provincial Watershed Atlas Third Order and Greater watersheds as the initial starting point for watersheds in TFL 8. Because most of these watersheds also have significant portions of the watershed outside TFL 8, adjacent portions of watersheds were grouped to form twelve surrogate watershed units ranging in size between 2,334 hectares and 15,017 hectares for this analysis. ECA will be evaluated for these units, and sensitivity analyses will be completed to test the effect of limiting ECA (Section 13.3.4).

ECA is a function of stand height, and will be calculated using the following equation (Winkler and Boon 2017):

$$\text{ECA percent} = 100 - (100 * (1 - \exp(-0.24 * (\text{height} - 2))) * 2.909)$$

In accordance with standard practice, ECA calculations will be based on the gross area of the watershed unit, with adjustments made for permanent ECA due to anthropogenic disturbances in the non-forested land base.

12.2.11 ROAD ACCESS

Reductions have been made to the timber harvesting land base to account for the loss of forest productivity due to permanent roads (see Section 8.4). In addition, road networks provide important access for forest protection and access to the land base for non-industrial users. While this access increases recreation opportunities for the public, it is recognized that there can also be adverse implications for wildlife values and potential damage to sensitive ecosystems. GAR Order #u-8-008 for mule deer (see Section 12.2.4) and GAR Order #3-373 for grizzly bear (see Section 8.14) include provisions related to road access that are dealt with operationally by Interfor and are therefore outside the scope of this analysis. In addition, site specific issues related to access raised by First Nations and stakeholders are discussed and addressed operationally as they arise. For example, screening of roads to reduce visibility of wildlife may be included in the design of in-block retention, and roads may be de-activated to prevent access to sensitive sites.

12.3 TIMBER HARVESTING

12.3.1 MINIMUM HARVESTABLE AGE / MERCHANTABILITY CRITERIA

Minimum harvest criteria are used to determine the age when stands become available for harvesting. A minimum harvest age will be assigned to each analysis unit, based on meeting all of the following criteria:

- Minimum volume of 150 m³/hectare
- The age at which the mean annual increment (MAI) reaches 95% of its value at culmination age. MAI at a given age is calculated as the stand volume less decay, waste and breakage divided by the stand age, and represents the average volume growth per year to that age. Culmination age is defined as the age at which MAI is maximized
- Minimum age of 60 years (managed stands only)

Within the timber supply model, a stand can be considered for harvesting once it meets the defined minimum harvest age. Note that these are minimum criteria, not the actual ages at which stands are forecast for harvest. Some stands may be harvested at the minimum thresholds to meet forest-level objectives (e.g., maintaining overall harvest levels for a short period of time or avoiding large fluctuations in harvest levels). However, other stands may not be harvested until past these "optimal" timber production ages due to management objectives for other resource values.

Table 47 summarizes the minimum harvest ages for existing natural and existing managed stands, while Table 48 summarizes the minimum harvest ages for future managed stands.

Table 47 Minimum harvest ages for existing natural and existing managed stands

AU*	Description	MHA	MAI	DBH	Volume	AU*	Description	MHA	MAI	DBH	Volume
1	ESSF – 01	104	1.98	24.4	206	101	ESSF – 01	89	3.32	23.8	296
2	ESSF – 03	98	1.70	20.8	167	102	ESSF – 03	87	3.23	19.9	281
3	ESSF – 04	113	1.99	26.8	225	103	ESSF – 04	88	3.39	24.0	299
4	ESSF – Other	111	1.60	23.0	177	104	ESSF – Other	91	2.91	26.1	265
5	ICH – 01	105	2.37	26.2	248	105	ICH – 01	85	3.38	26.1	287
6	ICH – 03	109	1.64	25.3	179	106	ICH – 03	79	3.78	23.7	299
7	ICH – 04	105	1.95	23.9	204	107	ICH – 04	76	4.08	23.0	310
8	ICH – Other	110	2.33	27.1	256	108	ICH – Other	75	3.94	25.8	295
9	IDF – 01	101	1.76	25.0	178	109	IDF – 01	71	3.90	21.6	277
10	IDF – 04	105	1.60	25.0	168	110	IDF – 04	76	3.63	21.3	276
11	IDF – 05	102	1.91	25.2	195	111	IDF – 05	72	3.97	23.5	286
12	IDF – Other	106	1.60	26.8	169	112	IDF – Other	78	3.59	22.1	280
13	MSdm1 – 01	91	2.01	22.1	183	113	MSdm1 – 01	72	4.14	21.8	298
14	MSdm1 – 03	92	1.73	20.9	159	114	MSdm1 – 03	71	4.03	21.7	286
15	MSdm1 – 04	94	1.77	22.0	166	115	MSdm1 – 04	73	3.99	21.8	291
16	MSdm1 – 05	86	2.41	22.0	208	116	MSdm1 – 05	71	4.13	21.1	293
17	MSdm1 - Other	98	1.89	23.9	185	117	MSdm1 - Other	66	4.60	21.2	303
18	MSdm1a - All	94	2.14	22.4	202	118	MSdm1a - All	80	3.73	26.0	299
201	ESSF – 01	86	3.35	24.2	288	301	ESSF – 01	84	3.29	24.1	276
202	ESSF – 03	87	3.05	23.7	265	302	ESSF – 03	87	3.09	22.8	269
203	ESSF – 04	81	3.58	23.2	290	303	ESSF – 04	80	3.56	25.6	285
204	ESSF – Other	97	2.73	24.5	264	304	ESSF – Other	93	2.82	23.4	262
205	ICH – 01	72	4.07	23.9	293	305	ICH – 01	76	4.00	27.8	304
206	ICH – 03	76	3.73	23.7	283	306	ICH – 03	68	3.61	24.7	246
207	ICH – 04	69	4.28	24.4	295	307	ICH – 04	78	3.64	26.4	284
208	ICH – Other	74	3.86	27.8	286	308	ICH – Other	76	3.83	27.1	291
209	IDF – 01	75	3.62	23.2	271	309	IDF – 01	83	3.05	26.5	254
210	IDF – 04	87	2.84	24.3	247	310	IDF – 04	95	2.76	26.4	262
211	IDF – 05	75	3.56	26.4	267	311	IDF – 05	72	3.71	26.5	267
212	IDF – Other	75	3.45	27.2	258	312	IDF – Other	87	2.69	25.9	234
213	MSdm1 – 01	71	4.19	23.0	298	313	MSdm1 – 01	75	3.66	25.2	275
214	MSdm1 – 03	79	3.46	24.4	273	314	MSdm1 – 03	69	4.40	22.8	304
215	MSdm1 – 04	74	3.83	23.0	283	315	MSdm1 – 04	71	3.86	23.1	274
216	MSdm1 – 05	72	4.23	24.9	305	316	MSdm1 – 05	67	4.34	21.1	291
217	MSdm1 - Other	63	4.74	19.4	299	317	MSdm1 - Other	71	3.87	24.1	275
218	MSdm1a - All	67	4.57	22.7	306	318	MSdm1a - All	72	4.26	28.7	307
401	ESSF – 01	82	3.40	24.2	279						
402	ESSF – 03	82	3.37	22.9	276						
403	ESSF – 04	79	3.63	25.7	286						
404	ESSF – Other	87	3.13	23.6	272						
405	ICH – 01	76	3.98	27.7	302						
406	ICH – 03	69	3.58	24.7	247						
407	ICH – 04	78	3.58	26.3	279						
408	ICH – Other	77	3.67	26.9	282						
409	IDF – 01	81	3.20	26.6	259						
410	IDF – 04	94	2.72	26.3	255						
411	IDF – 05	70	3.96	26.7	277						
412	IDF – Other	86	2.83	26.0	244						
413	MSdm1 – 01	74	3.72	25.1	275						
414	MSdm1 – 03	71	4.20	22.7	298						
415	MSdm1 – 04	71	3.84	23.1	273						
416	MSdm1 – 05	68	4.26	21.1	290						
417	MSdm1 - Other	71	3.85	24.1	273						
418	MSdm1a - All	72	4.36	28.9	314						

* AUs 1-18: EN ; AUs 101-118: EM Era 1; AUs 201-218: EM Era 2; AUs 301-318: EM Era 3; AUs 401-418: EM Era 4

Table 48 Minimum harvest ages for future managed stands

AU	Description	MHA	MAI	DBH	Volume	AU	Description	MHA	MAI*	DBH	Volume
1001	ESSF – 01	82	3.44	24.3	282	2001	ESSF – 01	81	3.50	24.3	284
1002	ESSF – 03	86	3.17	22.8	272	2002	ESSF – 03	83	3.31	22.9	275
1003	ESSF – 04	78	3.65	25.6	284	2003	ESSF – 04	78	3.66	25.6	286
1004	ESSF – Other	94	2.70	23.3	254	2004	ESSF – Other	88	3.03	23.5	266
1005	ICH – 01	76	4.04	27.8	307	2005	ICH – 01	75	4.05	27.7	303
1006	ICH – 03	70	3.48	24.6	244	2006	ICH – 03	70	3.62	24.9	253
1007	ICH – 04	78	3.62	26.4	282	2007	ICH – 04	77	3.67	26.4	282
1008	ICH – Other	75	3.97	27.2	298	2008	ICH – Other	76	3.83	27.0	291
1009	IDF – 01	82	3.17	26.6	260	2009	IDF – 01	81	3.23	26.6	262
1010	IDF – 04	96	2.61	26.2	250	2010	IDF – 04	94	2.76	26.4	259
1011	IDF – 05	70	3.96	26.7	278	2011	IDF – 05	70	3.94	26.7	276
1012	IDF – Other	89	2.49	25.6	221	2012	IDF – Other	82	3.15	26.3	258
1013	MSdm1 – 01	75	3.73	25.2	279	2013	MSdm1 – 01	74	3.76	25.2	278
1014	MSdm1 – 03	73	4.07	22.7	297	2014	MSdm1 – 03	71	4.30	22.9	305
1015	MSdm1 – 04	72	3.79	23.1	273	2015	MSdm1 – 04	71	3.90	23.2	277
1016	MSdm1 – 05	67	4.33	21.1	290	2016	MSdm1 – 05	67	4.36	21.1	292
1017	MSdm1 -	73	3.74	24.1	273	2017	MSdm1 - Other	71	4.01	24.3	285
1018	MSdm1a - All	73	4.18	28.7	305	2018	MSdm1a - All	71	4.34	28.7	308

* Prior to reduction for future roads (AUs 2001 to 2018)

12.3.2 CUT BLOCK AGGREGATION

Cut block aggregation will be used so that the analysis reflects operational reality by avoiding harvesting of small isolated units, or “slivers”. Two forms of aggregation will be implemented.

1. The individual polygons (“fragments”) created by overlaying the various data input layers into the “resultant” layer will be aggregated into larger units called “blocks” prior to modelling. Within the model, blocks are the units that get harvested. Individual fragments that are adjacent, have the same analysis unit and are within 5 years of age are potential candidates to be combined into blocks. The target size for these blocks will be 10 hectares, which may not be achieved in all cases due to the differing attributes of the initial fragments.
2. During the model runs, the patching capabilities of the model will be used to control the spatial distribution of the harvested blocks. The model will be configured to prevent creating harvest patches less than 1 hectare in size, and avoid creating harvest patches less than 5 hectares in size if possible.

12.3.3 SILVICULTURE SYSTEMS

Recent partial cut harvesting in TFL 8 has occurred mainly in areas with Williamson’s Sapsucker habitat. Rather than modelling this as a partial cutting silviculture system, the retention for Williamson’s Sapsucker has been accounted for using THLB reductions. Therefore, clear cut harvesting with reserves is the only silviculture system that will be modelled. The reserves for wildlife tree retention and Williamson’s Sapsucker habitat will be accounted for using THLB reductions as outlined in Sections 8.18 and 8.19.

12.3.4 INITIAL HARVEST RATE

The current AAC for TFL 8 is 186,000 m³ per year. The initial gross harvest level for the Base Case scenario will be set to 186,000 m³ per year plus the allowance for non-recoverable losses. This level may be adjusted depending on the modelling results.

12.3.5 HARVEST RULES

The model used for this analysis does not explicitly use rules such as “oldest first” to rank stands for harvest. Rather, targets are set for harvest levels and individual non-timber resource requirements (e.g. maximum disturbance in a visual polygon, etc.). Each target in the model is assigned a relative weight that is used by the model to balance the achievement of the targets. Non-timber resource targets are typically assigned a very high weight so that the model will ensure they are achieved. Harvest volume is assigned a lower weight so that harvest is only attractive to the model when all other targets have been addressed.

The model will prioritize harvest of individual blocks to best achieve the overall harvest target subject to the non-timber resource targets being met. Stands will be harvested at the age that balances the requirements of all targets, including harvest.

12.3.6 HARVEST FLOW OBJECTIVES

Forest cover objectives and the growth capacity of the THLB will determine the harvest level options that will be considered. In general, the choice of harvest flow will reflect the following objectives:

- Avoid any large or abrupt disruptions in timber supply during transitions from short to mid to long-term periods (generally increases and decreases in steps of 10% per 10 year period)
- Achieve a stable long-term harvest level over a 300 year planning horizon
- Ensure that the growing stock on the THLB does not decline during the last 50 years of the planning horizon

12.4 NATURAL DISTURBANCE ASSUMPTIONS

Natural disturbance assumptions define the extent and frequency of natural disturbances such as fire or epidemic insect infestations across the land base. Within the THLB, natural disturbances are typically addressed through harvesting, with any unsalvaged areas contributing to the allowance for unsalvaged losses as outlined in Section 11.1.

For areas outside the THLB, stands will continuously age throughout the planning horizon unless disturbances are explicitly modelled. This can lead to the non-THLB fulfilling an unrealistic portion of the forest cover requirements for non-timber resources values such as landscape-level biodiversity, visual quality, etc.

Disturbance in the non-THLB will not be considered in the Base Case scenario because the options available for modeling natural disturbance (i.e. randomly assigning stands to be disturbed) can lead to inconsistent results, particularly on smaller land bases such as TFL 8. However, a sensitivity analysis will examine the effect of introducing natural disturbance on the non-THLB. The assumptions used to model this disturbance for the sensitivity analysis are explained below.

For this analysis, a constant area was disturbed annually within each landscape unit, biogeoclimatic zone and natural disturbance type (NDT). BEC version 4 was used for determining natural disturbance as this was the current version at the time the landscape-level biodiversity targets were set. The area of disturbance varied based on the biogeoclimatic variants present, their associated natural disturbance intervals and old seral definitions, as outlined in the Biodiversity Guidebook (BC Ministry of Forests, 1995): In summary, the process used to calculate the annual disturbed area is:

- Calculate the % Area that is greater than old using the equation

$$\% \text{ area old} = \exp(-[\text{old age} / \text{disturbance interval}])$$

- Calculate the effective rotation age using the equation

$$\text{Effective rotation age} = \text{old age} / (1 - \% \text{ area old})$$

- Calculate the annual area disturbed using the equation

$$\text{Area disturbed} = \text{non-THLB area} / \text{effective rotation age}$$

Table 49 summarizes the calculations used to determine the annual disturbance limits applied in the forested non-THLB. Within the model, these areas will be allocated to the individual landscape unit/BEC combination according to the relative proportion of the landscape unit within the BEC. Across the Non-THLB, approximately 43 ha (0.39%) is disturbed each year, resulting in an average disturbance turn-over of the non-THLB approximately every 274 years (range is 231 to 395 years).

Table 49 Annual natural disturbance areas in the forested non-THLB

BGC Zone	NDT	Disturbance Interval (yrs)	"OLD" Defn (yrs)	% Area > OLD*	Effective Rotation Age (yrs)*	Contributing Non-THLB Area (ha)	Annual Area Disturbed (ha)**
ICH	2	200	250	29%	350	12	0
ICH	3	150	140	39%	231	1,166	5
ESSF	3	150	140	39%	231	1,931	8
MS	3	150	140	39%	231	5,115	22
IDF	4	250	250	37%	395	2,959	7
AT	5	N/A	N/A	N/A	N/A	243	N/A
Total					274	11,426	43

* % area old = $\exp(-[\text{old age} / \text{disturbance interval}])$, Effective rotation age = $\text{old age} / (1 - \% \text{ area old})$

** Annual area disturbed = $(\text{non-THLB area} / \text{effective rotation age})$

12.5 CLIMATE CHANGE

Within BC, climate change is expected to include a general increase in temperature, change in precipitation patterns, and an increase in the magnitude, frequency and intensity of extreme weather events. While the trends are generally consistent, the specific magnitude of these changes, and their spatial and temporal distribution, are uncertain. Many adaptation strategies are being assessed, considered and implemented across the province. Within TFL 8, examples of adaptation strategies that Interfor are adopting to establish resilient forests include:

- Planting a mix of species on most sites
- Increased use of ponderosa pine in regeneration of drier sites

Climate change may result in either increases or decreases in productivity of forests in the future. While these changes are largely unknown at this time, sensitivity analyses related to productivity of stands have been

incorporated into this analysis and can be used to understand the implications for timber supply if stand productivity changes from current understanding.

The Base Case does not include natural disturbance in the non-THLB (see Section 12.4). However a sensitivity analysis has been included that will explore the degree to which timber supply is influenced by potential disturbances in the non-THLB.

Potential changes in the rate of natural disturbance in the timber harvesting land base will either be captured as part of the indicated harvest flow through Interfor's ongoing salvage operations, or through the allowance for unsalvaged losses as discussed in Section 11.1. The non-recoverable losses used for this analysis are derived from recent (i.e. past 10 years) historic levels and represent our best understanding of the current losses on the land base. Any future changes in these losses will be captured as part of the next timber supply review which will be completed ten years from now.

13 Sensitivity Analyses

This section briefly describes the sensitivity analyses that will be performed against the Base Case scenario. These analyses explore the stability of the Base Case relative to the uncertainty surrounding specific analysis assumptions. They also reflect the impact of alternative management or potential changes in forest practices.

13.1 LAND BASE DEFINITION

13.1.1 TIMBER HARVESTING LAND BASE +/- 10%

This sensitivity analysis will test the effect of moving land between the non-THLB and the THLB. This will be accomplished by increasing/decreasing the area of each THLB polygon by 10% when it is entered into the model. The area of each productive non-THLB polygon will have a corresponding proportional adjustment applied so that the total land base area remains the same, and that the area for each non-timber resource value remains the same.

13.2 GROWTH AND YIELD ASSUMPTIONS

13.2.1 NATURAL STAND YIELDS +/-10%

This sensitivity analysis will test the uncertainty in the yields predicted by the VDYP 7 model used to generate natural stand yield tables. The volumes for each natural stand analysis unit will be increased/decreased by 10%. Other yield parameters used by the model (e.g. height, minimum harvest age) will remain unchanged.

13.2.2 MANAGED STAND YIELDS +/- 10%

This sensitivity analysis will test the effect of changes to the yield tables for managed stands. The volumes for each managed stand yield table will be increased/decreased by 10%. Other yield parameters used by the model will remain unchanged.

13.2.3 MANAGED STAND SITE INDEX

This sensitivity analysis will test the effect of using the provincial site productivity layer for managed stand site indices.

13.2.4 MINIMUM HARVEST AGES +/- 10 YEARS

This sensitivity analysis will test the effect of increasing/decreasing minimum harvest ages by 10 years for each analysis unit.

13.3 INTEGRATED RESOURCE MANAGEMENT ASSUMPTIONS

13.3.1 INCLUDE DISTURBANCES IN THE NON-THLB

This sensitivity analysis will test the effect of introducing natural disturbance into the non-THLB, as outlined in Section 12.4. Three different model runs will be completed, using a different random number sequence to assign the year of disturbance to the non-THLB polygons.

13.3.2 APPLY OLD SERAL TARGETS

This sensitivity analysis will test the effect of requiring achievement of the full old seral targets outlined in Section 12.2.1 (Table 36) by the end of the third rotation, and 2/3 of the target by the end of the second rotation for those units with a low biodiversity emphasis. For units with high and intermediate biodiversity emphasis, full targets will be set for the entire planning horizon.

13.3.3 BEC VERSION 11 FOR OLD SERAL TARGETS

This sensitivity analysis will test the effect of using BEC Version 11 instead of BEC version 4 for old seral targets. Because the BEC labels and NDT types are different than those in BEC 4, the NDTs for BEC Version 11 will be used to determine the appropriate ages and targets for seral stage by BEC zone/subzone. This sensitivity will not consider revisiting the spatial location of other items related to BEC such as biodiversity emphasis option, mule deer winter range/snow pack zones, etc.

13.3.4 EQUIVALENT CLEARCUT AREA

This sensitivity analysis will test the effect of limiting ECA within the surrogate watershed units described in Section 12.2.10 to a maximum of 30% and 40%.

13.3.5 FIRST NATIONS INTERESTS IDENTIFIED DURING FIELD REVIEWS

This sensitivity analysis will test the effect of including additional retention for riparian and other features based on analysis field reviews of cutblocks by Penticton Indian Band as outlined in Section 12.2.9.1.

13.4 TIMBER HARVESTING ASSUMPTIONS

13.4.1 TURN OFF CUTBLOCK AGGREGATION

This sensitivity analysis will test the effect of relaxing the requirements for cutblock aggregation at the time of harvest so that there is no minimum cutblock size. The aggregation undertaken during data preparation prior to modelling will remain unchanged.

14 References

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Appendix 1 Yield Tables

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
1	EN:ESSFdc1/dcu1-01	10	-	-	-	2	2.4	1.2	173
1	EN:ESSFdc1/dcu1-01	20	-	-	-	2	2.4	3.6	111
1	EN:ESSFdc1/dcu1-01	30	1.6	-	1.6	2	4.2	6.3	117
1	EN:ESSFdc1/dcu1-01	40	9.4	-	9.4	3	7.9	9.2	165
1	EN:ESSFdc1/dcu1-01	50	27.3	-	27.2	7	12.4	11.8	282
1	EN:ESSFdc1/dcu1-01	60	56.0	-	56.0	11	17.7	14.1	408
1	EN:ESSFdc1/dcu1-01	70	90.2	-	90.2	16	19.8	16.1	514
1	EN:ESSFdc1/dcu1-01	80	126.3	-	126.3	20	21.7	17.9	583
1	EN:ESSFdc1/dcu1-01	90	161.4	-	161.3	24	22.9	19.5	627
1	EN:ESSFdc1/dcu1-01	100	193.9	-	193.8	27	24.0	20.8	652
1	EN:ESSFdc1/dcu1-01	110	222.5	0.1	222.4	30	25.0	22.0	660
1	EN:ESSFdc1/dcu1-01	120	248.1	0.1	248.0	32	25.9	23.0	661
1	EN:ESSFdc1/dcu1-01	130	270.8	0.1	270.7	34	26.8	23.9	657
1	EN:ESSFdc1/dcu1-01	140	290.7	0.1	290.6	35	27.5	24.7	652
1	EN:ESSFdc1/dcu1-01	150	306.2	0.1	306.1	36	28.1	25.4	646
1	EN:ESSFdc1/dcu1-01	160	317.0	0.1	316.9	37	28.5	26.0	642
1	EN:ESSFdc1/dcu1-01	170	324.4	0.1	324.4	38	28.9	26.5	639
1	EN:ESSFdc1/dcu1-01	180	328.5	0.1	328.4	38	29.1	27.0	635
1	EN:ESSFdc1/dcu1-01	190	330.6	0.1	330.6	39	29.3	27.5	631
1	EN:ESSFdc1/dcu1-01	200	331.7	0.1	331.6	39	29.4	27.9	627
1	EN:ESSFdc1/dcu1-01	210	330.7	0.1	330.7	39	29.5	28.2	624
1	EN:ESSFdc1/dcu1-01	220	329.8	0.1	329.8	39	29.6	28.6	621
1	EN:ESSFdc1/dcu1-01	230	328.9	-	328.9	39	29.7	28.9	618
1	EN:ESSFdc1/dcu1-01	240	328.0	-	328.0	39	29.8	29.1	615
1	EN:ESSFdc1/dcu1-01	250	327.2	-	327.1	39	29.9	29.4	612
1	EN:ESSFdc1/dcu1-01	260	326.2	-	326.1	39	30.0	29.6	609
1	EN:ESSFdc1/dcu1-01	270	325.2	-	325.2	39	30.0	29.8	606
1	EN:ESSFdc1/dcu1-01	280	324.3	-	324.3	39	30.1	30.0	604
1	EN:ESSFdc1/dcu1-01	290	323.4	-	323.4	40	30.2	30.2	601
1	EN:ESSFdc1/dcu1-01	300	322.5	-	322.5	40	30.2	30.4	599
1	EN:ESSFdc1/dcu1-01	310	321.6	-	321.6	40	30.3	30.5	597
1	EN:ESSFdc1/dcu1-01	320	320.7	-	320.6	40	30.3	30.7	597
1	EN:ESSFdc1/dcu1-01	330	319.8	-	319.7	40	30.3	30.8	597
1	EN:ESSFdc1/dcu1-01	340	318.9	-	318.8	40	30.3	30.9	597
1	EN:ESSFdc1/dcu1-01	350	318.0	-	318.0	40	30.3	31.1	597

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2	EN:ESSFdc1/dcu1-03	10	-	-	-	1	1.4	1.6	84
2	EN:ESSFdc1/dcu1-03	20	0.1	-	0.1	1	1.6	4.3	38
2	EN:ESSFdc1/dcu1-03	30	2.0	-	2.0	1	3.5	7.2	64
2	EN:ESSFdc1/dcu1-03	40	11.7	-	11.7	4	9.7	9.9	184
2	EN:ESSFdc1/dcu1-03	50	31.5	-	31.5	8	13.6	12.2	366
2	EN:ESSFdc1/dcu1-03	60	58.9	-	58.9	12	16.7	14.2	542
2	EN:ESSFdc1/dcu1-03	70	88.7	-	88.7	17	18.2	15.9	661
2	EN:ESSFdc1/dcu1-03	80	118.3	-	118.3	20	19.2	17.3	738
2	EN:ESSFdc1/dcu1-03	90	146.1	-	146.1	23	20.1	18.5	784
2	EN:ESSFdc1/dcu1-03	100	171.4	-	171.4	26	21.0	19.6	809
2	EN:ESSFdc1/dcu1-03	110	193.8	-	193.8	28	21.8	20.4	816
2	EN:ESSFdc1/dcu1-03	120	213.8	-	213.8	30	22.5	21.2	816
2	EN:ESSFdc1/dcu1-03	130	231.7	-	231.7	32	23.2	21.9	813
2	EN:ESSFdc1/dcu1-03	140	247.6	-	247.6	33	23.8	22.5	810
2	EN:ESSFdc1/dcu1-03	150	260.2	-	260.2	34	24.3	23.0	807
2	EN:ESSFdc1/dcu1-03	160	269.3	-	269.3	35	24.6	23.4	807
2	EN:ESSFdc1/dcu1-03	170	275.7	-	275.7	36	24.9	23.8	806
2	EN:ESSFdc1/dcu1-03	180	279.6	-	279.6	36	25.1	24.2	804
2	EN:ESSFdc1/dcu1-03	190	282.0	-	282.0	37	25.3	24.5	801
2	EN:ESSFdc1/dcu1-03	200	283.2	-	283.2	37	25.4	24.8	798
2	EN:ESSFdc1/dcu1-03	210	282.7	-	282.7	37	25.5	25.1	794
2	EN:ESSFdc1/dcu1-03	220	282.0	-	282.0	37	25.7	25.3	789
2	EN:ESSFdc1/dcu1-03	230	281.3	-	281.3	38	25.8	25.5	785
2	EN:ESSFdc1/dcu1-03	240	280.6	-	280.6	38	25.9	25.7	781
2	EN:ESSFdc1/dcu1-03	250	279.8	-	279.8	38	25.9	25.9	778
2	EN:ESSFdc1/dcu1-03	260	279.0	-	279.0	38	26.0	26.1	774
2	EN:ESSFdc1/dcu1-03	270	278.1	-	278.1	38	26.1	26.2	770
2	EN:ESSFdc1/dcu1-03	280	277.3	-	277.3	38	26.2	26.4	767
2	EN:ESSFdc1/dcu1-03	290	276.4	-	276.4	38	26.3	26.5	763
2	EN:ESSFdc1/dcu1-03	300	275.6	-	275.6	38	26.4	26.6	760
2	EN:ESSFdc1/dcu1-03	310	274.7	-	274.7	38	26.4	26.8	757
2	EN:ESSFdc1/dcu1-03	320	273.6	-	273.6	38	26.4	26.9	757
2	EN:ESSFdc1/dcu1-03	330	272.6	-	272.6	38	26.4	27.0	757
2	EN:ESSFdc1/dcu1-03	340	271.6	-	271.6	38	26.4	27.1	757
2	EN:ESSFdc1/dcu1-03	350	270.5	-	270.5	38	26.4	27.1	757

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
3	EN:ESSFdc1/dcu1-04	10	-	-	-	1	0.6	0.8	28
3	EN:ESSFdc1/dcu1-04	20	-	-	-	1	0.6	2.4	17
3	EN:ESSFdc1/dcu1-04	30	0.4	-	0.4	0	1.1	4.7	21
3	EN:ESSFdc1/dcu1-04	40	3.1	-	3.1	1	2.8	7.4	52
3	EN:ESSFdc1/dcu1-04	50	11.0	-	11.0	3	6.7	10.0	106
3	EN:ESSFdc1/dcu1-04	60	32.4	-	32.4	7	17.7	12.5	224
3	EN:ESSFdc1/dcu1-04	70	64.2	-	64.2	12	20.9	14.8	334
3	EN:ESSFdc1/dcu1-04	80	102.8	-	102.8	17	22.3	16.8	420
3	EN:ESSFdc1/dcu1-04	90	143.4	-	143.4	22	24.1	18.5	490
3	EN:ESSFdc1/dcu1-04	100	181.5	-	181.5	26	25.4	20.1	528
3	EN:ESSFdc1/dcu1-04	110	215.4	-	215.4	29	26.5	21.5	545
3	EN:ESSFdc1/dcu1-04	120	245.1	-	245.1	32	27.6	22.7	549
3	EN:ESSFdc1/dcu1-04	130	271.0	-	271.0	34	28.6	23.7	547
3	EN:ESSFdc1/dcu1-04	140	293.3	-	293.3	36	29.4	24.7	540
3	EN:ESSFdc1/dcu1-04	150	310.4	-	310.4	37	30.2	25.5	533
3	EN:ESSFdc1/dcu1-04	160	321.8	-	321.8	38	30.7	26.3	527
3	EN:ESSFdc1/dcu1-04	170	329.3	-	329.3	38	31.1	26.9	521
3	EN:ESSFdc1/dcu1-04	180	333.9	-	333.9	39	31.4	27.5	517
3	EN:ESSFdc1/dcu1-04	190	336.1	-	336.1	39	31.6	28.1	512
3	EN:ESSFdc1/dcu1-04	200	337.1	-	337.1	39	31.8	28.5	509
3	EN:ESSFdc1/dcu1-04	210	335.8	-	335.8	39	31.8	29.0	506
3	EN:ESSFdc1/dcu1-04	220	334.8	-	334.8	39	31.9	29.4	504
3	EN:ESSFdc1/dcu1-04	230	333.7	-	333.7	39	32.0	29.7	502
3	EN:ESSFdc1/dcu1-04	240	332.7	-	332.7	39	32.0	30.1	501
3	EN:ESSFdc1/dcu1-04	250	331.7	-	331.7	39	32.1	30.4	499
3	EN:ESSFdc1/dcu1-04	260	330.6	-	330.6	39	32.1	30.6	498
3	EN:ESSFdc1/dcu1-04	270	329.7	-	329.7	39	32.2	30.9	496
3	EN:ESSFdc1/dcu1-04	280	328.8	-	328.8	39	32.2	31.1	495
3	EN:ESSFdc1/dcu1-04	290	327.9	-	327.9	39	32.3	31.3	494
3	EN:ESSFdc1/dcu1-04	300	327.1	-	327.1	39	32.3	31.5	492
3	EN:ESSFdc1/dcu1-04	310	326.4	-	326.4	39	32.3	31.7	491
3	EN:ESSFdc1/dcu1-04	320	325.6	-	325.6	39	32.4	31.9	491
3	EN:ESSFdc1/dcu1-04	330	325.0	-	325.0	39	32.4	32.1	491
3	EN:ESSFdc1/dcu1-04	340	324.4	-	324.4	39	32.4	32.2	491
3	EN:ESSFdc1/dcu1-04	350	323.8	-	323.8	39	32.4	32.4	491

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
4	EN:ESSFdc1/dcu1-Oth	10	-	-	-	2	1.8	1.2	145
4	EN:ESSFdc1/dcu1-Oth	20	-	-	-	2	2.0	3.4	127
4	EN:ESSFdc1/dcu1-Oth	30	1.4	-	1.4	1	3.1	5.9	123
4	EN:ESSFdc1/dcu1-Oth	40	7.2	-	7.2	3	5.4	8.3	189
4	EN:ESSFdc1/dcu1-Oth	50	20.9	-	20.9	6	10.5	10.6	297
4	EN:ESSFdc1/dcu1-Oth	60	41.3	-	41.3	9	14.9	12.6	428
4	EN:ESSFdc1/dcu1-Oth	70	66.5	-	66.5	13	18.6	14.4	535
4	EN:ESSFdc1/dcu1-Oth	80	94.1	-	94.1	17	20.0	16.0	575
4	EN:ESSFdc1/dcu1-Oth	90	122.5	-	122.5	20	21.0	17.3	633
4	EN:ESSFdc1/dcu1-Oth	100	149.9	-	149.8	24	22.0	18.5	669
4	EN:ESSFdc1/dcu1-Oth	110	174.9	-	174.9	26	22.9	19.6	686
4	EN:ESSFdc1/dcu1-Oth	120	197.6	-	197.5	28	23.8	20.5	693
4	EN:ESSFdc1/dcu1-Oth	130	217.8	-	217.7	30	24.5	21.3	694
4	EN:ESSFdc1/dcu1-Oth	140	235.7	-	235.6	32	25.2	22.0	694
4	EN:ESSFdc1/dcu1-Oth	150	249.8	0.1	249.7	33	25.8	22.7	692
4	EN:ESSFdc1/dcu1-Oth	160	259.7	0.1	259.6	34	26.2	23.2	691
4	EN:ESSFdc1/dcu1-Oth	170	266.5	0.1	266.5	35	26.5	23.7	690
4	EN:ESSFdc1/dcu1-Oth	180	271.1	0.1	271.1	36	26.7	24.2	689
4	EN:ESSFdc1/dcu1-Oth	190	274.1	-	274.0	36	26.9	24.6	686
4	EN:ESSFdc1/dcu1-Oth	200	275.8	-	275.7	36	27.1	25.0	684
4	EN:ESSFdc1/dcu1-Oth	210	275.3	-	275.3	36	27.2	25.3	681
4	EN:ESSFdc1/dcu1-Oth	220	274.8	-	274.8	36	27.3	25.6	678
4	EN:ESSFdc1/dcu1-Oth	230	274.3	-	274.2	36	27.4	25.9	675
4	EN:ESSFdc1/dcu1-Oth	240	273.7	-	273.6	37	27.4	26.1	673
4	EN:ESSFdc1/dcu1-Oth	250	273.0	-	273.0	37	27.5	26.4	670
4	EN:ESSFdc1/dcu1-Oth	260	272.3	-	272.3	37	27.6	26.6	668
4	EN:ESSFdc1/dcu1-Oth	270	271.6	-	271.6	37	27.7	26.8	665
4	EN:ESSFdc1/dcu1-Oth	280	270.9	-	270.9	37	27.7	27.0	663
4	EN:ESSFdc1/dcu1-Oth	290	270.2	-	270.2	37	27.8	27.1	661
4	EN:ESSFdc1/dcu1-Oth	300	269.6	-	269.5	37	27.9	27.3	659
4	EN:ESSFdc1/dcu1-Oth	310	268.9	-	268.9	37	27.9	27.5	657
4	EN:ESSFdc1/dcu1-Oth	320	268.1	-	268.1	37	27.9	27.6	657
4	EN:ESSFdc1/dcu1-Oth	330	267.3	-	267.3	37	27.9	27.7	657
4	EN:ESSFdc1/dcu1-Oth	340	266.5	-	266.5	37	27.9	27.8	657
4	EN:ESSFdc1/dcu1-Oth	350	265.7	-	265.7	37	27.9	28.0	657

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
5	EN:ICHmk1/mw2-01	10	-	-	-	1	1.6	1.2	261
5	EN:ICHmk1/mw2-01	20	-	-	-	1	1.6	4.0	262
5	EN:ICHmk1/mw2-01	30	1.6	-	1.6	1	6.6	7.2	111
5	EN:ICHmk1/mw2-01	40	12.5	0.1	12.4	3	13.4	10.4	106
5	EN:ICHmk1/mw2-01	50	37.4	0.4	37.0	7	18.5	13.2	224
5	EN:ICHmk1/mw2-01	60	72.4	1.1	71.3	12	21.2	15.7	339
5	EN:ICHmk1/mw2-01	70	112.6	1.9	110.8	18	22.7	17.9	434
5	EN:ICHmk1/mw2-01	80	154.8	2.6	152.2	22	23.7	19.9	507
5	EN:ICHmk1/mw2-01	90	196.0	3.2	192.8	27	24.7	21.6	558
5	EN:ICHmk1/mw2-01	100	234.3	3.8	230.5	31	25.7	23.1	592
5	EN:ICHmk1/mw2-01	110	269.5	4.2	265.3	34	26.7	24.4	613
5	EN:ICHmk1/mw2-01	120	300.2	4.5	295.8	37	27.6	25.5	623
5	EN:ICHmk1/mw2-01	130	326.9	4.7	322.2	39	28.4	26.6	625
5	EN:ICHmk1/mw2-01	140	349.5	4.8	344.8	41	29.2	27.5	622
5	EN:ICHmk1/mw2-01	150	366.3	4.8	361.5	43	29.9	28.3	616
5	EN:ICHmk1/mw2-01	160	376.7	4.7	372.0	44	30.4	29.0	608
5	EN:ICHmk1/mw2-01	170	382.8	4.6	378.2	44	30.8	29.7	601
5	EN:ICHmk1/mw2-01	180	386.1	4.4	381.7	45	31.1	30.3	594
5	EN:ICHmk1/mw2-01	190	387.6	4.3	383.3	45	31.4	30.8	587
5	EN:ICHmk1/mw2-01	200	387.9	4.1	383.8	46	31.7	31.3	580
5	EN:ICHmk1/mw2-01	210	385.7	3.9	381.7	46	31.9	31.8	574
5	EN:ICHmk1/mw2-01	220	383.6	3.8	379.8	46	32.1	32.2	568
5	EN:ICHmk1/mw2-01	230	381.5	3.6	377.9	46	32.3	32.6	563
5	EN:ICHmk1/mw2-01	240	379.4	3.5	375.9	46	32.5	32.9	558
5	EN:ICHmk1/mw2-01	250	377.2	3.4	373.9	46	32.6	33.2	553
5	EN:ICHmk1/mw2-01	260	375.1	3.2	371.9	46	32.8	33.5	548
5	EN:ICHmk1/mw2-01	270	372.9	3.1	369.8	46	33.0	33.8	543
5	EN:ICHmk1/mw2-01	280	370.8	3.0	367.8	47	33.1	34.1	539
5	EN:ICHmk1/mw2-01	290	368.6	2.9	365.7	47	33.3	34.3	535
5	EN:ICHmk1/mw2-01	300	366.4	2.8	363.6	47	33.5	34.5	530
5	EN:ICHmk1/mw2-01	310	364.2	2.7	361.6	47	33.6	34.7	527
5	EN:ICHmk1/mw2-01	320	362.2	2.6	359.6	47	33.6	34.9	526
5	EN:ICHmk1/mw2-01	330	360.2	2.5	357.7	47	33.6	35.1	526
5	EN:ICHmk1/mw2-01	340	358.2	2.4	355.8	47	33.6	35.3	526
5	EN:ICHmk1/mw2-01	350	356.2	2.3	353.9	47	33.6	35.5	526

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
6	EN:ICHmk1/mw2-03	10	-	-	-	1	2.0	1.3	94
6	EN:ICHmk1/mw2-03	20	-	-	-	1	2.0	4.1	94
6	EN:ICHmk1/mw2-03	30	1.1	-	1.0	1	4.4	7.2	38
6	EN:ICHmk1/mw2-03	40	8.6	0.1	8.5	2	11.9	10.1	86
6	EN:ICHmk1/mw2-03	50	25.0	0.2	24.8	6	19.2	12.7	184
6	EN:ICHmk1/mw2-03	60	47.2	0.5	46.7	9	20.7	14.9	275
6	EN:ICHmk1/mw2-03	70	73.5	0.7	72.8	13	21.9	16.9	355
6	EN:ICHmk1/mw2-03	80	102.0	1.0	101.0	17	22.8	18.6	420
6	EN:ICHmk1/mw2-03	90	130.4	1.2	129.2	20	23.7	20.1	469
6	EN:ICHmk1/mw2-03	100	157.4	1.4	156.0	23	24.6	21.4	505
6	EN:ICHmk1/mw2-03	110	182.9	1.5	181.4	26	25.4	22.6	529
6	EN:ICHmk1/mw2-03	120	205.8	1.6	204.1	28	26.1	23.6	544
6	EN:ICHmk1/mw2-03	130	225.6	1.7	223.9	30	26.8	24.5	552
6	EN:ICHmk1/mw2-03	140	242.6	1.8	240.8	32	27.4	25.3	554
6	EN:ICHmk1/mw2-03	150	255.3	1.8	253.5	33	27.9	26.0	553
6	EN:ICHmk1/mw2-03	160	263.6	1.8	261.8	34	28.3	26.7	551
6	EN:ICHmk1/mw2-03	170	268.7	1.7	266.9	34	28.6	27.2	547
6	EN:ICHmk1/mw2-03	180	271.8	1.7	270.1	35	28.9	27.8	543
6	EN:ICHmk1/mw2-03	190	273.3	1.7	271.6	35	29.2	28.2	538
6	EN:ICHmk1/mw2-03	200	273.9	1.6	272.3	35	29.4	28.7	533
6	EN:ICHmk1/mw2-03	210	272.5	1.6	270.9	36	29.6	29.0	529
6	EN:ICHmk1/mw2-03	220	271.2	1.5	269.6	36	29.7	29.4	524
6	EN:ICHmk1/mw2-03	230	269.8	1.5	268.3	36	29.9	29.7	520
6	EN:ICHmk1/mw2-03	240	268.5	1.5	267.0	36	30.1	30.0	515
6	EN:ICHmk1/mw2-03	250	267.1	1.4	265.7	36	30.3	30.3	511
6	EN:ICHmk1/mw2-03	260	265.7	1.4	264.3	36	30.4	30.5	507
6	EN:ICHmk1/mw2-03	270	264.3	1.4	262.9	36	30.6	30.8	503
6	EN:ICHmk1/mw2-03	280	262.9	1.3	261.5	36	30.7	31.0	499
6	EN:ICHmk1/mw2-03	290	261.4	1.3	260.1	36	30.9	31.2	495
6	EN:ICHmk1/mw2-03	300	259.9	1.3	258.7	36	31.0	31.4	491
6	EN:ICHmk1/mw2-03	310	258.4	1.2	257.2	37	31.2	31.6	488
6	EN:ICHmk1/mw2-03	320	256.9	1.2	255.7	37	31.2	31.7	488
6	EN:ICHmk1/mw2-03	330	255.3	1.2	254.1	37	31.2	31.9	488
6	EN:ICHmk1/mw2-03	340	253.6	1.1	252.5	37	31.2	32.0	488
6	EN:ICHmk1/mw2-03	350	252.0	1.1	250.9	37	31.2	32.2	488

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
7	EN:ICHmk1/mw2-04	10	-	-	-	0	0.3	1.4	138
7	EN:ICHmk1/mw2-04	20	-	-	-	0	0.3	4.3	138
7	EN:ICHmk1/mw2-04	30	1.5	-	1.5	1	6.5	7.5	47
7	EN:ICHmk1/mw2-04	40	10.8	0.1	10.7	3	11.7	10.5	96
7	EN:ICHmk1/mw2-04	50	31.6	0.5	31.1	7	18.2	13.1	222
7	EN:ICHmk1/mw2-04	60	60.2	1.2	59.0	11	19.9	15.4	336
7	EN:ICHmk1/mw2-04	70	93.4	2.2	91.2	15	21.1	17.5	437
7	EN:ICHmk1/mw2-04	80	128.2	3.1	125.1	20	21.9	19.2	517
7	EN:ICHmk1/mw2-04	90	162.1	3.8	158.3	23	22.7	20.7	575
7	EN:ICHmk1/mw2-04	100	193.9	4.4	189.5	27	23.5	22.0	616
7	EN:ICHmk1/mw2-04	110	223.3	4.9	218.4	30	24.3	23.2	641
7	EN:ICHmk1/mw2-04	120	249.4	5.3	244.1	32	25.0	24.2	655
7	EN:ICHmk1/mw2-04	130	271.5	5.5	266.0	34	25.7	25.1	659
7	EN:ICHmk1/mw2-04	140	290.0	5.6	284.4	36	26.4	25.9	658
7	EN:ICHmk1/mw2-04	150	303.1	5.6	297.5	37	27.0	26.6	653
7	EN:ICHmk1/mw2-04	160	311.0	5.5	305.5	37	27.4	27.2	647
7	EN:ICHmk1/mw2-04	170	315.3	5.3	310.0	38	27.7	27.8	640
7	EN:ICHmk1/mw2-04	180	317.7	5.1	312.6	38	28.0	28.2	633
7	EN:ICHmk1/mw2-04	190	318.6	4.9	313.7	38	28.2	28.7	626
7	EN:ICHmk1/mw2-04	200	318.7	4.8	313.9	39	28.5	29.1	619
7	EN:ICHmk1/mw2-04	210	316.5	4.6	311.9	39	28.7	29.5	613
7	EN:ICHmk1/mw2-04	220	314.4	4.4	310.0	39	28.9	29.8	606
7	EN:ICHmk1/mw2-04	230	312.3	4.2	308.1	39	29.0	30.1	600
7	EN:ICHmk1/mw2-04	240	310.2	4.0	306.2	39	29.2	30.3	594
7	EN:ICHmk1/mw2-04	250	308.1	3.9	304.2	39	29.4	30.6	589
7	EN:ICHmk1/mw2-04	260	306.0	3.7	302.3	39	29.6	30.8	583
7	EN:ICHmk1/mw2-04	270	303.9	3.6	300.3	39	29.7	31.0	578
7	EN:ICHmk1/mw2-04	280	301.8	3.4	298.3	39	29.9	31.2	573
7	EN:ICHmk1/mw2-04	290	299.6	3.3	296.3	39	30.0	31.4	568
7	EN:ICHmk1/mw2-04	300	297.4	3.2	294.3	39	30.2	31.6	563
7	EN:ICHmk1/mw2-04	310	295.3	3.0	292.3	39	30.3	31.7	559
7	EN:ICHmk1/mw2-04	320	293.4	2.9	290.5	39	30.3	31.9	558
7	EN:ICHmk1/mw2-04	330	291.5	2.8	288.7	39	30.3	32.0	558
7	EN:ICHmk1/mw2-04	340	289.6	2.7	286.8	39	30.3	32.1	558
7	EN:ICHmk1/mw2-04	350	287.6	2.6	285.0	39	30.3	32.3	558

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
8	EN:ICHmk1/mw2-Oth	10	-	-	-	1	1.5	1.1	117
8	EN:ICHmk1/mw2-Oth	20	-	-	-	1	1.5	3.7	117
8	EN:ICHmk1/mw2-Oth	30	1.6	-	1.6	1	6.3	6.7	64
8	EN:ICHmk1/mw2-Oth	40	10.8	0.1	10.7	3	10.1	9.7	86
8	EN:ICHmk1/mw2-Oth	50	31.6	0.5	31.1	6	16.8	12.5	185
8	EN:ICHmk1/mw2-Oth	60	64.2	1.2	63.0	11	21.5	15.0	297
8	EN:ICHmk1/mw2-Oth	70	102.3	1.9	100.4	16	23.0	17.3	393
8	EN:ICHmk1/mw2-Oth	80	143.3	2.8	140.6	21	24.0	19.3	470
8	EN:ICHmk1/mw2-Oth	90	184.4	3.6	180.8	25	25.1	21.1	526
8	EN:ICHmk1/mw2-Oth	100	223.8	4.3	219.5	29	26.1	22.7	564
8	EN:ICHmk1/mw2-Oth	110	260.6	4.9	255.8	33	27.1	24.2	589
8	EN:ICHmk1/mw2-Oth	120	293.4	5.3	288.1	36	28.0	25.4	601
8	EN:ICHmk1/mw2-Oth	130	322.4	5.7	316.7	39	28.9	26.6	605
8	EN:ICHmk1/mw2-Oth	140	347.5	6.0	341.6	41	29.7	27.6	603
8	EN:ICHmk1/mw2-Oth	150	366.6	6.1	360.5	42	30.4	28.5	597
8	EN:ICHmk1/mw2-Oth	160	378.8	6.1	372.7	44	31.0	29.4	589
8	EN:ICHmk1/mw2-Oth	170	385.9	6.0	379.9	44	31.4	30.1	582
8	EN:ICHmk1/mw2-Oth	180	390.2	5.9	384.4	45	31.8	30.8	574
8	EN:ICHmk1/mw2-Oth	190	392.3	5.7	386.6	45	32.2	31.4	567
8	EN:ICHmk1/mw2-Oth	200	393.0	5.5	387.5	46	32.5	32.0	560
8	EN:ICHmk1/mw2-Oth	210	390.9	5.3	385.6	46	32.7	32.5	554
8	EN:ICHmk1/mw2-Oth	220	388.9	5.1	383.8	46	32.9	33.0	549
8	EN:ICHmk1/mw2-Oth	230	386.9	4.9	382.0	46	33.1	33.5	543
8	EN:ICHmk1/mw2-Oth	240	384.9	4.8	380.1	46	33.3	33.9	538
8	EN:ICHmk1/mw2-Oth	250	382.8	4.6	378.2	46	33.5	34.3	533
8	EN:ICHmk1/mw2-Oth	260	380.8	4.4	376.3	47	33.7	34.6	529
8	EN:ICHmk1/mw2-Oth	270	378.7	4.3	374.4	47	33.9	34.9	524
8	EN:ICHmk1/mw2-Oth	280	376.6	4.1	372.5	47	34.1	35.2	520
8	EN:ICHmk1/mw2-Oth	290	374.4	4.0	370.5	47	34.2	35.5	515
8	EN:ICHmk1/mw2-Oth	300	372.3	3.8	368.4	47	34.4	35.8	511
8	EN:ICHmk1/mw2-Oth	310	370.1	3.7	366.4	47	34.6	36.1	508
8	EN:ICHmk1/mw2-Oth	320	368.1	3.5	364.5	47	34.6	36.3	507
8	EN:ICHmk1/mw2-Oth	330	366.0	3.4	362.6	47	34.6	36.5	507
8	EN:ICHmk1/mw2-Oth	340	363.9	3.3	360.7	47	34.6	36.7	507
8	EN:ICHmk1/mw2-Oth	350	361.9	3.2	358.7	47	34.6	36.9	507

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
9	EN:IDFdm1-01	10	-	-	-	2	2.7	1.6	731
9	EN:IDFdm1-01	20	0.1	-	0.1	2	3.1	5.1	716
9	EN:IDFdm1-01	30	3.6	-	3.6	3	8.4	8.7	220
9	EN:IDFdm1-01	40	16.9	0.1	16.8	4	17.0	11.9	166
9	EN:IDFdm1-01	50	37.5	0.2	37.3	7	19.5	14.6	256
9	EN:IDFdm1-01	60	63.4	0.4	63.0	11	20.8	17.0	341
9	EN:IDFdm1-01	70	92.0	0.6	91.4	14	21.9	19.1	408
9	EN:IDFdm1-01	80	121.3	0.8	120.5	18	22.9	20.8	457
9	EN:IDFdm1-01	90	149.7	1.1	148.6	21	23.9	22.4	490
9	EN:IDFdm1-01	100	176.4	1.3	175.2	23	24.9	23.7	511
9	EN:IDFdm1-01	110	201.2	1.5	199.8	26	25.8	24.9	522
9	EN:IDFdm1-01	120	223.3	1.6	221.7	28	26.8	25.9	525
9	EN:IDFdm1-01	130	242.3	1.8	240.6	30	27.7	26.9	521
9	EN:IDFdm1-01	140	258.4	1.8	256.6	31	28.5	27.7	513
9	EN:IDFdm1-01	150	270.1	1.9	268.2	32	29.3	28.4	503
9	EN:IDFdm1-01	160	277.2	1.9	275.3	33	29.9	29.1	492
9	EN:IDFdm1-01	170	281.4	1.8	279.6	33	30.4	29.7	481
9	EN:IDFdm1-01	180	283.9	1.8	282.1	33	30.8	30.2	472
9	EN:IDFdm1-01	190	285.3	1.7	283.6	34	31.2	30.7	463
9	EN:IDFdm1-01	200	285.9	1.7	284.2	34	31.6	31.1	455
9	EN:IDFdm1-01	210	285.0	1.6	283.4	34	31.9	31.5	448
9	EN:IDFdm1-01	220	284.1	1.6	282.6	34	32.2	31.9	441
9	EN:IDFdm1-01	230	283.2	1.5	281.7	34	32.5	32.3	435
9	EN:IDFdm1-01	240	282.3	1.5	280.8	34	32.8	32.6	429
9	EN:IDFdm1-01	250	281.3	1.4	279.9	34	33.1	32.9	424
9	EN:IDFdm1-01	260	280.3	1.4	279.0	35	33.3	33.1	419
9	EN:IDFdm1-01	270	279.3	1.3	278.0	35	33.6	33.4	414
9	EN:IDFdm1-01	280	278.3	1.3	277.0	35	33.8	33.6	409
9	EN:IDFdm1-01	290	277.3	1.2	276.0	35	34.0	33.8	404
9	EN:IDFdm1-01	300	276.2	1.2	275.0	35	34.2	34.0	400
9	EN:IDFdm1-01	310	275.2	1.1	274.0	35	34.4	34.2	397
9	EN:IDFdm1-01	320	274.1	1.1	273.0	35	34.4	34.4	397
9	EN:IDFdm1-01	330	273.1	1.1	272.0	35	34.4	34.6	397
9	EN:IDFdm1-01	340	272.1	1.0	271.0	35	34.4	34.7	397
9	EN:IDFdm1-01	350	271.0	1.0	270.0	35	34.4	34.9	397

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
10	EN:IDFdm1-04	10	-	-	-	2	1.9	1.5	305
10	EN:IDFdm1-04	20	-	-	-	2	1.9	4.8	302
10	EN:IDFdm1-04	30	2.1	-	2.1	2	5.9	8.2	74
10	EN:IDFdm1-04	40	12.8	-	12.7	3	15.1	11.2	148
10	EN:IDFdm1-04	50	30.2	0.1	30.1	6	19.0	13.8	231
10	EN:IDFdm1-04	60	52.6	0.2	52.4	10	20.4	16.1	314
10	EN:IDFdm1-04	70	78.4	0.3	78.1	13	21.6	18.1	383
10	EN:IDFdm1-04	80	105.3	0.4	104.9	16	22.6	19.8	434
10	EN:IDFdm1-04	90	131.8	0.6	131.2	19	23.6	21.3	470
10	EN:IDFdm1-04	100	156.9	0.7	156.2	22	24.5	22.6	493
10	EN:IDFdm1-04	110	180.1	0.8	179.4	24	25.4	23.8	505
10	EN:IDFdm1-04	120	201.2	0.9	200.3	26	26.3	24.8	510
10	EN:IDFdm1-04	130	219.6	0.9	218.7	28	27.2	25.7	508
10	EN:IDFdm1-04	140	235.5	1.0	234.5	29	28.1	26.5	501
10	EN:IDFdm1-04	150	247.4	1.0	246.4	30	28.8	27.2	491
10	EN:IDFdm1-04	160	254.8	1.0	253.8	31	29.4	27.8	481
10	EN:IDFdm1-04	170	259.4	1.0	258.4	31	30.0	28.4	471
10	EN:IDFdm1-04	180	262.3	1.0	261.4	32	30.4	28.9	461
10	EN:IDFdm1-04	190	263.9	0.9	263.0	32	30.8	29.4	452
10	EN:IDFdm1-04	200	264.7	0.9	263.8	32	31.2	29.8	444
10	EN:IDFdm1-04	210	263.9	0.9	263.1	32	31.5	30.2	437
10	EN:IDFdm1-04	220	263.2	0.8	262.3	32	31.8	30.6	431
10	EN:IDFdm1-04	230	262.4	0.8	261.6	32	32.1	30.9	425
10	EN:IDFdm1-04	240	261.5	0.8	260.8	32	32.4	31.3	419
10	EN:IDFdm1-04	250	260.7	0.7	259.9	33	32.7	31.5	413
10	EN:IDFdm1-04	260	259.8	0.7	259.1	33	33.0	31.8	408
10	EN:IDFdm1-04	270	258.9	0.7	258.2	33	33.2	32.1	402
10	EN:IDFdm1-04	280	258.0	0.7	257.3	33	33.5	32.3	397
10	EN:IDFdm1-04	290	257.1	0.6	256.4	33	33.7	32.5	393
10	EN:IDFdm1-04	300	256.1	0.6	255.5	33	33.9	32.7	389
10	EN:IDFdm1-04	310	255.2	0.6	254.6	33	34.1	32.9	385
10	EN:IDFdm1-04	320	254.2	0.6	253.6	33	34.1	33.1	385
10	EN:IDFdm1-04	330	253.2	0.6	252.7	33	34.1	33.2	385
10	EN:IDFdm1-04	340	252.2	0.5	251.7	33	34.1	33.4	385
10	EN:IDFdm1-04	350	251.2	0.5	250.7	33	34.1	33.5	385

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
11	EN:IDFdm1-05	10	-	-	-	1	1.2	1.5	631
11	EN:IDFdm1-05	20	-	-	-	1	1.2	4.8	621
11	EN:IDFdm1-05	30	2.4	-	2.4	1	7.0	8.3	82
11	EN:IDFdm1-05	40	15.2	0.1	15.1	4	17.3	11.5	150
11	EN:IDFdm1-05	50	36.3	0.4	35.9	7	19.8	14.3	250
11	EN:IDFdm1-05	60	64.2	0.8	63.3	11	21.0	16.8	342
11	EN:IDFdm1-05	70	96.2	1.4	94.8	15	22.0	18.9	416
11	EN:IDFdm1-05	80	129.4	1.9	127.5	19	23.0	20.7	470
11	EN:IDFdm1-05	90	161.5	2.4	159.0	22	24.0	22.3	507
11	EN:IDFdm1-05	100	191.8	2.9	188.8	25	25.0	23.7	530
11	EN:IDFdm1-05	110	219.6	3.4	216.2	27	25.9	24.9	542
11	EN:IDFdm1-05	120	244.1	3.7	240.4	29	26.8	26.0	544
11	EN:IDFdm1-05	130	265.1	4.0	261.1	31	27.7	26.9	539
11	EN:IDFdm1-05	140	282.8	4.2	278.6	33	28.6	27.7	528
11	EN:IDFdm1-05	150	295.4	4.3	291.1	34	29.4	28.5	514
11	EN:IDFdm1-05	160	302.9	4.3	298.6	34	30.0	29.2	501
11	EN:IDFdm1-05	170	307.2	4.3	302.9	35	30.6	29.8	488
11	EN:IDFdm1-05	180	309.4	4.2	305.2	35	31.1	30.3	477
11	EN:IDFdm1-05	190	310.2	4.1	306.1	35	31.5	30.8	467
11	EN:IDFdm1-05	200	310.3	4.0	306.4	35	31.9	31.3	458
11	EN:IDFdm1-05	210	308.8	3.8	305.0	35	32.2	31.7	451
11	EN:IDFdm1-05	220	307.4	3.7	303.7	35	32.5	32.1	444
11	EN:IDFdm1-05	230	306.0	3.6	302.4	35	32.8	32.4	437
11	EN:IDFdm1-05	240	304.6	3.5	301.1	35	33.0	32.8	431
11	EN:IDFdm1-05	250	303.1	3.4	299.8	35	33.3	33.1	424
11	EN:IDFdm1-05	260	301.7	3.3	298.4	35	33.6	33.3	419
11	EN:IDFdm1-05	270	300.3	3.2	297.1	36	33.8	33.6	413
11	EN:IDFdm1-05	280	298.9	3.1	295.8	36	34.1	33.8	408
11	EN:IDFdm1-05	290	297.4	3.0	294.4	36	34.3	34.1	403
11	EN:IDFdm1-05	300	296.0	2.9	293.1	36	34.5	34.3	398
11	EN:IDFdm1-05	310	294.7	2.8	291.9	36	34.7	34.5	395
11	EN:IDFdm1-05	320	293.5	2.8	290.8	36	34.7	34.7	394
11	EN:IDFdm1-05	330	292.4	2.7	289.7	36	34.7	34.8	394
11	EN:IDFdm1-05	340	291.3	2.6	288.7	36	34.7	35.0	394
11	EN:IDFdm1-05	350	290.3	2.6	287.7	36	34.7	35.1	394

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
12	EN:IDFdm1-Oth	10	-	-	-	1	0.9	1.3	416
12	EN:IDFdm1-Oth	20	-	-	-	1	1.1	4.3	350
12	EN:IDFdm1-Oth	30	2.0	-	2.0	1	4.4	7.6	161
12	EN:IDFdm1-Oth	40	11.6	0.1	11.5	3	13.6	10.7	103
12	EN:IDFdm1-Oth	50	29.1	0.2	28.9	6	19.7	13.4	189
12	EN:IDFdm1-Oth	60	51.7	0.5	51.3	9	21.4	15.8	261
12	EN:IDFdm1-Oth	70	77.5	0.8	76.7	12	22.6	17.9	318
12	EN:IDFdm1-Oth	80	104.4	1.1	103.4	15	23.7	19.7	361
12	EN:IDFdm1-Oth	90	131.0	1.4	129.6	18	24.9	21.3	391
12	EN:IDFdm1-Oth	100	156.3	1.6	154.8	20	26.1	22.7	411
12	EN:IDFdm1-Oth	110	180.0	1.8	178.2	23	27.3	23.9	423
12	EN:IDFdm1-Oth	120	201.4	1.9	199.4	25	28.4	25.0	429
12	EN:IDFdm1-Oth	130	219.9	2.0	217.9	26	29.2	26.0	429
12	EN:IDFdm1-Oth	140	236.0	2.1	233.9	28	30.1	26.9	425
12	EN:IDFdm1-Oth	150	248.0	2.1	245.8	29	30.8	27.7	418
12	EN:IDFdm1-Oth	160	255.5	2.1	253.4	29	31.4	28.4	409
12	EN:IDFdm1-Oth	170	260.1	2.0	258.1	30	32.0	29.0	402
12	EN:IDFdm1-Oth	180	262.9	2.0	260.9	30	32.4	29.6	394
12	EN:IDFdm1-Oth	190	264.5	1.9	262.6	30	32.8	30.1	387
12	EN:IDFdm1-Oth	200	265.4	1.8	263.6	30	33.2	30.6	381
12	EN:IDFdm1-Oth	210	264.4	1.7	262.6	30	33.5	31.1	375
12	EN:IDFdm1-Oth	220	263.2	1.7	261.5	31	33.8	31.5	370
12	EN:IDFdm1-Oth	230	262.0	1.6	260.4	31	34.1	31.9	365
12	EN:IDFdm1-Oth	240	260.9	1.6	259.3	31	34.4	32.2	360
12	EN:IDFdm1-Oth	250	259.7	1.5	258.2	31	34.6	32.5	355
12	EN:IDFdm1-Oth	260	258.6	1.4	257.2	31	34.9	32.8	351
12	EN:IDFdm1-Oth	270	257.6	1.4	256.2	31	35.1	33.1	347
12	EN:IDFdm1-Oth	280	256.5	1.3	255.2	31	35.4	33.4	343
12	EN:IDFdm1-Oth	290	255.5	1.3	254.2	31	35.6	33.6	339
12	EN:IDFdm1-Oth	300	254.5	1.2	253.2	31	35.8	33.9	336
12	EN:IDFdm1-Oth	310	253.5	1.2	252.3	31	36.0	34.1	333
12	EN:IDFdm1-Oth	320	252.4	1.2	251.3	31	36.0	34.3	332
12	EN:IDFdm1-Oth	330	251.5	1.1	250.4	31	36.0	34.5	332
12	EN:IDFdm1-Oth	340	250.5	1.1	249.5	31	36.0	34.6	332
12	EN:IDFdm1-Oth	350	249.6	1.1	248.6	31	36.0	34.8	332

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
13	EN:MSdm1-01	10	-	-	-	2	1.8	1.7	574
13	EN:MSdm1-01	20	0.1	-	0.1	2	2.4	5.1	423
13	EN:MSdm1-01	30	4.2	-	4.2	3	7.9	8.6	147
13	EN:MSdm1-01	40	20.3	0.1	20.2	5	14.4	11.7	223
13	EN:MSdm1-01	50	47.5	0.2	47.3	9	17.6	14.4	359
13	EN:MSdm1-01	60	81.3	0.3	81.0	13	19.3	16.7	481
13	EN:MSdm1-01	70	116.3	0.4	115.8	17	20.3	18.7	572
13	EN:MSdm1-01	80	149.9	0.6	149.3	21	21.2	20.4	630
13	EN:MSdm1-01	90	180.8	0.6	180.2	24	22.0	21.8	665
13	EN:MSdm1-01	100	208.4	0.7	207.7	26	22.8	23.1	682
13	EN:MSdm1-01	110	232.6	0.8	231.8	29	23.7	24.1	686
13	EN:MSdm1-01	120	253.6	0.8	252.8	30	24.5	25.1	683
13	EN:MSdm1-01	130	271.8	0.9	270.9	32	25.2	25.9	677
13	EN:MSdm1-01	140	287.3	0.9	286.5	33	25.8	26.6	669
13	EN:MSdm1-01	150	299.1	0.9	298.2	34	26.4	27.2	662
13	EN:MSdm1-01	160	306.8	0.9	306.0	35	26.8	27.8	656
13	EN:MSdm1-01	170	311.7	0.9	310.8	35	27.1	28.2	649
13	EN:MSdm1-01	180	314.6	0.8	313.7	36	27.4	28.7	643
13	EN:MSdm1-01	190	316.0	0.8	315.2	36	27.7	29.1	635
13	EN:MSdm1-01	200	316.5	0.8	315.7	36	27.9	29.4	628
13	EN:MSdm1-01	210	315.2	0.8	314.4	36	28.1	29.7	621
13	EN:MSdm1-01	220	313.8	0.8	313.1	36	28.3	30.0	614
13	EN:MSdm1-01	230	312.4	0.7	311.7	36	28.5	30.3	607
13	EN:MSdm1-01	240	311.0	0.7	310.2	36	28.7	30.5	601
13	EN:MSdm1-01	250	309.5	0.7	308.8	36	28.8	30.7	594
13	EN:MSdm1-01	260	308.0	0.7	307.4	36	29.0	30.9	588
13	EN:MSdm1-01	270	306.6	0.7	305.9	36	29.1	31.1	582
13	EN:MSdm1-01	280	305.1	0.7	304.4	37	29.3	31.2	577
13	EN:MSdm1-01	290	303.6	0.6	303.0	37	29.4	31.4	571
13	EN:MSdm1-01	300	302.1	0.6	301.5	37	29.6	31.5	566
13	EN:MSdm1-01	310	300.8	0.6	300.2	37	29.7	31.7	562
13	EN:MSdm1-01	320	299.8	0.6	299.2	37	29.7	31.8	562
13	EN:MSdm1-01	330	298.8	0.6	298.2	37	29.7	31.9	562
13	EN:MSdm1-01	340	297.8	0.6	297.2	37	29.7	32.0	562
13	EN:MSdm1-01	350	296.8	0.6	296.3	37	29.7	32.1	562

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
14	EN:MSdm1-03	10	-	-	-	0	0.2	1.7	69
14	EN:MSdm1-03	20	-	-	-	0	0.2	4.8	69
14	EN:MSdm1-03	30	2.5	-	2.5	1	4.6	8.0	82
14	EN:MSdm1-03	40	15.0	-	15.0	4	13.1	10.9	185
14	EN:MSdm1-03	50	38.4	-	38.4	8	16.5	13.4	347
14	EN:MSdm1-03	60	67.8	-	67.8	12	18.4	15.5	491
14	EN:MSdm1-03	70	97.7	-	97.7	16	19.2	17.3	587
14	EN:MSdm1-03	80	126.9	-	126.9	19	20.0	18.8	651
14	EN:MSdm1-03	90	154.0	-	154.0	22	20.7	20.1	690
14	EN:MSdm1-03	100	178.3	-	178.3	24	21.5	21.2	710
14	EN:MSdm1-03	110	199.8	-	199.7	26	22.2	22.1	716
14	EN:MSdm1-03	120	218.5	-	218.5	28	22.9	23.0	715
14	EN:MSdm1-03	130	235.1	-	235.1	29	23.6	23.7	711
14	EN:MSdm1-03	140	249.5	-	249.5	31	24.2	24.3	706
14	EN:MSdm1-03	150	260.8	-	260.8	32	24.6	24.9	701
14	EN:MSdm1-03	160	268.6	-	268.6	32	25.0	25.4	697
14	EN:MSdm1-03	170	273.8	-	273.8	33	25.3	25.8	693
14	EN:MSdm1-03	180	277.1	-	277.0	33	25.5	26.2	688
14	EN:MSdm1-03	190	278.9	-	278.9	33	25.7	26.6	682
14	EN:MSdm1-03	200	279.8	-	279.8	34	26.0	26.9	675
14	EN:MSdm1-03	210	278.9	-	278.9	34	26.1	27.2	669
14	EN:MSdm1-03	220	277.9	-	277.9	34	26.3	27.4	662
14	EN:MSdm1-03	230	276.8	-	276.8	34	26.4	27.7	655
14	EN:MSdm1-03	240	275.7	-	275.7	34	26.6	27.9	649
14	EN:MSdm1-03	250	274.6	-	274.6	34	26.8	28.1	642
14	EN:MSdm1-03	260	273.5	-	273.5	34	26.9	28.2	636
14	EN:MSdm1-03	270	272.3	-	272.3	34	27.0	28.4	631
14	EN:MSdm1-03	280	271.2	-	271.1	34	27.2	28.6	625
14	EN:MSdm1-03	290	270.0	-	270.0	34	27.3	28.7	619
14	EN:MSdm1-03	300	268.8	-	268.8	34	27.4	28.8	614
14	EN:MSdm1-03	310	267.7	-	267.7	34	27.6	28.9	610
14	EN:MSdm1-03	320	266.8	-	266.8	34	27.6	29.1	610
14	EN:MSdm1-03	330	265.9	-	265.9	34	27.6	29.2	610
14	EN:MSdm1-03	340	264.9	-	264.9	34	27.6	29.3	610
14	EN:MSdm1-03	350	264.0	-	264.0	34	27.6	29.3	610

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
15	EN:MSdm1-04	10	-	-	-	1	1.1	1.6	163
15	EN:MSdm1-04	20	-	-	-	1	1.3	4.9	131
15	EN:MSdm1-04	30	2.9	-	2.9	2	5.7	8.2	94
15	EN:MSdm1-04	40	16.2	-	16.2	4	14.2	11.2	191
15	EN:MSdm1-04	50	39.4	-	39.4	8	17.7	13.8	334
15	EN:MSdm1-04	60	68.5	0.1	68.5	12	19.1	16.0	459
15	EN:MSdm1-04	70	98.9	0.1	98.8	16	20.0	17.8	548
15	EN:MSdm1-04	80	128.6	0.1	128.4	19	20.8	19.4	609
15	EN:MSdm1-04	90	156.1	0.2	155.9	22	21.7	20.8	646
15	EN:MSdm1-04	100	181.1	0.2	180.9	24	22.5	22.0	666
15	EN:MSdm1-04	110	203.4	0.2	203.2	27	23.2	23.0	673
15	EN:MSdm1-04	120	223.2	0.2	223.0	28	24.0	23.9	672
15	EN:MSdm1-04	130	240.6	0.2	240.3	30	24.7	24.7	669
15	EN:MSdm1-04	140	255.7	0.2	255.5	31	25.3	25.4	664
15	EN:MSdm1-04	150	267.4	0.2	267.2	32	25.9	26.0	658
15	EN:MSdm1-04	160	275.4	0.2	275.1	33	26.3	26.6	653
15	EN:MSdm1-04	170	280.6	0.2	280.3	33	26.6	27.1	648
15	EN:MSdm1-04	180	283.8	0.2	283.6	34	26.9	27.5	642
15	EN:MSdm1-04	190	285.6	0.2	285.4	34	27.1	27.9	636
15	EN:MSdm1-04	200	286.5	0.2	286.3	34	27.4	28.2	629
15	EN:MSdm1-04	210	285.6	0.2	285.4	34	27.6	28.6	622
15	EN:MSdm1-04	220	284.6	0.2	284.4	35	27.8	28.8	615
15	EN:MSdm1-04	230	283.5	0.2	283.4	35	28.0	29.1	608
15	EN:MSdm1-04	240	282.5	0.2	282.3	35	28.1	29.3	602
15	EN:MSdm1-04	250	281.4	0.2	281.2	35	28.3	29.6	596
15	EN:MSdm1-04	260	280.3	0.2	280.1	35	28.5	29.8	590
15	EN:MSdm1-04	270	279.1	0.2	279.0	35	28.7	30.0	584
15	EN:MSdm1-04	280	278.0	0.1	277.9	35	28.8	30.1	579
15	EN:MSdm1-04	290	276.9	0.1	276.7	35	29.0	30.3	573
15	EN:MSdm1-04	300	275.7	0.1	275.6	35	29.1	30.4	568
15	EN:MSdm1-04	310	274.7	0.1	274.6	35	29.3	30.6	564
15	EN:MSdm1-04	320	273.8	0.1	273.7	35	29.3	30.7	564
15	EN:MSdm1-04	330	272.9	0.1	272.8	35	29.3	30.8	564
15	EN:MSdm1-04	340	272.0	0.1	271.8	35	29.3	30.9	564
15	EN:MSdm1-04	350	271.0	0.1	270.9	35	29.3	31.0	564

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
16	EN:MSdm1-05	10	-	-	-	0	0.1	1.8	1252
16	EN:MSdm1-05	20	0.2	-	0.2	0	1.7	5.4	959
16	EN:MSdm1-05	30	6.3	0.1	6.2	2	9.1	9.1	427
16	EN:MSdm1-05	40	27.1	0.4	26.8	5	14.8	12.5	347
16	EN:MSdm1-05	50	62.2	0.8	61.3	10	17.5	15.5	513
16	EN:MSdm1-05	60	104.9	1.4	103.5	15	19.2	18.0	550
16	EN:MSdm1-05	70	148.1	2.1	146.0	19	20.3	20.1	629
16	EN:MSdm1-05	80	188.4	2.7	185.7	23	21.4	21.9	673
16	EN:MSdm1-05	90	224.3	3.2	221.2	26	22.4	23.4	692
16	EN:MSdm1-05	100	255.5	3.6	251.9	29	23.3	24.7	693
16	EN:MSdm1-05	110	282.1	3.9	278.1	31	24.2	25.8	684
16	EN:MSdm1-05	120	304.4	4.2	300.3	32	25.1	26.8	670
16	EN:MSdm1-05	130	323.5	4.3	319.2	34	26.0	27.6	654
16	EN:MSdm1-05	140	339.4	4.5	335.0	35	26.8	28.3	638
16	EN:MSdm1-05	150	351.0	4.5	346.5	36	27.5	29.0	623
16	EN:MSdm1-05	160	358.0	4.4	353.6	36	28.0	29.5	610
16	EN:MSdm1-05	170	362.0	4.4	357.6	37	28.4	30.0	599
16	EN:MSdm1-05	180	363.9	4.3	359.7	37	28.8	30.5	589
16	EN:MSdm1-05	190	364.5	4.1	360.4	37	29.1	30.8	579
16	EN:MSdm1-05	200	364.1	4.0	360.1	37	29.3	31.2	570
16	EN:MSdm1-05	210	361.8	3.9	357.9	37	29.5	31.5	563
16	EN:MSdm1-05	220	359.5	3.7	355.8	37	29.7	31.8	556
16	EN:MSdm1-05	230	357.2	3.6	353.7	37	29.9	32.1	550
16	EN:MSdm1-05	240	354.9	3.4	351.5	37	30.1	32.3	543
16	EN:MSdm1-05	250	352.6	3.3	349.3	37	30.3	32.5	537
16	EN:MSdm1-05	260	350.4	3.2	347.2	37	30.4	32.7	532
16	EN:MSdm1-05	270	348.1	3.1	345.0	37	30.6	32.9	526
16	EN:MSdm1-05	280	345.9	3.0	342.9	37	30.7	33.1	521
16	EN:MSdm1-05	290	343.7	2.9	340.8	37	30.9	33.2	515
16	EN:MSdm1-05	300	341.5	2.8	338.7	37	31.0	33.4	511
16	EN:MSdm1-05	310	339.6	2.7	336.9	37	31.2	33.5	507
16	EN:MSdm1-05	320	338.1	2.6	335.5	37	31.2	33.6	507
16	EN:MSdm1-05	330	336.7	2.5	334.2	37	31.2	33.7	507
16	EN:MSdm1-05	340	335.4	2.5	332.9	37	31.2	33.8	507
16	EN:MSdm1-05	350	334.0	2.4	331.6	37	31.2	33.9	507

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
17	EN:MSdm1-Oth	10	-	-	-	1	1.3	1.5	191
17	EN:MSdm1-Oth	20	0.1	-	0.1	1	1.5	4.7	177
17	EN:MSdm1-Oth	30	3.1	-	3.1	2	6.9	8.1	117
17	EN:MSdm1-Oth	40	15.8	-	15.8	4	14.5	11.2	155
17	EN:MSdm1-Oth	50	38.4	0.1	38.3	8	18.2	14.0	272
17	EN:MSdm1-Oth	60	67.9	0.2	67.6	12	20.2	16.4	379
17	EN:MSdm1-Oth	70	99.9	0.3	99.5	16	21.3	18.5	461
17	EN:MSdm1-Oth	80	132.2	0.5	131.7	19	22.2	20.3	519
17	EN:MSdm1-Oth	90	162.8	0.6	162.2	22	23.1	21.8	556
17	EN:MSdm1-Oth	100	190.7	0.7	190.1	25	24.0	23.2	577
17	EN:MSdm1-Oth	110	215.8	0.8	215.1	27	24.9	24.4	587
17	EN:MSdm1-Oth	120	237.8	0.8	237.0	29	25.7	25.4	588
17	EN:MSdm1-Oth	130	257.0	0.9	256.2	31	26.5	26.3	586
17	EN:MSdm1-Oth	140	273.6	0.9	272.7	32	27.2	27.1	581
17	EN:MSdm1-Oth	150	286.3	0.9	285.3	33	27.8	27.8	575
17	EN:MSdm1-Oth	160	294.8	0.9	293.9	34	28.3	28.4	570
17	EN:MSdm1-Oth	170	300.3	0.9	299.4	35	28.7	29.0	565
17	EN:MSdm1-Oth	180	303.7	0.9	302.8	35	29.0	29.5	559
17	EN:MSdm1-Oth	190	305.6	0.9	304.8	35	29.3	29.9	553
17	EN:MSdm1-Oth	200	306.6	0.8	305.8	36	29.5	30.3	547
17	EN:MSdm1-Oth	210	305.5	0.8	304.7	36	29.7	30.7	542
17	EN:MSdm1-Oth	220	304.3	0.8	303.6	36	29.9	31.0	536
17	EN:MSdm1-Oth	230	303.2	0.7	302.5	36	30.1	31.3	531
17	EN:MSdm1-Oth	240	302.1	0.7	301.4	36	30.3	31.6	525
17	EN:MSdm1-Oth	250	301.0	0.7	300.3	36	30.5	31.8	520
17	EN:MSdm1-Oth	260	299.8	0.7	299.2	36	30.7	32.1	516
17	EN:MSdm1-Oth	270	298.7	0.6	298.1	36	30.9	32.3	511
17	EN:MSdm1-Oth	280	297.6	0.6	297.0	36	31.0	32.5	506
17	EN:MSdm1-Oth	290	296.5	0.6	295.9	36	31.2	32.7	502
17	EN:MSdm1-Oth	300	295.4	0.6	294.8	36	31.3	32.8	498
17	EN:MSdm1-Oth	310	294.4	0.5	293.9	36	31.5	33.0	494
17	EN:MSdm1-Oth	320	293.6	0.5	293.0	36	31.5	33.1	494
17	EN:MSdm1-Oth	330	292.7	0.5	292.2	36	31.5	33.3	494
17	EN:MSdm1-Oth	340	291.9	0.5	291.4	36	31.5	33.4	494
17	EN:MSdm1-Oth	350	291.1	0.5	290.6	36	31.5	33.5	494

Yield Tables for Existing Natural Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
18	EN:Msdm1a-All	10	-	-	-	1	0.5	1.7	19
18	EN:Msdm1a-All	20	-	-	-	1	0.6	5.2	20
18	EN:Msdm1a-All	30	3.5	-	3.5	2	8.1	8.7	69
18	EN:Msdm1a-All	40	19.7	-	19.7	5	16.5	11.9	205
18	EN:Msdm1a-All	50	46.4	-	46.4	9	18.2	14.7	338
18	EN:Msdm1a-All	60	81.1	-	81.1	13	19.7	17.1	469
18	EN:Msdm1a-All	70	118.6	-	118.6	18	20.5	19.2	568
18	EN:Msdm1a-All	80	155.0	-	155.0	21	21.3	20.9	634
18	EN:Msdm1a-All	90	188.9	-	188.9	24	22.1	22.4	674
18	EN:Msdm1a-All	100	219.6	-	219.6	27	22.9	23.8	696
18	EN:Msdm1a-All	110	246.7	-	246.7	29	23.7	24.9	703
18	EN:Msdm1a-All	120	270.4	-	270.4	31	24.4	25.9	703
18	EN:Msdm1a-All	130	291.0	-	291.0	33	25.1	26.7	699
18	EN:Msdm1a-All	140	308.7	-	308.7	34	25.8	27.5	692
18	EN:Msdm1a-All	150	322.1	-	322.1	35	26.3	28.2	684
18	EN:Msdm1a-All	160	331.3	-	331.3	36	26.8	28.7	678
18	EN:Msdm1a-All	170	337.4	-	337.4	37	27.1	29.3	671
18	EN:Msdm1a-All	180	341.1	-	341.1	37	27.4	29.7	665
18	EN:Msdm1a-All	190	343.3	-	343.3	37	27.7	30.2	658
18	EN:Msdm1a-All	200	344.1	-	344.1	38	27.9	30.6	651
18	EN:Msdm1a-All	210	343.1	-	343.1	38	28.1	30.9	644
18	EN:Msdm1a-All	220	342.0	-	342.0	38	28.3	31.2	637
18	EN:Msdm1a-All	230	340.9	-	340.9	38	28.4	31.5	630
18	EN:Msdm1a-All	240	339.7	-	339.7	38	28.6	31.7	623
18	EN:Msdm1a-All	250	338.5	-	338.5	38	28.8	32.0	617
18	EN:Msdm1a-All	260	337.2	-	337.2	38	29.0	32.2	610
18	EN:Msdm1a-All	270	335.9	-	335.9	38	29.1	32.4	604
18	EN:Msdm1a-All	280	334.5	-	334.5	38	29.3	32.6	597
18	EN:Msdm1a-All	290	333.2	-	333.2	38	29.5	32.7	591
18	EN:Msdm1a-All	300	331.8	-	331.8	38	29.6	32.9	586
18	EN:Msdm1a-All	310	330.7	-	330.7	38	29.8	33.0	581
18	EN:Msdm1a-All	320	329.8	-	329.8	38	29.8	33.2	581
18	EN:Msdm1a-All	330	329.0	-	329.0	38	29.8	33.3	581
18	EN:Msdm1a-All	340	328.1	-	328.1	38	29.8	33.4	581
18	EN:Msdm1a-All	350	327.3	-	327.3	38	29.8	33.5	581

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
101	EM1:ESSFdc1/dcu1-01	10	-	-	-	0	-	0.5	0
101	EM1:ESSFdc1/dcu1-01	20	-	-	-	0	2.2	2.6	0
101	EM1:ESSFdc1/dcu1-01	30	1.4	-	1.4	0	17.9	6.1	27
101	EM1:ESSFdc1/dcu1-01	40	11.7	-	11.7	3	18.3	9.6	135
101	EM1:ESSFdc1/dcu1-01	50	41.6	-	41.6	7	19.2	12.9	360
101	EM1:ESSFdc1/dcu1-01	60	98.2	-	98.2	14	20.3	15.9	652
101	EM1:ESSFdc1/dcu1-01	70	167.1	-	167.1	21	21.5	18.4	851
101	EM1:ESSFdc1/dcu1-01	80	232.6	-	232.6	27	22.6	20.6	946
101	EM1:ESSFdc1/dcu1-01	90	288.1	-	288.1	32	23.7	22.4	972
101	EM1:ESSFdc1/dcu1-01	100	331.9	-	331.9	36	24.6	23.9	960
101	EM1:ESSFdc1/dcu1-01	110	366.6	-	366.6	39	25.4	25.2	934
101	EM1:ESSFdc1/dcu1-01	120	394.0	-	394.0	41	26.1	26.3	906
101	EM1:ESSFdc1/dcu1-01	130	415.4	-	415.4	43	26.7	27.3	878
101	EM1:ESSFdc1/dcu1-01	140	432.8	-	432.8	44	27.3	28.1	853
101	EM1:ESSFdc1/dcu1-01	150	447.6	-	447.6	44	27.7	28.9	831
101	EM1:ESSFdc1/dcu1-01	160	459.5	-	459.5	45	28.1	29.5	810
101	EM1:ESSFdc1/dcu1-01	170	469.3	-	469.3	46	28.6	30.1	791
101	EM1:ESSFdc1/dcu1-01	180	477.9	-	477.9	47	28.8	30.6	776
101	EM1:ESSFdc1/dcu1-01	190	484.7	-	484.7	46	29.1	31.0	762
101	EM1:ESSFdc1/dcu1-01	200	490.6	-	490.6	47	29.3	31.4	749
101	EM1:ESSFdc1/dcu1-01	210	495.6	-	495.6	47	29.6	31.8	737
101	EM1:ESSFdc1/dcu1-01	220	499.9	-	499.9	47	29.8	32.0	727
101	EM1:ESSFdc1/dcu1-01	230	503.1	-	503.1	47	30.0	32.4	717
101	EM1:ESSFdc1/dcu1-01	240	505.4	-	505.4	47	30.1	32.6	708
101	EM1:ESSFdc1/dcu1-01	250	507.2	-	507.2	47	30.3	32.9	699
101	EM1:ESSFdc1/dcu1-01	260	508.8	-	508.8	47	30.4	33.1	691
101	EM1:ESSFdc1/dcu1-01	270	509.9	-	509.9	47	30.6	33.3	683
101	EM1:ESSFdc1/dcu1-01	280	510.7	-	510.7	47	30.6	33.4	677
101	EM1:ESSFdc1/dcu1-01	290	511.1	-	511.1	47	30.7	33.6	670
101	EM1:ESSFdc1/dcu1-01	300	511.5	-	511.5	47	30.8	33.8	663
101	EM1:ESSFdc1/dcu1-01	310	511.5	-	511.5	47	30.8	33.8	661
101	EM1:ESSFdc1/dcu1-01	320	511.5	-	511.5	47	30.8	33.8	661
101	EM1:ESSFdc1/dcu1-01	330	511.5	-	511.5	47	30.8	33.8	661
101	EM1:ESSFdc1/dcu1-01	340	511.5	-	511.5	47	30.8	33.8	661
101	EM1:ESSFdc1/dcu1-01	350	511.5	-	511.5	47	30.8	33.8	661

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
102	EM1:ESSFdc1/dcu1-03	10	-	-	-	0	-	0.5	0
102	EM1:ESSFdc1/dcu1-03	20	-	-	-	0	10.4	2.9	0
102	EM1:ESSFdc1/dcu1-03	30	0.1	-	0.1	0	16.8	6.3	3
102	EM1:ESSFdc1/dcu1-03	40	7.1	-	7.1	2	16.7	9.6	124
102	EM1:ESSFdc1/dcu1-03	50	42.8	-	42.8	10	17.0	12.6	552
102	EM1:ESSFdc1/dcu1-03	60	102.8	-	102.8	20	17.5	15.2	1012
102	EM1:ESSFdc1/dcu1-03	70	170.0	-	170.0	27	18.2	17.4	1273
102	EM1:ESSFdc1/dcu1-03	80	229.9	-	229.9	31	19.0	19.3	1355
102	EM1:ESSFdc1/dcu1-03	90	278.8	-	278.8	34	19.9	20.9	1343
102	EM1:ESSFdc1/dcu1-03	100	317.0	-	317.0	36	20.6	22.2	1290
102	EM1:ESSFdc1/dcu1-03	110	347.0	-	347.0	38	21.3	23.3	1235
102	EM1:ESSFdc1/dcu1-03	120	370.4	-	370.4	39	22.0	24.2	1181
102	EM1:ESSFdc1/dcu1-03	130	388.9	-	388.9	39	22.5	25.0	1134
102	EM1:ESSFdc1/dcu1-03	140	403.9	-	403.9	40	23.0	25.7	1095
102	EM1:ESSFdc1/dcu1-03	150	415.2	-	415.2	41	23.4	26.3	1060
102	EM1:ESSFdc1/dcu1-03	160	424.9	-	424.9	41	23.8	26.9	1030
102	EM1:ESSFdc1/dcu1-03	170	431.7	-	431.7	41	24.0	27.3	1002
102	EM1:ESSFdc1/dcu1-03	180	437.4	-	437.4	42	24.3	27.8	977
102	EM1:ESSFdc1/dcu1-03	190	442.4	-	442.4	42	24.6	28.1	956
102	EM1:ESSFdc1/dcu1-03	200	446.0	-	446.0	42	24.8	28.5	937
102	EM1:ESSFdc1/dcu1-03	210	448.4	-	448.4	41	25.0	28.8	919
102	EM1:ESSFdc1/dcu1-03	220	450.5	-	450.5	41	25.1	29.0	902
102	EM1:ESSFdc1/dcu1-03	230	452.4	-	452.4	42	25.3	29.3	888
102	EM1:ESSFdc1/dcu1-03	240	453.9	-	453.9	42	25.4	29.5	875
102	EM1:ESSFdc1/dcu1-03	250	454.5	-	454.5	42	25.6	29.7	862
102	EM1:ESSFdc1/dcu1-03	260	454.1	-	454.1	41	25.7	29.9	850
102	EM1:ESSFdc1/dcu1-03	270	453.8	-	453.8	41	25.8	30.0	838
102	EM1:ESSFdc1/dcu1-03	280	453.3	-	453.3	41	25.9	30.2	828
102	EM1:ESSFdc1/dcu1-03	290	452.6	-	452.6	41	26.0	30.3	818
102	EM1:ESSFdc1/dcu1-03	300	452.0	-	452.0	40	26.1	30.5	808
102	EM1:ESSFdc1/dcu1-03	310	451.9	-	451.9	40	26.1	30.5	806
102	EM1:ESSFdc1/dcu1-03	320	451.9	-	451.9	40	26.1	30.5	806
102	EM1:ESSFdc1/dcu1-03	330	451.9	-	451.9	40	26.1	30.5	806
102	EM1:ESSFdc1/dcu1-03	340	451.9	-	451.9	40	26.1	30.5	806
102	EM1:ESSFdc1/dcu1-03	350	451.9	-	451.9	40	26.1	30.5	806

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
103	EM1:ESSFdc1/dcu1-04	10	-	-	-	0	-	0.5	0
103	EM1:ESSFdc1/dcu1-04	20	-	-	-	0	2.2	2.6	0
103	EM1:ESSFdc1/dcu1-04	30	1.5	-	1.5	0	17.9	6.1	28
103	EM1:ESSFdc1/dcu1-04	40	11.9	-	11.9	3	18.4	9.7	133
103	EM1:ESSFdc1/dcu1-04	50	44.1	-	44.1	8	19.4	13.0	371
103	EM1:ESSFdc1/dcu1-04	60	103.4	-	103.4	14	20.6	16.0	662
103	EM1:ESSFdc1/dcu1-04	70	174.5	-	174.5	22	21.8	18.6	853
103	EM1:ESSFdc1/dcu1-04	80	240.6	-	240.6	28	22.9	20.7	939
103	EM1:ESSFdc1/dcu1-04	90	296.4	-	296.4	32	24.0	22.5	960
103	EM1:ESSFdc1/dcu1-04	100	340.1	-	340.1	37	25.0	24.0	943
103	EM1:ESSFdc1/dcu1-04	110	375.0	-	375.0	39	25.8	25.3	917
103	EM1:ESSFdc1/dcu1-04	120	402.3	-	402.3	42	26.5	26.5	888
103	EM1:ESSFdc1/dcu1-04	130	423.7	-	423.7	43	27.2	27.4	861
103	EM1:ESSFdc1/dcu1-04	140	441.8	-	441.8	44	27.7	28.2	835
103	EM1:ESSFdc1/dcu1-04	150	456.9	-	456.9	45	28.2	28.9	813
103	EM1:ESSFdc1/dcu1-04	160	469.2	-	469.2	46	28.6	29.5	793
103	EM1:ESSFdc1/dcu1-04	170	479.7	-	479.7	46	29.0	30.1	775
103	EM1:ESSFdc1/dcu1-04	180	488.4	-	488.4	47	29.3	30.6	760
103	EM1:ESSFdc1/dcu1-04	190	495.8	-	495.8	47	29.6	31.0	746
103	EM1:ESSFdc1/dcu1-04	200	502.2	-	502.2	48	29.8	31.4	734
103	EM1:ESSFdc1/dcu1-04	210	507.5	-	507.5	48	30.1	31.8	723
103	EM1:ESSFdc1/dcu1-04	220	511.7	-	511.7	48	30.3	32.2	712
103	EM1:ESSFdc1/dcu1-04	230	515.2	-	515.2	48	30.5	32.4	703
103	EM1:ESSFdc1/dcu1-04	240	517.9	-	517.9	48	30.6	32.6	694
103	EM1:ESSFdc1/dcu1-04	250	520.2	-	520.2	48	30.8	32.9	686
103	EM1:ESSFdc1/dcu1-04	260	522.1	-	522.1	48	30.9	33.1	678
103	EM1:ESSFdc1/dcu1-04	270	523.5	-	523.5	48	31.0	33.3	670
103	EM1:ESSFdc1/dcu1-04	280	524.3	-	524.3	48	31.1	33.5	664
103	EM1:ESSFdc1/dcu1-04	290	524.0	-	524.0	48	31.3	33.7	656
103	EM1:ESSFdc1/dcu1-04	300	523.5	-	523.5	47	31.4	33.8	648
103	EM1:ESSFdc1/dcu1-04	310	523.4	-	523.4	47	31.4	33.8	646
103	EM1:ESSFdc1/dcu1-04	320	523.4	-	523.4	47	31.4	33.8	646
103	EM1:ESSFdc1/dcu1-04	330	523.4	-	523.4	47	31.4	33.8	646
103	EM1:ESSFdc1/dcu1-04	340	523.4	-	523.4	47	31.4	33.8	646
103	EM1:ESSFdc1/dcu1-04	350	523.4	-	523.4	47	31.4	33.8	646

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
104	EM1:ESSFdc1/dcu1-Oth	10	-	-	-	0	-	1.0	0
104	EM1:ESSFdc1/dcu1-Oth	20	-	-	-	0	-	3.7	0
104	EM1:ESSFdc1/dcu1-Oth	30	2.2	-	2.2	1	9.0	7.3	50
104	EM1:ESSFdc1/dcu1-Oth	40	20.4	-	20.4	5	18.1	10.6	224
104	EM1:ESSFdc1/dcu1-Oth	50	49.0	-	49.0	9	19.7	13.6	335
104	EM1:ESSFdc1/dcu1-Oth	60	92.5	-	92.5	14	21.6	16.3	484
104	EM1:ESSFdc1/dcu1-Oth	70	145.6	-	145.6	19	23.1	18.5	618
104	EM1:ESSFdc1/dcu1-Oth	80	199.0	-	199.0	24	24.4	20.4	704
104	EM1:ESSFdc1/dcu1-Oth	90	245.6	-	245.6	29	25.5	22.0	748
104	EM1:ESSFdc1/dcu1-Oth	100	284.4	-	284.4	32	26.4	23.3	762
104	EM1:ESSFdc1/dcu1-Oth	110	315.4	-	315.4	35	27.2	24.4	758
104	EM1:ESSFdc1/dcu1-Oth	120	340.0	-	340.0	37	27.8	25.4	746
104	EM1:ESSFdc1/dcu1-Oth	130	360.2	-	360.2	39	28.4	26.2	732
104	EM1:ESSFdc1/dcu1-Oth	140	376.3	-	376.3	40	28.9	27.0	718
104	EM1:ESSFdc1/dcu1-Oth	150	389.5	-	389.5	41	29.4	27.6	704
104	EM1:ESSFdc1/dcu1-Oth	160	400.0	-	400.0	42	29.7	28.1	690
104	EM1:ESSFdc1/dcu1-Oth	170	408.9	-	408.9	42	30.0	28.6	678
104	EM1:ESSFdc1/dcu1-Oth	180	416.3	-	416.3	43	30.3	29.0	668
104	EM1:ESSFdc1/dcu1-Oth	190	422.4	-	422.4	43	30.5	29.4	657
104	EM1:ESSFdc1/dcu1-Oth	200	427.6	-	427.6	43	30.7	29.7	649
104	EM1:ESSFdc1/dcu1-Oth	210	432.1	-	432.1	43	30.9	30.0	641
104	EM1:ESSFdc1/dcu1-Oth	220	435.8	-	435.8	44	31.1	30.3	634
104	EM1:ESSFdc1/dcu1-Oth	230	438.2	-	438.2	44	31.3	30.6	626
104	EM1:ESSFdc1/dcu1-Oth	240	440.1	-	440.1	44	31.4	30.8	619
104	EM1:ESSFdc1/dcu1-Oth	250	441.9	-	441.9	44	31.5	31.0	613
104	EM1:ESSFdc1/dcu1-Oth	260	443.5	-	443.5	44	31.6	31.2	607
104	EM1:ESSFdc1/dcu1-Oth	270	444.5	-	444.5	44	31.8	31.4	601
104	EM1:ESSFdc1/dcu1-Oth	280	445.4	-	445.4	44	31.8	31.6	596
104	EM1:ESSFdc1/dcu1-Oth	290	446.0	-	446.0	44	32.0	31.6	590
104	EM1:ESSFdc1/dcu1-Oth	300	445.2	-	445.2	44	32.0	31.8	585
104	EM1:ESSFdc1/dcu1-Oth	310	445.2	-	445.2	44	32.0	31.8	584
104	EM1:ESSFdc1/dcu1-Oth	320	445.2	-	445.2	44	32.0	31.8	584
104	EM1:ESSFdc1/dcu1-Oth	330	445.2	-	445.2	44	32.0	31.8	584
104	EM1:ESSFdc1/dcu1-Oth	340	445.2	-	445.2	44	32.0	31.8	584
104	EM1:ESSFdc1/dcu1-Oth	350	445.2	-	445.2	44	32.0	31.8	584

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
105	EM1:ICHmk1/mw2-01	10	-	-	-	0	-	0.2	0
105	EM1:ICHmk1/mw2-01	20	-	-	-	0	4.4	4.0	0
105	EM1:ICHmk1/mw2-01	30	1.9	-	1.9	1	19.8	8.3	37
105	EM1:ICHmk1/mw2-01	40	25.5	-	25.5	4	19.9	12.4	239
105	EM1:ICHmk1/mw2-01	50	79.9	-	79.9	10	21.1	16.1	465
105	EM1:ICHmk1/mw2-01	60	143.4	-	143.4	17	22.6	19.2	600
105	EM1:ICHmk1/mw2-01	70	204.0	-	204.0	24	24.0	21.9	663
105	EM1:ICHmk1/mw2-01	80	258.0	-	258.0	28	25.3	24.2	689
105	EM1:ICHmk1/mw2-01	90	305.7	-	305.7	33	26.4	26.2	697
105	EM1:ICHmk1/mw2-01	100	347.6	-	347.6	37	27.4	27.8	700
105	EM1:ICHmk1/mw2-01	110	384.5	-	384.5	39	28.3	29.3	694
105	EM1:ICHmk1/mw2-01	120	417.6	-	417.6	42	29.0	30.5	688
105	EM1:ICHmk1/mw2-01	130	447.9	-	447.9	44	29.7	31.6	682
105	EM1:ICHmk1/mw2-01	140	474.7	-	474.7	46	30.3	32.6	674
105	EM1:ICHmk1/mw2-01	150	498.1	-	498.1	47	30.9	33.5	664
105	EM1:ICHmk1/mw2-01	160	519.5	-	519.5	48	31.4	34.3	655
105	EM1:ICHmk1/mw2-01	170	537.9	-	537.9	49	31.9	35.0	645
105	EM1:ICHmk1/mw2-01	180	554.2	-	554.2	50	32.3	35.6	634
105	EM1:ICHmk1/mw2-01	190	568.3	-	568.3	50	32.7	36.1	623
105	EM1:ICHmk1/mw2-01	200	580.6	-	580.6	51	33.1	36.6	612
105	EM1:ICHmk1/mw2-01	210	590.8	-	590.8	51	33.4	37.1	601
105	EM1:ICHmk1/mw2-01	220	599.8	-	599.8	52	33.8	37.5	591
105	EM1:ICHmk1/mw2-01	230	608.2	-	608.2	52	34.1	37.9	582
105	EM1:ICHmk1/mw2-01	240	615.9	-	615.9	52	34.4	38.2	574
105	EM1:ICHmk1/mw2-01	250	621.8	-	621.8	52	34.7	38.5	565
105	EM1:ICHmk1/mw2-01	260	626.6	-	626.6	52	34.9	38.8	558
105	EM1:ICHmk1/mw2-01	270	630.1	-	630.1	52	35.1	39.1	549
105	EM1:ICHmk1/mw2-01	280	632.9	-	632.9	52	35.3	39.4	541
105	EM1:ICHmk1/mw2-01	290	635.5	-	635.5	52	35.5	39.6	534
105	EM1:ICHmk1/mw2-01	300	637.6	-	637.6	52	35.7	39.8	526
105	EM1:ICHmk1/mw2-01	310	638.2	-	638.2	52	35.7	39.9	524
105	EM1:ICHmk1/mw2-01	320	638.2	-	638.2	52	35.7	39.9	524
105	EM1:ICHmk1/mw2-01	330	638.2	-	638.2	52	35.7	39.9	524
105	EM1:ICHmk1/mw2-01	340	638.2	-	638.2	52	35.7	39.9	524
105	EM1:ICHmk1/mw2-01	350	638.2	-	638.2	52	35.7	39.9	524

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
106	EM1:ICHmk1/mw2-03	10	-	-	-	0	-	0.4	0
106	EM1:ICHmk1/mw2-03	20	-	-	-	0	-	3.0	0
106	EM1:ICHmk1/mw2-03	30	0.9	-	0.9	0	18.4	6.9	17
106	EM1:ICHmk1/mw2-03	40	18.6	-	18.6	3	18.7	11.0	216
106	EM1:ICHmk1/mw2-03	50	76.5	-	76.5	11	19.6	14.7	587
106	EM1:ICHmk1/mw2-03	60	157.3	-	157.3	19	20.9	18.0	841
106	EM1:ICHmk1/mw2-03	70	235.0	-	235.0	27	22.4	20.8	940
106	EM1:ICHmk1/mw2-03	80	297.7	-	297.7	33	23.7	23.0	952
106	EM1:ICHmk1/mw2-03	90	345.9	-	345.9	38	24.8	24.9	927
106	EM1:ICHmk1/mw2-03	100	383.9	-	383.9	41	25.8	26.5	896
106	EM1:ICHmk1/mw2-03	110	413.2	-	413.2	43	26.6	27.9	863
106	EM1:ICHmk1/mw2-03	120	436.0	-	436.0	44	27.4	29.0	833
106	EM1:ICHmk1/mw2-03	130	454.6	-	454.6	46	28.0	30.0	808
106	EM1:ICHmk1/mw2-03	140	470.1	-	470.1	47	28.5	30.9	785
106	EM1:ICHmk1/mw2-03	150	483.0	-	483.0	47	28.9	31.6	766
106	EM1:ICHmk1/mw2-03	160	494.3	-	494.3	48	29.4	32.3	751
106	EM1:ICHmk1/mw2-03	170	502.6	-	502.6	48	29.7	32.9	735
106	EM1:ICHmk1/mw2-03	180	509.9	-	509.9	49	30.0	33.4	721
106	EM1:ICHmk1/mw2-03	190	516.3	-	516.3	49	30.2	33.8	709
106	EM1:ICHmk1/mw2-03	200	521.7	-	521.7	49	30.4	34.2	698
106	EM1:ICHmk1/mw2-03	210	525.5	-	525.5	49	30.6	34.6	687
106	EM1:ICHmk1/mw2-03	220	528.8	-	528.8	49	30.9	34.9	677
106	EM1:ICHmk1/mw2-03	230	531.6	-	531.6	49	31.1	35.2	668
106	EM1:ICHmk1/mw2-03	240	533.6	-	533.6	49	31.2	35.4	659
106	EM1:ICHmk1/mw2-03	250	535.2	-	535.2	49	31.4	35.7	651
106	EM1:ICHmk1/mw2-03	260	535.9	-	535.9	48	31.5	35.9	642
106	EM1:ICHmk1/mw2-03	270	536.2	-	536.2	48	31.6	36.1	634
106	EM1:ICHmk1/mw2-03	280	536.4	-	536.4	48	31.8	36.3	628
106	EM1:ICHmk1/mw2-03	290	536.1	-	536.1	48	31.9	36.5	621
106	EM1:ICHmk1/mw2-03	300	535.7	-	535.7	48	32.0	36.6	613
106	EM1:ICHmk1/mw2-03	310	535.5	-	535.5	48	32.0	36.7	611
106	EM1:ICHmk1/mw2-03	320	535.5	-	535.5	48	32.0	36.7	611
106	EM1:ICHmk1/mw2-03	330	535.5	-	535.5	48	32.0	36.7	611
106	EM1:ICHmk1/mw2-03	340	535.5	-	535.5	48	32.0	36.7	611
106	EM1:ICHmk1/mw2-03	350	535.5	-	535.5	48	32.0	36.7	611

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
107	EM1:ICHmk1/mw2-04	10	-	-	-	0	-	0.4	0
107	EM1:ICHmk1/mw2-04	20	-	-	-	0	-	2.9	0
107	EM1:ICHmk1/mw2-04	30	1.0	-	1.0	0	18.0	7.0	21
107	EM1:ICHmk1/mw2-04	40	21.8	-	21.8	4	18.5	11.3	256
107	EM1:ICHmk1/mw2-04	50	88.3	-	88.3	13	19.4	15.2	687
107	EM1:ICHmk1/mw2-04	60	177.9	-	177.9	22	20.7	18.5	971
107	EM1:ICHmk1/mw2-04	70	262.2	-	262.2	29	22.0	21.3	1065
107	EM1:ICHmk1/mw2-04	80	327.4	-	327.4	35	23.3	23.6	1054
107	EM1:ICHmk1/mw2-04	90	375.4	-	375.4	39	24.5	25.5	1009
107	EM1:ICHmk1/mw2-04	100	411.0	-	411.0	42	25.5	27.1	959
107	EM1:ICHmk1/mw2-04	110	436.9	-	436.9	44	26.4	28.5	912
107	EM1:ICHmk1/mw2-04	120	456.9	-	456.9	46	27.1	29.6	872
107	EM1:ICHmk1/mw2-04	130	473.2	-	473.2	46	27.7	30.6	840
107	EM1:ICHmk1/mw2-04	140	486.5	-	486.5	47	28.1	31.4	816
107	EM1:ICHmk1/mw2-04	150	497.7	-	497.7	47	28.5	32.1	795
107	EM1:ICHmk1/mw2-04	160	505.6	-	505.6	48	28.9	32.7	775
107	EM1:ICHmk1/mw2-04	170	512.2	-	512.2	48	29.2	33.2	758
107	EM1:ICHmk1/mw2-04	180	517.6	-	517.6	48	29.5	33.7	743
107	EM1:ICHmk1/mw2-04	190	521.4	-	521.4	49	29.8	34.1	730
107	EM1:ICHmk1/mw2-04	200	524.2	-	524.2	49	30.0	34.5	716
107	EM1:ICHmk1/mw2-04	210	526.5	-	526.5	49	30.2	34.8	705
107	EM1:ICHmk1/mw2-04	220	528.3	-	528.3	48	30.4	35.1	694
107	EM1:ICHmk1/mw2-04	230	528.9	-	528.9	48	30.5	35.4	685
107	EM1:ICHmk1/mw2-04	240	529.2	-	529.2	48	30.6	35.6	675
107	EM1:ICHmk1/mw2-04	250	529.2	-	529.2	48	30.7	35.8	667
107	EM1:ICHmk1/mw2-04	260	529.3	-	529.3	47	30.8	36.0	659
107	EM1:ICHmk1/mw2-04	270	528.7	-	528.7	47	30.9	36.2	652
107	EM1:ICHmk1/mw2-04	280	528.1	-	528.1	47	31.0	36.4	645
107	EM1:ICHmk1/mw2-04	290	527.3	-	527.3	47	31.1	36.5	638
107	EM1:ICHmk1/mw2-04	300	526.5	-	526.5	47	31.2	36.7	632
107	EM1:ICHmk1/mw2-04	310	526.0	-	526.0	47	31.2	36.7	630
107	EM1:ICHmk1/mw2-04	320	526.0	-	526.0	47	31.2	36.7	630
107	EM1:ICHmk1/mw2-04	330	526.0	-	526.0	47	31.2	36.7	630
107	EM1:ICHmk1/mw2-04	340	526.0	-	526.0	47	31.2	36.7	630
107	EM1:ICHmk1/mw2-04	350	526.0	-	526.0	47	31.2	36.7	630

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
108	EM1:ICHmk1/mw2-Oth	10	-	-	-	0	-	0.4	0
108	EM1:ICHmk1/mw2-Oth	20	-	-	-	0	6.0	3.7	0
108	EM1:ICHmk1/mw2-Oth	30	2.2	-	2.2	1	18.9	8.0	41
108	EM1:ICHmk1/mw2-Oth	40	33.0	-	33.0	5	19.4	12.4	300
108	EM1:ICHmk1/mw2-Oth	50	104.0	-	104.0	14	20.9	16.4	591
108	EM1:ICHmk1/mw2-Oth	60	186.4	-	186.4	23	22.9	19.7	723
108	EM1:ICHmk1/mw2-Oth	70	258.9	-	258.9	31	24.8	22.5	753
108	EM1:ICHmk1/mw2-Oth	80	317.7	-	317.7	37	26.4	24.9	743
108	EM1:ICHmk1/mw2-Oth	90	364.5	-	364.5	40	27.7	26.8	722
108	EM1:ICHmk1/mw2-Oth	100	401.8	-	401.8	42	28.8	28.4	700
108	EM1:ICHmk1/mw2-Oth	110	432.9	-	432.9	45	29.7	29.8	681
108	EM1:ICHmk1/mw2-Oth	120	459.1	-	459.1	47	30.5	31.0	664
108	EM1:ICHmk1/mw2-Oth	130	482.0	-	482.0	48	31.1	32.0	650
108	EM1:ICHmk1/mw2-Oth	140	500.9	-	500.9	49	31.7	32.9	636
108	EM1:ICHmk1/mw2-Oth	150	517.4	-	517.4	49	32.3	33.6	625
108	EM1:ICHmk1/mw2-Oth	160	531.4	-	531.4	50	32.7	34.3	614
108	EM1:ICHmk1/mw2-Oth	170	543.2	-	543.2	51	33.1	34.9	604
108	EM1:ICHmk1/mw2-Oth	180	553.5	-	553.5	51	33.4	35.4	594
108	EM1:ICHmk1/mw2-Oth	190	561.9	-	561.9	51	33.7	35.9	585
108	EM1:ICHmk1/mw2-Oth	200	568.7	-	568.7	52	34.0	36.3	576
108	EM1:ICHmk1/mw2-Oth	210	574.6	-	574.6	52	34.3	36.7	568
108	EM1:ICHmk1/mw2-Oth	220	579.7	-	579.7	52	34.5	37.0	560
108	EM1:ICHmk1/mw2-Oth	230	583.9	-	583.9	52	34.7	37.3	553
108	EM1:ICHmk1/mw2-Oth	240	587.1	-	587.1	51	34.9	37.6	546
108	EM1:ICHmk1/mw2-Oth	250	589.4	-	589.4	51	35.1	37.9	540
108	EM1:ICHmk1/mw2-Oth	260	590.9	-	590.9	51	35.2	38.1	533
108	EM1:ICHmk1/mw2-Oth	270	591.9	-	591.9	51	35.4	38.3	526
108	EM1:ICHmk1/mw2-Oth	280	592.9	-	592.9	51	35.5	38.5	521
108	EM1:ICHmk1/mw2-Oth	290	593.6	-	593.6	51	35.6	38.7	515
108	EM1:ICHmk1/mw2-Oth	300	593.0	-	593.0	50	35.7	38.8	510
108	EM1:ICHmk1/mw2-Oth	310	592.8	-	592.8	50	35.8	38.8	508
108	EM1:ICHmk1/mw2-Oth	320	592.8	-	592.8	50	35.8	38.8	508
108	EM1:ICHmk1/mw2-Oth	330	592.8	-	592.8	50	35.8	38.8	508
108	EM1:ICHmk1/mw2-Oth	340	592.8	-	592.8	50	35.8	38.8	508
108	EM1:ICHmk1/mw2-Oth	350	592.8	-	592.8	50	35.8	38.8	508

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
109	EM1:IDFdm1-01	10	-	-	-	0	-	0.7	0
109	EM1:IDFdm1-01	20	-	-	-	0	10.4	4.5	0
109	EM1:IDFdm1-01	30	3.8	-	3.8	2	16.8	8.9	71
109	EM1:IDFdm1-01	40	44.4	-	44.4	9	17.5	12.8	512
109	EM1:IDFdm1-01	50	122.3	-	122.3	19	18.7	16.2	909
109	EM1:IDFdm1-01	60	201.0	-	201.0	26	20.0	19.0	1042
109	EM1:IDFdm1-01	70	265.4	-	265.4	31	21.3	21.3	1047
109	EM1:IDFdm1-01	80	315.6	-	315.6	34	22.6	23.2	1015
109	EM1:IDFdm1-01	90	354.8	-	354.8	37	23.5	24.8	978
109	EM1:IDFdm1-01	100	385.2	-	385.2	39	24.4	26.0	942
109	EM1:IDFdm1-01	110	409.6	-	409.6	41	25.1	27.2	908
109	EM1:IDFdm1-01	120	428.5	-	428.5	41	25.8	28.1	877
109	EM1:IDFdm1-01	130	444.4	-	444.4	43	26.3	29.0	850
109	EM1:IDFdm1-01	140	456.4	-	456.4	43	26.7	29.6	825
109	EM1:IDFdm1-01	150	464.0	-	464.0	43	27.1	29.9	803
109	EM1:IDFdm1-01	160	472.5	-	472.5	44	27.5	30.3	785
109	EM1:IDFdm1-01	170	480.4	-	480.4	44	27.8	30.8	769
109	EM1:IDFdm1-01	180	487.0	-	487.0	44	28.1	31.2	754
109	EM1:IDFdm1-01	190	492.9	-	492.9	44	28.4	31.6	741
109	EM1:IDFdm1-01	200	497.9	-	497.9	44	28.6	31.9	728
109	EM1:IDFdm1-01	210	501.1	-	501.1	44	28.8	32.3	715
109	EM1:IDFdm1-01	220	503.6	-	503.6	44	29.0	32.5	702
109	EM1:IDFdm1-01	230	505.6	-	505.6	44	29.2	32.8	690
109	EM1:IDFdm1-01	240	507.2	-	507.2	44	29.4	33.0	679
109	EM1:IDFdm1-01	250	508.7	-	508.7	44	29.6	33.3	668
109	EM1:IDFdm1-01	260	509.8	-	509.8	44	29.7	33.5	658
109	EM1:IDFdm1-01	270	509.4	-	509.4	44	29.9	33.6	647
109	EM1:IDFdm1-01	280	509.0	-	509.0	43	30.0	33.8	638
109	EM1:IDFdm1-01	290	508.6	-	508.6	43	30.1	34.0	630
109	EM1:IDFdm1-01	300	508.3	-	508.3	43	30.2	34.1	623
109	EM1:IDFdm1-01	310	508.2	-	508.2	43	30.3	34.2	621
109	EM1:IDFdm1-01	320	508.2	-	508.2	43	30.3	34.2	621
109	EM1:IDFdm1-01	330	508.2	-	508.2	43	30.3	34.2	621
109	EM1:IDFdm1-01	340	508.2	-	508.2	43	30.3	34.2	621
109	EM1:IDFdm1-01	350	508.2	-	508.2	43	30.3	34.2	621

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
110	EM1:IDFdm1-04	10	-	-	-	0	-	0.6	0
110	EM1:IDFdm1-04	20	-	-	-	0	2.0	3.9	0
110	EM1:IDFdm1-04	30	1.3	-	1.3	0	16.8	7.9	27
110	EM1:IDFdm1-04	40	25.1	-	25.1	7	17.1	11.5	352
110	EM1:IDFdm1-04	50	89.7	-	89.7	16	18.1	14.7	795
110	EM1:IDFdm1-04	60	164.3	-	164.3	24	19.1	17.3	1023
110	EM1:IDFdm1-04	70	230.6	-	230.6	29	20.4	19.5	1074
110	EM1:IDFdm1-04	80	284.2	-	284.2	33	21.5	21.4	1059
110	EM1:IDFdm1-04	90	327.0	-	327.0	36	22.5	22.9	1028
110	EM1:IDFdm1-04	100	360.6	-	360.6	38	23.3	24.2	994
110	EM1:IDFdm1-04	110	387.8	-	387.8	39	24.0	25.3	962
110	EM1:IDFdm1-04	120	409.9	-	409.9	41	24.7	26.2	933
110	EM1:IDFdm1-04	130	428.7	-	428.7	42	25.2	27.0	908
110	EM1:IDFdm1-04	140	443.7	-	443.7	43	25.7	27.7	883
110	EM1:IDFdm1-04	150	456.1	-	456.1	43	26.2	28.3	861
110	EM1:IDFdm1-04	160	466.7	-	466.7	44	26.5	28.8	841
110	EM1:IDFdm1-04	170	475.6	-	475.6	44	26.9	29.3	824
110	EM1:IDFdm1-04	180	483.7	-	483.7	45	27.2	29.7	809
110	EM1:IDFdm1-04	190	490.4	-	490.4	45	27.5	30.1	795
110	EM1:IDFdm1-04	200	495.9	-	495.9	45	27.7	30.4	783
110	EM1:IDFdm1-04	210	500.7	-	500.7	45	27.9	30.7	771
110	EM1:IDFdm1-04	220	505.0	-	505.0	45	28.1	31.0	761
110	EM1:IDFdm1-04	230	508.7	-	508.7	45	28.3	31.3	752
110	EM1:IDFdm1-04	240	510.6	-	510.6	45	28.4	31.5	741
110	EM1:IDFdm1-04	250	511.8	-	511.8	45	28.6	31.7	731
110	EM1:IDFdm1-04	260	512.5	-	512.5	45	28.7	31.9	720
110	EM1:IDFdm1-04	270	513.0	-	513.0	45	28.9	32.0	711
110	EM1:IDFdm1-04	280	513.4	-	513.4	45	29.0	32.2	702
110	EM1:IDFdm1-04	290	513.8	-	513.8	45	29.1	32.3	694
110	EM1:IDFdm1-04	300	514.0	-	514.0	44	29.2	32.5	686
110	EM1:IDFdm1-04	310	514.0	-	514.0	44	29.2	32.5	684
110	EM1:IDFdm1-04	320	514.0	-	514.0	44	29.2	32.5	684
110	EM1:IDFdm1-04	330	514.0	-	514.0	44	29.2	32.5	684
110	EM1:IDFdm1-04	340	514.0	-	514.0	44	29.2	32.5	684
110	EM1:IDFdm1-04	350	514.0	-	514.0	44	29.2	32.5	684

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
111	EM1:IDFdm1-05	10	-	-	-	0	-	0.8	0
111	EM1:IDFdm1-05	20	-	-	-	0	10.2	4.5	0
111	EM1:IDFdm1-05	30	5.2	-	5.2	2	17.4	9.0	89
111	EM1:IDFdm1-05	40	46.2	-	46.2	9	18.4	13.1	449
111	EM1:IDFdm1-05	50	121.1	-	121.1	18	19.9	16.6	766
111	EM1:IDFdm1-05	60	199.5	-	199.5	26	21.6	19.5	901
111	EM1:IDFdm1-05	70	267.1	-	267.1	31	23.0	22.0	924
111	EM1:IDFdm1-05	80	319.6	-	319.6	36	24.4	24.0	903
111	EM1:IDFdm1-05	90	360.8	-	360.8	39	25.5	25.6	873
111	EM1:IDFdm1-05	100	393.2	-	393.2	41	26.4	27.1	843
111	EM1:IDFdm1-05	110	418.2	-	418.2	43	27.2	28.3	812
111	EM1:IDFdm1-05	120	438.2	-	438.2	44	27.8	29.3	785
111	EM1:IDFdm1-05	130	455.0	-	455.0	45	28.5	30.1	764
111	EM1:IDFdm1-05	140	465.2	-	465.2	46	28.9	30.7	741
111	EM1:IDFdm1-05	150	470.2	-	470.2	46	29.3	30.8	720
111	EM1:IDFdm1-05	160	476.6	-	476.6	46	29.6	31.1	703
111	EM1:IDFdm1-05	170	483.9	-	483.9	46	29.9	31.5	690
111	EM1:IDFdm1-05	180	490.7	-	490.7	46	30.2	32.0	678
111	EM1:IDFdm1-05	190	496.1	-	496.1	46	30.4	32.4	667
111	EM1:IDFdm1-05	200	499.8	-	499.8	46	30.7	32.7	655
111	EM1:IDFdm1-05	210	503.1	-	503.1	46	30.9	33.0	645
111	EM1:IDFdm1-05	220	505.7	-	505.7	46	31.1	33.3	635
111	EM1:IDFdm1-05	230	507.8	-	507.8	46	31.3	33.6	625
111	EM1:IDFdm1-05	240	509.0	-	509.0	46	31.5	33.8	616
111	EM1:IDFdm1-05	250	509.3	-	509.3	46	31.6	34.0	608
111	EM1:IDFdm1-05	260	509.5	-	509.5	46	31.7	34.2	600
111	EM1:IDFdm1-05	270	509.6	-	509.6	45	31.8	34.4	593
111	EM1:IDFdm1-05	280	509.7	-	509.7	45	31.9	34.5	586
111	EM1:IDFdm1-05	290	509.6	-	509.6	45	32.0	34.7	580
111	EM1:IDFdm1-05	300	509.4	-	509.4	45	32.1	34.8	574
111	EM1:IDFdm1-05	310	509.4	-	509.4	45	32.2	34.9	572
111	EM1:IDFdm1-05	320	509.4	-	509.4	45	32.2	34.9	572
111	EM1:IDFdm1-05	330	509.4	-	509.4	45	32.2	34.9	572
111	EM1:IDFdm1-05	340	509.4	-	509.4	45	32.2	34.9	572
111	EM1:IDFdm1-05	350	509.4	-	509.4	45	32.2	34.9	572

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
112	EM1:IDFdm1-Oth	10	-	-	-	0	-	0.6	0
112	EM1:IDFdm1-Oth	20	-	-	-	0	1.2	3.9	0
112	EM1:IDFdm1-Oth	30	2.1	-	2.1	1	17.5	7.9	41
112	EM1:IDFdm1-Oth	40	27.3	-	27.3	6	18.0	11.8	337
112	EM1:IDFdm1-Oth	50	86.9	-	86.9	14	18.7	15.2	720
112	EM1:IDFdm1-Oth	60	160.5	-	160.5	21	19.9	18.0	928
112	EM1:IDFdm1-Oth	70	227.1	-	227.1	26	21.0	20.4	997
112	EM1:IDFdm1-Oth	80	282.4	-	282.4	31	22.1	22.4	1002
112	EM1:IDFdm1-Oth	90	325.9	-	325.9	34	23.1	24.1	983
112	EM1:IDFdm1-Oth	100	361.0	-	361.0	36	23.9	25.6	957
112	EM1:IDFdm1-Oth	110	389.4	-	389.4	38	24.6	26.7	930
112	EM1:IDFdm1-Oth	120	412.6	-	412.6	40	25.3	27.8	903
112	EM1:IDFdm1-Oth	130	431.3	-	431.3	42	25.8	28.7	878
112	EM1:IDFdm1-Oth	140	447.5	-	447.5	42	26.3	29.5	856
112	EM1:IDFdm1-Oth	150	461.7	-	461.7	43	26.7	30.2	838
112	EM1:IDFdm1-Oth	160	473.8	-	473.8	44	27.1	30.8	821
112	EM1:IDFdm1-Oth	170	484.2	-	484.2	44	27.4	31.4	806
112	EM1:IDFdm1-Oth	180	493.4	-	493.4	45	27.7	31.8	793
112	EM1:IDFdm1-Oth	190	501.2	-	501.2	45	28.0	32.3	780
112	EM1:IDFdm1-Oth	200	507.1	-	507.1	45	28.2	32.6	768
112	EM1:IDFdm1-Oth	210	512.2	-	512.2	45	28.4	33.0	757
112	EM1:IDFdm1-Oth	220	516.6	-	516.6	46	28.7	33.3	746
112	EM1:IDFdm1-Oth	230	520.4	-	520.4	46	28.8	33.6	735
112	EM1:IDFdm1-Oth	240	523.1	-	523.1	46	29.0	33.8	725
112	EM1:IDFdm1-Oth	250	524.4	-	524.4	46	29.1	34.1	713
112	EM1:IDFdm1-Oth	260	525.3	-	525.3	45	29.3	34.3	703
112	EM1:IDFdm1-Oth	270	526.1	-	526.1	45	29.4	34.5	692
112	EM1:IDFdm1-Oth	280	526.7	-	526.7	45	29.6	34.7	683
112	EM1:IDFdm1-Oth	290	527.1	-	527.1	45	29.7	34.8	675
112	EM1:IDFdm1-Oth	300	527.5	-	527.5	45	29.8	35.0	666
112	EM1:IDFdm1-Oth	310	527.5	-	527.5	45	29.9	35.0	664
112	EM1:IDFdm1-Oth	320	527.5	-	527.5	45	29.9	35.0	664
112	EM1:IDFdm1-Oth	330	527.5	-	527.5	45	29.9	35.0	664
112	EM1:IDFdm1-Oth	340	527.5	-	527.5	45	29.9	35.0	664
112	EM1:IDFdm1-Oth	350	527.5	-	527.5	45	29.9	35.0	664

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
113	EM1:MSdm1-01	10	-	-	-	0	-	0.7	0
113	EM1:MSdm1-01	20	-	-	-	0	11.2	4.5	0
113	EM1:MSdm1-01	30	4.4	-	4.4	1	16.7	8.8	81
113	EM1:MSdm1-01	40	45.8	-	45.8	10	17.3	12.7	521
113	EM1:MSdm1-01	50	125.8	-	125.8	21	18.6	16.1	936
113	EM1:MSdm1-01	60	209.4	-	209.4	28	20.0	19.0	1081
113	EM1:MSdm1-01	70	279.2	-	279.2	33	21.3	21.2	1086
113	EM1:MSdm1-01	80	333.1	-	333.1	37	22.6	23.1	1047
113	EM1:MSdm1-01	90	373.8	-	373.8	39	23.7	24.7	998
113	EM1:MSdm1-01	100	405.5	-	405.5	41	24.6	26.0	955
113	EM1:MSdm1-01	110	430.1	-	430.1	43	25.3	27.1	917
113	EM1:MSdm1-01	120	449.0	-	449.0	44	26.0	28.0	883
113	EM1:MSdm1-01	130	464.2	-	464.2	45	26.6	28.9	853
113	EM1:MSdm1-01	140	476.4	-	476.4	45	27.1	29.6	829
113	EM1:MSdm1-01	150	487.0	-	487.0	45	27.4	30.2	808
113	EM1:MSdm1-01	160	495.3	-	495.3	46	27.8	30.7	791
113	EM1:MSdm1-01	170	502.6	-	502.6	46	28.1	31.1	775
113	EM1:MSdm1-01	180	508.0	-	508.0	46	28.4	31.5	760
113	EM1:MSdm1-01	190	511.7	-	511.7	46	28.6	31.8	746
113	EM1:MSdm1-01	200	515.0	-	515.0	46	28.8	32.2	734
113	EM1:MSdm1-01	210	517.5	-	517.5	46	29.0	32.4	722
113	EM1:MSdm1-01	220	519.6	-	519.6	46	29.2	32.7	711
113	EM1:MSdm1-01	230	519.9	-	519.9	46	29.3	32.9	699
113	EM1:MSdm1-01	240	519.7	-	519.7	45	29.5	33.1	689
113	EM1:MSdm1-01	250	519.6	-	519.6	45	29.6	33.3	679
113	EM1:MSdm1-01	260	519.3	-	519.3	45	29.8	33.5	670
113	EM1:MSdm1-01	270	519.0	-	519.0	45	29.9	33.7	661
113	EM1:MSdm1-01	280	518.7	-	518.7	45	30.0	33.8	654
113	EM1:MSdm1-01	290	518.4	-	518.4	45	30.1	34.0	647
113	EM1:MSdm1-01	300	516.8	-	516.8	44	30.1	34.1	639
113	EM1:MSdm1-01	310	516.2	-	516.2	44	30.2	34.1	637
113	EM1:MSdm1-01	320	516.2	-	516.2	44	30.2	34.1	637
113	EM1:MSdm1-01	330	516.2	-	516.2	44	30.2	34.1	637
113	EM1:MSdm1-01	340	516.2	-	516.2	44	30.2	34.1	637
113	EM1:MSdm1-01	350	516.2	-	516.2	44	30.2	34.1	637

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)						
114	EM1:MSdm1-03	10	-	-	-	0	-	0.9	0
114	EM1:MSdm1-03	20	-	-	-	0	2.2	4.7	0
114	EM1:MSdm1-03	30	3.7	-	3.7	1	16.0	9.0	69
114	EM1:MSdm1-03	40	45.5	-	45.5	11	16.8	12.9	554
114	EM1:MSdm1-03	50	126.7	-	126.7	23	18.2	16.0	1029
114	EM1:MSdm1-03	60	209.0	-	209.0	30	19.7	18.7	1164
114	EM1:MSdm1-03	70	274.1	-	274.1	34	21.3	20.8	1137
114	EM1:MSdm1-03	80	324.2	-	324.2	37	22.6	22.5	1073
114	EM1:MSdm1-03	90	360.2	-	360.2	39	23.7	23.9	1011
114	EM1:MSdm1-03	100	388.7	-	388.7	41	24.7	25.1	959
114	EM1:MSdm1-03	110	410.7	-	410.7	42	25.4	26.1	917
114	EM1:MSdm1-03	120	428.0	-	428.0	42	26.1	26.9	880
114	EM1:MSdm1-03	130	440.9	-	440.9	43	26.6	27.6	850
114	EM1:MSdm1-03	140	451.4	-	451.4	43	27.0	28.2	823
114	EM1:MSdm1-03	150	459.6	-	459.6	44	27.4	28.8	800
114	EM1:MSdm1-03	160	466.9	-	466.9	44	27.8	29.3	781
114	EM1:MSdm1-03	170	472.4	-	472.4	44	28.1	29.7	765
114	EM1:MSdm1-03	180	477.0	-	477.0	44	28.4	30.1	751
114	EM1:MSdm1-03	190	481.1	-	481.1	44	28.6	30.4	738
114	EM1:MSdm1-03	200	484.3	-	484.3	44	28.8	30.6	726
114	EM1:MSdm1-03	210	485.5	-	485.5	44	29.0	30.9	714
114	EM1:MSdm1-03	220	486.6	-	486.6	44	29.1	31.1	703
114	EM1:MSdm1-03	230	487.3	-	487.3	44	29.3	31.3	693
114	EM1:MSdm1-03	240	488.0	-	488.0	44	29.4	31.5	684
114	EM1:MSdm1-03	250	488.5	-	488.5	43	29.5	31.7	675
114	EM1:MSdm1-03	260	487.9	-	487.9	43	29.6	31.8	666
114	EM1:MSdm1-03	270	486.3	-	486.3	43	29.7	32.0	657
114	EM1:MSdm1-03	280	484.8	-	484.8	42	29.8	32.1	648
114	EM1:MSdm1-03	290	483.4	-	483.4	42	29.9	32.2	640
114	EM1:MSdm1-03	300	482.0	-	482.0	42	30.0	32.4	632
114	EM1:MSdm1-03	310	481.7	-	481.7	42	30.0	32.4	631
114	EM1:MSdm1-03	320	481.7	-	481.7	42	30.0	32.4	631
114	EM1:MSdm1-03	330	481.7	-	481.7	42	30.0	32.4	631
114	EM1:MSdm1-03	340	481.7	-	481.7	42	30.0	32.4	631
114	EM1:MSdm1-03	350	481.7	-	481.7	42	30.0	32.4	631

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)						
115	EM1:MSdm1-04	10	-	-	-	0	-	0.7	0
115	EM1:MSdm1-04	20	-	-	-	0	1.3	4.3	0
115	EM1:MSdm1-04	30	2.9	-	2.9	1	16.7	8.5	56
115	EM1:MSdm1-04	40	39.3	-	39.3	9	17.3	12.4	476
115	EM1:MSdm1-04	50	115.5	-	115.5	19	18.4	15.8	918
115	EM1:MSdm1-04	60	198.0	-	198.0	26	19.8	18.6	1080
115	EM1:MSdm1-04	70	267.0	-	267.0	32	21.2	21.0	1092
115	EM1:MSdm1-04	80	320.9	-	320.9	35	22.5	22.8	1054
115	EM1:MSdm1-04	90	361.3	-	361.3	38	23.5	24.3	1006
115	EM1:MSdm1-04	100	392.9	-	392.9	40	24.4	25.7	963
115	EM1:MSdm1-04	110	417.7	-	417.7	42	25.1	26.8	926
115	EM1:MSdm1-04	120	437.1	-	437.1	43	25.8	27.7	892
115	EM1:MSdm1-04	130	452.4	-	452.4	44	26.3	28.6	862
115	EM1:MSdm1-04	140	465.0	-	465.0	44	26.8	29.3	837
115	EM1:MSdm1-04	150	475.9	-	475.9	45	27.3	29.9	816
115	EM1:MSdm1-04	160	484.6	-	484.6	45	27.6	30.5	798
115	EM1:MSdm1-04	170	492.2	-	492.2	45	27.9	30.9	782
115	EM1:MSdm1-04	180	498.8	-	498.8	45	28.2	31.3	768
115	EM1:MSdm1-04	190	503.4	-	503.4	46	28.4	31.7	754
115	EM1:MSdm1-04	200	507.0	-	507.0	46	28.7	32.0	742
115	EM1:MSdm1-04	210	510.1	-	510.1	46	28.9	32.3	730
115	EM1:MSdm1-04	220	512.6	-	512.6	46	29.1	32.5	718
115	EM1:MSdm1-04	230	514.8	-	514.8	46	29.2	32.8	708
115	EM1:MSdm1-04	240	515.0	-	515.0	45	29.3	33.0	697
115	EM1:MSdm1-04	250	515.0	-	515.0	45	29.5	33.2	686
115	EM1:MSdm1-04	260	514.8	-	514.8	45	29.6	33.4	676
115	EM1:MSdm1-04	270	514.7	-	514.7	45	29.7	33.6	667
115	EM1:MSdm1-04	280	514.4	-	514.4	44	29.8	33.7	659
115	EM1:MSdm1-04	290	514.1	-	514.1	44	30.0	33.9	651
115	EM1:MSdm1-04	300	513.9	-	513.9	44	30.1	34.0	645
115	EM1:MSdm1-04	310	513.8	-	513.8	44	30.1	34.0	642
115	EM1:MSdm1-04	320	513.8	-	513.8	44	30.1	34.0	642
115	EM1:MSdm1-04	330	513.8	-	513.8	44	30.1	34.0	642
115	EM1:MSdm1-04	340	513.8	-	513.8	44	30.1	34.0	642
115	EM1:MSdm1-04	350	513.8	-	513.8	44	30.1	34.0	642

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
116	EM1:MSdm1-05	10	-	-	-	0	-	0.7	0
116	EM1:MSdm1-05	20	-	-	-	0	10.2	4.4	0
116	EM1:MSdm1-05	30	3.8	-	3.8	2	16.8	8.8	73
116	EM1:MSdm1-05	40	46.2	0.4	45.8	10	17.3	12.9	548
116	EM1:MSdm1-05	50	131.1	2.1	129.0	21	18.2	16.4	1008
116	EM1:MSdm1-05	60	218.1	4.7	213.4	28	19.5	19.2	1163
116	EM1:MSdm1-05	70	288.6	7.1	281.5	32	20.8	21.6	1157
116	EM1:MSdm1-05	80	342.6	9.1	333.5	36	22.0	23.4	1106
116	EM1:MSdm1-05	90	383.0	10.5	372.5	39	23.1	25.0	1050
116	EM1:MSdm1-05	100	412.9	11.6	401.3	40	23.9	26.3	997
116	EM1:MSdm1-05	110	435.8	12.3	423.5	42	24.6	27.5	951
116	EM1:MSdm1-05	120	452.9	12.9	440.0	42	25.3	28.4	911
116	EM1:MSdm1-05	130	466.7	13.3	453.4	43	25.8	29.2	877
116	EM1:MSdm1-05	140	478.5	13.7	464.8	43	26.3	29.9	850
116	EM1:MSdm1-05	150	488.1	14.0	474.1	44	26.7	30.5	828
116	EM1:MSdm1-05	160	496.6	14.3	482.3	44	27.0	31.1	809
116	EM1:MSdm1-05	170	496.7	14.3	482.4	44	27.1	31.1	809
116	EM1:MSdm1-05	180	496.8	14.3	482.5	44	27.1	31.1	809
116	EM1:MSdm1-05	190	496.9	14.3	482.6	44	27.1	31.1	809
116	EM1:MSdm1-05	200	497.0	14.3	482.7	44	27.1	31.1	809
116	EM1:MSdm1-05	210	497.0	14.3	482.7	44	27.1	31.1	808
116	EM1:MSdm1-05	220	497.0	14.3	482.7	44	27.1	31.1	808
116	EM1:MSdm1-05	230	497.0	14.3	482.7	44	27.1	31.1	808
116	EM1:MSdm1-05	240	497.0	14.3	482.7	44	27.1	31.1	808
116	EM1:MSdm1-05	250	497.0	14.3	482.7	44	27.1	31.1	808
116	EM1:MSdm1-05	260	497.0	14.3	482.7	44	27.1	31.1	808
116	EM1:MSdm1-05	270	496.9	14.3	482.6	44	27.1	31.2	807
116	EM1:MSdm1-05	280	496.8	14.3	482.6	44	27.1	31.2	807
116	EM1:MSdm1-05	290	496.8	14.3	482.5	44	27.1	31.2	807
116	EM1:MSdm1-05	300	496.8	14.3	482.5	44	27.1	31.2	807
116	EM1:MSdm1-05	310	496.8	14.3	482.5	44	27.1	31.2	807
116	EM1:MSdm1-05	320	496.8	14.3	482.5	44	27.1	31.2	807
116	EM1:MSdm1-05	330	496.8	14.3	482.5	44	27.1	31.2	807
116	EM1:MSdm1-05	340	496.8	14.3	482.5	44	27.1	31.2	807
116	EM1:MSdm1-05	350	496.8	14.3	482.5	44	27.1	31.2	807

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
117	EM1:MSdm1-Oth	10	-	-	-	0	-	0.8	0
117	EM1:MSdm1-Oth	20	-	-	-	0	12.3	4.7	0
117	EM1:MSdm1-Oth	30	5.3	-	5.3	2	16.1	9.2	99
117	EM1:MSdm1-Oth	40	64.6	-	64.6	14	16.9	13.4	722
117	EM1:MSdm1-Oth	50	165.8	-	165.8	27	18.4	16.9	1181
117	EM1:MSdm1-Oth	60	256.8	-	256.8	35	20.1	19.7	1256
117	EM1:MSdm1-Oth	70	325.5	-	325.5	39	21.7	22.0	1181
117	EM1:MSdm1-Oth	80	374.6	-	374.6	42	23.1	23.9	1090
117	EM1:MSdm1-Oth	90	410.8	-	410.8	43	24.3	25.4	1014
117	EM1:MSdm1-Oth	100	437.4	-	437.4	44	25.2	26.6	953
117	EM1:MSdm1-Oth	110	456.9	-	456.9	45	25.9	27.6	903
117	EM1:MSdm1-Oth	120	471.4	-	471.4	45	26.6	28.5	863
117	EM1:MSdm1-Oth	130	483.1	-	483.1	45	27.1	29.2	831
117	EM1:MSdm1-Oth	140	492.4	-	492.4	46	27.6	29.8	805
117	EM1:MSdm1-Oth	150	500.0	-	500.0	46	28.0	30.4	784
117	EM1:MSdm1-Oth	160	505.8	-	505.8	46	28.3	30.9	765
117	EM1:MSdm1-Oth	170	509.3	-	509.3	46	28.6	31.3	748
117	EM1:MSdm1-Oth	180	512.3	-	512.3	46	28.8	31.6	733
117	EM1:MSdm1-Oth	190	514.5	-	514.5	46	29.1	32.0	719
117	EM1:MSdm1-Oth	200	515.0	-	515.0	45	29.2	32.3	704
117	EM1:MSdm1-Oth	210	515.3	-	515.3	45	29.4	32.6	692
117	EM1:MSdm1-Oth	220	515.4	-	515.4	45	29.6	32.8	681
117	EM1:MSdm1-Oth	230	515.5	-	515.5	45	29.7	33.1	670
117	EM1:MSdm1-Oth	240	515.2	-	515.2	45	29.8	33.2	660
117	EM1:MSdm1-Oth	250	513.4	-	513.4	45	29.9	33.4	651
117	EM1:MSdm1-Oth	260	511.5	-	511.5	45	30.0	33.6	642
117	EM1:MSdm1-Oth	270	509.6	-	509.6	44	30.1	33.7	633
117	EM1:MSdm1-Oth	280	507.8	-	507.8	44	30.2	33.9	625
117	EM1:MSdm1-Oth	290	506.0	-	506.0	44	30.3	34.0	618
117	EM1:MSdm1-Oth	300	504.3	-	504.3	43	30.3	34.1	611
117	EM1:MSdm1-Oth	310	503.9	-	503.9	43	30.3	34.1	610
117	EM1:MSdm1-Oth	320	503.9	-	503.9	43	30.3	34.1	610
117	EM1:MSdm1-Oth	330	503.9	-	503.9	43	30.3	34.1	610
117	EM1:MSdm1-Oth	340	503.9	-	503.9	43	30.3	34.1	610
117	EM1:MSdm1-Oth	350	503.9	-	503.9	43	30.3	34.1	610

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)						
118	EM1:Msdm1a-All	10	-	-	-	0	-	0.3	0
118	EM1:Msdm1a-All	20	-	-	-	0	4.5	4.3	0
118	EM1:Msdm1a-All	30	3.0	-	3.0	1	19.6	8.8	54
118	EM1:Msdm1a-All	40	36.0	-	36.0	6	20.0	13.1	302
118	EM1:Msdm1a-All	50	101.5	-	101.5	12	21.4	16.9	536
118	EM1:Msdm1a-All	60	173.6	-	173.6	20	23.0	20.2	657
118	EM1:Msdm1a-All	70	238.0	-	238.0	27	24.5	23.0	703
118	EM1:Msdm1a-All	80	294.9	-	294.9	32	25.9	25.4	719
118	EM1:Msdm1a-All	90	343.5	-	343.5	36	27.0	27.4	721
118	EM1:Msdm1a-All	100	386.0	-	386.0	39	28.0	29.0	715
118	EM1:Msdm1a-All	110	424.0	-	424.0	42	28.8	30.5	707
118	EM1:Msdm1a-All	120	457.8	-	457.8	44	29.6	31.7	698
118	EM1:Msdm1a-All	130	487.5	-	487.5	46	30.2	32.9	688
118	EM1:Msdm1a-All	140	513.5	-	513.5	47	30.8	33.8	676
118	EM1:Msdm1a-All	150	536.6	-	536.6	49	31.4	34.7	664
118	EM1:Msdm1a-All	160	556.5	-	556.5	50	32.0	35.4	652
118	EM1:Msdm1a-All	170	573.3	-	573.3	51	32.5	36.1	639
118	EM1:Msdm1a-All	180	587.9	-	587.9	51	32.9	36.7	627
118	EM1:Msdm1a-All	190	600.3	-	600.3	52	33.3	37.2	614
118	EM1:Msdm1a-All	200	610.8	-	610.8	52	33.7	37.7	602
118	EM1:Msdm1a-All	210	620.3	-	620.3	52	34.1	38.2	592
118	EM1:Msdm1a-All	220	628.3	-	628.3	53	34.4	38.5	583
118	EM1:Msdm1a-All	230	635.4	-	635.4	53	34.6	38.9	574
118	EM1:Msdm1a-All	240	641.4	-	641.4	53	34.9	39.2	565
118	EM1:Msdm1a-All	250	645.5	-	645.5	53	35.1	39.5	558
118	EM1:Msdm1a-All	260	646.8	-	646.8	53	35.3	39.7	549
118	EM1:Msdm1a-All	270	647.0	-	647.0	52	35.4	39.9	540
118	EM1:Msdm1a-All	280	647.4	-	647.4	52	35.6	40.1	533
118	EM1:Msdm1a-All	290	648.0	-	648.0	52	35.7	40.2	527
118	EM1:Msdm1a-All	300	648.6	-	648.6	52	35.8	40.4	521
118	EM1:Msdm1a-All	310	648.9	-	648.9	52	35.9	40.4	519
118	EM1:Msdm1a-All	320	648.9	-	648.9	52	35.9	40.4	519
118	EM1:Msdm1a-All	330	648.9	-	648.9	52	35.9	40.4	519
118	EM1:Msdm1a-All	340	648.9	-	648.9	52	35.9	40.4	519
118	EM1:Msdm1a-All	350	648.9	-	648.9	52	35.9	40.4	519

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
201	EM2:ESSFdc1/dcu1-01	10	-	-	-	0	-	0.8	0
201	EM2:ESSFdc1/dcu1-01	20	-	-	-	0	3.3	3.5	0
201	EM2:ESSFdc1/dcu1-01	30	0.9	-	0.9	0	17.9	7.2	21
201	EM2:ESSFdc1/dcu1-01	40	17.3	-	17.3	4	18.4	10.8	218
201	EM2:ESSFdc1/dcu1-01	50	59.5	-	59.5	10	19.4	14.0	487
201	EM2:ESSFdc1/dcu1-01	60	119.2	-	119.2	18	20.8	17.0	722
201	EM2:ESSFdc1/dcu1-01	70	183.4	-	183.4	25	22.1	19.4	866
201	EM2:ESSFdc1/dcu1-01	80	242.9	-	242.9	31	23.2	21.5	927
201	EM2:ESSFdc1/dcu1-01	90	293.2	-	293.2	35	24.3	23.2	934
201	EM2:ESSFdc1/dcu1-01	100	334.2	-	334.2	38	25.2	24.7	920
201	EM2:ESSFdc1/dcu1-01	110	367.0	-	367.0	40	26.0	26.0	895
201	EM2:ESSFdc1/dcu1-01	120	393.5	-	393.5	42	26.7	27.0	871
201	EM2:ESSFdc1/dcu1-01	130	414.9	-	414.9	44	27.3	28.0	847
201	EM2:ESSFdc1/dcu1-01	140	432.2	-	432.2	45	27.8	28.8	825
201	EM2:ESSFdc1/dcu1-01	150	445.8	-	445.8	45	28.2	29.5	805
201	EM2:ESSFdc1/dcu1-01	160	457.6	-	457.6	46	28.6	30.1	787
201	EM2:ESSFdc1/dcu1-01	170	467.2	-	467.2	46	29.0	30.7	771
201	EM2:ESSFdc1/dcu1-01	180	475.0	-	475.0	47	29.3	31.2	756
201	EM2:ESSFdc1/dcu1-01	190	481.7	-	481.7	47	29.5	31.6	743
201	EM2:ESSFdc1/dcu1-01	200	487.0	-	487.0	47	29.7	32.0	731
201	EM2:ESSFdc1/dcu1-01	210	491.0	-	491.0	47	29.9	32.4	720
201	EM2:ESSFdc1/dcu1-01	220	494.4	-	494.4	47	30.1	32.7	710
201	EM2:ESSFdc1/dcu1-01	230	497.2	-	497.2	47	30.3	32.9	701
201	EM2:ESSFdc1/dcu1-01	240	499.5	-	499.5	47	30.5	33.2	693
201	EM2:ESSFdc1/dcu1-01	250	501.4	-	501.4	47	30.6	33.4	685
201	EM2:ESSFdc1/dcu1-01	260	502.3	-	502.3	47	30.7	33.6	677
201	EM2:ESSFdc1/dcu1-01	270	502.5	-	502.5	47	30.8	33.8	670
201	EM2:ESSFdc1/dcu1-01	280	502.6	-	502.6	47	30.9	34.0	662
201	EM2:ESSFdc1/dcu1-01	290	502.5	-	502.5	47	31.0	34.2	656
201	EM2:ESSFdc1/dcu1-01	300	502.3	-	502.3	47	31.1	34.3	650
201	EM2:ESSFdc1/dcu1-01	310	502.2	-	502.2	47	31.1	34.3	649
201	EM2:ESSFdc1/dcu1-01	320	502.2	-	502.2	47	31.1	34.3	649
201	EM2:ESSFdc1/dcu1-01	330	502.2	-	502.2	47	31.1	34.3	649
201	EM2:ESSFdc1/dcu1-01	340	502.2	-	502.2	47	31.1	34.3	649
201	EM2:ESSFdc1/dcu1-01	350	502.2	-	502.2	47	31.1	34.3	649

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
202	EM2:ESSFdc1/dcu1-03	10	-	-	-	0	-	0.8	0
202	EM2:ESSFdc1/dcu1-03	20	-	-	-	0	13.5	3.8	0
202	EM2:ESSFdc1/dcu1-03	30	0.7	-	0.7	0	16.7	7.3	16
202	EM2:ESSFdc1/dcu1-03	40	14.6	-	14.6	4	17.0	10.6	209
202	EM2:ESSFdc1/dcu1-03	50	53.2	-	53.2	11	18.2	13.6	504
202	EM2:ESSFdc1/dcu1-03	60	106.6	-	106.6	19	19.8	16.1	757
202	EM2:ESSFdc1/dcu1-03	70	163.6	-	163.6	25	21.2	18.2	907
202	EM2:ESSFdc1/dcu1-03	80	215.7	-	215.7	30	22.4	20.0	963
202	EM2:ESSFdc1/dcu1-03	90	260.3	-	260.3	34	23.5	21.6	964
202	EM2:ESSFdc1/dcu1-03	100	296.4	-	296.4	36	24.5	22.8	936
202	EM2:ESSFdc1/dcu1-03	110	326.1	-	326.1	38	25.3	23.9	907
202	EM2:ESSFdc1/dcu1-03	120	349.8	-	349.8	39	26.0	24.8	877
202	EM2:ESSFdc1/dcu1-03	130	369.2	-	369.2	41	26.5	25.6	851
202	EM2:ESSFdc1/dcu1-03	140	385.5	-	385.5	41	27.0	26.3	829
202	EM2:ESSFdc1/dcu1-03	150	398.4	-	398.4	42	27.5	26.9	808
202	EM2:ESSFdc1/dcu1-03	160	409.1	-	409.1	42	27.8	27.4	790
202	EM2:ESSFdc1/dcu1-03	170	418.3	-	418.3	43	28.1	27.8	775
202	EM2:ESSFdc1/dcu1-03	180	425.2	-	425.2	43	28.4	28.3	760
202	EM2:ESSFdc1/dcu1-03	190	431.3	-	431.3	43	28.7	28.6	747
202	EM2:ESSFdc1/dcu1-03	200	436.7	-	436.7	44	28.9	29.0	736
202	EM2:ESSFdc1/dcu1-03	210	440.9	-	440.9	44	29.1	29.2	725
202	EM2:ESSFdc1/dcu1-03	220	443.7	-	443.7	44	29.3	29.6	715
202	EM2:ESSFdc1/dcu1-03	230	446.2	-	446.2	44	29.5	29.8	706
202	EM2:ESSFdc1/dcu1-03	240	448.3	-	448.3	44	29.6	30.0	697
202	EM2:ESSFdc1/dcu1-03	250	450.1	-	450.1	44	29.7	30.2	689
202	EM2:ESSFdc1/dcu1-03	260	451.6	-	451.6	44	29.8	30.4	682
202	EM2:ESSFdc1/dcu1-03	270	452.5	-	452.5	44	29.9	30.6	675
202	EM2:ESSFdc1/dcu1-03	280	451.9	-	451.9	44	30.0	30.8	667
202	EM2:ESSFdc1/dcu1-03	290	451.4	-	451.4	43	30.1	30.8	659
202	EM2:ESSFdc1/dcu1-03	300	450.7	-	450.7	43	30.2	31.0	653
202	EM2:ESSFdc1/dcu1-03	310	450.6	-	450.6	43	30.2	31.0	651
202	EM2:ESSFdc1/dcu1-03	320	450.6	-	450.6	43	30.2	31.0	651
202	EM2:ESSFdc1/dcu1-03	330	450.6	-	450.6	43	30.2	31.0	651
202	EM2:ESSFdc1/dcu1-03	340	450.6	-	450.6	43	30.2	31.0	651
202	EM2:ESSFdc1/dcu1-03	350	450.6	-	450.6	43	30.2	31.0	651

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
203	EM2:ESSFdc1/dcu1-04	10	-	-	-	0	-	0.8	0
203	EM2:ESSFdc1/dcu1-04	20	-	-	-	0	8.4	3.8	0
203	EM2:ESSFdc1/dcu1-04	30	1.8	-	1.8	1	17.0	7.6	40
203	EM2:ESSFdc1/dcu1-04	40	25.7	-	25.7	6	17.6	11.2	314
203	EM2:ESSFdc1/dcu1-04	50	77.0	-	77.0	14	18.8	14.4	622
203	EM2:ESSFdc1/dcu1-04	60	143.7	-	143.7	22	20.2	17.2	856
203	EM2:ESSFdc1/dcu1-04	70	210.5	-	210.5	28	21.6	19.5	972
203	EM2:ESSFdc1/dcu1-04	80	269.2	-	269.2	34	22.7	21.4	1004
203	EM2:ESSFdc1/dcu1-04	90	316.9	-	316.9	37	23.8	23.0	990
203	EM2:ESSFdc1/dcu1-04	100	354.7	-	354.7	40	24.7	24.4	962
203	EM2:ESSFdc1/dcu1-04	110	383.9	-	383.9	42	25.5	25.5	929
203	EM2:ESSFdc1/dcu1-04	120	407.4	-	407.4	43	26.1	26.6	900
203	EM2:ESSFdc1/dcu1-04	130	425.9	-	425.9	44	26.7	27.4	873
203	EM2:ESSFdc1/dcu1-04	140	440.0	-	440.0	45	27.2	28.1	848
203	EM2:ESSFdc1/dcu1-04	150	451.9	-	451.9	46	27.6	28.8	826
203	EM2:ESSFdc1/dcu1-04	160	461.4	-	461.4	46	28.0	29.3	806
203	EM2:ESSFdc1/dcu1-04	170	469.1	-	469.1	46	28.3	29.8	789
203	EM2:ESSFdc1/dcu1-04	180	475.7	-	475.7	47	28.6	30.2	774
203	EM2:ESSFdc1/dcu1-04	190	480.5	-	480.5	47	28.9	30.6	760
203	EM2:ESSFdc1/dcu1-04	200	484.4	-	484.4	47	29.1	31.0	748
203	EM2:ESSFdc1/dcu1-04	210	487.6	-	487.6	47	29.3	31.2	736
203	EM2:ESSFdc1/dcu1-04	220	490.4	-	490.4	47	29.4	31.6	726
203	EM2:ESSFdc1/dcu1-04	230	492.7	-	492.7	47	29.6	31.8	718
203	EM2:ESSFdc1/dcu1-04	240	493.7	-	493.7	47	29.7	32.0	708
203	EM2:ESSFdc1/dcu1-04	250	494.2	-	494.2	47	29.8	32.2	700
203	EM2:ESSFdc1/dcu1-04	260	494.6	-	494.6	47	29.9	32.4	692
203	EM2:ESSFdc1/dcu1-04	270	494.8	-	494.8	46	30.1	32.6	684
203	EM2:ESSFdc1/dcu1-04	280	494.9	-	494.9	46	30.2	32.8	677
203	EM2:ESSFdc1/dcu1-04	290	494.8	-	494.8	46	30.2	33.0	670
203	EM2:ESSFdc1/dcu1-04	300	494.6	-	494.6	46	30.3	33.0	665
203	EM2:ESSFdc1/dcu1-04	310	494.6	-	494.6	46	30.3	33.0	664
203	EM2:ESSFdc1/dcu1-04	320	494.6	-	494.6	46	30.3	33.0	664
203	EM2:ESSFdc1/dcu1-04	330	494.6	-	494.6	46	30.3	33.0	664
203	EM2:ESSFdc1/dcu1-04	340	494.6	-	494.6	46	30.3	33.0	664
203	EM2:ESSFdc1/dcu1-04	350	494.6	-	494.6	46	30.3	33.0	664

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
204	EM2:ESSFdc1/dcu1-Oth	10	-	-	-	0	-	0.7	0
204	EM2:ESSFdc1/dcu1-Oth	20	-	-	-	0	12.3	3.0	1
204	EM2:ESSFdc1/dcu1-Oth	30	0.4	-	0.4	0	18.3	6.2	8
204	EM2:ESSFdc1/dcu1-Oth	40	7.0	-	7.0	2	18.3	9.4	107
204	EM2:ESSFdc1/dcu1-Oth	50	30.8	-	30.8	6	18.9	12.3	316
204	EM2:ESSFdc1/dcu1-Oth	60	72.1	-	72.1	13	20.1	15.0	537
204	EM2:ESSFdc1/dcu1-Oth	70	121.2	-	121.2	19	21.3	17.2	710
204	EM2:ESSFdc1/dcu1-Oth	80	172.4	-	172.4	24	22.4	19.2	815
204	EM2:ESSFdc1/dcu1-Oth	90	219.7	-	219.7	29	23.5	21.0	861
204	EM2:ESSFdc1/dcu1-Oth	100	260.9	-	260.9	32	24.5	22.4	877
204	EM2:ESSFdc1/dcu1-Oth	110	295.5	-	295.5	35	25.2	23.7	870
204	EM2:ESSFdc1/dcu1-Oth	120	324.4	-	324.4	37	26.0	24.8	855
204	EM2:ESSFdc1/dcu1-Oth	130	348.3	-	348.3	39	26.6	25.8	837
204	EM2:ESSFdc1/dcu1-Oth	140	368.3	-	368.3	41	27.1	26.6	819
204	EM2:ESSFdc1/dcu1-Oth	150	384.9	-	384.9	42	27.6	27.3	803
204	EM2:ESSFdc1/dcu1-Oth	160	398.9	-	398.9	42	28.0	28.0	787
204	EM2:ESSFdc1/dcu1-Oth	170	410.8	-	410.8	43	28.4	28.6	773
204	EM2:ESSFdc1/dcu1-Oth	180	420.4	-	420.4	44	28.7	29.0	759
204	EM2:ESSFdc1/dcu1-Oth	190	428.7	-	428.7	44	29.0	29.5	747
204	EM2:ESSFdc1/dcu1-Oth	200	436.0	-	436.0	44	29.2	29.9	736
204	EM2:ESSFdc1/dcu1-Oth	210	442.0	-	442.0	45	29.5	30.3	725
204	EM2:ESSFdc1/dcu1-Oth	220	446.6	-	446.6	45	29.7	30.6	716
204	EM2:ESSFdc1/dcu1-Oth	230	450.6	-	450.6	45	29.8	30.9	707
204	EM2:ESSFdc1/dcu1-Oth	240	454.1	-	454.1	45	30.0	31.2	698
204	EM2:ESSFdc1/dcu1-Oth	250	457.1	-	457.1	45	30.2	31.4	690
204	EM2:ESSFdc1/dcu1-Oth	260	459.8	-	459.8	45	30.3	31.6	683
204	EM2:ESSFdc1/dcu1-Oth	270	461.6	-	461.6	45	30.4	31.8	676
204	EM2:ESSFdc1/dcu1-Oth	280	462.4	-	462.4	45	30.5	32.0	669
204	EM2:ESSFdc1/dcu1-Oth	290	463.1	-	463.1	45	30.6	32.2	662
204	EM2:ESSFdc1/dcu1-Oth	300	463.4	-	463.4	45	30.7	32.4	656
204	EM2:ESSFdc1/dcu1-Oth	310	463.4	-	463.4	45	30.7	32.4	654
204	EM2:ESSFdc1/dcu1-Oth	320	463.4	-	463.4	45	30.7	32.4	654
204	EM2:ESSFdc1/dcu1-Oth	330	463.4	-	463.4	45	30.7	32.4	654
204	EM2:ESSFdc1/dcu1-Oth	340	463.4	-	463.4	45	30.7	32.4	654
204	EM2:ESSFdc1/dcu1-Oth	350	463.4	-	463.4	45	30.7	32.4	654

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
205	EM2:ICHmk1/mw2-01	10	-	-	-	0	-	1.2	0
205	EM2:ICHmk1/mw2-01	20	0.2	-	0.2	0	6.2	5.0	6
205	EM2:ICHmk1/mw2-01	30	11.1	-	11.1	3	18.0	9.4	148
205	EM2:ICHmk1/mw2-01	40	54.7	-	54.7	9	19.2	13.5	434
205	EM2:ICHmk1/mw2-01	50	127.5	-	127.5	18	20.7	17.1	705
205	EM2:ICHmk1/mw2-01	60	206.2	-	206.2	25	22.2	20.1	853
205	EM2:ICHmk1/mw2-01	70	275.8	-	275.8	32	23.6	22.6	897
205	EM2:ICHmk1/mw2-01	80	331.1	-	331.1	36	24.7	24.6	893
205	EM2:ICHmk1/mw2-01	90	374.4	-	374.4	39	25.8	26.4	873
205	EM2:ICHmk1/mw2-01	100	408.8	-	408.8	42	26.6	27.8	848
205	EM2:ICHmk1/mw2-01	110	435.9	-	435.9	44	27.4	29.0	823
205	EM2:ICHmk1/mw2-01	120	458.4	-	458.4	45	28.0	30.1	800
205	EM2:ICHmk1/mw2-01	130	477.5	-	477.5	46	28.5	30.9	781
205	EM2:ICHmk1/mw2-01	140	493.8	-	493.8	47	29.0	31.8	765
205	EM2:ICHmk1/mw2-01	150	506.9	-	506.9	48	29.4	32.4	749
205	EM2:ICHmk1/mw2-01	160	517.6	-	517.6	48	29.8	33.1	734
205	EM2:ICHmk1/mw2-01	170	526.8	-	526.8	48	30.1	33.5	721
205	EM2:ICHmk1/mw2-01	180	533.9	-	533.9	49	30.4	34.0	709
205	EM2:ICHmk1/mw2-01	190	539.7	-	539.7	49	30.6	34.4	697
205	EM2:ICHmk1/mw2-01	200	544.4	-	544.4	49	30.8	34.8	685
205	EM2:ICHmk1/mw2-01	210	548.3	-	548.3	49	31.1	35.1	675
205	EM2:ICHmk1/mw2-01	220	550.5	-	550.5	49	31.3	35.3	663
205	EM2:ICHmk1/mw2-01	230	552.0	-	552.0	49	31.5	35.6	653
205	EM2:ICHmk1/mw2-01	240	553.3	-	553.3	48	31.6	35.9	643
205	EM2:ICHmk1/mw2-01	250	554.5	-	554.5	48	31.8	36.0	635
205	EM2:ICHmk1/mw2-01	260	555.3	-	555.3	48	31.9	36.2	628
205	EM2:ICHmk1/mw2-01	270	556.0	-	556.0	48	32.0	36.4	620
205	EM2:ICHmk1/mw2-01	280	556.2	-	556.2	48	32.1	36.6	614
205	EM2:ICHmk1/mw2-01	290	555.4	-	555.4	48	32.2	36.7	607
205	EM2:ICHmk1/mw2-01	300	554.4	-	554.4	48	32.3	36.8	601
205	EM2:ICHmk1/mw2-01	310	554.4	-	554.4	47	32.3	36.9	600
205	EM2:ICHmk1/mw2-01	320	554.4	-	554.4	47	32.3	36.9	600
205	EM2:ICHmk1/mw2-01	330	554.4	-	554.4	47	32.3	36.9	600
205	EM2:ICHmk1/mw2-01	340	554.4	-	554.4	47	32.3	36.9	600
205	EM2:ICHmk1/mw2-01	350	554.4	-	554.4	47	32.3	36.9	600

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
206	EM2:ICHmk1/mw2-03	10	-	-	-	0	-	1.2	0
206	EM2:ICHmk1/mw2-03	20	0.1	-	0.1	0	8.6	5.2	4
206	EM2:ICHmk1/mw2-03	30	7.1	-	7.1	2	17.7	9.4	119
206	EM2:ICHmk1/mw2-03	40	45.4	-	45.4	9	18.7	13.4	431
206	EM2:ICHmk1/mw2-03	50	109.3	-	109.3	17	20.1	16.6	703
206	EM2:ICHmk1/mw2-03	60	179.0	-	179.0	24	21.5	19.4	828
206	EM2:ICHmk1/mw2-03	70	241.2	-	241.2	29	22.8	21.7	872
206	EM2:ICHmk1/mw2-03	80	293.7	-	293.7	33	24.0	23.6	877
206	EM2:ICHmk1/mw2-03	90	336.6	-	336.6	37	25.0	25.2	868
206	EM2:ICHmk1/mw2-03	100	372.1	-	372.1	39	25.7	26.6	853
206	EM2:ICHmk1/mw2-03	110	400.6	-	400.6	41	26.5	27.7	835
206	EM2:ICHmk1/mw2-03	120	424.4	-	424.4	43	27.1	28.7	817
206	EM2:ICHmk1/mw2-03	130	444.2	-	444.2	44	27.6	29.6	800
206	EM2:ICHmk1/mw2-03	140	460.7	-	460.7	45	28.1	30.3	785
206	EM2:ICHmk1/mw2-03	150	474.8	-	474.8	46	28.5	30.9	771
206	EM2:ICHmk1/mw2-03	160	486.6	-	486.6	46	28.8	31.4	757
206	EM2:ICHmk1/mw2-03	170	496.4	-	496.4	47	29.1	32.0	745
206	EM2:ICHmk1/mw2-03	180	505.0	-	505.0	47	29.4	32.4	735
206	EM2:ICHmk1/mw2-03	190	511.9	-	511.9	48	29.7	32.8	725
206	EM2:ICHmk1/mw2-03	200	516.6	-	516.6	48	29.9	33.1	714
206	EM2:ICHmk1/mw2-03	210	520.6	-	520.6	48	30.0	33.4	705
206	EM2:ICHmk1/mw2-03	220	523.8	-	523.8	48	30.2	33.6	696
206	EM2:ICHmk1/mw2-03	230	526.2	-	526.2	48	30.4	33.8	687
206	EM2:ICHmk1/mw2-03	240	528.1	-	528.1	48	30.5	34.0	678
206	EM2:ICHmk1/mw2-03	250	528.6	-	528.6	47	30.7	34.2	669
206	EM2:ICHmk1/mw2-03	260	528.9	-	528.9	47	30.8	34.4	662
206	EM2:ICHmk1/mw2-03	270	529.1	-	529.1	47	30.9	34.6	654
206	EM2:ICHmk1/mw2-03	280	529.2	-	529.2	47	31.0	34.8	647
206	EM2:ICHmk1/mw2-03	290	529.3	-	529.3	47	31.1	34.9	641
206	EM2:ICHmk1/mw2-03	300	529.2	-	529.2	47	31.2	35.0	636
206	EM2:ICHmk1/mw2-03	310	529.2	-	529.2	47	31.2	35.0	634
206	EM2:ICHmk1/mw2-03	320	529.2	-	529.2	47	31.2	35.0	634
206	EM2:ICHmk1/mw2-03	330	529.2	-	529.2	47	31.2	35.0	634
206	EM2:ICHmk1/mw2-03	340	529.2	-	529.2	47	31.2	35.0	634
206	EM2:ICHmk1/mw2-03	350	529.2	-	529.2	47	31.2	35.0	634

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
207	EM2:ICHmk1/mw2-04	10	-	-	-	0	-	1.2	0
207	EM2:ICHmk1/mw2-04	20	0.1	-	0.1	0	12.5	5.4	5
207	EM2:ICHmk1/mw2-04	30	11.3	-	11.3	3	18.0	10.0	167
207	EM2:ICHmk1/mw2-04	40	64.2	-	64.2	11	19.2	14.2	508
207	EM2:ICHmk1/mw2-04	50	144.2	-	144.2	20	21.1	17.8	745
207	EM2:ICHmk1/mw2-04	60	224.4	-	224.4	28	22.8	20.8	844
207	EM2:ICHmk1/mw2-04	70	293.4	-	293.4	35	24.4	23.2	864
207	EM2:ICHmk1/mw2-04	80	346.9	-	346.9	39	25.7	25.2	847
207	EM2:ICHmk1/mw2-04	90	389.9	-	389.9	42	26.8	26.9	823
207	EM2:ICHmk1/mw2-04	100	423.3	-	423.3	45	27.7	28.3	797
207	EM2:ICHmk1/mw2-04	110	449.9	-	449.9	47	28.5	29.5	773
207	EM2:ICHmk1/mw2-04	120	471.1	-	471.1	48	29.1	30.6	751
207	EM2:ICHmk1/mw2-04	130	488.8	-	488.8	48	29.7	31.4	732
207	EM2:ICHmk1/mw2-04	140	501.4	-	501.4	49	30.1	32.0	714
207	EM2:ICHmk1/mw2-04	150	509.8	-	509.8	49	30.5	32.4	698
207	EM2:ICHmk1/mw2-04	160	517.4	-	517.4	50	30.8	32.8	684
207	EM2:ICHmk1/mw2-04	170	524.8	-	524.8	50	31.2	33.4	672
207	EM2:ICHmk1/mw2-04	180	530.4	-	530.4	50	31.4	33.8	661
207	EM2:ICHmk1/mw2-04	190	534.9	-	534.9	50	31.7	34.1	651
207	EM2:ICHmk1/mw2-04	200	538.4	-	538.4	50	31.9	34.4	641
207	EM2:ICHmk1/mw2-04	210	541.1	-	541.1	50	32.1	34.7	632
207	EM2:ICHmk1/mw2-04	220	542.5	-	542.5	50	32.2	35.0	623
207	EM2:ICHmk1/mw2-04	230	542.8	-	542.8	50	32.3	35.2	614
207	EM2:ICHmk1/mw2-04	240	542.4	-	542.4	49	32.5	35.4	606
207	EM2:ICHmk1/mw2-04	250	541.9	-	541.9	49	32.6	35.6	598
207	EM2:ICHmk1/mw2-04	260	541.5	-	541.5	49	32.7	35.8	592
207	EM2:ICHmk1/mw2-04	270	541.0	-	541.0	49	32.8	35.9	586
207	EM2:ICHmk1/mw2-04	280	540.3	-	540.3	49	32.9	36.0	580
207	EM2:ICHmk1/mw2-04	290	539.0	-	539.0	48	33.0	36.2	574
207	EM2:ICHmk1/mw2-04	300	537.2	-	537.2	48	33.0	36.2	569
207	EM2:ICHmk1/mw2-04	310	536.9	-	536.9	48	33.0	36.2	568
207	EM2:ICHmk1/mw2-04	320	536.9	-	536.9	48	33.0	36.2	568
207	EM2:ICHmk1/mw2-04	330	536.9	-	536.9	48	33.0	36.2	568
207	EM2:ICHmk1/mw2-04	340	536.9	-	536.9	48	33.0	36.2	568
207	EM2:ICHmk1/mw2-04	350	536.9	-	536.9	48	33.0	36.2	568

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
208	EM2:ICHmk1/mw2-Oth	10	-	-	-	0	-	1.3	0
208	EM2:ICHmk1/mw2-Oth	20	0.1	-	0.1	0	12.6	5.2	4
208	EM2:ICHmk1/mw2-Oth	30	9.0	-	9.0	2	18.2	9.7	114
208	EM2:ICHmk1/mw2-Oth	40	48.9	-	48.9	9	20.2	13.8	351
208	EM2:ICHmk1/mw2-Oth	50	116.2	-	116.2	17	22.8	17.4	576
208	EM2:ICHmk1/mw2-Oth	60	190.2	-	190.2	25	25.0	20.4	694
208	EM2:ICHmk1/mw2-Oth	70	256.8	-	256.8	31	26.9	22.9	726
208	EM2:ICHmk1/mw2-Oth	80	310.3	-	310.3	36	28.5	25.0	716
208	EM2:ICHmk1/mw2-Oth	90	353.0	-	353.0	39	29.7	26.6	694
208	EM2:ICHmk1/mw2-Oth	100	386.7	-	386.7	41	30.7	28.0	672
208	EM2:ICHmk1/mw2-Oth	110	413.6	-	413.6	43	31.6	29.2	650
208	EM2:ICHmk1/mw2-Oth	120	435.5	-	435.5	45	32.3	30.3	632
208	EM2:ICHmk1/mw2-Oth	130	454.1	-	454.1	46	32.9	31.2	616
208	EM2:ICHmk1/mw2-Oth	140	469.5	-	469.5	47	33.4	31.9	604
208	EM2:ICHmk1/mw2-Oth	150	482.6	-	482.6	47	33.8	32.6	593
208	EM2:ICHmk1/mw2-Oth	160	493.0	-	493.0	48	34.1	33.1	582
208	EM2:ICHmk1/mw2-Oth	170	501.7	-	501.7	48	34.5	33.6	573
208	EM2:ICHmk1/mw2-Oth	180	509.0	-	509.0	48	34.8	34.0	564
208	EM2:ICHmk1/mw2-Oth	190	514.4	-	514.4	48	35.0	34.4	555
208	EM2:ICHmk1/mw2-Oth	200	518.9	-	518.9	48	35.2	34.8	547
208	EM2:ICHmk1/mw2-Oth	210	522.5	-	522.5	48	35.4	35.1	540
208	EM2:ICHmk1/mw2-Oth	220	525.6	-	525.6	49	35.6	35.4	533
208	EM2:ICHmk1/mw2-Oth	230	527.4	-	527.4	49	35.8	35.6	526
208	EM2:ICHmk1/mw2-Oth	240	528.4	-	528.4	49	35.9	35.8	520
208	EM2:ICHmk1/mw2-Oth	250	528.8	-	528.8	48	36.0	36.0	513
208	EM2:ICHmk1/mw2-Oth	260	529.1	-	529.1	48	36.1	36.2	508
208	EM2:ICHmk1/mw2-Oth	270	529.1	-	529.1	48	36.2	36.4	502
208	EM2:ICHmk1/mw2-Oth	280	529.0	-	529.0	48	36.3	36.6	498
208	EM2:ICHmk1/mw2-Oth	290	528.7	-	528.7	48	36.4	36.6	493
208	EM2:ICHmk1/mw2-Oth	300	528.3	-	528.3	48	36.5	36.8	489
208	EM2:ICHmk1/mw2-Oth	310	528.2	-	528.2	48	36.5	36.8	488
208	EM2:ICHmk1/mw2-Oth	320	528.2	-	528.2	48	36.5	36.8	488
208	EM2:ICHmk1/mw2-Oth	330	528.2	-	528.2	48	36.5	36.8	488
208	EM2:ICHmk1/mw2-Oth	340	528.2	-	528.2	48	36.5	36.8	488
208	EM2:ICHmk1/mw2-Oth	350	528.2	-	528.2	48	36.5	36.8	488

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
209	EM2:IDFdm1-01	10	-	-	-	0	-	0.9	0
209	EM2:IDFdm1-01	20	0.1	-	0.1	0	4.9	4.8	2
209	EM2:IDFdm1-01	30	5.2	-	5.2	1	17.7	9.0	88
209	EM2:IDFdm1-01	40	40.6	-	40.6	8	18.6	12.9	406
209	EM2:IDFdm1-01	50	105.4	-	105.4	16	19.8	16.3	697
209	EM2:IDFdm1-01	60	175.1	-	175.1	22	21.2	19.1	830
209	EM2:IDFdm1-01	70	236.6	-	236.6	27	22.5	21.5	872
209	EM2:IDFdm1-01	80	287.7	-	287.7	31	23.6	23.4	878
209	EM2:IDFdm1-01	90	330.0	-	330.0	35	24.5	25.1	870
209	EM2:IDFdm1-01	100	364.8	-	364.8	37	25.3	26.4	856
209	EM2:IDFdm1-01	110	394.2	-	394.2	39	26.0	27.7	839
209	EM2:IDFdm1-01	120	418.1	-	418.1	41	26.7	28.7	821
209	EM2:IDFdm1-01	130	439.0	-	439.0	43	27.2	29.6	803
209	EM2:IDFdm1-01	140	457.4	-	457.4	44	27.8	30.4	788
209	EM2:IDFdm1-01	150	473.3	-	473.3	45	28.2	31.1	774
209	EM2:IDFdm1-01	160	487.2	-	487.2	46	28.6	31.7	761
209	EM2:IDFdm1-01	170	499.0	-	499.0	46	28.9	32.2	749
209	EM2:IDFdm1-01	180	508.6	-	508.6	46	29.2	32.7	736
209	EM2:IDFdm1-01	190	517.1	-	517.1	46	29.5	33.2	724
209	EM2:IDFdm1-01	200	524.5	-	524.5	47	29.8	33.6	713
209	EM2:IDFdm1-01	210	530.2	-	530.2	47	30.0	33.9	702
209	EM2:IDFdm1-01	220	534.6	-	534.6	47	30.2	34.2	690
209	EM2:IDFdm1-01	230	538.1	-	538.1	47	30.4	34.5	679
209	EM2:IDFdm1-01	240	541.1	-	541.1	47	30.6	34.7	668
209	EM2:IDFdm1-01	250	543.7	-	543.7	47	30.8	34.9	657
209	EM2:IDFdm1-01	260	546.0	-	546.0	47	31.0	35.2	648
209	EM2:IDFdm1-01	270	547.5	-	547.5	47	31.1	35.4	639
209	EM2:IDFdm1-01	280	548.1	-	548.1	47	31.3	35.6	631
209	EM2:IDFdm1-01	290	548.6	-	548.6	47	31.4	35.8	622
209	EM2:IDFdm1-01	300	549.0	-	549.0	47	31.6	35.9	616
209	EM2:IDFdm1-01	310	549.2	-	549.2	47	31.6	35.9	614
209	EM2:IDFdm1-01	320	549.2	-	549.2	47	31.6	35.9	614
209	EM2:IDFdm1-01	330	549.2	-	549.2	47	31.6	35.9	614
209	EM2:IDFdm1-01	340	549.2	-	549.2	47	31.6	35.9	614
209	EM2:IDFdm1-01	350	549.2	-	549.2	47	31.6	35.9	614

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
210	EM2:IDFdm1-04	10	-	-	-	0	-	0.8	0
210	EM2:IDFdm1-04	20	-	-	-	0	5.5	4.1	1
210	EM2:IDFdm1-04	30	1.7	-	1.7	0	18.7	7.9	31
210	EM2:IDFdm1-04	40	17.0	-	17.0	4	19.1	11.4	200
210	EM2:IDFdm1-04	50	56.5	-	56.5	9	20.0	14.5	435
210	EM2:IDFdm1-04	60	107.6	-	107.6	14	21.2	17.3	603
210	EM2:IDFdm1-04	70	159.7	-	159.7	20	22.3	19.6	694
210	EM2:IDFdm1-04	80	207.6	-	207.6	24	23.4	21.6	740
210	EM2:IDFdm1-04	90	249.1	-	249.1	28	24.3	23.3	761
210	EM2:IDFdm1-04	100	284.0	-	284.0	31	25.1	24.7	765
210	EM2:IDFdm1-04	110	314.8	-	314.8	34	25.8	26.0	766
210	EM2:IDFdm1-04	120	341.7	-	341.7	36	26.5	27.1	763
210	EM2:IDFdm1-04	130	364.8	-	364.8	38	27.0	28.0	757
210	EM2:IDFdm1-04	140	384.7	-	384.7	39	27.5	28.8	749
210	EM2:IDFdm1-04	150	401.8	-	401.8	41	28.0	29.5	741
210	EM2:IDFdm1-04	160	417.1	-	417.1	42	28.3	30.2	732
210	EM2:IDFdm1-04	170	430.1	-	430.1	42	28.7	30.7	724
210	EM2:IDFdm1-04	180	441.7	-	441.7	43	28.9	31.3	716
210	EM2:IDFdm1-04	190	452.0	-	452.0	44	29.2	31.7	708
210	EM2:IDFdm1-04	200	460.5	-	460.5	44	29.5	32.1	700
210	EM2:IDFdm1-04	210	467.9	-	467.9	45	29.7	32.4	692
210	EM2:IDFdm1-04	220	474.3	-	474.3	45	29.9	32.7	685
210	EM2:IDFdm1-04	230	480.0	-	480.0	45	30.1	33.0	678
210	EM2:IDFdm1-04	240	485.0	-	485.0	45	30.3	33.3	672
210	EM2:IDFdm1-04	250	489.0	-	489.0	46	30.5	33.6	665
210	EM2:IDFdm1-04	260	492.0	-	492.0	46	30.7	33.8	658
210	EM2:IDFdm1-04	270	495.0	-	495.0	46	30.8	34.0	651
210	EM2:IDFdm1-04	280	497.4	-	497.4	46	30.9	34.2	645
210	EM2:IDFdm1-04	290	499.6	-	499.6	46	31.0	34.4	639
210	EM2:IDFdm1-04	300	501.4	-	501.4	46	31.2	34.6	633
210	EM2:IDFdm1-04	310	501.9	-	501.9	46	31.2	34.6	632
210	EM2:IDFdm1-04	320	501.9	-	501.9	46	31.2	34.6	632
210	EM2:IDFdm1-04	330	501.9	-	501.9	46	31.2	34.6	632
210	EM2:IDFdm1-04	340	501.9	-	501.9	46	31.2	34.6	632
210	EM2:IDFdm1-04	350	501.9	-	501.9	46	31.2	34.6	632

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
211	EM2:IDFdm1-05	10	-	-	-	0	-	1.4	0
211	EM2:IDFdm1-05	20	0.2	-	0.2	0	12.1	5.8	8
211	EM2:IDFdm1-05	30	9.2	-	9.2	3	18.9	10.2	130
211	EM2:IDFdm1-05	40	49.7	-	49.7	8	20.0	14.2	373
211	EM2:IDFdm1-05	50	111.4	-	111.4	15	22.0	17.6	532
211	EM2:IDFdm1-05	60	174.9	-	174.9	23	23.9	20.5	607
211	EM2:IDFdm1-05	70	232.7	-	232.7	29	25.5	22.9	638
211	EM2:IDFdm1-05	80	282.1	-	282.1	33	26.9	24.9	647
211	EM2:IDFdm1-05	90	324.4	-	324.4	37	28.0	26.6	649
211	EM2:IDFdm1-05	100	359.6	-	359.6	40	29.0	28.0	643
211	EM2:IDFdm1-05	110	389.2	-	389.2	42	29.8	29.2	637
211	EM2:IDFdm1-05	120	414.9	-	414.9	44	30.4	30.2	631
211	EM2:IDFdm1-05	130	437.0	-	437.0	45	31.0	31.0	625
211	EM2:IDFdm1-05	140	455.8	-	455.8	47	31.5	31.8	617
211	EM2:IDFdm1-05	150	471.7	-	471.7	48	31.9	32.5	611
211	EM2:IDFdm1-05	160	484.9	-	484.9	48	32.3	33.0	603
211	EM2:IDFdm1-05	170	495.9	-	495.9	49	32.6	33.5	597
211	EM2:IDFdm1-05	180	505.3	-	505.3	49	32.9	34.0	592
211	EM2:IDFdm1-05	190	512.5	-	512.5	49	33.2	34.3	584
211	EM2:IDFdm1-05	200	518.6	-	518.6	50	33.4	34.7	578
211	EM2:IDFdm1-05	210	523.2	-	523.2	50	33.6	34.9	571
211	EM2:IDFdm1-05	220	527.1	-	527.1	50	33.8	35.2	566
211	EM2:IDFdm1-05	230	530.0	-	530.0	50	34.0	35.4	560
211	EM2:IDFdm1-05	240	531.4	-	531.4	50	34.1	35.6	554
211	EM2:IDFdm1-05	250	531.2	-	531.2	49	34.2	35.8	548
211	EM2:IDFdm1-05	260	531.0	-	531.0	49	34.3	35.9	541
211	EM2:IDFdm1-05	270	530.7	-	530.7	49	34.5	36.0	536
211	EM2:IDFdm1-05	280	530.4	-	530.4	49	34.6	36.2	531
211	EM2:IDFdm1-05	290	530.2	-	530.2	49	34.6	36.2	527
211	EM2:IDFdm1-05	300	530.0	-	530.0	48	34.7	36.4	523
211	EM2:IDFdm1-05	310	530.1	-	530.1	48	34.7	36.4	522
211	EM2:IDFdm1-05	320	530.1	-	530.1	48	34.7	36.4	522
211	EM2:IDFdm1-05	330	530.1	-	530.1	48	34.7	36.4	522
211	EM2:IDFdm1-05	340	530.1	-	530.1	48	34.7	36.4	522
211	EM2:IDFdm1-05	350	530.1	-	530.1	48	34.7	36.4	522

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
212	EM2:IDFdm1-Oth	10	-	-	-	0	-	1.4	0
212	EM2:IDFdm1-Oth	20	0.2	-	0.2	0	12.3	5.8	7
212	EM2:IDFdm1-Oth	30	8.8	-	8.8	2	19.0	10.2	118
212	EM2:IDFdm1-Oth	40	47.6	-	47.6	8	20.3	14.2	346
212	EM2:IDFdm1-Oth	50	107.2	-	107.2	15	22.5	17.7	493
212	EM2:IDFdm1-Oth	60	168.9	-	168.9	22	24.5	20.5	563
212	EM2:IDFdm1-Oth	70	225.2	-	225.2	28	26.2	23.0	591
212	EM2:IDFdm1-Oth	80	273.6	-	273.6	33	27.6	25.0	599
212	EM2:IDFdm1-Oth	90	315.0	-	315.0	36	28.8	26.6	601
212	EM2:IDFdm1-Oth	100	349.7	-	349.7	39	29.8	28.1	596
212	EM2:IDFdm1-Oth	110	379.1	-	379.1	41	30.7	29.2	590
212	EM2:IDFdm1-Oth	120	404.7	-	404.7	43	31.3	30.2	585
212	EM2:IDFdm1-Oth	130	426.8	-	426.8	45	31.9	31.2	580
212	EM2:IDFdm1-Oth	140	445.7	-	445.7	46	32.5	31.9	574
212	EM2:IDFdm1-Oth	150	461.6	-	461.6	47	32.9	32.6	568
212	EM2:IDFdm1-Oth	160	475.2	-	475.2	48	33.3	33.2	562
212	EM2:IDFdm1-Oth	170	486.8	-	486.8	48	33.7	33.7	556
212	EM2:IDFdm1-Oth	180	496.1	-	496.1	49	34.0	34.0	550
212	EM2:IDFdm1-Oth	190	503.8	-	503.8	49	34.2	34.4	545
212	EM2:IDFdm1-Oth	200	510.4	-	510.4	49	34.5	34.8	539
212	EM2:IDFdm1-Oth	210	515.6	-	515.6	49	34.7	35.1	533
212	EM2:IDFdm1-Oth	220	519.4	-	519.4	49	34.9	35.3	528
212	EM2:IDFdm1-Oth	230	522.3	-	522.3	49	35.0	35.6	523
212	EM2:IDFdm1-Oth	240	524.7	-	524.7	49	35.2	35.8	518
212	EM2:IDFdm1-Oth	250	525.1	-	525.1	49	35.3	35.9	512
212	EM2:IDFdm1-Oth	260	525.0	-	525.0	49	35.4	36.1	506
212	EM2:IDFdm1-Oth	270	524.9	-	524.9	49	35.5	36.2	501
212	EM2:IDFdm1-Oth	280	524.6	-	524.6	49	35.6	36.4	496
212	EM2:IDFdm1-Oth	290	524.1	-	524.1	48	35.7	36.4	492
212	EM2:IDFdm1-Oth	300	523.5	-	523.5	48	35.8	36.5	490
212	EM2:IDFdm1-Oth	310	523.3	-	523.3	48	35.8	36.6	489
212	EM2:IDFdm1-Oth	320	523.3	-	523.3	48	35.8	36.6	489
212	EM2:IDFdm1-Oth	330	523.3	-	523.3	48	35.8	36.6	489
212	EM2:IDFdm1-Oth	340	523.3	-	523.3	48	35.8	36.6	489
212	EM2:IDFdm1-Oth	350	523.3	-	523.3	48	35.8	36.6	489

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
213	EM2:MSdm1-01	10	-	-	-	0	-	1.0	0
213	EM2:MSdm1-01	20	-	-	-	0	12.7	4.8	1
213	EM2:MSdm1-01	30	6.5	-	6.5	2	16.9	9.2	110
213	EM2:MSdm1-01	40	52.0	-	52.0	11	18.0	13.3	520
213	EM2:MSdm1-01	50	131.7	-	131.7	21	19.5	16.7	891
213	EM2:MSdm1-01	60	214.6	-	214.6	29	21.2	19.6	1032
213	EM2:MSdm1-01	70	284.2	-	284.2	34	22.6	21.9	1037
213	EM2:MSdm1-01	80	338.7	-	338.7	38	23.9	23.8	997
213	EM2:MSdm1-01	90	380.6	-	380.6	41	25.0	25.4	950
213	EM2:MSdm1-01	100	412.5	-	412.5	43	26.0	26.8	907
213	EM2:MSdm1-01	110	437.2	-	437.2	44	26.7	27.8	870
213	EM2:MSdm1-01	120	456.3	-	456.3	45	27.4	28.8	837
213	EM2:MSdm1-01	130	471.8	-	471.8	46	27.9	29.7	810
213	EM2:MSdm1-01	140	484.5	-	484.5	46	28.4	30.4	787
213	EM2:MSdm1-01	150	495.1	-	495.1	47	28.7	30.9	769
213	EM2:MSdm1-01	160	503.6	-	503.6	47	29.1	31.4	752
213	EM2:MSdm1-01	170	510.8	-	510.8	47	29.4	31.9	739
213	EM2:MSdm1-01	180	515.8	-	515.8	47	29.6	32.3	725
213	EM2:MSdm1-01	190	519.4	-	519.4	47	29.8	32.7	712
213	EM2:MSdm1-01	200	522.3	-	522.3	48	30.1	33.0	700
213	EM2:MSdm1-01	210	524.7	-	524.7	48	30.3	33.3	690
213	EM2:MSdm1-01	220	525.9	-	525.9	48	30.5	33.5	679
213	EM2:MSdm1-01	230	525.8	-	525.8	47	30.6	33.8	668
213	EM2:MSdm1-01	240	525.7	-	525.7	47	30.7	34.0	659
213	EM2:MSdm1-01	250	525.4	-	525.4	47	30.8	34.2	650
213	EM2:MSdm1-01	260	525.1	-	525.1	47	30.9	34.3	641
213	EM2:MSdm1-01	270	524.7	-	524.7	46	31.0	34.5	634
213	EM2:MSdm1-01	280	524.3	-	524.3	46	31.1	34.7	627
213	EM2:MSdm1-01	290	523.2	-	523.2	46	31.2	34.8	620
213	EM2:MSdm1-01	300	521.0	-	521.0	46	31.3	34.9	613
213	EM2:MSdm1-01	310	520.6	-	520.6	46	31.3	34.9	611
213	EM2:MSdm1-01	320	520.6	-	520.6	46	31.3	34.9	611
213	EM2:MSdm1-01	330	520.6	-	520.6	46	31.3	34.9	611
213	EM2:MSdm1-01	340	520.6	-	520.6	46	31.3	34.9	611
213	EM2:MSdm1-01	350	520.6	-	520.6	46	31.3	34.9	611

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
214	EM2:MSdm1-03	10	-	-	-	0	-	0.7	0
214	EM2:MSdm1-03	20	-	-	-	0	5.7	4.1	1
214	EM2:MSdm1-03	30	2.5	-	2.5	1	17.6	8.3	46
214	EM2:MSdm1-03	40	26.0	-	26.0	6	18.3	12.1	290
214	EM2:MSdm1-03	50	80.6	-	80.6	14	19.9	15.4	604
214	EM2:MSdm1-03	60	147.7	-	147.7	21	21.4	18.2	805
214	EM2:MSdm1-03	70	212.0	-	212.0	27	22.9	20.5	878
214	EM2:MSdm1-03	80	266.1	-	266.1	31	24.2	22.5	885
214	EM2:MSdm1-03	90	310.1	-	310.1	34	25.2	24.1	871
214	EM2:MSdm1-03	100	345.9	-	345.9	37	26.2	25.5	850
214	EM2:MSdm1-03	110	374.7	-	374.7	38	26.9	26.6	829
214	EM2:MSdm1-03	120	397.7	-	397.7	40	27.5	27.6	808
214	EM2:MSdm1-03	130	416.9	-	416.9	41	28.1	28.5	788
214	EM2:MSdm1-03	140	432.3	-	432.3	42	28.6	29.2	770
214	EM2:MSdm1-03	150	445.5	-	445.5	43	29.0	29.9	753
214	EM2:MSdm1-03	160	456.3	-	456.3	44	29.3	30.4	739
214	EM2:MSdm1-03	170	465.6	-	465.6	44	29.6	30.9	726
214	EM2:MSdm1-03	180	473.4	-	473.4	45	29.9	31.3	714
214	EM2:MSdm1-03	190	479.6	-	479.6	45	30.2	31.7	703
214	EM2:MSdm1-03	200	485.1	-	485.1	45	30.4	32.1	693
214	EM2:MSdm1-03	210	489.9	-	489.9	45	30.6	32.4	685
214	EM2:MSdm1-03	220	493.7	-	493.7	45	30.7	32.6	677
214	EM2:MSdm1-03	230	495.8	-	495.8	45	30.9	32.9	668
214	EM2:MSdm1-03	240	497.5	-	497.5	45	31.1	33.1	660
214	EM2:MSdm1-03	250	499.0	-	499.0	45	31.2	33.3	652
214	EM2:MSdm1-03	260	500.0	-	500.0	45	31.3	33.5	644
214	EM2:MSdm1-03	270	501.0	-	501.0	45	31.4	33.7	637
214	EM2:MSdm1-03	280	501.9	-	501.9	45	31.5	33.9	631
214	EM2:MSdm1-03	290	502.4	-	502.4	45	31.6	34.0	625
214	EM2:MSdm1-03	300	501.5	-	501.5	45	31.7	34.1	618
214	EM2:MSdm1-03	310	501.2	-	501.2	45	31.7	34.1	616
214	EM2:MSdm1-03	320	501.2	-	501.2	45	31.7	34.1	616
214	EM2:MSdm1-03	330	501.2	-	501.2	45	31.7	34.1	616
214	EM2:MSdm1-03	340	501.2	-	501.2	45	31.7	34.1	616
214	EM2:MSdm1-03	350	501.2	-	501.2	45	31.7	34.1	616

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
215	EM2:MSdm1-04	10	-	-	-	0	-	1.1	0
215	EM2:MSdm1-04	20	0.1	-	0.1	0	12.3	5.0	3
215	EM2:MSdm1-04	30	5.4	-	5.4	2	17.4	9.3	92
215	EM2:MSdm1-04	40	44.0	-	44.0	9	18.2	13.3	457
215	EM2:MSdm1-04	50	113.5	-	113.5	19	19.5	16.7	817
215	EM2:MSdm1-04	60	188.9	-	188.9	26	21.0	19.5	970
215	EM2:MSdm1-04	70	253.4	-	253.4	31	22.3	21.7	996
215	EM2:MSdm1-04	80	305.3	-	305.3	34	23.5	23.7	972
215	EM2:MSdm1-04	90	346.4	-	346.4	37	24.5	25.3	937
215	EM2:MSdm1-04	100	379.1	-	379.1	40	25.4	26.6	903
215	EM2:MSdm1-04	110	404.5	-	404.5	41	26.2	27.6	872
215	EM2:MSdm1-04	120	424.7	-	424.7	42	26.8	28.6	843
215	EM2:MSdm1-04	130	440.9	-	440.9	43	27.4	29.4	817
215	EM2:MSdm1-04	140	451.2	-	451.2	44	27.7	29.9	792
215	EM2:MSdm1-04	150	457.0	-	457.0	44	28.1	30.1	768
215	EM2:MSdm1-04	160	463.1	-	463.1	44	28.5	30.4	750
215	EM2:MSdm1-04	170	469.9	-	469.9	45	28.8	30.8	736
215	EM2:MSdm1-04	180	476.0	-	476.0	45	29.0	31.2	724
215	EM2:MSdm1-04	190	480.6	-	480.6	45	29.2	31.6	713
215	EM2:MSdm1-04	200	483.6	-	483.6	45	29.4	31.9	702
215	EM2:MSdm1-04	210	485.7	-	485.7	45	29.6	32.2	691
215	EM2:MSdm1-04	220	487.6	-	487.6	45	29.8	32.4	681
215	EM2:MSdm1-04	230	489.0	-	489.0	45	29.9	32.6	673
215	EM2:MSdm1-04	240	489.2	-	489.2	45	30.0	32.8	664
215	EM2:MSdm1-04	250	488.2	-	488.2	44	30.1	33.0	654
215	EM2:MSdm1-04	260	487.1	-	487.1	44	30.2	33.1	646
215	EM2:MSdm1-04	270	486.2	-	486.2	44	30.3	33.3	638
215	EM2:MSdm1-04	280	485.2	-	485.2	44	30.4	33.4	631
215	EM2:MSdm1-04	290	484.2	-	484.2	44	30.5	33.5	625
215	EM2:MSdm1-04	300	483.4	-	483.4	43	30.6	33.6	619
215	EM2:MSdm1-04	310	483.2	-	483.2	43	30.6	33.6	617
215	EM2:MSdm1-04	320	483.2	-	483.2	43	30.6	33.6	617
215	EM2:MSdm1-04	330	483.2	-	483.2	43	30.6	33.6	617
215	EM2:MSdm1-04	340	483.2	-	483.2	43	30.6	33.6	617
215	EM2:MSdm1-04	350	483.2	-	483.2	43	30.6	33.6	617

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
216	EM2:MSdm1-05	10	-	-	-	0	-	1.1	0
216	EM2:MSdm1-05	20	-	-	-	0	13.0	4.8	1
216	EM2:MSdm1-05	30	7.6	-	7.6	2	17.2	9.2	126
216	EM2:MSdm1-05	40	54.3	-	54.3	10	18.7	13.4	467
216	EM2:MSdm1-05	50	130.7	-	130.7	20	20.7	16.8	730
216	EM2:MSdm1-05	60	211.9	-	211.9	29	22.7	19.8	844
216	EM2:MSdm1-05	70	283.0	-	283.0	35	24.4	22.2	866
216	EM2:MSdm1-05	80	339.3	-	339.3	40	25.8	24.2	847
216	EM2:MSdm1-05	90	382.5	-	382.5	42	27.0	25.8	816
216	EM2:MSdm1-05	100	416.4	-	416.4	45	28.0	27.2	788
216	EM2:MSdm1-05	110	442.7	-	442.7	47	28.8	28.4	761
216	EM2:MSdm1-05	120	463.0	-	463.0	48	29.5	29.4	738
216	EM2:MSdm1-05	130	479.1	-	479.1	48	30.0	30.2	717
216	EM2:MSdm1-05	140	492.3	-	492.3	49	30.5	31.0	700
216	EM2:MSdm1-05	150	502.6	-	502.6	49	30.9	31.6	684
216	EM2:MSdm1-05	160	511.5	-	511.5	50	31.3	32.2	672
216	EM2:MSdm1-05	170	518.7	-	518.7	50	31.6	32.7	660
216	EM2:MSdm1-05	180	523.7	-	523.7	51	31.9	33.0	650
216	EM2:MSdm1-05	190	527.9	-	527.9	50	32.1	33.4	639
216	EM2:MSdm1-05	200	531.4	-	531.4	50	32.3	33.8	631
216	EM2:MSdm1-05	210	534.0	-	534.0	50	32.5	34.0	622
216	EM2:MSdm1-05	220	535.3	-	535.3	50	32.6	34.3	613
216	EM2:MSdm1-05	230	536.2	-	536.2	50	32.8	34.6	606
216	EM2:MSdm1-05	240	536.8	-	536.8	50	32.9	34.8	599
216	EM2:MSdm1-05	250	537.4	-	537.4	50	33.0	35.0	592
216	EM2:MSdm1-05	260	537.6	-	537.6	49	33.1	35.2	586
216	EM2:MSdm1-05	270	537.6	-	537.6	49	33.2	35.3	581
216	EM2:MSdm1-05	280	536.3	-	536.3	49	33.3	35.5	574
216	EM2:MSdm1-05	290	534.6	-	534.6	49	33.4	35.6	568
216	EM2:MSdm1-05	300	533.0	-	533.0	48	33.4	35.8	562
216	EM2:MSdm1-05	310	532.8	-	532.8	48	33.4	35.8	561
216	EM2:MSdm1-05	320	532.8	-	532.8	48	33.4	35.8	561
216	EM2:MSdm1-05	330	532.8	-	532.8	48	33.4	35.8	561
216	EM2:MSdm1-05	340	532.8	-	532.8	48	33.4	35.8	561
216	EM2:MSdm1-05	350	532.8	-	532.8	48	33.4	35.8	561

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
217	EM2:MSdm1-Oth	10	-	-	-	0	-	0.9	0
217	EM2:MSdm1-Oth	20	-	-	-	0	14.0	5.0	0
217	EM2:MSdm1-Oth	30	5.7	-	5.7	2	15.8	9.7	106
217	EM2:MSdm1-Oth	40	71.7	-	71.7	16	16.5	13.8	847
217	EM2:MSdm1-Oth	50	182.8	-	182.8	31	17.6	17.2	1432
217	EM2:MSdm1-Oth	60	276.3	-	276.3	37	19.0	19.9	1485
217	EM2:MSdm1-Oth	70	340.2	-	340.2	40	20.4	22.1	1351
217	EM2:MSdm1-Oth	80	385.2	-	385.2	42	21.8	23.8	1217
217	EM2:MSdm1-Oth	90	418.3	-	418.3	42	22.8	25.3	1118
217	EM2:MSdm1-Oth	100	442.6	-	442.6	44	23.7	26.5	1046
217	EM2:MSdm1-Oth	110	460.2	-	460.2	44	24.4	27.5	989
217	EM2:MSdm1-Oth	120	473.5	-	473.5	43	25.0	28.3	942
217	EM2:MSdm1-Oth	130	483.0	-	483.0	44	25.5	29.0	904
217	EM2:MSdm1-Oth	140	490.8	-	490.8	44	26.0	29.6	873
217	EM2:MSdm1-Oth	150	496.8	-	496.8	44	26.3	30.1	847
217	EM2:MSdm1-Oth	160	502.0	-	502.0	44	26.7	30.5	824
217	EM2:MSdm1-Oth	170	504.5	-	504.5	44	26.9	30.9	804
217	EM2:MSdm1-Oth	180	506.4	-	506.4	43	27.2	31.3	785
217	EM2:MSdm1-Oth	190	508.1	-	508.1	43	27.4	31.6	769
217	EM2:MSdm1-Oth	200	508.4	-	508.4	43	27.6	31.9	753
217	EM2:MSdm1-Oth	210	508.0	-	508.0	43	27.8	32.1	738
217	EM2:MSdm1-Oth	220	507.5	-	507.5	43	27.9	32.3	725
217	EM2:MSdm1-Oth	230	507.1	-	507.1	43	28.1	32.6	714
217	EM2:MSdm1-Oth	240	506.6	-	506.6	43	28.2	32.8	703
217	EM2:MSdm1-Oth	250	505.5	-	505.5	43	28.3	33.0	693
217	EM2:MSdm1-Oth	260	502.5	-	502.5	42	28.4	33.1	681
217	EM2:MSdm1-Oth	270	499.8	-	499.8	42	28.5	33.2	671
217	EM2:MSdm1-Oth	280	497.3	-	497.3	42	28.5	33.4	662
217	EM2:MSdm1-Oth	290	494.8	-	494.8	41	28.6	33.5	654
217	EM2:MSdm1-Oth	300	492.7	-	492.7	41	28.7	33.6	646
217	EM2:MSdm1-Oth	310	492.1	-	492.1	41	28.7	33.6	644
217	EM2:MSdm1-Oth	320	492.1	-	492.1	41	28.7	33.6	644
217	EM2:MSdm1-Oth	330	492.1	-	492.1	41	28.7	33.6	644
217	EM2:MSdm1-Oth	340	492.1	-	492.1	41	28.7	33.6	644
217	EM2:MSdm1-Oth	350	492.1	-	492.1	41	28.7	33.6	644

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
218	EM2:Msdm1a-All	10	-	-	-	0	3.5	1.2	0
218	EM2:Msdm1a-All	20	0.4	-	0.4	0	10.4	5.2	12
218	EM2:Msdm1a-All	30	18.3	-	18.3	4	18.0	9.9	237
218	EM2:Msdm1a-All	40	77.6	-	77.6	13	18.9	14.2	609
218	EM2:Msdm1a-All	50	165.3	-	165.3	21	20.1	18.0	897
218	EM2:Msdm1a-All	60	251.6	-	251.6	29	21.6	21.1	1000
218	EM2:Msdm1a-All	70	322.2	-	322.2	34	23.1	23.6	1004
218	EM2:Msdm1a-All	80	376.4	-	376.4	38	24.3	25.7	972
218	EM2:Msdm1a-All	90	417.0	-	417.0	41	25.3	27.5	932
218	EM2:Msdm1a-All	100	449.1	-	449.1	44	26.2	28.9	893
218	EM2:Msdm1a-All	110	474.9	-	474.9	45	26.9	30.2	858
218	EM2:Msdm1a-All	120	496.8	-	496.8	46	27.6	31.2	830
218	EM2:Msdm1a-All	130	515.4	-	515.4	47	28.2	32.1	806
218	EM2:Msdm1a-All	140	530.2	-	530.2	48	28.7	32.9	785
218	EM2:Msdm1a-All	150	542.3	-	542.3	48	29.1	33.6	765
218	EM2:Msdm1a-All	160	552.0	-	552.0	49	29.5	34.2	746
218	EM2:Msdm1a-All	170	559.9	-	559.9	49	29.8	34.7	729
218	EM2:Msdm1a-All	180	566.1	-	566.1	49	30.1	35.1	712
218	EM2:Msdm1a-All	190	570.6	-	570.6	49	30.4	35.6	696
218	EM2:Msdm1a-All	200	574.2	-	574.2	49	30.7	35.9	683
218	EM2:Msdm1a-All	210	576.9	-	576.9	49	30.9	36.2	670
218	EM2:Msdm1a-All	220	579.2	-	579.2	48	31.1	36.5	659
218	EM2:Msdm1a-All	230	580.8	-	580.8	48	31.3	36.7	648
218	EM2:Msdm1a-All	240	581.0	-	581.0	48	31.4	37.0	638
218	EM2:Msdm1a-All	250	580.8	-	580.8	48	31.6	37.2	629
218	EM2:Msdm1a-All	260	580.4	-	580.4	48	31.7	37.3	621
218	EM2:Msdm1a-All	270	580.0	-	580.0	48	31.8	37.5	613
218	EM2:Msdm1a-All	280	579.4	-	579.4	47	31.9	37.7	606
218	EM2:Msdm1a-All	290	578.6	-	578.6	47	32.0	37.8	600
218	EM2:Msdm1a-All	300	577.8	-	577.8	47	32.1	37.9	594
218	EM2:Msdm1a-All	310	577.6	-	577.6	47	32.1	37.9	594
218	EM2:Msdm1a-All	320	577.6	-	577.6	47	32.1	37.9	594
218	EM2:Msdm1a-All	330	577.6	-	577.6	47	32.1	37.9	594
218	EM2:Msdm1a-All	340	577.6	-	577.6	47	32.1	37.9	594
218	EM2:Msdm1a-All	350	577.6	-	577.6	47	32.1	37.9	594

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
301	EM3:ESSFdc1/dcu1-01	10	-	-	-	0	-	0.8	0
301	EM3:ESSFdc1/dcu1-01	20	-	-	-	0	-	3.6	0
301	EM3:ESSFdc1/dcu1-01	30	0.8	-	0.8	0	14.5	7.3	20
301	EM3:ESSFdc1/dcu1-01	40	18.0	-	18.0	4	18.3	11.0	223
301	EM3:ESSFdc1/dcu1-01	50	64.7	-	64.7	11	19.5	14.2	520
301	EM3:ESSFdc1/dcu1-01	60	126.2	-	126.2	19	20.9	16.9	740
301	EM3:ESSFdc1/dcu1-01	70	188.6	-	188.6	26	22.2	19.3	857
301	EM3:ESSFdc1/dcu1-01	80	244.4	-	244.4	32	23.5	21.3	900
301	EM3:ESSFdc1/dcu1-01	90	291.2	-	291.2	36	24.5	23.0	904
301	EM3:ESSFdc1/dcu1-01	100	329.6	-	329.6	39	25.5	24.4	889
301	EM3:ESSFdc1/dcu1-01	110	360.3	-	360.3	41	26.2	25.7	868
301	EM3:ESSFdc1/dcu1-01	120	385.0	-	385.0	44	26.9	26.7	845
301	EM3:ESSFdc1/dcu1-01	130	405.3	-	405.3	44	27.5	27.6	823
301	EM3:ESSFdc1/dcu1-01	140	421.9	-	421.9	45	28.0	28.4	805
301	EM3:ESSFdc1/dcu1-01	150	435.2	-	435.2	46	28.4	29.0	787
301	EM3:ESSFdc1/dcu1-01	160	446.2	-	446.2	47	28.8	29.6	771
301	EM3:ESSFdc1/dcu1-01	170	455.3	-	455.3	47	29.2	30.1	757
301	EM3:ESSFdc1/dcu1-01	180	462.6	-	462.6	48	29.5	30.6	743
301	EM3:ESSFdc1/dcu1-01	190	468.7	-	468.7	48	29.7	31.0	730
301	EM3:ESSFdc1/dcu1-01	200	473.5	-	473.5	48	29.9	31.3	719
301	EM3:ESSFdc1/dcu1-01	210	477.5	-	477.5	48	30.1	31.7	710
301	EM3:ESSFdc1/dcu1-01	220	480.9	-	480.9	48	30.3	31.9	701
301	EM3:ESSFdc1/dcu1-01	230	483.2	-	483.2	48	30.5	32.2	692
301	EM3:ESSFdc1/dcu1-01	240	484.6	-	484.6	48	30.6	32.5	683
301	EM3:ESSFdc1/dcu1-01	250	485.5	-	485.5	48	30.7	32.7	675
301	EM3:ESSFdc1/dcu1-01	260	486.3	-	486.3	48	30.8	32.9	667
301	EM3:ESSFdc1/dcu1-01	270	486.8	-	486.8	47	30.9	33.0	661
301	EM3:ESSFdc1/dcu1-01	280	486.9	-	486.9	47	31.0	33.2	654
301	EM3:ESSFdc1/dcu1-01	290	486.8	-	486.8	47	31.1	33.4	648
301	EM3:ESSFdc1/dcu1-01	300	486.8	-	486.8	47	31.2	33.5	643
301	EM3:ESSFdc1/dcu1-01	310	486.7	-	486.7	47	31.2	33.5	642
301	EM3:ESSFdc1/dcu1-01	320	486.7	-	486.7	47	31.2	33.5	642
301	EM3:ESSFdc1/dcu1-01	330	486.7	-	486.7	47	31.2	33.5	642
301	EM3:ESSFdc1/dcu1-01	340	486.7	-	486.7	47	31.2	33.5	642
301	EM3:ESSFdc1/dcu1-01	350	486.7	-	486.7	47	31.2	33.5	642

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
302	EM3:ESSFdc1/dcu1-03	10	-	-	-	0	-	0.8	0
302	EM3:ESSFdc1/dcu1-03	20	-	-	-	0	-	3.6	0
302	EM3:ESSFdc1/dcu1-03	30	0.5	-	0.5	0	17.0	7.2	12
302	EM3:ESSFdc1/dcu1-03	40	14.2	-	14.2	4	17.4	10.4	210
302	EM3:ESSFdc1/dcu1-03	50	54.4	-	54.4	10	18.4	13.4	519
302	EM3:ESSFdc1/dcu1-03	60	110.1	-	110.1	18	19.6	16.0	783
302	EM3:ESSFdc1/dcu1-03	70	168.6	-	168.6	25	20.8	18.2	939
302	EM3:ESSFdc1/dcu1-03	80	221.9	-	221.9	31	21.8	20.0	1010
302	EM3:ESSFdc1/dcu1-03	90	267.3	-	267.3	35	22.8	21.5	1017
302	EM3:ESSFdc1/dcu1-03	100	304.6	-	304.6	37	23.6	22.8	1004
302	EM3:ESSFdc1/dcu1-03	110	334.9	-	334.9	39	24.4	23.9	977
302	EM3:ESSFdc1/dcu1-03	120	359.8	-	359.8	41	25.0	24.9	950
302	EM3:ESSFdc1/dcu1-03	130	379.6	-	379.6	42	25.6	25.7	924
302	EM3:ESSFdc1/dcu1-03	140	395.9	-	395.9	43	26.1	26.4	900
302	EM3:ESSFdc1/dcu1-03	150	409.3	-	409.3	44	26.4	27.1	879
302	EM3:ESSFdc1/dcu1-03	160	420.5	-	420.5	44	26.8	27.6	861
302	EM3:ESSFdc1/dcu1-03	170	429.6	-	429.6	45	27.1	28.1	843
302	EM3:ESSFdc1/dcu1-03	180	437.2	-	437.2	45	27.4	28.6	828
302	EM3:ESSFdc1/dcu1-03	190	443.0	-	443.0	45	27.7	29.0	813
302	EM3:ESSFdc1/dcu1-03	200	447.7	-	447.7	46	27.9	29.3	800
302	EM3:ESSFdc1/dcu1-03	210	451.6	-	451.6	46	28.1	29.6	787
302	EM3:ESSFdc1/dcu1-03	220	454.8	-	454.8	46	28.2	29.9	776
302	EM3:ESSFdc1/dcu1-03	230	457.6	-	457.6	46	28.4	30.1	766
302	EM3:ESSFdc1/dcu1-03	240	459.3	-	459.3	45	28.6	30.3	756
302	EM3:ESSFdc1/dcu1-03	250	460.4	-	460.4	45	28.7	30.5	746
302	EM3:ESSFdc1/dcu1-03	260	460.9	-	460.9	45	28.8	30.7	737
302	EM3:ESSFdc1/dcu1-03	270	461.4	-	461.4	45	28.9	30.9	729
302	EM3:ESSFdc1/dcu1-03	280	461.5	-	461.5	45	29.0	31.1	721
302	EM3:ESSFdc1/dcu1-03	290	461.4	-	461.4	45	29.1	31.2	713
302	EM3:ESSFdc1/dcu1-03	300	461.2	-	461.2	45	29.2	31.3	708
302	EM3:ESSFdc1/dcu1-03	310	461.2	-	461.2	45	29.2	31.3	707
302	EM3:ESSFdc1/dcu1-03	320	461.2	-	461.2	45	29.2	31.3	707
302	EM3:ESSFdc1/dcu1-03	330	461.2	-	461.2	45	29.2	31.3	707
302	EM3:ESSFdc1/dcu1-03	340	461.2	-	461.2	45	29.2	31.3	707
302	EM3:ESSFdc1/dcu1-03	350	461.2	-	461.2	45	29.2	31.3	707

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
303	EM3:ESSFdc1/dcu1-04	10	-	-	-	0	-	0.9	0
303	EM3:ESSFdc1/dcu1-04	20	-	-	-	0	-	4.2	0
303	EM3:ESSFdc1/dcu1-04	30	1.7	-	1.7	1	15.9	8.1	38
303	EM3:ESSFdc1/dcu1-04	40	27.4	-	27.4	5	19.1	11.9	300
303	EM3:ESSFdc1/dcu1-04	50	85.8	-	85.8	13	20.8	15.4	554
303	EM3:ESSFdc1/dcu1-04	60	153.2	-	153.2	21	22.5	18.3	704
303	EM3:ESSFdc1/dcu1-04	70	218.3	-	218.3	28	24.1	20.9	777
303	EM3:ESSFdc1/dcu1-04	80	275.0	-	275.0	35	25.4	23.0	803
303	EM3:ESSFdc1/dcu1-04	90	322.0	-	322.0	39	26.5	24.8	801
303	EM3:ESSFdc1/dcu1-04	100	360.4	-	360.4	42	27.5	26.3	788
303	EM3:ESSFdc1/dcu1-04	110	391.1	-	391.1	45	28.3	27.6	769
303	EM3:ESSFdc1/dcu1-04	120	416.5	-	416.5	46	29.1	28.7	752
303	EM3:ESSFdc1/dcu1-04	130	437.1	-	437.1	48	29.6	29.7	736
303	EM3:ESSFdc1/dcu1-04	140	453.5	-	453.5	49	30.1	30.5	719
303	EM3:ESSFdc1/dcu1-04	150	467.5	-	467.5	49	30.6	31.2	706
303	EM3:ESSFdc1/dcu1-04	160	478.9	-	478.9	50	31.0	31.8	694
303	EM3:ESSFdc1/dcu1-04	170	488.2	-	488.2	50	31.3	32.3	681
303	EM3:ESSFdc1/dcu1-04	180	495.9	-	495.9	51	31.6	32.8	670
303	EM3:ESSFdc1/dcu1-04	190	502.0	-	502.0	51	31.8	33.3	660
303	EM3:ESSFdc1/dcu1-04	200	506.7	-	506.7	51	32.1	33.7	651
303	EM3:ESSFdc1/dcu1-04	210	510.8	-	510.8	51	32.2	34.0	644
303	EM3:ESSFdc1/dcu1-04	220	514.0	-	514.0	51	32.4	34.3	637
303	EM3:ESSFdc1/dcu1-04	230	516.3	-	516.3	51	32.6	34.5	629
303	EM3:ESSFdc1/dcu1-04	240	518.4	-	518.4	51	32.7	34.8	623
303	EM3:ESSFdc1/dcu1-04	250	519.6	-	519.6	51	32.9	35.0	616
303	EM3:ESSFdc1/dcu1-04	260	519.7	-	519.7	51	33.0	35.2	609
303	EM3:ESSFdc1/dcu1-04	270	519.7	-	519.7	51	33.1	35.4	603
303	EM3:ESSFdc1/dcu1-04	280	519.7	-	519.7	50	33.1	35.6	598
303	EM3:ESSFdc1/dcu1-04	290	519.6	-	519.6	50	33.2	35.8	592
303	EM3:ESSFdc1/dcu1-04	300	519.5	-	519.5	50	33.3	35.9	589
303	EM3:ESSFdc1/dcu1-04	310	519.5	-	519.5	50	33.3	35.9	588
303	EM3:ESSFdc1/dcu1-04	320	519.5	-	519.5	50	33.3	35.9	588
303	EM3:ESSFdc1/dcu1-04	330	519.5	-	519.5	50	33.3	35.9	588
303	EM3:ESSFdc1/dcu1-04	340	519.5	-	519.5	50	33.3	35.9	588
303	EM3:ESSFdc1/dcu1-04	350	519.5	-	519.5	50	33.3	35.9	588

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
304	EM3:ESSFdc1/dcu1-Oth	10	-	-	-	0	-	0.7	0
304	EM3:ESSFdc1/dcu1-Oth	20	-	-	-	0	-	2.8	0
304	EM3:ESSFdc1/dcu1-Oth	30	0.2	-	0.2	0	12.8	5.5	5
304	EM3:ESSFdc1/dcu1-Oth	40	7.6	-	7.6	2	14.3	8.0	123
304	EM3:ESSFdc1/dcu1-Oth	50	34.4	-	34.4	6	15.0	10.4	344
304	EM3:ESSFdc1/dcu1-Oth	60	75.0	-	75.0	12	16.1	12.5	521
304	EM3:ESSFdc1/dcu1-Oth	70	117.9	-	117.9	17	17.1	14.3	630
304	EM3:ESSFdc1/dcu1-Oth	80	158.5	-	158.5	21	18.1	15.8	682
304	EM3:ESSFdc1/dcu1-Oth	90	194.1	-	194.1	25	18.9	17.1	702
304	EM3:ESSFdc1/dcu1-Oth	100	224.4	-	224.4	28	19.6	18.2	703
304	EM3:ESSFdc1/dcu1-Oth	110	249.6	-	249.6	30	20.3	19.1	694
304	EM3:ESSFdc1/dcu1-Oth	120	270.6	-	270.6	32	20.8	20.0	681
304	EM3:ESSFdc1/dcu1-Oth	130	288.2	-	288.2	33	21.3	20.7	668
304	EM3:ESSFdc1/dcu1-Oth	140	302.7	-	302.7	34	21.7	21.3	654
304	EM3:ESSFdc1/dcu1-Oth	150	314.6	-	314.6	35	22.0	21.8	641
304	EM3:ESSFdc1/dcu1-Oth	160	324.7	-	324.7	36	22.4	22.3	630
304	EM3:ESSFdc1/dcu1-Oth	170	333.2	-	333.2	36	22.6	22.8	620
304	EM3:ESSFdc1/dcu1-Oth	180	340.2	-	340.2	36	22.9	23.2	610
304	EM3:ESSFdc1/dcu1-Oth	190	346.2	-	346.2	37	23.1	23.5	601
304	EM3:ESSFdc1/dcu1-Oth	200	351.4	-	351.4	37	23.2	23.8	593
304	EM3:ESSFdc1/dcu1-Oth	210	355.6	-	355.6	37	23.4	24.0	585
304	EM3:ESSFdc1/dcu1-Oth	220	358.6	-	358.6	37	23.6	24.3	577
304	EM3:ESSFdc1/dcu1-Oth	230	361.2	-	361.2	37	23.7	24.5	569
304	EM3:ESSFdc1/dcu1-Oth	240	363.1	-	363.1	37	23.8	24.7	562
304	EM3:ESSFdc1/dcu1-Oth	250	364.8	-	364.8	37	24.0	24.9	556
304	EM3:ESSFdc1/dcu1-Oth	260	366.2	-	366.2	37	24.0	25.1	550
304	EM3:ESSFdc1/dcu1-Oth	270	367.4	-	367.4	37	24.1	25.2	545
304	EM3:ESSFdc1/dcu1-Oth	280	368.3	-	368.3	37	24.2	25.3	540
304	EM3:ESSFdc1/dcu1-Oth	290	368.7	-	368.7	37	24.3	25.5	535
304	EM3:ESSFdc1/dcu1-Oth	300	368.7	-	368.7	37	24.3	25.6	531
304	EM3:ESSFdc1/dcu1-Oth	310	368.6	-	368.6	37	24.3	25.6	531
304	EM3:ESSFdc1/dcu1-Oth	320	368.6	-	368.6	37	24.3	25.6	531
304	EM3:ESSFdc1/dcu1-Oth	330	368.6	-	368.6	37	24.3	25.6	531
304	EM3:ESSFdc1/dcu1-Oth	340	368.6	-	368.6	37	24.3	25.6	531
304	EM3:ESSFdc1/dcu1-Oth	350	368.6	-	368.6	37	24.3	25.6	531

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
305	EM3:ICHmk1/mw2-01	10	-	-	-	0	20.0	2.9	0
305	EM3:ICHmk1/mw2-01	20	1.7	-	1.7	0	20.7	7.6	19
305	EM3:ICHmk1/mw2-01	30	19.6	-	19.6	2	21.5	12.3	154
305	EM3:ICHmk1/mw2-01	40	73.4	-	73.4	8	22.7	16.6	406
305	EM3:ICHmk1/mw2-01	50	143.0	-	143.0	17	24.3	20.3	564
305	EM3:ICHmk1/mw2-01	60	211.5	-	211.5	25	25.9	23.5	642
305	EM3:ICHmk1/mw2-01	70	274.8	-	274.8	32	27.2	26.2	676
305	EM3:ICHmk1/mw2-01	80	330.7	-	330.7	37	28.3	28.5	689
305	EM3:ICHmk1/mw2-01	90	380.6	-	380.6	41	29.3	30.4	695
305	EM3:ICHmk1/mw2-01	100	424.9	-	424.9	45	30.1	32.0	695
305	EM3:ICHmk1/mw2-01	110	463.7	-	463.7	47	30.8	33.5	693
305	EM3:ICHmk1/mw2-01	120	496.9	-	496.9	49	31.4	34.7	688
305	EM3:ICHmk1/mw2-01	130	526.0	-	526.0	51	32.0	35.7	682
305	EM3:ICHmk1/mw2-01	140	551.1	-	551.1	53	32.5	36.7	675
305	EM3:ICHmk1/mw2-01	150	572.2	-	572.2	54	32.9	37.4	667
305	EM3:ICHmk1/mw2-01	160	590.1	-	590.1	54	33.3	38.1	658
305	EM3:ICHmk1/mw2-01	170	605.5	-	605.5	55	33.7	38.7	650
305	EM3:ICHmk1/mw2-01	180	618.5	-	618.5	56	34.0	39.3	641
305	EM3:ICHmk1/mw2-01	190	629.5	-	629.5	56	34.3	39.8	633
305	EM3:ICHmk1/mw2-01	200	638.4	-	638.4	56	34.6	40.2	625
305	EM3:ICHmk1/mw2-01	210	646.1	-	646.1	57	34.9	40.6	616
305	EM3:ICHmk1/mw2-01	220	652.5	-	652.5	57	35.1	40.9	607
305	EM3:ICHmk1/mw2-01	230	657.6	-	657.6	57	35.3	41.2	600
305	EM3:ICHmk1/mw2-01	240	661.7	-	661.7	57	35.5	41.5	593
305	EM3:ICHmk1/mw2-01	250	665.5	-	665.5	57	35.6	41.7	587
305	EM3:ICHmk1/mw2-01	260	668.9	-	668.9	57	35.8	42.0	582
305	EM3:ICHmk1/mw2-01	270	671.9	-	671.9	57	35.9	42.2	576
305	EM3:ICHmk1/mw2-01	280	674.0	-	674.0	57	36.1	42.4	571
305	EM3:ICHmk1/mw2-01	290	674.5	-	674.5	56	36.2	42.5	565
305	EM3:ICHmk1/mw2-01	300	674.7	-	674.7	56	36.3	42.6	561
305	EM3:ICHmk1/mw2-01	310	674.7	-	674.7	56	36.3	42.6	561
305	EM3:ICHmk1/mw2-01	320	674.7	-	674.7	56	36.3	42.6	561
305	EM3:ICHmk1/mw2-01	330	674.7	-	674.7	56	36.3	42.6	561
305	EM3:ICHmk1/mw2-01	340	674.7	-	674.7	56	36.3	42.6	561
305	EM3:ICHmk1/mw2-01	350	674.7	-	674.7	56	36.3	42.6	561

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
306	EM3:ICHmk1/mw2-03	10	-	-	-	0	-	2.1	0
306	EM3:ICHmk1/mw2-03	20	-	-	-	0	18.1	6.6	4
306	EM3:ICHmk1/mw2-03	30	14.4	-	14.4	3	18.7	10.9	203
306	EM3:ICHmk1/mw2-03	40	68.8	-	68.8	10	20.2	14.7	487
306	EM3:ICHmk1/mw2-03	50	135.8	-	135.8	18	21.9	17.8	641
306	EM3:ICHmk1/mw2-03	60	197.0	-	197.0	24	23.4	20.5	709
306	EM3:ICHmk1/mw2-03	70	249.5	-	249.5	30	24.8	22.7	733
306	EM3:ICHmk1/mw2-03	80	293.6	-	293.6	35	25.8	24.6	742
306	EM3:ICHmk1/mw2-03	90	331.5	-	331.5	38	26.7	26.2	744
306	EM3:ICHmk1/mw2-03	100	363.4	-	363.4	41	27.4	27.5	743
306	EM3:ICHmk1/mw2-03	110	392.2	-	392.2	43	28.1	28.7	738
306	EM3:ICHmk1/mw2-03	120	416.8	-	416.8	44	28.7	29.7	732
306	EM3:ICHmk1/mw2-03	130	438.5	-	438.5	46	29.1	30.7	727
306	EM3:ICHmk1/mw2-03	140	458.4	-	458.4	47	29.5	31.5	721
306	EM3:ICHmk1/mw2-03	150	476.6	-	476.6	48	29.9	32.2	715
306	EM3:ICHmk1/mw2-03	160	492.2	-	492.2	49	30.3	32.9	707
306	EM3:ICHmk1/mw2-03	170	506.2	-	506.2	50	30.6	33.5	700
306	EM3:ICHmk1/mw2-03	180	519.0	-	519.0	51	31.0	34.0	693
306	EM3:ICHmk1/mw2-03	190	530.0	-	530.0	51	31.3	34.5	686
306	EM3:ICHmk1/mw2-03	200	539.8	-	539.8	51	31.5	35.0	677
306	EM3:ICHmk1/mw2-03	210	548.7	-	548.7	52	31.8	35.4	669
306	EM3:ICHmk1/mw2-03	220	556.8	-	556.8	52	32.1	35.7	661
306	EM3:ICHmk1/mw2-03	230	564.1	-	564.1	52	32.3	36.1	653
306	EM3:ICHmk1/mw2-03	240	570.3	-	570.3	52	32.6	36.4	643
306	EM3:ICHmk1/mw2-03	250	576.0	-	576.0	52	32.8	36.7	634
306	EM3:ICHmk1/mw2-03	260	579.8	-	579.8	52	33.0	37.0	625
306	EM3:ICHmk1/mw2-03	270	583.2	-	583.2	52	33.2	37.2	615
306	EM3:ICHmk1/mw2-03	280	585.8	-	585.8	52	33.4	37.5	607
306	EM3:ICHmk1/mw2-03	290	588.1	-	588.1	52	33.6	37.7	598
306	EM3:ICHmk1/mw2-03	300	589.9	-	589.9	52	33.7	37.9	592
306	EM3:ICHmk1/mw2-03	310	589.9	-	589.9	52	33.7	37.9	592
306	EM3:ICHmk1/mw2-03	320	589.9	-	589.9	52	33.7	37.9	592
306	EM3:ICHmk1/mw2-03	330	589.9	-	589.9	52	33.7	37.9	592
306	EM3:ICHmk1/mw2-03	340	589.9	-	589.9	52	33.7	37.9	592
306	EM3:ICHmk1/mw2-03	350	589.9	-	589.9	52	33.7	37.9	592

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
307	EM3:ICHmk1/mw2-04	10	-	-	-	0	-	2.4	0
307	EM3:ICHmk1/mw2-04	20	0.6	-	0.6	0	19.9	6.9	14
307	EM3:ICHmk1/mw2-04	30	14.6	-	14.6	2	20.6	11.3	146
307	EM3:ICHmk1/mw2-04	40	60.1	-	60.1	7	21.6	15.3	383
307	EM3:ICHmk1/mw2-04	50	120.8	-	120.8	14	23.0	18.7	550
307	EM3:ICHmk1/mw2-04	60	181.8	-	181.8	22	24.3	21.7	642
307	EM3:ICHmk1/mw2-04	70	239.0	-	239.0	27	25.5	24.2	689
307	EM3:ICHmk1/mw2-04	80	290.7	-	290.7	32	26.5	26.4	713
307	EM3:ICHmk1/mw2-04	90	337.2	-	337.2	37	27.4	28.3	727
307	EM3:ICHmk1/mw2-04	100	379.1	-	379.1	40	28.1	29.8	734
307	EM3:ICHmk1/mw2-04	110	416.4	-	416.4	43	28.8	31.2	735
307	EM3:ICHmk1/mw2-04	120	449.2	-	449.2	45	29.4	32.4	733
307	EM3:ICHmk1/mw2-04	130	478.3	-	478.3	47	29.9	33.5	729
307	EM3:ICHmk1/mw2-04	140	504.0	-	504.0	49	30.4	34.4	724
307	EM3:ICHmk1/mw2-04	150	526.6	-	526.6	50	30.9	35.2	717
307	EM3:ICHmk1/mw2-04	160	546.2	-	546.2	51	31.3	35.9	710
307	EM3:ICHmk1/mw2-04	170	562.9	-	562.9	52	31.7	36.6	700
307	EM3:ICHmk1/mw2-04	180	577.2	-	577.2	53	32.1	37.1	691
307	EM3:ICHmk1/mw2-04	190	589.9	-	589.9	53	32.4	37.6	681
307	EM3:ICHmk1/mw2-04	200	596.0	-	596.0	53	32.7	38.1	667
307	EM3:ICHmk1/mw2-04	210	601.4	-	601.4	53	33.0	38.5	653
307	EM3:ICHmk1/mw2-04	220	606.0	-	606.0	53	33.2	38.8	641
307	EM3:ICHmk1/mw2-04	230	610.2	-	610.2	53	33.5	39.2	629
307	EM3:ICHmk1/mw2-04	240	613.8	-	613.8	52	33.7	39.5	617
307	EM3:ICHmk1/mw2-04	250	617.6	-	617.6	52	33.9	39.7	607
307	EM3:ICHmk1/mw2-04	260	621.0	-	621.0	52	34.1	40.0	599
307	EM3:ICHmk1/mw2-04	270	624.1	-	624.1	52	34.3	40.2	591
307	EM3:ICHmk1/mw2-04	280	626.8	-	626.8	52	34.5	40.4	584
307	EM3:ICHmk1/mw2-04	290	629.2	-	629.2	52	34.6	40.7	577
307	EM3:ICHmk1/mw2-04	300	631.0	-	631.0	52	34.7	40.8	571
307	EM3:ICHmk1/mw2-04	310	631.0	-	631.0	52	34.7	40.8	571
307	EM3:ICHmk1/mw2-04	320	631.0	-	631.0	52	34.7	40.8	571
307	EM3:ICHmk1/mw2-04	330	631.0	-	631.0	52	34.7	40.8	571
307	EM3:ICHmk1/mw2-04	340	631.0	-	631.0	52	34.7	40.8	571
307	EM3:ICHmk1/mw2-04	350	631.0	-	631.0	52	34.7	40.8	571

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
308	EM3:ICHmk1/mw2-Oth	10	-	-	-	0	-	2.3	0
308	EM3:ICHmk1/mw2-Oth	20	0.7	-	0.7	0	20.2	6.9	12
308	EM3:ICHmk1/mw2-Oth	30	14.7	-	14.7	2	20.9	11.5	136
308	EM3:ICHmk1/mw2-Oth	40	63.4	-	63.4	7	22.1	15.7	385
308	EM3:ICHmk1/mw2-Oth	50	129.2	-	129.2	16	23.5	19.4	555
308	EM3:ICHmk1/mw2-Oth	60	194.9	-	194.9	24	25.1	22.5	643
308	EM3:ICHmk1/mw2-Oth	70	255.6	-	255.6	30	26.3	25.2	684
308	EM3:ICHmk1/mw2-Oth	80	309.7	-	309.7	35	27.4	27.4	701
308	EM3:ICHmk1/mw2-Oth	90	357.8	-	357.8	39	28.4	29.3	710
308	EM3:ICHmk1/mw2-Oth	100	400.8	-	400.8	42	29.1	31.0	712
308	EM3:ICHmk1/mw2-Oth	110	438.6	-	438.6	45	29.8	32.4	712
308	EM3:ICHmk1/mw2-Oth	120	471.2	-	471.2	47	30.4	33.6	707
308	EM3:ICHmk1/mw2-Oth	130	500.2	-	500.2	49	31.0	34.7	703
308	EM3:ICHmk1/mw2-Oth	140	525.5	-	525.5	50	31.5	35.6	696
308	EM3:ICHmk1/mw2-Oth	150	547.3	-	547.3	51	31.9	36.4	690
308	EM3:ICHmk1/mw2-Oth	160	565.8	-	565.8	52	32.3	37.2	681
308	EM3:ICHmk1/mw2-Oth	170	581.6	-	581.6	53	32.7	37.8	671
308	EM3:ICHmk1/mw2-Oth	180	595.2	-	595.2	54	33.0	38.3	662
308	EM3:ICHmk1/mw2-Oth	190	607.1	-	607.1	54	33.4	38.8	654
308	EM3:ICHmk1/mw2-Oth	200	617.2	-	617.2	55	33.6	39.3	645
308	EM3:ICHmk1/mw2-Oth	210	623.7	-	623.7	55	33.9	39.7	634
308	EM3:ICHmk1/mw2-Oth	220	629.8	-	629.8	55	34.2	40.0	623
308	EM3:ICHmk1/mw2-Oth	230	635.2	-	635.2	55	34.4	40.3	614
308	EM3:ICHmk1/mw2-Oth	240	639.8	-	639.8	55	34.7	40.6	606
308	EM3:ICHmk1/mw2-Oth	250	643.4	-	643.4	55	34.9	40.9	598
308	EM3:ICHmk1/mw2-Oth	260	646.6	-	646.6	55	35.1	41.2	590
308	EM3:ICHmk1/mw2-Oth	270	649.4	-	649.4	55	35.2	41.4	583
308	EM3:ICHmk1/mw2-Oth	280	652.0	-	652.0	55	35.4	41.6	577
308	EM3:ICHmk1/mw2-Oth	290	653.8	-	653.8	55	35.5	41.8	570
308	EM3:ICHmk1/mw2-Oth	300	654.7	-	654.7	54	35.6	42.0	565
308	EM3:ICHmk1/mw2-Oth	310	654.7	-	654.7	54	35.6	42.0	565
308	EM3:ICHmk1/mw2-Oth	320	654.7	-	654.7	54	35.6	42.0	565
308	EM3:ICHmk1/mw2-Oth	330	654.7	-	654.7	54	35.6	42.0	565
308	EM3:ICHmk1/mw2-Oth	340	654.7	-	654.7	54	35.6	42.0	565
308	EM3:ICHmk1/mw2-Oth	350	654.7	-	654.7	54	35.6	42.0	565

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
309	EM3:IDFdm1-01	10	-	-	-	0	-	2.2	0
309	EM3:IDFdm1-01	20	0.2	-	0.2	0	19.8	6.5	6
309	EM3:IDFdm1-01	30	9.0	-	9.0	1	20.3	10.7	103
309	EM3:IDFdm1-01	40	43.6	-	43.6	5	21.3	14.4	311
309	EM3:IDFdm1-01	50	93.0	-	93.0	11	22.7	17.6	472
309	EM3:IDFdm1-01	60	144.4	-	144.4	17	23.9	20.4	568
309	EM3:IDFdm1-01	70	193.4	-	193.4	23	25.2	22.7	620
309	EM3:IDFdm1-01	80	238.6	-	238.6	28	26.1	24.8	652
309	EM3:IDFdm1-01	90	280.0	-	280.0	33	27.0	26.6	669
309	EM3:IDFdm1-01	100	317.5	-	317.5	36	27.8	28.1	683
309	EM3:IDFdm1-01	110	351.1	-	351.1	39	28.4	29.5	689
309	EM3:IDFdm1-01	120	381.3	-	381.3	41	29.0	30.6	691
309	EM3:IDFdm1-01	130	408.3	-	408.3	43	29.5	31.7	693
309	EM3:IDFdm1-01	140	432.5	-	432.5	45	30.0	32.6	692
309	EM3:IDFdm1-01	150	454.1	-	454.1	46	30.4	33.4	691
309	EM3:IDFdm1-01	160	473.8	-	473.8	48	30.8	34.1	687
309	EM3:IDFdm1-01	170	490.8	-	490.8	49	31.1	34.7	684
309	EM3:IDFdm1-01	180	505.9	-	505.9	49	31.4	35.3	679
309	EM3:IDFdm1-01	190	519.2	-	519.2	50	31.7	35.8	675
309	EM3:IDFdm1-01	200	530.6	-	530.6	50	31.9	36.3	669
309	EM3:IDFdm1-01	210	540.3	-	540.3	51	32.2	36.7	662
309	EM3:IDFdm1-01	220	549.1	-	549.1	51	32.4	37.1	656
309	EM3:IDFdm1-01	230	556.9	-	556.9	51	32.7	37.4	650
309	EM3:IDFdm1-01	240	564.0	-	564.0	51	32.9	37.8	644
309	EM3:IDFdm1-01	250	570.0	-	570.0	52	33.1	38.0	635
309	EM3:IDFdm1-01	260	575.4	-	575.4	52	33.3	38.3	628
309	EM3:IDFdm1-01	270	580.1	-	580.1	52	33.4	38.6	621
309	EM3:IDFdm1-01	280	584.4	-	584.4	52	33.6	38.8	614
309	EM3:IDFdm1-01	290	588.3	-	588.3	52	33.8	39.0	608
309	EM3:IDFdm1-01	300	590.6	-	590.6	52	33.9	39.2	602
309	EM3:IDFdm1-01	310	590.6	-	590.6	52	33.9	39.2	602
309	EM3:IDFdm1-01	320	590.6	-	590.6	52	33.9	39.2	602
309	EM3:IDFdm1-01	330	590.6	-	590.6	52	33.9	39.2	602
309	EM3:IDFdm1-01	340	590.6	-	590.6	52	33.9	39.2	602
309	EM3:IDFdm1-01	350	590.6	-	590.6	52	33.9	39.2	602

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
310	EM3:IDFdm1-04	10	-	-	-	0	-	1.6	0
310	EM3:IDFdm1-04	20	-	-	-	0	19.5	5.3	1
310	EM3:IDFdm1-04	30	3.5	-	3.5	1	19.8	9.0	53
310	EM3:IDFdm1-04	40	25.9	-	25.9	4	20.5	12.5	222
310	EM3:IDFdm1-04	50	64.7	-	64.7	8	21.7	15.6	393
310	EM3:IDFdm1-04	60	108.8	-	108.8	13	22.8	18.4	511
310	EM3:IDFdm1-04	70	152.8	-	152.8	19	24.0	20.8	580
310	EM3:IDFdm1-04	80	195.5	-	195.5	24	25.0	22.9	624
310	EM3:IDFdm1-04	90	235.6	-	235.6	28	25.9	24.7	654
310	EM3:IDFdm1-04	100	273.4	-	273.4	32	26.6	26.3	675
310	EM3:IDFdm1-04	110	308.2	-	308.2	35	27.4	27.7	687
310	EM3:IDFdm1-04	120	340.3	-	340.3	38	28.0	29.0	694
310	EM3:IDFdm1-04	130	369.8	-	369.8	40	28.6	30.1	698
310	EM3:IDFdm1-04	140	396.7	-	396.7	42	29.1	31.1	700
310	EM3:IDFdm1-04	150	421.3	-	421.3	44	29.5	32.0	700
310	EM3:IDFdm1-04	160	443.9	-	443.9	45	29.9	32.8	698
310	EM3:IDFdm1-04	170	464.2	-	464.2	46	30.3	33.5	696
310	EM3:IDFdm1-04	180	483.0	-	483.0	48	30.6	34.2	691
310	EM3:IDFdm1-04	190	499.8	-	499.8	49	31.0	34.8	686
310	EM3:IDFdm1-04	200	514.8	-	514.8	50	31.3	35.3	681
310	EM3:IDFdm1-04	210	528.1	-	528.1	50	31.6	35.8	673
310	EM3:IDFdm1-04	220	539.7	-	539.7	51	32.0	36.3	666
310	EM3:IDFdm1-04	230	550.3	-	550.3	51	32.2	36.7	658
310	EM3:IDFdm1-04	240	559.8	-	559.8	52	32.4	37.1	651
310	EM3:IDFdm1-04	250	568.6	-	568.6	52	32.7	37.5	644
310	EM3:IDFdm1-04	260	576.2	-	576.2	52	33.0	37.9	636
310	EM3:IDFdm1-04	270	583.2	-	583.2	52	33.2	38.2	629
310	EM3:IDFdm1-04	280	589.5	-	589.5	52	33.4	38.5	623
310	EM3:IDFdm1-04	290	594.1	-	594.1	52	33.6	38.8	613
310	EM3:IDFdm1-04	300	597.5	-	597.5	52	33.8	39.0	606
310	EM3:IDFdm1-04	310	597.5	-	597.5	52	33.8	39.0	606
310	EM3:IDFdm1-04	320	597.5	-	597.5	52	33.8	39.0	606
310	EM3:IDFdm1-04	330	597.5	-	597.5	52	33.8	39.0	606
310	EM3:IDFdm1-04	340	597.5	-	597.5	52	33.8	39.0	606
310	EM3:IDFdm1-04	350	597.5	-	597.5	52	33.8	39.0	606

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
311	EM3:IDFdm1-05	10	-	-	-	0	2.7	2.6	0
311	EM3:IDFdm1-05	20	0.6	-	0.6	0	19.5	7.0	14
311	EM3:IDFdm1-05	30	14.6	-	14.6	2	20.1	11.5	161
311	EM3:IDFdm1-05	40	67.1	-	67.1	9	21.5	15.5	436
311	EM3:IDFdm1-05	50	135.1	-	135.1	17	23.3	19.0	596
311	EM3:IDFdm1-05	60	200.6	-	200.6	25	24.9	21.9	667
311	EM3:IDFdm1-05	70	258.7	-	258.7	32	26.3	24.4	695
311	EM3:IDFdm1-05	80	308.4	-	308.4	36	27.5	26.5	702
311	EM3:IDFdm1-05	90	350.8	-	350.8	40	28.4	28.3	701
311	EM3:IDFdm1-05	100	386.5	-	386.5	43	29.2	29.8	698
311	EM3:IDFdm1-05	110	417.4	-	417.4	45	29.9	31.0	691
311	EM3:IDFdm1-05	120	443.9	-	443.9	47	30.5	32.1	686
311	EM3:IDFdm1-05	130	466.3	-	466.3	49	31.0	33.1	679
311	EM3:IDFdm1-05	140	485.4	-	485.4	50	31.5	33.9	672
311	EM3:IDFdm1-05	150	501.9	-	501.9	51	31.8	34.6	666
311	EM3:IDFdm1-05	160	515.7	-	515.7	51	32.1	35.2	660
311	EM3:IDFdm1-05	170	527.0	-	527.0	52	32.4	35.7	654
311	EM3:IDFdm1-05	180	536.8	-	536.8	52	32.7	36.2	648
311	EM3:IDFdm1-05	190	544.9	-	544.9	53	32.9	36.6	642
311	EM3:IDFdm1-05	200	551.9	-	551.9	53	33.1	37.0	636
311	EM3:IDFdm1-05	210	557.8	-	557.8	53	33.3	37.3	631
311	EM3:IDFdm1-05	220	562.2	-	562.2	53	33.5	37.6	625
311	EM3:IDFdm1-05	230	566.1	-	566.1	53	33.6	37.8	621
311	EM3:IDFdm1-05	240	569.2	-	569.2	53	33.7	38.1	615
311	EM3:IDFdm1-05	250	571.5	-	571.5	53	33.9	38.3	609
311	EM3:IDFdm1-05	260	573.6	-	573.6	53	34.0	38.5	604
311	EM3:IDFdm1-05	270	575.4	-	575.4	53	34.1	38.6	599
311	EM3:IDFdm1-05	280	576.5	-	576.5	53	34.2	38.8	594
311	EM3:IDFdm1-05	290	577.4	-	577.4	53	34.3	39.0	588
311	EM3:IDFdm1-05	300	577.6	-	577.6	52	34.3	39.1	585
311	EM3:IDFdm1-05	310	577.6	-	577.6	52	34.3	39.1	585
311	EM3:IDFdm1-05	320	577.6	-	577.6	52	34.3	39.1	585
311	EM3:IDFdm1-05	330	577.6	-	577.6	52	34.3	39.1	585
311	EM3:IDFdm1-05	340	577.6	-	577.6	52	34.3	39.1	585
311	EM3:IDFdm1-05	350	577.6	-	577.6	52	34.3	39.1	585

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
312	EM3:IDFdm1-Oth	10	-	-	-	0	-	2.4	0
312	EM3:IDFdm1-Oth	20	0.2	-	0.2	0	20.0	6.3	5
312	EM3:IDFdm1-Oth	30	6.6	-	6.6	1	20.2	10.1	84
312	EM3:IDFdm1-Oth	40	33.5	-	33.5	4	21.0	13.5	266
312	EM3:IDFdm1-Oth	50	76.1	-	76.1	9	22.1	16.5	435
312	EM3:IDFdm1-Oth	60	122.0	-	122.0	15	23.2	19.1	542
312	EM3:IDFdm1-Oth	70	166.1	-	166.1	20	24.2	21.4	604
312	EM3:IDFdm1-Oth	80	207.4	-	207.4	25	25.3	23.3	642
312	EM3:IDFdm1-Oth	90	244.9	-	244.9	29	26.1	25.0	666
312	EM3:IDFdm1-Oth	100	279.0	-	279.0	32	26.8	26.5	681
312	EM3:IDFdm1-Oth	110	310.1	-	310.1	35	27.4	27.7	692
312	EM3:IDFdm1-Oth	120	337.5	-	337.5	37	27.9	28.8	698
312	EM3:IDFdm1-Oth	130	362.3	-	362.3	39	28.4	29.8	700
312	EM3:IDFdm1-Oth	140	384.7	-	384.7	41	28.8	30.7	701
312	EM3:IDFdm1-Oth	150	404.2	-	404.2	43	29.2	31.5	700
312	EM3:IDFdm1-Oth	160	422.1	-	422.1	44	29.5	32.2	698
312	EM3:IDFdm1-Oth	170	437.9	-	437.9	45	29.8	32.8	697
312	EM3:IDFdm1-Oth	180	452.1	-	452.1	46	30.1	33.3	693
312	EM3:IDFdm1-Oth	190	464.9	-	464.9	46	30.4	33.8	690
312	EM3:IDFdm1-Oth	200	476.2	-	476.2	47	30.7	34.3	685
312	EM3:IDFdm1-Oth	210	486.2	-	486.2	48	30.9	34.7	681
312	EM3:IDFdm1-Oth	220	495.0	-	495.0	48	31.1	35.1	675
312	EM3:IDFdm1-Oth	230	502.8	-	502.8	48	31.3	35.4	671
312	EM3:IDFdm1-Oth	240	509.5	-	509.5	49	31.5	35.7	666
312	EM3:IDFdm1-Oth	250	515.6	-	515.6	49	31.6	36.0	661
312	EM3:IDFdm1-Oth	260	521.1	-	521.1	49	31.8	36.3	655
312	EM3:IDFdm1-Oth	270	526.2	-	526.2	49	32.0	36.6	650
312	EM3:IDFdm1-Oth	280	530.7	-	530.7	49	32.1	36.8	645
312	EM3:IDFdm1-Oth	290	534.7	-	534.7	49	32.3	37.0	640
312	EM3:IDFdm1-Oth	300	537.4	-	537.4	49	32.4	37.2	637
312	EM3:IDFdm1-Oth	310	537.4	-	537.4	49	32.4	37.2	637
312	EM3:IDFdm1-Oth	320	537.4	-	537.4	49	32.4	37.2	637
312	EM3:IDFdm1-Oth	330	537.4	-	537.4	49	32.4	37.2	637
312	EM3:IDFdm1-Oth	340	537.4	-	537.4	49	32.4	37.2	637
312	EM3:IDFdm1-Oth	350	537.4	-	537.4	49	32.4	37.2	637

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
313	EM3:MSdm1-01	10	-	-	-	0	-	1.6	0
313	EM3:MSdm1-01	20	0.4	-	0.4	0	17.0	5.9	7
313	EM3:MSdm1-01	30	8.6	-	8.6	1	19.5	10.3	95
313	EM3:MSdm1-01	40	48.7	-	48.7	7	20.3	14.2	390
313	EM3:MSdm1-01	50	114.0	-	114.0	16	21.7	17.7	647
313	EM3:MSdm1-01	60	182.4	-	182.4	23	23.1	20.7	762
313	EM3:MSdm1-01	70	243.6	-	243.6	29	24.5	23.1	796
313	EM3:MSdm1-01	80	295.6	-	295.6	34	25.6	25.1	799
313	EM3:MSdm1-01	90	339.0	-	339.0	37	26.6	27.0	790
313	EM3:MSdm1-01	100	376.0	-	376.0	41	27.4	28.5	779
313	EM3:MSdm1-01	110	407.6	-	407.6	43	28.1	29.7	766
313	EM3:MSdm1-01	120	434.3	-	434.3	45	28.7	30.8	754
313	EM3:MSdm1-01	130	456.8	-	456.8	46	29.3	31.8	742
313	EM3:MSdm1-01	140	475.9	-	475.9	47	29.8	32.6	731
313	EM3:MSdm1-01	150	492.6	-	492.6	48	30.2	33.3	721
313	EM3:MSdm1-01	160	507.0	-	507.0	49	30.5	33.9	712
313	EM3:MSdm1-01	170	518.9	-	518.9	50	30.8	34.5	702
313	EM3:MSdm1-01	180	529.2	-	529.2	50	31.1	34.9	694
313	EM3:MSdm1-01	190	537.6	-	537.6	50	31.4	35.4	686
313	EM3:MSdm1-01	200	541.0	-	541.0	51	31.6	35.8	674
313	EM3:MSdm1-01	210	544.3	-	544.3	50	31.8	36.1	663
313	EM3:MSdm1-01	220	547.2	-	547.2	50	32.0	36.4	653
313	EM3:MSdm1-01	230	549.6	-	549.6	50	32.2	36.7	644
313	EM3:MSdm1-01	240	551.7	-	551.7	50	32.3	36.9	636
313	EM3:MSdm1-01	250	553.4	-	553.4	50	32.4	37.1	628
313	EM3:MSdm1-01	260	555.0	-	555.0	50	32.6	37.3	621
313	EM3:MSdm1-01	270	556.3	-	556.3	50	32.7	37.5	614
313	EM3:MSdm1-01	280	557.4	-	557.4	50	32.8	37.7	608
313	EM3:MSdm1-01	290	558.5	-	558.5	50	32.9	37.8	601
313	EM3:MSdm1-01	300	559.0	-	559.0	49	33.0	38.0	596
313	EM3:MSdm1-01	310	558.9	-	558.9	49	33.0	38.0	596
313	EM3:MSdm1-01	320	558.9	-	558.9	49	33.0	38.0	596
313	EM3:MSdm1-01	330	558.9	-	558.9	49	33.0	38.0	596
313	EM3:MSdm1-01	340	558.9	-	558.9	49	33.0	38.0	596
313	EM3:MSdm1-01	350	558.9	-	558.9	49	33.0	38.0	596

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
314	EM3:MSdm1-03	10	-	-	-	0	-	1.3	0
314	EM3:MSdm1-03	20	-	-	-	0	6.4	5.2	0
314	EM3:MSdm1-03	30	12.1	-	12.1	4	16.7	9.6	195
314	EM3:MSdm1-03	40	67.6	-	67.6	13	18.1	13.7	587
314	EM3:MSdm1-03	50	149.4	-	149.4	24	19.8	17.0	909
314	EM3:MSdm1-03	60	233.1	-	233.1	32	21.3	19.7	1052
314	EM3:MSdm1-03	70	302.8	-	302.8	37	22.8	21.9	1068
314	EM3:MSdm1-03	80	356.4	-	356.4	41	24.0	23.7	1030
314	EM3:MSdm1-03	90	396.0	-	396.0	43	25.0	25.2	981
314	EM3:MSdm1-03	100	425.9	-	425.9	45	25.9	26.4	936
314	EM3:MSdm1-03	110	447.8	-	447.8	46	26.6	27.4	897
314	EM3:MSdm1-03	120	464.7	-	464.7	47	27.2	28.3	864
314	EM3:MSdm1-03	130	477.3	-	477.3	47	27.7	29.0	836
314	EM3:MSdm1-03	140	486.8	-	486.8	48	28.2	29.7	810
314	EM3:MSdm1-03	150	494.2	-	494.2	48	28.5	30.2	790
314	EM3:MSdm1-03	160	500.1	-	500.1	48	28.8	30.7	772
314	EM3:MSdm1-03	170	504.9	-	504.9	48	29.1	31.1	757
314	EM3:MSdm1-03	180	508.7	-	508.7	48	29.3	31.4	743
314	EM3:MSdm1-03	190	510.7	-	510.7	48	29.5	31.7	731
314	EM3:MSdm1-03	200	512.2	-	512.2	48	29.7	32.0	719
314	EM3:MSdm1-03	210	512.9	-	512.9	48	29.8	32.3	708
314	EM3:MSdm1-03	220	513.4	-	513.4	48	29.9	32.5	699
314	EM3:MSdm1-03	230	513.7	-	513.7	48	30.1	32.7	690
314	EM3:MSdm1-03	240	513.4	-	513.4	47	30.2	32.9	681
314	EM3:MSdm1-03	250	512.3	-	512.3	47	30.3	33.1	673
314	EM3:MSdm1-03	260	511.0	-	511.0	47	30.4	33.3	665
314	EM3:MSdm1-03	270	509.2	-	509.2	47	30.5	33.4	657
314	EM3:MSdm1-03	280	507.1	-	507.1	46	30.6	33.5	649
314	EM3:MSdm1-03	290	505.3	-	505.3	46	30.6	33.6	642
314	EM3:MSdm1-03	300	503.8	-	503.8	46	30.7	33.7	636
314	EM3:MSdm1-03	310	503.6	-	503.6	46	30.7	33.7	635
314	EM3:MSdm1-03	320	503.6	-	503.6	46	30.7	33.7	635
314	EM3:MSdm1-03	330	503.6	-	503.6	46	30.7	33.7	635
314	EM3:MSdm1-03	340	503.6	-	503.6	46	30.7	33.7	635
314	EM3:MSdm1-03	350	503.6	-	503.6	46	30.7	33.7	635

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
315	EM3:MSdm1-04	10	-	-	-	0	-	1.5	0
315	EM3:MSdm1-04	20	0.4	-	0.4	0	9.7	5.7	9
315	EM3:MSdm1-04	30	8.6	-	8.6	2	17.9	10.0	117
315	EM3:MSdm1-04	40	54.0	-	54.0	10	18.8	13.9	503
315	EM3:MSdm1-04	50	127.8	-	127.8	20	20.1	17.2	828
315	EM3:MSdm1-04	60	201.4	-	201.4	27	21.5	19.9	932
315	EM3:MSdm1-04	70	263.4	-	263.4	32	22.9	22.1	938
315	EM3:MSdm1-04	80	313.7	-	313.7	36	24.1	24.0	916
315	EM3:MSdm1-04	90	352.9	-	352.9	39	25.1	25.5	885
315	EM3:MSdm1-04	100	385.1	-	385.1	41	25.9	26.8	859
315	EM3:MSdm1-04	110	411.8	-	411.8	43	26.6	27.9	836
315	EM3:MSdm1-04	120	434.0	-	434.0	44	27.2	28.9	815
315	EM3:MSdm1-04	130	451.4	-	451.4	45	27.7	29.7	796
315	EM3:MSdm1-04	140	466.2	-	466.2	46	28.2	30.4	780
315	EM3:MSdm1-04	150	478.6	-	478.6	47	28.6	31.0	766
315	EM3:MSdm1-04	160	489.3	-	489.3	47	28.9	31.6	752
315	EM3:MSdm1-04	170	498.1	-	498.1	48	29.2	32.0	741
315	EM3:MSdm1-04	180	505.3	-	505.3	48	29.4	32.5	730
315	EM3:MSdm1-04	190	511.3	-	511.3	48	29.7	32.8	720
315	EM3:MSdm1-04	200	513.5	-	513.5	48	29.9	33.1	708
315	EM3:MSdm1-04	210	515.8	-	515.8	48	30.1	33.4	697
315	EM3:MSdm1-04	220	517.9	-	517.9	48	30.2	33.7	688
315	EM3:MSdm1-04	230	519.4	-	519.4	48	30.4	33.9	678
315	EM3:MSdm1-04	240	520.8	-	520.8	48	30.6	34.1	670
315	EM3:MSdm1-04	250	521.5	-	521.5	48	30.7	34.3	662
315	EM3:MSdm1-04	260	521.9	-	521.9	48	30.8	34.5	654
315	EM3:MSdm1-04	270	522.2	-	522.2	47	30.9	34.7	647
315	EM3:MSdm1-04	280	522.4	-	522.4	47	31.0	34.8	640
315	EM3:MSdm1-04	290	522.6	-	522.6	47	31.1	34.9	633
315	EM3:MSdm1-04	300	522.6	-	522.6	47	31.2	35.0	628
315	EM3:MSdm1-04	310	522.4	-	522.4	47	31.2	35.0	627
315	EM3:MSdm1-04	320	522.4	-	522.4	47	31.2	35.0	627
315	EM3:MSdm1-04	330	522.4	-	522.4	47	31.2	35.0	627
315	EM3:MSdm1-04	340	522.4	-	522.4	47	31.2	35.0	627
315	EM3:MSdm1-04	350	522.4	-	522.4	47	31.2	35.0	627

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
316	EM3:MSdm1-05	10	-	-	-	0	-	1.2	0
316	EM3:MSdm1-05	20	0.2	-	0.2	0	15.4	5.2	3
316	EM3:MSdm1-05	30	6.0	-	6.0	1	17.4	9.7	81
316	EM3:MSdm1-05	40	59.6	-	59.6	12	18.0	13.8	646
316	EM3:MSdm1-05	50	153.6	-	153.6	25	18.9	17.3	1180
316	EM3:MSdm1-05	60	241.0	-	241.0	32	20.2	20.2	1305
316	EM3:MSdm1-05	70	306.1	-	306.1	36	21.4	22.6	1237
316	EM3:MSdm1-05	80	354.8	-	354.8	39	22.6	24.5	1138
316	EM3:MSdm1-05	90	392.7	-	392.7	41	23.7	26.1	1059
316	EM3:MSdm1-05	100	422.4	-	422.4	42	24.6	27.5	1001
316	EM3:MSdm1-05	110	445.3	-	445.3	43	25.3	28.6	954
316	EM3:MSdm1-05	120	463.6	-	463.6	44	25.9	29.5	915
316	EM3:MSdm1-05	130	477.8	-	477.8	45	26.4	30.3	883
316	EM3:MSdm1-05	140	489.8	-	489.8	45	26.8	31.0	856
316	EM3:MSdm1-05	150	499.5	-	499.5	45	27.2	31.6	833
316	EM3:MSdm1-05	160	507.7	-	507.7	46	27.5	32.2	813
316	EM3:MSdm1-05	170	514.2	-	514.2	46	27.8	32.7	795
316	EM3:MSdm1-05	180	519.0	-	519.0	46	28.1	33.1	779
316	EM3:MSdm1-05	190	522.6	-	522.6	46	28.3	33.5	763
316	EM3:MSdm1-05	200	525.4	-	525.4	46	28.5	33.8	749
316	EM3:MSdm1-05	210	527.1	-	527.1	46	28.7	34.1	736
316	EM3:MSdm1-05	220	528.3	-	528.3	45	28.9	34.3	724
316	EM3:MSdm1-05	230	529.4	-	529.4	45	29.1	34.6	713
316	EM3:MSdm1-05	240	530.1	-	530.1	45	29.3	34.8	702
316	EM3:MSdm1-05	250	530.7	-	530.7	45	29.4	35.0	692
316	EM3:MSdm1-05	260	531.2	-	531.2	45	29.5	35.1	684
316	EM3:MSdm1-05	270	530.6	-	530.6	45	29.6	35.3	675
316	EM3:MSdm1-05	280	529.3	-	529.3	45	29.7	35.5	666
316	EM3:MSdm1-05	290	528.0	-	528.0	44	29.8	35.6	658
316	EM3:MSdm1-05	300	526.5	-	526.5	44	29.8	35.7	650
316	EM3:MSdm1-05	310	526.0	-	526.0	44	29.8	35.8	649
316	EM3:MSdm1-05	320	526.0	-	526.0	44	29.8	35.8	649
316	EM3:MSdm1-05	330	526.0	-	526.0	44	29.8	35.8	649
316	EM3:MSdm1-05	340	526.0	-	526.0	44	29.8	35.8	649
316	EM3:MSdm1-05	350	526.0	-	526.0	44	29.8	35.8	649

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
317	EM3:MSdm1-Oth	10	-	-	-	0	1.6	2.0	0
317	EM3:MSdm1-Oth	20	0.7	-	0.7	0	16.5	6.2	14
317	EM3:MSdm1-Oth	30	12.0	-	12.0	2	18.9	10.6	134
317	EM3:MSdm1-Oth	40	60.5	-	60.5	9	19.8	14.6	488
317	EM3:MSdm1-Oth	50	134.0	-	134.0	19	21.2	18.0	768
317	EM3:MSdm1-Oth	60	206.3	-	206.3	26	22.6	20.8	868
317	EM3:MSdm1-Oth	70	268.3	-	268.3	32	24.0	23.2	880
317	EM3:MSdm1-Oth	80	318.9	-	318.9	36	25.1	25.2	863
317	EM3:MSdm1-Oth	90	360.4	-	360.4	39	26.1	26.9	841
317	EM3:MSdm1-Oth	100	394.8	-	394.8	42	26.9	28.3	821
317	EM3:MSdm1-Oth	110	423.9	-	423.9	44	27.6	29.4	801
317	EM3:MSdm1-Oth	120	447.5	-	447.5	45	28.3	30.5	783
317	EM3:MSdm1-Oth	130	467.5	-	467.5	47	28.8	31.4	767
317	EM3:MSdm1-Oth	140	484.6	-	484.6	47	29.2	32.2	753
317	EM3:MSdm1-Oth	150	499.3	-	499.3	48	29.6	32.8	741
317	EM3:MSdm1-Oth	160	511.7	-	511.7	49	29.9	33.4	730
317	EM3:MSdm1-Oth	170	522.2	-	522.2	49	30.3	33.9	720
317	EM3:MSdm1-Oth	180	530.6	-	530.6	49	30.5	34.4	709
317	EM3:MSdm1-Oth	190	536.2	-	536.2	50	30.8	34.8	699
317	EM3:MSdm1-Oth	200	540.1	-	540.1	50	31.0	35.1	687
317	EM3:MSdm1-Oth	210	543.7	-	543.7	50	31.2	35.4	677
317	EM3:MSdm1-Oth	220	546.3	-	546.3	50	31.4	35.7	667
317	EM3:MSdm1-Oth	230	548.7	-	548.7	50	31.6	35.9	658
317	EM3:MSdm1-Oth	240	550.8	-	550.8	50	31.7	36.2	649
317	EM3:MSdm1-Oth	250	552.6	-	552.6	49	31.8	36.4	642
317	EM3:MSdm1-Oth	260	554.0	-	554.0	49	32.0	36.6	635
317	EM3:MSdm1-Oth	270	555.1	-	555.1	49	32.1	36.7	628
317	EM3:MSdm1-Oth	280	555.6	-	555.6	49	32.2	36.9	622
317	EM3:MSdm1-Oth	290	555.6	-	555.6	49	32.3	37.0	615
317	EM3:MSdm1-Oth	300	555.2	-	555.2	49	32.3	37.1	610
317	EM3:MSdm1-Oth	310	554.9	-	554.9	49	32.4	37.1	609
317	EM3:MSdm1-Oth	320	554.9	-	554.9	49	32.4	37.1	609
317	EM3:MSdm1-Oth	330	554.9	-	554.9	49	32.4	37.1	609
317	EM3:MSdm1-Oth	340	554.9	-	554.9	49	32.4	37.1	609
317	EM3:MSdm1-Oth	350	554.9	-	554.9	49	32.4	37.1	609

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
318	EM3:Msdm1a-All	10	-	-	-	0	-	2.2	0
318	EM3:Msdm1a-All	20	0.4	-	0.4	0	20.6	6.7	4
318	EM3:Msdm1a-All	30	15.8	-	15.8	1	21.0	11.6	136
318	EM3:Msdm1a-All	40	80.2	-	80.2	10	23.0	16.1	433
318	EM3:Msdm1a-All	50	159.1	-	159.1	20	25.0	20.0	580
318	EM3:Msdm1a-All	60	232.2	-	232.2	29	27.0	23.3	635
318	EM3:Msdm1a-All	70	298.3	-	298.3	36	28.5	26.0	651
318	EM3:Msdm1a-All	80	356.0	-	356.0	41	29.9	28.3	653
318	EM3:Msdm1a-All	90	405.3	-	405.3	45	30.9	30.3	652
318	EM3:Msdm1a-All	100	449.2	-	449.2	48	31.9	31.9	646
318	EM3:Msdm1a-All	110	487.8	-	487.8	51	32.7	33.4	642
318	EM3:Msdm1a-All	120	520.6	-	520.6	53	33.4	34.6	635
318	EM3:Msdm1a-All	130	549.4	-	549.4	54	33.9	35.7	629
318	EM3:Msdm1a-All	140	574.3	-	574.3	55	34.4	36.6	622
318	EM3:Msdm1a-All	150	596.5	-	596.5	57	34.9	37.4	616
318	EM3:Msdm1a-All	160	616.0	-	616.0	58	35.3	38.2	611
318	EM3:Msdm1a-All	170	632.9	-	632.9	58	35.6	38.8	605
318	EM3:Msdm1a-All	180	647.7	-	647.7	59	36.0	39.4	599
318	EM3:Msdm1a-All	190	659.7	-	659.7	59	36.3	39.9	591
318	EM3:Msdm1a-All	200	670.1	-	670.1	60	36.6	40.3	583
318	EM3:Msdm1a-All	210	679.3	-	679.3	60	36.9	40.8	575
318	EM3:Msdm1a-All	220	687.0	-	687.0	60	37.1	41.1	568
318	EM3:Msdm1a-All	230	693.9	-	693.9	60	37.4	41.5	561
318	EM3:Msdm1a-All	240	699.9	-	699.9	60	37.6	41.8	554
318	EM3:Msdm1a-All	250	705.5	-	705.5	60	37.8	42.1	549
318	EM3:Msdm1a-All	260	708.0	-	708.0	60	37.9	42.4	542
318	EM3:Msdm1a-All	270	709.1	-	709.1	60	38.1	42.5	535
318	EM3:Msdm1a-All	280	709.6	-	709.6	60	38.2	42.7	529
318	EM3:Msdm1a-All	290	710.0	-	710.0	59	38.4	42.8	523
318	EM3:Msdm1a-All	300	710.3	-	710.3	59	38.5	42.9	520
318	EM3:Msdm1a-All	310	710.3	-	710.3	59	38.5	42.9	520
318	EM3:Msdm1a-All	320	710.3	-	710.3	59	38.5	42.9	520
318	EM3:Msdm1a-All	330	710.3	-	710.3	59	38.5	42.9	520
318	EM3:Msdm1a-All	340	710.3	-	710.3	59	38.5	42.9	520
318	EM3:Msdm1a-All	350	710.3	-	710.3	59	38.5	42.9	520

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
401	EM4:ESSFdc1/dcu1-01	10	-	-	-	0	-	0.8	0
401	EM4:ESSFdc1/dcu1-01	20	-	-	-	0	-	3.7	0
401	EM4:ESSFdc1/dcu1-01	30	1.0	-	1.0	1	14.5	7.6	24
401	EM4:ESSFdc1/dcu1-01	40	20.4	-	20.4	4	18.3	11.2	245
401	EM4:ESSFdc1/dcu1-01	50	70.3	-	70.3	12	19.6	14.5	545
401	EM4:ESSFdc1/dcu1-01	60	134.0	-	134.0	20	21.1	17.3	761
401	EM4:ESSFdc1/dcu1-01	70	197.7	-	197.7	27	22.5	19.7	868
401	EM4:ESSFdc1/dcu1-01	80	254.0	-	254.0	33	23.7	21.7	903
401	EM4:ESSFdc1/dcu1-01	90	300.6	-	300.6	37	24.8	23.4	902
401	EM4:ESSFdc1/dcu1-01	100	338.6	-	338.6	40	25.7	24.8	885
401	EM4:ESSFdc1/dcu1-01	110	368.7	-	368.7	42	26.5	26.0	863
401	EM4:ESSFdc1/dcu1-01	120	393.0	-	393.0	44	27.1	27.0	839
401	EM4:ESSFdc1/dcu1-01	130	412.9	-	412.9	45	27.7	27.9	818
401	EM4:ESSFdc1/dcu1-01	140	429.0	-	429.0	46	28.2	28.6	799
401	EM4:ESSFdc1/dcu1-01	150	441.9	-	441.9	47	28.6	29.3	781
401	EM4:ESSFdc1/dcu1-01	160	452.7	-	452.7	47	29.0	29.9	766
401	EM4:ESSFdc1/dcu1-01	170	461.3	-	461.3	48	29.3	30.4	751
401	EM4:ESSFdc1/dcu1-01	180	468.4	-	468.4	48	29.6	30.8	738
401	EM4:ESSFdc1/dcu1-01	190	474.1	-	474.1	48	29.9	31.2	726
401	EM4:ESSFdc1/dcu1-01	200	478.8	-	478.8	48	30.1	31.6	715
401	EM4:ESSFdc1/dcu1-01	210	482.6	-	482.6	48	30.3	31.9	705
401	EM4:ESSFdc1/dcu1-01	220	485.4	-	485.4	48	30.5	32.2	696
401	EM4:ESSFdc1/dcu1-01	230	487.2	-	487.2	48	30.6	32.4	687
401	EM4:ESSFdc1/dcu1-01	240	488.5	-	488.5	48	30.7	32.7	679
401	EM4:ESSFdc1/dcu1-01	250	489.6	-	489.6	48	30.8	32.9	671
401	EM4:ESSFdc1/dcu1-01	260	490.5	-	490.5	48	31.0	33.1	664
401	EM4:ESSFdc1/dcu1-01	270	490.8	-	490.8	48	31.1	33.2	657
401	EM4:ESSFdc1/dcu1-01	280	490.9	-	490.9	47	31.2	33.4	651
401	EM4:ESSFdc1/dcu1-01	290	491.0	-	491.0	47	31.2	33.6	644
401	EM4:ESSFdc1/dcu1-01	300	490.6	-	490.6	47	31.3	33.7	640
401	EM4:ESSFdc1/dcu1-01	310	490.6	-	490.6	47	31.3	33.7	639
401	EM4:ESSFdc1/dcu1-01	320	490.6	-	490.6	47	31.3	33.7	639
401	EM4:ESSFdc1/dcu1-01	330	490.6	-	490.6	47	31.3	33.7	639
401	EM4:ESSFdc1/dcu1-01	340	490.6	-	490.6	47	31.3	33.7	639
401	EM4:ESSFdc1/dcu1-01	350	490.6	-	490.6	47	31.3	33.7	639

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
402	EM4:ESSFdc1/dcu1-03	10	-	-	-	0	-	0.8	0
402	EM4:ESSFdc1/dcu1-03	20	-	-	-	0	-	3.9	0
402	EM4:ESSFdc1/dcu1-03	30	1.3	-	1.3	1	17.1	7.7	31
402	EM4:ESSFdc1/dcu1-03	40	22.5	-	22.5	5	17.6	11.3	288
402	EM4:ESSFdc1/dcu1-03	50	73.9	-	73.9	13	18.8	14.4	620
402	EM4:ESSFdc1/dcu1-03	60	138.6	-	138.6	22	20.1	17.1	866
402	EM4:ESSFdc1/dcu1-03	70	202.6	-	202.6	28	21.4	19.3	987
402	EM4:ESSFdc1/dcu1-03	80	258.0	-	258.0	34	22.5	21.2	1021
402	EM4:ESSFdc1/dcu1-03	90	303.5	-	303.5	37	23.5	22.7	1011
402	EM4:ESSFdc1/dcu1-03	100	340.0	-	340.0	40	24.5	24.0	981
402	EM4:ESSFdc1/dcu1-03	110	369.2	-	369.2	42	25.2	25.1	950
402	EM4:ESSFdc1/dcu1-03	120	392.1	-	392.1	43	25.8	26.1	920
402	EM4:ESSFdc1/dcu1-03	130	410.7	-	410.7	44	26.4	26.9	893
402	EM4:ESSFdc1/dcu1-03	140	426.0	-	426.0	45	26.8	27.6	870
402	EM4:ESSFdc1/dcu1-03	150	438.0	-	438.0	45	27.3	28.2	849
402	EM4:ESSFdc1/dcu1-03	160	447.7	-	447.7	46	27.6	28.8	830
402	EM4:ESSFdc1/dcu1-03	170	455.4	-	455.4	46	27.9	29.2	812
402	EM4:ESSFdc1/dcu1-03	180	461.7	-	461.7	47	28.2	29.6	796
402	EM4:ESSFdc1/dcu1-03	190	466.8	-	466.8	47	28.4	30.0	782
402	EM4:ESSFdc1/dcu1-03	200	470.8	-	470.8	47	28.6	30.3	769
402	EM4:ESSFdc1/dcu1-03	210	474.0	-	474.0	47	28.8	30.6	758
402	EM4:ESSFdc1/dcu1-03	220	476.7	-	476.7	47	29.0	30.9	747
402	EM4:ESSFdc1/dcu1-03	230	478.7	-	478.7	47	29.2	31.1	738
402	EM4:ESSFdc1/dcu1-03	240	479.5	-	479.5	46	29.3	31.3	728
402	EM4:ESSFdc1/dcu1-03	250	479.8	-	479.8	46	29.4	31.5	719
402	EM4:ESSFdc1/dcu1-03	260	479.8	-	479.8	46	29.5	31.7	710
402	EM4:ESSFdc1/dcu1-03	270	479.8	-	479.8	46	29.6	31.9	703
402	EM4:ESSFdc1/dcu1-03	280	479.6	-	479.6	46	29.7	32.0	695
402	EM4:ESSFdc1/dcu1-03	290	479.0	-	479.0	46	29.8	32.2	688
402	EM4:ESSFdc1/dcu1-03	300	478.6	-	478.6	46	29.8	32.3	683
402	EM4:ESSFdc1/dcu1-03	310	478.5	-	478.5	46	29.8	32.3	682
402	EM4:ESSFdc1/dcu1-03	320	478.5	-	478.5	46	29.8	32.3	682
402	EM4:ESSFdc1/dcu1-03	330	478.5	-	478.5	46	29.8	32.3	682
402	EM4:ESSFdc1/dcu1-03	340	478.5	-	478.5	46	29.8	32.3	682
402	EM4:ESSFdc1/dcu1-03	350	478.5	-	478.5	46	29.8	32.3	682

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
403	EM4:ESSFdc1/dcu1-04	10	-	-	-	0	-	0.9	0
403	EM4:ESSFdc1/dcu1-04	20	-	-	-	0	-	4.2	0
403	EM4:ESSFdc1/dcu1-04	30	1.7	-	1.7	1	15.9	8.1	38
403	EM4:ESSFdc1/dcu1-04	40	27.9	-	27.9	5	19.1	12.0	304
403	EM4:ESSFdc1/dcu1-04	50	86.4	-	86.4	13	20.8	15.4	556
403	EM4:ESSFdc1/dcu1-04	60	153.9	-	153.9	21	22.5	18.4	703
403	EM4:ESSFdc1/dcu1-04	70	218.9	-	218.9	28	24.0	20.9	776
403	EM4:ESSFdc1/dcu1-04	80	275.6	-	275.6	35	25.5	23.1	801
403	EM4:ESSFdc1/dcu1-04	90	322.5	-	322.5	39	26.6	24.8	799
403	EM4:ESSFdc1/dcu1-04	100	361.0	-	361.0	43	27.5	26.3	787
403	EM4:ESSFdc1/dcu1-04	110	391.7	-	391.7	45	28.3	27.6	768
403	EM4:ESSFdc1/dcu1-04	120	416.9	-	416.9	46	29.0	28.7	751
403	EM4:ESSFdc1/dcu1-04	130	437.7	-	437.7	48	29.7	29.6	736
403	EM4:ESSFdc1/dcu1-04	140	453.9	-	453.9	49	30.1	30.5	720
403	EM4:ESSFdc1/dcu1-04	150	467.8	-	467.8	49	30.6	31.2	707
403	EM4:ESSFdc1/dcu1-04	160	479.0	-	479.0	50	31.0	31.8	694
403	EM4:ESSFdc1/dcu1-04	170	488.2	-	488.2	50	31.3	32.3	681
403	EM4:ESSFdc1/dcu1-04	180	495.7	-	495.7	51	31.6	32.8	671
403	EM4:ESSFdc1/dcu1-04	190	502.0	-	502.0	51	31.8	33.2	661
403	EM4:ESSFdc1/dcu1-04	200	506.5	-	506.5	51	32.0	33.7	653
403	EM4:ESSFdc1/dcu1-04	210	510.4	-	510.4	51	32.2	34.0	645
403	EM4:ESSFdc1/dcu1-04	220	513.3	-	513.3	51	32.4	34.3	637
403	EM4:ESSFdc1/dcu1-04	230	515.4	-	515.4	51	32.5	34.5	630
403	EM4:ESSFdc1/dcu1-04	240	517.3	-	517.3	51	32.7	34.7	624
403	EM4:ESSFdc1/dcu1-04	250	519.0	-	519.0	51	32.8	34.9	618
403	EM4:ESSFdc1/dcu1-04	260	518.9	-	518.9	51	32.9	35.1	611
403	EM4:ESSFdc1/dcu1-04	270	518.7	-	518.7	51	33.0	35.3	604
403	EM4:ESSFdc1/dcu1-04	280	518.4	-	518.4	50	33.1	35.5	599
403	EM4:ESSFdc1/dcu1-04	290	518.1	-	518.1	50	33.2	35.7	593
403	EM4:ESSFdc1/dcu1-04	300	517.9	-	517.9	50	33.2	35.8	589
403	EM4:ESSFdc1/dcu1-04	310	517.8	-	517.8	50	33.2	35.8	589
403	EM4:ESSFdc1/dcu1-04	320	517.8	-	517.8	50	33.2	35.8	589
403	EM4:ESSFdc1/dcu1-04	330	517.8	-	517.8	50	33.2	35.8	589
403	EM4:ESSFdc1/dcu1-04	340	517.8	-	517.8	50	33.2	35.8	589
403	EM4:ESSFdc1/dcu1-04	350	517.8	-	517.8	50	33.2	35.8	589

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
404	EM4:ESSFdc1/dcu1-Oth	10	-	-	-	0	-	0.6	0
404	EM4:ESSFdc1/dcu1-Oth	20	-	-	-	0	-	2.7	0
404	EM4:ESSFdc1/dcu1-Oth	30	0.2	-	0.2	0	12.8	5.5	5
404	EM4:ESSFdc1/dcu1-Oth	40	8.1	-	8.1	2	14.3	8.1	130
404	EM4:ESSFdc1/dcu1-Oth	50	35.7	-	35.7	6	15.1	10.5	348
404	EM4:ESSFdc1/dcu1-Oth	60	76.6	-	76.6	12	16.2	12.6	523
404	EM4:ESSFdc1/dcu1-Oth	70	119.7	-	119.7	17	17.2	14.4	631
404	EM4:ESSFdc1/dcu1-Oth	80	160.8	-	160.8	22	18.1	15.9	681
404	EM4:ESSFdc1/dcu1-Oth	90	196.4	-	196.4	26	19.0	17.2	701
404	EM4:ESSFdc1/dcu1-Oth	100	226.7	-	226.7	28	19.7	18.3	702
404	EM4:ESSFdc1/dcu1-Oth	110	252.0	-	252.0	30	20.3	19.2	693
404	EM4:ESSFdc1/dcu1-Oth	120	272.9	-	272.9	32	20.9	20.1	679
404	EM4:ESSFdc1/dcu1-Oth	130	290.3	-	290.3	33	21.3	20.8	666
404	EM4:ESSFdc1/dcu1-Oth	140	304.9	-	304.9	34	21.8	21.4	654
404	EM4:ESSFdc1/dcu1-Oth	150	316.7	-	316.7	35	22.1	22.0	641
404	EM4:ESSFdc1/dcu1-Oth	160	326.6	-	326.6	36	22.4	22.4	629
404	EM4:ESSFdc1/dcu1-Oth	170	335.0	-	335.0	36	22.7	22.9	619
404	EM4:ESSFdc1/dcu1-Oth	180	341.9	-	341.9	36	22.9	23.2	609
404	EM4:ESSFdc1/dcu1-Oth	190	347.8	-	347.8	37	23.1	23.5	601
404	EM4:ESSFdc1/dcu1-Oth	200	352.8	-	352.8	37	23.3	23.9	593
404	EM4:ESSFdc1/dcu1-Oth	210	357.0	-	357.0	37	23.5	24.1	584
404	EM4:ESSFdc1/dcu1-Oth	220	360.0	-	360.0	38	23.6	24.3	577
404	EM4:ESSFdc1/dcu1-Oth	230	362.3	-	362.3	37	23.7	24.6	569
404	EM4:ESSFdc1/dcu1-Oth	240	364.1	-	364.1	37	23.9	24.7	562
404	EM4:ESSFdc1/dcu1-Oth	250	365.7	-	365.7	37	23.9	25.0	556
404	EM4:ESSFdc1/dcu1-Oth	260	366.9	-	366.9	37	24.1	25.1	550
404	EM4:ESSFdc1/dcu1-Oth	270	367.8	-	367.8	37	24.1	25.2	545
404	EM4:ESSFdc1/dcu1-Oth	280	368.6	-	368.6	37	24.2	25.4	540
404	EM4:ESSFdc1/dcu1-Oth	290	369.3	-	369.3	37	24.3	25.5	535
404	EM4:ESSFdc1/dcu1-Oth	300	369.6	-	369.6	37	24.3	25.6	532
404	EM4:ESSFdc1/dcu1-Oth	310	369.7	-	369.7	37	24.3	25.6	532
404	EM4:ESSFdc1/dcu1-Oth	320	369.7	-	369.7	37	24.3	25.6	532
404	EM4:ESSFdc1/dcu1-Oth	330	369.7	-	369.7	37	24.3	25.6	532
404	EM4:ESSFdc1/dcu1-Oth	340	369.7	-	369.7	37	24.3	25.6	532
404	EM4:ESSFdc1/dcu1-Oth	350	369.7	-	369.7	37	24.3	25.6	532

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)						
405	EM4:ICHmk1/mw2-01	10	-	-	-	0	-	2.7	0
405	EM4:ICHmk1/mw2-01	20	1.1	-	1.1	0	20.6	7.5	14
405	EM4:ICHmk1/mw2-01	30	18.3	-	18.3	2	21.3	12.2	150
405	EM4:ICHmk1/mw2-01	40	71.7	-	71.7	8	22.6	16.5	405
405	EM4:ICHmk1/mw2-01	50	140.9	-	140.9	17	24.2	20.2	565
405	EM4:ICHmk1/mw2-01	60	209.0	-	209.0	25	25.8	23.4	642
405	EM4:ICHmk1/mw2-01	70	271.9	-	271.9	32	27.1	26.1	677
405	EM4:ICHmk1/mw2-01	80	327.8	-	327.8	37	28.2	28.4	690
405	EM4:ICHmk1/mw2-01	90	377.1	-	377.1	41	29.2	30.3	696
405	EM4:ICHmk1/mw2-01	100	420.8	-	420.8	44	30.0	31.9	696
405	EM4:ICHmk1/mw2-01	110	459.1	-	459.1	47	30.7	33.3	694
405	EM4:ICHmk1/mw2-01	120	492.0	-	492.0	49	31.3	34.6	689
405	EM4:ICHmk1/mw2-01	130	520.6	-	520.6	51	31.9	35.6	684
405	EM4:ICHmk1/mw2-01	140	545.3	-	545.3	52	32.4	36.5	677
405	EM4:ICHmk1/mw2-01	150	566.2	-	566.2	53	32.8	37.3	670
405	EM4:ICHmk1/mw2-01	160	583.7	-	583.7	54	33.2	37.9	662
405	EM4:ICHmk1/mw2-01	170	598.5	-	598.5	55	33.5	38.5	653
405	EM4:ICHmk1/mw2-01	180	611.2	-	611.2	55	33.9	39.1	645
405	EM4:ICHmk1/mw2-01	190	622.0	-	622.0	56	34.2	39.5	638
405	EM4:ICHmk1/mw2-01	200	630.5	-	630.5	56	34.4	39.9	629
405	EM4:ICHmk1/mw2-01	210	636.0	-	636.0	56	34.7	40.3	619
405	EM4:ICHmk1/mw2-01	220	641.0	-	641.0	56	34.9	40.6	610
405	EM4:ICHmk1/mw2-01	230	645.5	-	645.5	56	35.1	40.9	602
405	EM4:ICHmk1/mw2-01	240	649.0	-	649.0	56	35.2	41.1	595
405	EM4:ICHmk1/mw2-01	250	652.0	-	652.0	56	35.4	41.4	588
405	EM4:ICHmk1/mw2-01	260	654.4	-	654.4	56	35.6	41.6	582
405	EM4:ICHmk1/mw2-01	270	656.7	-	656.7	56	35.7	41.8	576
405	EM4:ICHmk1/mw2-01	280	658.7	-	658.7	56	35.8	42.0	570
405	EM4:ICHmk1/mw2-01	290	660.1	-	660.1	56	36.0	42.2	565
405	EM4:ICHmk1/mw2-01	300	661.0	-	661.0	56	36.0	42.3	561
405	EM4:ICHmk1/mw2-01	310	661.0	-	661.0	56	36.0	42.3	561
405	EM4:ICHmk1/mw2-01	320	661.0	-	661.0	56	36.0	42.3	561
405	EM4:ICHmk1/mw2-01	330	661.0	-	661.0	56	36.0	42.3	561
405	EM4:ICHmk1/mw2-01	340	661.0	-	661.0	56	36.0	42.3	561
405	EM4:ICHmk1/mw2-01	350	661.0	-	661.0	56	36.0	42.3	561

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
406	EM4:ICHmk1/mw2-03	10	-	-	-	0	-	2.1	0
406	EM4:ICHmk1/mw2-03	20	0.2	-	0.2	0	18.5	6.7	8
406	EM4:ICHmk1/mw2-03	30	15.6	-	15.6	4	18.8	11.2	216
406	EM4:ICHmk1/mw2-03	40	71.5	-	71.5	10	20.3	15.0	503
406	EM4:ICHmk1/mw2-03	50	139.9	-	139.9	18	22.0	18.2	654
406	EM4:ICHmk1/mw2-03	60	202.2	-	202.2	25	23.5	20.8	717
406	EM4:ICHmk1/mw2-03	70	256.0	-	256.0	31	24.9	23.0	740
406	EM4:ICHmk1/mw2-03	80	300.8	-	300.8	36	26.0	24.9	748
406	EM4:ICHmk1/mw2-03	90	339.4	-	339.4	38	26.8	26.5	750
406	EM4:ICHmk1/mw2-03	100	371.8	-	371.8	41	27.5	27.8	747
406	EM4:ICHmk1/mw2-03	110	400.5	-	400.5	43	28.2	29.0	740
406	EM4:ICHmk1/mw2-03	120	425.0	-	425.0	45	28.8	30.0	735
406	EM4:ICHmk1/mw2-03	130	446.9	-	446.9	46	29.3	30.9	729
406	EM4:ICHmk1/mw2-03	140	466.5	-	466.5	48	29.6	31.7	723
406	EM4:ICHmk1/mw2-03	150	484.5	-	484.5	49	30.0	32.5	715
406	EM4:ICHmk1/mw2-03	160	499.7	-	499.7	50	30.4	33.1	708
406	EM4:ICHmk1/mw2-03	170	513.2	-	513.2	50	30.8	33.7	700
406	EM4:ICHmk1/mw2-03	180	525.3	-	525.3	51	31.1	34.2	692
406	EM4:ICHmk1/mw2-03	190	536.1	-	536.1	51	31.4	34.7	685
406	EM4:ICHmk1/mw2-03	200	545.3	-	545.3	52	31.6	35.1	676
406	EM4:ICHmk1/mw2-03	210	553.5	-	553.5	52	31.9	35.5	668
406	EM4:ICHmk1/mw2-03	220	561.0	-	561.0	52	32.1	35.9	660
406	EM4:ICHmk1/mw2-03	230	567.4	-	567.4	52	32.4	36.2	651
406	EM4:ICHmk1/mw2-03	240	573.1	-	573.1	52	32.6	36.5	642
406	EM4:ICHmk1/mw2-03	250	578.1	-	578.1	52	32.8	36.7	633
406	EM4:ICHmk1/mw2-03	260	582.0	-	582.0	52	33.1	37.0	625
406	EM4:ICHmk1/mw2-03	270	585.0	-	585.0	52	33.2	37.2	615
406	EM4:ICHmk1/mw2-03	280	586.8	-	586.8	52	33.4	37.5	607
406	EM4:ICHmk1/mw2-03	290	588.6	-	588.6	52	33.6	37.7	599
406	EM4:ICHmk1/mw2-03	300	589.9	-	589.9	52	33.7	37.9	592
406	EM4:ICHmk1/mw2-03	310	589.9	-	589.9	52	33.7	37.9	592
406	EM4:ICHmk1/mw2-03	320	589.9	-	589.9	52	33.7	37.9	592
406	EM4:ICHmk1/mw2-03	330	589.9	-	589.9	52	33.7	37.9	592
406	EM4:ICHmk1/mw2-03	340	589.9	-	589.9	52	33.7	37.9	592
406	EM4:ICHmk1/mw2-03	350	589.9	-	589.9	52	33.7	37.9	592

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
407	EM4:ICHmk1/mw2-04	10	-	-	-	0	-	2.3	0
407	EM4:ICHmk1/mw2-04	20	0.5	-	0.5	0	20.0	6.9	14
407	EM4:ICHmk1/mw2-04	30	13.9	-	13.9	2	20.5	11.3	145
407	EM4:ICHmk1/mw2-04	40	58.7	-	58.7	7	21.5	15.3	382
407	EM4:ICHmk1/mw2-04	50	118.8	-	118.8	14	22.9	18.7	550
407	EM4:ICHmk1/mw2-04	60	179.4	-	179.4	22	24.2	21.7	643
407	EM4:ICHmk1/mw2-04	70	236.0	-	236.0	27	25.4	24.2	689
407	EM4:ICHmk1/mw2-04	80	287.0	-	287.0	32	26.4	26.3	714
407	EM4:ICHmk1/mw2-04	90	333.0	-	333.0	36	27.3	28.1	729
407	EM4:ICHmk1/mw2-04	100	374.0	-	374.0	40	28.0	29.7	735
407	EM4:ICHmk1/mw2-04	110	410.8	-	410.8	43	28.7	31.0	737
407	EM4:ICHmk1/mw2-04	120	442.7	-	442.7	45	29.3	32.2	736
407	EM4:ICHmk1/mw2-04	130	471.3	-	471.3	47	29.8	33.2	732
407	EM4:ICHmk1/mw2-04	140	496.4	-	496.4	48	30.2	34.1	727
407	EM4:ICHmk1/mw2-04	150	518.3	-	518.3	50	30.7	34.9	721
407	EM4:ICHmk1/mw2-04	160	537.2	-	537.2	51	31.1	35.6	713
407	EM4:ICHmk1/mw2-04	170	553.5	-	553.5	52	31.5	36.3	705
407	EM4:ICHmk1/mw2-04	180	567.4	-	567.4	52	31.8	36.8	697
407	EM4:ICHmk1/mw2-04	190	577.9	-	577.9	52	32.1	37.3	685
407	EM4:ICHmk1/mw2-04	200	585.3	-	585.3	52	32.4	37.7	673
407	EM4:ICHmk1/mw2-04	210	592.1	-	592.1	52	32.7	38.1	663
407	EM4:ICHmk1/mw2-04	220	598.2	-	598.2	52	33.0	38.5	651
407	EM4:ICHmk1/mw2-04	230	603.4	-	603.4	52	33.2	38.8	641
407	EM4:ICHmk1/mw2-04	240	607.6	-	607.6	52	33.4	39.0	631
407	EM4:ICHmk1/mw2-04	250	611.8	-	611.8	52	33.6	39.3	623
407	EM4:ICHmk1/mw2-04	260	615.5	-	615.5	52	33.8	39.5	615
407	EM4:ICHmk1/mw2-04	270	618.4	-	618.4	52	33.9	39.7	608
407	EM4:ICHmk1/mw2-04	280	620.9	-	620.9	52	34.1	39.9	601
407	EM4:ICHmk1/mw2-04	290	623.1	-	623.1	52	34.2	40.1	595
407	EM4:ICHmk1/mw2-04	300	624.5	-	624.5	52	34.3	40.3	590
407	EM4:ICHmk1/mw2-04	310	624.5	-	624.5	52	34.3	40.3	590
407	EM4:ICHmk1/mw2-04	320	624.5	-	624.5	52	34.3	40.3	590
407	EM4:ICHmk1/mw2-04	330	624.5	-	624.5	52	34.3	40.3	590
407	EM4:ICHmk1/mw2-04	340	624.5	-	624.5	52	34.3	40.3	590
407	EM4:ICHmk1/mw2-04	350	624.5	-	624.5	52	34.3	40.3	590

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
408	EM4:ICHmk1/mw2-Oth	10	-	-	-	0	-	2.3	0
408	EM4:ICHmk1/mw2-Oth	20	0.6	-	0.6	0	20.2	7.0	11
408	EM4:ICHmk1/mw2-Oth	30	15.2	-	15.2	2	20.8	11.7	142
408	EM4:ICHmk1/mw2-Oth	40	65.4	-	65.4	8	22.1	15.9	397
408	EM4:ICHmk1/mw2-Oth	50	132.1	-	132.1	16	23.6	19.6	566
408	EM4:ICHmk1/mw2-Oth	60	198.4	-	198.4	24	25.1	22.7	648
408	EM4:ICHmk1/mw2-Oth	70	259.3	-	259.3	31	26.4	25.4	688
408	EM4:ICHmk1/mw2-Oth	80	313.6	-	313.6	36	27.5	27.6	704
408	EM4:ICHmk1/mw2-Oth	90	361.6	-	361.6	39	28.4	29.5	713
408	EM4:ICHmk1/mw2-Oth	100	404.3	-	404.3	42	29.2	31.1	713
408	EM4:ICHmk1/mw2-Oth	110	441.8	-	441.8	45	29.9	32.5	712
408	EM4:ICHmk1/mw2-Oth	120	474.2	-	474.2	47	30.5	33.8	708
408	EM4:ICHmk1/mw2-Oth	130	502.8	-	502.8	49	31.0	34.8	704
408	EM4:ICHmk1/mw2-Oth	140	527.8	-	527.8	50	31.5	35.7	697
408	EM4:ICHmk1/mw2-Oth	150	549.0	-	549.0	52	31.9	36.5	690
408	EM4:ICHmk1/mw2-Oth	160	567.0	-	567.0	53	32.3	37.2	682
408	EM4:ICHmk1/mw2-Oth	170	582.3	-	582.3	53	32.7	37.8	673
408	EM4:ICHmk1/mw2-Oth	180	595.6	-	595.6	54	33.0	38.4	663
408	EM4:ICHmk1/mw2-Oth	190	606.7	-	606.7	54	33.3	38.8	655
408	EM4:ICHmk1/mw2-Oth	200	616.0	-	616.0	55	33.6	39.3	646
408	EM4:ICHmk1/mw2-Oth	210	623.7	-	623.7	55	33.9	39.6	636
408	EM4:ICHmk1/mw2-Oth	220	630.4	-	630.4	55	34.1	40.0	627
408	EM4:ICHmk1/mw2-Oth	230	636.0	-	636.0	55	34.4	40.3	618
408	EM4:ICHmk1/mw2-Oth	240	640.2	-	640.2	55	34.6	40.5	611
408	EM4:ICHmk1/mw2-Oth	250	643.8	-	643.8	55	34.8	40.8	604
408	EM4:ICHmk1/mw2-Oth	260	646.8	-	646.8	55	34.9	41.0	597
408	EM4:ICHmk1/mw2-Oth	270	649.4	-	649.4	55	35.1	41.2	591
408	EM4:ICHmk1/mw2-Oth	280	651.8	-	651.8	55	35.2	41.4	586
408	EM4:ICHmk1/mw2-Oth	290	653.5	-	653.5	55	35.3	41.6	580
408	EM4:ICHmk1/mw2-Oth	300	654.6	-	654.6	55	35.4	41.8	575
408	EM4:ICHmk1/mw2-Oth	310	654.6	-	654.6	55	35.4	41.8	575
408	EM4:ICHmk1/mw2-Oth	320	654.6	-	654.6	55	35.4	41.8	575
408	EM4:ICHmk1/mw2-Oth	330	654.6	-	654.6	55	35.4	41.8	575
408	EM4:ICHmk1/mw2-Oth	340	654.6	-	654.6	55	35.4	41.8	575
408	EM4:ICHmk1/mw2-Oth	350	654.6	-	654.6	55	35.4	41.8	575

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
409	EM4:IDFdm1-01	10	-	-	-	0	-	2.2	0
409	EM4:IDFdm1-01	20	0.2	-	0.2	0	19.9	6.8	8
409	EM4:IDFdm1-01	30	11.2	-	11.2	2	20.4	11.1	123
409	EM4:IDFdm1-01	40	49.7	-	49.7	6	21.5	14.9	339
409	EM4:IDFdm1-01	50	102.6	-	102.6	13	22.9	18.2	497
409	EM4:IDFdm1-01	60	156.4	-	156.4	19	24.2	21.0	586
409	EM4:IDFdm1-01	70	207.8	-	207.8	25	25.5	23.4	634
409	EM4:IDFdm1-01	80	254.8	-	254.8	30	26.5	25.5	662
409	EM4:IDFdm1-01	90	297.6	-	297.6	34	27.3	27.3	679
409	EM4:IDFdm1-01	100	335.9	-	335.9	38	28.1	28.8	690
409	EM4:IDFdm1-01	110	370.6	-	370.6	40	28.7	30.2	694
409	EM4:IDFdm1-01	120	401.3	-	401.3	43	29.3	31.3	696
409	EM4:IDFdm1-01	130	428.7	-	428.7	45	29.9	32.4	696
409	EM4:IDFdm1-01	140	453.2	-	453.2	46	30.3	33.3	695
409	EM4:IDFdm1-01	150	475.4	-	475.4	48	30.7	34.1	691
409	EM4:IDFdm1-01	160	494.5	-	494.5	49	31.1	34.8	688
409	EM4:IDFdm1-01	170	511.4	-	511.4	50	31.4	35.4	683
409	EM4:IDFdm1-01	180	526.1	-	526.1	51	31.7	36.0	678
409	EM4:IDFdm1-01	190	539.0	-	539.0	51	32.0	36.4	673
409	EM4:IDFdm1-01	200	550.5	-	550.5	51	32.3	36.9	666
409	EM4:IDFdm1-01	210	560.7	-	560.7	52	32.6	37.3	660
409	EM4:IDFdm1-01	220	569.1	-	569.1	52	32.8	37.7	654
409	EM4:IDFdm1-01	230	576.5	-	576.5	52	33.0	38.0	647
409	EM4:IDFdm1-01	240	582.7	-	582.7	52	33.2	38.3	639
409	EM4:IDFdm1-01	250	588.4	-	588.4	53	33.4	38.6	632
409	EM4:IDFdm1-01	260	593.2	-	593.2	53	33.6	38.8	625
409	EM4:IDFdm1-01	270	597.4	-	597.4	53	33.8	39.0	618
409	EM4:IDFdm1-01	280	600.8	-	600.8	53	33.9	39.3	611
409	EM4:IDFdm1-01	290	603.7	-	603.7	53	34.1	39.5	603
409	EM4:IDFdm1-01	300	605.8	-	605.8	53	34.2	39.7	598
409	EM4:IDFdm1-01	310	605.8	-	605.8	53	34.2	39.7	598
409	EM4:IDFdm1-01	320	605.8	-	605.8	53	34.2	39.7	598
409	EM4:IDFdm1-01	330	605.8	-	605.8	53	34.2	39.7	598
409	EM4:IDFdm1-01	340	605.8	-	605.8	53	34.2	39.7	598
409	EM4:IDFdm1-01	350	605.8	-	605.8	53	34.2	39.7	598

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
410	EM4:IDFdm1-04	10	-	-	-	0	-	1.7	0
410	EM4:IDFdm1-04	20	-	-	-	0	19.5	5.5	2
410	EM4:IDFdm1-04	30	4.8	-	4.8	1	19.9	9.4	67
410	EM4:IDFdm1-04	40	30.5	-	30.5	4	20.7	12.9	247
410	EM4:IDFdm1-04	50	71.8	-	71.8	9	21.9	16.1	415
410	EM4:IDFdm1-04	60	117.7	-	117.7	14	23.0	18.9	528
410	EM4:IDFdm1-04	70	163.1	-	163.1	20	24.2	21.3	593
410	EM4:IDFdm1-04	80	207.1	-	207.1	26	25.2	23.4	635
410	EM4:IDFdm1-04	90	248.1	-	248.1	30	26.1	25.3	662
410	EM4:IDFdm1-04	100	286.9	-	286.9	33	26.9	26.8	683
410	EM4:IDFdm1-04	110	322.3	-	322.3	36	27.6	28.2	692
410	EM4:IDFdm1-04	120	354.6	-	354.6	39	28.3	29.5	698
410	EM4:IDFdm1-04	130	384.5	-	384.5	41	28.8	30.6	701
410	EM4:IDFdm1-04	140	411.5	-	411.5	43	29.3	31.6	702
410	EM4:IDFdm1-04	150	436.3	-	436.3	45	29.7	32.5	702
410	EM4:IDFdm1-04	160	458.9	-	458.9	46	30.1	33.3	699
410	EM4:IDFdm1-04	170	479.3	-	479.3	47	30.5	34.0	696
410	EM4:IDFdm1-04	180	497.9	-	497.9	49	30.9	34.7	691
410	EM4:IDFdm1-04	190	514.6	-	514.6	50	31.2	35.3	686
410	EM4:IDFdm1-04	200	529.3	-	529.3	50	31.6	35.8	679
410	EM4:IDFdm1-04	210	542.0	-	542.0	51	31.9	36.3	672
410	EM4:IDFdm1-04	220	553.4	-	553.4	52	32.2	36.7	664
410	EM4:IDFdm1-04	230	563.8	-	563.8	52	32.4	37.1	656
410	EM4:IDFdm1-04	240	573.1	-	573.1	52	32.7	37.5	648
410	EM4:IDFdm1-04	250	581.2	-	581.2	52	33.0	37.9	640
410	EM4:IDFdm1-04	260	588.5	-	588.5	53	33.2	38.2	633
410	EM4:IDFdm1-04	270	594.5	-	594.5	53	33.5	38.6	625
410	EM4:IDFdm1-04	280	599.4	-	599.4	52	33.7	38.8	616
410	EM4:IDFdm1-04	290	603.8	-	603.8	52	33.9	39.1	607
410	EM4:IDFdm1-04	300	606.9	-	606.9	52	34.0	39.3	601
410	EM4:IDFdm1-04	310	606.9	-	606.9	52	34.0	39.3	601
410	EM4:IDFdm1-04	320	606.9	-	606.9	52	34.0	39.3	601
410	EM4:IDFdm1-04	330	606.9	-	606.9	52	34.0	39.3	601
410	EM4:IDFdm1-04	340	606.9	-	606.9	52	34.0	39.3	601
410	EM4:IDFdm1-04	350	606.9	-	606.9	52	34.0	39.3	601

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
411	EM4:IDFdm1-05	10	-	-	-	0	2.7	2.6	0
411	EM4:IDFdm1-05	20	0.7	-	0.7	0	19.5	7.2	16
411	EM4:IDFdm1-05	30	17.3	-	17.3	3	20.1	11.9	184
411	EM4:IDFdm1-05	40	75.6	-	75.6	10	21.8	16.0	466
411	EM4:IDFdm1-05	50	147.4	-	147.4	19	23.5	19.6	616
411	EM4:IDFdm1-05	60	215.2	-	215.2	27	25.2	22.6	679
411	EM4:IDFdm1-05	70	274.8	-	274.8	34	26.7	25.1	701
411	EM4:IDFdm1-05	80	325.3	-	325.3	38	27.8	27.2	704
411	EM4:IDFdm1-05	90	368.3	-	368.3	42	28.8	29.0	703
411	EM4:IDFdm1-05	100	404.8	-	404.8	44	29.6	30.5	697
411	EM4:IDFdm1-05	110	436.0	-	436.0	47	30.3	31.7	691
411	EM4:IDFdm1-05	120	462.5	-	462.5	49	30.9	32.8	684
411	EM4:IDFdm1-05	130	485.1	-	485.1	50	31.4	33.8	677
411	EM4:IDFdm1-05	140	504.3	-	504.3	51	31.8	34.6	670
411	EM4:IDFdm1-05	150	520.6	-	520.6	52	32.2	35.3	664
411	EM4:IDFdm1-05	160	533.8	-	533.8	53	32.5	35.9	657
411	EM4:IDFdm1-05	170	545.3	-	545.3	53	32.8	36.4	650
411	EM4:IDFdm1-05	180	554.9	-	554.9	54	33.0	36.8	644
411	EM4:IDFdm1-05	190	561.6	-	561.6	54	33.3	37.2	637
411	EM4:IDFdm1-05	200	567.0	-	567.0	54	33.5	37.6	630
411	EM4:IDFdm1-05	210	571.8	-	571.8	54	33.7	37.9	624
411	EM4:IDFdm1-05	220	576.0	-	576.0	54	33.8	38.2	617
411	EM4:IDFdm1-05	230	579.0	-	579.0	54	34.0	38.4	611
411	EM4:IDFdm1-05	240	581.3	-	581.3	54	34.1	38.6	605
411	EM4:IDFdm1-05	250	583.0	-	583.0	53	34.2	38.8	600
411	EM4:IDFdm1-05	260	584.6	-	584.6	53	34.3	39.0	595
411	EM4:IDFdm1-05	270	585.6	-	585.6	53	34.4	39.1	590
411	EM4:IDFdm1-05	280	586.2	-	586.2	53	34.5	39.3	584
411	EM4:IDFdm1-05	290	586.7	-	586.7	53	34.6	39.4	580
411	EM4:IDFdm1-05	300	587.0	-	587.0	53	34.6	39.5	577
411	EM4:IDFdm1-05	310	587.0	-	587.0	53	34.6	39.5	577
411	EM4:IDFdm1-05	320	587.0	-	587.0	53	34.6	39.5	577
411	EM4:IDFdm1-05	330	587.0	-	587.0	53	34.6	39.5	577
411	EM4:IDFdm1-05	340	587.0	-	587.0	53	34.6	39.5	577
411	EM4:IDFdm1-05	350	587.0	-	587.0	53	34.6	39.5	577

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
412	EM4:IDFdm1-Oth	10	-	-	-	0	-	2.2	0
412	EM4:IDFdm1-Oth	20	0.3	-	0.3	0	19.9	6.7	8
412	EM4:IDFdm1-Oth	30	10.7	-	10.7	2	20.4	10.9	121
412	EM4:IDFdm1-Oth	40	48.6	-	48.6	6	21.4	14.7	338
412	EM4:IDFdm1-Oth	50	101.3	-	101.3	13	22.7	18.0	501
412	EM4:IDFdm1-Oth	60	155.2	-	155.2	19	24.0	20.8	594
412	EM4:IDFdm1-Oth	70	206.4	-	206.4	24	25.2	23.2	644
412	EM4:IDFdm1-Oth	80	253.3	-	253.3	29	26.2	25.3	674
412	EM4:IDFdm1-Oth	90	296.2	-	296.2	34	27.1	27.1	692
412	EM4:IDFdm1-Oth	100	334.5	-	334.5	37	27.8	28.6	703
412	EM4:IDFdm1-Oth	110	369.1	-	369.1	40	28.4	29.9	708
412	EM4:IDFdm1-Oth	120	400.1	-	400.1	42	29.0	31.1	709
412	EM4:IDFdm1-Oth	130	427.4	-	427.4	44	29.5	32.1	710
412	EM4:IDFdm1-Oth	140	452.0	-	452.0	46	29.9	33.0	708
412	EM4:IDFdm1-Oth	150	474.2	-	474.2	47	30.4	33.8	704
412	EM4:IDFdm1-Oth	160	493.7	-	493.7	49	30.8	34.5	700
412	EM4:IDFdm1-Oth	170	510.6	-	510.6	50	31.1	35.1	696
412	EM4:IDFdm1-Oth	180	525.6	-	525.6	50	31.4	35.7	689
412	EM4:IDFdm1-Oth	190	538.6	-	538.6	51	31.7	36.2	684
412	EM4:IDFdm1-Oth	200	550.4	-	550.4	51	32.0	36.7	677
412	EM4:IDFdm1-Oth	210	559.4	-	559.4	52	32.3	37.1	669
412	EM4:IDFdm1-Oth	220	567.4	-	567.4	52	32.5	37.5	661
412	EM4:IDFdm1-Oth	230	574.8	-	574.8	52	32.8	37.8	654
412	EM4:IDFdm1-Oth	240	580.9	-	580.9	52	33.0	38.1	646
412	EM4:IDFdm1-Oth	250	586.4	-	586.4	52	33.2	38.4	638
412	EM4:IDFdm1-Oth	260	591.2	-	591.2	52	33.4	38.6	630
412	EM4:IDFdm1-Oth	270	595.4	-	595.4	52	33.5	38.9	622
412	EM4:IDFdm1-Oth	280	599.3	-	599.3	52	33.7	39.1	614
412	EM4:IDFdm1-Oth	290	602.1	-	602.1	52	33.9	39.3	607
412	EM4:IDFdm1-Oth	300	604.0	-	604.0	52	34.0	39.5	601
412	EM4:IDFdm1-Oth	310	604.0	-	604.0	52	34.0	39.5	601
412	EM4:IDFdm1-Oth	320	604.0	-	604.0	52	34.0	39.5	601
412	EM4:IDFdm1-Oth	330	604.0	-	604.0	52	34.0	39.5	601
412	EM4:IDFdm1-Oth	340	604.0	-	604.0	52	34.0	39.5	601
412	EM4:IDFdm1-Oth	350	604.0	-	604.0	52	34.0	39.5	601

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
413	EM4:MSdm1-01	10	-	-	-	0	-	1.8	0
413	EM4:MSdm1-01	20	0.4	-	0.4	0	17.0	6.0	8
413	EM4:MSdm1-01	30	9.6	-	9.6	1	19.5	10.4	104
413	EM4:MSdm1-01	40	51.5	-	51.5	8	20.4	14.5	405
413	EM4:MSdm1-01	50	118.5	-	118.5	17	21.8	17.9	659
413	EM4:MSdm1-01	60	188.0	-	188.0	24	23.2	20.9	769
413	EM4:MSdm1-01	70	250.2	-	250.2	30	24.6	23.4	802
413	EM4:MSdm1-01	80	302.6	-	302.6	35	25.7	25.5	802
413	EM4:MSdm1-01	90	346.5	-	346.5	38	26.8	27.2	792
413	EM4:MSdm1-01	100	383.8	-	383.8	42	27.6	28.8	780
413	EM4:MSdm1-01	110	415.6	-	415.6	43	28.3	30.0	767
413	EM4:MSdm1-01	120	442.4	-	442.4	45	28.9	31.1	755
413	EM4:MSdm1-01	130	464.9	-	464.9	46	29.4	32.0	742
413	EM4:MSdm1-01	140	484.0	-	484.0	47	29.8	32.9	731
413	EM4:MSdm1-01	150	500.6	-	500.6	49	30.2	33.6	720
413	EM4:MSdm1-01	160	514.8	-	514.8	50	30.6	34.2	711
413	EM4:MSdm1-01	170	526.5	-	526.5	50	30.9	34.8	702
413	EM4:MSdm1-01	180	536.6	-	536.6	50	31.2	35.2	694
413	EM4:MSdm1-01	190	543.8	-	543.8	51	31.4	35.6	684
413	EM4:MSdm1-01	200	550.3	-	550.3	51	31.7	36.0	674
413	EM4:MSdm1-01	210	555.7	-	555.7	51	31.9	36.3	667
413	EM4:MSdm1-01	220	560.3	-	560.3	51	32.1	36.6	659
413	EM4:MSdm1-01	230	564.1	-	564.1	51	32.3	36.8	651
413	EM4:MSdm1-01	240	567.0	-	567.0	51	32.4	37.1	644
413	EM4:MSdm1-01	250	569.1	-	569.1	51	32.6	37.3	637
413	EM4:MSdm1-01	260	570.9	-	570.9	51	32.7	37.5	631
413	EM4:MSdm1-01	270	572.5	-	572.5	51	32.8	37.6	625
413	EM4:MSdm1-01	280	574.0	-	574.0	51	32.9	37.8	619
413	EM4:MSdm1-01	290	575.0	-	575.0	51	33.0	38.0	614
413	EM4:MSdm1-01	300	575.5	-	575.5	50	33.1	38.1	609
413	EM4:MSdm1-01	310	575.3	-	575.3	50	33.1	38.1	608
413	EM4:MSdm1-01	320	575.3	-	575.3	50	33.1	38.1	608
413	EM4:MSdm1-01	330	575.3	-	575.3	50	33.1	38.1	608
413	EM4:MSdm1-01	340	575.3	-	575.3	50	33.1	38.1	608
413	EM4:MSdm1-01	350	575.3	-	575.3	50	33.1	38.1	608

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
414	EM4:MSdm1-03	10	-	-	-	0	-	1.0	0
414	EM4:MSdm1-03	20	-	-	-	0	6.4	4.7	0
414	EM4:MSdm1-03	30	7.7	-	7.7	3	16.6	9.0	134
414	EM4:MSdm1-03	40	53.0	-	53.0	11	17.7	12.9	509
414	EM4:MSdm1-03	50	127.0	-	127.0	21	19.4	16.2	838
414	EM4:MSdm1-03	60	207.1	-	207.1	29	20.8	18.9	1025
414	EM4:MSdm1-03	70	277.1	-	277.1	35	22.3	21.1	1074
414	EM4:MSdm1-03	80	332.3	-	332.3	39	23.5	23.0	1049
414	EM4:MSdm1-03	90	374.3	-	374.3	42	24.5	24.5	1005
414	EM4:MSdm1-03	100	406.2	-	406.2	44	25.3	25.7	962
414	EM4:MSdm1-03	110	430.3	-	430.3	45	26.1	26.7	923
414	EM4:MSdm1-03	120	448.5	-	448.5	46	26.7	27.6	889
414	EM4:MSdm1-03	130	462.4	-	462.4	47	27.2	28.3	861
414	EM4:MSdm1-03	140	473.4	-	473.4	47	27.6	29.0	835
414	EM4:MSdm1-03	150	481.2	-	481.2	47	28.0	29.5	812
414	EM4:MSdm1-03	160	487.6	-	487.6	47	28.3	30.0	793
414	EM4:MSdm1-03	170	492.8	-	492.8	47	28.6	30.4	778
414	EM4:MSdm1-03	180	496.5	-	496.5	48	28.8	30.8	763
414	EM4:MSdm1-03	190	499.4	-	499.4	47	29.1	31.1	750
414	EM4:MSdm1-03	200	501.6	-	501.6	47	29.2	31.3	738
414	EM4:MSdm1-03	210	503.4	-	503.4	48	29.4	31.6	728
414	EM4:MSdm1-03	220	504.2	-	504.2	47	29.5	31.9	718
414	EM4:MSdm1-03	230	504.2	-	504.2	47	29.6	32.0	708
414	EM4:MSdm1-03	240	503.8	-	503.8	47	29.7	32.2	699
414	EM4:MSdm1-03	250	502.7	-	502.7	47	29.8	32.4	690
414	EM4:MSdm1-03	260	501.7	-	501.7	47	30.0	32.6	682
414	EM4:MSdm1-03	270	500.8	-	500.8	46	30.0	32.7	675
414	EM4:MSdm1-03	280	499.9	-	499.9	46	30.1	32.8	668
414	EM4:MSdm1-03	290	499.1	-	499.1	46	30.2	32.9	662
414	EM4:MSdm1-03	300	498.1	-	498.1	46	30.2	33.1	657
414	EM4:MSdm1-03	310	498.0	-	498.0	46	30.2	33.1	655
414	EM4:MSdm1-03	320	498.0	-	498.0	46	30.2	33.1	655
414	EM4:MSdm1-03	330	498.0	-	498.0	46	30.2	33.1	655
414	EM4:MSdm1-03	340	498.0	-	498.0	46	30.2	33.1	655
414	EM4:MSdm1-03	350	498.0	-	498.0	46	30.2	33.1	655

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
415	EM4:MSdm1-04	10	-	-	-	0	-	1.5	0
415	EM4:MSdm1-04	20	0.3	-	0.3	0	9.7	5.7	9
415	EM4:MSdm1-04	30	8.7	-	8.7	2	17.9	10.1	117
415	EM4:MSdm1-04	40	53.4	-	53.4	10	18.7	13.9	499
415	EM4:MSdm1-04	50	126.9	-	126.9	19	20.0	17.2	828
415	EM4:MSdm1-04	60	200.4	-	200.4	27	21.5	19.9	934
415	EM4:MSdm1-04	70	262.4	-	262.4	32	22.9	22.1	941
415	EM4:MSdm1-04	80	313.0	-	313.0	36	24.0	24.0	919
415	EM4:MSdm1-04	90	352.2	-	352.2	39	25.1	25.5	889
415	EM4:MSdm1-04	100	384.5	-	384.5	42	25.9	26.8	863
415	EM4:MSdm1-04	110	411.2	-	411.2	43	26.6	27.9	840
415	EM4:MSdm1-04	120	433.5	-	433.5	44	27.2	28.9	819
415	EM4:MSdm1-04	130	450.8	-	450.8	45	27.7	29.7	800
415	EM4:MSdm1-04	140	465.5	-	465.5	46	28.1	30.4	783
415	EM4:MSdm1-04	150	477.8	-	477.8	47	28.5	31.0	768
415	EM4:MSdm1-04	160	488.4	-	488.4	47	28.8	31.5	755
415	EM4:MSdm1-04	170	497.0	-	497.0	48	29.1	32.0	743
415	EM4:MSdm1-04	180	504.1	-	504.1	48	29.4	32.4	732
415	EM4:MSdm1-04	190	510.0	-	510.0	48	29.6	32.8	722
415	EM4:MSdm1-04	200	514.6	-	514.6	48	29.8	33.1	713
415	EM4:MSdm1-04	210	517.4	-	517.4	48	30.0	33.3	703
415	EM4:MSdm1-04	220	519.8	-	519.8	48	30.2	33.6	694
415	EM4:MSdm1-04	230	521.8	-	521.8	48	30.3	33.8	686
415	EM4:MSdm1-04	240	523.3	-	523.3	48	30.5	34.0	678
415	EM4:MSdm1-04	250	524.3	-	524.3	48	30.6	34.2	670
415	EM4:MSdm1-04	260	524.5	-	524.5	48	30.7	34.4	662
415	EM4:MSdm1-04	270	524.5	-	524.5	48	30.9	34.6	654
415	EM4:MSdm1-04	280	524.4	-	524.4	47	30.9	34.7	646
415	EM4:MSdm1-04	290	524.3	-	524.3	47	31.0	34.8	640
415	EM4:MSdm1-04	300	524.2	-	524.2	47	31.1	34.9	634
415	EM4:MSdm1-04	310	524.0	-	524.0	47	31.1	34.9	633
415	EM4:MSdm1-04	320	524.0	-	524.0	47	31.1	34.9	633
415	EM4:MSdm1-04	330	524.0	-	524.0	47	31.1	34.9	633
415	EM4:MSdm1-04	340	524.0	-	524.0	47	31.1	34.9	633
415	EM4:MSdm1-04	350	524.0	-	524.0	47	31.1	34.9	633

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
416	EM4:MSdm1-05	10	-	-	-	0	-	1.2	0
416	EM4:MSdm1-05	20	0.1	-	0.1	0	15.4	5.2	3
416	EM4:MSdm1-05	30	5.5	-	5.5	1	17.4	9.6	75
416	EM4:MSdm1-05	40	54.6	-	54.6	11	18.0	13.7	598
416	EM4:MSdm1-05	50	144.2	-	144.2	24	18.8	17.1	1153
416	EM4:MSdm1-05	60	231.7	-	231.7	32	20.0	20.0	1310
416	EM4:MSdm1-05	70	297.9	-	297.9	36	21.2	22.3	1260
416	EM4:MSdm1-05	80	347.0	-	347.0	38	22.4	24.2	1164
416	EM4:MSdm1-05	90	385.2	-	385.2	41	23.5	25.8	1083
416	EM4:MSdm1-05	100	415.6	-	415.6	42	24.3	27.1	1021
416	EM4:MSdm1-05	110	439.0	-	439.0	43	25.1	28.2	973
416	EM4:MSdm1-05	120	457.6	-	457.6	44	25.7	29.2	934
416	EM4:MSdm1-05	130	472.7	-	472.7	45	26.2	30.0	900
416	EM4:MSdm1-05	140	484.3	-	484.3	45	26.6	30.7	873
416	EM4:MSdm1-05	150	494.3	-	494.3	45	26.9	31.3	849
416	EM4:MSdm1-05	160	502.2	-	502.2	46	27.3	31.9	828
416	EM4:MSdm1-05	170	508.8	-	508.8	46	27.5	32.3	810
416	EM4:MSdm1-05	180	514.5	-	514.5	46	27.8	32.7	794
416	EM4:MSdm1-05	190	518.0	-	518.0	46	28.0	33.1	779
416	EM4:MSdm1-05	200	521.1	-	521.1	46	28.3	33.4	765
416	EM4:MSdm1-05	210	523.6	-	523.6	46	28.5	33.7	752
416	EM4:MSdm1-05	220	525.8	-	525.8	45	28.6	34.0	741
416	EM4:MSdm1-05	230	527.2	-	527.2	45	28.8	34.2	730
416	EM4:MSdm1-05	240	527.4	-	527.4	45	28.9	34.4	719
416	EM4:MSdm1-05	250	527.4	-	527.4	45	29.0	34.6	709
416	EM4:MSdm1-05	260	527.4	-	527.4	45	29.2	34.8	700
416	EM4:MSdm1-05	270	527.3	-	527.3	45	29.3	34.9	691
416	EM4:MSdm1-05	280	527.2	-	527.2	45	29.4	35.1	683
416	EM4:MSdm1-05	290	526.9	-	526.9	45	29.5	35.2	676
416	EM4:MSdm1-05	300	526.5	-	526.5	45	29.6	35.3	669
416	EM4:MSdm1-05	310	526.3	-	526.3	44	29.6	35.3	668
416	EM4:MSdm1-05	320	526.3	-	526.3	44	29.6	35.3	668
416	EM4:MSdm1-05	330	526.3	-	526.3	44	29.6	35.3	668
416	EM4:MSdm1-05	340	526.3	-	526.3	44	29.6	35.3	668
416	EM4:MSdm1-05	350	526.3	-	526.3	44	29.6	35.3	668

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
417	EM4:MSdm1-Oth	10	-	-	-	0	1.6	2.0	0
417	EM4:MSdm1-Oth	20	0.6	-	0.6	0	16.5	6.2	13
417	EM4:MSdm1-Oth	30	11.7	-	11.7	2	18.9	10.6	132
417	EM4:MSdm1-Oth	40	58.8	-	58.8	9	19.8	14.5	479
417	EM4:MSdm1-Oth	50	131.2	-	131.2	19	21.1	17.9	764
417	EM4:MSdm1-Oth	60	203.0	-	203.0	26	22.6	20.7	868
417	EM4:MSdm1-Oth	70	264.8	-	264.8	32	23.9	23.2	883
417	EM4:MSdm1-Oth	80	315.4	-	315.4	36	25.0	25.1	868
417	EM4:MSdm1-Oth	90	356.9	-	356.9	39	26.0	26.8	846
417	EM4:MSdm1-Oth	100	391.1	-	391.1	42	26.8	28.1	825
417	EM4:MSdm1-Oth	110	419.7	-	419.7	44	27.6	29.3	806
417	EM4:MSdm1-Oth	120	443.4	-	443.4	45	28.2	30.3	788
417	EM4:MSdm1-Oth	130	463.2	-	463.2	46	28.7	31.3	771
417	EM4:MSdm1-Oth	140	480.0	-	480.0	47	29.1	32.0	757
417	EM4:MSdm1-Oth	150	494.5	-	494.5	48	29.5	32.6	745
417	EM4:MSdm1-Oth	160	506.5	-	506.5	49	29.8	33.2	734
417	EM4:MSdm1-Oth	170	516.7	-	516.7	49	30.1	33.7	724
417	EM4:MSdm1-Oth	180	525.0	-	525.0	49	30.4	34.1	714
417	EM4:MSdm1-Oth	190	531.6	-	531.6	49	30.6	34.5	704
417	EM4:MSdm1-Oth	200	537.3	-	537.3	50	30.8	34.9	696
417	EM4:MSdm1-Oth	210	542.0	-	542.0	50	31.0	35.1	687
417	EM4:MSdm1-Oth	220	545.9	-	545.9	50	31.2	35.4	679
417	EM4:MSdm1-Oth	230	548.5	-	548.5	50	31.4	35.7	671
417	EM4:MSdm1-Oth	240	550.4	-	550.4	50	31.5	35.9	663
417	EM4:MSdm1-Oth	250	552.1	-	552.1	49	31.6	36.1	655
417	EM4:MSdm1-Oth	260	553.4	-	553.4	49	31.7	36.3	648
417	EM4:MSdm1-Oth	270	554.5	-	554.5	49	31.8	36.4	641
417	EM4:MSdm1-Oth	280	555.6	-	555.6	49	32.0	36.6	636
417	EM4:MSdm1-Oth	290	556.0	-	556.0	49	32.1	36.7	629
417	EM4:MSdm1-Oth	300	555.8	-	555.8	49	32.1	36.8	624
417	EM4:MSdm1-Oth	310	555.5	-	555.5	49	32.1	36.9	623
417	EM4:MSdm1-Oth	320	555.5	-	555.5	49	32.1	36.9	623
417	EM4:MSdm1-Oth	330	555.5	-	555.5	49	32.1	36.9	623
417	EM4:MSdm1-Oth	340	555.5	-	555.5	49	32.1	36.9	623
417	EM4:MSdm1-Oth	350	555.5	-	555.5	49	32.1	36.9	623

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
418	EM4:Msdm1a-All	10	-	-	-	0	-	2.2	0
418	EM4:Msdm1a-All	20	0.4	-	0.4	0	20.5	6.9	5
418	EM4:Msdm1a-All	30	16.9	-	16.9	1	21.0	11.8	146
418	EM4:Msdm1a-All	40	83.2	-	83.2	10	23.0	16.3	445
418	EM4:Msdm1a-All	50	163.2	-	163.2	21	25.1	20.3	589
418	EM4:Msdm1a-All	60	237.0	-	237.0	30	27.1	23.5	640
418	EM4:Msdm1a-All	70	303.5	-	303.5	37	28.6	26.3	654
418	EM4:Msdm1a-All	80	361.4	-	361.4	42	30.0	28.6	656
418	EM4:Msdm1a-All	90	410.6	-	410.6	46	31.0	30.5	653
418	EM4:Msdm1a-All	100	454.2	-	454.2	49	32.0	32.2	647
418	EM4:Msdm1a-All	110	492.6	-	492.6	51	32.8	33.6	642
418	EM4:Msdm1a-All	120	524.9	-	524.9	53	33.4	34.8	635
418	EM4:Msdm1a-All	130	553.3	-	553.3	54	34.0	35.8	629
418	EM4:Msdm1a-All	140	577.7	-	577.7	56	34.5	36.8	622
418	EM4:Msdm1a-All	150	599.3	-	599.3	57	34.9	37.6	616
418	EM4:Msdm1a-All	160	618.4	-	618.4	58	35.3	38.2	611
418	EM4:Msdm1a-All	170	634.6	-	634.6	59	35.7	38.9	605
418	EM4:Msdm1a-All	180	648.8	-	648.8	59	36.0	39.4	600
418	EM4:Msdm1a-All	190	660.0	-	660.0	60	36.3	39.9	591
418	EM4:Msdm1a-All	200	669.6	-	669.6	60	36.6	40.3	583
418	EM4:Msdm1a-All	210	678.1	-	678.1	60	36.9	40.7	575
418	EM4:Msdm1a-All	220	684.9	-	684.9	60	37.1	41.1	568
418	EM4:Msdm1a-All	230	691.1	-	691.1	60	37.3	41.5	561
418	EM4:Msdm1a-All	240	696.5	-	696.5	60	37.5	41.8	555
418	EM4:Msdm1a-All	250	701.5	-	701.5	60	37.7	42.0	549
418	EM4:Msdm1a-All	260	704.9	-	704.9	60	37.9	42.3	543
418	EM4:Msdm1a-All	270	705.7	-	705.7	60	38.0	42.4	536
418	EM4:Msdm1a-All	280	705.9	-	705.9	60	38.2	42.6	530
418	EM4:Msdm1a-All	290	705.8	-	705.8	59	38.3	42.7	525
418	EM4:Msdm1a-All	300	705.7	-	705.7	59	38.4	42.8	521
418	EM4:Msdm1a-All	310	705.7	-	705.7	59	38.4	42.8	521
418	EM4:Msdm1a-All	320	705.7	-	705.7	59	38.4	42.8	521
418	EM4:Msdm1a-All	330	705.7	-	705.7	59	38.4	42.8	521
418	EM4:Msdm1a-All	340	705.7	-	705.7	59	38.4	42.8	521
418	EM4:Msdm1a-All	350	705.7	-	705.7	59	38.4	42.8	521

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
1001	FM1:ESSFdc1/dcu1-01	10	-	-	-	0	-	0.8	0
1001	FM1:ESSFdc1/dcu1-01	20	-	-	-	0	-	3.9	0
1001	FM1:ESSFdc1/dcu1-01	30	1.2	-	1.2	1	14.5	7.7	27
1001	FM1:ESSFdc1/dcu1-01	40	22.2	-	22.2	4	18.3	11.4	260
1001	FM1:ESSFdc1/dcu1-01	50	74.3	-	74.3	12	19.7	14.6	560
1001	FM1:ESSFdc1/dcu1-01	60	139.7	-	139.7	20	21.2	17.5	772
1001	FM1:ESSFdc1/dcu1-01	70	204.3	-	204.3	28	22.6	19.9	874
1001	FM1:ESSFdc1/dcu1-01	80	260.8	-	260.8	33	23.8	21.9	905
1001	FM1:ESSFdc1/dcu1-01	90	307.4	-	307.4	38	24.9	23.6	900
1001	FM1:ESSFdc1/dcu1-01	100	345.4	-	345.4	40	25.9	25.0	883
1001	FM1:ESSFdc1/dcu1-01	110	374.9	-	374.9	42	26.6	26.2	858
1001	FM1:ESSFdc1/dcu1-01	120	399.0	-	399.0	44	27.3	27.2	835
1001	FM1:ESSFdc1/dcu1-01	130	418.8	-	418.8	45	27.9	28.1	814
1001	FM1:ESSFdc1/dcu1-01	140	434.2	-	434.2	46	28.4	28.8	794
1001	FM1:ESSFdc1/dcu1-01	150	447.1	-	447.1	47	28.8	29.5	777
1001	FM1:ESSFdc1/dcu1-01	160	457.6	-	457.6	48	29.2	30.1	761
1001	FM1:ESSFdc1/dcu1-01	170	466.1	-	466.1	48	29.5	30.6	746
1001	FM1:ESSFdc1/dcu1-01	180	472.9	-	472.9	48	29.8	31.0	733
1001	FM1:ESSFdc1/dcu1-01	190	478.6	-	478.6	48	30.0	31.4	721
1001	FM1:ESSFdc1/dcu1-01	200	483.0	-	483.0	48	30.3	31.8	710
1001	FM1:ESSFdc1/dcu1-01	210	486.5	-	486.5	49	30.4	32.1	700
1001	FM1:ESSFdc1/dcu1-01	220	489.2	-	489.2	48	30.6	32.4	691
1001	FM1:ESSFdc1/dcu1-01	230	491.0	-	491.0	48	30.7	32.6	683
1001	FM1:ESSFdc1/dcu1-01	240	492.5	-	492.5	48	30.9	32.9	675
1001	FM1:ESSFdc1/dcu1-01	250	493.9	-	493.9	48	31.0	33.1	667
1001	FM1:ESSFdc1/dcu1-01	260	494.8	-	494.8	48	31.1	33.3	661
1001	FM1:ESSFdc1/dcu1-01	270	494.8	-	494.8	48	31.2	33.4	653
1001	FM1:ESSFdc1/dcu1-01	280	494.5	-	494.5	48	31.3	33.6	646
1001	FM1:ESSFdc1/dcu1-01	290	493.7	-	493.7	48	31.4	33.8	640
1001	FM1:ESSFdc1/dcu1-01	300	493.1	-	493.1	48	31.5	33.9	634
1001	FM1:ESSFdc1/dcu1-01	310	493.0	-	493.0	47	31.5	33.9	633
1001	FM1:ESSFdc1/dcu1-01	320	493.0	-	493.0	47	31.5	33.9	633
1001	FM1:ESSFdc1/dcu1-01	330	493.0	-	493.0	47	31.5	33.9	633
1001	FM1:ESSFdc1/dcu1-01	340	493.0	-	493.0	47	31.5	33.9	633
1001	FM1:ESSFdc1/dcu1-01	350	493.0	-	493.0	47	31.5	33.9	633

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)						
1002	FM1:ESSFdc1/dcu1-03	10	-	-	-	0	-	0.8	0
1002	FM1:ESSFdc1/dcu1-03	20	-	-	-	0	-	3.6	0
1002	FM1:ESSFdc1/dcu1-03	30	0.7	-	0.7	0	17.1	7.3	17
1002	FM1:ESSFdc1/dcu1-03	40	16.0	-	16.0	4	17.5	10.7	230
1002	FM1:ESSFdc1/dcu1-03	50	59.1	-	59.1	11	18.5	13.7	543
1002	FM1:ESSFdc1/dcu1-03	60	117.0	-	117.0	19	19.7	16.2	801
1002	FM1:ESSFdc1/dcu1-03	70	176.8	-	176.8	26	20.9	18.4	950
1002	FM1:ESSFdc1/dcu1-03	80	230.7	-	230.7	31	22.0	20.3	1014
1002	FM1:ESSFdc1/dcu1-03	90	276.3	-	276.3	35	23.0	21.9	1018
1002	FM1:ESSFdc1/dcu1-03	100	313.3	-	313.3	38	23.8	23.2	999
1002	FM1:ESSFdc1/dcu1-03	110	343.4	-	343.4	40	24.6	24.3	971
1002	FM1:ESSFdc1/dcu1-03	120	368.0	-	368.0	42	25.2	25.2	944
1002	FM1:ESSFdc1/dcu1-03	130	387.3	-	387.3	43	25.8	26.1	917
1002	FM1:ESSFdc1/dcu1-03	140	403.3	-	403.3	44	26.3	26.8	894
1002	FM1:ESSFdc1/dcu1-03	150	416.4	-	416.4	44	26.7	27.4	873
1002	FM1:ESSFdc1/dcu1-03	160	427.4	-	427.4	45	27.0	27.9	854
1002	FM1:ESSFdc1/dcu1-03	170	436.3	-	436.3	45	27.4	28.4	838
1002	FM1:ESSFdc1/dcu1-03	180	443.2	-	443.2	45	27.6	28.8	821
1002	FM1:ESSFdc1/dcu1-03	190	448.8	-	448.8	46	27.9	29.2	806
1002	FM1:ESSFdc1/dcu1-03	200	453.2	-	453.2	46	28.1	29.5	793
1002	FM1:ESSFdc1/dcu1-03	210	457.0	-	457.0	46	28.2	29.8	781
1002	FM1:ESSFdc1/dcu1-03	220	460.2	-	460.2	46	28.4	30.1	771
1002	FM1:ESSFdc1/dcu1-03	230	462.3	-	462.3	46	28.6	30.3	760
1002	FM1:ESSFdc1/dcu1-03	240	463.7	-	463.7	46	28.7	30.5	750
1002	FM1:ESSFdc1/dcu1-03	250	464.6	-	464.6	46	28.9	30.7	741
1002	FM1:ESSFdc1/dcu1-03	260	465.4	-	465.4	45	29.0	30.9	732
1002	FM1:ESSFdc1/dcu1-03	270	465.6	-	465.6	45	29.1	31.1	724
1002	FM1:ESSFdc1/dcu1-03	280	465.8	-	465.8	45	29.2	31.2	717
1002	FM1:ESSFdc1/dcu1-03	290	466.0	-	466.0	45	29.3	31.4	710
1002	FM1:ESSFdc1/dcu1-03	300	466.1	-	466.1	45	29.3	31.5	704
1002	FM1:ESSFdc1/dcu1-03	310	466.1	-	466.1	45	29.3	31.5	703
1002	FM1:ESSFdc1/dcu1-03	320	466.1	-	466.1	45	29.3	31.5	703
1002	FM1:ESSFdc1/dcu1-03	330	466.1	-	466.1	45	29.3	31.5	703
1002	FM1:ESSFdc1/dcu1-03	340	466.1	-	466.1	45	29.3	31.5	703
1002	FM1:ESSFdc1/dcu1-03	350	466.1	-	466.1	45	29.3	31.5	703

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
1003	FM1:ESSFdc1/dcu1-04	10	-	-	-	0	-	0.9	0
1003	FM1:ESSFdc1/dcu1-04	20	-	-	-	0	-	4.3	0
1003	FM1:ESSFdc1/dcu1-04	30	2.2	-	2.2	1	18.3	8.3	45
1003	FM1:ESSFdc1/dcu1-04	40	31.0	-	31.0	5	19.2	12.2	324
1003	FM1:ESSFdc1/dcu1-04	50	92.7	-	92.7	14	21.0	15.7	573
1003	FM1:ESSFdc1/dcu1-04	60	162.4	-	162.4	22	22.8	18.7	714
1003	FM1:ESSFdc1/dcu1-04	70	228.3	-	228.3	30	24.3	21.2	783
1003	FM1:ESSFdc1/dcu1-04	80	285.3	-	285.3	35	25.6	23.4	803
1003	FM1:ESSFdc1/dcu1-04	90	332.2	-	332.2	40	26.8	25.2	799
1003	FM1:ESSFdc1/dcu1-04	100	370.1	-	370.1	43	27.8	26.7	783
1003	FM1:ESSFdc1/dcu1-04	110	400.6	-	400.6	46	28.5	28.0	765
1003	FM1:ESSFdc1/dcu1-04	120	425.7	-	425.7	47	29.3	29.1	748
1003	FM1:ESSFdc1/dcu1-04	130	445.4	-	445.4	48	29.9	30.0	730
1003	FM1:ESSFdc1/dcu1-04	140	461.7	-	461.7	49	30.4	30.9	715
1003	FM1:ESSFdc1/dcu1-04	150	475.3	-	475.3	50	30.8	31.5	702
1003	FM1:ESSFdc1/dcu1-04	160	486.2	-	486.2	50	31.2	32.1	688
1003	FM1:ESSFdc1/dcu1-04	170	495.2	-	495.2	51	31.5	32.6	676
1003	FM1:ESSFdc1/dcu1-04	180	502.2	-	502.2	51	31.8	33.1	666
1003	FM1:ESSFdc1/dcu1-04	190	507.9	-	507.9	51	32.0	33.6	656
1003	FM1:ESSFdc1/dcu1-04	200	512.5	-	512.5	51	32.2	34.0	648
1003	FM1:ESSFdc1/dcu1-04	210	516.5	-	516.5	51	32.4	34.3	640
1003	FM1:ESSFdc1/dcu1-04	220	519.3	-	519.3	51	32.6	34.6	633
1003	FM1:ESSFdc1/dcu1-04	230	521.2	-	521.2	51	32.7	34.8	625
1003	FM1:ESSFdc1/dcu1-04	240	522.5	-	522.5	51	32.9	35.0	618
1003	FM1:ESSFdc1/dcu1-04	250	523.0	-	523.0	51	33.0	35.2	612
1003	FM1:ESSFdc1/dcu1-04	260	523.4	-	523.4	51	33.1	35.4	605
1003	FM1:ESSFdc1/dcu1-04	270	523.6	-	523.6	51	33.2	35.6	600
1003	FM1:ESSFdc1/dcu1-04	280	523.8	-	523.8	51	33.3	35.8	595
1003	FM1:ESSFdc1/dcu1-04	290	523.9	-	523.9	51	33.3	36.0	590
1003	FM1:ESSFdc1/dcu1-04	300	523.6	-	523.6	50	33.4	36.0	587
1003	FM1:ESSFdc1/dcu1-04	310	523.6	-	523.6	50	33.4	36.0	586
1003	FM1:ESSFdc1/dcu1-04	320	523.6	-	523.6	50	33.4	36.0	586
1003	FM1:ESSFdc1/dcu1-04	330	523.6	-	523.6	50	33.4	36.0	586
1003	FM1:ESSFdc1/dcu1-04	340	523.6	-	523.6	50	33.4	36.0	586
1003	FM1:ESSFdc1/dcu1-04	350	523.6	-	523.6	50	33.4	36.0	586

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
1004	FM1:ESSFdc1/dcu1-Oth	10	-	-	-	0	-	0.6	0
1004	FM1:ESSFdc1/dcu1-Oth	20	-	-	-	0	-	2.7	0
1004	FM1:ESSFdc1/dcu1-Oth	30	0.2	-	0.2	0	12.8	5.4	4
1004	FM1:ESSFdc1/dcu1-Oth	40	7.2	-	7.2	2	14.3	8.0	117
1004	FM1:ESSFdc1/dcu1-Oth	50	32.4	-	32.4	6	15.0	10.3	332
1004	FM1:ESSFdc1/dcu1-Oth	60	71.7	-	71.7	11	16.0	12.4	508
1004	FM1:ESSFdc1/dcu1-Oth	70	113.7	-	113.7	17	17.1	14.2	620
1004	FM1:ESSFdc1/dcu1-Oth	80	154.0	-	154.0	21	18.0	15.7	675
1004	FM1:ESSFdc1/dcu1-Oth	90	189.3	-	189.3	25	18.8	16.9	699
1004	FM1:ESSFdc1/dcu1-Oth	100	219.6	-	219.6	28	19.5	18.1	702
1004	FM1:ESSFdc1/dcu1-Oth	110	245.0	-	245.0	30	20.2	19.0	695
1004	FM1:ESSFdc1/dcu1-Oth	120	266.0	-	266.0	32	20.7	19.8	683
1004	FM1:ESSFdc1/dcu1-Oth	130	283.6	-	283.6	33	21.2	20.5	670
1004	FM1:ESSFdc1/dcu1-Oth	140	298.4	-	298.4	34	21.6	21.2	657
1004	FM1:ESSFdc1/dcu1-Oth	150	310.6	-	310.6	35	21.9	21.7	645
1004	FM1:ESSFdc1/dcu1-Oth	160	320.6	-	320.6	35	22.3	22.2	633
1004	FM1:ESSFdc1/dcu1-Oth	170	329.1	-	329.1	36	22.5	22.7	623
1004	FM1:ESSFdc1/dcu1-Oth	180	336.3	-	336.3	36	22.8	23.0	613
1004	FM1:ESSFdc1/dcu1-Oth	190	342.3	-	342.3	36	23.0	23.4	604
1004	FM1:ESSFdc1/dcu1-Oth	200	347.4	-	347.4	37	23.1	23.6	596
1004	FM1:ESSFdc1/dcu1-Oth	210	351.6	-	351.6	37	23.3	23.9	588
1004	FM1:ESSFdc1/dcu1-Oth	220	355.2	-	355.2	37	23.5	24.2	581
1004	FM1:ESSFdc1/dcu1-Oth	230	358.0	-	358.0	37	23.6	24.3	573
1004	FM1:ESSFdc1/dcu1-Oth	240	359.7	-	359.7	37	23.7	24.6	566
1004	FM1:ESSFdc1/dcu1-Oth	250	361.2	-	361.2	37	23.8	24.7	560
1004	FM1:ESSFdc1/dcu1-Oth	260	362.3	-	362.3	37	23.9	24.9	554
1004	FM1:ESSFdc1/dcu1-Oth	270	363.1	-	363.1	37	24.0	25.1	548
1004	FM1:ESSFdc1/dcu1-Oth	280	363.7	-	363.7	37	24.1	25.2	542
1004	FM1:ESSFdc1/dcu1-Oth	290	364.1	-	364.1	37	24.1	25.3	538
1004	FM1:ESSFdc1/dcu1-Oth	300	364.4	-	364.4	36	24.2	25.4	534
1004	FM1:ESSFdc1/dcu1-Oth	310	364.4	-	364.4	36	24.2	25.4	534
1004	FM1:ESSFdc1/dcu1-Oth	320	364.4	-	364.4	36	24.2	25.4	534
1004	FM1:ESSFdc1/dcu1-Oth	330	364.4	-	364.4	36	24.2	25.4	534
1004	FM1:ESSFdc1/dcu1-Oth	340	364.4	-	364.4	36	24.2	25.4	534
1004	FM1:ESSFdc1/dcu1-Oth	350	364.4	-	364.4	36	24.2	25.4	534

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
1005	FM1:ICHmk1/mw2-01	10	-	-	-	0	-	2.9	0
1005	FM1:ICHmk1/mw2-01	20	1.6	-	1.6	0	20.7	7.7	19
1005	FM1:ICHmk1/mw2-01	30	20.2	-	20.2	2	21.4	12.4	160
1005	FM1:ICHmk1/mw2-01	40	75.2	-	75.2	9	22.7	16.7	415
1005	FM1:ICHmk1/mw2-01	50	145.5	-	145.5	18	24.3	20.5	572
1005	FM1:ICHmk1/mw2-01	60	214.4	-	214.4	26	25.9	23.6	646
1005	FM1:ICHmk1/mw2-01	70	277.8	-	277.8	32	27.2	26.3	679
1005	FM1:ICHmk1/mw2-01	80	334.0	-	334.0	38	28.4	28.6	692
1005	FM1:ICHmk1/mw2-01	90	383.7	-	383.7	42	29.3	30.5	697
1005	FM1:ICHmk1/mw2-01	100	427.6	-	427.6	45	30.1	32.2	696
1005	FM1:ICHmk1/mw2-01	110	466.0	-	466.0	47	30.9	33.6	694
1005	FM1:ICHmk1/mw2-01	120	498.9	-	498.9	49	31.5	34.8	689
1005	FM1:ICHmk1/mw2-01	130	527.7	-	527.7	51	32.0	35.8	683
1005	FM1:ICHmk1/mw2-01	140	552.4	-	552.4	53	32.5	36.7	676
1005	FM1:ICHmk1/mw2-01	150	573.1	-	573.1	54	32.9	37.5	668
1005	FM1:ICHmk1/mw2-01	160	590.6	-	590.6	54	33.3	38.2	659
1005	FM1:ICHmk1/mw2-01	170	605.4	-	605.4	55	33.7	38.8	650
1005	FM1:ICHmk1/mw2-01	180	618.1	-	618.1	56	34.0	39.3	643
1005	FM1:ICHmk1/mw2-01	190	625.9	-	625.9	56	34.3	39.7	632
1005	FM1:ICHmk1/mw2-01	200	631.2	-	631.2	56	34.6	40.1	620
1005	FM1:ICHmk1/mw2-01	210	635.9	-	635.9	56	34.8	40.5	610
1005	FM1:ICHmk1/mw2-01	220	640.2	-	640.2	56	35.0	40.8	600
1005	FM1:ICHmk1/mw2-01	230	643.9	-	643.9	56	35.2	41.1	591
1005	FM1:ICHmk1/mw2-01	240	647.1	-	647.1	56	35.4	41.4	584
1005	FM1:ICHmk1/mw2-01	250	650.3	-	650.3	56	35.6	41.6	579
1005	FM1:ICHmk1/mw2-01	260	653.1	-	653.1	56	35.7	41.8	574
1005	FM1:ICHmk1/mw2-01	270	655.7	-	655.7	56	35.8	42.0	569
1005	FM1:ICHmk1/mw2-01	280	657.6	-	657.6	55	35.9	42.2	564
1005	FM1:ICHmk1/mw2-01	290	659.1	-	659.1	55	36.1	42.3	559
1005	FM1:ICHmk1/mw2-01	300	659.2	-	659.2	55	36.1	42.4	556
1005	FM1:ICHmk1/mw2-01	310	659.2	-	659.2	55	36.1	42.4	556
1005	FM1:ICHmk1/mw2-01	320	659.2	-	659.2	55	36.1	42.4	556
1005	FM1:ICHmk1/mw2-01	330	659.2	-	659.2	55	36.1	42.4	556
1005	FM1:ICHmk1/mw2-01	340	659.2	-	659.2	55	36.1	42.4	556
1005	FM1:ICHmk1/mw2-01	350	659.2	-	659.2	55	36.1	42.4	556

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
1006	FM1:ICHmk1/mw2-03	10	-	-	-	0	-	2.1	0
1006	FM1:ICHmk1/mw2-03	20	0.1	-	0.1	0	18.4	6.5	5
1006	FM1:ICHmk1/mw2-03	30	12.1	-	12.1	3	18.7	10.8	187
1006	FM1:ICHmk1/mw2-03	40	61.6	-	61.6	9	20.0	14.5	470
1006	FM1:ICHmk1/mw2-03	50	125.9	-	125.9	17	21.7	17.6	633
1006	FM1:ICHmk1/mw2-03	60	186.0	-	186.0	23	23.2	20.2	707
1006	FM1:ICHmk1/mw2-03	70	238.1	-	238.1	29	24.5	22.3	735
1006	FM1:ICHmk1/mw2-03	80	282.5	-	282.5	34	25.5	24.2	747
1006	FM1:ICHmk1/mw2-03	90	320.0	-	320.0	37	26.4	25.7	750
1006	FM1:ICHmk1/mw2-03	100	352.4	-	352.4	40	27.1	27.1	750
1006	FM1:ICHmk1/mw2-03	110	380.2	-	380.2	42	27.7	28.2	745
1006	FM1:ICHmk1/mw2-03	120	404.8	-	404.8	43	28.3	29.2	739
1006	FM1:ICHmk1/mw2-03	130	425.8	-	425.8	45	28.8	30.1	734
1006	FM1:ICHmk1/mw2-03	140	444.7	-	444.7	46	29.2	30.9	728
1006	FM1:ICHmk1/mw2-03	150	461.5	-	461.5	47	29.6	31.6	722
1006	FM1:ICHmk1/mw2-03	160	476.9	-	476.9	48	29.9	32.2	715
1006	FM1:ICHmk1/mw2-03	170	490.6	-	490.6	49	30.2	32.8	707
1006	FM1:ICHmk1/mw2-03	180	502.5	-	502.5	50	30.5	33.3	701
1006	FM1:ICHmk1/mw2-03	190	512.7	-	512.7	50	30.8	33.8	694
1006	FM1:ICHmk1/mw2-03	200	521.6	-	521.6	51	31.1	34.2	687
1006	FM1:ICHmk1/mw2-03	210	529.9	-	529.9	51	31.3	34.6	680
1006	FM1:ICHmk1/mw2-03	220	537.5	-	537.5	51	31.5	35.0	672
1006	FM1:ICHmk1/mw2-03	230	544.3	-	544.3	51	31.8	35.3	665
1006	FM1:ICHmk1/mw2-03	240	549.3	-	549.3	51	32.0	35.6	658
1006	FM1:ICHmk1/mw2-03	250	553.8	-	553.8	51	32.2	35.9	650
1006	FM1:ICHmk1/mw2-03	260	557.4	-	557.4	51	32.3	36.1	641
1006	FM1:ICHmk1/mw2-03	270	560.8	-	560.8	51	32.5	36.3	633
1006	FM1:ICHmk1/mw2-03	280	563.6	-	563.6	51	32.7	36.5	625
1006	FM1:ICHmk1/mw2-03	290	566.0	-	566.0	51	32.9	36.7	618
1006	FM1:ICHmk1/mw2-03	300	567.8	-	567.8	51	33.0	36.9	612
1006	FM1:ICHmk1/mw2-03	310	567.8	-	567.8	51	33.0	36.9	612
1006	FM1:ICHmk1/mw2-03	320	567.8	-	567.8	51	33.0	36.9	612
1006	FM1:ICHmk1/mw2-03	330	567.8	-	567.8	51	33.0	36.9	612
1006	FM1:ICHmk1/mw2-03	340	567.8	-	567.8	51	33.0	36.9	612
1006	FM1:ICHmk1/mw2-03	350	567.8	-	567.8	51	33.0	36.9	612

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)						
1007	FM1:ICHmk1/mw2-04	10	-	-	-	0	-	2.4	0
1007	FM1:ICHmk1/mw2-04	20	0.6	-	0.6	0	20.0	6.9	14
1007	FM1:ICHmk1/mw2-04	30	14.2	-	14.2	2	20.5	11.4	147
1007	FM1:ICHmk1/mw2-04	40	59.6	-	59.6	7	21.6	15.3	385
1007	FM1:ICHmk1/mw2-04	50	120.2	-	120.2	14	22.9	18.8	553
1007	FM1:ICHmk1/mw2-04	60	181.0	-	181.0	22	24.2	21.7	643
1007	FM1:ICHmk1/mw2-04	70	237.9	-	237.9	27	25.5	24.2	690
1007	FM1:ICHmk1/mw2-04	80	289.1	-	289.1	32	26.5	26.4	715
1007	FM1:ICHmk1/mw2-04	90	335.2	-	335.2	37	27.3	28.2	730
1007	FM1:ICHmk1/mw2-04	100	376.6	-	376.6	40	28.1	29.8	735
1007	FM1:ICHmk1/mw2-04	110	413.4	-	413.4	43	28.8	31.1	737
1007	FM1:ICHmk1/mw2-04	120	445.5	-	445.5	45	29.3	32.3	735
1007	FM1:ICHmk1/mw2-04	130	474.2	-	474.2	47	29.8	33.3	731
1007	FM1:ICHmk1/mw2-04	140	499.3	-	499.3	48	30.3	34.2	726
1007	FM1:ICHmk1/mw2-04	150	521.3	-	521.3	50	30.8	35.0	720
1007	FM1:ICHmk1/mw2-04	160	540.2	-	540.2	51	31.2	35.7	712
1007	FM1:ICHmk1/mw2-04	170	556.6	-	556.6	52	31.6	36.4	704
1007	FM1:ICHmk1/mw2-04	180	570.6	-	570.6	52	31.9	36.9	696
1007	FM1:ICHmk1/mw2-04	190	582.1	-	582.1	53	32.2	37.4	685
1007	FM1:ICHmk1/mw2-04	200	592.2	-	592.2	53	32.5	37.8	676
1007	FM1:ICHmk1/mw2-04	210	601.1	-	601.1	53	32.8	38.2	667
1007	FM1:ICHmk1/mw2-04	220	608.7	-	608.7	53	33.0	38.6	657
1007	FM1:ICHmk1/mw2-04	230	615.1	-	615.1	53	33.3	38.9	648
1007	FM1:ICHmk1/mw2-04	240	620.1	-	620.1	53	33.5	39.1	640
1007	FM1:ICHmk1/mw2-04	250	624.6	-	624.6	53	33.6	39.4	632
1007	FM1:ICHmk1/mw2-04	260	628.2	-	628.2	53	33.8	39.6	625
1007	FM1:ICHmk1/mw2-04	270	631.2	-	631.2	53	34.0	39.8	617
1007	FM1:ICHmk1/mw2-04	280	633.9	-	633.9	53	34.1	40.0	610
1007	FM1:ICHmk1/mw2-04	290	636.1	-	636.1	53	34.2	40.2	604
1007	FM1:ICHmk1/mw2-04	300	637.7	-	637.7	53	34.4	40.4	600
1007	FM1:ICHmk1/mw2-04	310	637.7	-	637.7	53	34.4	40.4	600
1007	FM1:ICHmk1/mw2-04	320	637.7	-	637.7	53	34.4	40.4	600
1007	FM1:ICHmk1/mw2-04	330	637.7	-	637.7	53	34.4	40.4	600
1007	FM1:ICHmk1/mw2-04	340	637.7	-	637.7	53	34.4	40.4	600
1007	FM1:ICHmk1/mw2-04	350	637.7	-	637.7	53	34.4	40.4	600

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area		Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)			(m2/ha)	Diameter (cm)		
1008	FM1:ICHmk1/mw2-Oth	10	-	-	-	0	-	2.3	0
1008	FM1:ICHmk1/mw2-Oth	20	0.6	-	0.6	0	20.2	7.1	12
1008	FM1:ICHmk1/mw2-Oth	30	15.7	-	15.7	2	20.8	11.7	145
1008	FM1:ICHmk1/mw2-Oth	40	66.7	-	66.7	8	22.1	16.0	401
1008	FM1:ICHmk1/mw2-Oth	50	134.1	-	134.1	16	23.6	19.7	568
1008	FM1:ICHmk1/mw2-Oth	60	200.9	-	200.9	24	25.2	22.8	650
1008	FM1:ICHmk1/mw2-Oth	70	262.4	-	262.4	31	26.4	25.5	690
1008	FM1:ICHmk1/mw2-Oth	80	317.0	-	317.0	36	27.5	27.7	705
1008	FM1:ICHmk1/mw2-Oth	90	365.4	-	365.4	39	28.5	29.6	713
1008	FM1:ICHmk1/mw2-Oth	100	408.5	-	408.5	43	29.3	31.3	714
1008	FM1:ICHmk1/mw2-Oth	110	446.2	-	446.2	45	30.0	32.7	712
1008	FM1:ICHmk1/mw2-Oth	120	478.8	-	478.8	47	30.6	33.9	708
1008	FM1:ICHmk1/mw2-Oth	130	507.6	-	507.6	49	31.1	35.0	703
1008	FM1:ICHmk1/mw2-Oth	140	532.7	-	532.7	51	31.6	35.9	696
1008	FM1:ICHmk1/mw2-Oth	150	554.0	-	554.0	52	32.0	36.7	689
1008	FM1:ICHmk1/mw2-Oth	160	571.9	-	571.9	53	32.4	37.4	679
1008	FM1:ICHmk1/mw2-Oth	170	587.4	-	587.4	54	32.8	38.0	670
1008	FM1:ICHmk1/mw2-Oth	180	600.6	-	600.6	54	33.1	38.5	661
1008	FM1:ICHmk1/mw2-Oth	190	611.9	-	611.9	55	33.4	39.0	653
1008	FM1:ICHmk1/mw2-Oth	200	621.5	-	621.5	55	33.7	39.4	644
1008	FM1:ICHmk1/mw2-Oth	210	627.5	-	627.5	55	34.0	39.8	632
1008	FM1:ICHmk1/mw2-Oth	220	632.8	-	632.8	55	34.3	40.1	621
1008	FM1:ICHmk1/mw2-Oth	230	637.6	-	637.6	55	34.5	40.4	613
1008	FM1:ICHmk1/mw2-Oth	240	641.2	-	641.2	55	34.7	40.7	604
1008	FM1:ICHmk1/mw2-Oth	250	644.4	-	644.4	55	34.9	41.0	596
1008	FM1:ICHmk1/mw2-Oth	260	647.0	-	647.0	55	35.1	41.2	589
1008	FM1:ICHmk1/mw2-Oth	270	649.2	-	649.2	55	35.2	41.4	582
1008	FM1:ICHmk1/mw2-Oth	280	651.1	-	651.1	55	35.4	41.6	576
1008	FM1:ICHmk1/mw2-Oth	290	652.5	-	652.5	54	35.5	41.8	569
1008	FM1:ICHmk1/mw2-Oth	300	653.0	-	653.0	54	35.6	42.0	564
1008	FM1:ICHmk1/mw2-Oth	310	653.0	-	653.0	54	35.6	42.0	564
1008	FM1:ICHmk1/mw2-Oth	320	653.0	-	653.0	54	35.6	42.0	564
1008	FM1:ICHmk1/mw2-Oth	330	653.0	-	653.0	54	35.6	42.0	564
1008	FM1:ICHmk1/mw2-Oth	340	653.0	-	653.0	54	35.6	42.0	564
1008	FM1:ICHmk1/mw2-Oth	350	653.0	-	653.0	54	35.6	42.0	564

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
1009	FM1:IDFdm1-01	10	-	-	-	0	-	2.2	0
1009	FM1:IDFdm1-01	20	0.2	-	0.2	0	19.9	6.8	8
1009	FM1:IDFdm1-01	30	10.4	-	10.4	2	20.4	11.0	116
1009	FM1:IDFdm1-01	40	47.5	-	47.5	5	21.5	14.7	331
1009	FM1:IDFdm1-01	50	99.1	-	99.1	12	22.8	18.0	490
1009	FM1:IDFdm1-01	60	152.1	-	152.1	18	24.1	20.8	580
1009	FM1:IDFdm1-01	70	202.5	-	202.5	25	25.4	23.2	629
1009	FM1:IDFdm1-01	80	248.8	-	248.8	30	26.3	25.3	659
1009	FM1:IDFdm1-01	90	291.1	-	291.1	34	27.2	27.0	677
1009	FM1:IDFdm1-01	100	328.8	-	328.8	37	27.9	28.6	688
1009	FM1:IDFdm1-01	110	362.9	-	362.9	40	28.6	29.9	692
1009	FM1:IDFdm1-01	120	393.3	-	393.3	42	29.2	31.1	695
1009	FM1:IDFdm1-01	130	420.2	-	420.2	44	29.7	32.1	695
1009	FM1:IDFdm1-01	140	444.4	-	444.4	46	30.2	33.0	694
1009	FM1:IDFdm1-01	150	466.1	-	466.1	47	30.6	33.8	692
1009	FM1:IDFdm1-01	160	485.3	-	485.3	48	30.9	34.5	688
1009	FM1:IDFdm1-01	170	501.8	-	501.8	49	31.3	35.1	683
1009	FM1:IDFdm1-01	180	516.6	-	516.6	50	31.6	35.6	679
1009	FM1:IDFdm1-01	190	528.4	-	528.4	50	31.8	36.1	674
1009	FM1:IDFdm1-01	200	537.6	-	537.6	51	32.1	36.6	664
1009	FM1:IDFdm1-01	210	545.9	-	545.9	51	32.4	37.0	657
1009	FM1:IDFdm1-01	220	553.3	-	553.3	51	32.6	37.4	649
1009	FM1:IDFdm1-01	230	560.0	-	560.0	51	32.8	37.7	642
1009	FM1:IDFdm1-01	240	565.8	-	565.8	51	33.0	38.0	634
1009	FM1:IDFdm1-01	250	571.2	-	571.2	51	33.2	38.2	626
1009	FM1:IDFdm1-01	260	575.9	-	575.9	51	33.4	38.5	620
1009	FM1:IDFdm1-01	270	580.1	-	580.1	52	33.6	38.7	613
1009	FM1:IDFdm1-01	280	583.9	-	583.9	52	33.7	38.9	607
1009	FM1:IDFdm1-01	290	586.9	-	586.9	52	33.9	39.1	601
1009	FM1:IDFdm1-01	300	588.8	-	588.8	51	34.0	39.3	595
1009	FM1:IDFdm1-01	310	588.8	-	588.8	51	34.0	39.3	595
1009	FM1:IDFdm1-01	320	588.8	-	588.8	51	34.0	39.3	595
1009	FM1:IDFdm1-01	330	588.8	-	588.8	51	34.0	39.3	595
1009	FM1:IDFdm1-01	340	588.8	-	588.8	51	34.0	39.3	595
1009	FM1:IDFdm1-01	350	588.8	-	588.8	51	34.0	39.3	595

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
1010	FM1:IDFdm1-04	10	-	-	-	0	-	1.6	0
1010	FM1:IDFdm1-04	20	-	-	-	0	19.4	5.2	1
1010	FM1:IDFdm1-04	30	3.1	-	3.1	1	19.9	8.9	50
1010	FM1:IDFdm1-04	40	22.4	-	22.4	2	20.4	12.3	204
1010	FM1:IDFdm1-04	50	58.4	-	58.4	7	21.5	15.3	373
1010	FM1:IDFdm1-04	60	100.1	-	100.1	12	22.6	17.9	496
1010	FM1:IDFdm1-04	70	142.0	-	142.0	18	23.7	20.3	569
1010	FM1:IDFdm1-04	80	182.8	-	182.8	23	24.7	22.3	615
1010	FM1:IDFdm1-04	90	221.2	-	221.2	27	25.5	24.1	647
1010	FM1:IDFdm1-04	100	257.1	-	257.1	30	26.3	25.7	668
1010	FM1:IDFdm1-04	110	290.6	-	290.6	33	27.0	27.1	683
1010	FM1:IDFdm1-04	120	321.2	-	321.2	36	27.6	28.3	691
1010	FM1:IDFdm1-04	130	348.8	-	348.8	38	28.2	29.3	696
1010	FM1:IDFdm1-04	140	374.4	-	374.4	40	28.7	30.3	698
1010	FM1:IDFdm1-04	150	397.6	-	397.6	42	29.1	31.2	699
1010	FM1:IDFdm1-04	160	419.0	-	419.0	43	29.5	32.0	698
1010	FM1:IDFdm1-04	170	438.1	-	438.1	45	29.8	32.7	696
1010	FM1:IDFdm1-04	180	455.6	-	455.6	46	30.1	33.3	693
1010	FM1:IDFdm1-04	190	471.5	-	471.5	47	30.5	33.9	689
1010	FM1:IDFdm1-04	200	485.5	-	485.5	48	30.8	34.4	684
1010	FM1:IDFdm1-04	210	498.0	-	498.0	48	31.0	34.9	679
1010	FM1:IDFdm1-04	220	509.2	-	509.2	49	31.3	35.3	673
1010	FM1:IDFdm1-04	230	519.4	-	519.4	49	31.6	35.7	665
1010	FM1:IDFdm1-04	240	528.3	-	528.3	50	31.8	36.1	659
1010	FM1:IDFdm1-04	250	536.4	-	536.4	50	32.0	36.5	652
1010	FM1:IDFdm1-04	260	543.7	-	543.7	50	32.2	36.8	646
1010	FM1:IDFdm1-04	270	550.0	-	550.0	51	32.4	37.1	640
1010	FM1:IDFdm1-04	280	555.6	-	555.6	51	32.6	37.4	632
1010	FM1:IDFdm1-04	290	560.3	-	560.3	51	32.8	37.6	626
1010	FM1:IDFdm1-04	300	563.2	-	563.2	51	33.0	37.8	621
1010	FM1:IDFdm1-04	310	563.2	-	563.2	51	33.0	37.8	621
1010	FM1:IDFdm1-04	320	563.2	-	563.2	51	33.0	37.8	621
1010	FM1:IDFdm1-04	330	563.2	-	563.2	51	33.0	37.8	621
1010	FM1:IDFdm1-04	340	563.2	-	563.2	51	33.0	37.8	621
1010	FM1:IDFdm1-04	350	563.2	-	563.2	51	33.0	37.8	621

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable	Deciduous	Conifer	Basal Area		Density	
			Volume (m3/ha)	Volume (m3/ha)	Volume (m3/ha)	(m2/ha)	Diameter (cm)	Height (m)	(stems/ha)
1011	FM1:IDFdm1-05	10	-	-	-	0	2.7	2.6	0
1011	FM1:IDFdm1-05	20	0.8	-	0.8	0	19.6	7.3	18
1011	FM1:IDFdm1-05	30	18.3	-	18.3	3	20.2	12.0	192
1011	FM1:IDFdm1-05	40	78.3	-	78.3	10	21.8	16.2	474
1011	FM1:IDFdm1-05	50	151.2	-	151.2	19	23.6	19.8	621
1011	FM1:IDFdm1-05	60	219.8	-	219.8	28	25.4	22.8	682
1011	FM1:IDFdm1-05	70	280.0	-	280.0	34	26.8	25.3	703
1011	FM1:IDFdm1-05	80	331.0	-	331.0	38	27.9	27.4	705
1011	FM1:IDFdm1-05	90	374.2	-	374.2	42	28.9	29.2	702
1011	FM1:IDFdm1-05	100	411.0	-	411.0	45	29.7	30.7	698
1011	FM1:IDFdm1-05	110	442.5	-	442.5	47	30.4	32.0	690
1011	FM1:IDFdm1-05	120	469.2	-	469.2	49	31.0	33.1	683
1011	FM1:IDFdm1-05	130	491.8	-	491.8	50	31.5	34.0	676
1011	FM1:IDFdm1-05	140	511.3	-	511.3	51	31.9	34.8	670
1011	FM1:IDFdm1-05	150	527.4	-	527.4	52	32.3	35.5	663
1011	FM1:IDFdm1-05	160	540.9	-	540.9	53	32.6	36.1	656
1011	FM1:IDFdm1-05	170	552.5	-	552.5	54	32.9	36.6	649
1011	FM1:IDFdm1-05	180	561.8	-	561.8	54	33.2	37.1	643
1011	FM1:IDFdm1-05	190	569.7	-	569.7	54	33.4	37.5	637
1011	FM1:IDFdm1-05	200	576.5	-	576.5	54	33.6	37.8	631
1011	FM1:IDFdm1-05	210	580.6	-	580.6	54	33.8	38.2	623
1011	FM1:IDFdm1-05	220	583.7	-	583.7	54	34.0	38.4	616
1011	FM1:IDFdm1-05	230	585.8	-	585.8	54	34.1	38.7	608
1011	FM1:IDFdm1-05	240	587.4	-	587.4	54	34.3	38.9	601
1011	FM1:IDFdm1-05	250	589.0	-	589.0	54	34.4	39.1	595
1011	FM1:IDFdm1-05	260	590.3	-	590.3	53	34.5	39.3	588
1011	FM1:IDFdm1-05	270	590.7	-	590.7	53	34.6	39.4	582
1011	FM1:IDFdm1-05	280	591.0	-	591.0	53	34.7	39.6	577
1011	FM1:IDFdm1-05	290	591.2	-	591.2	53	34.8	39.7	571
1011	FM1:IDFdm1-05	300	591.3	-	591.3	53	34.9	39.8	568
1011	FM1:IDFdm1-05	310	591.3	-	591.3	53	34.9	39.8	568
1011	FM1:IDFdm1-05	320	591.3	-	591.3	53	34.9	39.8	568
1011	FM1:IDFdm1-05	330	591.3	-	591.3	53	34.9	39.8	568
1011	FM1:IDFdm1-05	340	591.3	-	591.3	53	34.9	39.8	568
1011	FM1:IDFdm1-05	350	591.3	-	591.3	53	34.9	39.8	568

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable	Deciduous	Conifer	Basal Area		Density	
			Volume (m3/ha)	Volume (m3/ha)	Volume (m3/ha)	(m2/ha)	Diameter (cm)	Height (m)	(stems/ha)
1012	FM1:IDFdm1-Oth	10	-	-	-	0	-	1.8	0
1012	FM1:IDFdm1-Oth	20	-	-	-	0	20.0	5.8	3
1012	FM1:IDFdm1-Oth	30	4.3	-	4.3	1	20.1	9.4	61
1012	FM1:IDFdm1-Oth	40	24.2	-	24.2	3	20.7	12.8	218
1012	FM1:IDFdm1-Oth	50	61.6	-	61.6	8	21.7	15.7	391
1012	FM1:IDFdm1-Oth	60	104.2	-	104.2	13	22.8	18.3	510
1012	FM1:IDFdm1-Oth	70	146.0	-	146.0	18	23.8	20.5	583
1012	FM1:IDFdm1-Oth	80	185.1	-	185.1	22	24.7	22.4	625
1012	FM1:IDFdm1-Oth	90	221.1	-	221.1	26	25.6	24.0	652
1012	FM1:IDFdm1-Oth	100	253.6	-	253.6	30	26.2	25.5	671
1012	FM1:IDFdm1-Oth	110	282.9	-	282.9	32	26.8	26.7	683
1012	FM1:IDFdm1-Oth	120	309.2	-	309.2	35	27.3	27.8	692
1012	FM1:IDFdm1-Oth	130	332.7	-	332.7	37	27.8	28.7	696
1012	FM1:IDFdm1-Oth	140	353.3	-	353.3	39	28.2	29.6	697
1012	FM1:IDFdm1-Oth	150	372.1	-	372.1	40	28.6	30.3	697
1012	FM1:IDFdm1-Oth	160	388.3	-	388.3	41	28.9	31.0	696
1012	FM1:IDFdm1-Oth	170	402.9	-	402.9	42	29.2	31.6	695
1012	FM1:IDFdm1-Oth	180	416.2	-	416.2	43	29.5	32.1	693
1012	FM1:IDFdm1-Oth	190	426.7	-	426.7	44	29.7	32.6	689
1012	FM1:IDFdm1-Oth	200	436.1	-	436.1	44	29.9	33.0	684
1012	FM1:IDFdm1-Oth	210	444.9	-	444.9	45	30.1	33.4	680
1012	FM1:IDFdm1-Oth	220	452.7	-	452.7	45	30.3	33.8	674
1012	FM1:IDFdm1-Oth	230	459.7	-	459.7	46	30.5	34.1	671
1012	FM1:IDFdm1-Oth	240	466.1	-	466.1	46	30.7	34.4	667
1012	FM1:IDFdm1-Oth	250	471.5	-	471.5	46	30.8	34.6	663
1012	FM1:IDFdm1-Oth	260	476.4	-	476.4	46	31.0	34.9	658
1012	FM1:IDFdm1-Oth	270	480.6	-	480.6	47	31.1	35.1	654
1012	FM1:IDFdm1-Oth	280	484.4	-	484.4	47	31.2	35.3	650
1012	FM1:IDFdm1-Oth	290	487.8	-	487.8	47	31.3	35.5	647
1012	FM1:IDFdm1-Oth	300	490.2	-	490.2	47	31.4	35.6	644
1012	FM1:IDFdm1-Oth	310	490.2	-	490.2	47	31.4	35.6	644
1012	FM1:IDFdm1-Oth	320	490.2	-	490.2	47	31.4	35.6	644
1012	FM1:IDFdm1-Oth	330	490.2	-	490.2	47	31.4	35.6	644
1012	FM1:IDFdm1-Oth	340	490.2	-	490.2	47	31.4	35.6	644
1012	FM1:IDFdm1-Oth	350	490.2	-	490.2	47	31.4	35.6	644

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
1013	FM1:MSdm1-01	10	-	-	-	0	-	1.8	0
1013	FM1:MSdm1-01	20	0.4	-	0.4	0	17.0	6.0	8
1013	FM1:MSdm1-01	30	9.3	-	9.3	1	19.5	10.4	102
1013	FM1:MSdm1-01	40	50.7	-	50.7	7	20.4	14.4	401
1013	FM1:MSdm1-01	50	117.2	-	117.2	16	21.8	17.9	656
1013	FM1:MSdm1-01	60	186.3	-	186.3	24	23.2	20.8	768
1013	FM1:MSdm1-01	70	248.3	-	248.3	30	24.5	23.3	801
1013	FM1:MSdm1-01	80	300.8	-	300.8	35	25.7	25.4	803
1013	FM1:MSdm1-01	90	344.6	-	344.6	38	26.7	27.2	793
1013	FM1:MSdm1-01	100	381.8	-	381.8	41	27.5	28.7	781
1013	FM1:MSdm1-01	110	413.5	-	413.5	43	28.2	29.9	768
1013	FM1:MSdm1-01	120	440.3	-	440.3	45	28.9	31.0	756
1013	FM1:MSdm1-01	130	462.7	-	462.7	46	29.4	32.0	743
1013	FM1:MSdm1-01	140	481.9	-	481.9	47	29.8	32.8	732
1013	FM1:MSdm1-01	150	498.4	-	498.4	48	30.2	33.5	721
1013	FM1:MSdm1-01	160	512.6	-	512.6	49	30.6	34.1	712
1013	FM1:MSdm1-01	170	524.2	-	524.2	50	30.9	34.7	703
1013	FM1:MSdm1-01	180	534.3	-	534.3	50	31.1	35.1	694
1013	FM1:MSdm1-01	190	541.6	-	541.6	50	31.4	35.5	685
1013	FM1:MSdm1-01	200	545.9	-	545.9	51	31.6	35.9	674
1013	FM1:MSdm1-01	210	550.0	-	550.0	50	31.8	36.3	664
1013	FM1:MSdm1-01	220	553.4	-	553.4	50	32.0	36.5	656
1013	FM1:MSdm1-01	230	556.3	-	556.3	50	32.2	36.8	648
1013	FM1:MSdm1-01	240	558.4	-	558.4	50	32.4	37.0	639
1013	FM1:MSdm1-01	250	560.4	-	560.4	50	32.5	37.2	631
1013	FM1:MSdm1-01	260	561.9	-	561.9	50	32.6	37.4	624
1013	FM1:MSdm1-01	270	563.2	-	563.2	50	32.8	37.6	618
1013	FM1:MSdm1-01	280	564.5	-	564.5	50	32.9	37.7	612
1013	FM1:MSdm1-01	290	565.5	-	565.5	50	33.0	37.9	607
1013	FM1:MSdm1-01	300	566.0	-	566.0	50	33.1	38.0	602
1013	FM1:MSdm1-01	310	566.0	-	566.0	50	33.1	38.0	601
1013	FM1:MSdm1-01	320	566.0	-	566.0	50	33.1	38.0	601
1013	FM1:MSdm1-01	330	566.0	-	566.0	50	33.1	38.0	601
1013	FM1:MSdm1-01	340	566.0	-	566.0	50	33.1	38.0	601
1013	FM1:MSdm1-01	350	566.0	-	566.0	50	33.1	38.0	601

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)						
1014	FM1:MSdm1-03	10	-	-	-	0	-	1.0	0
1014	FM1:MSdm1-03	20	-	-	-	0	6.4	4.6	0
1014	FM1:MSdm1-03	30	6.5	-	6.5	2	16.6	8.8	118
1014	FM1:MSdm1-03	40	48.8	-	48.8	10	17.6	12.7	488
1014	FM1:MSdm1-03	50	119.6	-	119.6	20	19.2	16.0	814
1014	FM1:MSdm1-03	60	197.5	-	197.5	29	20.7	18.6	1012
1014	FM1:MSdm1-03	70	266.8	-	266.8	35	22.1	20.9	1072
1014	FM1:MSdm1-03	80	322.2	-	322.2	39	23.2	22.7	1056
1014	FM1:MSdm1-03	90	364.9	-	364.9	41	24.2	24.2	1015
1014	FM1:MSdm1-03	100	397.2	-	397.2	43	25.1	25.3	972
1014	FM1:MSdm1-03	110	422.5	-	422.5	45	25.9	26.4	934
1014	FM1:MSdm1-03	120	440.7	-	440.7	46	26.5	27.3	901
1014	FM1:MSdm1-03	130	455.1	-	455.1	46	27.0	28.0	871
1014	FM1:MSdm1-03	140	466.6	-	466.6	47	27.4	28.7	846
1014	FM1:MSdm1-03	150	475.1	-	475.1	47	27.8	29.2	823
1014	FM1:MSdm1-03	160	481.5	-	481.5	47	28.1	29.7	803
1014	FM1:MSdm1-03	170	486.8	-	486.8	47	28.4	30.1	787
1014	FM1:MSdm1-03	180	491.0	-	491.0	47	28.6	30.4	773
1014	FM1:MSdm1-03	190	493.9	-	493.9	47	28.8	30.7	759
1014	FM1:MSdm1-03	200	496.1	-	496.1	47	29.0	31.0	747
1014	FM1:MSdm1-03	210	497.6	-	497.6	47	29.1	31.3	736
1014	FM1:MSdm1-03	220	498.8	-	498.8	47	29.3	31.5	726
1014	FM1:MSdm1-03	230	499.7	-	499.7	47	29.4	31.7	717
1014	FM1:MSdm1-03	240	500.2	-	500.2	47	29.5	31.9	708
1014	FM1:MSdm1-03	250	499.5	-	499.5	47	29.6	32.1	699
1014	FM1:MSdm1-03	260	498.3	-	498.3	47	29.8	32.3	691
1014	FM1:MSdm1-03	270	496.7	-	496.7	46	29.8	32.4	683
1014	FM1:MSdm1-03	280	495.1	-	495.1	46	29.9	32.5	675
1014	FM1:MSdm1-03	290	493.7	-	493.7	46	30.0	32.6	668
1014	FM1:MSdm1-03	300	492.5	-	492.5	46	30.0	32.8	662
1014	FM1:MSdm1-03	310	492.3	-	492.3	46	30.1	32.8	661
1014	FM1:MSdm1-03	320	492.3	-	492.3	46	30.1	32.8	661
1014	FM1:MSdm1-03	330	492.3	-	492.3	46	30.1	32.8	661
1014	FM1:MSdm1-03	340	492.3	-	492.3	46	30.1	32.8	661
1014	FM1:MSdm1-03	350	492.3	-	492.3	46	30.1	32.8	661

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)						
1015	FM1:MSdm1-04	10	-	-	-	0	-	1.5	0
1015	FM1:MSdm1-04	20	0.3	-	0.3	0	9.8	5.7	9
1015	FM1:MSdm1-04	30	8.2	-	8.2	2	17.9	10.0	111
1015	FM1:MSdm1-04	40	51.0	-	51.0	9	18.7	13.8	484
1015	FM1:MSdm1-04	50	123.0	-	123.0	19	20.0	17.0	815
1015	FM1:MSdm1-04	60	195.6	-	195.6	26	21.4	19.7	932
1015	FM1:MSdm1-04	70	257.1	-	257.1	32	22.7	21.9	942
1015	FM1:MSdm1-04	80	307.8	-	307.8	36	23.9	23.8	922
1015	FM1:MSdm1-04	90	346.8	-	346.8	39	24.9	25.3	892
1015	FM1:MSdm1-04	100	379.2	-	379.2	41	25.8	26.6	866
1015	FM1:MSdm1-04	110	405.9	-	405.9	42	26.5	27.7	844
1015	FM1:MSdm1-04	120	427.9	-	427.9	44	27.0	28.7	823
1015	FM1:MSdm1-04	130	445.6	-	445.6	45	27.6	29.5	804
1015	FM1:MSdm1-04	140	460.3	-	460.3	46	28.0	30.2	787
1015	FM1:MSdm1-04	150	472.5	-	472.5	46	28.4	30.8	772
1015	FM1:MSdm1-04	160	482.9	-	482.9	47	28.7	31.3	759
1015	FM1:MSdm1-04	170	491.6	-	491.6	47	29.0	31.8	747
1015	FM1:MSdm1-04	180	498.8	-	498.8	48	29.3	32.2	736
1015	FM1:MSdm1-04	190	504.4	-	504.4	48	29.5	32.5	726
1015	FM1:MSdm1-04	200	509.2	-	509.2	48	29.7	32.9	717
1015	FM1:MSdm1-04	210	512.7	-	512.7	48	29.9	33.1	708
1015	FM1:MSdm1-04	220	515.8	-	515.8	48	30.0	33.3	699
1015	FM1:MSdm1-04	230	518.4	-	518.4	48	30.2	33.6	692
1015	FM1:MSdm1-04	240	520.4	-	520.4	48	30.3	33.8	684
1015	FM1:MSdm1-04	250	521.8	-	521.8	48	30.4	34.0	678
1015	FM1:MSdm1-04	260	522.9	-	522.9	48	30.6	34.1	670
1015	FM1:MSdm1-04	270	522.8	-	522.8	48	30.7	34.3	663
1015	FM1:MSdm1-04	280	522.8	-	522.8	47	30.8	34.4	656
1015	FM1:MSdm1-04	290	522.5	-	522.5	47	30.9	34.6	649
1015	FM1:MSdm1-04	300	522.1	-	522.1	47	30.9	34.7	644
1015	FM1:MSdm1-04	310	521.9	-	521.9	47	30.9	34.7	643
1015	FM1:MSdm1-04	320	521.9	-	521.9	47	30.9	34.7	643
1015	FM1:MSdm1-04	330	521.9	-	521.9	47	30.9	34.7	643
1015	FM1:MSdm1-04	340	521.9	-	521.9	47	30.9	34.7	643
1015	FM1:MSdm1-04	350	521.9	-	521.9	47	30.9	34.7	643

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
1016	FM1:MSdm1-05	10	-	-	-	0	-	1.2	0
1016	FM1:MSdm1-05	20	0.1	-	0.1	0	15.4	5.3	3
1016	FM1:MSdm1-05	30	6.0	-	6.0	1	17.4	9.8	81
1016	FM1:MSdm1-05	40	58.9	-	58.9	12	18.0	13.8	637
1016	FM1:MSdm1-05	50	152.1	-	152.1	25	18.9	17.3	1175
1016	FM1:MSdm1-05	60	239.8	-	239.8	33	20.1	20.2	1309
1016	FM1:MSdm1-05	70	305.4	-	305.4	37	21.4	22.5	1245
1016	FM1:MSdm1-05	80	354.2	-	354.2	39	22.6	24.5	1145
1016	FM1:MSdm1-05	90	392.4	-	392.4	41	23.7	26.1	1066
1016	FM1:MSdm1-05	100	422.3	-	422.3	42	24.6	27.5	1007
1016	FM1:MSdm1-05	110	445.3	-	445.3	44	25.3	28.5	959
1016	FM1:MSdm1-05	120	463.5	-	463.5	44	25.9	29.5	921
1016	FM1:MSdm1-05	130	478.0	-	478.0	45	26.4	30.3	888
1016	FM1:MSdm1-05	140	489.7	-	489.7	45	26.8	31.0	861
1016	FM1:MSdm1-05	150	499.5	-	499.5	45	27.2	31.6	838
1016	FM1:MSdm1-05	160	507.4	-	507.4	46	27.5	32.2	818
1016	FM1:MSdm1-05	170	514.2	-	514.2	46	27.8	32.6	799
1016	FM1:MSdm1-05	180	518.8	-	518.8	46	28.0	33.0	783
1016	FM1:MSdm1-05	190	522.8	-	522.8	46	28.2	33.4	768
1016	FM1:MSdm1-05	200	526.0	-	526.0	46	28.5	33.7	754
1016	FM1:MSdm1-05	210	528.3	-	528.3	46	28.7	34.0	742
1016	FM1:MSdm1-05	220	529.4	-	529.4	45	28.9	34.3	729
1016	FM1:MSdm1-05	230	530.2	-	530.2	45	29.0	34.5	718
1016	FM1:MSdm1-05	240	530.8	-	530.8	45	29.2	34.7	708
1016	FM1:MSdm1-05	250	531.1	-	531.1	45	29.3	34.9	698
1016	FM1:MSdm1-05	260	531.4	-	531.4	45	29.4	35.1	689
1016	FM1:MSdm1-05	270	531.5	-	531.5	45	29.5	35.3	680
1016	FM1:MSdm1-05	280	530.7	-	530.7	45	29.6	35.4	672
1016	FM1:MSdm1-05	290	529.0	-	529.0	45	29.7	35.5	663
1016	FM1:MSdm1-05	300	527.2	-	527.2	44	29.8	35.6	655
1016	FM1:MSdm1-05	310	526.6	-	526.6	44	29.8	35.6	654
1016	FM1:MSdm1-05	320	526.6	-	526.6	44	29.8	35.6	654
1016	FM1:MSdm1-05	330	526.6	-	526.6	44	29.8	35.6	654
1016	FM1:MSdm1-05	340	526.6	-	526.6	44	29.8	35.6	654
1016	FM1:MSdm1-05	350	526.6	-	526.6	44	29.8	35.6	654

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)						
1017	FM1:MSdm1-Oth	10	-	-	-	0	1.6	2.0	0
1017	FM1:MSdm1-Oth	20	0.5	-	0.5	0	12.1	6.1	12
1017	FM1:MSdm1-Oth	30	10.6	-	10.6	2	18.8	10.4	123
1017	FM1:MSdm1-Oth	40	54.9	-	54.9	9	19.7	14.3	458
1017	FM1:MSdm1-Oth	50	124.7	-	124.7	18	21.0	17.7	751
1017	FM1:MSdm1-Oth	60	195.4	-	195.4	25	22.4	20.5	864
1017	FM1:MSdm1-Oth	70	256.6	-	256.6	32	23.7	22.8	884
1017	FM1:MSdm1-Oth	80	307.1	-	307.1	36	24.8	24.8	872
1017	FM1:MSdm1-Oth	90	348.3	-	348.3	38	25.8	26.5	850
1017	FM1:MSdm1-Oth	100	382.2	-	382.2	41	26.7	27.8	830
1017	FM1:MSdm1-Oth	110	410.7	-	410.7	43	27.3	29.0	810
1017	FM1:MSdm1-Oth	120	434.8	-	434.8	44	27.9	30.0	793
1017	FM1:MSdm1-Oth	130	454.2	-	454.2	46	28.4	30.9	777
1017	FM1:MSdm1-Oth	140	470.9	-	470.9	47	28.9	31.6	763
1017	FM1:MSdm1-Oth	150	485.2	-	485.2	47	29.3	32.3	750
1017	FM1:MSdm1-Oth	160	497.3	-	497.3	48	29.6	32.8	739
1017	FM1:MSdm1-Oth	170	507.4	-	507.4	49	29.9	33.4	729
1017	FM1:MSdm1-Oth	180	515.9	-	515.9	49	30.2	33.8	719
1017	FM1:MSdm1-Oth	190	523.0	-	523.0	49	30.4	34.2	710
1017	FM1:MSdm1-Oth	200	527.9	-	527.9	49	30.6	34.5	701
1017	FM1:MSdm1-Oth	210	532.0	-	532.0	49	30.8	34.8	692
1017	FM1:MSdm1-Oth	220	535.5	-	535.5	49	31.0	35.1	683
1017	FM1:MSdm1-Oth	230	538.3	-	538.3	50	31.1	35.3	676
1017	FM1:MSdm1-Oth	240	540.6	-	540.6	50	31.3	35.5	668
1017	FM1:MSdm1-Oth	250	542.0	-	542.0	49	31.4	35.7	660
1017	FM1:MSdm1-Oth	260	543.1	-	543.1	49	31.5	35.9	652
1017	FM1:MSdm1-Oth	270	544.0	-	544.0	49	31.6	36.1	645
1017	FM1:MSdm1-Oth	280	544.7	-	544.7	49	31.7	36.3	639
1017	FM1:MSdm1-Oth	290	545.4	-	545.4	49	31.8	36.4	633
1017	FM1:MSdm1-Oth	300	545.6	-	545.6	48	31.9	36.5	628
1017	FM1:MSdm1-Oth	310	545.5	-	545.5	48	31.9	36.5	627
1017	FM1:MSdm1-Oth	320	545.5	-	545.5	48	31.9	36.5	627
1017	FM1:MSdm1-Oth	330	545.5	-	545.5	48	31.9	36.5	627
1017	FM1:MSdm1-Oth	340	545.5	-	545.5	48	31.9	36.5	627
1017	FM1:MSdm1-Oth	350	545.5	-	545.5	48	31.9	36.5	627

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
1018	FM1:Msdm1a-All	10	-	-	-	0	-	2.2	0
1018	FM1:Msdm1a-All	20	0.3	-	0.3	0	20.5	6.8	4
1018	FM1:Msdm1a-All	30	14.9	-	14.9	1	20.9	11.6	132
1018	FM1:Msdm1a-All	40	78.2	-	78.2	9	22.9	16.1	430
1018	FM1:Msdm1a-All	50	156.2	-	156.2	20	24.9	19.9	580
1018	FM1:Msdm1a-All	60	228.5	-	228.5	29	26.9	23.2	635
1018	FM1:Msdm1a-All	70	294.2	-	294.2	36	28.4	25.9	653
1018	FM1:Msdm1a-All	80	351.4	-	351.4	41	29.7	28.2	655
1018	FM1:Msdm1a-All	90	400.3	-	400.3	45	30.8	30.1	654
1018	FM1:Msdm1a-All	100	442.9	-	442.9	48	31.8	31.8	647
1018	FM1:Msdm1a-All	110	481.0	-	481.0	50	32.6	33.2	643
1018	FM1:Msdm1a-All	120	513.4	-	513.4	52	33.2	34.4	636
1018	FM1:Msdm1a-All	130	541.4	-	541.4	54	33.8	35.4	630
1018	FM1:Msdm1a-All	140	565.8	-	565.8	55	34.3	36.4	624
1018	FM1:Msdm1a-All	150	587.1	-	587.1	56	34.7	37.2	618
1018	FM1:Msdm1a-All	160	605.8	-	605.8	57	35.1	37.8	613
1018	FM1:Msdm1a-All	170	622.2	-	622.2	58	35.4	38.5	607
1018	FM1:Msdm1a-All	180	636.2	-	636.2	58	35.8	39.0	602
1018	FM1:Msdm1a-All	190	648.4	-	648.4	59	36.1	39.5	596
1018	FM1:Msdm1a-All	200	657.8	-	657.8	59	36.4	39.9	587
1018	FM1:Msdm1a-All	210	666.2	-	666.2	59	36.6	40.3	580
1018	FM1:Msdm1a-All	220	673.7	-	673.7	60	36.9	40.7	572
1018	FM1:Msdm1a-All	230	679.7	-	679.7	60	37.1	41.0	565
1018	FM1:Msdm1a-All	240	684.9	-	684.9	60	37.3	41.3	559
1018	FM1:Msdm1a-All	250	689.4	-	689.4	60	37.4	41.6	553
1018	FM1:Msdm1a-All	260	693.6	-	693.6	60	37.6	41.9	548
1018	FM1:Msdm1a-All	270	697.2	-	697.2	59	37.8	42.1	542
1018	FM1:Msdm1a-All	280	699.5	-	699.5	59	37.9	42.3	537
1018	FM1:Msdm1a-All	290	699.5	-	699.5	59	38.0	42.4	531
1018	FM1:Msdm1a-All	300	699.3	-	699.3	59	38.1	42.5	527
1018	FM1:Msdm1a-All	310	699.3	-	699.3	59	38.1	42.5	527
1018	FM1:Msdm1a-All	320	699.3	-	699.3	59	38.1	42.5	527
1018	FM1:Msdm1a-All	330	699.3	-	699.3	59	38.1	42.5	527
1018	FM1:Msdm1a-All	340	699.3	-	699.3	59	38.1	42.5	527
1018	FM1:Msdm1a-All	350	699.3	-	699.3	59	38.1	42.5	527

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2001	FM2:ESSFdc1/dcu1-01	10	-	-	-	0	-	0.8	0
2001	FM2:ESSFdc1/dcu1-01	20	-	-	-	0	-	3.9	0
2001	FM2:ESSFdc1/dcu1-01	30	1.5	-	1.5	1	14.6	7.8	31
2001	FM2:ESSFdc1/dcu1-01	40	24.0	-	24.0	5	18.4	11.5	275
2001	FM2:ESSFdc1/dcu1-01	50	78.3	-	78.3	13	19.8	14.8	577
2001	FM2:ESSFdc1/dcu1-01	60	145.5	-	145.5	21	21.3	17.7	782
2001	FM2:ESSFdc1/dcu1-01	70	210.9	-	210.9	28	22.7	20.1	879
2001	FM2:ESSFdc1/dcu1-01	80	267.7	-	267.7	34	23.9	22.1	907
2001	FM2:ESSFdc1/dcu1-01	90	314.2	-	314.2	38	25.0	23.8	899
2001	FM2:ESSFdc1/dcu1-01	100	351.8	-	351.8	41	26.0	25.2	879
2001	FM2:ESSFdc1/dcu1-01	110	381.2	-	381.2	43	26.8	26.4	854
2001	FM2:ESSFdc1/dcu1-01	120	405.2	-	405.2	44	27.4	27.4	831
2001	FM2:ESSFdc1/dcu1-01	130	424.4	-	424.4	46	28.0	28.3	809
2001	FM2:ESSFdc1/dcu1-01	140	439.7	-	439.7	47	28.5	29.1	789
2001	FM2:ESSFdc1/dcu1-01	150	452.4	-	452.4	48	28.9	29.8	772
2001	FM2:ESSFdc1/dcu1-01	160	462.6	-	462.6	48	29.3	30.3	755
2001	FM2:ESSFdc1/dcu1-01	170	471.0	-	471.0	48	29.6	30.8	741
2001	FM2:ESSFdc1/dcu1-01	180	477.6	-	477.6	48	29.9	31.3	728
2001	FM2:ESSFdc1/dcu1-01	190	483.1	-	483.1	48	30.2	31.7	716
2001	FM2:ESSFdc1/dcu1-01	200	487.2	-	487.2	49	30.4	32.0	706
2001	FM2:ESSFdc1/dcu1-01	210	490.6	-	490.6	49	30.6	32.3	696
2001	FM2:ESSFdc1/dcu1-01	220	493.1	-	493.1	49	30.7	32.6	687
2001	FM2:ESSFdc1/dcu1-01	230	495.1	-	495.1	48	30.9	32.9	679
2001	FM2:ESSFdc1/dcu1-01	240	496.9	-	496.9	48	31.0	33.1	671
2001	FM2:ESSFdc1/dcu1-01	250	497.9	-	497.9	48	31.1	33.3	663
2001	FM2:ESSFdc1/dcu1-01	260	498.0	-	498.0	48	31.2	33.5	656
2001	FM2:ESSFdc1/dcu1-01	270	497.7	-	497.7	48	31.3	33.6	649
2001	FM2:ESSFdc1/dcu1-01	280	497.3	-	497.3	48	31.4	33.8	642
2001	FM2:ESSFdc1/dcu1-01	290	497.0	-	497.0	48	31.5	34.0	636
2001	FM2:ESSFdc1/dcu1-01	300	496.6	-	496.6	48	31.6	34.1	631
2001	FM2:ESSFdc1/dcu1-01	310	496.5	-	496.5	48	31.6	34.1	630
2001	FM2:ESSFdc1/dcu1-01	320	496.5	-	496.5	48	31.6	34.1	630
2001	FM2:ESSFdc1/dcu1-01	330	496.5	-	496.5	48	31.6	34.1	630
2001	FM2:ESSFdc1/dcu1-01	340	496.5	-	496.5	48	31.6	34.1	630
2001	FM2:ESSFdc1/dcu1-01	350	496.5	-	496.5	48	31.6	34.1	630

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)						
2002	FM2:ESSFdc1/dcu1-03	10	-	-	-	0	-	0.8	0
2002	FM2:ESSFdc1/dcu1-03	20	-	-	-	0	4.1	3.8	0
2002	FM2:ESSFdc1/dcu1-03	30	1.0	-	1.0	0	17.1	7.5	25
2002	FM2:ESSFdc1/dcu1-03	40	19.4	-	19.4	5	17.6	11.0	261
2002	FM2:ESSFdc1/dcu1-03	50	67.4	-	67.4	12	18.6	14.0	588
2002	FM2:ESSFdc1/dcu1-03	60	129.4	-	129.4	21	20.0	16.7	840
2002	FM2:ESSFdc1/dcu1-03	70	191.8	-	191.8	27	21.2	18.9	972
2002	FM2:ESSFdc1/dcu1-03	80	246.6	-	246.6	33	22.3	20.8	1019
2002	FM2:ESSFdc1/dcu1-03	90	292.4	-	292.4	37	23.3	22.4	1018
2002	FM2:ESSFdc1/dcu1-03	100	329.0	-	329.0	39	24.2	23.7	989
2002	FM2:ESSFdc1/dcu1-03	110	358.7	-	358.7	41	25.0	24.8	960
2002	FM2:ESSFdc1/dcu1-03	120	382.1	-	382.1	43	25.6	25.7	930
2002	FM2:ESSFdc1/dcu1-03	130	401.1	-	401.1	44	26.1	26.6	903
2002	FM2:ESSFdc1/dcu1-03	140	416.7	-	416.7	44	26.6	27.3	880
2002	FM2:ESSFdc1/dcu1-03	150	429.4	-	429.4	45	27.0	27.9	859
2002	FM2:ESSFdc1/dcu1-03	160	439.5	-	439.5	45	27.4	28.4	840
2002	FM2:ESSFdc1/dcu1-03	170	447.7	-	447.7	46	27.7	28.9	823
2002	FM2:ESSFdc1/dcu1-03	180	454.1	-	454.1	46	28.0	29.3	807
2002	FM2:ESSFdc1/dcu1-03	190	459.7	-	459.7	46	28.2	29.6	792
2002	FM2:ESSFdc1/dcu1-03	200	463.8	-	463.8	46	28.4	30.0	779
2002	FM2:ESSFdc1/dcu1-03	210	467.3	-	467.3	46	28.6	30.3	767
2002	FM2:ESSFdc1/dcu1-03	220	469.6	-	469.6	46	28.8	30.5	756
2002	FM2:ESSFdc1/dcu1-03	230	471.6	-	471.6	46	28.9	30.8	746
2002	FM2:ESSFdc1/dcu1-03	240	473.4	-	473.4	46	29.1	31.0	737
2002	FM2:ESSFdc1/dcu1-03	250	474.8	-	474.8	46	29.2	31.2	729
2002	FM2:ESSFdc1/dcu1-03	260	475.1	-	475.1	46	29.3	31.4	720
2002	FM2:ESSFdc1/dcu1-03	270	475.0	-	475.0	46	29.4	31.6	712
2002	FM2:ESSFdc1/dcu1-03	280	474.3	-	474.3	46	29.5	31.7	704
2002	FM2:ESSFdc1/dcu1-03	290	473.6	-	473.6	45	29.6	31.9	696
2002	FM2:ESSFdc1/dcu1-03	300	472.8	-	472.8	45	29.6	31.9	690
2002	FM2:ESSFdc1/dcu1-03	310	472.7	-	472.7	45	29.6	31.9	689
2002	FM2:ESSFdc1/dcu1-03	320	472.7	-	472.7	45	29.6	31.9	689
2002	FM2:ESSFdc1/dcu1-03	330	472.7	-	472.7	45	29.6	31.9	689
2002	FM2:ESSFdc1/dcu1-03	340	472.7	-	472.7	45	29.6	31.9	689
2002	FM2:ESSFdc1/dcu1-03	350	472.7	-	472.7	45	29.6	31.9	689

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2003	FM2:ESSFdc1/dcu1-04	10	-	-	-	0	-	0.9	0
2003	FM2:ESSFdc1/dcu1-04	20	-	-	-	0	-	4.4	0
2003	FM2:ESSFdc1/dcu1-04	30	2.3	-	2.3	1	18.3	8.4	47
2003	FM2:ESSFdc1/dcu1-04	40	31.9	-	31.9	5	19.2	12.3	330
2003	FM2:ESSFdc1/dcu1-04	50	94.4	-	94.4	14	21.1	15.8	578
2003	FM2:ESSFdc1/dcu1-04	60	164.7	-	164.7	22	22.8	18.8	717
2003	FM2:ESSFdc1/dcu1-04	70	230.9	-	230.9	30	24.4	21.3	784
2003	FM2:ESSFdc1/dcu1-04	80	288.0	-	288.0	36	25.7	23.5	804
2003	FM2:ESSFdc1/dcu1-04	90	335.0	-	335.0	40	26.8	25.3	798
2003	FM2:ESSFdc1/dcu1-04	100	372.7	-	372.7	43	27.8	26.7	782
2003	FM2:ESSFdc1/dcu1-04	110	403.2	-	403.2	46	28.6	28.1	764
2003	FM2:ESSFdc1/dcu1-04	120	428.2	-	428.2	47	29.4	29.2	746
2003	FM2:ESSFdc1/dcu1-04	130	447.8	-	447.8	48	29.9	30.1	729
2003	FM2:ESSFdc1/dcu1-04	140	464.0	-	464.0	49	30.4	31.0	714
2003	FM2:ESSFdc1/dcu1-04	150	477.5	-	477.5	50	30.8	31.6	701
2003	FM2:ESSFdc1/dcu1-04	160	488.3	-	488.3	51	31.2	32.2	687
2003	FM2:ESSFdc1/dcu1-04	170	497.2	-	497.2	51	31.6	32.7	675
2003	FM2:ESSFdc1/dcu1-04	180	504.2	-	504.2	51	31.8	33.2	665
2003	FM2:ESSFdc1/dcu1-04	190	509.8	-	509.8	51	32.1	33.6	655
2003	FM2:ESSFdc1/dcu1-04	200	514.5	-	514.5	52	32.3	34.1	647
2003	FM2:ESSFdc1/dcu1-04	210	518.2	-	518.2	52	32.5	34.4	639
2003	FM2:ESSFdc1/dcu1-04	220	521.1	-	521.1	52	32.6	34.6	632
2003	FM2:ESSFdc1/dcu1-04	230	522.8	-	522.8	51	32.8	34.9	624
2003	FM2:ESSFdc1/dcu1-04	240	524.0	-	524.0	51	32.9	35.1	617
2003	FM2:ESSFdc1/dcu1-04	250	524.5	-	524.5	51	33.0	35.3	611
2003	FM2:ESSFdc1/dcu1-04	260	525.0	-	525.0	51	33.1	35.5	605
2003	FM2:ESSFdc1/dcu1-04	270	525.3	-	525.3	51	33.2	35.7	600
2003	FM2:ESSFdc1/dcu1-04	280	525.6	-	525.6	51	33.3	35.8	594
2003	FM2:ESSFdc1/dcu1-04	290	525.4	-	525.4	51	33.4	36.0	590
2003	FM2:ESSFdc1/dcu1-04	300	524.9	-	524.9	51	33.4	36.1	586
2003	FM2:ESSFdc1/dcu1-04	310	524.9	-	524.9	51	33.4	36.1	586
2003	FM2:ESSFdc1/dcu1-04	320	524.9	-	524.9	51	33.4	36.1	586
2003	FM2:ESSFdc1/dcu1-04	330	524.9	-	524.9	51	33.4	36.1	586
2003	FM2:ESSFdc1/dcu1-04	340	524.9	-	524.9	51	33.4	36.1	586
2003	FM2:ESSFdc1/dcu1-04	350	524.9	-	524.9	51	33.4	36.1	586

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2004	FM2:ESSFdc1/dcu1-Oth	10	-	-	-	0	-	0.7	0
2004	FM2:ESSFdc1/dcu1-Oth	20	-	-	-	0	-	2.9	0
2004	FM2:ESSFdc1/dcu1-Oth	30	0.3	-	0.3	0	12.8	5.7	7
2004	FM2:ESSFdc1/dcu1-Oth	40	10.3	-	10.3	3	14.3	8.4	153
2004	FM2:ESSFdc1/dcu1-Oth	50	41.9	-	41.9	8	15.3	10.8	380
2004	FM2:ESSFdc1/dcu1-Oth	60	85.6	-	85.6	13	16.4	13.0	551
2004	FM2:ESSFdc1/dcu1-Oth	70	131.0	-	131.0	19	17.4	14.8	647
2004	FM2:ESSFdc1/dcu1-Oth	80	172.6	-	172.6	23	18.4	16.3	693
2004	FM2:ESSFdc1/dcu1-Oth	90	208.7	-	208.7	26	19.2	17.6	704
2004	FM2:ESSFdc1/dcu1-Oth	100	239.0	-	239.0	30	20.0	18.8	702
2004	FM2:ESSFdc1/dcu1-Oth	110	263.9	-	263.9	32	20.6	19.6	689
2004	FM2:ESSFdc1/dcu1-Oth	120	284.5	-	284.5	33	21.1	20.5	674
2004	FM2:ESSFdc1/dcu1-Oth	130	301.6	-	301.6	34	21.6	21.2	661
2004	FM2:ESSFdc1/dcu1-Oth	140	315.4	-	315.4	35	22.0	21.8	646
2004	FM2:ESSFdc1/dcu1-Oth	150	326.9	-	326.9	36	22.4	22.4	634
2004	FM2:ESSFdc1/dcu1-Oth	160	336.5	-	336.5	36	22.7	22.8	623
2004	FM2:ESSFdc1/dcu1-Oth	170	344.7	-	344.7	37	22.9	23.2	612
2004	FM2:ESSFdc1/dcu1-Oth	180	351.5	-	351.5	37	23.1	23.6	602
2004	FM2:ESSFdc1/dcu1-Oth	190	357.2	-	357.2	38	23.4	23.9	594
2004	FM2:ESSFdc1/dcu1-Oth	200	361.3	-	361.3	38	23.5	24.2	585
2004	FM2:ESSFdc1/dcu1-Oth	210	364.9	-	364.9	38	23.7	24.5	576
2004	FM2:ESSFdc1/dcu1-Oth	220	367.7	-	367.7	38	23.9	24.7	569
2004	FM2:ESSFdc1/dcu1-Oth	230	370.2	-	370.2	38	24.0	24.9	562
2004	FM2:ESSFdc1/dcu1-Oth	240	372.4	-	372.4	38	24.1	25.1	556
2004	FM2:ESSFdc1/dcu1-Oth	250	373.8	-	373.8	38	24.2	25.3	550
2004	FM2:ESSFdc1/dcu1-Oth	260	374.5	-	374.5	38	24.3	25.5	544
2004	FM2:ESSFdc1/dcu1-Oth	270	375.0	-	375.0	38	24.4	25.6	538
2004	FM2:ESSFdc1/dcu1-Oth	280	375.3	-	375.3	37	24.5	25.7	532
2004	FM2:ESSFdc1/dcu1-Oth	290	375.2	-	375.2	37	24.6	25.9	527
2004	FM2:ESSFdc1/dcu1-Oth	300	375.0	-	375.0	37	24.6	25.9	523
2004	FM2:ESSFdc1/dcu1-Oth	310	375.0	-	375.0	37	24.6	26.0	523
2004	FM2:ESSFdc1/dcu1-Oth	320	375.0	-	375.0	37	24.6	26.0	523
2004	FM2:ESSFdc1/dcu1-Oth	330	375.0	-	375.0	37	24.6	26.0	523
2004	FM2:ESSFdc1/dcu1-Oth	340	375.0	-	375.0	37	24.6	26.0	523
2004	FM2:ESSFdc1/dcu1-Oth	350	375.0	-	375.0	37	24.6	26.0	523

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
			Merchantable Volume (m3/ha)						
2005	FM2:ICHmk1/mw2-01	10	-	-	-	0	-	2.9	0
2005	FM2:ICHmk1/mw2-01	20	1.7	-	1.7	0	20.7	7.7	19
2005	FM2:ICHmk1/mw2-01	30	20.7	-	20.7	2	21.4	12.5	163
2005	FM2:ICHmk1/mw2-01	40	76.5	-	76.5	9	22.8	16.8	419
2005	FM2:ICHmk1/mw2-01	50	147.4	-	147.4	18	24.4	20.6	575
2005	FM2:ICHmk1/mw2-01	60	216.9	-	216.9	26	25.9	23.8	648
2005	FM2:ICHmk1/mw2-01	70	280.8	-	280.8	33	27.3	26.4	681
2005	FM2:ICHmk1/mw2-01	80	337.2	-	337.2	38	28.4	28.7	693
2005	FM2:ICHmk1/mw2-01	90	387.4	-	387.4	42	29.4	30.6	698
2005	FM2:ICHmk1/mw2-01	100	431.7	-	431.7	45	30.2	32.3	697
2005	FM2:ICHmk1/mw2-01	110	470.2	-	470.2	48	30.9	33.7	694
2005	FM2:ICHmk1/mw2-01	120	503.5	-	503.5	50	31.5	34.9	689
2005	FM2:ICHmk1/mw2-01	130	532.5	-	532.5	51	32.1	36.0	682
2005	FM2:ICHmk1/mw2-01	140	557.2	-	557.2	53	32.6	36.9	676
2005	FM2:ICHmk1/mw2-01	150	578.0	-	578.0	54	33.0	37.6	667
2005	FM2:ICHmk1/mw2-01	160	595.4	-	595.4	55	33.4	38.3	658
2005	FM2:ICHmk1/mw2-01	170	610.5	-	610.5	55	33.8	38.9	649
2005	FM2:ICHmk1/mw2-01	180	623.0	-	623.0	56	34.1	39.4	641
2005	FM2:ICHmk1/mw2-01	190	633.4	-	633.4	56	34.4	39.9	632
2005	FM2:ICHmk1/mw2-01	200	641.8	-	641.8	57	34.7	40.3	623
2005	FM2:ICHmk1/mw2-01	210	648.9	-	648.9	57	34.9	40.7	614
2005	FM2:ICHmk1/mw2-01	220	655.0	-	655.0	57	35.2	41.0	606
2005	FM2:ICHmk1/mw2-01	230	659.5	-	659.5	57	35.3	41.3	599
2005	FM2:ICHmk1/mw2-01	240	663.2	-	663.2	57	35.5	41.5	592
2005	FM2:ICHmk1/mw2-01	250	666.4	-	666.4	57	35.7	41.8	586
2005	FM2:ICHmk1/mw2-01	260	669.4	-	669.4	57	35.8	42.0	581
2005	FM2:ICHmk1/mw2-01	270	671.8	-	671.8	57	35.9	42.2	576
2005	FM2:ICHmk1/mw2-01	280	673.8	-	673.8	57	36.1	42.4	571
2005	FM2:ICHmk1/mw2-01	290	674.9	-	674.9	56	36.2	42.5	566
2005	FM2:ICHmk1/mw2-01	300	675.0	-	675.0	56	36.2	42.6	562
2005	FM2:ICHmk1/mw2-01	310	675.0	-	675.0	56	36.2	42.6	562
2005	FM2:ICHmk1/mw2-01	320	675.0	-	675.0	56	36.2	42.6	562
2005	FM2:ICHmk1/mw2-01	330	675.0	-	675.0	56	36.2	42.6	562
2005	FM2:ICHmk1/mw2-01	340	675.0	-	675.0	56	36.2	42.6	562
2005	FM2:ICHmk1/mw2-01	350	675.0	-	675.0	56	36.2	42.6	562

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2006	FM2:ICHmk1/mw2-03	10	-	-	-	0	-	2.1	0
2006	FM2:ICHmk1/mw2-03	20	0.2	-	0.2	0	18.5	6.7	8
2006	FM2:ICHmk1/mw2-03	30	14.3	-	14.3	4	18.7	11.0	207
2006	FM2:ICHmk1/mw2-03	40	68.2	-	68.2	10	20.2	14.8	493
2006	FM2:ICHmk1/mw2-03	50	135.4	-	135.4	18	21.9	18.0	648
2006	FM2:ICHmk1/mw2-03	60	196.9	-	196.9	24	23.4	20.6	714
2006	FM2:ICHmk1/mw2-03	70	250.2	-	250.2	30	24.7	22.8	739
2006	FM2:ICHmk1/mw2-03	80	294.9	-	294.9	35	25.8	24.7	748
2006	FM2:ICHmk1/mw2-03	90	333.4	-	333.4	38	26.7	26.2	750
2006	FM2:ICHmk1/mw2-03	100	365.5	-	365.5	41	27.4	27.6	748
2006	FM2:ICHmk1/mw2-03	110	393.9	-	393.9	43	28.1	28.7	742
2006	FM2:ICHmk1/mw2-03	120	418.5	-	418.5	44	28.7	29.8	736
2006	FM2:ICHmk1/mw2-03	130	440.0	-	440.0	46	29.1	30.7	731
2006	FM2:ICHmk1/mw2-03	140	459.3	-	459.3	47	29.5	31.5	724
2006	FM2:ICHmk1/mw2-03	150	476.9	-	476.9	48	29.9	32.2	717
2006	FM2:ICHmk1/mw2-03	160	492.7	-	492.7	49	30.2	32.8	710
2006	FM2:ICHmk1/mw2-03	170	505.8	-	505.8	50	30.6	33.4	702
2006	FM2:ICHmk1/mw2-03	180	517.8	-	517.8	51	30.9	33.9	695
2006	FM2:ICHmk1/mw2-03	190	528.3	-	528.3	51	31.2	34.4	688
2006	FM2:ICHmk1/mw2-03	200	538.1	-	538.1	51	31.4	34.8	680
2006	FM2:ICHmk1/mw2-03	210	546.0	-	546.0	52	31.7	35.2	672
2006	FM2:ICHmk1/mw2-03	220	553.1	-	553.1	52	31.9	35.6	664
2006	FM2:ICHmk1/mw2-03	230	559.6	-	559.6	52	32.2	35.9	656
2006	FM2:ICHmk1/mw2-03	240	564.9	-	564.9	52	32.4	36.2	648
2006	FM2:ICHmk1/mw2-03	250	569.9	-	569.9	52	32.6	36.4	639
2006	FM2:ICHmk1/mw2-03	260	574.1	-	574.1	52	32.8	36.7	630
2006	FM2:ICHmk1/mw2-03	270	577.8	-	577.8	52	33.0	36.9	623
2006	FM2:ICHmk1/mw2-03	280	581.4	-	581.4	52	33.2	37.1	615
2006	FM2:ICHmk1/mw2-03	290	582.8	-	582.8	52	33.4	37.4	607
2006	FM2:ICHmk1/mw2-03	300	583.7	-	583.7	52	33.5	37.5	600
2006	FM2:ICHmk1/mw2-03	310	583.7	-	583.7	52	33.5	37.5	600
2006	FM2:ICHmk1/mw2-03	320	583.7	-	583.7	52	33.5	37.5	600
2006	FM2:ICHmk1/mw2-03	330	583.7	-	583.7	52	33.5	37.5	600
2006	FM2:ICHmk1/mw2-03	340	583.7	-	583.7	52	33.5	37.5	600
2006	FM2:ICHmk1/mw2-03	350	583.7	-	583.7	52	33.5	37.5	600

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2007	FM2:ICHmk1/mw2-04	10	-	-	-	0	-	2.4	0
2007	FM2:ICHmk1/mw2-04	20	0.6	-	0.6	0	20.0	7.0	15
2007	FM2:ICHmk1/mw2-04	30	15.1	-	15.1	2	20.6	11.5	153
2007	FM2:ICHmk1/mw2-04	40	62.0	-	62.0	7	21.6	15.5	394
2007	FM2:ICHmk1/mw2-04	50	123.9	-	123.9	15	23.0	19.0	560
2007	FM2:ICHmk1/mw2-04	60	185.6	-	185.6	22	24.3	21.9	648
2007	FM2:ICHmk1/mw2-04	70	243.2	-	243.2	28	25.6	24.5	694
2007	FM2:ICHmk1/mw2-04	80	295.2	-	295.2	33	26.6	26.6	717
2007	FM2:ICHmk1/mw2-04	90	341.7	-	341.7	37	27.5	28.4	731
2007	FM2:ICHmk1/mw2-04	100	383.8	-	383.8	41	28.2	30.0	736
2007	FM2:ICHmk1/mw2-04	110	421.0	-	421.0	43	28.9	31.4	737
2007	FM2:ICHmk1/mw2-04	120	453.6	-	453.6	46	29.5	32.6	735
2007	FM2:ICHmk1/mw2-04	130	482.5	-	482.5	47	30.0	33.6	731
2007	FM2:ICHmk1/mw2-04	140	508.0	-	508.0	49	30.5	34.5	725
2007	FM2:ICHmk1/mw2-04	150	530.2	-	530.2	50	31.0	35.3	718
2007	FM2:ICHmk1/mw2-04	160	549.2	-	549.2	52	31.4	36.0	710
2007	FM2:ICHmk1/mw2-04	170	565.6	-	565.6	52	31.7	36.6	702
2007	FM2:ICHmk1/mw2-04	180	579.4	-	579.4	53	32.1	37.2	692
2007	FM2:ICHmk1/mw2-04	190	591.5	-	591.5	53	32.4	37.7	681
2007	FM2:ICHmk1/mw2-04	200	602.1	-	602.1	53	32.7	38.1	672
2007	FM2:ICHmk1/mw2-04	210	609.6	-	609.6	53	33.0	38.5	661
2007	FM2:ICHmk1/mw2-04	220	615.6	-	615.6	53	33.2	38.8	650
2007	FM2:ICHmk1/mw2-04	230	620.9	-	620.9	53	33.5	39.1	640
2007	FM2:ICHmk1/mw2-04	240	625.4	-	625.4	53	33.7	39.4	631
2007	FM2:ICHmk1/mw2-04	250	629.5	-	629.5	53	33.9	39.7	621
2007	FM2:ICHmk1/mw2-04	260	632.6	-	632.6	53	34.1	39.9	613
2007	FM2:ICHmk1/mw2-04	270	635.4	-	635.4	53	34.2	40.2	605
2007	FM2:ICHmk1/mw2-04	280	637.7	-	637.7	53	34.4	40.4	597
2007	FM2:ICHmk1/mw2-04	290	639.7	-	639.7	53	34.5	40.6	590
2007	FM2:ICHmk1/mw2-04	300	641.2	-	641.2	53	34.7	40.8	585
2007	FM2:ICHmk1/mw2-04	310	641.2	-	641.2	53	34.7	40.8	585
2007	FM2:ICHmk1/mw2-04	320	641.2	-	641.2	53	34.7	40.8	585
2007	FM2:ICHmk1/mw2-04	330	641.2	-	641.2	53	34.7	40.8	585
2007	FM2:ICHmk1/mw2-04	340	641.2	-	641.2	53	34.7	40.8	585
2007	FM2:ICHmk1/mw2-04	350	641.2	-	641.2	53	34.7	40.8	585

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2008	FM2:ICHmk1/mw2-Oth	10	-	-	-	0	-	2.3	0
2008	FM2:ICHmk1/mw2-Oth	20	0.7	-	0.7	0	20.2	7.1	12
2008	FM2:ICHmk1/mw2-Oth	30	16.0	-	16.0	2	20.8	11.8	147
2008	FM2:ICHmk1/mw2-Oth	40	67.7	-	67.7	8	22.1	16.1	404
2008	FM2:ICHmk1/mw2-Oth	50	135.5	-	135.5	16	23.6	19.7	570
2008	FM2:ICHmk1/mw2-Oth	60	202.6	-	202.6	25	25.2	22.9	652
2008	FM2:ICHmk1/mw2-Oth	70	264.4	-	264.4	31	26.5	25.6	691
2008	FM2:ICHmk1/mw2-Oth	80	319.3	-	319.3	36	27.6	27.8	706
2008	FM2:ICHmk1/mw2-Oth	90	367.8	-	367.8	40	28.5	29.7	714
2008	FM2:ICHmk1/mw2-Oth	100	411.1	-	411.1	43	29.3	31.4	714
2008	FM2:ICHmk1/mw2-Oth	110	449.0	-	449.0	46	30.0	32.8	712
2008	FM2:ICHmk1/mw2-Oth	120	481.7	-	481.7	48	30.6	34.0	708
2008	FM2:ICHmk1/mw2-Oth	130	510.7	-	510.7	49	31.1	35.1	702
2008	FM2:ICHmk1/mw2-Oth	140	535.8	-	535.8	51	31.6	36.0	696
2008	FM2:ICHmk1/mw2-Oth	150	557.2	-	557.2	52	32.1	36.8	689
2008	FM2:ICHmk1/mw2-Oth	160	575.1	-	575.1	53	32.5	37.5	678
2008	FM2:ICHmk1/mw2-Oth	170	590.5	-	590.5	54	32.9	38.1	669
2008	FM2:ICHmk1/mw2-Oth	180	603.9	-	603.9	54	33.2	38.6	660
2008	FM2:ICHmk1/mw2-Oth	190	615.3	-	615.3	55	33.5	39.1	652
2008	FM2:ICHmk1/mw2-Oth	200	624.0	-	624.0	55	33.8	39.5	641
2008	FM2:ICHmk1/mw2-Oth	210	630.5	-	630.5	55	34.1	39.9	630
2008	FM2:ICHmk1/mw2-Oth	220	636.3	-	636.3	55	34.3	40.2	620
2008	FM2:ICHmk1/mw2-Oth	230	641.3	-	641.3	55	34.6	40.5	611
2008	FM2:ICHmk1/mw2-Oth	240	645.2	-	645.2	55	34.8	40.8	603
2008	FM2:ICHmk1/mw2-Oth	250	648.6	-	648.6	55	35.0	41.1	595
2008	FM2:ICHmk1/mw2-Oth	260	651.4	-	651.4	55	35.2	41.3	588
2008	FM2:ICHmk1/mw2-Oth	270	654.1	-	654.1	55	35.3	41.6	582
2008	FM2:ICHmk1/mw2-Oth	280	656.1	-	656.1	55	35.5	41.8	575
2008	FM2:ICHmk1/mw2-Oth	290	657.6	-	657.6	55	35.6	42.0	569
2008	FM2:ICHmk1/mw2-Oth	300	658.1	-	658.1	55	35.7	42.1	564
2008	FM2:ICHmk1/mw2-Oth	310	658.1	-	658.1	55	35.7	42.1	564
2008	FM2:ICHmk1/mw2-Oth	320	658.1	-	658.1	55	35.7	42.1	564
2008	FM2:ICHmk1/mw2-Oth	330	658.1	-	658.1	55	35.7	42.1	564
2008	FM2:ICHmk1/mw2-Oth	340	658.1	-	658.1	55	35.7	42.1	564
2008	FM2:ICHmk1/mw2-Oth	350	658.1	-	658.1	55	35.7	42.1	564

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2009	FM2:IDFdm1-01	10	-	-	-	0	-	2.2	0
2009	FM2:IDFdm1-01	20	0.2	-	0.2	0	19.9	6.8	8
2009	FM2:IDFdm1-01	30	11.2	-	11.2	2	20.4	11.1	123
2009	FM2:IDFdm1-01	40	50.0	-	50.0	6	21.5	14.9	340
2009	FM2:IDFdm1-01	50	103.0	-	103.0	13	22.9	18.2	498
2009	FM2:IDFdm1-01	60	157.1	-	157.1	19	24.3	21.0	587
2009	FM2:IDFdm1-01	70	208.5	-	208.5	25	25.5	23.5	634
2009	FM2:IDFdm1-01	80	255.6	-	255.6	30	26.5	25.6	663
2009	FM2:IDFdm1-01	90	298.5	-	298.5	34	27.4	27.3	679
2009	FM2:IDFdm1-01	100	336.9	-	336.9	38	28.1	28.9	690
2009	FM2:IDFdm1-01	110	371.7	-	371.7	41	28.8	30.2	694
2009	FM2:IDFdm1-01	120	402.4	-	402.4	43	29.4	31.4	696
2009	FM2:IDFdm1-01	130	429.9	-	429.9	45	29.9	32.4	696
2009	FM2:IDFdm1-01	140	454.5	-	454.5	46	30.3	33.3	695
2009	FM2:IDFdm1-01	150	476.7	-	476.7	48	30.8	34.1	691
2009	FM2:IDFdm1-01	160	495.8	-	495.8	49	31.1	34.8	688
2009	FM2:IDFdm1-01	170	512.9	-	512.9	50	31.5	35.4	683
2009	FM2:IDFdm1-01	180	527.5	-	527.5	51	31.8	36.0	678
2009	FM2:IDFdm1-01	190	540.5	-	540.5	51	32.0	36.5	672
2009	FM2:IDFdm1-01	200	551.9	-	551.9	52	32.3	36.9	666
2009	FM2:IDFdm1-01	210	562.1	-	562.1	52	32.6	37.4	660
2009	FM2:IDFdm1-01	220	571.0	-	571.0	52	32.8	37.7	654
2009	FM2:IDFdm1-01	230	578.2	-	578.2	52	33.1	38.0	646
2009	FM2:IDFdm1-01	240	584.6	-	584.6	53	33.3	38.3	638
2009	FM2:IDFdm1-01	250	590.2	-	590.2	53	33.5	38.6	631
2009	FM2:IDFdm1-01	260	594.9	-	594.9	53	33.6	38.9	624
2009	FM2:IDFdm1-01	270	599.2	-	599.2	53	33.8	39.1	617
2009	FM2:IDFdm1-01	280	602.5	-	602.5	53	34.0	39.3	611
2009	FM2:IDFdm1-01	290	605.4	-	605.4	53	34.1	39.5	603
2009	FM2:IDFdm1-01	300	607.7	-	607.7	53	34.2	39.7	598
2009	FM2:IDFdm1-01	310	607.7	-	607.7	53	34.2	39.7	598
2009	FM2:IDFdm1-01	320	607.7	-	607.7	53	34.2	39.7	598
2009	FM2:IDFdm1-01	330	607.7	-	607.7	53	34.2	39.7	598
2009	FM2:IDFdm1-01	340	607.7	-	607.7	53	34.2	39.7	598
2009	FM2:IDFdm1-01	350	607.7	-	607.7	53	34.2	39.7	598

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2010	FM2:IDFdm1-04	10	-	-	-	0	-	1.6	0
2010	FM2:IDFdm1-04	20	-	-	-	0	19.5	5.4	1
2010	FM2:IDFdm1-04	30	4.1	-	4.1	1	19.9	9.2	60
2010	FM2:IDFdm1-04	40	27.2	-	27.2	4	20.6	12.7	231
2010	FM2:IDFdm1-04	50	66.8	-	66.8	8	21.7	15.8	403
2010	FM2:IDFdm1-04	60	111.7	-	111.7	14	22.9	18.6	518
2010	FM2:IDFdm1-04	70	156.3	-	156.3	19	24.1	21.0	587
2010	FM2:IDFdm1-04	80	199.4	-	199.4	25	25.1	23.1	629
2010	FM2:IDFdm1-04	90	239.8	-	239.8	28	25.9	24.9	657
2010	FM2:IDFdm1-04	100	277.8	-	277.8	32	26.7	26.5	678
2010	FM2:IDFdm1-04	110	312.7	-	312.7	35	27.4	27.9	690
2010	FM2:IDFdm1-04	120	344.5	-	344.5	38	28.1	29.1	696
2010	FM2:IDFdm1-04	130	373.7	-	373.7	40	28.6	30.2	700
2010	FM2:IDFdm1-04	140	400.2	-	400.2	42	29.1	31.2	702
2010	FM2:IDFdm1-04	150	424.7	-	424.7	44	29.5	32.1	702
2010	FM2:IDFdm1-04	160	446.9	-	446.9	45	29.9	32.9	700
2010	FM2:IDFdm1-04	170	467.0	-	467.0	47	30.3	33.6	697
2010	FM2:IDFdm1-04	180	485.2	-	485.2	48	30.7	34.3	692
2010	FM2:IDFdm1-04	190	501.6	-	501.6	49	31.0	34.9	687
2010	FM2:IDFdm1-04	200	516.1	-	516.1	50	31.3	35.4	682
2010	FM2:IDFdm1-04	210	529.1	-	529.1	50	31.6	35.9	674
2010	FM2:IDFdm1-04	220	540.1	-	540.1	51	32.0	36.3	667
2010	FM2:IDFdm1-04	230	550.2	-	550.2	51	32.2	36.7	659
2010	FM2:IDFdm1-04	240	559.3	-	559.3	52	32.4	37.1	651
2010	FM2:IDFdm1-04	250	567.5	-	567.5	52	32.7	37.5	644
2010	FM2:IDFdm1-04	260	574.6	-	574.6	52	33.0	37.8	636
2010	FM2:IDFdm1-04	270	581.0	-	581.0	52	33.2	38.1	630
2010	FM2:IDFdm1-04	280	587.0	-	587.0	52	33.4	38.4	624
2010	FM2:IDFdm1-04	290	591.5	-	591.5	52	33.6	38.7	615
2010	FM2:IDFdm1-04	300	594.8	-	594.8	52	33.7	38.9	609
2010	FM2:IDFdm1-04	310	594.8	-	594.8	52	33.7	38.9	609
2010	FM2:IDFdm1-04	320	594.8	-	594.8	52	33.7	38.9	609
2010	FM2:IDFdm1-04	330	594.8	-	594.8	52	33.7	38.9	609
2010	FM2:IDFdm1-04	340	594.8	-	594.8	52	33.7	38.9	609
2010	FM2:IDFdm1-04	350	594.8	-	594.8	52	33.7	38.9	609

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2011	FM2:IDFdm1-05	10	-	-	-	0	2.7	2.6	0
2011	FM2:IDFdm1-05	20	0.7	-	0.7	0	19.5	7.3	17
2011	FM2:IDFdm1-05	30	17.8	-	17.8	3	20.2	12.0	189
2011	FM2:IDFdm1-05	40	77.1	-	77.1	10	21.8	16.1	471
2011	FM2:IDFdm1-05	50	149.4	-	149.4	19	23.6	19.7	619
2011	FM2:IDFdm1-05	60	217.6	-	217.6	28	25.3	22.7	680
2011	FM2:IDFdm1-05	70	277.5	-	277.5	34	26.7	25.2	702
2011	FM2:IDFdm1-05	80	328.3	-	328.3	38	27.9	27.3	705
2011	FM2:IDFdm1-05	90	371.4	-	371.4	42	28.9	29.1	702
2011	FM2:IDFdm1-05	100	408.0	-	408.0	45	29.7	30.6	697
2011	FM2:IDFdm1-05	110	439.3	-	439.3	47	30.3	31.8	690
2011	FM2:IDFdm1-05	120	465.9	-	465.9	49	30.9	33.0	684
2011	FM2:IDFdm1-05	130	488.5	-	488.5	50	31.5	33.9	676
2011	FM2:IDFdm1-05	140	507.9	-	507.9	51	31.9	34.7	670
2011	FM2:IDFdm1-05	150	524.0	-	524.0	52	32.2	35.4	663
2011	FM2:IDFdm1-05	160	537.4	-	537.4	53	32.6	36.0	657
2011	FM2:IDFdm1-05	170	549.0	-	549.0	53	32.9	36.5	649
2011	FM2:IDFdm1-05	180	558.3	-	558.3	54	33.1	37.0	644
2011	FM2:IDFdm1-05	190	566.1	-	566.1	54	33.3	37.4	637
2011	FM2:IDFdm1-05	200	572.5	-	572.5	54	33.5	37.7	632
2011	FM2:IDFdm1-05	210	578.2	-	578.2	54	33.7	38.0	626
2011	FM2:IDFdm1-05	220	582.7	-	582.7	54	33.9	38.3	620
2011	FM2:IDFdm1-05	230	585.7	-	585.7	54	34.0	38.5	613
2011	FM2:IDFdm1-05	240	587.7	-	587.7	54	34.2	38.8	607
2011	FM2:IDFdm1-05	250	589.6	-	589.6	54	34.3	38.9	601
2011	FM2:IDFdm1-05	260	591.2	-	591.2	54	34.4	39.1	596
2011	FM2:IDFdm1-05	270	592.1	-	592.1	54	34.5	39.3	590
2011	FM2:IDFdm1-05	280	592.8	-	592.8	53	34.6	39.4	586
2011	FM2:IDFdm1-05	290	593.3	-	593.3	53	34.7	39.6	581
2011	FM2:IDFdm1-05	300	593.6	-	593.6	53	34.7	39.7	578
2011	FM2:IDFdm1-05	310	593.6	-	593.6	53	34.7	39.7	578
2011	FM2:IDFdm1-05	320	593.6	-	593.6	53	34.7	39.7	578
2011	FM2:IDFdm1-05	330	593.6	-	593.6	53	34.7	39.7	578
2011	FM2:IDFdm1-05	340	593.6	-	593.6	53	34.7	39.7	578
2011	FM2:IDFdm1-05	350	593.6	-	593.6	53	34.7	39.7	578

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2012	FM2:IDFdm1-Oth	10	-	-	-	0	-	2.2	0
2012	FM2:IDFdm1-Oth	20	0.2	-	0.2	0	20.0	6.7	8
2012	FM2:IDFdm1-Oth	30	10.8	-	10.8	2	20.4	11.0	123
2012	FM2:IDFdm1-Oth	40	49.3	-	49.3	6	21.4	14.8	342
2012	FM2:IDFdm1-Oth	50	102.3	-	102.3	13	22.8	18.0	503
2012	FM2:IDFdm1-Oth	60	156.4	-	156.4	19	24.0	20.9	596
2012	FM2:IDFdm1-Oth	70	207.8	-	207.8	25	25.2	23.3	645
2012	FM2:IDFdm1-Oth	80	254.7	-	254.7	30	26.2	25.3	674
2012	FM2:IDFdm1-Oth	90	297.7	-	297.7	34	27.1	27.1	692
2012	FM2:IDFdm1-Oth	100	336.1	-	336.1	37	27.8	28.7	704
2012	FM2:IDFdm1-Oth	110	370.8	-	370.8	40	28.5	30.0	708
2012	FM2:IDFdm1-Oth	120	401.7	-	401.7	43	29.0	31.2	709
2012	FM2:IDFdm1-Oth	130	429.3	-	429.3	44	29.5	32.2	709
2012	FM2:IDFdm1-Oth	140	454.0	-	454.0	46	30.0	33.1	708
2012	FM2:IDFdm1-Oth	150	476.4	-	476.4	47	30.4	33.9	704
2012	FM2:IDFdm1-Oth	160	495.7	-	495.7	49	30.8	34.6	700
2012	FM2:IDFdm1-Oth	170	512.9	-	512.9	50	31.2	35.2	695
2012	FM2:IDFdm1-Oth	180	527.8	-	527.8	51	31.5	35.8	689
2012	FM2:IDFdm1-Oth	190	540.8	-	540.8	51	31.8	36.3	683
2012	FM2:IDFdm1-Oth	200	552.3	-	552.3	51	32.1	36.8	675
2012	FM2:IDFdm1-Oth	210	562.6	-	562.6	52	32.3	37.2	669
2012	FM2:IDFdm1-Oth	220	571.6	-	571.6	52	32.6	37.6	662
2012	FM2:IDFdm1-Oth	230	579.2	-	579.2	52	32.8	37.9	654
2012	FM2:IDFdm1-Oth	240	585.7	-	585.7	52	33.0	38.2	646
2012	FM2:IDFdm1-Oth	250	591.5	-	591.5	52	33.2	38.5	639
2012	FM2:IDFdm1-Oth	260	596.5	-	596.5	52	33.4	38.7	631
2012	FM2:IDFdm1-Oth	270	600.9	-	600.9	53	33.6	39.0	624
2012	FM2:IDFdm1-Oth	280	604.4	-	604.4	53	33.8	39.2	616
2012	FM2:IDFdm1-Oth	290	607.3	-	607.3	52	33.9	39.4	610
2012	FM2:IDFdm1-Oth	300	609.4	-	609.4	52	34.0	39.6	604
2012	FM2:IDFdm1-Oth	310	609.4	-	609.4	52	34.0	39.6	604
2012	FM2:IDFdm1-Oth	320	609.4	-	609.4	52	34.0	39.6	604
2012	FM2:IDFdm1-Oth	330	609.4	-	609.4	52	34.0	39.6	604
2012	FM2:IDFdm1-Oth	340	609.4	-	609.4	52	34.0	39.6	604
2012	FM2:IDFdm1-Oth	350	609.4	-	609.4	52	34.0	39.6	604

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2013	FM2:MSdm1-01	10	-	-	-	0	-	1.8	0
2013	FM2:MSdm1-01	20	0.4	-	0.4	0	17.0	6.0	8
2013	FM2:MSdm1-01	30	9.9	-	9.9	1	19.5	10.5	106
2013	FM2:MSdm1-01	40	52.5	-	52.5	8	20.4	14.5	410
2013	FM2:MSdm1-01	50	120.2	-	120.2	17	21.8	18.0	662
2013	FM2:MSdm1-01	60	190.0	-	190.0	24	23.3	21.0	771
2013	FM2:MSdm1-01	70	252.5	-	252.5	30	24.6	23.5	803
2013	FM2:MSdm1-01	80	305.1	-	305.1	35	25.8	25.6	802
2013	FM2:MSdm1-01	90	349.2	-	349.2	39	26.8	27.3	792
2013	FM2:MSdm1-01	100	386.7	-	386.7	42	27.6	28.8	780
2013	FM2:MSdm1-01	110	418.6	-	418.6	44	28.3	30.1	766
2013	FM2:MSdm1-01	120	445.4	-	445.4	46	29.0	31.2	754
2013	FM2:MSdm1-01	130	468.0	-	468.0	47	29.5	32.2	741
2013	FM2:MSdm1-01	140	487.3	-	487.3	48	29.9	33.0	730
2013	FM2:MSdm1-01	150	504.0	-	504.0	49	30.3	33.7	720
2013	FM2:MSdm1-01	160	518.0	-	518.0	50	30.7	34.3	710
2013	FM2:MSdm1-01	170	530.0	-	530.0	50	31.0	34.9	701
2013	FM2:MSdm1-01	180	539.7	-	539.7	50	31.3	35.3	691
2013	FM2:MSdm1-01	190	547.6	-	547.6	51	31.5	35.7	683
2013	FM2:MSdm1-01	200	554.5	-	554.5	51	31.8	36.1	674
2013	FM2:MSdm1-01	210	560.4	-	560.4	51	32.0	36.4	666
2013	FM2:MSdm1-01	220	565.1	-	565.1	52	32.2	36.7	658
2013	FM2:MSdm1-01	230	568.6	-	568.6	52	32.3	37.0	651
2013	FM2:MSdm1-01	240	571.4	-	571.4	52	32.5	37.2	644
2013	FM2:MSdm1-01	250	573.6	-	573.6	52	32.7	37.4	636
2013	FM2:MSdm1-01	260	575.4	-	575.4	51	32.8	37.6	630
2013	FM2:MSdm1-01	270	577.2	-	577.2	51	32.9	37.8	623
2013	FM2:MSdm1-01	280	578.6	-	578.6	51	33.0	37.9	618
2013	FM2:MSdm1-01	290	579.6	-	579.6	51	33.1	38.1	612
2013	FM2:MSdm1-01	300	579.8	-	579.8	51	33.2	38.2	606
2013	FM2:MSdm1-01	310	579.6	-	579.6	50	33.2	38.2	606
2013	FM2:MSdm1-01	320	579.6	-	579.6	50	33.2	38.2	606
2013	FM2:MSdm1-01	330	579.6	-	579.6	50	33.2	38.2	606
2013	FM2:MSdm1-01	340	579.6	-	579.6	50	33.2	38.2	606
2013	FM2:MSdm1-01	350	579.6	-	579.6	50	33.2	38.2	606

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2014	FM2:MSdm1-03	10	-	-	-	0	-	1.0	0
2014	FM2:MSdm1-03	20	-	-	-	0	6.4	4.8	0
2014	FM2:MSdm1-03	30	8.7	-	8.7	3	16.6	9.2	148
2014	FM2:MSdm1-03	40	56.6	-	56.6	11	17.8	13.2	528
2014	FM2:MSdm1-03	50	134.1	-	134.1	22	19.5	16.5	865
2014	FM2:MSdm1-03	60	216.3	-	216.3	30	21.0	19.2	1040
2014	FM2:MSdm1-03	70	286.7	-	286.7	36	22.4	21.5	1075
2014	FM2:MSdm1-03	80	341.6	-	341.6	40	23.7	23.3	1042
2014	FM2:MSdm1-03	90	382.8	-	382.8	42	24.7	24.8	996
2014	FM2:MSdm1-03	100	414.3	-	414.3	44	25.6	26.0	952
2014	FM2:MSdm1-03	110	437.4	-	437.4	45	26.3	27.0	913
2014	FM2:MSdm1-03	120	454.9	-	454.9	46	26.9	27.9	880
2014	FM2:MSdm1-03	130	468.8	-	468.8	47	27.4	28.6	851
2014	FM2:MSdm1-03	140	478.7	-	478.7	47	27.8	29.3	825
2014	FM2:MSdm1-03	150	486.6	-	486.6	47	28.2	29.8	803
2014	FM2:MSdm1-03	160	492.9	-	492.9	48	28.5	30.3	786
2014	FM2:MSdm1-03	170	497.5	-	497.5	48	28.8	30.7	769
2014	FM2:MSdm1-03	180	501.4	-	501.4	48	29.0	31.0	755
2014	FM2:MSdm1-03	190	504.2	-	504.2	47	29.2	31.3	742
2014	FM2:MSdm1-03	200	506.6	-	506.6	48	29.4	31.6	732
2014	FM2:MSdm1-03	210	507.4	-	507.4	48	29.5	31.9	720
2014	FM2:MSdm1-03	220	507.9	-	507.9	47	29.7	32.1	710
2014	FM2:MSdm1-03	230	507.6	-	507.6	47	29.8	32.3	700
2014	FM2:MSdm1-03	240	507.2	-	507.2	47	29.9	32.5	692
2014	FM2:MSdm1-03	250	506.6	-	506.6	47	30.0	32.7	684
2014	FM2:MSdm1-03	260	506.1	-	506.1	47	30.1	32.8	676
2014	FM2:MSdm1-03	270	505.6	-	505.6	47	30.2	33.0	669
2014	FM2:MSdm1-03	280	505.0	-	505.0	46	30.3	33.1	663
2014	FM2:MSdm1-03	290	503.0	-	503.0	46	30.3	33.2	656
2014	FM2:MSdm1-03	300	500.6	-	500.6	46	30.4	33.3	649
2014	FM2:MSdm1-03	310	500.3	-	500.3	46	30.4	33.3	647
2014	FM2:MSdm1-03	320	500.3	-	500.3	46	30.4	33.3	647
2014	FM2:MSdm1-03	330	500.3	-	500.3	46	30.4	33.3	647
2014	FM2:MSdm1-03	340	500.3	-	500.3	46	30.4	33.3	647
2014	FM2:MSdm1-03	350	500.3	-	500.3	46	30.4	33.3	647

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2015	FM2:MSdm1-04	10	-	-	-	0	-	1.5	0
2015	FM2:MSdm1-04	20	0.4	-	0.4	0	9.7	5.8	10
2015	FM2:MSdm1-04	30	9.2	-	9.2	2	17.9	10.1	123
2015	FM2:MSdm1-04	40	55.6	-	55.6	10	18.8	14.0	512
2015	FM2:MSdm1-04	50	130.6	-	130.6	20	20.1	17.3	834
2015	FM2:MSdm1-04	60	204.6	-	204.6	27	21.6	20.0	935
2015	FM2:MSdm1-04	70	267.1	-	267.1	33	23.0	22.3	940
2015	FM2:MSdm1-04	80	317.6	-	317.6	37	24.1	24.1	917
2015	FM2:MSdm1-04	90	357.1	-	357.1	40	25.2	25.7	886
2015	FM2:MSdm1-04	100	389.5	-	389.5	42	26.0	27.0	860
2015	FM2:MSdm1-04	110	416.2	-	416.2	43	26.7	28.1	836
2015	FM2:MSdm1-04	120	438.4	-	438.4	44	27.3	29.0	815
2015	FM2:MSdm1-04	130	455.7	-	455.7	46	27.8	29.9	796
2015	FM2:MSdm1-04	140	470.5	-	470.5	46	28.3	30.6	779
2015	FM2:MSdm1-04	150	482.9	-	482.9	47	28.6	31.2	764
2015	FM2:MSdm1-04	160	493.5	-	493.5	47	29.0	31.7	752
2015	FM2:MSdm1-04	170	502.1	-	502.1	48	29.3	32.2	740
2015	FM2:MSdm1-04	180	509.3	-	509.3	48	29.6	32.6	729
2015	FM2:MSdm1-04	190	514.3	-	514.3	48	29.8	32.9	718
2015	FM2:MSdm1-04	200	517.0	-	517.0	48	30.0	33.2	707
2015	FM2:MSdm1-04	210	519.6	-	519.6	48	30.2	33.5	696
2015	FM2:MSdm1-04	220	521.7	-	521.7	48	30.3	33.8	687
2015	FM2:MSdm1-04	230	523.4	-	523.4	48	30.5	34.0	677
2015	FM2:MSdm1-04	240	524.7	-	524.7	48	30.7	34.2	669
2015	FM2:MSdm1-04	250	525.3	-	525.3	48	30.8	34.4	661
2015	FM2:MSdm1-04	260	525.8	-	525.8	48	30.9	34.6	654
2015	FM2:MSdm1-04	270	526.1	-	526.1	47	31.0	34.8	647
2015	FM2:MSdm1-04	280	526.3	-	526.3	47	31.1	34.8	640
2015	FM2:MSdm1-04	290	526.5	-	526.5	47	31.1	34.9	635
2015	FM2:MSdm1-04	300	526.5	-	526.5	47	31.2	35.1	629
2015	FM2:MSdm1-04	310	526.4	-	526.4	47	31.2	35.2	628
2015	FM2:MSdm1-04	320	526.4	-	526.4	47	31.2	35.2	628
2015	FM2:MSdm1-04	330	526.4	-	526.4	47	31.2	35.2	628
2015	FM2:MSdm1-04	340	526.4	-	526.4	47	31.2	35.2	628
2015	FM2:MSdm1-04	350	526.4	-	526.4	47	31.2	35.2	628

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2016	FM2:MSdm1-05	10	-	-	-	0	-	1.2	0
2016	FM2:MSdm1-05	20	0.1	-	0.1	0	15.4	5.3	3
2016	FM2:MSdm1-05	30	6.2	-	6.2	1	17.4	9.8	84
2016	FM2:MSdm1-05	40	60.4	-	60.4	12	18.0	13.9	650
2016	FM2:MSdm1-05	50	154.8	-	154.8	25	19.0	17.4	1183
2016	FM2:MSdm1-05	60	242.5	-	242.5	33	20.2	20.3	1308
2016	FM2:MSdm1-05	70	307.9	-	307.9	37	21.5	22.6	1240
2016	FM2:MSdm1-05	80	356.7	-	356.7	39	22.7	24.6	1140
2016	FM2:MSdm1-05	90	394.7	-	394.7	41	23.8	26.2	1062
2016	FM2:MSdm1-05	100	424.4	-	424.4	42	24.6	27.6	1002
2016	FM2:MSdm1-05	110	447.5	-	447.5	44	25.3	28.6	955
2016	FM2:MSdm1-05	120	465.5	-	465.5	44	25.9	29.6	916
2016	FM2:MSdm1-05	130	479.9	-	479.9	45	26.4	30.4	884
2016	FM2:MSdm1-05	140	491.7	-	491.7	45	26.8	31.1	857
2016	FM2:MSdm1-05	150	501.3	-	501.3	45	27.2	31.7	834
2016	FM2:MSdm1-05	160	509.4	-	509.4	46	27.6	32.3	814
2016	FM2:MSdm1-05	170	515.9	-	515.9	46	27.8	32.7	795
2016	FM2:MSdm1-05	180	520.5	-	520.5	46	28.1	33.1	779
2016	FM2:MSdm1-05	190	524.5	-	524.5	46	28.3	33.5	765
2016	FM2:MSdm1-05	200	526.5	-	526.5	46	28.5	33.8	750
2016	FM2:MSdm1-05	210	527.4	-	527.4	46	28.7	34.1	735
2016	FM2:MSdm1-05	220	527.9	-	527.9	45	29.0	34.4	723
2016	FM2:MSdm1-05	230	528.1	-	528.1	45	29.1	34.6	711
2016	FM2:MSdm1-05	240	528.3	-	528.3	45	29.2	34.8	700
2016	FM2:MSdm1-05	250	528.3	-	528.3	45	29.4	35.0	690
2016	FM2:MSdm1-05	260	528.5	-	528.5	44	29.5	35.2	681
2016	FM2:MSdm1-05	270	527.9	-	527.9	44	29.6	35.4	673
2016	FM2:MSdm1-05	280	526.3	-	526.3	44	29.7	35.5	663
2016	FM2:MSdm1-05	290	524.7	-	524.7	44	29.8	35.6	655
2016	FM2:MSdm1-05	300	523.0	-	523.0	44	29.9	35.7	647
2016	FM2:MSdm1-05	310	522.4	-	522.4	44	29.9	35.7	646
2016	FM2:MSdm1-05	320	522.4	-	522.4	44	29.9	35.7	646
2016	FM2:MSdm1-05	330	522.4	-	522.4	44	29.9	35.7	646
2016	FM2:MSdm1-05	340	522.4	-	522.4	44	29.9	35.7	646
2016	FM2:MSdm1-05	350	522.4	-	522.4	44	29.9	35.7	646

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable Volume (m3/ha)	Deciduous Volume (m3/ha)	Conifer Volume (m3/ha)	Basal Area (m2/ha)	Diameter (cm)	Height (m)	Density (stems/ha)
2017	FM2:MSdm1-Oth	10	-	-	-	0	1.6	2.1	0
2017	FM2:MSdm1-Oth	20	0.8	-	0.8	0	16.5	6.3	15
2017	FM2:MSdm1-Oth	30	13.5	-	13.5	2	18.9	10.9	148
2017	FM2:MSdm1-Oth	40	65.4	-	65.4	10	19.9	14.9	513
2017	FM2:MSdm1-Oth	50	141.6	-	141.6	20	21.3	18.3	785
2017	FM2:MSdm1-Oth	60	215.5	-	215.5	27	22.8	21.3	876
2017	FM2:MSdm1-Oth	70	278.4	-	278.4	33	24.2	23.6	883
2017	FM2:MSdm1-Oth	80	329.4	-	329.4	37	25.4	25.7	863
2017	FM2:MSdm1-Oth	90	371.2	-	371.2	40	26.4	27.3	840
2017	FM2:MSdm1-Oth	100	405.9	-	405.9	43	27.2	28.7	819
2017	FM2:MSdm1-Oth	110	435.0	-	435.0	44	27.9	29.9	798
2017	FM2:MSdm1-Oth	120	458.7	-	458.7	46	28.5	31.0	780
2017	FM2:MSdm1-Oth	130	478.8	-	478.8	47	29.0	31.8	764
2017	FM2:MSdm1-Oth	140	496.1	-	496.1	48	29.4	32.5	750
2017	FM2:MSdm1-Oth	150	510.7	-	510.7	49	29.8	33.3	737
2017	FM2:MSdm1-Oth	160	522.9	-	522.9	49	30.2	33.8	726
2017	FM2:MSdm1-Oth	170	533.0	-	533.0	50	30.5	34.3	715
2017	FM2:MSdm1-Oth	180	540.9	-	540.9	50	30.8	34.7	705
2017	FM2:MSdm1-Oth	190	547.7	-	547.7	51	31.0	35.1	694
2017	FM2:MSdm1-Oth	200	553.4	-	553.4	51	31.2	35.5	685
2017	FM2:MSdm1-Oth	210	557.9	-	557.9	50	31.4	35.8	676
2017	FM2:MSdm1-Oth	220	561.2	-	561.2	50	31.6	36.1	667
2017	FM2:MSdm1-Oth	230	563.7	-	563.7	50	31.8	36.3	658
2017	FM2:MSdm1-Oth	240	565.7	-	565.7	50	31.9	36.5	650
2017	FM2:MSdm1-Oth	250	567.3	-	567.3	50	32.1	36.7	642
2017	FM2:MSdm1-Oth	260	568.4	-	568.4	50	32.2	36.9	635
2017	FM2:MSdm1-Oth	270	568.8	-	568.8	50	32.3	37.1	628
2017	FM2:MSdm1-Oth	280	569.1	-	569.1	50	32.4	37.2	621
2017	FM2:MSdm1-Oth	290	569.1	-	569.1	50	32.5	37.4	614
2017	FM2:MSdm1-Oth	300	568.9	-	568.9	50	32.6	37.5	609
2017	FM2:MSdm1-Oth	310	568.7	-	568.7	50	32.6	37.5	608
2017	FM2:MSdm1-Oth	320	568.7	-	568.7	50	32.6	37.5	608
2017	FM2:MSdm1-Oth	330	568.7	-	568.7	50	32.6	37.5	608
2017	FM2:MSdm1-Oth	340	568.7	-	568.7	50	32.6	37.5	608
2017	FM2:MSdm1-Oth	350	568.7	-	568.7	50	32.6	37.5	608

Yield Tables for Managed Stands

Analysis Unit	Description	Stand Age	Total Merchantable	Deciduous	Conifer	Basal Area		Density	
			Volume (m3/ha)	Volume (m3/ha)	Volume (m3/ha)	(m2/ha)	Diameter (cm)	Height (m)	(stems/ha)
2018	FM2:Msdm1a-All	10	-	-	-	0	-	2.2	0
2018	FM2:Msdm1a-All	20	0.4	-	0.4	0	20.5	6.9	5
2018	FM2:Msdm1a-All	30	17.3	-	17.3	1	21.0	11.8	149
2018	FM2:Msdm1a-All	40	84.4	-	84.4	10	23.0	16.4	449
2018	FM2:Msdm1a-All	50	164.8	-	164.8	21	25.1	20.3	590
2018	FM2:Msdm1a-All	60	238.9	-	238.9	30	27.1	23.6	641
2018	FM2:Msdm1a-All	70	305.6	-	305.6	37	28.7	26.4	654
2018	FM2:Msdm1a-All	80	363.7	-	363.7	42	30.0	28.7	656
2018	FM2:Msdm1a-All	90	413.1	-	413.1	46	31.1	30.6	653
2018	FM2:Msdm1a-All	100	456.8	-	456.8	49	32.0	32.3	648
2018	FM2:Msdm1a-All	110	495.3	-	495.3	51	32.8	33.7	642
2018	FM2:Msdm1a-All	120	527.6	-	527.6	53	33.5	34.9	635
2018	FM2:Msdm1a-All	130	556.2	-	556.2	55	34.0	35.9	629
2018	FM2:Msdm1a-All	140	580.6	-	580.6	56	34.5	36.9	622
2018	FM2:Msdm1a-All	150	602.2	-	602.2	57	35.0	37.6	616
2018	FM2:Msdm1a-All	160	621.3	-	621.3	58	35.4	38.3	611
2018	FM2:Msdm1a-All	170	637.5	-	637.5	59	35.7	39.0	605
2018	FM2:Msdm1a-All	180	651.8	-	651.8	59	36.1	39.5	599
2018	FM2:Msdm1a-All	190	662.7	-	662.7	60	36.4	40.0	590
2018	FM2:Msdm1a-All	200	672.5	-	672.5	60	36.7	40.4	582
2018	FM2:Msdm1a-All	210	681.1	-	681.1	60	36.9	40.8	574
2018	FM2:Msdm1a-All	220	688.1	-	688.1	60	37.2	41.2	567
2018	FM2:Msdm1a-All	230	694.5	-	694.5	60	37.4	41.6	560
2018	FM2:Msdm1a-All	240	700.0	-	700.0	60	37.6	41.9	554
2018	FM2:Msdm1a-All	250	705.0	-	705.0	60	37.8	42.1	549
2018	FM2:Msdm1a-All	260	707.2	-	707.2	60	37.9	42.3	542
2018	FM2:Msdm1a-All	270	708.1	-	708.1	60	38.1	42.5	536
2018	FM2:Msdm1a-All	280	708.2	-	708.2	60	38.2	42.6	530
2018	FM2:Msdm1a-All	290	708.2	-	708.2	59	38.3	42.8	524
2018	FM2:Msdm1a-All	300	708.2	-	708.2	59	38.4	42.8	521
2018	FM2:Msdm1a-All	310	708.2	-	708.2	59	38.4	42.8	521
2018	FM2:Msdm1a-All	320	708.2	-	708.2	59	38.4	42.8	521
2018	FM2:Msdm1a-All	330	708.2	-	708.2	59	38.4	42.8	521
2018	FM2:Msdm1a-All	340	708.2	-	708.2	59	38.4	42.8	521
2018	FM2:Msdm1a-All	350	708.2	-	708.2	59	38.4	42.8	521

Appendix 2 Unsalvaged Losses

The estimate of unsalvaged losses was prepared using pest aerial overview survey (AOS) polygon data downloaded from the BCGW website. The general approach used to estimate these losses was as follows:

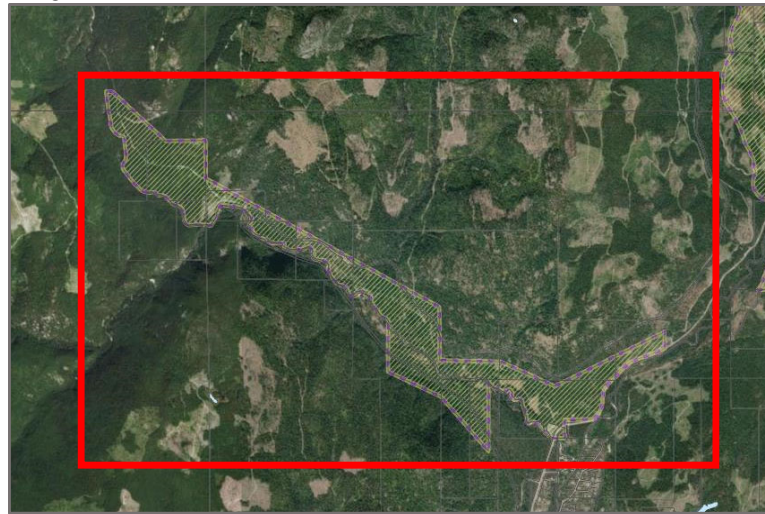
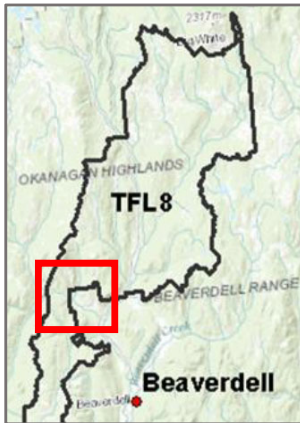
- Data from the most recent 10 year period (2009 to 2018) was included in the analysis.
- Pests that were found within TFL 8 and were considered in the analysis included wildfire, mountain pine beetle, western balsam bark beetle, Douglas-fir beetle, windthrow, and slides.
- Fires in the AOS were compared with the provincial historic fire layer to confirm that all fires were accounted for.
- Although drought was also present in the data it was not considered as it mostly occurred in 2018 and was not felt to be representative of ongoing losses (i.e. very large, broad polygons). A field review by Interfor confirmed that much of the mortality in these polygons were in younger stands.
- The polygons for mountain pine beetle were manually examined and a few were not considered where it was evident that harvesting had occurred and addressed most of the polygon (i.e. any unlogged areas were likely the result of mapping errors in the overview data.
- The timber harvesting landbase that did not have a harvest history or was not within a planned cutblock and was over 40 years old was combined with the pest polygons
- Areas within small scale salvage polygons in the FTEN layer with a disturbance end date of 2009 or greater were also excluded to ensure there was no double counting between the NRL estimates and the SSS estimates. Note that excluding these polygons resulted in a very small reduction in NRL estimates.
- The pest severity ratings were used to estimate the proportion of volume loss within a polygon in each year (Very Severe = 75% loss, Severe = 30% loss, Moderate = 15% loss, Low = 5% loss, Endemic = 0.5% loss).
- Where polygons for a pest occurred in more than one year, the cumulative loss was determined by reducing the volume for the first year, then applying the reduction factor for the next year to the remaining volume. This process was repeated for all remaining years.
- The total volume loss over the 10 year period was summed for each pest, and then divided by 10 as an estimate of the annual loss.

The average annual loss to each forest health factor is summarized below:

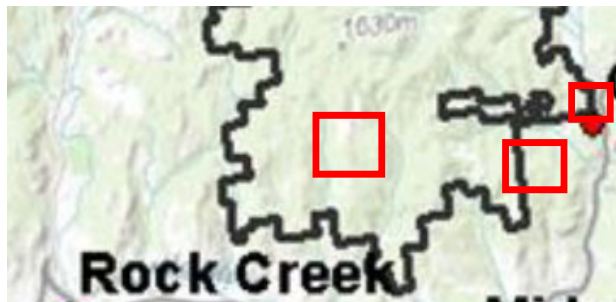
Loss Category	Annual Volume (m ³ /year)
Mountain pine beetle	1,358
Balsam bark beetle	71
Douglas-fir bark beetle	41
Wildfire	81
Windthrow	0
Slides	24
Total	1,575

Attachment #2 – ALR Lands

Approximate location of ALR in TFL8 boundary – near Carmi (shown in red)



Approximate location of ALR in TFL8 boundary – near Greenwood





STAFF REPORT

Date: 19 January 2021 **File**
To: **Chair Langman,**
Finance Liaison McGregor, and
Members of the Board of Directors
From: Barb Ihlen,
 General Manager of Finance/CFO
Re: Asset Management Planning Grants

Issue Introduction

A staff report from Barb Ihlen, General Manager of Finance/CFO, regarding application for Asset Management Planning grants from the BC Government Infrastructure Planning Grant Program and from the Federation of Canadian Municipalities (FCM) Municipal Asset Management Program (MAMP).

History/Background Factors

The Regional District of Kootenay Boundary (RDKB) has the opportunity to apply for two Asset Management Planning grants in 2021.

1. BC Government Infrastructure Planning Grant Program

Grants of up to \$10,000 are available to help local governments develop or improve long-term comprehensive plans including asset management plans. This program assists local governments in developing sustainable infrastructure that will improve public health and safety, protect the natural environment and strengthen local and regional economies.

The province will provide a maximum grant amount of \$10,000 for approved projects and each approved grant amount is arrived at through a formula as illustrated below:

Approved Eligible Project Costs	Provincial Grant
First \$5,000 of costs or less	100% of approved costs
Next \$10,000 or less	50% of approved costs

For approved eligible costs over the first \$5,000, this portion will be calculated at 50% funding for the remaining approved eligible costs up to a maximum total grant amount of \$10,000.

Staff have applied for this grant on January 13, 2021 with a projected total project cost of \$25,000. After receiving the grant for \$10,000 and providing staff time of \$4,440, the RDKB portion will be \$10,560, which is included in the proposed Five Year Financial Plan for 2021-2025. The project will focus on building staff capacity through training and the development of a user guide regarding the ongoing required maintenance of the asset register. In addition, this project will include state of the infrastructure updates.

2. FCM's Municipal Asset management Program (MAMP)

FCM is offering grants to help local governments strengthen its asset management practices. Having strong asset management practices will help the RDKB secure future key infrastructure projects and will equip the RDKB to continue to provide the region with reliable services and a high quality of life.

FCM will provide 80% of total eligible project costs, to a maximum of \$50,000 for individual applications. The other 20% borne by the RDKB can be in the form of in kind staff time and services and therefore, will not create an additional cost to the RDKB.

Staff are working with consultant on the application with the intent to maximize the grant funding. Therefore, the total project cost will be \$62,500 - \$50,000 in grant funding and \$12,500 of in kind staff time and services. This grant and project is also included in the proposed Five Year Financial Plan for 2021-2025. This project will focus on asset management training and organizational development as well as development of asset management policies and strategies to lay the foundation for the development of the Asset Management Plan. The Board of Directors will benefit from this project and be directly involved with raising the organization's knowledge and understanding of asset management as well as with the development of policies and strategies.

Implications

With the additional grant funds, the RDKB will take significant steps towards laying a solid foundation for the overall Asset Management Plan, which will assist services to apply for future capital grants that will help with key infrastructure projects.

Advancement of Strategic Planning Goals

Contributes to exceptional cost effective and efficient services

Background Information Provided

Not applicable

Alternatives

Receive
Approve
Defer

Recommendation(s)

THAT the Regional District of Kootenay Boundary Board of Directors direct staff to apply for a grant opportunity from the BC Government Infrastructure Planning Grant Program for *Building Asset Management Capacity Within the RDKB*.

FURTHER that the Regional District of Kootenay Boundary commits to conducting the following activities in its proposed project submitted to the BC Government Infrastructure Planning Grant Program to advance our asset management program:

- Employee training (asset register),
- Development of a user guide (asset register), and
- Continue to create and update the state of infrastructure dashboards

FURTHER that the Regional District of Kootenay Boundary commits \$15,000 from its budget toward the costs of this initiative.

THAT the Regional District of Kootenay Boundary Board of Directors direct staff to apply for a grant opportunity from the Federation of Canadian Municipalities' Municipal Asset Management Program for *Building Asset Management Capacity – Development, Policies, and Strategy*. **FURTHER** that the Regional District of Kootenay Boundary commits to conducting the following activities in its proposed project submitted to the Federation of Canadian Municipalities' Municipal Asset Management Program to advance our asset management program:

- Board and management development and understanding,
- Development of policies,
- Development of strategy, and
- Other areas to support the overall development of an asset management plan.

FURTHER that the Regional District of Kootenay Boundary commits \$12,500 from its budget toward the costs of this initiative.

Jennifer Kuhn

From: is@rdkb.com
Sent: January 11, 2021 9:07 AM
To: Theresa Lenardon; Information Services; Jennifer Kuhn; Melissa Zahn
Subject: Grant-in-Aid Form submitted by JL Crowe Secondary School, email address - dwaterstreet@sd20.bc.ca

Online Grant-in-Aid Application**Electoral Area(s) Applied to:**

Electoral Area 'A' Director Ali Grieve, Electoral Area 'B' / Lower Columbia- Old Glory Director Linda Worley

Applicant Information:

Applicant: JL Crowe Secondary School

Address: 1300 Frances Moran Rd

Phone: 12503685591

Fax: 2503641567

Email: dwaterstreet@sd20.bc.ca

Representative: Dara A Waterstreet

Make Cheque Payable To: JL Crowe Secondary School

Other Expenses:

Total Cost of Project: \$

Amount Requested from
RDKB Director(s):

\$\$750

Approval Director Grieve
January 18, 2021

What is the Grant-in-Aid for?

~~Memorial Scholarship~~

~~Regional District Kootenay Boundary Area A or B Directors' Memorial Award~~

RDKB Area A Fallen Firefighters Memorial Award

List of Other Organizations Applied to for Funding

Name of Organization

Amount Requested

Amount Secured

Name of Organization

Amount Requested

Amount Secured

Name of Organization

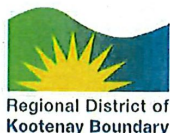
Amount Requested

Amount Secured

Documents uploaded with Submission?

☐

I:\Portals\0\Documents\GIA-Attachments\



Grant-in-Aid Request

The personal information you provide on this RDKB document is being collected in accordance with the Freedom of Information and Protection of Privacy Act and will be used only for the purpose of processing RDKB business. This document may become public information. If you have any questions about the collection of your personal information, please contact Theresa Lenardon, Manager of Corporate Administration/Corporate Officer and Freedom of Information Protection of Privacy Officer at 250-368-9148 or foi@rdkb.com.

This application must include a complete mailing address. Incomplete address fields will result in delays in processing GIA funds and your request sent back to the RDKB Director.

Please check all Electoral Area Boxes You Are Making Application To:

<input checked="" type="checkbox"/> Electoral Area 'A' Director Ali Grieve	<input type="checkbox"/> Electoral Area 'B' Lower Columbia-Old Glory Director Linda Worley	<input type="checkbox"/> Electoral Area 'C' Christina Lake Director Grace McGregor	<input type="checkbox"/> Electoral Area 'D' Rural Grand Forks Director Roly Russell	<input type="checkbox"/> Electoral Area 'E' West Boundary Director Vicki Gee
--	--	--	---	--

Applicant:	* The Village of Fruitvale				
FULL Mailing Address: Including Postal Code	* Box 370, Fruitvale, BC V0G 1L0				
Phone:	* 250-367-7551	Fax:	250-367-9267	E-Mail:	* ktuttle@village.fruitvale.bc.ca
Representative:	* Kelli Tuttle, CAO				
Make Cheque Payable To:	* The Village of Fruitvale				

*Starred items, including contact information, must be completed in full.

****GIA Requests of \$5,000.00 or more may require official receipt. The Electoral Area Director may ask for additional information.

What is the total Cost of the Project? \$ 5,000 What amount are you requesting from this RDKB Director(s)? \$ 1,500

What is the Grant-in-Aid for? (attach an extra sheet if necessary)

Funds will be used towards the rental costs of the outdoor patio heaters, in-tent heaters, tables and chairs for participants of Candy Cane Lane.

We will be requesting donations from other organizations however this is not done until closer to the event date.

Please list all other organizations you have applied to for funding (attach an extra sheet if necessary)

Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

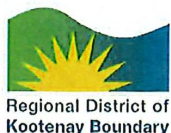
Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

Date: January 18, 2021 Applicant Signature [Signature] Print Name Kelli Tuttle, CAO

Office Use Only

Grant approved by Electoral Area Director: _____

Approved by Board: _____



Grant-in-Aid Request

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This application must include a complete mailing address. Incomplete address fields will result in delays in processing GIA funds and your request sent back to the RDKB Director.

Please check all Electoral Area Boxes You Are Making Application To:

<input checked="" type="checkbox"/> Electoral Area 'A' Director Ali Grieve	<input type="checkbox"/> Electoral Area 'B/' Lower Columbia-Old Glory Director Linda Worley	<input type="checkbox"/> Electoral Area 'C/' Christina Lake Director Grace McGregor	<input type="checkbox"/> Electoral Area 'D/' Rural Grand Forks Director Roly Russell	<input type="checkbox"/> Electoral Area 'E/' West Boundary Director Vicki Gee
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Applicant:	*The Village of Fruitvale				
FULL Mailing Address: Including Postal Code	*Box 370, Fruitvale, BC V0G 1L0				
Phone:	*250-367-7551	Fax:	250-367-9267	E-Mail:	*ktuttle@village.fruitvale.bc.ca
Representative:	*Kelli Tuttle, CAO				
Make Cheque Payable To:	*TheVillage of Fruitvale				

*Starred items, including contact information, must be completed in full.

****GIA Requests of \$5,000.00 or more may require official receipt. The Electoral Area Director may ask for additional information.

What is the total Cost of the Project? \$3,000 What amount are you requesting from this RDKB Director(s)? \$3 000.00

What is the Grant-in-Aid for? (attach an extra sheet if necessary)

Funds will be used for the purchase of a tool shed to be installed at the new Harvest Central Community Garden.

Please list all other organizations you have applied to for funding (attach an extra sheet if necessary)

Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

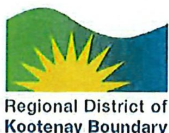
Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

Date: January 18, 2021 Applicant Signature  Print Name Kelli Tuttle, CAO

Office Use Only

Grant approved by Electoral Area Director: _____

Approved by Board: _____



Grant-in-Aid Request

The personal information you provide on this RDKB document is being collected in accordance with the Freedom of Information and Protection of Privacy Act and will be used only for the purpose of processing RDKB business. This document may become public information. If you have any questions about the collection of your personal information, please contact Theresa Lenardon, Manager of Corporate Administration/Corporate Officer and Freedom of Information Protection of Privacy Officer at 250-368-9148 or foi@rdkb.com.

This application must include a complete mailing address. Incomplete address fields will result in delays in processing GIA funds and your request sent back to the RDKB Director.

Please check all Electoral Area Boxes You Are Making Application To:

<input checked="" type="checkbox"/> Electoral Area 'A' Director Ali Grieve	<input type="checkbox"/> Electoral Area 'B/' Lower Columbia-Old Glory Director Linda Worley	<input type="checkbox"/> Electoral Area 'C/' Christina Lake Director Grace McGregor	<input type="checkbox"/> Electoral Area 'D/' Rural Grand Forks Director Roly Russell	<input type="checkbox"/> Electoral Area 'E/' West Boundary Director Vicki Gee
--	---	---	--	---

Applicant:	* The Village of Fruitvale			
FULL Mailing Address; Including Postal Code	* Box 370, Fruitvale, BC V0G 1L0			
Phone:	* 250-367-7551	Fax:	250-367-9267	E-Mail: * ktuttle@village.fruitvale.bc.ca
Representative:	* Kelli Tuttle, CAO			
Make Cheque Payable To:	* The Village of Fruitvale			

*Starred items, including contact information, must be completed in full.

****GIA Requests of \$5,000.00 or more may require official receipt. The Electoral Area Director may ask for additional information.

What is the total Cost of the Project? \$ 1,500 What amount are you requesting from this RDKB Director(s)? \$ 500.00

What is the Grant-in-Aid for? (attach an extra sheet if necessary) January 18, 2021

Funds will be used towards the luncheon held in the Fruitvale Memorial Centre after the Remembrance Day service.

Please list all other organizations you have applied to for funding (attach an extra sheet if necessary)

Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

Date: January 18, 2021 Applicant Signature  Print Name Kelli Tuttle, CAO

Office Use Only

Grant approved by Electoral Area Director: _____

Approved by Board: _____

Jennifer Kuhn

From: is@rdkb.com
Sent: January 11, 2021 9:07 AM
To: Theresa Lenardon; Information Services; Jennifer Kuhn; Melissa Zahn
Subject: Grant-in-Aid Form submitted by JL Crowe Secondary School, email address - dwaterstreet@sd20.bc.ca

Online Grant-in-Aid Application**Electoral Area(s) Applied to:**

Electoral Area 'A' Director Ali Grieve, Electoral Area 'B' / Lower Columbia- Old Glory Director Linda Worley

Applicant Information:

Applicant: JL Crowe Secondary School

Address: 1300 Frances Moran Rd

Phone: 12503685591

Fax: 2503641567

Email: dwaterstreet@sd20.bc.ca

Representative: Dara A Waterstreet

Make Cheque Payable To: JL Crowe Secondary School

Other Expenses:

Total Cost of Project: \$

Amount Requested from RDKB Director(s): \$\$750

What is the Grant-in-Aid for? *RDKB Area B/Lower Columbia- Old Glory Fallen*
~~Memorial Scholarship~~ *Firefighters Memorial Award*
~~Regional District Kootenay Boundary Area A or B Directors' Memorial Award~~

List of Other Organizations Applied to for Funding

Name of Organization

Amount Requested

Amount Secured

Name of Organization

Amount Requested

Amount Secured

Name of Organization

Amount Requested

Amount Secured

Documents uploaded with Submission?

☐

I:\Portals\0\Documents\GIA-Attachments\

I approve this GIA for \$750.00 with the corrected title

Linda J. Morley



Regional District of
Kootenay Boundary

Grant-in-Aid Request

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This application must include a complete mailing address. Incomplete address fields will result in delays in processing GIA funds and your request sent back to the RDKB Director.

Please check all Electoral Area Boxes You Are Making Application To:

<input type="checkbox"/> Electoral Area 'A' Director Ali Grieve	<input type="checkbox"/> Electoral Area 'B/' Lower Columbia-Old Glory Director Linda Worley	<input checked="" type="checkbox"/> Electoral Area 'C/' Christina Lake Director Grace McGregor	<input checked="" type="checkbox"/> Electoral Area 'D/' Rural Grand Forks Director Roly Russell	<input type="checkbox"/> Electoral Area 'E/' West Boundary Director Vicki Gee
---	---	--	---	---

Applicant:	* Boundary Multi 4-H Club			
FULL Mailing Address: Including Postal Code	* 5770 Darcy Road, Grand Forks, BC V0H 1H4			
Phone:	* 2504433191	Fax:		E-Mail: * kmespenhain@telus.net
Representative:	* Madalene Espenhain - Club Leader			
Make Cheque Payable To:	* Boundary Multi 4-H Club			

*Starred items, including contact information, must be completed in full.

***GIA Requests of \$5,000.00 or more may require official receipt. The Electoral Area Director may ask for additional information.

What is the total Cost of the Project? \$ _____ What amount are you requesting from this RDKB Director(s)? \$ 500

What is the Grant-in-Aid for? (attach an extra sheet if necessary)

Please See Attached Letter

Please list all other organizations you have applied to for funding (attach an extra sheet if necessary)

Name of Organization _____	Amount Requested: \$ _____	Amount Secured: \$ _____
Name of Organization _____	Amount Requested: \$ _____	Amount Secured: \$ _____
Name of Organization _____	Amount Requested: \$ _____	Amount Secured: \$ _____

Date: January 17, 2021 Applicant Signature _____ Print Name Madalene Espenhain

Office Use Only

Grant approved by Electoral Area Director: _____

Approved by Board: _____



January 17, 2021

Regional District of Kootenay Boundary

202 - 843 Rossland Ave.

Trail, BC V1R 4S8

250.368.9148

Dear Sir/Madame,

The Boundary Multi 4-H Club is British Columbia 4-H affiliated club currently comprised of 20-25 youth ranging from the ages 6-19 years old in the Grand Forks area. As we are a multi club our members are able to explore all project areas that 4-H has to offer. Currently our members are exploring areas such as dog, poultry, rabbit, photography, foods as well as our Cloverbud program that is available to 6-8 year olds.

The 4-H program provides young people with an opportunity to learn how to become productive, self-assured adults who can make their community and country a good place in which to live. This is fostered through project and program work, experiences with their 4-H club members and leaders and their participation in district, regional and even provincial programs. The goal of the 4-H program is youth development. The objectives of 4-H clubs are knowledge, leadership, citizenship and personal development. The purpose of the 4-H program is to prepare girls and boys for their future as adult citizens.

Throughout the year our club activities consist of many diverse activities such as club meetings, field trips & farm visits, participation in agricultural fairs & festivals, public speaking competitions, community service activities, provincial 4-H workshops, travel opportunities and much more. There are often costs associated with many of these activities which is why we are asking for your support. We are hoping that your area of representation would be willing to sponsor our club for the 2021 year with a monetary donation of any amount. All funds will go directly to our club and stay within the community. If you would like any further information regarding our club, please feel free to contact me at any time.

Sincerely,

Madalene Espenhain

Boundary Multi 4-H Club Leader

*Boundary Multi 4-H Club**5770 Darcy Road, Grand Forks, BC V0H 1H4**250-443-3191*



Regional District of
Kootenay Boundary

Grant-in-Aid Request

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This application must include a complete mailing address. Incomplete address fields will result in delays in processing GIA funds and your request sent back to the RDKB Director.

Please check all Electoral Area Boxes You Are Making Application To:

<input type="checkbox"/> Electoral Area 'A' Director Ali Grieve	<input type="checkbox"/> Electoral Area 'B'/ Lower Columbia-Old Glory Director Linda Worley	<input checked="" type="checkbox"/> Electoral Area 'C'/ Christina Lake Director Grace McGregor	<input checked="" type="checkbox"/> Electoral Area 'D'/ Rural Grand Forks Director Roly Russell	<input type="checkbox"/> Electoral Area 'E'/ West Boundary Director Vicki Gee
---	---	--	---	---

Applicant:	* Boundary Multi 4-H Club			
FULL Mailing Address: Including Postal Code	* 5770 Darcy Road, Grand Forks, BC V0H 1H4			
Phone:	* 2504433191	Fax:		E-Mail: *kmespenhain@telus.net
Representative:	* Madalene Espenhain - Club Leader			
Make Cheque Payable To:	* Boundary Multi 4-H Club			

*Starred items, including contact information, must be completed in full.

***GIA Requests of \$5,000.00 or more may require official receipt. The Electoral Area Director may ask for additional information.

What is the total Cost of the Project? \$ _____ What amount are you requesting from this RDKB Director(s)? \$ 500.00 *Approved*

What is the Grant-in-Aid for? (attach an extra sheet if necessary) January 19/21 O'Donnell *Director*

Please See Attached Letter

Please list all other organizations you have applied to for funding (attach an extra sheet if necessary)

Name of Organization _____	Amount Requested: \$ _____	Amount Secured: \$ _____
Name of Organization _____	Amount Requested: \$ _____	Amount Secured: \$ _____
Name of Organization _____	Amount Requested: \$ _____	Amount Secured: \$ _____

Date: January 17, 2021 Applicant Signature _____ Print Name Madalene Espenhain

Office Use Only

Grant approved by Electoral Area Director: _____

Approved by Board: _____

Boundary Multi 4-H Club

CANADA
4-H British Columbia

January 17, 2021

Regional District of Kootenay Boundary

202 - 843 Rossland Ave.

Trail, BC V1R 4S8

250.368.9148

Dear Sir/Madame,

The Boundary Multi 4-H Club is British Columbia 4-H affiliated club currently comprised of 20-25 youth ranging from the ages 6-19 years old in the Grand Forks area. As we are a multi club our members are able to explore all project areas that 4-H has to offer. Currently our members are exploring areas such as dog, poultry, rabbit, photography, foods as well as our Cloverbud program that is available to 6-8 year olds.

The 4-H program provides young people with an opportunity to learn how to become productive, self-assured adults who can make their community and country a good place in which to live. This is fostered through project and program work, experiences with their 4-H club members and leaders and their participation in district, regional and even provincial programs. The goal of the 4-H program is youth development. The objectives of 4-H clubs are knowledge, leadership, citizenship and personal development. The purpose of the 4-H program is to prepare girls and boys for their future as adult citizens.

Throughout the year our club activities consist of many diverse activities such as club meetings, field trips & farm visits, participation in agricultural fairs & festivals, public speaking competitions, community service activities, provincial 4-H workshops, travel opportunities and much more. There are often costs associated with many of these activities which is why we are asking for your support. We are hoping that your area of representation would be willing to sponsor our club for the 2021 year with a monetary donation of any amount. All funds will go directly to our club and stay within the community. If you would like any further information regarding our club, please feel free to contact me at any time.

Sincerely,

Madalene Espenhain

Boundary Multi 4-H Club Leader

Boundary Multi 4-H Club

5770 Darcy Road, Grand Forks, BC V0H 1H4

250-443-3191



Grant-in-Aid Request

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This application must include a complete mailing address. Incomplete address fields will result in delays in processing GIA funds and your request sent back to the RDKB Director.

Please check all Electoral Area Boxes You Are Making Application To:

<input checked="" type="checkbox"/> Electoral Area 'A' Director Ali Grieve	<input type="checkbox"/> Electoral Area 'B'/ Lower Columbia-Old Glory Director Linda Worley	<input type="checkbox"/> Electoral Area 'C'/ Christina Lake Director Grace McGregor	<input type="checkbox"/> Electoral Area 'D'/ Rural Grand Forks Director Roly Russell	<input type="checkbox"/> Electoral Area 'E'/ West Boundary Director Vicki Gee
--	---	---	--	---

Applicant:	* Village of Fruitvale for BV Age Friendly Program				
FULL Mailing Address: Including Postal Code	* Box 370, 1947 Beaver Street, Fruitvale, BC V0G 1L0				
Phone:	* 250-367-7551	Fax:	250-367-9267	E-Mail:	* ktuttle@village.fruitvale.bc.ca
Representative:	* Kelli Tuttle				
Make Cheque Payable To:	* Village of Fruitvale				

*Starred items, including contact information, must be completed in full.

****GIA Requests of \$5,000.00 or more may require official receipt. The Electoral Area Director may ask for additional information.

What is the total Cost of the Project? \$ 2000 What amount are you requesting from this RDKB Director(s)? \$ 1000

What is the Grant-in-Aid for? (attach an extra sheet if necessary)

The money will be used for the Connecting Generations with Letter Links program to purchase writing paper, various occasional cards, stamps, envelopes to supply to the Senior Citizens and Fruitvale Elementary School Students taking part in the "pen pal" program. The program is open to all Beaver Valley seniors and students at the Fruitvale Elementary School.

Please list all other organizations you have applied to for funding (attach an extra sheet if necessary)

Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

Name of Organization _____
Amount Requested: \$ _____ Amount Secured: \$ _____

Date: January 21, 2021 Applicant Signature Kelli Tuttle Print Name Kelli Tuttle

Office Use Only

Grant approved by Electoral Area Director: _____

Approved by Board: _____

**STAFF REPORT**

Date: 19 January 2021 **File**
To: **Chair Langman,**
Finance Liaison McGregor, and
Members of the Board of Directors
From: Barb Ihlen, General Manager of Finance/CFO
Re: Bylaw 1751, 2021
 Revenue Anticipation Loan Authorization

Issue Introduction

A staff report from Barb Ihlen, General Manager of Finance/CFO, regarding Bylaw No. 1751 Revenue Anticipation Bylaw.

History/Background Factors

The Regional District of Kootenay Boundary (RDKB) receives tax requisition funds in August of each year and typically depletes operating funds by February/March of the following year. Section 404 of the Local Government Act enables the RDKB to borrow funds required to meet current expenditures pending the receipt of taxation funds.

Implications

A bylaw is required to enable the RDKB to borrow funds to meet financial obligations prior to receiving tax requisition revenue.

Advancement of Strategic Planning Goals

Not applicable

Background Information Provided

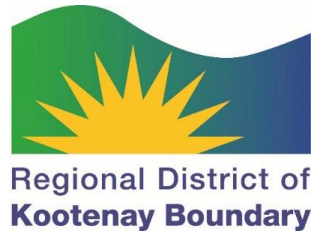
Not applicable

Alternatives

None

Recommendation(s)

That the Regional District of Kootenay Boundary Board of Directors adopt Revenue Anticipation Loan Bylaw 1751, 2021 as presented at the January 28th, 2021 Board of Directors meeting.



BYLAW NO. 1751

A Bylaw to provide for the borrowing of such sums of money as may be requisite to meet current expenditures of the Regional District pending receipt of current revenue.

WHEREAS pursuant to Section 404 of the *Local Government Act*, a Regional District may provide for the borrowing of such sums of money as may be required to meet the current expenditures of the Regional District pending the receipt of current revenue;

AND WHEREAS the Board of the Regional District of Kootenay Boundary has adopted a bylaw that establishes a five-year financial plan that includes the year 2020 in the amount of Forty Six Million Eight Hundred Forty Four Thousand Eight Hundred Eighty Seven Dollars (\$46,844,887);

NOW THEREFORE the Board of the Regional District of Kootenay Boundary in open meeting assembled, enacts as follows:

1. The Regional District of Kootenay Boundary is hereby authorized to borrow such sums of money as may be requisite to meet current expenditures, providing that the aggregate of such borrowings shall not exceed the sum of Ten Million Dollars (\$10,000,000).
2. The form of obligation or obligations to be given as security against such borrowings shall be in the form of a promissory note or by an overdraft on the current operating account bearing interest at current bank rates prevailing from time to time, signed by both the Chair of the Board and the General Manager of Finance thereof, and sealed with the Corporate Seal of the Regional District of Kootenay Boundary.
3. The promissory note or overdraft as aforesaid shall be deemed to be a first charge on current revenues and all temporary borrowings hereby authorized shall be repaid in full not later than December 31, 2021.
4. This bylaw may be cited as the "Regional District of Kootenay Boundary Year 2021 Revenue Anticipation Borrowing Bylaw No. 1751, 2021".

READ the **FIRST** and **SECOND** time this 28th day of January, 2021.

Read a **THIRD** time this 28th day of January, 2021.

I, Theresa Lenardon, Manager of Corporate Administration/Corporate Officer of the Regional District of Kootenay Boundary, hereby certify the foregoing to be a true and correct copy of Bylaw No. 1751 cited as the "Regional District of Kootenay Boundary Year 2021 Revenue Anticipation Borrowing Bylaw No. 1751, 2021" as read a third time the 28th day of January, 2021.

Manager of Corporate Administration

RECONSIDERED and **ADOPTED** this 28th day of January, 2021.

Chair

Manager of Corporate Administration

I, Theresa Lenardon, Manager of Corporate Administration of the Regional District of Kootenay Boundary, do hereby certify the foregoing to be a true and correct copy of Bylaw No. 1751 cited as "Regional District of Kootenay Boundary Year 2021 Revenue Anticipation Borrowing Bylaw No. 1751, 2021," as reconsidered and finally adopted by the Board of Directors at a regular meeting held this 28th day of January, 2021.

Certified a true copy of Bylaw No. 1751 as adopted

Manager of Corporate Administration



**Regional District of
Kootenay Boundary**

STAFF REPORT

Date: 31 Dec 2020 **File**
To: **Chair Langman, Finance
Liaison Grace McGregor, and
Members of the Board of
Directors**
From: Barb Ihlen, General Manager of
Finance/CFO
Re: Financial Plan Amendment Bylaw 1749, 2021

Issue Introduction

A staff report from Barb Ihlen, General Manager of Finance/CFO, presenting Financial Plan Amendment Bylaw No. 1749, 2021.

History/Background Factors

Financial Plan Bylaw 1735 was adopted March 31, 2020 for the 2020-2024 Five Year Financial Plan. Throughout the year, the Board has made amendments to the financial plan. The Financial Amendment Bylaw 1749 reflects the changes made to the budget throughout the year.

Implications

Formalizing changes to budget made throughout the 2020 fiscal year.

Advancement of Strategic Planning Goals

Not applicable

Background Information Provided

Financial Plan Amendment Bylaw 1749, 2021
 Financial Plan Bylaw 1735, 2020
 Listing of budget changes

Alternatives

1. Approve

Recommendation(s)

That the Regional District of Kootenay Boundary Board of Directors adopt Bylaw - Financial Plan Amendment Bylaw 1749, 2021 as presented at the January 28th, 2021 Board of Directors meeting.



Regional District of
Kootenay Boundary

BYLAW NO. 1749

A Bylaw to Amend Bylaw No. 1735

Financial Plan for the Years 2020 to 2024

WHEREAS pursuant to Section 374 of the *Local Government Act*, a Regional District Board must, by bylaw, adopt a financial plan with a planning period of 5 (five) years;

AND WHEREAS the Board has prepared a financial plan for the years 2020 to 2024 that makes provision for expenditures for the fiscal year ending December 31, 2020 estimated in the total amount of Forty Six Million Eight Hundred Forty Four Thousand Eight Hundred Eighty Seven Dollars (\$46,844,887);

AND WHEREAS pursuant to Section 401 of the *Local Government Act*, a Regional District Board may amend the financial plan in respect of a service to include the expenditure and the funding source for the expenditure;

AND WHEREAS the Board finds it desirous of a net increase for the approval of expenditures in the year 2020 through 2024 of Five Hundred, Thirteen Thousand, Nine Hundred Eighty Two Dollars (\$513,982) for the following:

- a grant to conduct a Poverty Reduction Plan for the Boundary area including the municipalities of Midway, Greenwood and Grand Forks; and Electoral Areas C/Christina Lake, D/Rural Grand Forks, and E/West Boundary to a maximum of \$100,000
- a reduction in tax requisition for Grant In Aid of \$5,716
- a reduction in tax requisition for Mosquito Control-Area D Grand Forks of \$876
- additional reserve contribution of \$60,000 for the Big White Fire Hall Bay Expansion
- additional reserve contribution of up to \$55,000 for Christina Lake Fire Services to purchase new auto extrication tools of \$55,000
- funding of up to \$286,884.28 from reserves for Kootenay Boundary Fire and Rescue Service to make the down payment on the purchase of a new fire engine
- a funding agreement for the amount of \$18,690 from FortisBC Build Better funding

NOW THEREFORE BE IT RESOLVED that the Regional District of Kootenay Boundary Board of Directors in open meeting assembled, enacts as follows:

1. Schedule 'A' of Bylaw No. 1735 which is hereby amended to become Schedule 'A' of Bylaw No. 1749 by way of the changes referred to above and made part of this bylaw making the 2020 budget now be in the amount of Forty Seven Million Three Hundred Fifty Eight Thousand Eight Hundred Sixty Nine Dollars (\$47,358,869) and is hereby declared to be the Financial Plan for the Regional District of Kootenay Boundary for the five years of 2020 to 2024.
2. This bylaw shall be cited as the "Regional District of Kootenay Boundary Financial Plan Amendment Bylaw 1749, 2021".

READ the **FIRST** and **SECOND** time this 28th day of January, 2021.

Read a **THIRD** time this 28th day of January, 2021.

I, Theresa Lenardon, Manager of Corporate Administration of the Regional District of Kootenay Boundary, do hereby certify the foregoing to be a true and correct copy of Bylaw No. 1749 cited as " Regional District of Kootenay Boundary Financial Plan Amendment Bylaw 1749, 2021" as read a third time by the Regional District of Kootenay Boundary Board of Directors this 28th day of January, 2021.

Manager of Corporate Administration

RECONSIDERED and **ADOPTED** this 28th day of January, 2021.

Chair

Manager of Corporate Administration

I, Theresa Lenardon, Manager of Corporate Administration of the Regional District of Kootenay Boundary, do hereby certify the foregoing to be a true and correct copy of Bylaw No. 1749 cited as " Regional District of Kootenay Boundary Financial Plan Amendment Bylaw 1749, 2021" as reconsidered and adopted by the Regional District of Kootenay Boundary Board of Directors this 28th day of January, 2021.

Certified a true copy of Bylaw No. 1749 as adopted.

Manager of Corporate Administration

Bylaw No. 1749
SCHEDULE 'A'

Regional District of Kootenay Boundary
Five Year Financial Plan 2020 - 2024 - Amended

2020	2021	2022	2023	2024
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LOCAL GOVERNMENT SERVICES:

REVENUE:

Requisition from Local Governments	19,036,556	20,595,448	20,469,892	20,399,663	21,492,880
Parcel Tax	40,000	40,000	40,000	40,000	40,000
Grants	4,967,832	3,034,060	3,071,689	3,110,071	3,149,220
Services Provided	474,807	479,507	483,755	487,035	490,380
User Fees	3,304,626	3,312,960	3,671,457	3,717,109	3,725,918
Other Sources of Revenue	1,398,051	3,055,470	542,571	539,858	540,456
Recovery of Common Costs	113,514	115,784	118,100	120,462	122,871
Board Fee Revenue	696,145	710,068	724,269	738,755	753,530
Transfer From 9-1-1/Emergency Preparedness	-	-	-	-	-
Interest Earned on Investments	112,020	113,060	114,122	115,204	116,308
Previous Year's Surplus	2,590,806	-	-	-	-

Transfers From Other Funds:

Capital Fund	1,970,100	495,000	850,000	125,000	2,000,000
Reserve Fund	2,754,260	2,948,526	194,905	9,000	403,000

Municipal Debt:

Municipal Debenture Debt	2,403,635	2,403,635	2,396,354	2,342,827	2,272,071
--------------------------	-----------	-----------	-----------	-----------	-----------

Total Revenue	39,862,352	37,303,519	32,677,114	31,744,983	35,106,633
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EXPENDITURE:

Other General Government Services	8,375,669	8,172,717	8,061,806	8,143,575	8,276,183
Waste Management	3,945,585	4,097,840	4,813,608	4,830,284	4,888,604
Recreation & Culture	5,177,182	5,149,293	5,176,282	5,263,792	5,360,581
Fire & Protection Services	7,161,353	6,766,959	6,876,497	6,940,926	7,081,794
Capital Expenditures	6,798,170	6,908,075	1,706,764	516,000	3,252,500
Grants to Other Programs	1,937,741	1,311,123	1,309,071	1,296,312	1,298,599
Transfers to Local Governments	553,161	542,650	385,229	389,832	394,550
Transfers to Reserve Funds	2,213,462	622,532	676,700	699,805	674,487

Regional District Debenture Debt:

Debt Interest	283,153	253,712	225,910	211,283	233,522
Debt Principal	971,771	1,074,981	1,048,893	1,110,346	1,373,744

Previous Year's Deficit	41,471	-	-	-	-
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Municipal Debenture Debt:

Debt Interest	1,200,247	1,203,388	1,198,776	1,185,743	1,143,838
Debt Principal	1,203,388	1,200,247	1,197,579	1,157,084	1,128,232

Total Municipal Debenture Debt	2,403,635	2,403,635	2,396,354	2,342,827	2,272,071
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Total Expenditure	39,862,352	37,303,519	32,677,114	31,744,983	35,106,633
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Bylaw No. 1749
SCHEDULE 'A'

Regional District of Kootenay Boundary
Five Year Financial Plan 2020 - 2024 - Amended

2020	2021	2022	2023	2024
------	------	------	------	------

WATER UTILITY FUNDS:

REVENUE:					
Requisition from Local Governments	12,706	24,030	26,427	26,800	27,177
Parcel Tax	684,100	684,100	684,100	684,100	684,100
Previous Year's Surplus	281,168	-	-	-	-
Transfer From Reserve Fund	237,150	356,221	-	-	-
Grants	53,455	379,930	513	513	513
User Fees & Sales	2,052,214	2,071,870	742,099	762,917	784,341
Transfer From Capital Fund	-	-	-	-	-
Total Revenue	3,320,795	3,516,151	1,453,139	1,474,329	1,496,132
EXPENDITURE:					
Operations & Maintenance	878,275	890,771	909,303	926,541	949,602
Debt Interest	20,653	20,477	20,433	20,433	20,433
Debt Principal	70,866	68,524	63,655	63,655	63,655
Capital Expenditure	2,119,975	2,409,750	40,000	40,000	40,000
Transfer to Reserve Fund	230,947	126,630	419,748	423,700	422,442
Previous Year's Deficit	79	-	-	-	-
Total Expenditure	3,320,795	3,516,151	1,453,139	1,474,329	1,496,132

SEWER UTILITY FUNDS:

REVENUE:					
Requisition from Local Governments	1,640,300	1,892,580	2,038,152	3,153,027	3,508,290
Parcel Tax	30,534	29,996	30,100	30,203	30,305
Previous Year's Surplus	316,894	-	-	-	-
Grants	4,000	370,667	22,737,333	23,004,000	4,000
Services Provided	-	-	-	-	-
User Fees & Sales	56,268	57,952	59,687	61,473	63,314
Transfer From Capital Fund	-	133,333	8,266,667	8,500,000	-
Transfer From Reserves	243,864	-	-	-	-
Inter-Sewer Fund Transfer	15,524	15,990	16,470	16,964	17,473
Total Revenue	2,307,384	2,500,519	33,148,409	34,765,667	3,623,382
EXPENDITURE:					
Operations & Maintenance	1,433,805	1,412,475	1,432,385	1,994,539	2,030,635
Debt Interest	187,200	187,200	314,700	569,700	697,200
Debt Principal	184,854	184,854	184,854	378,464	572,074
Capital Expenditure	365,000	600,000	31,100,000	31,600,000	100,000
Inter-Sewer Fund Transfer	15,524	15,990	16,470	16,964	17,473
Previous Year's Deficit	-	-	-	-	-
Transfer to Reserve Fund	121,000	100,000	100,000	206,000	206,000
Total Expenditure	2,307,384	2,500,519	33,148,409	34,765,667	3,623,382

TRANSIT UTILITY FUNDS:

REVENUE:					
Requisition from Local Governments	1,183,222	1,275,684	1,337,382	1,374,882	1,413,203
Previous Year's Surplus	121,880	-	-	-	-
Grants	2,900	2,900	2,900	2,900	2,900
User Fees & Sales	448,453	448,247	448,255	448,263	448,271
Transfer From Reserves	111,884	25,000	-	-	-
Total Revenue	1,868,339	1,751,831	1,788,537	1,826,045	1,864,374
EXPENDITURE:					
Operations & Maintenance	1,868,339	1,751,831	1,788,537	1,826,045	1,864,374
Transfer to Reserve Fund	-	-	-	-	-
Previous Year's Deficit	-	-	-	-	-
Total Expenditure	1,868,339	1,751,831	1,788,537	1,826,045	1,864,374

Bylaw No. 1749
SCHEDULE 'A'

Regional District of Kootenay Boundary
Five Year Financial Plan 2020 - 2024 - Amended

2020	2021	2022	2023	2024
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TOTAL BUDGET (RDKB) consolidated

REVENUE:

Requisition from Local Governments	21,872,784	23,787,743	23,871,854	24,954,372	26,441,550
Parcel Tax	754,634	754,096	754,200	754,303	754,405
Grants	5,028,187	3,787,557	25,812,435	26,117,484	3,156,633
Services Provided	474,807	479,507	483,755	487,035	490,380
User Fees & Other Sources	7,259,613	8,946,498	5,464,069	5,529,620	5,562,300
Recovery of Common Costs	113,514	115,784	118,100	120,462	122,871
Board Fee Revenue	696,145	710,068	724,269	738,755	753,530
Transfer From 9-1-1/Emergency Preparedness	-	-	-	-	-
Interest Earned on Investments	112,020	113,060	114,122	115,204	116,308
Previous Year's Surplus	3,310,748	-	-	-	-

Transfers From Other Funds:

Capital Fund	1,970,100	628,333	9,116,667	8,625,000	2,000,000
Reserve Fund	3,347,159	3,329,747	194,905	9,000	403,000
Inter Sewer Fund Transfer	15,524	15,990	16,470	16,964	17,473

Municipal Debt:

Municipal Debenture Debt	2,403,635	2,403,635	2,396,354	2,342,827	2,272,071
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Total Revenue	47,358,869	45,072,019	69,067,199	69,811,024	42,090,521
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EXPENDITURE:

Other General Government Services	8,375,669	8,172,717	8,061,806	8,143,575	8,276,183
Waste Management	3,945,585	4,097,840	4,813,608	4,830,284	4,888,604
Recreation & Culture	5,177,182	5,149,293	5,176,282	5,263,792	5,360,581
Fire & Protection Services	7,161,353	6,766,959	6,876,497	6,940,926	7,081,794
Water Utilities	878,275	890,771	909,303	926,541	949,602
Sewer Utilities	1,433,805	1,412,475	1,432,385	1,994,539	2,030,635
Transit Services	1,868,339	1,751,831	1,788,537	1,826,045	1,864,374
Capital Expenditures	9,283,145	9,917,825	32,846,764	32,156,000	3,392,500
Grants to Other Programs	1,937,741	1,311,123	1,309,071	1,296,312	1,298,599
Transfers to Local Governments	553,161	542,650	385,229	389,832	394,550
Transfers to Reserve Funds	2,565,409	849,162	1,196,449	1,329,505	1,302,928
Inter Sewer Fund Transfer	15,524	15,990	16,470	16,964	17,473
Previous Year's Deficit	41,550	-	-	-	-

Regional District Debenture Debt:

Debt Interest RDKB	491,006	461,389	561,043	801,416	951,155
Debt Principal RDKB	1,227,492	1,328,359	1,297,402	1,552,465	2,009,472

Municipal Debenture Debt:

Debt Interest Municipal	1,200,247	1,203,388	1,198,776	1,185,743	1,143,838
Debt Principal Municipal	1,203,388	1,200,247	1,197,579	1,157,084	1,128,232
Total Municipal Debenture Debt	2,403,635	2,403,635	2,396,354	2,342,827	2,272,071

Total Expenditure	47,358,869	45,072,019	69,067,199	69,811,024	42,090,521
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**REGIONAL DISTRICT OF KOOTENAY BOUNDARY
BYLAW NO. 1748**

A Bylaw to amend Electoral Area 'D'/Rural Grand Forks Zoning Bylaw No. 1675 of the Regional District of Kootenay Boundary

WHEREAS the Regional District of Kootenay Boundary may amend the provisions of its Zoning Bylaws pursuant to the provisions of the *Local Government Act*;

AND WHEREAS the Regional District of Kootenay Board of Directors intends to make a text amendment to Section 610.2 of the Electoral Area 'D'/Rural Grand Forks Zoning Bylaw No. 1675;

NOW THEREFORE the Regional District of Kootenay Boundary Board of Directors, in open and public meeting assembled, hereby enacts as follows:

1. CITATION:

- 1.1. This Bylaw may be cited as "Regional District of Kootenay Boundary Zoning Amendment Bylaw No. 1748, 2021" and takes effect as of the date of adoption.

2. ADMINISTRATIVE PROVISION:

- 2.1. If any section, subsection, sentence, clause or phrase in this bylaw is for any reason held to be invalid by a decision of any Court of competent jurisdiction, the decision shall not affect the validity of the remaining portion of the bylaw.

3. TEXT AMENDMENT:

- 3.1. That Section 610.2 of the Electoral Area 'D'/Rural Grand Forks Zoning Bylaw No. 1675 is amended by adding the following:
- i) A second dwelling in the form of a manufactured home, for exclusive use by immediate family members, is permitted on the property legally described as Lot 3, Plan KAP54436, District Lot 1735 3000, Similkameen Division of Yale Land District, provided that a Section 219 Covenant is registered on the property stating that the manufactured home is restricted to immediate family members and if such use ceases, the manufactured home shall be removed from the subject property.

READ A FIRST AND SECOND TIME this 28th day of January, 2021.

PUBLIC HEARING held on this ____ day of _____.

READ A THIRD TIME this ____ day of _____.

ADOPTED this ____ day of _____.

Theresa Lenardon
Manager of Corporate Administration

Diane Langman
Chair

I, Theresa Lenardon, Manager of Corporate Administration of the Regional District of Kootenay Boundary, hereby certify that this is a true and correct copy of Bylaw No. 1748, cited as "Regional District of Kootenay Boundary Zoning Amendment Bylaw No. 1748, 2021".

Manager of Corporate Administration

Bylaw 1748, 2021