



2018/2019 HIGHWAY MAINTENANCE CONTRACT **TRAINING COURSE**

2020 TAC EDUCATIONAL
ACHIEVEMENT AWARD APPLICATION



BRITISH
COLUMBIA

Ministry of
Transportation
and Infrastructure

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INTRODUCTION

Together, the BC Ministry of Transportation and Infrastructure (Ministry) and its highway maintenance contractors maintain the integrity and safety of more than 47,500 kilometers of highway and 2,800 road structures throughout the province.

Since privatizing highway maintenance in 1988, the Ministry has selected, through a comprehensive tender process, highway maintenance contractors who provide services through long-term (10 year) agreements in all 28 service areas across the province. The value of the highway maintenance agreements totals approximately \$400 million a year.

Since privatizing this work, the Ministry has evolved its highway maintenance agreement from a prescriptive approach, which specified how maintenance contractors should carry out their work, to a performance-based approach that focuses on measuring outcomes and encouraging innovation. The Ministry's emphasis on overseeing results vs managing methods requires more discretion and autonomy on the part of highway maintenance contractors in fulfilling the agreement specifications. It also requires both Ministry and contractors to have a common understanding of the agreement requirements and a high level of trust and collaboration between both parties.

In 2018 and 2019, the Ministry rolled out its new 2018/2019 Highway Maintenance Contract, awarding agreements to contractors in 26 of the 28 service areas. Agreements for the two remaining service areas will be awarded in 2021 and 2023.

The Ministry recognized that it would be critical for Ministry staff and maintenance contractors to be aligned and working well together if the agreements are to be successful. Because of

that, the Ministry took the unprecedented step to develop and deliver specialized training for Ministry staff and maintenance contractors designed to build their knowledge and skills for fulfilling their roles, develop a common understanding of the agreement and establish positive working relationships from the start of the contract.

In June 2018, a training team consisting of four of the Ministry's highway maintenance subject matter experts (SMEs) and a certified adult educator from Urban Systems Ltd, worked closely to design, develop and deliver two-days of in-class training to support Ministry staff and successful highway maintenance contractors in administering and implementing the new agreements. Between October 2018 and October 2019, the team delivered this training 19 times throughout the province and provided approximately 650 person days of training¹. See **Figure 1** for locations, dates and number of participants for each course offering. A total of 421 participants, including 220 Ministry staff and 201 contractor representatives, participated in the training.

Through analysis of formal feedback from participants and observed practices between Ministry staff and maintenance contractors, we are confident that the training has been very successful in meeting desired objectives, was highly valued by both Ministry and contractor participants and will continue to strengthen relationships and, ultimately, result in improved public safety and satisfaction on BC's highways.

**Our team is excited to submit this application
for the Transportation Association of Canada's
2020 Educational Achievement Award.**

¹Note: When participants attended both days of training, their participation was counted twice, to calculate the total number of training days provided.



Date	Location	Participants (Day 1 and Day 2)
October 24 - 25, 2018	Smithers	17
November 1 - 2, 2018	Nanaimo	43
November 7 - 9, 2018	Kamloops	49
November 21 - 22, 2018	Terrace	16
November 28 - 29, 2018	Nelson	43
December 12 - 13, 2018	Coquitlam	27
May 7 - 9, 2019	Coquitlam	64
May 15 - 16, 2019	Terrace	30
May 22 - 23, 2019	Prince George	41
June 12 - 13, 2019	Nelson	24
June 19 - 20, 2019	Fort St. John	30
June 25 - 26, 2019	Kelowna	35
July 9 - 10, 2019	Williams Lake	47
July 17 - 18, 2019	Chilliwack	34
July 24 - 25, 2019	Kamloops	19
Aug 14 – 15, 2019	Dawson Creek	29
September 11 – 12, 2019	Quesnel	26
October 3 - 4, 2019	Smithers	28
October 10 – 11, 2019	Victoria	48
Total		650

FIGURE 1 - NUMBER OF ATTENDEES PER LOCATION



COURSE OVERVIEW

The Highway Maintenance Contract Renewal Training Program was designed to ensure Ministry staff who would oversee the 2018/19 Highway Maintenance Agreements, and the maintenance contractors who would implement them, could establish accurate, common understanding of the agreement, develop the skills required to effectively administer/ implement it, and establish the positive relationships that would support their working well together over next 10 years.

The program was created as a two-day course. Each full-day course sought to build knowledge and skills in three general areas of competence (GACs), with specific learning objectives to support mastery of each competency. GACs were organized into separate modules within the training. **Figure 2** shows the GACs and learning objectives for the Day 1 course for Ministry staff. And the GACs and Learning Objectives for the Day 2 course for Ministry staff and maintenance contractors.

After completing this module, you will be able to:

- Recognize changes in the new agreement format
- Apply the new specifications for:
 - Rest areas
 - Communication
 - Dust control and base stabilization
 - Traffic management
 - Invasive plants

The course was designed to use a variety of instructional techniques to support a diversity of learning styles including:

- Small group hands-on activities
- Large group discussions
- Videos
- Presentations
- Learner workbook & handouts

DAY ONE MODULES



1 | NAVIGATE THE NEW AGREEMENT

- Correctly read the new 2018/19 Highway Maintenance Agreement
- Correctly interpret the new agreement's defined terms
- Find the information you need in the new agreement

2 | EFFECTIVELY ADMINISTERING ALL SERVICES WITHIN THE AGREEMENT

- Identify and administer routine services
- Identify and administer quantified services
- Apply the cost-plus schedule
- Identify and administer additional services

3 | APPLY OTHER KEY ELEMENTS OF THE AGREEMENT

- Make amendments to the new agreement
- Hold contractors accountable to their quality management system
- Manage contractor performance
- Manage gravel pits

DAY TWO MODULES



1 | APPLY KEY CONCEPTS FOR WORKING WELL TOGETHER

- Identify the importance of collaborating as Ministry staff and maintenance contractors to successfully implement the new highway maintenance 10-year agreement
- Identify the key concepts and actions for collaboration that will support a positive working relationship within your service area

2 | EFFECTIVELY ADMINISTER/IMPLEMENT THE SPECIFICATIONS

- Recognize changes in the new agreement format
- Apply the new specifications

3 | ADMINISTER RECORDS AND REPORTING REQUIREMENTS

- Understand and apply the requirements around records and reporting

FIGURE 2 - GACS AND LEARNING OBJECTIVES FOR DAY 1 WITH MINISTRY STAFF AND DAY 2 WITH MINISTRY STAFF AND CONTRACTORS

INNOVATION IN PROGRAM APPROACH AND EXECUTION

A NEW APPROACH TO LEARNING

While Ministry staff have, in the past, undergone orientation at the start of new highway maintenance agreements, the Ministry has never undertaken a training course of this kind. The approach of owner and contractor learning side-by-side is, in itself, innovative for this industry. The training was designed to foster collaboration and relationship building and reduce the potential for misunderstandings or adversarial perceptions that, at times, have been part of Ministry/Contractor relations in the past.

BEST PRACTICES IN ADULT LEARNING

The Ministry also used an innovative approach to curriculum design. While many industry-related courses are taught by subject matter experts, the courses themselves do not always employ the proven principles and processes of adult learning to ensure their success.

The Ministry decided to hire a certified adult educator to lead the training team through the process of curriculum design, development and delivery.

The Ministry's subject matter experts (SMEs) were senior members of the Ministry's 2018-2019 Highway Maintenance Contract Renewal Team and responsible for developing the new agreement. They worked closely with a certified training and development professional from Urban Systems Ltd. Together they applied a proven process for curriculum design that is based on best practices in the adult learning industry.

Using a well-defined and proven course planning process helped the team to identify and build into the course the required knowledge and skills Ministry staff and

maintenance contractors would need to be successful in their roles. The curriculum design process employed four general steps.

1 Determine competencies required to do the job and the learning objectives to ensure mastery

Through a day-long curriculum design workshop, the team identified the general areas of competence (GAC) that learners would need to fulfil their roles well. From there, the team identified specific learning objectives (or enabling skills) that would enable participants to master the competencies. See **Figure 2** above and also **Appendix A** for the detailed training plan for this course.

2 Develop detailed lesson plans considering a range of learning styles

The team came together for several in-person workshops to create lesson plans to support each learning objective for the two days of training (21 in total). Lesson planning allowed the team to think through and record the detailed content participants would need to know. They not only outline the course content, but lesson plans also allowed the team to consider the various learning styles that participants would represent and to design into the course teaching methods and resources to support those learning styles. See **Appendix B** for a sample lesson plan.

3 Create innovative teaching tools and learner materials.

Teaching tools include materials instructors require to support course facilitation. One of the challenges that the Ministry identified was how to ensure a long shelf life for the course and support not only current facilitators, but those

who will deliver the course in the future. The team developed a comprehensive **Facilitator Handbook** that included background on the principles of adult learning, a detailed course agenda, and suggested script for course slides and activities. **PowerPoint slides** provided visual cues and key content points for participants during the course. The Facilitator Handbook and PowerPoint slides help ensure that, regardless of who will teach the course over the next 10 years, they will be well supported, and the integrity of the course content and approach will be maintained.

See **Appendix C** for sample of Day 2 course presentation slides and **Appendix D** for an excerpt from the Facilitator Handbook.

The team also created a comprehensive **Learner Workbook** for each full-day course to support participants' learning during the session and serve as a resource following it. The workbook included all course content (to minimize the need for note taking), instructions for all hands-on activities, important contract-related highlights presented in "Did you know" or "New in the Agreement" boxes. Because the content had a potential to be dry, the team hired a cartoonist to create content-relevant cartoons that were placed throughout the learner workbook and on presentation slides to add some levity and humour to the course. See **Appendix E** for excerpts of learner workbooks from Day 1 and Day 2 courses. The team engaged participants through innovative hands-on activities that fostered collaboration and teamwork -- for example a competitive Records Bingo game and a timed, team-based brainstorming exercise to develop action items for follow-up after the course.

All teaching tools and learner materials were branded with the Ministry's logo and colours to lend consistency of look and feel across all materials.

"Incorporating a competitive, timed exercise was one innovative approach that really encouraged participants to work together as a Team while competing and learning the contract requirements – win/win!! [...] "Receiving the follow up list of actions from the collaboration activity was an innovative way to re-affirm and highlight the common interest and partnering aspect of the relationships. These action lists provide the foundation for the parties to reference, review and build on in the future."

Sandi Paulson, General Manager, Argo Road Maintenance.

(See **Appendix H** for the full letter of recommendation from Sandi Paulson)

4 Identify and Create Measures of Success

While the success of training is often measured through formal testing of course participants, in a course of this nature, the team knew that testing would neither be appealing to participants nor useful to the course sponsor. Instead, the team adapted a course evaluation format that is based on industry best practices for measuring learning impact developed by the Canadian Centre for Learning Impact. Specifically, the evaluation assessed participant's perceptions in six key areas:

- 1. Skills and Knowledge:** Have participants acquired new knowledge, skills or attitudes in areas important to their jobs?
- 2. Perceived Value:** do they value their learning from the program (i.e. do they see the training as credible, relevant, practical and essential)?
- 3. Confidence in Applying Learning:** Are they confident in their capability to apply their new learning to their jobs?



4. Quality of the Course: How would they rate the quality of facilitation and specific teaching tools (discussions, videos, etc.) used to teach the content?

5. Quality of Tasks Used to Teach Content: How effective was the course in achieving tasks important for adult learning (e.g. chance for reflection, opportunity to participate, chance to learn from others, etc.)

6. Course logistics: How did attendees rate the breaks, lunch, sound, seating, meeting room and venue location in supporting their learning?

See **Appendix F** for sample course evaluations for Day 1 and Day 2.

5 Pilot the Course

The training team conducted two initial pilot programs with a view to improving the course based on facilitator and learner input. This process proved fruitful, as course participants in Smithers and Nanaimo, the first two courses offered, provided valuable input that the team used to improve the course. The most significant changes included adding additional content that participants felt was important and increasing the time for Ministry staff and contractors to spend together – from a half-day to a full-day.

EDUCATION/ TRAINING IMPACTS ON PROGRAM PARTICIPANTS

The team carefully measured impacts of the training on participants through the 650 course evaluations they provided. In examining the feedback, the training team is confident that the training helped participants achieve the learning objectives, that it met their personal knowledge and skill gaps and improved confidence to implement the new agreement.

MASTERY OF COMPETENCIES

Learners were asked to rate their level of skill and knowledge in each of the general areas of competence **before attending the course** and **after attending the course**. Figures 3 through 8, demonstrate that most learners felt that they had significantly increased their skills and knowledge in every competency area.

Note: Where two graphs appear side-by-side, the graphs with red and yellow on the left demonstrate results from all Day 1 participants (Ministry staff) and graphs on the right in blue represent results from all Day 2 participants (Ministry staff and contractors).

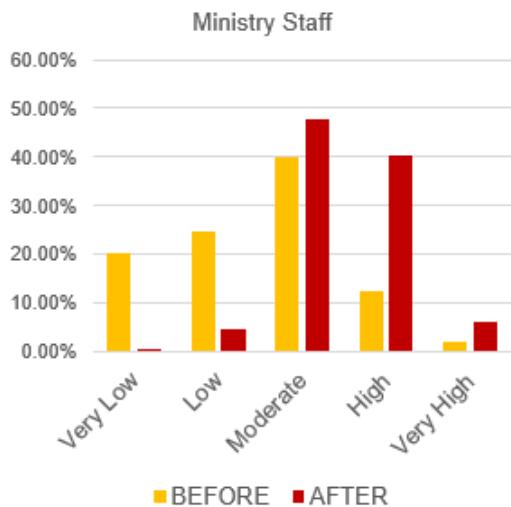


FIGURE 3 - MODULE 1 – NAVIGATE THE NEW AGREEMENT

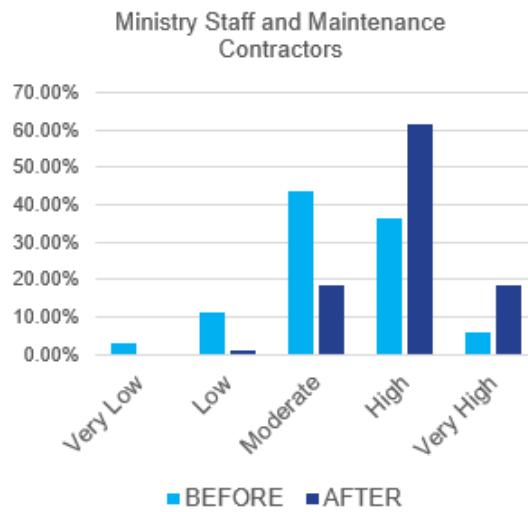


FIGURE 4 - MODULE 1 – APPLY KEY CONCEPTS FOR WORKING TOGETHER

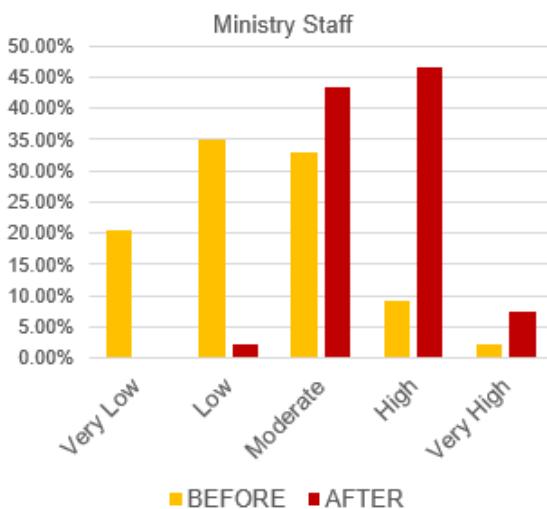


FIGURE 5 - MODULE 2 – EFFECTIVELY ADMINISTER ALL SERVICES WITHIN THE NEW AGREEMENT

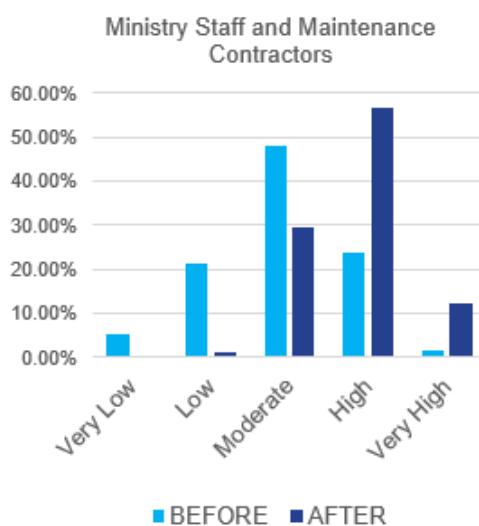


FIGURE 6 - MODULE 2- EFFECTIVELY ADMINISTER/IMPLEMENT THE SPECIFICATIONS

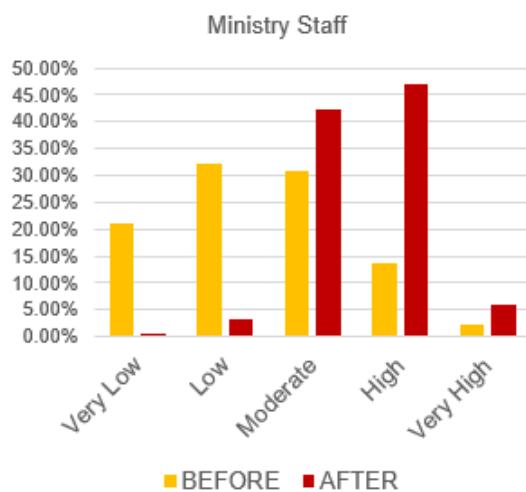


FIGURE 7 - MODULE 3 – APPLY OTHER KEY ELEMENTS OF THE NEW AGREEMENT

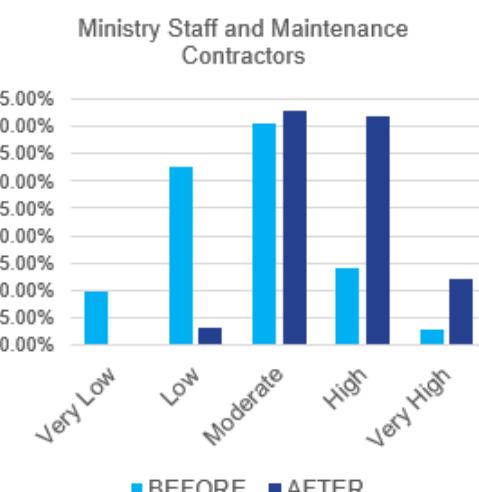


FIGURE 8 - MODULE 3 – ADMINISTER RECORDS AND REPORTING REQUIREMENTS

PERSONAL SKILL GAPS MET

Recognizing there may be skill gaps outside of identified learning objectives, we asked participants to also identify how well the course addressed their personal skill gaps. **Figure 9** shows that most participants (56% for Day 1 and 61% for Day 2) indicated that the course met personal knowledge and skill gaps to a great or very great extent. The comments provided by participants indicated that some people felt that more experience working in the contract would increase their personal knowledge and skill gaps over time. Less than 6% of participants said the course met their skill gaps to a small extent or not at all. See **Appendix G** for a full summary of course evaluation results.

CONFIDENCE TO IMPLEMENT LEARNING

Confidence in applying new knowledge and skills is a significant indicator for how well they will be transferred to the job. Most participants (56% on Day 1 and 70% on Day 2) rated their confidence in applying the knowledge and skills to their role as high or very high. Comments provided by participants indicated that some

"Although there was a common level of anxiety among Ministry and contractor participants to learn the new contract, the focused delivery allowed for a comfortable setting to dive into complex topics."

Elcy LePage, Dawson Road Maintenance.

See **Appendix H** for Elcy LePage's full letter of recommendation.

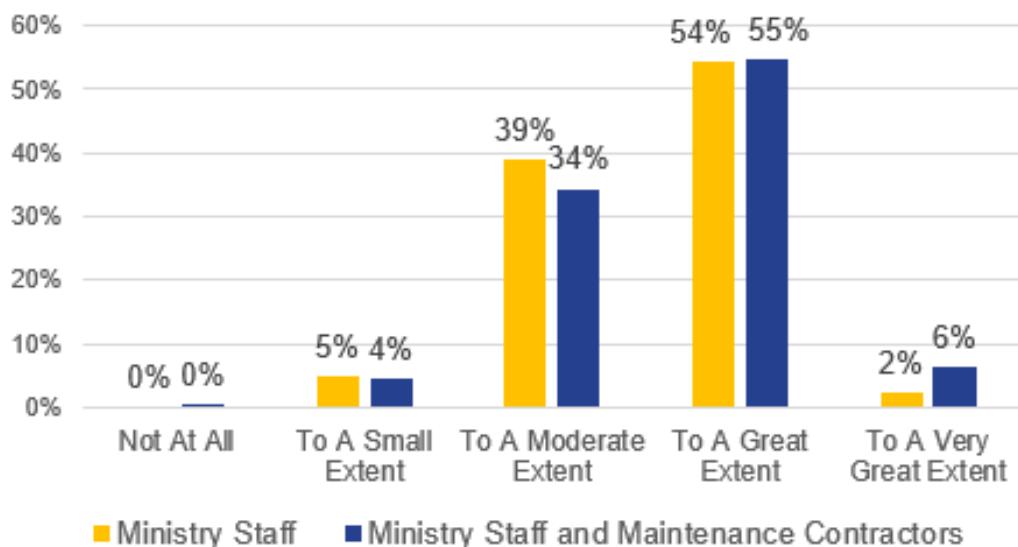


FIGURE 9 - THE EXTENT TO WHICH COURSE MET PERSONAL KNOWLEDGE & SKILL GAPS



PAYOUT OR BENEFITS ACHIEVED

From the formal and informal feedback offered by course participants, our team recognizes the course provided many immediate benefits and will contribute greatly to long-term payoffs.

An immediate benefit was the new/strengthened relationships and tools for collaboration that learners took from the course. Most respondents (74%) rated their confidence to collaborate before the course as very low, low or moderate. Following the course, more than 75% rated their ability to apply key concepts for working together high or very high (see **Figure 4**).

Another immediate benefit was the improved knowledge and skills course participants recognized they had gained in all competency areas, as seen through the course evaluation graphs above (**Figures 3** through **8**.) Ministry staff and contractors' anecdotal feedback to the team was clear -- they appreciated the opportunity to quickly get up to speed on the new contract at its inception, rather than through implementing it over time. The following evaluation comments are typical of responses received to the question: What was the most effective part of the course for you?

- “Apply my knowledge. This was an effective way to use the contract and discuss with our table how to tackle various projects/problems.” (Day 1 participant)
- “Learning the specifications and applying to scenarios, also the reports activity helped with understanding due dates and requirements.” (Day 2 participant)
- “Having group discussions to hear others’ opinions and insight on various topics (Great)” (Day 1 participant)
- “Having everyone in the same venue hearing the same message.” (Day 2 participant)
- “The opportunity to work together and discuss common views and create understanding of the new contract.” (Day 2 participant)

The training also helped build the Ministry's credibility and reputation for excellence in training and development. The following graphs demonstrate that participants viewed the course as credible, practical and useful (**Figure 10**). They also gave high ratings to the quality of facilitation and the methods used to teach the course.

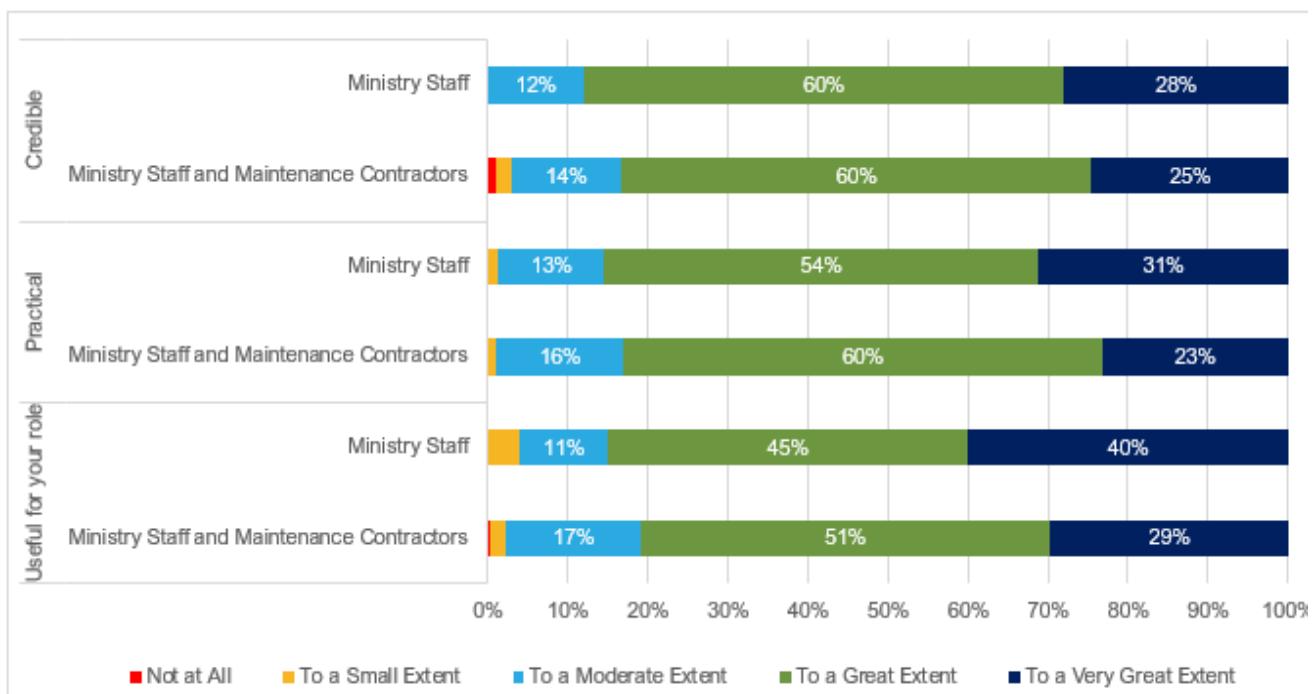


FIGURE 10 - TO WHAT EXTENT DID YOU PERCEIVE THIS TRAINING AS CREDIBLE, PRACTICAL AND USEFUL

CONTRIBUTION TO IMPROVED PRACTICES, SKILL SETS, AND THE OVERALL TRANSPORTATION COMMUNITY

During the joint sessions between Ministry and Contractors, both parties worked together to create ideas and action plans for improving industry practices and achieving performance based contractual objectives. Information and ideas were captured on flip charts, transcribed and re-submitted back to both parties for ongoing review and discussions. The idea is to continue to foster this kind of innovation using the principles of collaboration developed and continue exploring future innovations, ideas and improvements.

The training package was designed for ease of future delivery by having facilitator guidebooks and training materials readily available, and easy to use. This will contribute to the benefit of the transportation community (public and stakeholders) through continued skill development and training across both the ministry and contracting community over the life of the contract (10 years).

The training contributed to improved levels of service for the transportation community, in particular through the transition phase of the maintenance contracts.

Both Ministry and Contractor came away with a clearer understanding of changes to the contract, and clarity of expectations through the joint development of best working practices; these were unique to each region of the province, which are geographically diverse.

“Although the logistics and delivery were of the highest quality, it was the lasting relationships which formed as a result of the training that can truly speak to its value. [] As a direct result, there is a more inclusive and transparent line of communication between Dawson and the Ministry, which will undoubtedly support each of us in working together to keep BC roads safe and the traveling public satisfied.”

Elcy LePage, Dawson Road Maintenance.

See **Appendix H** for the complete letter of recommendation from Elcy LePage.





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APPENDIX A

Sample Training Plan





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APPENDIX B

Sample Lesson Plan - Apply Principles of
Working Together





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APPENDIX C

Sample Course PowerPoint Slides





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APPENDIX D

Excerpts from Facilitator Handbook





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APPENDIX E

Excerpts from Day 1 and Day 2
Participant Workbook





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APPENDIX F

Sample Course Evaluation
Questionnaire Day 1 and Day 2





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APPENDIX G

Full Training Feedback Report





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APPENDIX H

**Letters of Support from Argo Road
Maintenance and Dawson Road Maintenance**

