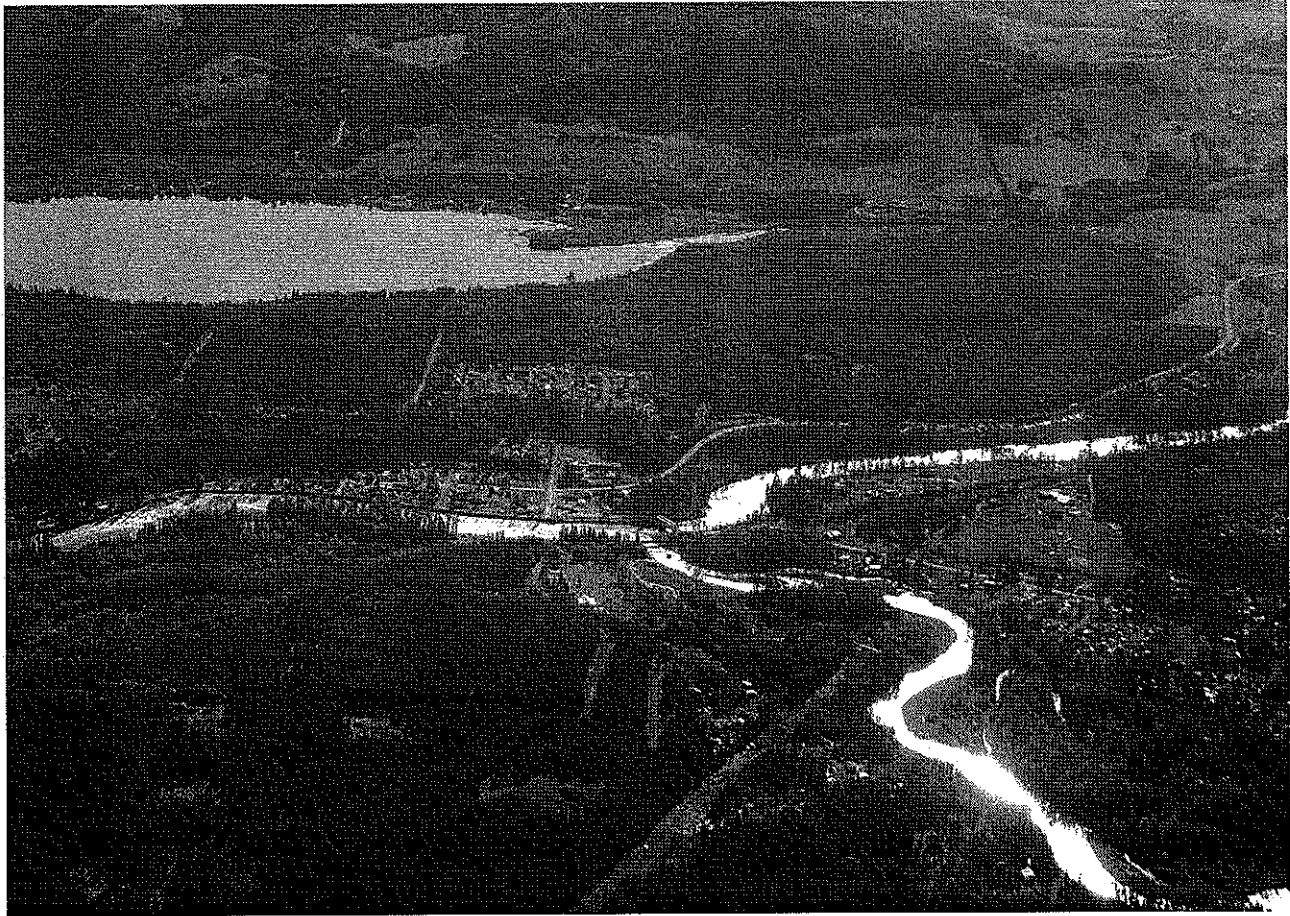


Village of Telkwa

Community Wildfire Protection Plan

October 2008



Prepared for:

Village of Telkwa
P.O. Box 220
Telkwa, BC
V0J-2X0

Prepared By:

Brad Layton, RFT
Pro-Tech Forest Resources
P.O. Box 100
Telkwa, BC
V0J-2X0

Village of Telkwa - Community Wildfire Protection Plan 2008

Table of Contents

Bibliography	2
Glossary	2
1.0 Introduction	3
2.0 Goals and Objectives	3
3.0 Area description	3
4.0 Biogeoclimatic Ecosystem Classification	3
4.1 Ecology	4
5.0 Wildfire Hazard Assessment Methodology	5
6.0 Common Wildfire Hazards	6
6.1 Railway Tracks	6
6.2 Power lines	6
7.0 Fire Weather	6
8.0 Local Fire History	7
9.0 Future Wildfire Concerns	7
9.1 Mountain Pine Beetle	7
9.1.1 Mountain Pine Beetle Life Cycles	7
9.2 Weather Trends	7
10.0 Wildfire Hazard Reduction Options	8
10.1 FireSmart Landscaping	8
10.2 Forest Fuel Modification	8
10.3 Wildfire Reduction Maintenance	10
10.4 Implications of Wildfire Hazard Reduction Work	10
11.0 Management Unit Summaries	10
11.1 Babine Lake Road	10
11.2 Good Road	11
11.3 Raymond Road	11
11.4 Tyhee East	12
11.5 Hislop	13
11.6 Telkwa North	13
11.7 Tyhee West	14
11.8 Telkwa South	15
11.9 Lawson	15
11.10 Woodmere	16
11.11 Morris	16
11.12 Skillhorn	17
11.13 Jackpine	17
11.14 Cottonwood	18
11.15 Eveling Coalmine	18
12.0 General Recommendations	19
12.1 Priority Areas for Treatment	19
12.1.1 Priority Area One – Jackpine MU	19
12.1.2 Priority Area Two – Skillhorn MU	20
12.1.3 Priority Area Three – Tyhee West MU	20
12.1.4 Priority Area Four – Tyhee North Interface Zone	21

Village of Telkwa - Community Wildfire Protection Plan 2008

12.2 Hydro Power lines.....	22
12.3 Large Landowners.....	22
12.4 Public Information and Education.....	22
12.5 Update Official Community Plan.....	23
12.6 Ministry of Forests and Range Letter Regarding Crown Land.....	23
12.7 Stakeholder Communciations.....	23
12.7 Report Distribution.....	24
12.8 Further Activities.....	24
13.0 Summary.....	25
Appendix A- Risk Assessment and Site Photographs.....	26
Appendix A Table of Contents.....	26
Appendix B List of Maps.....	112

Bibliography

A special thanks to all of those individuals who helped make this report a success. Both the Burns Lake and Clinton CWPP's were used as a reference tool for layout and inclusion of information.

Biogeographical Ecological Classification... <http://selkirk.ca/rr/bec/zones/SBS.html>

Mean annual temperature...The Weather Network

Global warming..... http://www.ec.gc.ca/climate/overview_affect-e.html

Village of Clinton Community Wildfire Protection Plan

Burns Lake Community Wildfire Protection Plan

NRCAN Funding Source

UBCM.....Funding Source

Glossary

CN.....	Canadian National Railways
CWPP.....	Community Wildfire Protection Plan
FPA.....	Fire Protection Area
GIS.....	Geographic Information Systems
Ha.....	Hectares
MPB.....	Mountain Pine Beetle
MU.....	Management Unit
OCP.....	Official Community Plan
SBS.....	Sub-Boreal Spruce
SFR.....	Surface Fuel Reduction
UBCM.....	Union of British Columbia Municipalities
FUP.....	Free Use Permit area. MOFR free use area for fire wood gatherers

1.0 Introduction

The Village of Telkwa has taken the proactive step of initiating the development of a Community Wildfire Protection Plan (CWPP) for its Fire Protection Area (FPA). One of the key recommendations from the review and subsequent report of Firestorm 2003 conducted by the honourable Gary Filmon was that communities could benefit from planning for fires and developing community protection plans.

In response to this recommendation the Provincial Government made grants available to local governments through the Union of British Columbia Municipalities (UBCM) to develop Community Wildfire Protection Plans. The Village of Telkwa is taking advantage of these grants and has initiated this CWPP with funds from this grant process.

2.0 Goals and Objectives

The goals and objectives that the Village of Telkwa hope to achieve with the development of this CWPP are:

1. Identify wildfire risk areas through ground risk assessments and Geographic Information Systems (GIS) analysis.
2. Meet the objectives in the UCBM criteria for a CWPP.
3. Provide maps of the Telkwa FPA with hazard rating information.
4. Provide recommendations to lower the high risk areas.
5. Establish a list of potential treatment areas to mitigate risk.

3.0 Area description

Telkwa is a rural community located 13 kilometres to the South East of Smithers along the Yellowhead highway 16 route to Prince Rupert in North Western British Columbia. Nestled on the banks of the Bulkley and Telkwa rivers, Telkwa is a village of approximately 1400 residents.

A great deal of Telkwa's FPA is located in sprawling developments with many areas directly interfaced with timbered and underdeveloped tracts of land. On a positive note, most of the timbered areas within the FPA consist of deciduous stands mixed with a small component of conifer.

4.0 Biogeoclimatic Ecosystem Classification

The Village of Telkwa and its FPA falls in the Sub-Boreal Spruce (SBS) biogeoclimatic ecosystem zone and the dk subzone. There is a slight transition to the mc subzone at higher elevations in the eastern most FPA areas.

The Sub-Boreal Spruce (SBS) zone occupies a dry, continental climate in the central interior of British Columbia. It occurs from valley bottom to 1350m. The zone is

situated in the rolling plateau around Prince George, west to the Coast Mountains and east to the Rocky Mountains. It is bordered along the north by the Boreal white and Black Spruce Zone and the Interior Cedar Hemlock zone. To the south, it grades into the Sub-Boreal Pine Spruce zone. The SBS is replaced by the Engelmann Spruce Subalpine Fir zone with increasing elevation.

The mean annual temperature for this zone is between 1.7 and 5C and the mean annual precipitation is between 440-900mm of which 25-50% falls as snow (Meidinger and Pojar 1991).

Meidinger and Pojar (1991) recognized ten subzones in the SBS ranging from dry to wet. Three dry subzones (SBSdw, SBSdk, SBSdh) are found along the western regions and south east along the Fraser River. Four moist subzones (SBSmh, SBSmw, SBSmk, SBSmc) are distributed throughout the region. In the northern regions, two wet subzones (SBSwk, SBSvk) around the Williston Reservoir, Takla Lake and Quesnel River.

4.1 Ecology

Zonal plant communities in the SBS are typically dominated by hybrid white spruce and subalpine fir at maturity with minor amounts of Douglas-fir in the drier subzones. Associated understory plants in the dry subzones can include Purple pea vine (*Lathyrus nevadensis*) and Pinegrass (*Calamagrostis rubescens*). Black huckleberry (*Vaccinium membranaceum*), Highbush cranberry (*Viburnum edule*) and oak fern (*Gymnocarpium dryopteris*) are common understory vegetation in the moist and wet subzones.

Site series on dry areas throughout the SBS typically have associations of lodgepole pine in the overstory and occasionally Douglas-fir. Understory plants can include common juniper (*Juniperus communis*), Cladonia (*Cladonia* spp.) and Cladina (*Cladina* spp.) lichens, feathermoss (*Pleurozium schreberi*) and step moss (*Hylocomium splendens*).

Although grasslands are rare, they are found on dry, south-facing slopes within the SBS (Steen and Coupe 1997). Typical plants on these sites can include Saskatoon (*Amelanchier alnifolia*), Rocky Mountain juniper (*Juniperus scopulorum*), slender wheatgrass (*Elymus trachycaulus*), spreading needlegrass (*Achnatherum richardsonii*).

Wet sites throughout the zone typically have site series with plant communities consisting of hybrid white spruce in the overstory. On nutrient poor sites black spruce will occasionally be a minor component of the stand. Common understory plants can include horsetail species (*Equisetum* spp.), scrub birch (*Betula glandulosa*), sedges (*Carex* spp.) and sphagnum moss (*Sphagnum* spp.). Wetlands, when they occur, typically form fens (a result of moving water).

****Information gathered from <http://selkirk.ca/rr/bec/zones/SBS.html>

5.0 Wildfire Hazard Assessment Methodology

The following steps were done to develop the Telkwa CWPP.

1. **Establishment of the CWPP boundary.** The Telkwa FPA was buffered by two kilometres to establish the wildfire interface zone for the CWPP. The FPA was then divided into subsections by geographic location, fuel type, terrain and level of development.
2. The subzones were then assessed for wildfire risk using the "*Wildland Urban Interface Wildfire Threat Worksheet*". (see appendix A)
3. The field risk assessments were then compiled and summarized to establish subzone risk rating.
4. The established subzone wildfire risk ratings were then reviewed and used to determine recommendations for potential treatment activities in the subzone to mitigate wildfire risk.
5. Completion of the draft CWPP was done and sent to appropriate persons/council for review.
6. The reviews of the draft CWPP were examined and proper changes were made.
7. Published final Village of Telkwa CWPP.

5.1 Wildfire Hazard Class Definitions

Low (<55)	Developed and underdeveloped land that will not support wildfire spread. Examples include irrigated fields, gravel pits.
Moderate (55-115)	Developed and undeveloped land that will support surface fires only. For example, grass fields with a coniferous or deciduous overstorey.
High (116-130)	Forested land that will support intermittent crown and continuous crown fires are considered high threat areas. Recently harvested areas without surface fuel treatments would be an example of a high wildfire threat area.
Extreme (>130)	Forested land that will support intermittent or continuous crown fires adjacent to and within communities, or surrounding individual homes constitutes extreme wildfire threat. Recently

harvested areas, adjacent to developments, where no slash reduction has occurred would be an example of an extreme wildfire hazard area.

6.0 Common Wildfire Hazards

6.1 Railway Tracks

Canadian National (CN) rail line passes thru the Village of Telkwa. The rail line falls into moderate threat management units in the Telkwa FPA. The railway line provides a continuous crown free corridor thru the Telkwa Village and with its proximity to the Bulkley River the two features create a fairly large firebreak. Unfortunately, railways are one of the three main ignition sources of man caused fires in BC. The Crown lands along the Railway line may be a good target for SFR treatments after the high priority areas are completed.

6.2 Power lines

Power lines are a likely ignition source within the Telkwa FPA especially if dead trees are bordering them. In areas that pine stems are immediately adjacent to power lines a clearing program should be considered. BC Hydro has right-of-way clearing programs for removing pine beetle killed trees along its exposed power line in the rest of the province.

The Village of Telkwa should open communications with BC hydro to explore what plans BC Hydro may have for any power lines within the Telkwa FPA and interface zones.

7.0 Fire Weather

Telkwa has historically mild summers and cold winters. The chart sourced from the Weather Network shows that the average summer temperature is fifteen degrees Celsius. As the residents know living in this area there can be extended period of higher temperatures but they are accounted for in the average mean temperatures used in the assessments.

	J	F	M	A	M	J	J	A	S	O	N	D
Maximum	-4	0	5	10	15	19	21	21	16	9	1	-3
Minimum	-12	-9	-5	-1	3	6	8	8	4	0	-5	-11
Mean	-8	-4	0	4	9	13	15	14	10	5	-2	-7

8.0 Local Fire History

The Local Fire history consists mainly of man caused fires (debris burning) with the large majority in the spring before greenup of the brush and grass. The Telkwa MU's fall within the R4 category of the MOFR Historical Wildfire Occurrence which translates to the second lowest level on the "*Wildland Urban Interface Wildfire Threat Worksheet*". This category is based on a summarization/compilation of historic data by the provincial government. It should be noted that in dry years the threat rating would increase on all the MU's within the Telkwa FPA.

9.0 Future Wildfire Concerns

Major Forest health issues like the mountain pine beetle, weather trends such as global warming and other natural occurrences will continue to change the wildfire threat level of Telkwa. With the mountain pine beetle epidemic rearing its head in the Bulkley Valley region it is likely that the threat levels for wildfire in the Telkwa area will increase in the coming years.

9.1 Mountain Pine Beetle

The mountain pine beetle, *Dendroctonus ponderosae*, is a small insect, less than a centimetre long, which lives most of its life under the bark of pine trees, including lodgepole, ponderosa and western white pine.

Normally these insects play an important role in the life of a forest. They attack old or weakened trees, speeding the development of a younger forest. However, unusual hot, dry summers and mild winters in central British Columbia during the last few years, along with forests filled with mature lodgepole pine, have lead to an epidemic. To date, beetles have destroyed millions of lodgepole pine in BC – the province's most commercially harvested tree.

9.1.1 Mountain Pine Beetle Life Cycles

Mountain pine beetles normally produce one generation a year. This can vary due to temperature and elevation. For example, warmer climates have been known to experience two generations a year, whereas colder climates may only experience one every two years.

9.2 Weather Trends

"Canada is blessed with a wide variety of ecosystems within its borders. Some sectors of the Canadian economy are based on its richness in natural resources. Changes in regional climate patterns may have positive and negative effects on these important ecosystems and resources. In every region and institute, Environment Canada scientists are studying the effects of climate change, while looking for ways to minimize or adapt to what the future could hold".

Source: http://www.ec.gc.ca/climate/overview_affect-e.html

In the Bulkley Valley we are seeing the impacts of Global warming mainly in the Mountain Pine Beetle epidemic. We may also experience an increase in brush and shrub growth with the milder winters. The MPB epidemic and potential longer growing season could potentially increase the available fuel levels within the Telkwa CWPP.

10.0 Wildfire Hazard Reduction Options

The objective of wildfire hazard reduction is not to stop all fires as this would be virtually impossible to achieve. Instead the objectives should be:

- To alter wildfire behaviour on forested lands adjacent to development to greatly reduce the potential for person, house and structure losses. This can be achieved thru forest fuel management.
- To allow for quick and orderly access to fires within the interface zone to localize fires and reduce spread to other areas within the CWPP zones. This can be achieved thru establishing travel routes, water sources, and firebreaks throughout the CWPP area.
- To promote FireSmart principles in new development areas and new house construction. This could be achieved thru public education as well as modification to “new development” bylaws to ensure that FireSmart principles are achieved.

Landowner awareness and participation is the only option for reducing the wildfire hazard on their own property as treatment funding is not available thru the Village to address private property.

10.1 FireSmart Landscaping

Separating houses and other structures from the forest environment involves FireSmart landscaping around the structures to minimize the hazard from wildfires. The idea is that within a specified zone adjacent to the structures that plants and surface cover that doesn't support combustion should be established. This area is identified as “Priority Zone One” in the FireSmart manual. FireSmart landscaping is discussed in detail in Chapter three of the FireSmart publication.

10.2 Forest Fuel Modification

Reducing the volume and continuity (availability) of the forest fuels can reduce the intensity and the rate at which a wildfire can spread, thereby reducing the overall hazard/threat from wildfires.

The objectives of forest fuel management should be:

- Reducing surface fire intensity
- Reducing crown fire potential

Reducing forest fuel availability to a wildfire consists of the following activities and in many cases require a combination of these activities. It should be noted that these activities when used as a combination do not necessarily need to be done at the same time. This allows the ability to use available funds and schedule works to maximize efficacy as well as take advantage of programs available like the Job Opportunity Program (JOP).

- **Spacing**, thinning or tree removal involves the reduction of forest fuels within the forest canopy. The spacing treatment is dependant on many factors including tree species, age of the stand, stand structure and other factors. Spacing treatments must be designed on a site specific basis. Spacing increases inter tree spacing (distance between stems) therefore reducing available fuel, lowering the crown bulk density and helps minimize the likelihood of a continuous crown fire as the crown are spaced far enough apart that tree to tree ignition will be difficult. Typically only extreme conditions or weather will be able to push the fire thru the crowns after a spacing treatment.
- **Pruning** involves the removal of the lower branches of conifer tree species to separate crown fuels from forest floor fuels. These branches are commonly referred to as ladder fuels, meaning they provide a means for fire to burn upwards from the forest floor to the crown (climb) creating a crown fire. Crown fires have an increased rate of spread, greatly increased fire intensity, create larger and more numerous embers to shower on to adjacent structure and can not be actioned directly by fire suppression crews due to extreme safety issues. Pruning treatments must be designed on a site specific basis and are often used in conjunction with spacing treatments.
- **Surface Fuel Reduction (SFR)** involves the removal, chipping or burning of surface fuels and understory that will contribute to wildfire spread. This includes fuels from any spacing or pruning treatments as well. Small trees or more commonly refered to as the understory of a stand are also commonly referred to as ladder fuels, meaning they provide a means for fire to burn upwards from the forest floor to the crown (climb) creating a crown fire. Crown fires have an increased rate of spread, greatly increased fire intensity, create larger and more numerous embers to shower on to adjacent structure and can not be actioned directly by fire suppression crews due to extreme safety issues SFR is often considered the most important of any fuel modification activities as these fuels dry out quickly, ignite easily and are the main contributor to surface fire spread on most sites. SFR activities should be conducted on forested lands adjacent to homes, structures or new developments to reduce the wildfire hazard.

- **Firebreaks** involve the creation of fuel free zones or minimal fuel availability to stop or greatly reduce the spread of wildfires. This can be achieved in forested areas by complete removal of flammable materials. A likely place to achieve these firebreaks is to augment natural firebreaks like water bodies, roads, irrigated fields to create a continual firebreak as well as a firebreak wide enough to have an impact on high intensity fires.

No one prescription will solve all wildfire hazard issues, however the development of a site specific prescription will go a long way to mitigating the hazards. All prescription development must be site specific and developed by an experienced person.

10.3 Wildfire Reduction Maintenance

Future maintenance will be required for SFR and firebreak treatment areas. However if done correctly this should be needed only once every few years. The amount of maintenance will depend on tree species, mortality in the stand, tree ingress, grass and shrub growth and other factors that increase the availability of dead or down fuel.

Re-assessment of treated area should be conducted within 3 years of the treatment to get an idea on how soon a maintenance treatment will be needed.

10.4 Implications of Wildfire Hazard Reduction Work

Efforts to reduce wildfire threat levels often have both negative and positive results.

The application of spacing out, pruning and surface fuel removal techniques creates a more open stand. An open stand allows more sunlight to reach the surface, often drying out the site, thus increasing fire hazards. Additionally, the added open spaces can increase wind through the zone, which will increase the intensity and mobility of a wildfire.

The open stand will allow for easier and safer access for firefighters and more effective aerial fire control efforts with air tankers. The removal of trees will also reduce the likelihood of fires in the crown layer due to the open canopy and the lower surface fuels.

11.0 Management Unit Summaries

The specific management zones (MU's) assessed in the surveys are listed below with the predominant wildfire threat rating for each zone. (See MAP 1 for MU locations).

11.1 Babine Lake Road

Village of Telkwa - Community Wildfire Protection Plan 2008

Babine Lake Road	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 1 - Babine Lake Rd	32	10	12	20	74	Moderate
Average	32	10	12	20	74	Moderate

The Babine Lake Road Management Unit (MU) is comprised of 586.3 hectares (ha's) of private land and 29.6 ha's of crown land for a total of 615.9 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up of mainly deciduous stands and farmland (cleared land). The spotting threat is minimal from adjacent interface zones as the adjacent areas are similar in nature.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.
- B. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.2 Good Road

Good Road	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 4 - Highway 16-1	57	10	12	20	99	Moderate
Average	57	10	12	20	99	Moderate

The Good Road Management Unit (MU) is comprised of 413.8 ha's of private land and 167.9 ha's of crown land for a total of 581.8 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up of mainly deciduous stands and farmland (cleared land). There are some small pockets of Immature pine located in the MU, however these are small and do not have a large impact on the threat rating. The spotting threat is low from adjacent interface zones as the adjacent areas are similar in nature with the exception of the Raymond Road MU which is moderate and contains a large pine timber type. The highway acts as a firebreak on the west side of this MU, separating it from the Raymond Road MU.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.
- B. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.3 Raymond Road

Village of Telkwa - Community Wildfire Protection Plan 2008

Raymond Road	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 5 - Donaldson Rd	49	10	12	20	91	Moderate
Plot 2 - Highway 16-2	32	10	12	20	64	Moderate
Average	41	10	12	20	78	Moderate

The Raymond Road Management Unit (MU) is comprised of 229.8 ha's of private land and 31.1 ha's of crown land for a total of 260.9 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up mainly of immature and mature pine stands and mixed pine/aspens stands as well as some farmland (cleared land).. The spotting threat is moderate from adjacent interface zones specifically from across the river to the west. There is evidence of MPB activity within the pine stands located in this MU. However land owners have been good at removing the dead and dying stems each year so far. The highway acts as a firebreak to the east and the Bulkley River acts as a firebreak to the west.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.
- B. Encourage landowners with pine stands to remove dead and dying pine stems.
- C. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.4 Tyhee East

Tyhee East	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 3 - Tyhee Lake 1	29	10	12	20	71	Moderate
Plot 8 - Tyhee Lake 2	25	10	27	24	86	Moderate
Average	27	10	20	22	79	Moderate

The Tyhee East Management Unit (MU) is comprised of 399.3 ha's of private land and 119.3 ha's of crown land for a total of 518.6 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up of mainly deciduous stands and brush along the east shores of Tyhee Lake. There are some small pockets of conifer located in the MU, however these are small and do not have a large impact on the threat rating. The spotting threat is low from adjacent interface zones as the adjacent areas are similar in nature as well as containing large tracts of cleared land.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.

Village of Telkwa - Community Wildfire Protection Plan 2008

B. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.5 Hislop

Hislop	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 7 - Hislop	27	10	18	20	75	Moderate
Average	27	10	18	20	75	Moderate

The Hislop Management Unit (MU) is comprised of 290.3 ha's of private land and 47.1 ha's of crown land for a total of 337.3 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up of mainly deciduous stands and cleared farmland on the slopes east of Tyhee Lake. There are some very small pockets of conifer located in the MU, however these are small and do not have an impact on the threat rating. The spotting threat is low from adjacent interface zones as the adjacent areas are similar in nature as well as containing large tracts of cleared land.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.**
- B. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.**

11.6 Telkwa North

Telkwa North	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 6 - Telkwa High Road	22	10	27	20	79	Moderate
Average	22	10	27	20	79	Moderate

The Telkwa North Management Unit (MU) is comprised of 56.5 ha's, all of which is private land. The MU has a moderate threat rating. This MU is made up of mainly brushy deciduous stands on the hillsides to the east and residential/commercial properties in the main portion of the MU. This MU is the main concentration of residential and commercial properties north of the Bulkley River sometimes referred to as the downtown core area. The spotting threat is low from adjacent interface zones with the exception of the pine stands located in the interface zone across the Bulkley River to the west. This interface zone has spotting threats to multiple MU's in the Telkwa FPA. There is Crown as well as Telkwa municipal lands across the river containing pines timber types.

Recommendations for remedial actions in this area:

Village of Telkwa - Community Wildfire Protection Plan 2008

- A. Ensure that residents have been informed of the FireSmart program.
- B. Continue to encourage and or facilitate removal of dead or dying pine stems across the river in the interface zone from this MU.
- C. Develop site prescription for reduction of fuels and potential firebreaks on crown/municipal lands in the interface zone on the west side of the Bulkley River from this MU.
- D. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.7 Tyhee West

Tyhee West	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 13 - Tyhee Lake Road 3	26	10	14	20	70	Moderate
Plot 10 - Tower Road	30	10	16	23	79	Moderate
Plot 9 - Hubert road 4	57	10	12	80	99	Moderate
Average	38	10	14	41	83	Moderate

The Telkwa West Management Unit (MU) is comprised of 162.5 ha's of private land and 273.7 ha's of crown land for a total of 436.2 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up of a mixture of brushy deciduous stands on the hillsides, conifer stands and cleared lands. This MU is located on the west/south west shores of Tyhee Lake. The spotting threat is low from adjacent interface zones with the exception of the pine stands located across the Bulkley River to the west. There is Crown as well as Telkwa municipal lands across the river containing pines timber types.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.
- B. Continue to encourage and or facilitate removal of dead or dying pine stems across the river from this MU.
- C. Develop site prescription for reduction of fuels and potential firebreaks on crown/municipal lands in the MU.
- D. Develop and post informational signs for walking trail thru this MU on wildfire dangers.
- E. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

Village of Telkwa - Community Wildfire Protection Plan 2008

11.8 Telkwa South

Telkwa South	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 17 - Lawson 93-1	44	10	12	20	86	Moderate
Average	44	10	12	20	86	Moderate

The Telkwa South Management Unit (MU) is comprised of 230.2 ha's, all of which is private land. The MU has a moderate threat rating. This MU is made up of mainly brushy deciduous stands, clumps of pine and spruce and residential/commercial properties in the main portion of the MU. This MU is the main concentration of residential and commercial properties south of the Bulkley and Telkwa Rivers. The spotting threat is low from adjacent interface zones to the south and east and moderate from the interface zones to the west and north. There is Crown as well as Telkwa municipal lands across the river to the north containing pine timber types.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.
- B. Continue to encourage and or facilitate removal of dead or dying pine stems across the river from this MU.
- C. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.9 Lawson

Lawson	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 20 - Lawson 2-1	36	10	9	23	78	Moderate
Plot 22 - Lawson 2-2	20	10	12	23	65	Moderate
Plot 12 - Lawson 93-2	48	10	14	23	95	Moderate
Average	35	10	12	23	79	Moderate

The Lawson Management Unit (MU) is comprised of 281.3 ha's of private land and 46.9 ha's of crown land for a total of 328.2 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up of mainly deciduous stands, cleared farmland and mixed conifer/deciduous stands on the slope and bench land adjacent to the west bank of the Bulkley River. The spotting threat is moderate from adjacent interface zones to the west and south as the adjacent areas are have significantly less development and consist mainly of forested lands. Spotting threat from across the river to the east and north are low.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.

Village of Telkwa - Community Wildfire Protection Plan 2008

- B. Develop site prescription for reduction of fuels and potential firebreaks on crown lands adjacent and within the MU.
- C. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.10 Woodmere

Woodmere	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 19 - Hubert 1	26	10	22	20	78	Moderate
Plot 18 - Hubert 2	32	10	14	20	76	Moderate
Plot 11 - Hubert 3	28	10	16	20	74	Moderate
Average	29	10	17	20	76	Moderate

The Woodmere Management Unit (MU) is comprised of 1145.3 ha's of private land and 82.4 ha's of crown land for a total of 1227.7 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up of mainly deciduous stands and farmland (cleared land). The spotting threat is minimal from adjacent interface zones as the adjacent areas are similar in nature.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.
- B. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.11 Morris

Morris	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 16 - Morris Rd	30	10	18	30	88	Moderate
Average	30	10	18	30	88	Moderate

The Morris Management Unit (MU) is comprised of 188.4 ha's of private land and 13.3 ha's of crown land for a total of 201.8 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up of mainly brushy deciduous stands on the slope and height of land to the west of the Bulkley River. The spotting threat is moderate from adjacent interface zones and MU's to the west and south as the adjacent areas are have a high component of pine stands susceptible to MPB attack. Spotting threat from across the river to the east and the north are low.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.
- B. Develop site prescription for reduction of fuels and potential firebreaks on crown lands adjacent to the MU.

Village of Telkwa - Community Wildfire Protection Plan 2008

C. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.12 Skillhorn

Skillhorn	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 14 - Skillhorn 1	58	10	12	20	100	Moderate
Plot 15 - Skillhorn 2	37	10	18	23	88	Moderate
Average	48	10	15	22	94	Moderate

The Skillhorn Management Unit (MU) is comprised of 90.4 ha's of private land and 124.3 ha's of crown land for a total of 214.7 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up mainly of immature and mature pine stands and mixed pine/aspens stands. The spotting threat is moderate from adjacent interface zones specifically from across the river to the west. There is evidence of MPB activity within the pine stands located in this MU. Although this MU assessed as a moderate risk it was one of the highest scores (next to Jackpine MU) assessed during the assessment phase of this CWPP. This MU along with Jackpine MU is the greatest risk areas within the Telkwa FPA. As such they should be the priority treatment areas.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.
- B. Encourage landowners with pine stands to remove dead and dying pine stems.
- C. Develop site prescription for reduction of fuels and potential firebreaks on crown lands adjacent and within the MU.
- D. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.13 Jackpine

Jackpine	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 21 - Jackpine	63	10	12	20	105	Moderate
Average	63	10	12	20	105	Moderate

The Jackpine Management Unit (MU) is comprised of 126.2 ha's of private land and 3.0 ha's of crown land for a total of 129.2 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up mainly of immature and mature pine stands in residential lots. The spotting threat is moderate from adjacent interface zones specifically from across the river to the west and the Skillhorn MU to the north. There is evidence of MPB activity within the pine stands located in this MU. Although this MU assessed as a moderate risk it was the highest score assessed

Village of Telkwa - Community Wildfire Protection Plan 2008

during the assessment phase of this CWPP. This MU along with Skillhorn MU is the greatest risk areas within the Telkwa FPA. As such they should be the priority treatment areas.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.
- B. Encourage landowners with pine stands to remove dead and dying pine stems.
- C. Assess and Develop site prescription for reduction of fuels and potential firebreaks on crown lands adjacent to the MU in the interface zone.
- D. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.14 Cottonwood

Cottonwood	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 25 - Cottonwood	32	10	20	23	85	Moderate
Average	32	10	20	23	85	Moderate

The Cottonwood Management Unit (MU) is comprised of 134.9 ha's of private land and 0.5 ha's of crown land for a total of 135.4 ha's in the Telkwa FPA. The MU has a moderate threat rating. This MU is made up of mainly brushy deciduous stands and cleared farm lands on the slope and bench lands south of the Telkwa River. The spotting threat is moderate from adjacent interface zones.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.
- B. Assess for potential reduction of fuels and firebreaks on crown lands adjacent to the MU.
- C. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.

11.15 Eveling Coalmine

Eveling Coalmine	Component	Weather	Topography	Structural	Total	Threat Rating
Plot 23 - Eagle 1	49	10	4	20	83	Moderate
Plot 24 - Eagle 2	33	10	12	20	75	Moderate
Average	41	10	8	20	79	Moderate

The Eveling Coalmine Management Unit (MU) is comprised of 62.5 ha's of private land and 9.0 ha's of crown land for a total of 71.5 ha's in the Telkwa FPA. The MU

has a moderate threat rating. This MU is made up of mainly brushy deciduous stands and immature pine stands on the south banks of the Telkwa River. The spotting threat is moderate from adjacent interface zones. Terrain in this area could be a factor if the right conditions were present when a fire started. There is potential for winds to be funnelled by the narrowing of the valley bottom from the west out of the Telkwa River valley which could push a fire along at greater speeds. The risk assessment doesn't measure for this but it is worth mentioning as this may be a higher priority area than assessment numbers show.

Recommendations for remedial actions in this area:

- A. Ensure that residents have been informed of the FireSmart program.**
- B. Assess for potential reduction of fuels and firebreaks on crown lands west of the MU.**
- C. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.**

12.0 General Recommendations

12.1 Priority Areas for Treatment

All Management Unit's in the CWPP for the Village of Telkwa fell into a moderate threat hazard. The topography and weather components of the risk assessment for our area is low in scores and don't allow the MU's with a higher risk component assessment to achieve a High or extreme risk rating. However as noted earlier in this document there were areas that were in the high end of the moderate classification due to the component assessment part of the risk analysis and should be considered for priority treatments. They are as follows:

12.1.1 Priority Area One – Jackpine MU

Priority Area One has been identified as Jackpine Management Unit (MU). Unfortunately there is only 3.0 ha's of crown land in the Telkwa FPA of Jackpine MU. However the private land in this MU is at the highest risk assessed within this report. The following recommendations are some suggested actions to mitigate the higher level of risk these land owners face.

Recommendations for remedial actions in this area:

- 1. Ensure that residents have been informed of the FireSmart program.**

- 2. Encourage landowners with pine stands to remove dead and dying pine stems.**
- 3. Assess and Develop site prescription for reduction of fuels and potential firebreaks on crown lands adjacent to the MU in the interface zone.**
Potential treatments that may be effective in this area are; Spacing, Pruning, harvesting & selective harvesting, surface fuel removal and firebreak construction. However the preparation of the Site prescription will be better able to determine which treatment or combination of treatments will be most effective within this specific area.
- 4. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.**

12.1.2 Priority Area Two – Skillhorn MU

Priority Area Two has been identified as Skillhorn Management Unit (MU). There is 124.3 ha's of crown land in the Telkwa FPA of the Skillhorn MU. Historically a lot of this crown land was within a free use area (FUP) by the MOFR and has a history of firewood gathering activities by local residents. This FUP has just been re-instated in this MU to facilitate the removal of the dead stems within the MU. This has both positive and negative benefits. The positive benefit is that firewood gatherers tend to remove the dead or dying stems within the high risk pine stand located here. The negative benefit from this activity is that most firewood gatherers don't remove the fines/branches or the tops of the felled trees from the site. This then increases the fuel loading on the ground and may increase the intensity of any potential ground fire within the MU. The following recommendations are some suggested actions to mitigate the higher level of risk these land owners face.

Recommendations for remedial actions in this area:

- 1. Ensure that residents have been informed of the FireSmart program.**
- 2. Encourage landowners with pine stands to remove dead and dying pine stems.**
- 3. Assess and Develop site prescription for reduction of fuels and potential firebreaks on crown lands adjacent to the MU in the interface zone.**
Potential treatments that may be effective in this area are; Spacing, Pruning, harvesting & selective harvesting, surface fuel removal and firebreak construction. However the preparation of the Site prescription will be better able to determine which treatment or combination of treatments will be most effective within this specific area.
- 4. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.**

12.1.3 Priority Area Three – Tyhee West MU

Priority Area Three has been identified as the Telkwa West Management Unit. There is 273.7 ha's of crown land in the Telkwa FPA of the Tyhee West MU. This crown land includes the Tyhee Lake Provincial Park area. In addition the MU has the Telkwa Walking Trail passing thru it. A portion of this trail is located in a pine stand that does have MPB infested stems. The walking trail could increase the potential for man caused fire ignitions thru activities like smoking and or carelessness with other potential ignition sources. Overall the MU has a moderate threat rating. This MU is made up of a mixture of brushy deciduous stands on the hillsides with conifer stands located throughout these deciduous stands. This MU is located on the west/south west shores of Tyhee Lake. The spotting threat is low from adjacent interface zones with the exception of the pine stands located in the Tyhee North Interface zone across the Bulkley River to the west. There is Crown as well as Telkwa municipal lands across the river containing pines timber types.

Recommendations for remedial actions in this area:

- 1. Ensure that residents have been informed of the FireSmart program.**
- 2. Continue to encourage and or facilitate removal of dead or dying pine stems across the river from this MU.**
- 3. Develop site prescription for reduction of fuels and potential firebreaks on crown/municipal lands in the MU.** Potential treatments that may be effective in this area are; Spacing, Pruning, harvesting & selective harvesting, surface fuel removal and firebreak construction. However the preparation of the Site prescription will be better able to determine which treatment of combination of treatments will be most effective within this specific area.
- 4. Develop and post informational signs for walking trail thru this MU on wildfire dangers as well as prepare a site prescription to conduct activities to "FireSmart the trail.** This would include such activities as fuel removal treatment on a specified width immediately adjacent to the walking trail.
- 5. Initiate contact with Parks branch to encourage SFR activities within the Park boundary and to potential conduct joint activities along the park boundary**
- 6. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.**

12.1.4 Priority Area Four – Tyhee North Interface Zone

Priority Area Four has been identified as the Telkwa North Interface Zone. There is 97.9 ha's of crown land in the western interface zone of the Tyhee North MU. This interface zone is made up of a mixture of conifer (pine) stands and deciduous stands. This interface zone is located across the Bulkley River from the Telkwa North MU on the west banks of the Bulkley River. There is Crown as well as Telkwa municipal lands in this interface zone. Although it isn't a part of the Telkwa FPA it could be a significant sources of spotting should a fire ignition

occur in this zone. Therefore it is in the Village of Telkwa's best interest to conduct activities to reduce wildfire threat to the rest of the community as well as residents in this area.

Recommendations for remedial actions in this area:

- 1. Ensure that residents have been informed of the FireSmart program.**
- 2. Continue to encourage and or facilitate removal of dead or dying pine stems across the river from this MU.**
- 3. Develop site prescription for reduction of fuels and potential firebreaks on crown/municipal lands in the MU.** Potential treatments that may be effective in this area are; harvesting & selective harvesting, Surface fuel removal and firebreak construction. However the preparation of the Site prescription will be better able to determine which treatment or combination of treatments will be most effective within this specific area.
- 4. Establish Wildfire Emergency Response Plan and Identify access and locate water sources.**

12.2 Hydro Power lines

Communication with BC Hydro in regards to conducting tree removal along their power lines within the village boundary needs to be implemented. Falling dead pine trees from MPB kill will be a likely source of wildfires if the trees are within reach of power lines. This will be important in the Skillhorn, Tyhee West and Jackpine management units where pine stands are dominant in places. In addition pine stands adjacent to power lines in the interface zones west of the Bulkley River will also require danger tree removal as well.

12.3 Large Landowners

Large landowners in the Telkwa FPA will play a very important role in their own wildfire safety as well as that of the entire community. Completing fuel management and FireSmart landscaping around these homes will make them easier to defend as well as more likely for fire suppression crews to defend them. In addition it will help in reducing the rate of spread should a wildfire start on or adjacent to their properties.

Landowners with large numbers of dead pine trees must be encouraged to remove these trees, or at least the trees along their access roads and power lines to reduce fuel areas, facilitate safe access and reduce potential for fire starts.

12.4 Public Information and Education

The most important treatment/mitigation activity for the reduction of wildfire hazards within the Village of Telkwa will be the public information campaign that informs village residents of the wildfire hazard problem areas identified in this report. As

Village of Telkwa - Community Wildfire Protection Plan 2008

many mediums as possible should be used to get this message out. The campaign should involve radio, newspaper, mail outs like the Telkwa newsletter and public meetings. Involvement by the Telkwa Fire Department would add great credibility to the program and make it a Telkwa program instead of a consultant lead one.

In addition communication with the MOFR to request resources/information on the MPB epidemic presently in the Bulkley valley to ensure up to date information is passed on to village residents.

12.5 Update Official Community Plan

In reviewing the Town By-laws and Telkwa Official Community Plan (OCP) it was determined that a review by council should be conducted to update the OCP to include FireSmart principles. The Village of Telkwa Official Community Plan (OCP) is scheduled for review in 2009. The following should be considered for inclusion during this review.

- All new developments in moderate or higher risk areas should be designed to meet FireSmart guidelines that apply to a community and area like Telkwa. This would apply to forest setbacks.
- New development areas that are not currently in the Telkwa FPA, or areas to be included in the Telkwa FPA that are not in the FPA, at the time of this report should have an assessment done by a Forest Professional to assess the hazard of the new area and update this report with the findings.
- A fine or ticketing process for landowners and industrial sites that do not adequately minimize wildfire hazard on their property when they are in a high or extreme risk area.

12.6 Ministry of Forests and Range Letter Regarding Crown Land

The hazard assessment identified locations where B.C. Crown Land contributed to a higher risk hazard to local residents. (primarily Pine stands in the Skillhorn, Jackpine, Telkwa North Interface and Tyhee West areas.) The local Forest District office should be contacted by letter. The letter must identify problem areas and should identify the need to cooperatively work to create a prescription for the treatment of this area. Although the MOFR will not be able to fund or develop the prescription or the subsequent treatments, they will be able to help in the permitting and approvals required to conduct any treatments on crown land to address the wildfire hazard problems. In addition the Fire Zone Manager should also receive a copy of this letter.

12.7 Stakeholder Communciations

Village of Telkwa - Community Wildfire Protection Plan 2008

It is crucial that there is a commitment to establish relationships and consult with various stakeholders within the local area. These would include tenure holders such as Pacific Inland Resources (PIR), British Columbia Timber Sales (BCTS), RDBN, the Town of Smithers and First Nations.

The Village of Telkwa should engage all stakeholders to coordinate planning and determine any future plans that the Stakeholders may have that could impact the plans being developed by the Village. An example of this is that PIR or BCTS could have salvage harvesting plans for some of the identified problem areas. The MOFR has also been issuing salvage tenures around the community as well. Additionally there is indications that the Town of Smithers may be revisiting their current CWPP and some opportunity for joint ventures or co-operations between the two administrations could be beneficial. It should be noted that the FPA as well as the interface zones in some cases overlap each other from the two communities.

First Nations should be consulted for any planned work on municipal lands. Although crown land is the responsibility of the land manager the Village should communicate with First Nations for any planned work at the earliest opportunity when considering treatment on municipal and or crown lands. It is recommended that this relationship/communications between the village and First Nations be established even before treatments get to the prescription phase.

12.7 Report Distribution

When this Community Wildfire Protection Plan report has received approval from UBCM it should be made available to:

Tom Dall	Telkwa Village Chief Administrative Officer
Stoney Stollanburg	Telkwa Village Fire Department Chief
Barry Smith	Skeena Stikine MOFR District Manager
Brian Atherton	Fire Zone Manager
Gail Chapman	Regional District Bulkley/Nechako Town of Smithers

12.8 Further Activities

Funding has become available from sources such as NRCAN and UBCM to assist communities in hazard reduction efforts that CWPP's identify. There is funding for sample hazard reduction prescriptions, public information development, detailed hazard reduction prescriptions, some treatment activities and other related activities. An additional source of funding that should be considered is the JOP or Job Opportunity Program for displaced forestry workers.

The Village of Telkwa should follow up on these funding sources in a timely manner before the programs end or are too difficult to get.

13.0 Summary

Although risk assessments show all of Telkwa's FPA to fall in a moderate threat classification, there are areas that still have elevated risk. This is mainly due to a pine component in the forested lands that is currently being attacked and killed by MPB. These areas would benefit from treatment activities to reduce this threat from a "high" moderate risk to a "mid" moderate risk classification. These areas have been identified as the priority treatment areas in this document.

The main recommendation for the entire FPA is to conduct public information sharing activities and to further Telkwa resident's level of education on the FireSmart program and its principles.

Additionally the Village of Telkwa could benefit from the development of an Emergency Response Plan for Wildfire and provide any necessary training identified in it to the Telkwa Fire Department.

A strong geographic feature in Telkwa that helps the community in the event of a wildfire event like British Columbia's firestorm of 2003 is the Bulkley and Telkwa Rivers dissecting the FPA. These water features basically divide the community into three sections and provide strong natural firebreaks. This will be a key strategic point and should be addressed in the Wildfire Emergency Response Plan development for both its positive benefits as well as negative benefits (*limited access routes*).

With careful planning, an education program for residents and treatment prescriptions the Village of Telkwa can reduce the overall risk from wildfire within its FPA. With continued effort by the Town personal and residents this CWPP will continue to help the Village of Telkwa minimize the risk to residents, structures and infra-structure well into the future.