



File: 18045-30/McBride Community Forest K1H (FSP ID 639)

January 20, 2017

Wes Bieber, RPF
McBride Community Forest Corp.
Box 519
McBride, BC V0J 2E0

Dear Wes Bieber:

Your Forest Stewardship Plan (FSP) submission dated January 18, 2017 for Community Forest Agreement K1H has now been fully reviewed.

Determination:

- I am satisfied the FSP has been prepared and submitted in accordance with section 5 of the *Forest and Range Practices Act* (FRPA) (the *Act*) and Regulations.
- I am also satisfied the review and comment requirements of Sections 20(1), 20(2), 21(1) and 22(2) of the *Forest Planning and Practices Regulation* (FPPR) have been met.
- As the Delegated Decision Maker under Section 16(1) of FRPA, I hereby approve your Forest Stewardship Plan.
- As per Section 6 of FRPA, the term of this FSP is from January 20, 2017 to January 19, 2022.
- Further development taking place under Community Forest Agreement K1H must be done in accordance with this FSP.

I recognize the McBride Community Forest has incorporated results, strategies, measures and stocking standards that are over and above the practice requirements listed in the FPPR. I wish the MCFC success in the implementation of this FSP and I am interested in learning and staying informed about results from the innovative practices and strategies. I encourage you and the MCFC staff to keep the district staff and I informed of accomplishments the McBride Community Forest achieves.

If you require clarification on any aspect of this determination, please contact Denise Hogue, RPF, Senior Authorizations Specialist at (250) 614-7492.

Yours truly,

John Huybers
District Manager
Prince George Natural Resource District

Forest Stewardship Plan Prince George Natural Resource District

McBride Community Forest Corporation

Community Forest Agreement K1H

January 18, 2017

Prepared by:



January 18, 2017

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Date

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1.0 INTERPRETATION

1.1 DEFINITIONS AND ABBREVIATIONS

In this FSP:

CFA means Community Forest Agreement

FDU means forest development unit

FPPR means *Forest Planning and Practices Regulation*

FRPA means *Forest and Range Practices Act*

FSP means Forest Stewardship Plan

GAR means *Government Actions Regulation*

MCFC means McBride Community Forest Corporation

OGMA means old growth management area

Qualified Registered Professional (QRP) means;

(1) A person with the prescribed qualifications, and is licensed by one or more of the following;

(a) an agrologist under the *Agrologists Act*,

(b) a professional biologist under the *College of Applied Biology Act*,

(c) a professional engineer or professional geoscientist under the *Engineers and Geoscientists Act*, or

(d) a forest professional under the *Foresters Act* and being authorized under that Act to practice as a professional in relation to the subject matter prescribed under that paragraph or those paragraphs, as the case may be, and;

(2) has the appropriate education, experience and training to carry out the activity.

Referral: the act of referring someone or something for consultation, review, or further action. In the case of this FSP, referral will be completed by sending appropriate information by mail; a followup by e-mail if the person has an e-mail address; and if necessary, a phone call or meeting between the 2 parties. Referral is complete when the person receiving the referral has responded in writing (ie. letter or e-mail), or 60days has transpired since the initial referral was made.

VQO: means visual quality objective

Terms used in this FSP have the definition given to them in FRPA and the *Forest Act* and regulations under them, as amended from time to time.

2.0 INTRODUCTION

The McBride Community Forest Corporation (MCFC) signed a long-term CFA on February 28, 2007. This agreement grants MCFC exclusive rights to harvest Crown timber from approximately 60,000 ha surrounding the community of McBride. MCFC is solely owned by the Village of McBride.

The community forest is intended to serve the social, economic and environmental needs of the community. In general terms, we will be managing the forest for all of its product potential rather than just timber.

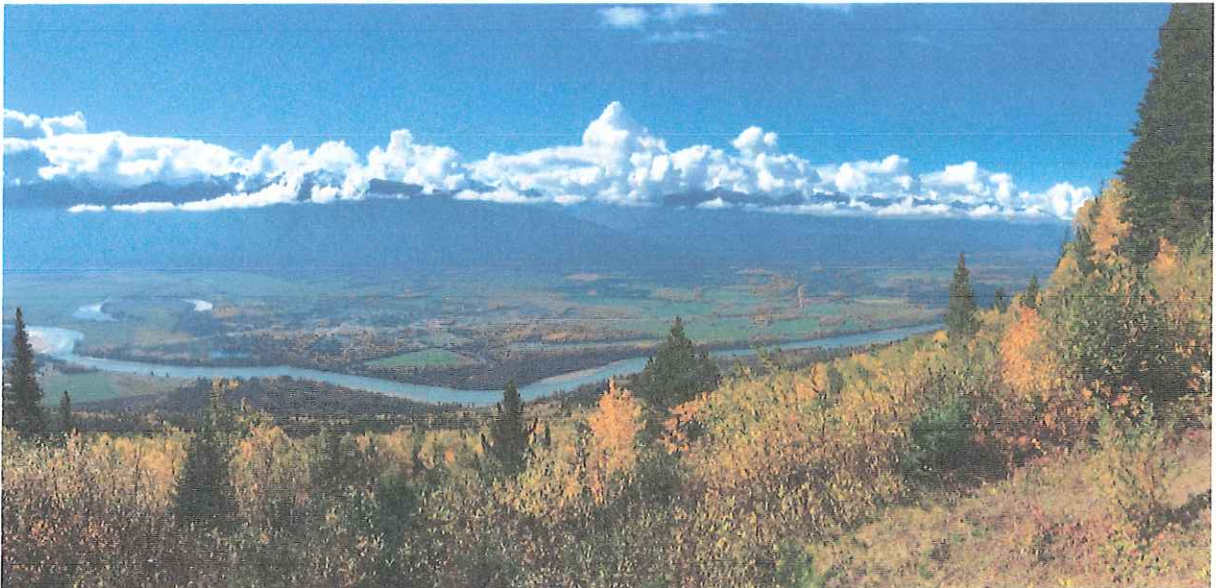


Figure 1. View of the Village of McBride and surrounding area from Halfway Viewpoint Recreation Area.

3.0 SUBMISSION DATE, TERM AND COMMENCEMENT DATE OF THIS FSP

The term of this FSP will be 5 years beginning on the commencement date. The commencement date for the term of this FSP is the date the FSP is approved.

4.0 FOREST DEVELOPMENT UNIT

Under FRPA licensees must identify areas where forest development (i.e. harvesting and road construction activities) may occur. These areas are referred to as Forest Development Units (FDU).

This plan will have one FDU which will cover the whole CFA (Appendix 1). The FDU will have results and/or strategies that are developed to meet Objectives Set by Government in the *Forest Planning*

and Practices Regulation (FPPR), and for Government Objectives that are the result of Government Actions Regulation.

Appendix 1 Forest Development Unit Map illustrates the area that this FSP applies to as well as the location of the following items that are in effect prior to the submission date:

- L1 Lakes
- Ungulate winter range areas
- Scenic areas
- Community watersheds
- Old growth management areas

5.0 RESULTS AND STRATEGIES

All results or strategies are applicable across the entire FDU unless otherwise specified.

5.1 LANDSCAPE BIODIVERSITY OBJECTIVES FOR THE CFA

Legal Reference:

- 1) Order Establishing Provincial Non-Spatial Old Growth Objectives, June 30, 2004.
- 2) Order to Establish the Crescent Spur, Lower Morkill Cushing, North Trench and Goat Landscape Unit Objectives, January 30, 2006.

The holder of this FSP will comply with the objectives set out in the orders referenced in Section 5.1 of this FSP. In support of this compliance the holder of this FSP will:

- a) for the landscape units where old growth management areas have not been spatialized (East Twin-McKale and McBride-Dunster), maintain the target portion of old forest stands by BEC variant and landscape unit shown in Table 1. in accordance with the requirements and variances set out in the Provincial Non-Spatial Old Growth Order.

Table 1. Amount of Old Forest in the FDU for each NDT and BEC Zone

Landscape Unit	BEO	NDT	BEC Subzones and Variants	Old Seral Stage Age (years)	Target%	Recruitment Applies	Amount of Old 2015 (ha)	Amount of Old 2015 (%)
East Twin-McKale	Low	2	ESSFmm1	>250	>9	No	560	16%
		2	ICHmm	>250	>9	Yes	0	0%
		1	ICHwk3	>250	>13	No	939	37%
McBride-Dunster	Low	2	ESSFmm1	>250	>9	No	427	17%
		2	ICHmm	>250	>9	No	1104	19%
		1	ICHwk3	>250	>13	Yes	0	0%
		3	SBSdh1	>140	>11	No	374	44%
		2	SBSvk	>250	>9	Yes	0	0%

- b) In the case where “recruitment applies” in Table 1, the holder of this FSP will ensure that mature stands (see Table 3) are maintained at target % levels indicated in Table 1. Stands that are at an age that is closer to the old forest age will be preferred in this recruitment strategy.
- c) apply strategies included in Section 5.4, 5.5 and 5.6 of this FSP.

Map Reference: OGMA identified on FSP content maps.

5.2 OBJECTIVES SET BY GOVERNMENT FOR SOILS

Legal Reference: FPPR Section 5 and 12.2

For the objective for soils that is set out in Section 5 of the FPPR, the holder of this FSP will comply with Section 35 and 36 of the FPPR.

5.3 OBJECTIVES SET BY GOVERNMENT FOR WILDLIFE

1) Legal Reference: GAR Order - Ungulate Winter Range #U-7-003 Mountain Caribou - Upper Fraser, Hart Ranges and Mount Robson Planning Units – December 14, 2005.

The holder of this FSP will comply with the General Wildlife Measures included in the order that is referenced in section 5.3 1) of this FSP.

2) Legal Reference: Notice - Indicators of the Amount, Distribution and Attributes of Wildlife Habitat Required for the Survival of Species At Risk in the Headwaters Forest District, under the authority of FPPR Section 7(2).

In accordance with the notice that is referenced in section 5.3 2) of this FSP the strategies that apply to the areas of planned road and harvest to be carried out by the holder of this FSP in the portion of the FDU that intersects with the Hart Range Herd and Caribou Population ID 1745 are:

Until such time that Government has identified Ungulate Winter Habitat or Wildlife Habitat Areas that replace this Notice:

- a) When road construction or harvest is proposed in areas that meet the attributes in Table 2, or when mineral licks are encountered during the planning of road and harvest areas:

Table 2: Description of Species At Risk Habitats for Mountain Caribou Calving and Rutting Ranges.

SAR Habitat	Slope	Forest Cover	Stand Age	Elevation	Other
Calving Range	Generally <35%	Subalpine Forest	NA	>1100m.	Convex rather than concave topography, alpine or open subalpine forest.
Rutting Range			>120yrs		

- i. Comply with recommendations included in a Mountain Caribou Habitat Evaluation that is completed by a Qualified Registered Professional(QRP).
- b) If a previously unidentified Mountain Caribou habitat feature is encountered by the Holder of this FSP while conducting a primary forest activity, operations will stop or be modified to protect the feature until a Mountain Caribou field evaluation is completed by a QRP. Operations may recommence once the site plan complies with recommendations made in the Mountain Caribou field evaluation.

5.4 OBJECTIVES SET BY GOVERNMENT FOR WATER, FISH, WILDLIFE AND BIODIVERSITY IN RIPARIAN AREAS (FPPR SECTIONS 8 AND 12.3)

Definitions:

Active Fluvial Unit (AFU): For the purposes of this Strategy, AFU is defined as hydrogeomorphically active landforms including alluvial fans and floodplains (FPPR47(1)).

AFU Margin: For the purposes of this Result and Strategy, AFU Margin is the total extent of the active fluvial unit.

Large Stream: a classifiable stream with bank width =>1.5m.

Small Stream: a classifiable stream with bank width <1.5m.

In relation to the objective set by government for water, fish, wildlife, and biodiversity within riparian areas set out in section 8 of the FPPR, the strategies that apply to the areas of primary forest activity carried out by the holder of this FSP in the FDU are, subject to paragraph 5.4.1, the requirements of section 47 to 51 and 53 of the FPPR.

5.4.1 For the purposes of section 12.3 (6) of FPPR and to meet the requirements of 12 (3) of the FPPR, the strategies for retention of trees in riparian management zones are:

- (a) to maintain stability and natural sediment regulation processes on all Large Streams, the following will apply:
 - (i) retain and protect mature timber and other vegetation within 1 co-dominant tree height of the AFU Margin, or
 - (ii) in the case where a QPR completes an assessment of the AFU, recommendations made as a result of this assessment will be followed.

- (b) for areas within 5 m of all Small Streams, retain brush species, Layer 2, 3, and 4 conifer stems, and non-commercial stems, unless:
 - (i) establishing stream crossings,
 - (ii) providing a safe escape route when carrying out hand falling,
 - (iii) carrying out cable or aerial yarding across or adjacent to the stream
 - (iv) removing trees to address a safety concern, or
 - (v) carrying out vegetation management treatments to meet free growing requirements, and

- (c) for areas within 10 m of an S4 stream, retain over the length of each stream within the cutblock, an average of not less than 15 Layer 1 trees per 100m of stream length on both sides of the stream, unless:
 - (i) the trees to be retained are infested or diseased by a forest health agent that would spread if the trees were not removed,
 - (ii) within 5 m of either side of a skid crossing, or within the right-of-way of a stream crossing,
 - (iii) the stream reach is located in a harvest unit that is being harvested by a cable or an aerial yarding system,
 - (iv) there are an insufficient number of overstory stems found within 10 m of the stream in which case the existing preharvest Layer 1 trees within 10m of the stream will be retained,
 - (v) the trees are removed because they are danger trees.

5.5 OBJECTIVES SET BY GOVERNMENT FOR WILDLIFE AND BIODIVERSITY – LANDSCAPE LEVEL

Legal Reference:

- 1) FPPR Section 9 and Section 12.4

In relation to the objective set by government for wildlife and biodiversity at the landscape level set out in section 9 of the FPPR, the strategies that apply to the areas of the primary forest activity in the FDU are the same as the requirements of Sections 64 and 65 of the FPPR.

The strategies included in Section 5.1, 5.4 and 5.6 of this FSP contribute to meeting this Government Objective.

For the purposes of FPPR64(2)(a)(ii), seral stage and seral stage distribution is defined by natural disturbance type and biogeoclimatic subzone and variant from the *Biodiversity Guidebook*. For the FDU for this FSP, the following tables have been extracted from the *Biodiversity Guidebook*:

Table 3 shows the age range used to classify forested stands into seral stages: early, mature or old.

Table 3. Definition of Seral Stages

NDT	BGC	Early	Mature	Old
		Forest Age in Years		
1	ESSFwc 3	0 - 119	120 - 249	250 +
	ESSFwk 1	0 - 119	120 - 249	250 +
	ICH wk 3	0 - 99	100 - 249	250 +
2	ESSFmm 1	0 - 119	120 - 249	250 +
	ICH mm	0 - 99	100 - 249	250 +
	SBS vk	0 - 99	100 - 249	250 +
3	SBS dh 1	0 - 99	100 - 139	140 +

Seral stage distribution by Natural Disturbance Type (NDT) is compared against targets from the *Biodiversity Guidebook*, Biogeoclimatic (BGC) zone and landscape unit (LU), biodiversity emphasis option (BEO) [low (L), intermediate (I) or high (H)] as shown in Table 4. The minimum requirement for the old seral stage is included in the "Mature + Old" category. For example, in NDT 1 ICH BGC zone intermediate BEO LU the seral stage distribution targets are:

- Less than 30% early seral stage;
- Greater than 34% in mature and old seral stages; and
- Greater than 13% in old seral stage.

Table 4. Seral Stage Distribution Targets

Targets illustrated in Table 4 are based on % of forested area.

NDT	BGC	Early			Mature + Old			Old			Table in <i>Biodiversity Guidebook</i>
		L	I	H	L	I	H	L	I	H	
1	ICH	n/a	< 30	< 23	> 17	> 34	> 51	> 13	> 13	> 19	3
1	ESSF	n/a	< 22	< 17	> 19	> 36	> 54	> 19	> 19	> 28	3
2	ICH	n/a	< 36	< 27	> 15	> 31	> 46	> 9	> 9	> 13	7
2	SBS	n/a	< 36	< 27	> 15	> 31	> 46	> 9	> 9	> 13	7
2	ESSF	n/a	< 36	< 27	> 14	> 28	> 42	> 9	> 9	> 13	7
3	SBS	n/a	< 54	< 40	> 11	> 23	> 34	> 11	> 11	> 16	11
3	ESSF	n/a	< 46	< 35	> 14	> 23	> 34	> 14	> 14	> 21	11
3	ICH	n/a	< 46	< 35	> 14	> 23	> 34	> 14	> 14	> 21	11

Patchsize distribution is compared against ranges outlined the *Biodiversity Guidebook* based on NDT. The patchsize targets for NDT 1, 2 and 3 are shown in 5. For example, in NDT 1 the *Biodiversity Guidebook* suggests between 30 and 40% of forested area are in patches less than 40 ha.

Table 5. Patchsize Distribution Targets

NDT	Table in <i>Biodiversity Guidebook</i>	% Forest Area within LU		
		< 40 ha	40 - 80 ha	80 - 250 ha
1	4	30 - 40 %	30 - 40%	20 - 40%
2	8	30 - 40%	30 - 40%	20 - 40%
3	12	20 - 30%	25 - 40%	30 - 50%

5.6 OBJECTIVES SET BY GOVERNMENT FOR WILDLIFE AND BIODIVERSITY – STAND LEVEL

Legal Reference: FPPR Section 9.1, Section 12.5(1), Section 12.5(2)

For the purposes of the objective set by government for wildlife and biodiversity at the stand level set out in section 9.1 of the FPPR, the strategies that apply to areas of the primary forest activity carried out by the holder of this FSP and in the FDU are:

A Holder of this FSP will comply with FPPR Sections 66.

For the purposes of section 12.5(2) of the FPPR, in relation to the objective set by government for wildlife and biodiversity at the stand level set out in section 9.1 of the FPPR, the holder of this FSP and in the FDU may harvest trees within a designated Wildlife Tree Retention Area if the purpose of the harvesting is to:

- a) Remove trees that contain insect populations that constitute a threat to forest health,
- b) recover stems previously killed by a disturbance that are suitable habitat for a known forest health risk,
- c) remove a safety hazard

and, in the opinion of a qualified registered professional:

- a) the harvested portion of the Wildlife Tree Retention Area is replaced with an equivalent or other suitable Wildlife Tree Retention Area, unless
- b) the trees on the Net Area to be Reforested (NAR) of the cutblock to which the Wildlife Tree Retention Area relates, has developed attributes that are consistent with a mature seral condition.

5.7 OBJECTIVES SET BY GOVERNMENT FOR CULTURAL HERITAGE RESOURCES

Legal Reference: FPPR Section 10 - The objective set by government for cultural heritage resources is to conserve, or, if necessary, protect cultural heritage resources that are:

(a) the focus of a traditional use by an aboriginal people that is of continuing importance to that people, and

(b) not regulated under the Heritage Conservation Act.

For the purposes of this strategy, the following definitions apply:

“cultural heritage resource” refers only to those resources that are the focus of a traditional use by an aboriginal people that are of continuing importance to that people, and not regulated under the *Heritage Conservation Act*.

A **“cultural heritage resource evaluation”** (CHRE) is a process conducted by a qualified person and consisting of the following steps:

- i. Complete a referral to the affected First Nations and solicit input.
- ii. Record the location of the cultural heritage resource.
- iii. Evaluate the direct impact of the planned forest harvesting or road building activity on the cultural heritage resource.
- iv. Prepare recommendations to mitigate the impact on, conserve or, if necessary, protect, the cultural heritage resource considering: the relative value or importance of the cultural heritage resource to a traditional use by an aboriginal people; the relative abundance or scarcity of the cultural heritage resource; the historical extent of the traditional use of the cultural heritage resource; and, the impact that conserving or protecting the cultural heritage resource has on the agreement holder’s timber harvesting rights.
- v. Communicate the outcomes of this evaluation to the First Nation in whose affected traditional territory the area lies.

A **“qualified person”** is an individual who has the necessary training, ability and experience that makes the person competent to carry out the CHRE. This person is either authorized by the affected First Nation or is a Qualified Professional.

In relation to the objective set by government for cultural heritage resources set out in the section 10 of the FPPR, the strategies that apply to the FDU are:

(a) The Holder of this FSP will complete a referral of road construction and harvest plans to affected First Nation bands, seeking information related to the existence or potential existence of cultural heritage resources (CHRs) in the area where roads or cutblocks are planned.

(b) Prior to the construction of a road or harvest of a cutblock, the Holder of this FSP will conduct a Cultural Heritage Resource Evaluation (CHRE) if, for the area being planned for road construction and harvest:

- i. a cultural heritage resource is identified that has not been previously evaluated, or
- ii. the area is located in “high potential” based on Forest District archaeological impact assessment predictive models approved by the appropriate government agency for use in the area of this FDU, or

- iii. site specific information regarding a cultural heritage resource is brought to the attention of the Holder of this FSP by First Nations, government employees or other individuals.

(c) In the case that construction of a road or harvest of a cutblock is located in an area described by (ii), and a First Nation advises the Holder of the FSP that a CHRE is not required, then a CHRE will not be carried out.

(d) In the case where the affected First Nation does not respond to the referral and the location of the CHR is identified in accordance with part (b) of this strategy, the Holder of this FSP will complete a CHRE with an otherwise qualified person without First Nation involvement.

The Holder of this FSP will implement the recommendations that are communicated in the CHRE.

(e) If a previously unidentified CHR is encountered by the Holder of this FSP while conducting a primary forest practice, operations will cease or be modified to protect the resource until a CHRE can be carried out. Operations will recommence once the site plan complies with recommendations made in the CHRE.

5.8 OBJECTIVES SET BY GOVERNMENT FOR VISUAL QUALITY OBJECTIVES AND OBJECTIVES IN SCENIC AREAS.

Legal Reference: FRPA Section 181, FPPR 9.2, GAR Section 17; DM 14 January 1998

In relation to a visual quality objective, the result for the identified FDU is:

i) that a planned cutblock or road will be designed and implemented to comply with the category of visually altered forest landscape (as set out in section 1.1 of the Forest Planning and Practices Regulation as of the date of submission of this FSP for approval) applicable to the visual quality objective illustrated on the FDU Maps included in Appendix 1 of this FSP.

5.9 RECREATION RESOURCES (FRPA S181)

In relation to the objectives referred to in section 56, 180, and 181 of the FRPA for recreation sites, recreation trails, and interpretative forest sites, the strategies that apply to the FDU and the holder of this FSP are:

Definitions:

forest health factors: means biotic and abiotic influences on a forest that have an adverse effect on the health of trees and other plants (FPPR Definitions).

(a) If harvesting or road construction is proposed within 100 m of a recreation site or recreation trail, the holder of this FSP will ensure:

- i. no harvesting occurs if stand damage from forest health factors is less than 10% of the merchantable stems per hectare;
- ii. the selection silviculture system will be used if stand damage from forest health factors is greater than or equal to 10% of the merchantable stems per hectare;
- iii. clear cutting will be used if stand damage from forest health factors is greater than 40% of the merchantable stems per hectare;
- iv. temporary road construction or access control will be implemented,
- v. the Holder of this FSP will repair any damage to the recreation site or trail due to road construction or harvest activities concurrent with these activities.

5.10 OBJECTIVES FOR WATER

5.10.1 OBJECTIVES IN RESPECT OF COMMUNITY WATERSHEDS.

The objective set by government for water being diverted for human consumption through a licensed waterworks in a community watershed is to prevent the cumulative hydrological effects of primary forest activities within the community watershed from resulting in:

- (a) a material adverse impact on the quantity of water or the timing of the flow of the water to the waterworks, or
- (b) the water from the waterworks having a material adverse impact on human health that cannot be addressed by water treatment required under
 - i. an enactment, or
 - ii. the licence pertaining to the waterworks.

Definitions:

Road Risk: Risk is the chance of injury or loss as defined as a measure of the probability and the consequence of an adverse effect to health, property, the environment, or other things of value (as described for Risk in Land Management Handbook 56, page 6). Road Risk will be determined by a combination of hazard and consequence.

In relation to the objective set by Government for water in Community Watersheds, the Holder of this FSP will comply with sections 59 through 61 of the FPPR.

In addition, prior to harvest and road construction within a Designated Community Watershed that:

- a) is defined in section 8.2(1) of the FPPR;
- b) contains a licensed waterworks through which water is being diverted for human consumption.

the Holder of this FSP will:

- a) complete a watershed assessment by a Qualified Registered Professional that provides recommendations regarding primary forest activities that could result in
 - i. a material adverse impact on the quantity of water or the timing of the flow of the water from the waterworks, or

- ii. the water from the waterworks having a material adverse impact on human health that cannot be addressed by water treatment required under (i) an enactment, or (ii) the licence pertaining to the waterworks;
- b) ensure that primary forest activities are planned and conducted in compliance with the assessment recommendations.
- c) Complete reassessment every 5 years or consistent with frequency recommended in the watershed assessment.

The Holder of this FSP will complete road inspections in the Community Watershed to monitor sediment sources and prescribe maintenance or deactivation activities designed to minimize sediment delivery to streams. Road inspections will be scheduled according to Road Risk:

- a) High Road Risk - annual inspections or after a large storm cycle.
- b) Medium Road Risk - biannual inspection
- c) Low Road Risk - inspection every 5 years.

Recommendations made during road inspections, for roads under the control of the Holder of this FSP, will be completed prior to the next freshet.

5.10.2 PROTECTION OF LICENCED WATERWORKS

The Holder of this FSP will comply with FPPR 60(1) and 60(2), and in addition will:

During the preparation of road and harvest plans,

- i. assess whether there are known water licenses that may be impacted,
- ii. complete a referral to known water license holders, and
- iii. implement agreements made during the referral.

If agreement cannot be made with the water licence holder or circumstance warrants,

- i. instruct a QRP to complete an assessment of proposed activities as they relate to values associated with the water licence and make recommendations to ensure there will be no damage to the licensed waterworks.
- ii. Comply with recommendations provided by the assessment completed by the QRP.

6.0 MEASURES TO PREVENT THE INTRODUCTION OR SPREAD OF INVASIVE PLANTS (FRPA S.47, FPPR S. 17)

Invasive plants are non-native plant species that have the potential to cause detriment to humans, animals or ecosystems, resulting in negative economic, social, and environmental impacts. In many cases, these plant species are able to establish quickly and easily, particularly on disturbed sites (Invasive Species Council of British Columbia 2013).

Legal Reference

FRPA Section 47

FPPR Section 17

Invasive Plants Regulation

Measures

The Holder of this FSP will take the following actions with regards to the introduction or spread of invasive plants as specified by the Invasive Plants Regulation (B.C. Reg. 18/2004 effective January 31, 2004)

Assessment

- a) before the FSP Holder carries out or authorizes primary forest activities within an FDU, the FSP Holder will check the provincial Invasive Alien Plant Program (IAPP) for the presence of invasive plant species in the area proposed for development;
- b) Ensure that all staff and contractors working within the agreement area are familiar with the list of potential invasive plants, and can identify these species in the field. This will be achieved by providing field identification materials available at the IAPP as part of prework meeting materials.

Reporting

- a) report new invasive plant infestation sites within one year of discovery through the provincial Invasive Alien Plant Program (IAPP) Application.

Prevention of Introduction and Spread

- a) Minimize soil disturbance in riparian areas by adhering to Section 5.4 of this Forest Stewardship Plan. Such action is intended to maintain riparian areas in a state that is less suitable for the establishment of invasive plants.
- b) Where safe and practicable, retain natural regeneration and understory vegetation at all stages of primary forest activity to prevent the creation of disturbance that is suitable for the establishment of invasive plants.
- c) Where exposed soil is created through road construction or harvest operations, seed the exposed soil within 1 year of completion of forest operations. Road running surface will be included in the area requiring seeding unless further use of the road is planned within 12 months of seeding operations. This action is intended to reduce the area of ground suitable for colonization by invasive plants.

- d) Use seed which meets or exceeds Canada Common No.1 Forage Mix specifications stated in the Canada Seeds Act to ensure that invasive species are not introduced through seeding activities.
- e) Request a Certificate of Seed Analysis for all seed mixes to be purchased and reject those that contain invasive plant material.
- f) Monitor the areas that were seeded in c) one year after application and repeat additional seeding if revegetation has not been achieved.
- g) Take precautions to prevent the spread of invasive plants if such species are identified on a worksite. Such precautions may include, but are not limited to, changing the season of operation, cleaning equipment (with or without water) following completion of work, and avoiding the location of landings or storage areas where invasive plants are present.

7.0 MEASURES TO MITIGATE THE LOSS OF NATURAL RANGE BARRIERS (FPPR S18)

The following measures will be taken in all FDU areas that contain or are adjacent to range tenures, to mitigate the effect of removing or rendering ineffective natural range barriers that are being relied upon pursuant to range tenures inside or immediately adjacent to the FDU:

Definitions

Natural Range Barrier: a river, a rock face, dense timber or other naturally occurring feature that stops or significantly impedes livestock movement to and from an adjacent area.¹

Measures: Before carrying out or authorizing primary forest activities, the FSP Holder will:

- a) Complete a referral to the range tenure holder of primary forest activities within or adjacent to (within 500m) their range tenure and request that the range tenure holder identify the location of Natural Range Barriers that may be rendered ineffective by the proposed primary forest activities;
- b) Where a range tenure holder indicates that primary forest activities may remove or render ineffective a Natural Range Barrier, strategies will be developed to minimize or mitigate the potential impact of the proposed activities on the natural range barrier.
- c) Implement strategies in accordance within the timelines agreed to with the range tenure holder.

¹ Ministry of Forests and Range Definitions of Forestry Terms as referenced in FRPA General Bulletin #21, February 2009

8.0 STOCKING REQUIREMENTS (FRPA SECTION 29(2), FPPR SECTION 16 AND 44(1))

Where a holder of this FSP is required under the Act and Regulations to establish a free growing stand in respect of timber harvested under this FSP, the holder will do so in accordance with Section 8.0 and Appendix 2 of this FSP. These standards are applicable across the entire Forest Development Unit of the CFA and are consistent with the CFA_K1H Management Plan.

8.1 GENERAL STANDARDS

8.1.1 EVEN-AGED STOCKING STANDARDS

Even-aged stocking standards, for the appropriate biogeoclimatic zone/variant and site series, will be applied, as permitted under this FSP, to even aged systems as described in the Silviculture Systems Guidebook.

8.1.2 UNEVEN-AGED STOCKING STANDARDS

Uneven-aged stocking standards, for the appropriate biogeoclimatic zone/variant and site series, will be applied, as permitted under this FSP, to uneven aged systems as described in the Silviculture Systems Guidebook and tree retention is not a result of commercial thinning, removal of individual trees, or a similar type of intermediate cutting.

8.1.3 BROADLEAF STOCKING STANDARDS

Broadleaf stocking standards for the appropriate biogeoclimatic zone/variant and site series will be applied as permitted under this FSP where the broadleaf tree species comprise more than 80% of the gross volume of the stand.

8.1.4 MINIMUM INTER-TREE DISTANCE

Unless otherwise specified by this FSP, the MITD defaults to 2.0m for all stocking standards.

Subject to a preharvest evaluation by a Qualified Registered Professional and as identified in a Site Plan, the MITD will be reduced to 1.5m to provide an opportunity to advance the level of stocking standard achievement (improve site occupancy) associated with the following:

Site conditions that are negatively impacting the achievement of the stocking standard objective:

- hygric or wetter sites
- cluster planting (e.g. wildlife habitat)
- very rocky soils
- areas with expected high cattle trampling damage to seedlings

- deer browse
- sites with a significant number of wildlife trees
- riparian areas with a high residual component
- sites that will be stumped to manage root rot
- areas with high residual regeneration that are negatively impacting the achievement of target stocking density
- areas with high unavoidable slash loading
- very harsh sites where protected microsites are critical (e.g. shade, snow creep).
- mechanical site preparation associated with mounding or patch scarification
- coppice-regenerating birch: two trees within each clump may be tallied as well-spaced regardless of their inter-tree distance. However, the next well-spaced tree must be at least 2m away.

8.1.5 BROADLEAF FREE GROWING HEIGHTS

Unless otherwise specified by this FSP, the broadleaf free growing height will be equal to the tallest conifer height for the site series/ stocking standard ID.

8.1.6 MAXIMUM DENSITY

Unless otherwise specified by this FSP, the maximum density for Interior Lodgepole pine leading stands is 20,000 countable stems per hectare. Lodgepole pine leading stands are stands where Lodgepole pine is greater than and/or equal to 80% of the total trees.

Unless otherwise specified by this FSP, the maximum density number for aspen and all other conifer species in non-lodgepole pine leading stands and mixed lodgepole pine stands is 10,000 countable stems per hectare.

Unless otherwise specified by this FSP, no maximum density number is defined for birch species. The rapid self-thinning characteristics of Birch species lend themselves well for natural thinning².

8.1.7 FREE GROWING DAMAGE CRITERIA

Even aged age class 1 stands, unless otherwise specified by this FSP, at the time of the free growing survey, the following free growing damage criteria will apply: Appendix 5 of *Establishment to Free Growing Guidebook: Prince George Forest Region* (revised edition May 2000).

² Paper Birch Manager's Handbook for British Columbia, FRR271-1, page 75.

Uneven-aged stands, layer 3 & 4 advance regeneration: unless otherwise specified by this FSP, at the time of the free growing survey the following free growing damage criteria will apply: Appendix 10, Table A10-1 of the *Establishment to Free Growing Guidebook: Prince George Forest Region (revised edition May 2000)*.

A tree susceptible to dwarf mistletoe that is located within 10 m of an overtopping tree, which is infected with dwarf mistletoe, will not be considered susceptible if the overtopping infected tree is part of an approved cut block boundary or is reserved from harvest within the harvestable area to address other non-timber objectives, as permitted under this FSP.

8.1.8 WHITE PINE

Where Pw is listed as an acceptable species, planted white pine blister rust resistant stock will be considered preferred to a maximum of 50% of the total preferred and acceptable well spaced stems.

8.1.9 MILESTONE DATES

Regeneration delay will be 4 years unless the site plan identifies natural regeneration for the block or SU then regeneration delay will be set up to a maximum of 7 years.

In accordance with FPPR 44(1), applicable stocking standards and free growing height will be met by a free growing date of 20 years.

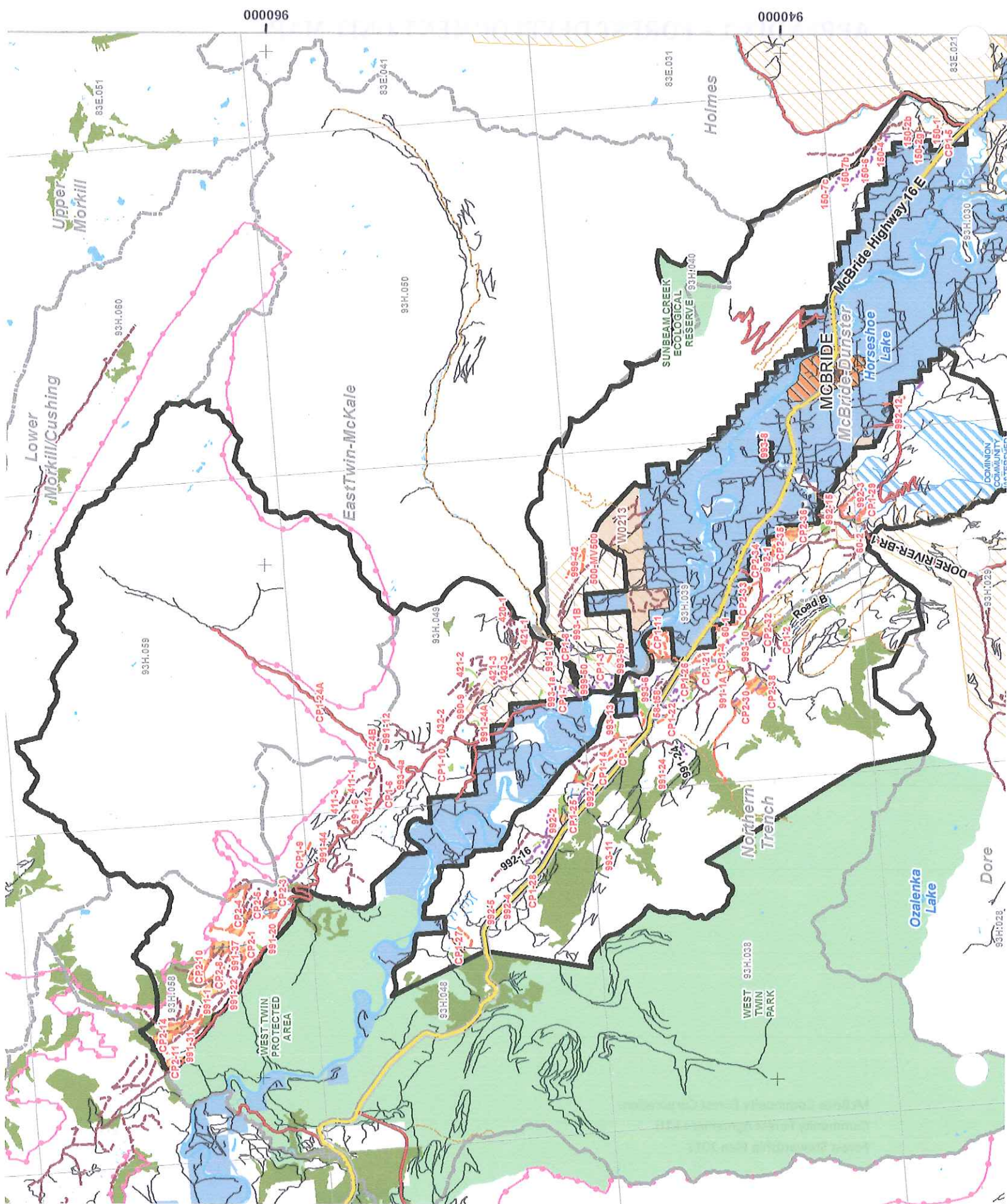
8.1.10 RIPARIAN MANAGEMENT CONSIDERATIONS

In order to adequately manage riparian values along streams, aspen, cottonwood, birch, willow and alder are not considered deleterious brush competition when conducting a free growing survey within 5m of S4, S5 and S6 streams.

APPENDIX 1 – FOREST DEVELOPMENT UNIT MAP

Legend

- McBride
- Active C
- Propost
- OGMA
- McBride
- Ungulat
- Range I
- Commu
- Landsc
- Private
- Woodlo
- Parks
- WTP
- Lakes a



960000

940000

Holmes

East Twin-McKale

Northern Trench

McBRIDE
McBride Dunster

McBride Highway 76 E

Horseshoe Lake

Ozalanka Lake

Dore

SUNBEAM CREEK
ECOLOGICAL
RESERVE 93H.040

WEST TWIN
PROTECTED
AREA

WEST TWIN
TWIN
PARK

93H.029

93H.023

93H.030

83E.021

83E.061

93H.060

93H.059

93H.058

93H.050

93H.049

83E.031

150-76

150-75

150-6

150-4

150-2b

150-23

150-1

CP1-5

93H.030

93E.021

93H.029

93H.023

93H.033

93H.033

93H.033

93H.033

93H.033

93H.033

93H.033

93H.033

93H.033

93H.033

93H.033

93H.033

93H.033

93H.033

APPENDIX 2 – STOCKING STANDARDS

Ministry of Forests and Range

FDP & FSP Standards Report

Page: _____
 Date Printed: _____
 User Id: _____
 Database: _____
 Report Id: _____
 File: _____

BGC Sub Zone: _____
 Reg Unit, Client, Standards Id _____

District Default Ind: Both

Species ----- Stocking (w/s) ----- Offsets ----- Max Density ----- Post Spacing -----

BEC	Layer	Pref Spp/Ht	Acc Spp/Ht	Intq	Min Stck	Min Pref	Min Horz	Regen Obl.	Ind	Eri No.	Lt No.	Rg	Eri	Lt	FG	FG	FG	Ht Rel to Comp	Max Conf	Min	Max	Resid BA	Effective Date	Expiry Date

C 2007-2012 FSP Amendment: 0 FSP ID: 175 Status: Approved

AUNITY FOREST,																								
1 01	ESSF mm 1 01	I	BL(.8) SE(.8)	PLI(1.6)	1,200	700	600	1.6	Y	4	4	20	125%	10,000	10,000	2008-03-04	2008-03-04							
1 02	ESSF mm 1 02	I	BL(.6) PLI(1.2) SE(.6)		1,000	500	400	1.6	Y	7	7	20	125%	10,000	10,000	2008-03-04	2008-03-04							
1 03	ESSF mm 1 03	I	PLI(1.2) SE(.6)		1,000	500	400	1.6	Y	4	4	20	125%	10,000	10,000	2008-03-04	2008-03-04							
1 04	ESSF mm 1 04	I	BL(.8) SE(.8)		1,200	700	600	1.6	Y	4	4	20	125%	10,000	10,000	2008-03-04	2008-03-04							
1 05	ESSF mm 1 05	I	BL(.8) SE(.8)		1,200	700	600	1.6	Y	4	4	20	125%	10,000	10,000	2008-03-04	2008-03-04							
1 06	ESSF mm 1 06	I	BL(.8) SE(.8)		1,200	700	600	1.6	Y	4	4	20	125%	10,000	10,000	2008-03-04	2008-03-04							
1 07	ESSF mm 1 07	I	BL(.6) SE(.6)		400	200	200	1.6	Y	4	4	15	125%	10,000	10,000	2008-03-04	2008-03-04							
01	ESSF wk 1 01	I	BL(.8) SE(.8)		1,200	700	600	1.6	Y	4	4	20	125%	10,000	10,000	2008-03-04	2008-03-04							
02	ESSF wk 1 02	I	BL(.6) SE(.6)		1,000	500	400	1.6	Y	7	7	20	125%	10,000	10,000	2008-03-04	2008-03-04							
03	ESSF wk 1 03	I	BL(.8) SE(.8)		1,200	700	600	1.6	Y	4	4	20	125%	10,000	10,000	2008-03-04	2008-03-04							
04	ESSF wk 1 04	I	BL(.8) SE(.8)		1,200	700	600	1.6	Y	4	4	20	125%	10,000	10,000	2008-03-04	2008-03-04							
05	ESSF wk 1 05	I	BL(.8) SE(.8)		1,200	700	600	1.6	Y	4	4	20	125%	10,000	10,000	2008-03-04	2008-03-04							
06	ESSF wk 1 06	I	BL(.6) SE(.6)		1,000	500	400	1.6	Y	4	4	20	125%	10,000	10,000	2008-03-04	2008-03-04							
07	ESSF wk 1 07	I	BL(.6) SE(.6)		1,000	500	400	1.6	Y	4	4	20	125%	10,000	10,000	2008-03-04	2008-03-04							
1	ICH mm 01	I	FDI(1.4) PLI(2.0) SX(1.0) CW(1.0)	BL(1.0) HW(1.0)	1,200	700	600	1.6	Y	4	4	15	150%	10,000	10,000	2008-03-04	2008-03-04							
2	ICH mm 02	I	FDI(1.4) PLI(1.4) SX(1.0) CW(1.0)	HW(.8) CW(.8) SX(.8)	1,000	500	400	1.6	Y	4	4	15	150%	10,000	10,000	2008-03-04	2008-03-04							
3	ICH mm 03	I	FDI(1.4) HW(1.0) PLI(2.0)	BL(1.0) CW(1.0)	1,200	700	600	1.6	Y	4	4	15	150%	10,000	10,000	2008-03-04	2008-03-04							
4	ICH mm 04	I	SX(1.0) CW(1.0)	BL(1.0) PLI(2.0) PW(2.0)	1,200	700	600	1.6	Y	4	4	15	150%	10,000	10,000	2008-03-04	2008-03-04							
5	ICH mm 05	I	HW(1.0) SX(1.0) FDI(1.4)	BL(1.0) PLI(2.0)	1,200	700	600	1.6	Y	4	4	15	150%	10,000	10,000	2008-03-04	2008-03-04							
6	ICH mm 06	I	HW(1.0) SX(1.0) FDI(1.4)	BL(1.0) HW(.8) PLI(1.4) SX(.8)	1,000	500	400	1.6	Y	4	4	15	150%	10,000	10,000	2008-03-04	2008-03-04							

Ministry of Forests and Range FDP & FSP Standards Report

Page: _____
 Date Printed: _____
 User Id: _____
 Database: _____
 Report Id: _____
 File: _____

BGC Sub Zone:

g Unit, Client, Standards Id

District Default Ind: Both

BEC	Layer	Pref Sppt/Ht	Acc Sppt/Ht	Stocking (w/s)		Offsets		Max Density		Resid BA	Effective Date	Expiry Date					
				Min	Max	Min	Max	Min	Max				Min	Max			
7	ICH mm 07	I	PLI(1.4) SB(.8) SX(.8)	400	200	200	200	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
8	ICH mm 08	I	CW(.8) HW(.8) SX(.8)	400	200	200	200	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
1	ICH wk 3 01	I	CW(1.0) SX(1.0) FDI(1.4)	1,200	700	600	600	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
2	ICH wk 3 02	I	PLI(1.4) HW(.8) SX(.8)	1,000	500	400	400	1.5	1.5	Y	7	7	15	150%	10,000	10,000	2008-03-04
3	ICH wk 3 03	I	FDI(1.4) PLI(2.0) HW(1.0) CW(1.0) SX(1.0)	1,200	700	600	600	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
4	ICH wk 3 04	I	FDI(1.4) PLI(2.0) HW(1.0) CW(1.0) SX(1.0)	1,200	700	600	600	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
5	ICH wk 3 05	I	CW(1.0) FDI(1.4) SX(1.0)	1,200	700	600	600	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
6	ICH wk 3 06	I	CW(.8) SX(.8) PLI(1.4)	1,000	500	400	400	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
7	ICH wk 3 07	I	PLI(1.4) SX(.8) HW(.8) CW(.8)	1,000	500	400	400	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
8	ICH wk 3 08	I	CW(.8) SX(.8) BL(.8) HW(.8)	1,000	500	400	400	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
9	ICH wk 3 09	I	CW(.8) SX(.8) PLI(1.4)	400	200	200	200	1.5	1.5	Y	3	3	11	150%	10,000	10,000	2008-03-04
1	SBS dh 1 01	I	FDI(1.4) PLI(2.0) SX(1.0)	1,200	700	600	600	1.5	1.5	Y	7	7	15	150%	10,000	10,000	2008-03-04
1	SBS vk 01	I	SX(1.0) FDI(1.4) PLI(2.0)	1,200	700	600	600	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
1	SBS vk 02	I	PLI(2.0) FDI(1.4) SX(1.0)	1,200	700	600	600	1.5	1.5	Y	7	7	15	150%	10,000	10,000	2008-03-04
1	SBS vk 03	I	FDI(1.4) SX(1.0) SX(1.0) FDI(1.4)	1,200	700	600	600	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
1	SBS vk 04	I	SX(1.0) FDI(1.4) SX(1.0) PLI(2.0)	1,200	700	600	600	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
1	SBS vk 05	I	SX(1.0) PLI(2.0) SX(.8) PLI(1.4)	1,000	500	400	400	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
1	SBS vk 06	I	SX(.8) PLI(1.4) SX(1.0) PLI(2.0)	1,200	700	600	600	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
1	SBS vk 07	I	SX(1.0) PLI(2.0) PLI(1.4) SB(.8)	400	200	200	200	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
1	SBS vk 08	I	PLI(1.4) SB(.8) SX(.8)	400	200	200	200	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
1	SBS vk 09	I	PLI(1.4) BL(.8) SX(.8)	1,000	500	400	400	1.5	1.5	Y	7	7	15	150%	10,000	10,000	2008-03-04
1	SBS vk 10	I	BL(.8) SX(.8)	1,000	500	400	400	1.5	1.5	Y	4	4	15	150%	10,000	10,000	2008-03-04
200		1		600	300	250	250	1.5	1.5	N			1	2	10,000	10,000	2008-03-04
200		2		800	400	300	300	1.5	1.5	N			1	2	10,000	10,000	2008-03-04
200		3		1,000	500	400	400	1.5	1.5	N			1	2	10,000	10,000	2008-03-04
200		4		1,200	700	600	600	1.5	1.5	N			1	2	10,000	10,000	2008-03-04

**Ministry of Forests and Range
FDP & FSP Standards Report**

Page:
Date Printed:
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Database:
Report Id:
File:

BGC Sub Zone:
Org Unit, Client, Standards Id

District Default Ind: Both

BEC	Layer	Pref Spn/Ht	Acc Spn/Ht	Stocking (w/s)			Offsets			Max Density			Resid BA	Effective Date	Expiry Date	
				Targ	Min Stock	Min Pref	Min Horz	Regen Obl	Erl No	Lt No	Erl Lt	Ht Rel				Max Conf
000	1			400	200	200	1.6	N	1	2					2008-03-04	
000	2			600	300	250	1.6	N	1	2					2008-03-04	
000	3			800	400	300	1.6	N	1	2					2008-03-04	
000	4			1,000	500	400	1.6	N	1	2					2008-03-04	
000	1			400	200	200	1.6	N	1	2					2008-03-04	
000	2			500	300	250	1.6	N	1	2					2008-03-04	
000	3			700	400	300	1.6	N	1	2					2008-03-04	
000	4			900	500	400	1.6	N	1	2					2008-03-04	
000	1			300	150	150	1.6	N	1	2					2008-03-04	
000	2			400	200	200	1.6	N	1	2					2008-03-04	
000	3			600	300	300	1.6	N	1	2					2008-03-04	
000	4			800	400	400	1.6	N	1	2					2008-03-04	
000	1			300	150	150	1.6	N	1	2					2008-03-04	
000	2			400	200	200	1.6	N	1	2					2008-03-04	
000	3			500	300	300	1.6	N	1	2					2008-03-04	
000	4			600	400	400	1.6	N	1	2					2008-03-04	
000	1			200	100	100	1.6	N	1	2					2008-03-04	
000	2			300	125	125	1.6	N	1	2					2008-03-04	
000	3			300	150	150	1.6	N	1	2					2008-03-04	
000	4			400	200	200	1.6	N	1	2					2008-03-04	

End of Report

Standard s ID	BGC		Preferred Species @ Regen Delay (SPP)				Acceptable Species @ Regen Delay (SPP)				Stocking (ws)			Tree Ht > Brush (min %)				
	Zone	SZ Variant	Site Series	SPP	MIN FG HT (m)	SPP	MIN FG HT (m)	SPP	MIN FG HT (m)	TSS p+a (spb)	MSS p+a (spb)	MSS p (spb)	MITD (m)*					
				SPP	MIN FG HT (m)	SPP	MIN FG HT (m)	SPP	MIN FG HT (m)	TSS p+a (spb)	MSS p+a (spb)	MSS p (spb)						
From BCTS FSP#24	ICH	wk3	01/03/04/05	AT	2	EP	2	FDI	1.4	PLI	2	SX	1	2000	1200	1000	1.6	150
	ICH	wk3	05/07	AT	2	EP	2	PLI	1.4	SX	0.8	CW	0.8	1200	1000	800	1	150
	SBS	wk	01/03/04	AT	2	EP	2	PLI	2	FDI	1.4	SX	1	2000	1200	1000	1.6	150
	SBS	wk	02/05/07	AT	2	EP	2	PLI	2	SX	1	SX	1	2000	1200	1000	1.6	150
	SBS	wk	06/09	AT	2	EP	2	SX	0.8	PLI	1.4	PLI	1	1200	1000	800	1	150
	ICH	mm	01/04/05/06	AT	2	EP	2	FDI	1.4	PLI	2	SX	1	1600	1200	1000	1.6	150

