

BC Forest Safety Council _ August 15, 2018

Forestry Pilot Report



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BC Forest Safety

INTRODUCTION

In July 2016 the BC Forest Safety Council (BCFSC) applied for funding under the Sector Labour Market Partnerships (Sector LMP) program to develop a project aimed at addressing the need for skilled workers in the forestry sector and the second goal outlined in the Forest Sector Workforce Initiative Roadmap. Since the start of the project, the BCFSC has:

- developed units of competence and the corresponding unit assessments tools for 32 forestry occupations;
- developed holistic recognition of current competence assessment tools (PLA/RPL); and,
- piloted the forestry common core, faller, trainer and assessor learning resources.

This test pilot report will outline the outcomes from the initial piloting of the materials, recommendations for improving the materials, and how BCFSC plans to implement the changes in the future.

The views and opinions expressed in this report are those of its author(s) and not the official policy or position of the Government of British Columbia.

FORESTRY PILOT DEFINITIONS

A pilot is a control activity to test the validity and accuracy of a product before distributing to a larger audience.

There are generally two types of pilot activities:

- peer review activity, and
- field testing.

PEER REVIEW

Peer review is an activity undertaken for reviewing a document or assessment tool for accuracy of content.

Peer review usually involves subject matter experts that were not involved in the development of the product conducting a rigorous review. This can include occupationally competent instructors and interested stakeholders.

FIELD TESTING

Field-testing is conducted after a robust peer review to determine if the content is at the right level for the audience. Field-testing of assessment tools can also be used to identify deficiency in learning resource content, and act as a second check on language and occupational terminology.

Caution should be taken when field-testing. Just because the field test audience may not be familiar with a subject does not mean the assessment tool is not valid in the newly developed standard. Validity of content should fall under peer review. Field testing takes place over a longer period than peer review and can take between 6 months and 2 years to complete.

CONTINUOUS IMPROVEMENT

Continuous improvement is an ongoing effort to improve competency standards and assessment tools, through incremental improvements over time to capture regulatory, technological, or procedural change. Each time a revision is made will result in a peer review and, and subject to the complexity of the change, may result in further field testing if required. The standards are living documents and are in a constant state of review to ensure they align with industry best practice.

FORESTRY PILOT REPORT

TRAINER AND ASSESSOR PILOT

The competency model is dependent on qualified trainers to deliver occupation specific instruction, and qualified assessors to evaluate trainees against the occupation standards.

The trainer and assessor materials were designed and developed so that the fundamentals and principles of training and assessment are the same regardless which occupation is being trained and or assessed. For example, the trainer focuses on training delivery and formative assessment while the assessor only focuses on the summative assessment.

To support trainer and assessor development, a suite of products was developed, validated, and field tested, and are comprised of Occupational Analysis Charts (OAC's), Units of Competency (UoC), learning resources, formative and summative assessments, and evidence guides. These trainer and assessor products were designed and developed based on a distillation of international best practices.

Five trainers took upgrade training in preparation for the faller pilot, and 25 individuals took the training for assessor in the faller and log truck driver occupations.

Peer review and field testing has focused on the two occupations with the highest injury and fatality rates – falling and log truck driving.

FALLER PILOT

The three administrators (BC Forest Safety Council, BC Wildfire Service, and Energy Safety Canada) are each conducting pilots in the Forestry, Wildfire, and Oil&Gas sectors using the new standards and learning resources. The Forest sector has completed one pilot and is preparing for a second pilot.

The first Forest sector pilot resulted in minor revisions to the faller competency standards, learning resources and assessment tools, in preparation for the second pilot. The trainer and assessor competency standards, learning resources, and assessment tools did not require revisions prior to the second faller pilot.

An independent education expert observed the first faller pilot and made recommendations for improvement to the student learning resources, lesson plans, competency conversation, and summative assessments.

Student Learning Resources

Recommendation. Reduce repetition. Currently the same information repeats across modules.

BCFSC action: Since the first pilot a full review of the learning resources has occurred with the aim to:

- Reduce duplication – unless the trainers indicated that duplication for reinforcement was useful
- Remove any information in the online pre-course modules that requires in field context to make sense
- Before final submission, both Energy Safety Canada and the BC Wildfire Services will review to remove duplication

Timing: Activity complete but further revisions may occur before submission at end of 2018.

Recommendation. Streamline phrasing – Current phrasing is wordy and often includes unnecessarily arcane language and technical jargon.

BCFSC action: An editor will review the entire resources in the fall to standardize language and content before final submission.

Recommendation. Increase self-testing – Students require more quizzes interspersed throughout the learning materials to test their comprehension more frequently.

BCFSC action: More connected learning activities to reinforce learning will be added using the three condensed levels of blooms taxonomy used in vocational education in Canada.

Timing: Draft activities ready for a WorkSafeBC feedback October 15 with finals included for submission end of 2018.

Recommendation. Increase visual resources – Students appreciated existing videos and images but commented there were too few, especially in the more technical units.

BCFSC action: Develop and insert videos on or before December 2018.

Recommendation. Improve quality of images – Many of the images used are of such poor quality that they convey no useful information. An example of this as an image of different tree species in which the trainee’s commented, the trees appear as ‘black blobs’.

BCFSC action: A professional photographer will be hired in September 2018 to take photos to replace all images plus an extensive list of other images to be included in the learning resources. This will create a bank of high quality images that are standardized.

Recommendation. Add information – the trainers were observed teaching topics not found in the New Faller Model Curriculum Materials. The polling of veteran trainers regarding what topics they believe are worth adding should be considered. If the content recommended is technically sound, the content should be adopted into the program.

BCFSC action: There are three topics identified in WorkSafeBC’s report:

- The use of a "Back Strap Cut" for small to medium diameter leaning trees.
- The use of "Fence Posting" to remove hung-up trees.
- The use of relief cuts in sapwood below the holding wood to eliminate tearing and possible root pull.

These three techniques will be added to the alternate falling methods in the standard and the learning resources under the same topic.

Timing: Immediately.

Lesson Plans

Recommendation. Add learner activities- Currently there are lesson plans that are missing learner activities for one or more levels. Lessons with nothing for students to do are not in the learner's best interest and are not consistent with adult learning best practices. If the current "Element Level" format prevents the inclusion of learner activities, it was recommended to revise or discard the format. The three following issues are prevalent throughout:

- Lesson plans lacking learner activities that support the learner,
- Lesson plans limited to little more than a statement of expected learning objectives, and
- Lesson plans guided by learning outcomes that are impossible to measure and assess.

BCFSC action: The cluster style ‘lesson plans’ building blocks are currently being revised in time for use in the second pilot. Further revisions are expected post pilot.

Competency Conversations

Recommendation. Reduce duration - These assessments should not exceed two hours in duration. At the university level, oral examinations of graduate students are not permitted to exceed two hours because it has been determined that after two hours, students begin faltering due to fatigue. The same would be true of faller trainees, and therefore suggest that the two-hour time limit "rule" be adopted for their Competency Conversations.

BCFSC action: The summative competency conversation that will occur when a candidate has met the evidence requirements will be set at 2 hours.

Summative Assessments

Recommendation. Use independent examiners - During the summative assessments that were observed by WorkSafeBC, trainers who had worked alongside the trainees during the pilot project were also the trainees' examiners. The examiners should be independent of the trainer, as stipulated in the Deloitte Report.

BCFSC action: Third party assessors will be used to conduct the summative assessments and review of evidence for fallers to receive their Certificate of Qualification.

The trainers completed the competency conversation with trainees that they had not trained for the purpose of:

- Reviewing the content of the competency conversation
- Identifying where gaps were in the knowledge after 30 days moving into the 180

Post pilot this function would not occur in the training environment. The third-party assessor would only conduct the summative competency conversation when all evidence requirements for the program had been met.

BCFSC will complete these revisions on or before December 31, 2018.

LOG TRUCK DRIVER PILOT

The log truck driver pilot has resulted in over 200 assessments being conducted by assessors, resulting in revisions being made to streamline the data capture process.

The log truck assessors attended a workshop to share their collective experience, and recommend improvements to the competency conversation and practical assessment tools.

BCFSC will make the revisions and complete the pilot by December 31, 2018.

FORESTRY FUNDAMENTALS

Vancouver Island University piloted a 12-week Fundamentals of Forestry Harvesting Practices Program based on competencies identified and developed by BCFSC. These competencies were identified in consultation with sector experts and include the key skills, knowledge and attributes required for entry-level workers in a harvesting environment. The pilot program is in response to a number of years of surveys / information gathering and strategies to address the potential gap of over 10,000 new employees needed in the Forest Sector. This training, focused on practical safety and operations-based activities.

Consultations on developing and refining training programs based on the work completed by BCFSC is ongoing and will consider:

- The pilot program's course content and fit with sector needs
- Curriculum modifications for future offerings across BC
- Opportunities for modifying or adding to the program for other forestry sub-sectors.

Expected Outcomes

Feedback on Vancouver Island University's "Fundamentals of Forestry" course content and fit with coastal industry needs. In particular do a majority of industry participants agree that:

- The "Fundamentals of Forestry" course is a priority to continue for the sector
- The course content meets the needs of coastal industries for entry-level employees in harvesting
- The course delivery is appropriate
- Some modifications (especially selection of different competencies) may be needed to accommodate different employers and/or different coastal harvesting conditions

Feedback on potential curriculum modifications for future Harvesting Practices training in other regions of BC. In particular:

- Do a majority of industry participants agree that The "Fundamentals of Forestry" course is important to launch in other regions of BC?
- What are the highest priority regions? (Northern Interior, Southern Interior, Kootenays, Peace)?
- Does the selection of competencies need to be modified to take into account regional variations in harvesting conditions as well as the needs of different regional employers?

Recommendations on opportunities for adding to the Harvesting Practices Program for other forestry sub-sectors such as yarding, road building, and transportation. In particular:

- Do a majority of industry participants agree that the “Fundamentals of Forestry” competency-based training is a suitable model for similar training in other sub-sectors?
- What are the highest priority forestry sub-sectors in different regions of BC?

Recommendations to guide next steps and improve future training offerings including:

- Suggestions to help attract suitable course applicants and move them into successful industry employment i.e. sector branding
- Suggestions to facilitate participation by Indigenous peoples in such training programs and on into successful industry employment
- Suggestions on advisory groups/processes to guide course priorities and content
- Pathways for affordable and sustainable training programs through to fully “commercially” qualified workers
- Additional observations and good practices that could be expanded

ONGOING FIELD TESTING

The field testing of the remaining occupations will occur outside this Sector LMP Project and will focus on accuracy of the tools in the field setting.

These occupations include:

- Chokerperson
- Rigging Slinger
- Utility/Landingperson
- Hook Tender
- Grapple Yarder Operator
- Tower Operator
- Mobile Backspar Operator
- Feller Buncher Operator
- Skidder Operator
- Forwarder Operator
- Hoe Chucker Operator
- Dangle Head Processor Operator
- Hydraulic Log Loader Operator
- Small Passenger Vessel Operator
- Boom Boat Operator
- Lowbed Truck Operator
- Fuel Truck Operator
- Truck Mounted Crane Operator
- Dozer Operator
- Excavator Operator
- Backhoe Operator
- Wheeled Loader Operator
- Rock Drill Operator
- Grader Operator
- Articulated Rock Truck Operator
- Internal Auditor
- External Auditor
- Internal Verifier
- External Verifier
- Stand Tending
- Falling Supervisor

The field testing of these occupations will conclude on or before October 2018 at which time the tools and product will be revised and move into a continuous improvement cycle starting in 2019.

Appendix A

Competency Assessment Tools and Occupational Standards