

Terms of Reference for Special Investigation

Road Construction in Steep Terrain

February 2015

Introduction

There is a vast network of resource roads constructed in British Columbia. With our rugged landscape, it is inevitable that some of these roads are constructed on steep slopes. Roads on steep slopes have long been identified as a cause of slumps, landslides and, in some cases, impacts to fish streams and private property across BC. To manage these risks, standards of engineering and construction have been developed over the years, some through legislation, but most through professional guidelines.

The *Forest and Range Practices Act* (FRPA) does not provide any standards for road construction. Instead, government relies on qualified professionals, licensee accountability, and compliance and enforcement to achieve good results. Under the *Forest Planning and Practices Regulation* (FPPR), the legal requirement is for a person who constructs a road to *ensure* the road, and other structures associated with the road, are structurally sound and safe for use.

To provide guidance to professionals constructing roads in the forest sector, the Joint Practices Board of the Association of BC Forest Professionals (ABC FP) and the Association of Professional Engineers and Geoscientists of BC (APEGBC) has developed [Guidelines for Professional Services in the Forest Sector-Forest Roads](#) (June 2012). These guidelines, approved by both the ABCFP and APEGBC councils in 2012, describe the professional practices associated with forest roads, and are meant to establish a standard of care with respect to forest road activities. While FRPA is relatively silent on public safety, the guidelines identify obligations to provide for worker and public user safety and to protect the environment.

Forest Practices Board auditors have identified concerns with road construction techniques on steep slopes. These concerns include: plans and recommendations not being followed; no qualified registered professional involvement or terrain stability assessments prepared and; lack of supervision and/or operator experience.

Objectives

The investigation will determine whether the parties who construct resource roads on steep terrain are meeting legislative requirements of FRPA and following professional standards of practice and the related guidelines of the professional regulatory bodies. Are the roads stable, safe for industrial and public use, constructed according to plan, and is the potential for damage to the environment being mitigated?

Scope

The investigation will focus on roads constructed since June 15, 2012, by *Forest Act* agreement holders, BC Timber Sales under *Forest Act*, s.121 and timber sale licence holders in the BC Timber Sales program, in 3 or 4 districts. Geographic coverage will include both coastal and interior districts.

Approach

The investigation will include office and field components. Staff will use GIS and Google Earth mapping to identify an initial population of roads that meet some of the criteria (e.g., slopes > 60%) within the selected districts. Detailed information will then be requested from the agreement holders that constructed the identified roads to finalize the population. In addition, investigators will interview District Engineering staff, WorkSafe BC safety officers, and members of the BC Forest Safety Council in the sample areas to identify any potential areas of concern.

Once the sample population has been identified, sites will be reviewed in the field for a number of criteria, including:

- adherence to plans (and profiles if available)
- adherence to recommendations of a terrain specialist
- accurate placement, sizing and proper installation of sufficient numbers of drainage structures
- safe for industrial and public use
- restrictions for environment and safety concerns identified and adhered to
- specific design objectives met
- assumed or documented ground conditions accurate
- road use objectives met and understood
- involvement of professionals, where required

Another key aspect of the investigation will be to identify if proper professional input and oversight occurred where changes were made to the prescribed design and location of the road by construction crews.

Reporting

A public report will be prepared. Findings will be grouped by geographic area and not by individual licensees (unless significant concerns are noted). Results may also be grouped by class, such as tenure type. The report may also make recommendations or comments on the legislative requirements of FRPA towards road construction practices currently being conducted on steeper terrain.