



**Forest
Practices
Board**

Road and Bridge Practices

Board Audit Findings 2005-2011

Special Report

FPB/SR/43

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Table of Contents

Board Commentary..... 1

Introduction..... 2

Audit Findings 2005-2011 2

 What are the FRPA requirements for Roads and Bridges? 3

 Summary 5

Examples of non compliant road and bridge practices..... 6

Examples of compliant road and bridge practices 8

Appendix 1: Summary of Compliance Audits 2005 - 2011 10

Board Commentary

This special report takes a look at the results of Board audits under the *Forest and Range Practices Act* and the *Wildfire Act* over the last seven years, specifically focusing on forestry roads and bridges. For all compliance audits carried out between 2005 and 2011, most roads and bridges met the requirements of the *Forest and Range Practices Act*, but a surprisingly large number did not, especially since 2009.

More than 55 percent of the issues found in audits since 2005 involve roads and bridges. The other 45 percent involve regenerating harvested sites, reporting information to government, and a few findings involved soil disturbance, protection of fish streams and range practices. This report focuses on road and bridge practices because poorly constructed or maintained roads and bridges create the highest risk to the environment and to safety for road users.

Of particular concern to the Board is the number of issues found in the 2010 and 2011 audits. There were five times more significant findings in those two years than in the preceding five years combined. While the audits for the 2012 season have not all been completed and published yet, and are not included in this report, we can say that the road and bridge issues have continued this year. Roads and bridges have been a common area of non-compliance since the Board first began auditing forest practices. However, since 2009, we have been seeing an increase in non compliant practices and that is of concern and needs to be addressed by licensees.

We've also observed a potential trend of reducing costs through cutting corners, as evidenced by decreased overall maintenance work and using few or no culverts in road construction. Whatever the reason for the decline in practices, the public expects better management of roads and bridges to achieve affective stewardship of resources and to maintain high safety standards.

While this report shows examples of the problems we have seen, it also shows examples of good practices. Many forest licensees are doing a good job, and we encourage other licensees to learn from them and employ similar practices in their own operations.

Introduction

The Forest Practices Board (FPB) was established in 1995 and currently operates under the authority of the *Forest and Range Practices Act* (FRPA) and the *Wildfire Act* (WA). The Board conducts audits and investigations and issues public reports about how well industry and government are meeting the intent of British Columbia's forest and range practices legislation. To date the Board has issued more than 425 reports, all of which are available on the internet: www.fpb.gov.bc.ca

This report summarizes observations with regard to road and bridge practices on BC's Crown forest and range land during the past seven years, bearing in mind that currently the Board only has the mandate to assess roads authorized under FRPA.

Auditors sometimes encounter roads on the forest land base that are authorized through other legislation, such as the *Land Act*. These road and bridge practices are outside of the Board's current mandate, and therefore cannot be assessed. An example is the 2010 [Toba Montrose Creek Hydroelectric project complaint investigation](#). These roads have different legal requirements and standards than roads built and used for forestry purposes. This lack of consistent standards is a problem government has recognized and is working to address through the proposed Natural Resource Roads Act.

Significant Non-Compliance (SNC) -

Significant non-compliance includes, but is not limited to, situations where non-compliance has resulted in, or has the potential for, harm to persons or the environment. In some circumstances, an accumulation of individual non-compliances may be significant, even if each individual non-compliance is not considered significant on its own.

Area Requiring Improvement (ARI) -

Areas requiring improvement are identified practices that are not considered significant, and may or may not be in non-compliance with legislation, but are also not considered to be sound forest or range management.

Unsound Practice (UP) -

Unsound forest or range practices are significant identified practices that comply with legislation, but are not considered a sound practice. For example, a road plan may call for hauling away excavated soil, but the operator casts it over the embankment instead.

Audit Findings 2005-2011

From 2005 through 2011, the Board conducted 58 compliance audits, published in 65 separate reports, involving 117 licensees and 17 BC Timber Sales districts. The population of activities audited includes: 2 285 kilometres of road construction; 1 145 kilometres of road deactivation; 34 702 kilometres of road maintenance; 176 bridges constructed and 2 915 bridges maintained. We generally sample between 10 percent and 100 percent of the populations, depending on the size of the populations and the inherent risks.

During that period, 25 audits had issues, including 37 significant non-compliances, 22 areas requiring improvement and 6 unsound practices. From 2005 through 2009, 6 audits had a total

of 6 significant non-compliance findings, and for 2010 and 2011, 7 audits had a total of 31 significant non-compliance findings.

Fifty-seven percent of the issues involve roads and bridges specifically.¹ Of these issues, 22 of the 37 significant non-compliances related to roads and bridges (59 percent). Examples include not ensuring roads are structurally sound, not blocking deactivated roads, using unsound crossings and poorly built roads and structures.

Eleven of the 22 areas requiring improvement related to roads and bridges (50 percent), mostly dealing with road maintenance.

Four of the six unsound practices (67 percent) involved roads, mostly relating to not following the plan for road construction; for example, sidecasting material when the prescription called for full bench end-haul.

What are the FRPA requirements for Roads and Bridges?

Forest Practices Board auditors generally focus on a few specific sections of the *Forest Planning and Practices Regulation* (FPPR),² such as: section 72—roads and associated structures; section 75—structural defects; section 77—retaining information; section 79—road maintenance; section 81—wilderness roads; section 82—road deactivation; as well as some FPPR sections regarding natural drainage patterns and protecting fish and fish habitat.

Some aspects of road and bridge compliance are quite straight forward, such as section 82—if a licensee deactivates a road, they need to barricade the road surface. If they don't, and they don't have a district manager exemption, they are in non-compliance. And section 75—if there is a known structural defect on a bridge, the licensee must correct, close, remove or replace the bridge. Other sections are not so straight forward. For example, section 72 and section 79(6) of FPPR both use the term “must ensure” in the legislation—but what does that mean?

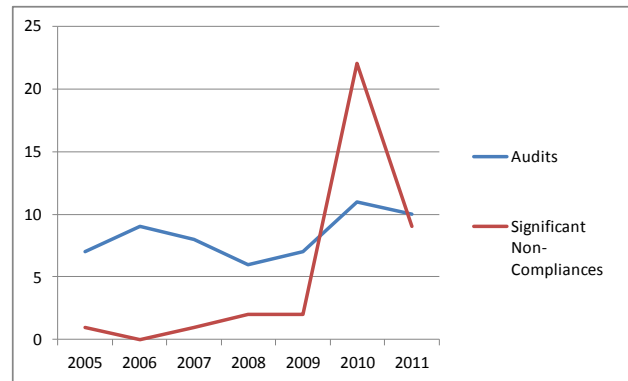


Figure 1. Number of audits and number of SNCs by year.

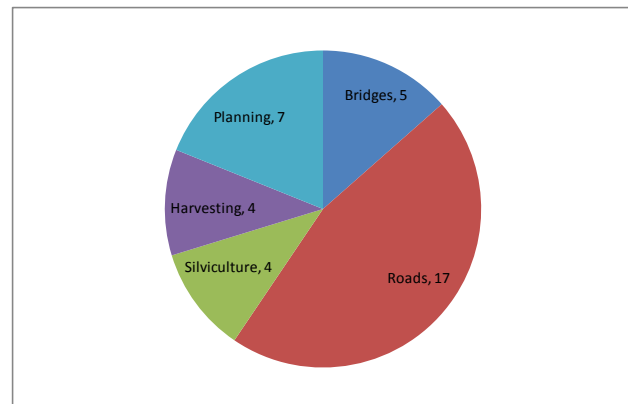


Figure 2 Types of non-compliances (note planning also includes 3 range SNCs),

¹ The remaining 43 percent of issues involved a variety of other practices. The majority of problems were related to planting/regenerating harvested sites and reporting information to government. A few audits found problems with soil disturbance during harvesting, protection of streams during harvesting, and range practices.

² Links to the *Forest and Range Practices Act* and Regulations can be found on our website at: <http://www.fpb.gov.bc.ca/publications.aspx?id=2147484035>

72. Roads and associated structures

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.

79. Road maintenance

- (6) A person required to maintain a road must ensure all of the following:
- (a) the structural integrity of the road prism and clearing width are protected;
 - (b) the drainage systems of the road are functional;
 - (c) the road can be used safely by industrial users.

Section 79(6) has been the subject of discussion at the Board for a while. Various Board staff, contractors, Board members and Ministry of Forests, Lands and Natural Resource Operations staff have had differing opinions on what it means.

A recent Board audit on southern Vancouver Island³ highlighted this issue. In this audit, a TFL holder operating in a high risk coastal area (Clayoquot Sound) had not assessed many of its roads since taking over the licence four years prior. Although no slides had occurred to date, were they “ensuring” the roads are structurally sound and safe for industrial users? Is this non-compliance? Is there a difference between good management and just good fortune?

Since this specific issue has not been defined elsewhere, the Board chair developed a rationale:

The legislation would not include the term “must ensure” if it did not intend there to be positive, deliberate action taken to achieve the results. For the Board, this means it is reasonable for an auditor to describe the absence of positive, deliberate action as non-compliance, whether or not there has been a failure to achieve a result.

Therefore, when auditing compliance with section 79(6) of the *Forest Planning and Practices Regulation* (FPPR) the absence of any proactive management to ensure achievement of the required results may be considered non-compliant by the Board.

This issue also arose in a 2012 audit of a small licensee in the Williams Lake area.⁴ In this audit, there was a similar lack of active management, but there were few forest values at risk. Therefore, the finding was not considered significant, although it was still non-compliance.

However, before a potential finding can be discussed, the specific road or bridge must be assessed in the field. The following section shows examples of road and bridge practices that the Board auditors have seen in the field on various projects—both non-complaint and compliant.

³ [Audit of Forest Planning and Practices, TFL 54, MaMook Development Corp.](#)

⁴ [Audit of Forest Planning and Practices, NRFL A79575 Amabilis Contracting](#)

Summary

From 2005-2011, the Board carried out 58 compliance audits, published in 65 separate reports, involving 117 licensees and 17 BC Timber Sales districts.

- 25 audits had issues, including 37 significant non-compliances, 22 areas requiring improvement and 6 unsound practices.
- 22 of 37 significant non-compliances related to roads and bridges (59 percent).
- 11 of 22 areas requiring improvement related to roads and bridges (50 percent).
- 4 of 6 unsound practices (67 percent) involved roads.

Examples of non compliant road and bridge practices



Poor road construction - failure of a 3-year old road prism. Note excessive organics in fill.



Road maintenance - failure of a road prism. Road under permit but considered a wilderness road. Structural integrity of the road prism has not been maintained, impacting a fish stream, therefore this is non compliant. Note the recent vehicle tire marks on this road.

New bridge construction - not following plans. Auditors recommended immediate removal of this structure and the licensee complied.



Bridge maintenance - cracked and broken stringers and guard log. Bridge was crossed with equipment.

Mismanaged water over a road system. Note extensive erosion over the road prism and ditchline.



Examples of compliant road and bridge practices



Bridge located on a wilderness road and is accessible by the public – since wilderness roads are not required to be used safely by industrial users, this bridge is considered compliant with FRPA, but this is not a sound practice. This bridge has since been blocked and removed.



An example of a well constructed, stable road prism. Note the ditchlines installed, even through rock.

Road deactivation - deactivated bridge crossing. Both approaches have been well armored to reduce the potential for erosion.



Structure with sediment traps / check dams along ditchlines. This is the most effective method to capture and reduce sediment delivery to streams.

Section of new road within a community watershed that is well capped to reduce the potential for sediment delivery.



Appendix 1: Summary of Compliance Audits 2005 - 2011

Report #	Audit #	Licence Type ⁵	Licensee	Findings ⁶
ARC 72	2005-01	NRFL	Nlaka'pamux	None
ARC 80	2005-02	BCTS	BCTS – Rocky Mountain	BCTS – 1 ARI TSL Holder – 1 SNC
ARC 75	2005-03	NRFL	C&C Wood Products	None
ARC 78	2005-04	BCTS	BCTS – Lakes TSA	BCTS – None TSL Holders – 1 ARI
ARC 76	2005-05	FL	Lakeland Mills	None
ARC 77	2005-08	FL	SWC Holdings	None
ARC 82	2005-10	3 FL, TFL	Multiple licensees	None
ARC 83	2006-01	BCTS	BCTS - QCI	None
ARC 81	2006-03	NRFL	Burns Lake Indian Band	None
ARC 86	2006-04	FL	Stuwix Resources	1 ARI
ARC 84	2006-05	PA, FL	Multiple licensees	None
ARC 85	2006-07	NRFL	Chunzoohl Forest Products	None
ARC 92	2006-07	NRFL	Carrier Lumber	1 ARI
ARC 89	2006-08	FL	Triumph Timber	None
ARC 87	2006-09	BCTS	BCTS – Fort St. John	None
ARC 88	2006-10	2 FL, 2 NRFL, TSL	Multiple licensees	None
ARC 91	2006-11	FL, NRFL	Multiple licensees	None
ARC 96	2007-01	5 WL	Multiple licensees	1 ARI
ARC 94	2007-02	TFL	Western Forest Products	None
ARC 95	2007-03	2 FL	Carrier Lumber	None
ARC 99	2007-05	BCTS	BCTS – Clearwater	None
ARC 93	2007-06	BCTS	BCTS – Kootenay Lake	None
ARC 98	2007-07	NRFL	Yun Ka Whu'ten Holdings	None
ARC 97	2007-07	NRFL	Sigurdson Bros. Logging	1 ARI
ARC 100	2007-08	CFA	Burns Lake Community Forest	1 ARI
ARC 102	2007-11	2 FL, BCTS	Multiple licensees	BCTS – None TSL Holder – 1 SNC
ARC 107	2008-01	TFL	Western Forest Products	None
ARC 109	2008-02	4 FL, 2 LTC	Multiple licensees	None
ARC 106	2008-04	BCTS	BCTS - Quesnel	BCTS – 1 SNC TSL Holder – 1 ARI
ARC 105	2008-05	N/A	Forest Service Roads in Skeena Stikine Forest District	None
ARC 108	2008-07	BCTS	BCTS – Sunshine Coast	BCTS – 1 ARI TSL Holders - None

⁵ FL (Forest Licence), NRFL (Non-Renewable Forest Licence), TFL (Tree Farm Licence), CFA (Community Forest Agreement), WL (Woodlot Licence), LTC (Licence to Cut), PA (Pulpwood Agreement), TSL (Timber Sale Licence), BCTS (BC Timber Sales), RT (Range Tenure), SSS (Small Scale Salvage Program)

⁶ ARI – area requiring improvement, SNC – significant non-compliance

Report #	Audit #	Licence Type⁵	Licensee	Findings⁶
ARC 103	2008-09	2 CFA	Harrop-Procer CF and Kaslo and District CF	None
ARC 104	2008-09	FL	Creston Valley Forest Corp.	1 SNC
ARC 117	2009-01	TFL	District of Mission	None
ARC 113	2009-02	TFL	Coast Tsimshian Resources	None
ARC 123	2009-03	5 FL, TFL, CFA, BCTS	Multiple licensees	None
ARC 110	2009-06	2 WL	W1412 AND W1592	None
ARC 112	2009-06	2 WL	W0512 and W1516	2 ARI
ARC 115	2009-06	WL	W1050	1 ARI
ARC 118	2009-07	BCTS	BCTS – Port McNeill	BCTS – 1 SNC / 1 ARI TSL Holders - None
ARC 111	2009-08	BCTS	BCTS - Hazelton	BCTS – None TSL Holder – 1 SNC
ARC 121	2009-09	FL, 4 LTC, 4 RT	Multiple licensees	None
ARC 129	2010-01	6 LTC	Multiple licensees	None
ARC 119	2010-02	FL	Black Mount Logging	None
ARC 120	2010-03	FL	Pacific Inland Resources	None
ARC 140	2010-04	FL, BCTS, SSS, 4 RT	Multiple licensees	3 SNC
ARC 130	2010-05	FL	Interfor	1 SNC, 2 ARI
ARC 128	2010-06	NRFL	Klatassine Resources	1 ARI
ARC 122	2010-07	TFL	Canfor	None
ARC 125	2010-08	FL	Tembec	None
ARC 127	2010-09	FL	Conifex	None
ARC 139	2010-11	BCTS, 11 TSL	BCTS – Campbell River	BCTS - 3 SNC, 1 ARI, 1 Unsound Practice TSL Holder - 15 SNC, 5 Unsound Practice
ARC 124	2010-12	BCTS	BCTS - Merritt	None
ARC 145	2011-03	TFL	MaMook	2 SNC
ARC 133	2011-04	4 CFA	Multiple licensees	None
ARC 132	2011-05	FL	Babine	None
ARC 136	2011-06	2 LTC	Troll Mountain Resort	1 ARI
ARC 131	2011-07	3 NRFL	Multiple licensees	None
ARC 143	2011-08	3 WL	W1431, W1881, W1888	None
ARC 142	2011-08	2 WL	W0295, W1893	2 SNC
ARC 141	2011-08	1 WL	W0657	3 SNC
ARC 137	2011-09	FL	Huscroft	1 ARI
ARC 135	2011-10	BCTS	BCTS - Squamish	BCTS – None TSL holder - 1 SNC, 1 ARI
ARC 138	2011-11	BCTS	BCTS – Mackenzie	BCTS - 1 SNC, 1 ARI TSL Holders - None
ARC 134	2011-15	FL	Weyerhaeuser	1 ARI



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