



**Forest
Practices
Board**

Forestry Audit

*BC Timber Sales and Timber Sale Licence Holders
Prince George Business Area
Prince George District*

FPB/ARC/164

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Board Commentary

This audit examined the activities of BC Timber Sales (BCTS) and timber sale licence (TSL) holders in the Prince George District.

Overall, auditors found that BCTS and TSL holders generally did a good job managing forest operations while harvesting mountain pine beetle infested stands. However, auditors identified two significant instances of non-compliance; one related to bridge construction and the other related to fire protection.

Timberspan Wood Products Inc., the holder of timber sale licence A82466, did not follow a professionally prepared bridge design for the crossing of a fish stream within a cutblock. The result was an unsafe structure with multiple deficiencies. Timberspan also failed to complete as-built drawings of the bridge, and obtain a conformance assurance statement, as required by legislation, to certify that the bridge met safety standards. As such, the soundness of the bridge was uncertain.

SDN Forest Ventures Inc., the holder of timber sale licence A84126, was actively timber harvesting without an adequate fire suppression system during a period when activities were restricted due to a high risk of starting a forest fire.

Fortunately, neither of these non-compliances resulted in a negative event, such as a vehicle crash or a forest fire. However, the potential was there in both instances.

The Board is concerned with the growing number of non-compliances showing up in recent audit reports,¹ and is very concerned about how many of those non-compliances involve unsafe crossings. This audit is one of two 2013 audits, out of a total of nine, with such a finding. The Board's *Special Investigation of Bridge Planning, Design and Construction* examined 216 bridges in 5 districts built since 2010 and also found a very high rate of non-compliance. This is a very disturbing trend that the forest industry, government and professional associations need to review and respond to.

¹ Forest Practices Board, *Road and Bridges Special Report*, February 2013, http://www.fpb.gov.bc.ca/SR43_Road_and_Bridge_Practices_Audit_Findings_2005-2011.htm.

Audit Results

Background

As part of the Forest Practices Board's 2013 compliance audit program, the BC Timber Sales (BCTS) program and timber sale licence (TSL) holders in the Prince George District portion of the Prince George Business Area were randomly selected for audit.

The audit area falls within the Prince George and Robson Valley Timber Supply Areas (TSA) and includes the communities of Prince George, McBride and Valemount (see map on page 3). The TSAs contain flat and rolling terrain in central areas and steeper slopes to the east along the Rocky Mountains. Together they include the Fraser, Nechako, McGregor and Parsnip River systems, as well as numerous lakes.

The *Prince George Land and Resource Management Plan*ⁱ provides general management direction for this area, by identifying land use zones and the resource objectives within them, which are designed to balance social, economic and environmental values. There are no legal requirements for licensees to adhere to objectives set out in the in the land and resource management plan, but recognizing its merit, BCTS chose to use it to guide its planning and forestry operations. Government objectives set out in the *Forest and Range Practices Act* (FRPA) and the *Forest Planning and Practices Regulation* (FPPR) are legal requirements. Their strategic and operational guidance to BCTS operations must be followed.

In the Prince George District, BCTS has been allocated 852 017 cubic metres of timber to harvest annually, from which it auctions to registrants in the BCTS program. BCTS prepares operational plans and issues timber sale licences and road permits to successful bidders. Licensees must fulfill licence, permit and operational plan obligations, including timber harvesting and road work, within cutblocks.

During the one-year audit period, approximately 750 000 cubic metres was harvested by TSL holders, primarily to address mountain pine beetle (MPB) infestations.

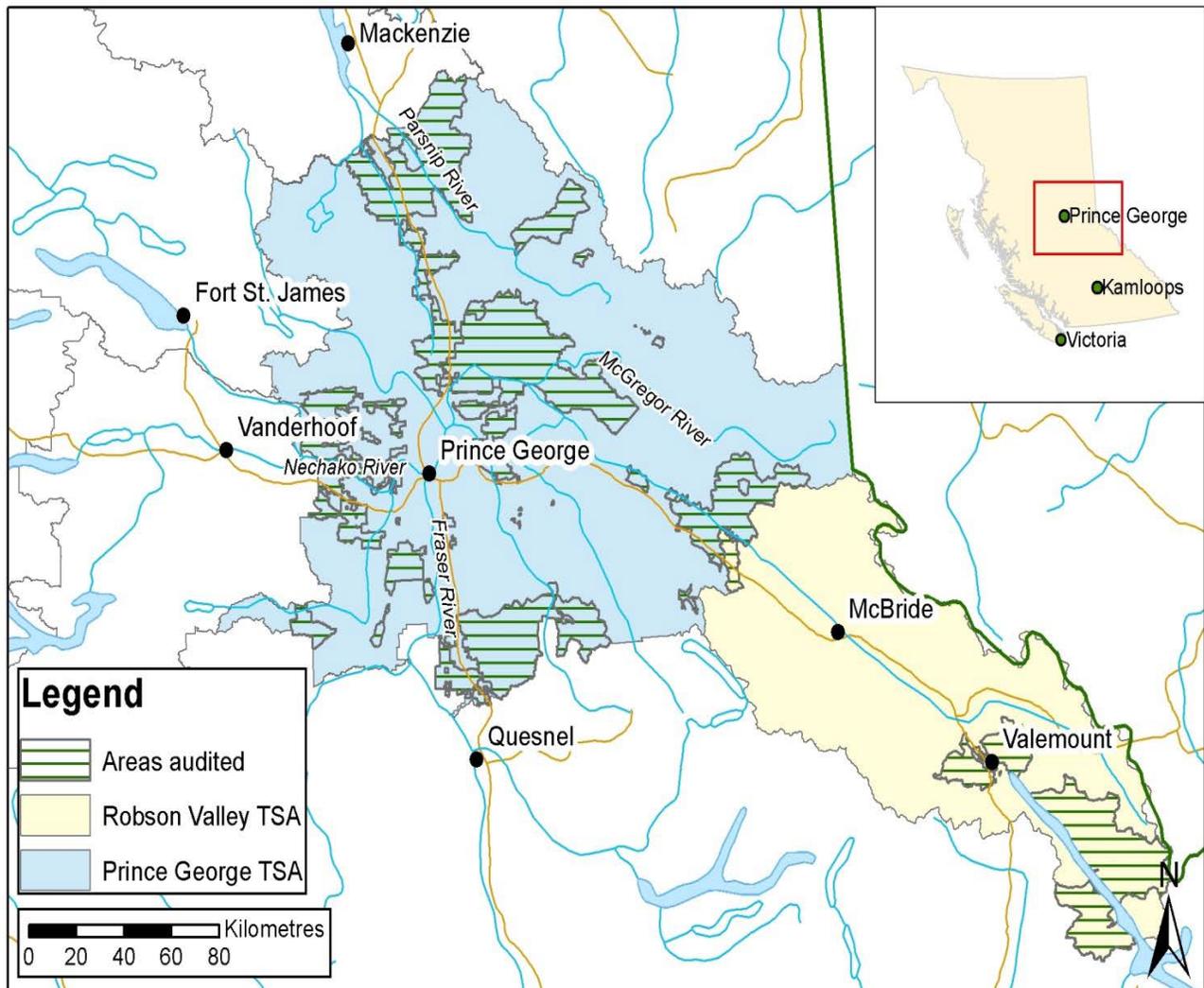
The audit team consisted of a professional forester, a professional forester/agrologist, a professional engineer and a chartered accountant. The Board's audit fieldwork took place from July 22 to 26, 2013.

Additional information about the Board's compliance audit process is provided in Appendix 1.



Timber harvesting near Purden Lake in the Prince George District.

Map of the Audit Area



Audit Approach and Scope

The audit examined both BCTS's and TSL holder's obligations and activities, using a combination of detailed office, ground and aerial reviews.

BCTS is responsible for operational planning, including preparing forest stewardship plans (FSPs) and site plans, silviculture activities, and most road and bridge construction, maintenance and deactivation outside of cutblocks.

TSL holders are responsible for timber harvesting, fire protection, and most road and bridge construction, maintenance and deactivation within cutblocks.

These activities were assessed for compliance with FRPA, the *Wildfire Act (WA)* and related regulations. All activities, planning and obligations for the period July 1, 2012, to July 26, 2013, were included in the scope of the audit.

The Board's audit reference manual, *Compliance Audit Reference Manual, Version 7.0, September 2012*, set out the standards and procedures that were used to carry out this audit.

Planning and Practices Examined

BCTS Responsibilities

Operational Planning

BCTS planned its activities under the *BC Timber Sales Prince George Forest Stewardship Plan*,ⁱⁱ amendment 11, approved on January 30, 2012, and expiring December 4, 2015. Both the FSP and stand level plans were examined to ensure they were consistent with legislative requirements.

Stand level plans were evaluated during harvesting, road and silviculture field sampling to ensure that they accurately identified site conditions.

Road Construction, Maintenance and Deactivation

During the audit period, BCTS maintained 511 kilometres of road and maintained 68 bridges. BCTS did not deactivate any new roads or construct any roads or bridges.

Auditors examined 293 kilometres of the maintained roads and 35 of the maintained bridges.

Silviculture Activities and Obligations

BCTS site prepared 7 cutblocks, planted 56 cutblocks and brushed 10 cutblocks. Regeneration obligations were due or declared on 164 cutblocks and free-growing obligations were due or declared on 174 cutblocks.

The audit examined 3 site prepared cutblocks, all 56 planted cutblocks for seed transfer (2 of these blocks were field-checked), and 4 brushed cutblocks. In addition, 34 cutblocks with regeneration obligations due and 52 cutblocks with free-growing obligations due were sampled.

Timber Sale Licence Holder Responsibilities

Timber Harvesting

Twenty-six TSL holders, with 37 separate TSLs, fully or partially harvested 54 cutblocks during the audit period, using ground-based systems. Auditors sampled 17 TSL holders, 24 TSLs and 34 cutblocks.

Road Construction, Maintenance and Deactivation

TSL holders constructed 181 kilometres of road and 2 bridges, and permanently deactivated 66 kilometres of road during the audit period. They also maintained the constructed roads and another 47.5 kilometres of in-block roads.

The Board audited 113 kilometres of the constructed road and 1 of the constructed bridges; the other bridge had been removed prior to the audit. Auditors also assessed 144 kilometres of the road maintenance and 23 kilometres of the permanently deactivated road.

Fire Preparedness

Fire preparedness was audited for compliance with the WA on the only two active harvest operations.

Fire hazard assessments were assessed on 6 cutblocks. Abatement activities were examined on all 34 of the harvested cutblocks sampled. Abatement obligations were further examined on the 3 site prepared cutblocks, the 2 planted cutblocks, the 4 brushed cutblocks and 34 cutblocks with regeneration obligations due.

Findings

The audit found that the planning and field activities undertaken by BCTS complied in all significant respects with the requirements of FRPA, WA and related regulations, as of July 2013.

The audit found, with two exceptions, that the planning and field activities undertaken by the TSL holders complied in all significant respects with the requirements of FRPA, WA and related regulations, as of July 2013. The two exceptions, one involving construction of a bridge and the other regarding fire protection, are described below.

Bridge Construction

During road construction to access timber sale licence A82466, the TSL holder, Timberspan Wood Products Inc. (Timberspan), constructed a bridge to cross a fish-bearing stream. BCTS provided Timberspan with a professionally prepared bridge design, which specified the construction requirements for the bridge. Auditors found that the bridge did not meet the design requirements.

Section 72ⁱⁱⁱ of the *Forest Planning and Practices Regulation (FPPR)* requires that a person who constructs a bridge must ensure that it is structurally sound and safe for use by industrial users. To help ensure a bridge is safe section 73^{iv} of FPPR requires that the design and fabrication of the bridge meet or exceed safety standards. While Timberspan was provided with a design for a 9-metre steel I-beam bridge that met safety standards, it did not follow the design and installed a bridge with a number of deficiencies.

- The stringers were not securely lashed.
- Ballast walls were not installed on the approaches and road fill material was failing and eroding away.
- The substructure was not aligned properly.
- Non-woven geotextile fabric and free draining granular materials were not used for the installation of the abutments and ballast walls.
- Guard logs were not lashed to the bridge.
- The cross ties had longitudinal cracks.
- The timber decking was cracked and there were no sediment control measures on the bridge deck.

Section 77^v of the FPPR requires that a person who builds a bridge must prepare as-built drawings of the bridge. Timberspan had not prepared post-installation drawings, nor obtained a conformance assurance statement to certify that the bridge met safety standards. As such, the soundness of the bridge was uncertain.

These practices are considered a significant non-compliance with sections 72, 73, and 77 of the FPPR because Timberspan did not ensure that the bridge was structurally sound and safe for industrial users.

Following the audit, Timberspan advised the Board that the road was seasonally deactivated and the bridge removed to ensure future safety for industrial and public users of this road.

Fire Protection

A TSL holder, SDN Forest Ventures Inc. (SDN), was actively harvesting on TSL A84126 without an adequate fire suppression system, during a period when activities were restricted due to the high risk of starting a forest fire.



Harvest activity observed during the field inspection.

Section 6(2)^{vi} of the WA requires that a person who carries out timber harvesting activities must minimize the risk of a fire starting. Section 6(3)^{vii} of the *Wildfire Regulation (WR)* requires that, when there is a risk of a fire starting, timber harvesting must be conducted according to applicable restrictions and that an adequate fire suppression system must be kept at the activity site.

SDN is required to monitor fire hazard conditions using representative weather stations, either installed on-site or using the most representative weather station monitored by the Fire Control Centre. SDN had not installed its own weather station, so had to rely on the weather data provided by the Fire Control Centre. On the date of the site inspection, representative weather data showed that there had been five consecutive days of fire danger class IV.^{viii} Schedule 3 within the WR states that after three consecutive days of fire danger class IV, harvest activities are to cease between 1:00 p.m. and sunset each day. The auditor found active timber harvesting underway at 3:30 p.m.

When inspecting SDN's fire tools and suppression system, the auditor found an adequate number of fire tools on site, but the water tank, used to suppress a fire should one occur, was almost empty. The nearest water source that could be used to fill the tank was at least two kilometres away. Should a fire have occurred it is unlikely that SDN could have reacted in time to control the fire.

Harvest activities took place during a restricted period and SDN's fire suppression system was inadequate, which is in contravention of section 6 (2) of the WA and sections 6 (3) (a) and 6 (3) (b) (ii) of

the WR. These practices are considered a significant non-compliance because SDN did not minimize the risk of a fire starting and spreading.

Operational Planning

BCTS's planning activities were consistent with the FSP and legislative requirements.

BCTS operates in five landscape units within the Prince George Business Area; three are within the Prince George District and are subject to this audit. BCTS participates in the Prince George Government Landscape Objectives Working Group (GLOWG) which monitors and evaluates the effectiveness of the landscape objectives and the performance of licensees in achieving the objectives in the Prince George District, and ensures planning and forest activities are consistent with the Prince George land and resource management plan and the FSP. Licensees are supposed to adhere to the values, objectives, indicators, targets and guiding principles described in the land and resource management plan, supporting sustainable forest management.

The FSP was consistent with legislated requirements, and incorporated FRPA objectives. Planning at the landscape and stand levels was consistent with the FSP.

BCTS addressed site specific resources in the site plans by accurately identifying and prescribing practices for resource features, including soils, streams and wetlands, recreation trails, visually sensitive areas and cultural or heritage sites.

To help confirm compliance with operational requirements, the auditors had BCTS demonstrate how its management systems incorporated operating procedures for planning and development, conducting forestry activities, reporting activities to the government, analyzing biodiversity objectives, public referrals and how their system linked those procedures.

Harvesting

Harvesting was conducted in accordance with legislative requirements and site plan provisions.

The majority of logging targeted MPB infected stands and employed ground-based harvest systems. To help conserve the productivity and hydrological function of soils, TSL holders deactivated permanent access structures, grass seeded areas with exposed mineral soil, rehabilitated temporary access structures, maintained natural drainage patterns and restricted activities on sensitive soils. TSL holders retained trees, vegetation and restricted machine traffic to help protect riparian, visual, cultural, recreational and wildlife habitat interests.

In some instances, TSL holders caused minor amounts of sediment to enter streams when they removed temporary drainage structures and caused small localized areas of high soil disturbance when skidding logs. These occurrences were not pervasive and were minor in nature.

Roads and Bridges

Other than the bridge finding described above, there were no concerns with road construction, maintenance or deactivation for either BCTS or TSL holders.

New road construction consisted of roads built within cutblocks (in-block roads) and main haul roads. Many of the in-block roads were seasonally deactivated following harvesting.

Auditors found that roads and bridges were generally well constructed and maintained. BCTS and TSL holders installed drainage structures to maintain natural drainage patterns, grass seeded exposed soils on roads to control erosion, and signed, armoured and decked bridges

Silviculture Activities and Obligations

Auditors found that BCTS actively managed silviculture activities and obligations and considered overall performance to be generally good. The silviculture activities audited included site preparation, brushing, planting, and regeneration delay and free-growing obligations.

BCTS primarily used seedlings that conformed to the Chief Forester's Standards for Seed Use,^{ix} reforested cutblocks, site prepared and brushed plantations and achieved regeneration delay and free growing milestones within the allotted timeframes.

Although BCTS's overall performance was generally good, there were a few instances where BCTS had not adhered to the Chief Foresters Standards for Seed Use and had not reported forest cover information accurately to the government. These occurrences were minor in nature and not pervasive.

Fire Preparedness

Only two TSL holders were active during field inspections, so only those two had fire preparedness obligations. Other than the fire protection finding described above involving one TSL holder, there were no concerns with the fire preparedness activities of the TSL holders.

The other active TSL holder had sufficient fire tools and a functional fire suppression system on site at the time of the field inspection. This TSL holder used a representative fire weather station to determine the correct fire danger class and restricted operations accordingly.

BCTS provided an emergency response plan (ERP) template for TSL holders to complete and forward to the Prince George Fire Centre. The ERP contains relevant information such as contact details and location of operations. The two active TSL holders had completed the ERP.

For all six hazard assessments sampled, TSL holders had completed them within prescribed intervals, and included an assessment of the fuel hazard and the risk of a fire starting or spreading, as required by the *Wildfire Regulation*.

TSL holders piled logging debris in a manner that facilitated burning. Slash burning was completed within the required time periods, which reduced the risk of fire starting on the cutblocks. There were no cutblocks audited where TSL holders did not complete abatement activities within the required time periods.

Audit Opinion

In my opinion, except for the bridge construction and fire protection issues identified below, the operational planning, timber harvesting, road construction, maintenance and deactivation, silviculture and fire preparedness activities carried out by BCTS and its TSL holders in the Prince George District portion of the Prince George Business Area, between July 1, 2012, and July 26, 2013, complied in all significant respects with the requirements of the *Forest and Range Practices Act*, the *Wildfire Act* and related regulations, as of July 2013.

In reference to compliance, the term “in all significant respects” recognizes that there may be minor instances of non-compliance that either may not be detected by the audit, or that are detected but not considered worthy of inclusion in the audit report.

As described in the Bridge Construction section of this report, the audit identified a situation of significant non-compliance related to the construction of an unsafe bridge.

As described in the Fire Protection section of this report, the audit identified a situation of non-compliance related to not minimizing the risk of starting a fire.

The Audit Approach and Scope and the Planning and Practices Examined sections of this report describe the basis of the audit work performed in reaching the above conclusion. The audit was conducted in accordance with the auditing standards of the Forest Practices Board. Such an audit includes examining sufficient forest planning and practices to support an overall evaluation of compliance with FRPA, and WA.



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Victoria, British Columbia
January 28, 2014

Appendix 1: Forest Practices Board Compliance Audit Process

Background

The Forest Practices Board conducts audits of government and agreement-holders under the *Forest and Range Practices Act* (FRPA), section 122 and the *Wildfire Act* (WA). Compliance audits examine forest or range planning and practices to determine whether or not they meet FRPA and/or WA requirements.

Selection of auditees

The Board conducts about eight or nine compliance audits annually. Most of these are audits of agreement holders. The Board also audits the government's BC Timber Sales Program (BCTS). This section describes the process for selecting agreement holders to audit.

To begin with, auditors randomly select an area of the Province, such as a district. Then the auditors review the forest resources, geographic features, operating conditions and other factors in the area selected. These are considered in conjunction with Board strategic priorities (updated annually), and the type of audit is determined. At this stage, we choose the auditee(s) that best suits the selected risk and priorities. The audit selections are not based on past performance.

For example, in 2010, the Board randomly selected the Mackenzie district as a location for an audit. After assessing the activities within that area, we discovered that a large licensee had recently closed operations due to financial problems. As the Board has expressed concern in the past about financially strapped companies failing to meet outstanding obligations, such as reforestation and road maintenance, and we knew that some of the licence area is very remote, the new licence holder was selected for audit.

For BCTS audits, a district within 1 of the 12 business areas within the province is selected randomly for audit.

Audit Standards

Audits by the Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with Canadian generally accepted auditing standards. The standards for compliance audits are described in the Board's *Compliance Audit Reference Manual*.

Audit Process

Conducting the Audit

Once the Board randomly selects an area or district and determines the scope of audit to be conducted and the licensee(s) to be audited, all activities carried out during the period subject to audit are identified (such as harvesting or replanting, and road construction or deactivation activities). Items that make up each forest activity are referred to as a population. For example, all sites harvested form the timber harvesting population and all road sections constructed form the road construction population.

A separate sample is then selected for each population (e.g., the cutblocks selected for auditing timber harvesting). Within each population, more audit effort (i.e., more audit sampling) is allocated to areas where the risk of non-compliance is greater.

Audit fieldwork includes assessments of features using helicopters and ground procedures, such as measuring specific features like riparian reserve zone width. The audit teams generally spend one week in the field.

Evaluating the Results

The Board recognizes that compliance with the many requirements of FRPA and WA is more a matter of degree than absolute adherence. Determining compliance, and assessing the significance of non-compliance, requires the exercise of professional judgment within the direction provided by the Board.

The audit team, composed of professionals and technical experts, first determines whether forest practices comply with legislated requirements. For those practices considered to not be in compliance, the audit team then evaluates the significance of the non-compliance, based on a number of criteria, including the magnitude of the event, the frequency of its occurrence and the severity of the consequences.

Auditors categorize their findings into the following levels of compliance:

Compliance – where the auditor finds that practices meet FRPA and WA requirements.

Not significant non-compliance – where the auditor, upon reaching a non-compliance conclusion, determines that one or more non-compliance event(s) is not significant and not generally worthy of reporting. However, in certain circumstances, events that are considered not significant non-compliance may be reported as an area requiring improvement.

Significant non-compliance – where the auditor determines a non-compliance event(s) or condition(s) is or has the potential to be significant, and is considered worthy of reporting.

Significant breach – where the auditor finds that significant harm has occurred, or is beginning to occur, to persons or the environment as a result of one or many non-compliance events.

If it is determined that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the Minister of Forests, Lands and Natural Resource Operations.

Reporting

Based on the above evaluation, the auditor then prepares a draft audit report. The party being audited is given a draft of the report for review and comment before it is submitted to the Board.

Once the auditor submits the draft report, the Board reviews it and determines if the audit findings may adversely affect any party or person. If so, the party or person must be given an opportunity to make representations before the Board decides the matter and issues a final report. The representations allow parties that may potentially be adversely affected to present their views to the Board.

The Board then reviews the draft report from the auditor and the representations from parties that may potentially be adversely affected before preparing its final report. Once the representations have been completed, the report is finalized and released: first to the auditee and then to the public and government.

ENDNOTES

ⁱ The Prince George Land and Resource Management Plan (PGLRMP) is a long-term plan for land use and resource development on Crown land within the Prince George Forest District. This plan is based on the principles of integrated resource management and sustainability. For more information the see the PGLRMP web site at:

<http://www.ilmb.gov.bc.ca/slrp/lrmp/princegeorge/pgeorge/index.html>

ⁱⁱ A forest stewardship plan (FSP) is a key planning element in the FRPA framework and the only plan subject to public review and comment and government approval. In FSPs licensees are required to identify results and/or strategies consistent with government objectives for values such as water, wildlife and soils. These results and strategies must be measurable and once approved are subject to government enforcement. FSPs identify areas within which road construction and harvesting will occur but are not required to show the specific locations of future roads and cut blocks. FSPs can have a term of up to five years.

ⁱⁱⁱ **Section 72 of the Forest Planning and Practices Regulation:**

Roads and associated structures

72 A person who constructs or maintains a road must ensure that the road and the bridges, culverts, fords and other structures associated with the road are structurally sound and safe for use by industrial users.

^{iv} **Section 73 of the Forest Planning and Practices Regulation:**

Design of bridges

73 A person who builds a bridge for the purpose of constructing or maintaining a road must ensure that the design and fabrication of the bridge

- (a) meets or exceeds standards applicable to roads at the time the design or fabrication is done, in respect of
 - (i) bridge design, as established by the Canadian Standards Association, Canadian Highway Bridge Design Code, CAN/CSA-S6, and
 - (ii) soil properties, as they apply to bridge piers and abutments, as established by the Canadian Foundation of Engineering Manual, and
- (b) takes into account the effect of logging trucks with unbalanced loads and off-centre driving.

^v **Section 77 of the Forest Planning and Practices Regulation:**

Retaining information

77 (1) A person who builds a bridge or major culvert for the purpose of constructing or maintaining a road must do all of the following:

- (b) prepare as-built drawings of the bridge or major culvert;
- (c) retain the information referred to in paragraph (b) until the earlier of the date that
 - (i) the bridge or major culvert is removed, and
 - (ii) the person is no longer required to maintain the road.

^{vi} **Section 6(2) of the Wildfire Act:**

WA - Industrial activities

6 (2) A person who carries out an industrial activity must do so

- (a) at a time, and
- (b) in a manner

that can reasonably be expected to prevent fires from starting because of the industrial activity.

^{vii} **Section 6(3) of the Wildfire Regulation:**

WR - High risk activities

6 (3) If there is a risk of a fire starting or spreading, a person carrying out a high risk activity on or within 300 m of forest land or grass land must

- (a) do so in accordance with the applicable restriction and duration set out in Schedule 3 (below) for the Fire Danger Class, and
- (b) keep at the activity site
 - (ii) an adequate fire suppression system.

Schedule 3
Restrictions on High Risk Activities

Fire Danger Class (DGR)	Restriction	Duration
III (moderate)	After 3 consecutive days of DGR III or greater, maintain a fire watcher after work for a minimum of one hour	Until after the fire danger class falls below DGR III
IV (high)	Maintain a fire watcher after work for a minimum of 2 hours	Until after the fire danger class falls below DGR III
	After 3 consecutive days of DGR IV, cease activity between 1 p.m. PDT (Pacific Daylight Saving Time) and sunset each day	Until after the fire danger class falls to DGR III for 2 consecutive days, or falls below DGR III
V (extreme)	Cease activity between 1 p.m. PDT (Pacific Daylight Saving Time) and sunset each day and maintain a fire watcher after work for a minimum of 2 hours	Until after the fire danger class falls below DGR IV for 2 or more consecutive days
	After 3 consecutive days of DGR V, cease activity all day	Until after the danger class falls below DGR V for 3 or more consecutive days, or falls below DGR IV

^{viii} Fire Danger Class is defined under the *Wildfire Regulation* Section 6(2), which can be found at: <http://www.fpb.gov.bc.ca/publications.aspx?id=2147484035>

^{ix} The Chief Forester's Standards for Seed Use can be found at: <http://www.for.gov.bc.ca/code/cfstandards/CFstds03Jun2010.pdf>



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