



**Forest
Practices
Board**

Harvesting Upslope of Cabins Along East Shuswap Lake

Complaint Investigation #131133

FPB/IRC/194

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Table of Contents

Commentary1

The Complaint3

Background4

 Legislative and Professional Obligations5

Discussion.....6

 Did the licensee adequately address landslide risk?.....7

 Were communications with property owners adequate?9

Conclusion10

Commentary

This complaint investigation highlights the responsibility licensees have to ensure stakeholder involvement and communications are consistent, timely, responsive, transparent and collaborative. It also demonstrates the responsibility of the public to get involved, share in building a working relationship with the licensee, and become an active part of the forest management process.

In this complaint, the licensee worked hard to properly address risk and engage with those potentially affected to help them to understand the situation. The complainant correctly raised concerns about the proposed development, which resulted in some positive changes. The licensee listened to the concerns and took steps to address them, resulting in more professional scrutiny, enhanced communications and a better overall plan. The Board is encouraged to see the resulting collaboration and communication by professionals and residents regarding this proposed development.

The changes to the plan, and the resulting commitments made by the licensee are the first step. Equally important will be the licensee's follow-through on the road and harvest plans, and the subsequent monitoring and maintenance of development by all parties.

The Complaint

On November 5, 2013, the Forest Practices Board received a complaint about proposed harvesting and road construction, planned by Canoe Forest Products' Ltd., a subsidiary of Gorman Bros. Lumber Ltd., in an area upslope of seasonal cabins on the east side of Shuswap Lake (Fig 1).

The complainant is a cabin owner and is concerned that future harvesting and road construction may create a debris flow, debris flood, or other form of landslide that could impact lives, property and water quantity and quality. The complainant's concerns were that:

- the licensee's planning did not adequately consider the immediate and long-term risk of the proposed development on landslide potential;
- the licensee would not release the terrain stability assessment for the proposed harvesting and road construction to the potentially affected parties;
- the proposed development poses a risk to life and property; and
- there is little recourse to the cabin owners should a landslide damage their properties.

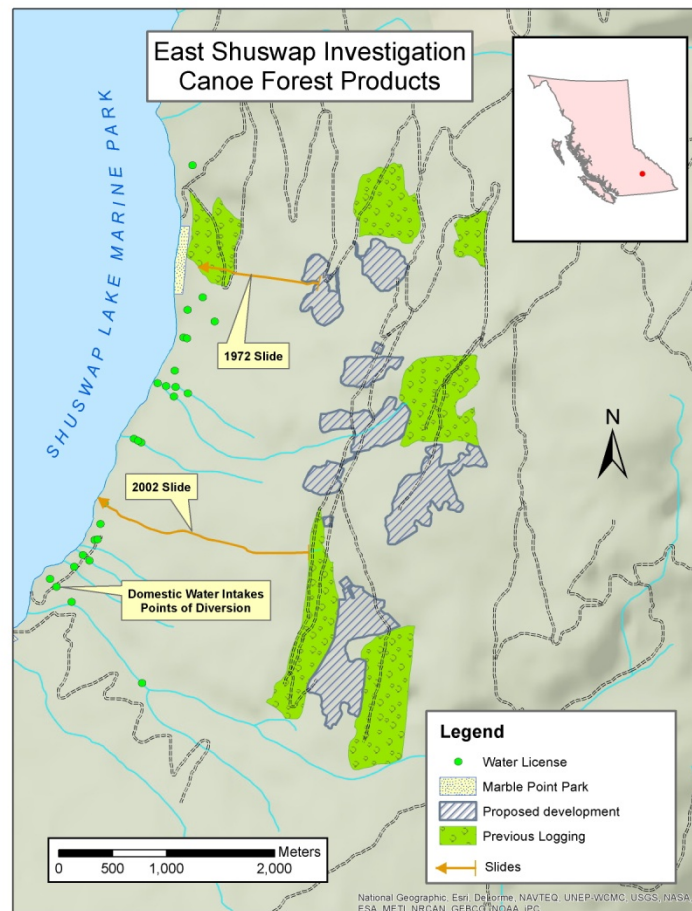


Figure 1 Overview of development. Cabins are along the lakeshore below the water licences

Background

In November 2012, Canoe Forest Products' Ltd. (the licensee) acquired Tree Farm Licence (TFL) 33, previously held by Federated Co-operatives Limited (FCL). In 2013 the licensee proposed a development on TFL 33 in an area upslope of 25 licensed domestic water intakes and 48 recreation cabins located along the eastern shoreline of Shuswap Lake. The licensee planned to reactivate 3.4 kilometres of previously deactivated road, construct 1.3 kilometres of new road, and harvest timber in four cutblocks, composed of nine patches, with a total harvest area of 48.9 hectares (Fig 1). The development is located on 'gentle over steep' terrain,¹ which is susceptible to landslides,² primarily due to the potential for roads to concentrate surface and subsurface water flows, directing it onto steeper slopes below.

There have been two forestry-related landslides in this area that the licensee and complainant are aware of. In 1972, a landslide occurred below the northern part of the proposed development but settled out and stopped before reaching private property or the lake. In 2002, another landslide³ occurred below the southern portion of the proposed development. The 2002 landslide affected private property and deposited large amount of debris into the lake. Both landslides were initiated near existing roads and were attributed to drainage redirection as a result of three blocked culverts and the failure of two cross ditches.

Terrain Stability Assessment (TSA)

A TSA evaluates the likely effect of timber harvesting or road construction on terrain stability and may include recommendations for site-specific actions to reduce the likelihood of post-harvesting or road-related landslides. These actions may involve modification of the cutblock layout, harvesting technique, road location, trail location, construction techniques, maintenance, or rehabilitation techniques.

– Adapted from the Mapping and Assessing Terrain Stability Guidebook, Second Edition, August 1999.

Based on the landslide history, the licensee was concerned that the proposed development increased the risk of a landslide that could impact down-slope private property, public safety and water quality. To address this, it focused the layout of the proposed cutblocks on gentle topography likely to have a low likelihood of landslide risk following harvest. The licensee then used its terrain specialist⁴ consultant (licensee's terrain specialist) to review plans for the proposed development and complete a terrain stability assessment (TSA). The TSA, completed in April 2013, included a drainage plan for reactivating existing roads and constructing new roads.

On May 23, 2013, the licensee sent letters to licensed water users notifying them of the proposed development and inviting them to review the plan in detail. Cabin owners also attended two separate field reviews with the licensee. The complainant declined to attend any field reviews.

A meeting was held between the licensee and the complainant on July 5. At this meeting, the complainant requested a copy of the TSA but the licensee declined. The TSA is a key document for the harvesting plan, and it contains information which would help the public understand the plan

¹ 'Gentle over steep' is where there is gentler ground above steep, unstable or potentially unstable terrain.

² Jordan, P. 2001. *Regional incidence of landslides*. In *Proc. Watershed Assessment in the Southern Interior of British Columbia*. D.A.A. Toews and S. Chatwin (editors). B.C. Min. For., Res. Br., Victoria, B.C. Work. Pap 57/2001, pp. 237 – 247.

³ Several other landslides were reported in this area during the same storm event.

⁴ A member of the Association of Professional Engineers and Geoscientists of BC (APEGBC) with appropriate levels of education, training and experience (skill sets) to conduct a terrain stability assessment.

and provide informed input. However, the TSA is over 50 pages long, technical in nature and difficult for a lay person to understand. For this reason, the licensee offered the complainant the opportunity to review the TSA at the licensee's office, where the licensee's professionals could explain the plan, clarify the TSA content and recommendations, review commitments and answer any questions.

Following that meeting, the licensee had another terrain specialist, who had not been previously involved, peer review the TSA, resulting in some minor changes. The TSA was signed off by both the licensee's terrain specialist and the independent terrain specialist on September 5, 2013.

On September 24, another meeting was held, this time between the complainant, the licensee and Ministry of Forests Lands and Natural Resource Operations (MFLNRO). At that meeting, the complainant continued to express concern that the licensee would not release the TSA. But instead of releasing the TSA, the licensee agreed to have the MFLNRO regional geomorphologist—who is also a terrain specialist—conduct another peer review of the TSA.

On September 30, a meeting between the complainant, the MFLNRO (including the regional geomorphologist) and the licensee was held. The regional geomorphologist provided a verbal review of the TSA and followed up on October 7 with a written review in which he noted a number of 'minor issues' regarding timing of inspections, completion of planned events and timing of road construction and harvesting. Subsequently, in further planning, the licensee addressed these issues.

The MFLNRO issued a road permit on October 2 and reconstruction began on October 8. When issuing the road permit, the district manager noted that risk has been, "managed to an acceptable level and low likelihood through the reliance on professionals, adherence to FRPA, internal standard operating procedures and a demonstrated, elevated level of due diligence and due care."

Field reviews were conducted throughout October by the licensee's terrain specialist and the planning forester. On October 31, 2013, while road activities were ongoing, another field review was conducted by the licensee's terrain specialist, the planning forester, MFLNRO district staff and the regional geomorphologist.

The complainant filed a complaint with the Board on November 2. A Board investigator interviewed the complainant, MFLNRO and the licensee and tried to resolve the issues by facilitating communication between the complainant and the licensee.

On January 22, 2014, the licensee, complainant, regional geomorphologist and the investigator further met at the licensee's office. At the meeting, the licensee explained the TSA in detail to the complainant and committed to following all the recommendations contained in the TSA. As well, the licensee made additional commitments to further address the complainant's concerns.

After the meeting the complainant said his concerns were still not adequately addressed and requested that the Board continue with the investigation.

As of February 2014, most road reactivation and new construction was completed.

Legislative and Professional Obligations

Legislative Obligations

The *Forest Planning and Practices Regulation* (FPPR) establishes minimum requirements for public review and comment.

Section 20 requires the licensee to provide a 60-day public review and written comment period for a forest stewardship plan⁵ (FSP), or a FSP amendment, before submitting it to government for approval. No further advertisement or notification is required.

Section 21 requires that the licensee make the FSP available for review during normal business hours at the licensee's place of business.

Section 11 of the *Forest and Range Practices Act* (FRPA) requires the licensee to make the site plan⁶ available for review on request during normal business hours at the licensee's place of business. The site plan is not required to be advertised.

Section 37 of the FPPR requires licensees to ensure that their practices do not cause landslides that have a material adverse effect on soils, water and other forest resources.

Section 39 of the FPPR requires licensees to maintain natural surface drainage patterns on the area both during and after road or temporary access construction.

Professional Obligations

FRPA legislation sets objectives for resource values, but allows forest licensees discretion about how to achieve those objectives. Licensees generally meet the objectives by relying on forest professionals, an approach commonly called professional reliance. If the licensee's forest professional lacks the skill set to address risks associated with proposed development, they must further rely on the advice or assistance of a specialist who possesses these qualities. Assessing terrain stability requires specialized knowledge and experience and it is up to the licensee and their coordinating forest professional to ensure that individuals completing these assessments are competent.

Though specialized professionals are used to conduct appropriate assessments and prescribe appropriate management strategies, it is ultimately up to the forest licensee to decide if it will accept and follow the advice of professionals.

Professional reliance is the practice of accepting and relying upon the decisions and advice of resource professionals who accept responsibility, and can be held accountable for, the decisions they make and the advice they give.

(Applying Professional Reliance Under FRPA, Professional Reliance Working Group, April 2008)
http://www.abcfp.ca/publications_forms/publications/documents/report_PR_Workgroup.pdf

Discussion

To answer the complainant's concerns about the proposed development, the Board considered the following questions:

- Did the licensee adequately address landslide risk?
- Were communications with property owners adequate?

⁵ 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 cutblocks. FSPs can have a term of up to five years.

⁶ A site plan (SP) is a site-specific plan that must be consistent with the forest stewardship plan, FRPA and FPPR; identify the approximate locations of cutblocks and roads; identify stocking standards and soil disturbance limits; and, identify how the results or strategies described in the FSP apply to the site.

The complainant was also interested in who would be responsible for remediation, should a landslide occur. To partially answer the complaint's question about who would be responsible if damage occurs, the Board notes that section 37 of the FPPR requires licensees to ensure that their practices do not cause landslides that have a material adverse effect on soils or water (and other forest resources). Contravention can result in penalties and remediation orders. Licensees can avoid contravening FRPA's practice requirements if they demonstrate due diligence.⁷ There are other remedies outside of FRPA for assigning responsibility, but they are outside the jurisdiction of the Board, so the investigation did not deal with them. As previously stated by the Board, where licensee practices are wholly or partially responsible for undesirable outcomes, the licensee should take some action to mitigate impacts and reduce remaining environmental risks where it is reasonable to do so.⁸ While such actions may not be legally required, it is a good practice to build and maintain public trust.

Did the licensee adequately address landslide risk?

Risk is the effect of uncertainty on objectives.⁹ Assessment of landslide risk is an evaluation of the hazard or likelihood of a landslide occurring and the consequence or impact the landslide might have on a specific resource value. It considers the inherent hazards associated with both existing site conditions and proposed development, including harvesting and road building activities. It is expected that when a forest licensee makes forest management decisions to facilitate a flow of economic benefits, they will adequately manage risk for other resource users and values. Under FRPA, with its emphasis on professional reliance, licensees are expected to use terrain specialists when necessary to evaluate landslide risk and make recommendations about how to minimize it.

In this case, the licensee and its professionals initially recognized the potential for landslides in the area. The licensee's terrain specialist then conducted a TSA to assess the specific risk associated with development, in accordance with generally accepted geotechnical practices in the BC forest industry and in conformance with professional guidelines.¹⁰ The TSA was appropriately focussed on the proposed harvest area, road reactivation and new road construction. It provided a general description of each harvest patch and road section; the likelihood of a landslide being initiated from harvesting or roads; the potential impact of a landslide (should one occur) on private property, public safety and water quality; recommendations to minimize the likelihood of initiating a landslide following harvesting; and, residual risk after following the recommendations.

The licensee addressed the FRPA requirement to maintain natural surface drainage by having its terrain specialist complete a drainage plan that identified drainage patterns; prescribed culvert size and locations; and identified deactivation measures once harvesting was completed. The drainage plan identified all creeks along the roads and prescribed specific culvert sizes for each

⁷ Due diligence means taking all reasonable care to foresee an event and to take appropriate action, including conducting appropriate assessments and following recommendations, to avoid the event from happening.

⁸ *Balancing Risk across Resource Values in Forest Operations*. Forest Practices Board bulletin, March, 2014.

⁹ CAN/CSA-ISO 31000, *Risk management — Principles and guidelines*, January 2010

¹⁰ The Association of BC Forest Professionals (ABCFP) and the Association of Professional Engineers and Geoscientists of BC (APEGBC) developed *Guidelines for Professional Services in the Forest Sector – Terrain Stability Assessments* (guidelines). The guidelines establish a standard for managing terrain stability in the forest sector, provide guidance on when and where to conduct TSAs, and outline the roles and responsibilities of ABCFP and APEGBC members.

http://www.abcfp.ca/regulating_the_profession/documents/Guidelines_terrain_stability.pdf

crossing. The terrain specialist also reviewed the road during the 2013 spring runoff to observe the area during peak flows.

In response to the complainant's concerns, the licensee had the TSA reviewed by another terrain specialist from a separate engineering firm, which resulted in minor changes. The modified TSA was then signed and sealed by both terrain specialists. The TSA was then also reviewed by the MFLNRO regional geomorphologist, who provided written comments, which were addressed in subsequent planning. MFLNRO's district manager further noted that risk was being managed to an acceptable level when she issued the road permit, recognizing the licensee for an elevated level of due diligence and care.

The final TSA established the hazard or likelihood of a landslide as 'low'; the consequence or impact of a landslide on private property, public safety and water quality ranged from 'low to very high'; and the residual risk following harvesting and road construction as 'low to moderate', if the recommendations were followed. In this instance, a residual risk of 'low to moderate' was tolerable to the licensee, but the complainant wanted the residual risk to public safety and property reduced to 'low' before development proceeded. This is understandable given that residual risk is imposed upon property owners, and there is little recourse for those affected.

The licensee committed to implementing the recommendations in the TSA, which included reviewing road and trail remediation measures with a qualified specialist. In addition, the licensee committed to other actions, such as: using a coordinating terrain specialist to oversee operations,¹¹ establishing minimum inspection frequency for the roads and cutblocks, and, preparing and implementing a road deactivation plan with oversight by a qualified specialist. The deactivation plan is critical for establishing and maintaining natural drainage patterns and avoiding concentration of flows, which addresses long term risk to avoid issues as in past landslides. Finally, the licensee and complainant agreed it would be beneficial for them to conduct some joint field reviews to improve communication.

The licensee also prepared an 'Action/Response Plan' containing contact information of licensee staff, staff involved with preparing the TSA and equipment operators. The roles, responsibilities and reporting requirements should a landslide or major erosion event occur are detailed in the licensee's *Environmental Management System – Emergency Response Manual*.

Finding

In the Board's opinion, the licensee's planning adequately addressed the risk to cabin owners from landslides that may result from road and harvesting activities.

- A terrain specialist completed a TSA which identified the risk associated with proposed development and recommended operational strategies to minimize it. The TSA was reviewed by an independent terrain specialist, was modified based on the results of that review, and was signed and sealed by both terrain specialists.
- The signed TSA was further reviewed by the regional geomorphologist, who is also a terrain specialist. His review identified a few minor issues which were addressed.
- The licensee committed to following the recommendations in the TSA and implement additional strategies to further address the complainant's concerns.

¹¹ This was identified as a recommended best practice in the Laird Creek Landslide complaint investigation available at http://www.fpb.gov.bc.ca/irc186_laird_creek_landslide.pdf.

Were communications with property owners adequate?

FRPA allows licensees considerable discretion with regard to how they communicate with the public and other stakeholders. Effective communication strategies need to be tailored to reflect individual situations. However, it is also important that licensees conduct their activities in a way that wins public confidence in their ability to manage the forest resource in consideration of all resource values.

In this case, the licensee exceeded legislative requirements for communication with potentially affected cabin owners and water licensees. There is no legislative requirement or FSP commitment to notify domestic water licensees of proposed development. Regardless, the licensee communicated through meetings, field reviews, letters and emails. On May 23, 2013, the licensee sent a letter to cabin owners notifying them of plans to develop the area and providing them an opportunity to review the TSA at the licensee's office. In addition, four meetings were held between the licensee, complainant and MFLNRO. Two of these meetings were also attended by the regional geomorphologist.

The Board has previously stated that effective public consultation requires an opportunity for public input and that public involvement is most effective when it incorporates eight principles.¹² In this case, the licensee followed these principles. One of the principles is to provide sufficient and understandable information. The complainant requested that a copy of the TSA be released to him, but the licensee refused, explaining that in its experience, people often take sections of their reports and use them out of context. The licensee told the Board it will continue to make the TSA available for review at its office, and will use it to carefully explain decisions to the complainant or any other individuals of the complainant's choice.

Finally, the licensee committed to continued communication with the complainant. Part of the continuing dialogue was a field reviews with the complainant on April 8 and May 13, 2014.

Finding

- Licensee communication was adequate, exceeded legislative obligations and mostly followed the Boards principles of effective communication.
- The licensee did not release the TSA, but provided a reasonable alternative by reviewing the TSA with the complainant and allowing individuals to review the TSA at the licensee's office.

¹² [Board Bulletin, Volume 3 – Opportunity for Public Consultation under FRPA.](#)

Conclusion

The licensee's actions exceeded the legal requirements of FRPA and adequately addressed the landslide risk for the proposed development. The complainant said that the licensee made the decision to proceed with development, putting cabin owners at an increased risk, and so should be doing even more to reduce the risk. The licensee's professional told the Board investigator that he understands this expectation, but thinks the licensee has done everything reasonable to address risk and will continue with the development.

In this instance, the Board considers that the licensee adequately addressed the risk to private property, public safety and water quality. The licensee completed a detailed terrain stability assessment (TSA) to assess risk and make recommendations to mitigate potential impacts of harvesting and road construction. The TSA was reviewed by two experienced terrain specialists and their input was discussed and incorporated. Further, the licensee committed to following the recommendations in the final TSA, as well as additional steps to reduce long term risk.

Licensee communication was adequate, exceeded legislative obligations and followed the Board's principles of effective communication. The licensee was proactive with affected parties, notifying and informing them of proposed activities with letters, meetings, field reviews and involvement of government staff. Although the licensee reviewed the TSA with the complainant, it did not provide the complainant a copy.

The complainant and the licensee have agreed to participate together in field reviews once operations start. It is anticipated that through these field reviews, communication and trust will develop and an effective planning process will evolve.



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