

Traffic Control Planning and Layout

Instructor Guide



Acknowledgements:

The BC Municipal Safety Association acknowledges the contributions of its member municipalities and their staff who participated in the development of these training materials.

Disclaimer:

Many resources have been used to develop this Guide. The authors have been careful to include the most up-to-date and correct information. However, it is the user's responsibility to check with WorkSafeBC and other legislators and their employer to ascertain safety requirements, and to determine their best course of action in any situation. This publication is not a substitute for review of the applicable government regulations and standards, and should not be construed as legal advice or opinion. Readers with specific questions should refer to the cited regulation.

Contact/order copies:

BC Municipal Safety Association

Box 317, 185-9040 Blundell Road
Richmond BC V6Y 1K3
<http://www.municipalsafety.bc.ca/>

© 2008 BC Municipal Safety Association

Prepared by Kathleen Savory & Associates • Graphic Design by D. Pollard

Table of Contents

How to Use this Guide.....	1
Module Description.....	1
Participant Pre-requisites	1
Estimated Module Duration	1
Class Size	1
Learning Objectives	2
Instructor Preparation.....	2
Resources You Will Need	3
What You Will Need To Provide To Each Participant	4
Participant Assessment.....	4
Course Evaluation	4
A Note About Instruction.....	5
Ordering and Changes to these Training Products	6
Course Outline	7
Lesson Plan	8
Unit 1: Complying with Regulations and Standards	11
Unit 2: Traffic Control Devices and Traffic Control Persons.....	14
Unit 3: Planning and Setting Up Work Zones	17
Theory Quiz and Evaluation	23
Theory Quiz Answer Key	24
Wrap-Up	29
Appendices.....	31

How to Use this Guide

This guide is meant to help you, the instructor, to teach this course. It has suggestions for ways to teach, timing and order of instruction. Please adapt these suggestions to your own situation. The content, however, should not be changed – municipalities in British Columbia are required to follow the Regulations and Guidelines that are set out for us. By changing any of the content in the training, you are leaving your organization open for safety incidents, fines and possible lawsuits.

Module Description

The Traffic Control Planning and Layout training module is for municipal employees who have responsibility for planning and setting up traffic control as a regular or occasional part of their work. It will be valuable for a variety of workers in public works, maintenance, engineering, special events and safety roles. The module will also be useful for supervisors.

Participant Pre-requisites

Participants in this Module will need to have:

- Knowledge of work on roadways including terms used, traffic control devices and road construction equipment.
- Basic familiarity with the WorkSafeBC Occupational Health and Safety Regulation (the *OHS Reg.*) and the *Traffic Control Manual for Work on Roadways*.

The module will be equally effective with workers who have already completed the Traffic Control Person Training or those who have not done so.

Estimated Module Duration

The suggested time is 3.5 hours.

Class Size

The optimal class size is 8 - 18 participants.

Learning Objectives

By the end of the course, the participant will be able to:

- Use the *OHS Reg.* and *Traffic Control Manual for Work on Roadways* to make planning and layout decisions
- Identify, use and maintain traffic control devices
- Conduct a Job Task Analysis to assess traffic control risk
- Create a Traffic Control Plan for any work on roadways
- Lay out a work zone where Traffic Control Persons are or are not being used
- Adapt a Traffic Control Plan based on actual situation
- Monitor traffic control in a work zone to ensure optimal safety
- Work with the site superintendent, contractors or other municipal representatives to ensure traffic control is understood and site safety is optimized

Instructor Qualifications

Instructors for this course must be experienced in:

- Traffic control planning in British Columbia
- Use of the Manual For Work on Roadways

Instructor Preparation

You should be very familiar with:

- The content and layout of the Participant Guide that accompanies this Instructor Guide.
- The PowerPoint presentation that accompanies this Instructor Guide. (use of the PowerPoint is optional – you may prefer to print out the slides and use them as overheads)
- The Traffic Control Manual for Work on Roadways (*Traffic Control Manual*). The *Traffic Control Manual* is published in both an Office and a Field Edition. Your employer should have copies of this manual. If you require a copy, you can either download it from the Ministry of Transportation's Traffic Control Home Page at:

http://www.th.gov.bc.ca/publications/eng_publications/TCM/Traffic_Control_Manual.htm

or order a copy of from the Queen's Printer. To do this you can search the BC Government Publications Index online or go directly to:

<http://www.publications.gov.bc.ca/pubdetail.aspx?nato=7610001788>

As this manual may change it is a good idea to check the website for updates.

- The Worksafe BC Occupational Health and Safety (OHS) Regulation parts that pertain to Traffic Control. The WorkSafe BC OHS Regulation can be found online at:

<http://www2.worksafebc.com/publications/OHSRegulation/Home.asp>

Worksafe BC now offers a searchable CD of the Regulation for sale on its website. You can order it online at:

<http://www.worksafebcstore.com/>

If you are using print versions of WorkSafe BC products, make sure they are up to date. Using print versions is risky because you may be unaware of any changes. It is a good idea to check the online versions each time before you teach a course.

- The WorkSafeBC Guidelines associated with Part 18. Follow the link above, and wehn you get to Part 18, click on "Guidelines".
- Your employer's policies and procedures with respect to traffic control planning and layout, including any existing Traffic Control Plan format or procedures or plans for introducing Traffic Control Plans. If your employer does not already have a Traffic Control Plan format, use the Ministry of Transportation Traffic Control Plan that has been included in the Participant Guide.

Resources You Will Need

- Copies of the WorkSafeBC OHS Regulation or classroom access to electronic versions.
- Copies of the WorkSafeBC Guidelines for Part 18 of the OHS Reg.

-
- Copies of the *Traffic Control Manual*, Field and Office Editions.
 - Your employer's Traffic Control Plan format, if one exists.
 - Your employer's Job Task Analysis (for Traffic Control risk) if one exists.
 - A copy of the *BCMSA Traffic Control and Layout Participant Guide* for pre-reading and use in the classroom.
 - The *BCMSA Traffic Control and Layout* PowerPoint presentation. If you prefer, you can print out the slides onto overhead transparencies, select certain slides of use, or not use the slides as part of your delivery. However, the slides you use should not be altered.
 - Large drawings for Exercise 2.

What You Will Need To Provide To Each Participant

- A Participant Guide

Participant Assessment

Participants will be assessed on:

- Completion of two exercises (small group exercises)
- Completion of the Theory quiz

Explanations for administration of the exercises and tests are included in this Guide.

Course Evaluation

The Participant Guide contains a course evaluation form. Direct participants to complete the form and provide feedback to the BC Municipal Safety Association.

A Note About Instruction

The people who teach this course will include those of you who are experienced instructors and those of you who are new to instruction. For experienced instructors, this section will serve as a reminder, for new instructors these tips may help to make this training go more smoothly.

For many of you who have been working in municipalities for years, some of this material will be “old hat”. Other parts may seem onerous or unnecessary. Please keep in mind that the Regulations and the principles set out in the *Traffic Control Manual for Work on Roadways* aren’t optional – they are required. Your attitude towards this training will make all the difference to the participants – you can “make it or break it” with how you present this material. Your role is to set an example, and to present the course positively, professionally and accurately.

To help keep the course enjoyable and effective, remember to:

- Start and end on time.
- Ensure participants know why they are there and why the training is important.
- As best you can, make sure the training you deliver is consistent with the actions of your employer. For example, if you are expecting participants to develop written Traffic Control Plans as recommended, your employer will need to select a format and a procedure for this.
- Use the lesson plan as a guideline to develop an interesting format that works for you and your participants.
- Use the PowerPoint slides to supplement and support your presentation – they are training aids only.
- Treat your participants with respect and have high expectations of them.
- Stay on track and to the point. Personal anecdotes and experiences do help to make a course interesting, but keep them to a minimum. It’s often more appropriate to ask participants what their experiences have been.
- If the group is resistant or disinterested, address this right away rather than “plowing on” just to get through the training. For Example, ask participants where they feel changes in traffic control might be required – get your participants

involved and interested by demonstrating the potential for improved safety and potential time saving.

- Acknowledge questions, contributions and the experience of your participants. Positive comments and questions work wonders – for example: *“good question” “thank you for that question” “thanks for mentioning that!”*, or *“Fred, I know you’ve been at this for 20 years – what’s your experience?”*
- Remember that telling someone something is one of the least effective ways to help them learn. Give your participants opportunities to actually do things, to figure it out for themselves, talk it out – deal with issues – they will remember much better.

Ordering and Changes to these Training Products

The BCMSA is striving to provide you with user-friendly, accurate and useful training materials. We value your feedback, and will use it to improve future versions of these materials. If you would like to see changes to the BCMSA Traffic Control Planning and Layout course, please send your comments and changes to the BCMSA at.

Mail:

BCMSA
Box 317, 185-9040 Blundell Road
Richmond BC V6Y 1K3

Website:

<http://www.municipalsafety.bc.ca>

You may also order materials from the above contact.

Course Outline

Topic	Activity	Time/ mins.	Resources
Course Introduction	Instructor Introduces self Participants introduce selves Explain course objectives, assessment and evaluation	15	<ul style="list-style-type: none"> • Computer and Projector to show PowerPoint Slides 1 to 5 • Name Tags • Instructor Guide • Participant Guides • White board and erasable markers • Flip chart and paper
Unit 1 Complying with Regulations and Standards	Lecture/Group discussion	20	<ul style="list-style-type: none"> • Computer and Projector to show PowerPoint Slides 6 to 14 • Instructor Guide • Copies of the OHS Regulation and guidelines for Part 18 or on-line access in classroom • A Field and an Office Edition of the T.C. Manual • Participant Guides • White board and erasable markers
Unit 2 Traffic Control Devices and Traffic Control Persons	Lecture/Group discussion	25	<ul style="list-style-type: none"> • Computer and Projector to show PowerPoint Slides 15 to 23 • Instructor Guide • An Office Edition of the T.C. Manual • Participant Guides • White board and erasable markers
Unit 3 Planning and Laying Out Traffic Control	Lecture/Group discussion	25	<ul style="list-style-type: none"> • Computer and Projector to show PowerPoint Slides 24 to 60 • Instructor Guide • An Office Edition of the T.C. Manual • Participant Guides • White board and erasable markers
	Exercise 1	30	
	Break	15	
	Exercise 2	40	<ul style="list-style-type: none"> • An Office Edition of the T.C. Manual • A blank Job Task Analysis for each small group • A blank Traffic Control Plan for each small group • Large drawing of Scenario #1

Assessment and Evaluation	Course Summary	10	<ul style="list-style-type: none"> • Computer and Projector to show PowerPoint Slide 49 • Instructor Guide • An Office Edition of the T.C. Manual • Participant Guides
	Theory Quiz	25	Theory Quiz
	Course Evaluation	5	Course Evaluation
Wrap-up		10	Group Discussion
Total suggested time		3.5 hrs	

Lesson Plan

Course Introduction

PowerPoint Slide Numbers: 2 to 5

Time 15 minutes

Instructor's Notes	Reference and Resources
<p>Introduce yourself if there is one or more person in the room who does not know you. Comment briefly on your career and your experience with work on roads. You could introduce a specific interesting role or challenge you have faced, or a safety incident you have been involved with.</p> <p>If you are in a place that is new to any participants, point out:</p> <ul style="list-style-type: none"> • fire exits • emergency meeting points • fire extinguishers • alarms • first aid kit or first aid station • washrooms, • smoking areas and • cafeteria or vending machines as appropriate. <p>Tell participants the start and end times and when break(s) will be.</p> <p>Ask them to turn cell phones and pagers off for the duration of the training.</p>	PowerPoint Slide 1

Instructor's Notes	Reference and Resources
<p>Introduction</p> <p>Purpose:</p> <p>To introduce participants, to engage participants and set the stage for why the training is taking place. You will also get a sense of the experience as well as the interest level of your participants from this exercise.</p> <p>Activity:</p> <p>If you do not know the participants or they do not know each other, have them make up name tags.</p> <p>Ask each participant to describe a traffic control close call ('near miss") he or she has been involved with or heard about. As part of this, have participants introduce themselves if they do not know each other.</p> <p>When each participant has introduced himself or herself, summarize the discussion and welcome participants. To summarize, use statements like "We have a lot of great experience in this room" or "as we can see from your experiences, traffic control is not yet perfect in our Province"</p>	<p>Name tags</p>
<p>Explain why this training is taking place and why it is important:</p> <ul style="list-style-type: none"> • Members of the BC Municipal Safety Association have identified a need to improve traffic control layout and planning • Municipalities may not be in compliance with WorkSafe BC requirements and as such are liable for fines. • Workers and supervisors have commented that they are unsure when to use a Traffic Control Person and when not to. • Workers and supervisors have been inconsistent in the planning and layout of traffic control. • Traffic Control Plans are not being used consistently, and they are recommended for the safety of workers. These Plans, when updated, also serve as a record in case of incidents, complaints or legal action. • Most importantly, the practices that some municipalities are using may not be the safest, so there is a risk of incidents. • Incorrect traffic control causes a significant number of injuries in British Columbia each year. 	
<p>Agenda</p> <p>Review the Agenda for the module.</p>	<p>PowerPoint Slide 2</p>
<p>Participant Guides</p> <p>Hand out a Participant Guide for each participant. Give participants a few minutes to review the Participant Guide and get used to the layout.</p> <p>Indicate the icons related to the reference materials.</p>	<p>Participant Guides PowerPoint Slide 3</p>

Instructor's Notes	Reference and Resources
<p>Learning Objectives</p> <p>Review the Learning Objectives found on Page vii of the Participant Guide.</p>	<p>PowerPoint Slides 4, 5</p> <p>Participant Guide page vii</p>
<p>Create a “Parking Lot”</p> <p>Using a flip chart, introduce a “parking lot” – this is where you can write down any issues that can not be resolved in this training session but that need to be dealt with. At the end of the course, you will come back to this list and state what you or the participants can do about the issues. An example of the “out of scope” issues that a participant might bring up, and an appropriate response, might be:</p> <p>Parking Lot Issue:</p> <p><i>“We don’t know who the Traffic Control Supervisor is”</i></p> <p>Response</p> <p><i>“I (instructor) will inform my supervisor/manager (or appropriate responsible manager) that this is an issue that may not meet the WCB regs. You as participants also need to inform your direct supervisors that this is an issue”.</i></p> <p>Don’t get bogged down on detailed discussions of issues you know can not be addressed in this short module. On the other” hand, if you ignore them, participants may dwell on these issues and not be able to learn. That is why the Parking Lot or another effective technique for acknowledging, but not addressing, these issues are important.</p>	<p>Flip chart and paper</p>
<p>Assessment</p> <p>Explain to participants that they will be considered to have completed this course if they complete the 2 exercises, the Theory Quiz, and the course evaluation. You will be going over the Theory Quiz during the class and reviewing it until each participant has achieved 100% on the Quiz.</p>	
<p>Evaluation</p> <p>Explain to participants that they will be asked to evaluate the module at the end of it.</p>	
<p>Ask if there are any questions or concerns.</p>	

Unit 1: Complying with Regulations and Standards

Suggested Time: 15 minutes

Participant Guide Section Reference: 1

PowerPoint Slides: 6 and 14

Instructor will need:

- A copy of the Traffic Control Planning and Layout Participant Guide
- Office Edition of Traffic Control Manual to refer to
- Field Edition of the Traffic Control Manual to show participants

Each Participant will need:

- A Traffic Control Planning and Layout Participant Guide
- A pen or pencil

Introduction:

This unit will be review for some participants. It is where you should ensure participants understand that traffic control is very important, and that both the public and workers are put at risk by poor traffic control.

You must ensure participants understand that they are responsible for following the Traffic Control Manual for Work on Roadways (the T.C. Manual), but that they need to think for themselves and adapt traffic control to particular circumstances.

In this unit you will also introduce the responsibilities of the Traffic Control Supervisor.

Instructor's Notes	Reference and Resources
1.1 About This Unit Introduce Unit 1 by having participants turn to page 1-3 in their Participant Guides.	PowerPoint Slide 6 Participant Guide page 1-3
Using the content of the Participant Guide as a reference: Review 1.1 Introduction to Unit 1 Review 1.1.1 Learning Objectives for Unit 1 Ask participants if there are any questions or concerns.	Participant Guide page 1-3 PowerPoint Slide 7

Instructor's Notes	Reference and Resources
<p>1.2 WorkSafeBC's Authority</p> <p>Review section 1.2 in the Participant Guide</p> <p>Explain that the OHS Reg. refers us to the Traffic Control Manual for Work on Roadways - "the Traffic Control Manual"</p> <p>Discuss the Key sections of the OHS Regulation</p>	<p>Participant Guide page 1-3</p> <p>A CD, online or print copy of the OHS Regulation</p> <p>PowerPoint Slide 8, 9, 10</p>
<p>1.3 Traffic Control Supervision</p> <p>Review Section 1.3 in the Participant Guide.</p> <p>Discuss the Role of the Traffic Control Supervisor with your participants. Ask them if they typically know who the Traffic Control Supervisor is, and if not, how they could improve compliance with this Part at their workplace. If issues that you can not resolve in the classroom come up, put them in the "Parking Lot".</p>	<p>Participant Guide page 1-5</p> <p>PowerPoint slide 11</p>
<p>1.4 Motor Vehicle Act and Regs.</p> <p>Review Section 1.4 in the Participant Guide.</p> <p>Point out that the Motor Vehicle Act is where it says that drivers need to obey signs.</p>	<p>Participant Guide page 1-5</p> <p>PowerPoint slide 12</p>
<p>1.5 Traffic Control Standards</p> <p>Review Section 1.5 in the Participant Guide.</p> <p>Indicate the Chapters of the T.C. Manual that are included as appendices to the Participant Guides</p> <p>Show the participants your copies of the Field and Office Editions</p> <p>Explain that the T.C. Manual could be updated at any time.</p> <p>Refer participants to the Table of contents from the Traffic Control Manual in their Participant Guides</p> <p>Review the definitions in Chapter 1 Section 1.1.2 of the T.C. Manual</p> <p>Pay special attention to the definitions of Long, Short and Brief/Emergency Duration Work. Rather than read these definitions, ask participants to find them and explain them to the group.</p>	<p>Participant Guide page 1-6 to 1-8</p> <p>PowerPoint slide 13, 14</p> <p>MOT Manual 1.1.2</p>
<p>Ask participants if they have any questions or concerns.</p>	

Points to Stress:

- The OHS Reg. points us to the Traffic Control Manual for Work on Roadways (Traffic Control Manual). We have to follow it.
- Your employer needs to make the T.C. Manual available to you.
- The T.C. Manual is a minimum guideline. In some cases, the standards you will set for yourselves will be higher than the diagrams in the manual. In other cases, an alternate layout might be better than the suggested diagrams in the manual. You are expected to analyze each situation and decide what needs to be done – rather than just try to match the diagrams exactly.
- You need a designated Traffic Control Supervisor, even when you will not be using Traffic Control Persons.
- Workers need to know who the Traffic Control Supervisor is and how to contact that person.
- The Traffic Control Manual is under review. Participants should periodically check for updates rather than continuing to rely on the copies provided in the Participant Guides.

Unit 2: Traffic Control Devices and Traffic Control Persons

Suggested time: 25 minutes

Participant Guide Section Reference: 2

PowerPoint Slide Numbers: 15 - 23

Instructor will need:

- Instructor Guide and Participant Guide
- Sample Job Task Analysis (Risk Assessment)

Each Participant will need:

- Participant Guide

Introduction:

This unit will familiarize participants with the devices they can use for Traffic Control. For participants who are new to work on roadways, more time on this section will probably be needed. For those with experience, this unit is an opportunity to review and check for any errors in current practice. Give participants time to identify any devices or signs they are unsure of. Don't get into placement details – these will come in the next unit.

Unit 2 also introduces the requirements to determine whether or not Traffic Control Persons should be utilized.

Instructor's Notes	Reference and Resources
2.1 About This Unit Introduce Unit 2 by having participants turn to page 2-3 in their Participant Guides.	PowerPoint Slide 15 Participant Guide page 2-3
Using the content of the Participant Guide as a reference: Review 2.1 Introduction to Unit 2 Review 2.1.1 Learning Objectives for Unit 2 Ask participants if there are any questions or concerns	PowerPoint Slide 16 Participant Guide page 2-3

<p>2.2 Traffic Control Devices</p> <p>Review Section 2.2 of the Participant Guide.</p> <p>Have participants find each type of device in the T.C. Manual as indicated in the Participant Guide.</p> <p>As you go through each section, quiz participants on the use of a selection of devices.</p> <p>You will need to review the R, TW and C signs, as all of them may be used in work on roadways.</p> <p>Ask participants questions to determine whether they have understood the use of each device. For example, you might ask:</p> <ul style="list-style-type: none"> • “How do you decide whether to use C-4 vs C-18?” (C-4 is for short duration work and C-18 for long duration.) • “When is it okay to use the C-29 alone to warn of a hazard?” (Never.) • “What do flexible drums need to have on them for use at night?” (Alternating horizontal orange and white reflectorized bands.) <p>You might want to engage participants by having each person ask a question, and the rest of the class answers it. (Make sure you check the answers.)</p>	<p>Participant Guide pages 2-3 to 2-6</p> <p>PowerPoint Slide 17 to 21</p>
<p>2.3 Maintaining Traffic Control Devices</p> <p>Review Section 2.3 in the Participant Guide.</p>	<p>Participant Guide page 2-7</p>
<p>2.4 TCPs Required?</p> <p>Review section 2.4 in the Participant Guide.</p> <p>After you have reviewed section 2</p> <p>“when TCP’s Required”, generate a discussion by asking participants “<i>is this what you are currently doing or have seen done in the field?</i>” “<i>does this make sense?</i>” “<i>why might we want or not want to have TCP’s controlling traffic?</i>”</p> <p>Refer Participants to the WorkSafeBC Guidelines for Part 18, referring to the training requirements for Traffic Control Persons.</p> <p>Hand out blank copies of your employers (or the sample included in Appendix 1 to this guide.) Job Task analysis for assessing the risk in the Traffic Control Operation, and explain how to complete it.</p>	<p>PowerPoint Slide 23</p> <p>Participant Guide pages 2-8 to 2-9</p> <p>WorkSafeBC guidelines for Part 18</p>
<p>Ask participants if they have any questions or concerns.</p>	

Points to Stress:

- Only the specified devices can be used.
- Devices must be kept in good condition. Poorly maintained devices can lead to drivers disregarding or not seeing them.
- Devices that are not necessary should not be there.
- Devices must be placed the same way each time. Use the same devices for the same situation.
- TCP's are not always either necessary or the safest method of controlling traffic. If you have a TCP on the road when you don't need to, you have exposed another person to traffic and all its associated hazards. A vehicle hitting a tubular marker is not a disaster, hitting a Traffic Control Person is.

Unit 3: Planning and Setting Up Work Zones

Suggested time: 1 hour and 35 minutes

Participant Guide Section Reference: 3

PowerPoint Slides: 24 to 59

Instructor will need:

- Large Drawing for Exercise 2 (one of each scenario)

Each Participant will need:

- Participant Guide

Introduction:

This unit is key to achieving the learning objectives in this module. It will give participants an opportunity to work with the T.C. Manual to identify optimal planning and layout for various scenarios.

In this unit you will introduce the Traffic Control Plan. Having a Traffic Control Plan is highly recommended and may become mandatory. The Plan itself does not necessarily have to be detailed or onerous, however, it does have to make sense, and you need to consider many factors as part of the planning process.

A sample Traffic Control plan has been included as an Appendix. If the participants work for an employer with a different format, use that one.

Instructor's Notes	Reference and Resources
Introduce Unit 3 by having participants turn to page 3-3 in their Participants Guides.	PowerPoint Slide 24 Participant Guide page 3-3
Using the content of the Participant Guide as a reference: Review 3.1 Introduction to Unit 3 Review 3.1.1 Learning Objectives for Unit 3 Ask participants if there are any questions or concerns	PowerPoint Slide 24 Participant Guide page 3-3

Instructor's Notes	Reference and Resources
<p>3.2 Principles of Traffic Control</p> <p>Review section 3.2 in the Participants Guide</p> <p>Refer participants to the Fundamental Principles of Traffic Control in the T.C. Manual.</p> <p>Review and discuss each of these principles. Explain that knowing these principles will really help in decision making. Many road construction workers refer only to the diagrams in the T.C. Manual and do not use the principles to adjust the diagrams to fit a particular situation.</p> <p>Ask participants how each principle can be applied, and if there are areas that are confusing to them. Where concerns or questions arise, address them. Ask participants for examples of where these principles are more difficult to apply, and where they are easy to understand and apply.</p>	<p>PowerPoint Slides 26, 27</p> <p>Participant Guide page 3-3</p> <p>TCM 1.1.1</p>
<p>Review Section 3.3</p> <p>Explain the reasons for a Traffic Control Plan.</p> <p>If the participant's employers do not have a Traffic Control Plan format, ask participants how they would like to see one designed – when and how it would be used, what the factors to consider would be. If there are valuable recommendations from this discussion, pass them on to the employer.</p> <p>Provide either the Employer's or the MOT sample Traffic Control Plan format.</p> <p>Go through each section of the plan template and discuss all the factors to be considered in planning. Involve participants in the discussion.</p> <p>Explain that in order to complete the plan, you need to refer to the T.C. Manual and its diagrams.</p>	<p>Participant Guide pages 3-4 to 3-6</p> <p>PowerPoint Slide 28</p> <p>A sample Traffic Control Plan, either the MOT plan (Appendix 2) or the employer's plan</p>
<p>3.4 Parts of a Work Zone</p> <p>Review Section 3.4 in the Participant Guide.</p> <p>Explain that every Work Zone has different areas with specific jobs.</p> <p>Review each slide and describe each part of a work zone. Have participants follow along in Section 3.4 in their Guides.</p>	<p>PowerPoint Slides 29 to 34</p> <p>Participant Guide pages 3-6 to 3-9</p>
<p>3.5 Work Zone Planning</p> <p>Review Section 3.5 in the Participant Guide.</p> <p>Have participants follow along in Section 3.5 in their Guides.</p>	<p>PowerPoint Slide 35</p> <p>Participant Guide pages 3-9 to 3-12</p>

Instructor's Notes	Reference and Resources
<p>Exercise 1 - Municipal Scenarios</p> <p>This exercise can be done in several ways. You may choose to have the large group work together or break the group in half to work.</p> <p>Bring Scenario 1 up on the screen. Read through the scenario with the participants. Have the group(s) use the T.C. Manual to identify the diagram they feel contains the correct set up for the scenario.</p> <p>Discuss the pros and cons of group answers. Give the correct answer by bringing the next slide up and work through the correct devices and their placement using Table A of the T.C. Manual.</p>	<p>Participant Guide page 4-3</p> <p>Powerpoint slides 62 - 70</p> <p>Whiteboard to track answers for each group</p>
<p>Exercise 2 - Traffic Control Plan</p> <p>Divide participants into groups of two to five, depending on the size of your class. Provide each group with a blank Traffic Control Plan.</p> <p>Ask participants to review the scenario and design a workzone layout that takes into account items on the Traffic Control Plan such as the location, road configuration, traffic volumes, supervision, duration, work, etc. One participant in the group should sketch the work zone (blank scenario on page 4-3 of the Participant Manual can be used) for the others in the group, being sure to include details such as traffic control devices, TCPs if required, and the areas of the Work Zone.</p> <p>When completed, ask each small group to present their Traffic Control Plan to the large group and discuss how they decided on their layout.</p> <p>This exercise could also be altered to use real life examples of pending or planned jobs in the field. If possible, bring drawings of the site, photographs, and a description of the work to be done. Groups can then develop Traffic Control Plans for the real life scenarios.</p> <p>Note on Student Assessment: Participants must contribute to this exercise as a mandatory element of completing this course.</p>	<p>fill out traffic control plan form and draw signage on blank diagram.</p>

Points to stress:

- Anyone doing layout or setup must review and understand the principles of traffic control in Chapter 1 of the Traffic Control Manual.
- You need a Traffic Control Plan. A written plan is recommended and at some point is likely to become mandatory.
- A Traffic Control Plan can be as simple as a reference to a diagram in the Traffic Control Manual, but you need to ensure you have thought through all the reasons for using the particular configuration. It is a good idea to have a record of what you have done.
- Some municipalities are setting up intranet sites where employees and contractors can download diagrams of particular configurations.

Theory Quiz and Evaluation

Participant Guide Section Reference: Assessment and Evaluation

PowerPoint Slides: none

Instructor will need:

- Theory Quiz Answer Key

Each Participant will need:

- A Theory Quiz and pen or pencil; the Evaluation form from the Participant Guide

Introduction:

Instructor's Notes	Reference and Resources
<p>Participant Assessment</p> <p>Have Participants turn to the Theory Quiz in the back of their Participant Guide. Give them 15 minutes to complete the quiz with books open. Once completed, have them exchange their tests with another participant and then review the answers, using the answer key on the next page.</p> <p>Have participants return their papers to each other, and then review the questions until each participant has the correct answer for each question. Respond to any questions or concerns.</p>	<p>Participant Guide page 5-2 to 5-6</p>

Theory Quiz Answer Key

Traffic Control Planning and Layout – Theory Quiz Answer Key

Name

Date

Read carefully! There may be more than one correct answer. Circle the BEST answer to complete the following statements or answer the questions:

1. When does Section 18.6 of the OHS Regulation say Traffic Control Persons may be used?
 - a) If signs and other traffic control devices do not provide adequate protection
 - b) Traffic Control Persons should be used whenever possible
 - c) Traffic Control Persons may be used when there are low traffic volumes
 - d) All of the above

2. Employers must ensure a copy of the Field Edition of the Traffic Control Manual is available at the work site.
 T F

3. The rules for operation of vehicles on the streets and highways are based on:
 - a) the WorkSafe BC Traffic Handbook
 - b) the Motor Vehicle Act and Regulations
 - c) Municipal bylaws
 - d) the driver training handbook

4. According to the *Motor Vehicle Act*, pedestrians are required to obey traffic control devices.
 T F

5. The normal colour combination for temporary warning signs is black on white.

T F

6. This sign indicates:



- a) bridge ahead
- b) merging traffic ahead
- c) road narrows ahead
- d) pavement ends ahead

7. A low volume roadway:

- a) Carries less than 1,000 vehicles per day
- b) Carries less than 1,000 vehicles per day and is located inside city limits
- c) Carries less than 1,000 vehicles per day and is located outside city limits
- d) Carries less than 10,000 vehicles per day

8. Shadow vehicles, with an appropriate sign on the rear, are used:

- a) as devices for directing traffic around heavy equipment
- b) as advanced warning devices in moving operations
- c) as a back-up vehicle for buffer vehicles
- d) all of the above

9. Where can you find the documentation of the distances required between signs and cones?

- a) Table 3c, Motor Vehicle Act
- b) Traffic Control Manual for Work on Roadways
- c) Appendix 5b, Industrial Health and Safety Regulations
- d) From the foreman of the work site

-
10. The first area that a motorist will encounter at a traffic control site will be:
- a) the Buffer space
 - b) the Transition area
 - c) the Termination area
 - d) the Advance Warning Area
11. Most work zones can be divided into five parts.
- T F
12. Advance Areas are not required if the work area is completely off the road shoulder and does not interfere with traffic.
- T F
13. What is the most important consideration in a traffic control zone?
- a) the placement of the control zone
 - b) the placement of the signs
 - c) the organization of the zone
 - d) the safety of the zone
14. A restriction in a roadway with high volume traffic will result in:
- a) a work slow-down
 - b) a traffic back-up
 - c) loss of at least one lane
 - d) no change in traffic flow
15. Which of the following are considered main factors in selecting a work zone layout for a project?
- a) environmental conditions and worksite variations
 - b) duration or type of project
 - c) road configuration and traffic variations
 - d) all of the above

16. Environmental conditions are a consideration when selecting and setting up a work zone.

T F

17. The time of day is a consideration when selecting or adjusting the work zone layout.

T F

18. One of the fundamental principles of traffic control described in Chapter 1 of the *Traffic Control Manual for Work on Roadways* is:

- a) reduced speed zones should only be used where a clearly demonstrated need exists
- b) in work zones, traffic should always be slowed as much as possible
- c) Traffic Control Persons should be used instead of signs wherever possible
- d) the Traffic Control Plan can not be changed under any circumstances

19. One of the fundamental principles of traffic control described in Chapter 1 of the *Traffic Control Manual* is:

- a) traffic speeds should always be reduced as much as possible
- b) traffic should be impeded as much as possible
- c) Traffic Control Persons should be used instead of signs wherever possible
- d) a Traffic Control Plan should be in place and understood by everyone involved in traffic control

20. Drivers should normally see this sign:

C-4



B on Or.
Bgd. Refl.

- a) as soon as they see the equipment working
- b) first in a long duration traffic control zone
- c) first in a short duration traffic control zone
- d) right after a temporary speed sign in a long duration traffic control zone

Wrap-Up

PowerPoint Slide Numbers: none

Time 10 minutes

Instructor's Notes	Reference and Resources
Ask participants if they have any questions or concerns. Respond to any that arise.	
Review the course very briefly by referring to the course objectives and to each section. Summarize with the key points: <ul style="list-style-type: none">• Traffic control is critically important.• You must follow the T.C. Manual, or improve upon it with good reason.• You must have a Traffic Control Supervisor and a Traffic Control Plan.• You must constantly maintain the traffic control in the Work Zone.	
Review anything that is in the Parking Lot and reinforce what you or others will do with the items.	
Thank participants for attending and participating.	

Appendices

Appendix 1 - Job Task Analysis

Appendix 2 - Traffic Control Plan

Appendix 3 - Layouts

Appendix 1

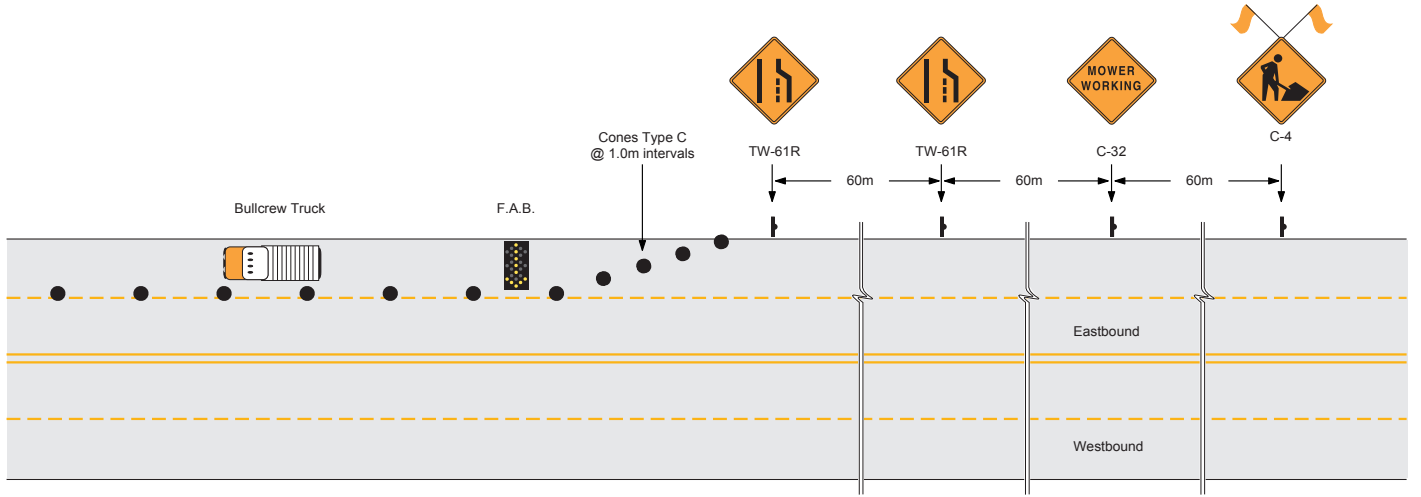
Traffic Control Job Task Analysis (Risk Assessment)		
Project ID:	Location:	Dates:
Traffic Control Supervisor:	Name: Telephone: Cell Phone:	Email: Contractor Name (if Applicable)
Direction of traffic being controlled	<input type="checkbox"/> Two Way <input type="checkbox"/> One Way	
Traffic speed	<input type="checkbox"/> 30 km/hr <input type="checkbox"/> 50 km/hr <input type="checkbox"/> 60 km/hr <input type="checkbox"/> 70 km/hr <input type="checkbox"/> 80 km/hr <input type="checkbox"/> 90 km/hr <input type="checkbox"/> 100 km/hr Other: (Specify)	
Traffic volume	<input type="checkbox"/> High Volume More than 1,000 vehicles per day	<input type="checkbox"/> Low Volume Less than 1,000 vehicles per day
Duration of traffic control operation	Hours of operation or length of time:	
Will Traffic control extend into dusk or night time hours?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Sightline for oncoming traffic	<input type="checkbox"/> Straight <input type="checkbox"/> Hill <input type="checkbox"/> Curved <input type="checkbox"/> Obstruction Other (Explain):	<input type="checkbox"/> Corner
Overhead hazards?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
	Hazards and potential to contact.	No potential to contact any hazards.
In intersection?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Appendix 1

Active driveways?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Merging traffic?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Bus stops?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Active mobile equipment?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Other problematic elements? Describe?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Two-way road temporarily reduced to one lane,	<input type="checkbox"/> Yes (Must be designated high risk)	<input type="checkbox"/> No
Where traffic must be stopped to permit work zone equipment to enter or cross a road.	<input type="checkbox"/> Yes (Must be designated high risk)	<input type="checkbox"/> No
Risk Assessment:		
<input type="checkbox"/> High	<input type="checkbox"/> Low or Moderate	
(If TCPs are required, they must be fully trained. See Guidelines, Part 18, for training requirements. See Guidelines, Part 18, for training requirements.)		
Risk Assessment Completed by:	Name:	Date:
Copy to Traffic Control Supervisor:	Date:	
<input type="checkbox"/> Email <input type="checkbox"/> Fax <input type="checkbox"/> Hard Copy		
Signature of Person who completed this assessment:		

Appendix 3

Job task is to Mow & hand cut boulevard from curb to fenceline



Right lane closure
Moving Working Zone @ Nordel Way