



# Traffic Management Manual for Work on Roadways (TMM)

2020 Office Edition



Ministry of  
Transportation  
and Infrastructure

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## Foreword

The 2020 Traffic Management Manual for Work on Roadways (TMM) is an update to the 2015 Interim Traffic Management Manual for Work on Roadways and accounts for edits, comments, and feedback received during the four-year phase in period.

Winter maintenance activities are not specifically covered in the TMM. BC Ministry of Transportation and Infrastructure's winter maintenance activities are defined in their Highway Maintenance Agreement and/or other written policies.

This Manual was developed through the effort and support of many individuals and organizations that provided technical expertise, drew on past experience, and applied innovation to new devices and methods of traffic control.

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## Manual Update Record

The Traffic Management Manual for Work on Roadways will be updated when necessary to address changing circumstances and requirements (see also [Section 1.1.6: Updating the Manual](#)).

Users are encouraged to contribute to this process by submitting suggestions for corrections and new content to the Director of Traffic and Highway Safety Engineering, Ministry of Transportation and Infrastructure at [MoTITMM@gov.bc.ca](mailto:MoTITMM@gov.bc.ca).

UPDATE RECORD		
Update Number	Issue Date	Brief Description of Changes
Rev. 1	August 2020	See <a href="#">Overview of Changes</a> document on website



## Acknowledgements

Many individuals, organizations, and publications contributed to the development of this Manual in 2015-2019.

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Ministry Publications	
The Traffic Management Manual for Work on Roadways was built upon a compendium of the previous Ministry Work Zone Manuals and related Ministry Technical Circulars	
Other Publications	
Geometric Design Guide for Canadian Roads, 1999	Transportation Association of Canada
Manual of Uniform Traffic Control Devices, 2009	US Federal Highway Administration
Manual on Uniform Traffic Control Devices, 2012	Minnesota Department of Transportation
Temporary Traffic Control Manual, 2011	Minnesota Department of Transportation
Temporary Workplace Traffic Control Manual, 2010	Nova Scotia Transportation and Infrastructure Renewal
Work Zone Traffic Control Guidelines, 2012	Washington State Department of Transportation
Ontario Traffic Manual – Book 7 Temporary Conditions, 2014	Ministry of Transportation Ontario

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<sup>3</sup> Part B is mandatory for Ministry projects and recommended for municipal projects

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## Section 1: Introduction

### 1.1 Traffic Management Manual for Work on Roadways

<b>Traffic Management</b>	The strategies designed to safely mitigate the impact of construction, rehabilitation, maintenance, incident management and special events on roadways to maintain mobility and worker safety. The documentation of strategies is completed using a Traffic Management Plan.
<b>Traffic Control</b>	The effective use of temporary traffic control devices to protect workers and move road users safely through a work zone. Traffic Control is implemented using a Traffic Management Plan

**The Traffic Management Manual for Work on Roadways (TMM or the Manual)—including the updates that may be issued from time to time—is required for planning and implementing traffic control for work zones on Provincial highways.**

The Manual updates and combines information from these previous Ministry publications:

- 2015 Interim Traffic Management Manual for Work on Roadways
- Traffic Management Guidelines for Work on Roadways, 2001
- Traffic Control Manual for Work on Roadways, 1999
- Technical Circulars relevant to temporary traffic control (up to publication date)



### 1.1.1 Purpose of the Manual

This Manual outlines fundamental principles and guidelines for traffic management and traffic control in work zones with the goal of ensuring the protection of workers and the safe and efficient movement of road users through the work zone.

It also includes standards for designing, applying, positioning, installing, maintaining, and inspecting various types of temporary traffic control devices through work zones, including signs, channelizing devices, signals, barricades, markings, lighting, and others.

### 1.1.2 Minimum Standards in the Manual

**The standards in this Manual are mandatory for Provincial roadways.**

Minimum standards are prescribed in the Manual for controlling traffic through highway work zones. Several typical situations are illustrated to show the recommended application of standard devices for planned, scheduled work on roadways.

All projects involving highway or street construction or maintenance, utility work, and incident management shall control road users—drivers, pedestrians, cyclists, and those with disabilities—and provide them with the information and guidance they need to successfully traverse the work zone.

Complying with minimum standards is mandatory for all works on Provincial roadways, including but not limited to, work performed by contractors, sub-contractors, and public utilities.

The standards are designed to minimize impacts on existing traffic, and maintain vehicle, pedestrian, cyclist, and worker safety during road projects. They apply to all sizes of roadway projects.

If minimum standards cannot be met—for whatever reason—the contractor shall discuss the matter with the Road Authority to develop a suitable resolution. It is understood that it may not be possible to meet these minimum standards in emergency situations.

**For Ministry Roadways, Ministry Maintenance Contractors may be exempt from standards in this Manual, as defined in their Highway Maintenance Agreement.**

### 1.1.3 Applying the Principles in the Manual

1. The term “work zone” in the Manual (see also [Appendix A: Glossary](#)) refers to the area which extends from the first traffic control device to the last traffic control device as seen by the travelling public, installed specific to the work.
2. The Manual provides guiding principles for traffic management and traffic control in work zones. Only typical situations are illustrated because various situations may be encountered in practice. Users may benefit from using the principles and examples provided in the Manual to develop customized Traffic Control Plans.
3. The traffic management and control requirements described and illustrated in the Manual are generally the minimum required. Additional measures may be necessary in certain circumstances and under particular conditions.
4. For situations not specifically addressed in this Manual, traffic control procedures should be established by appropriately modifying the general traffic control principles specified in the Manual.
5. No single standard sequence of signs or devices can be used as a fixed arrangement for all conditions and locations. When the Manual indicates that something shall be done, there may be circumstances where strict compliance with the requirement is not reasonable, and it will be necessary to deviate from the requirement. In these cases, written justification for the modification must be recorded and depending on the complexity of the modification, written permission may need to be granted by the Road Authority.
6. The principles provided in the Manual are applicable to both urban and rural areas.
7. Traffic conditions on urban streets are characterized by lower speeds, widely ranging traffic volumes, limited maneuvering space, frequent turns and cross-movements, significant pedestrian movement, and other obstructions. Customization of traffic control layouts is often necessary to maintain access and mobility.
8. Traffic conditions on rural highways are characterized by higher speeds and fewer access points. Advance warning is critical to provide sufficient response time in rural Traffic Control Plans.
9. The Manual provides some information about Ministry contracts and project cycles. Other Road Authorities may find it useful to modify these systems and tools for their own projects.

## 1.1.4 Organization and Content of the Manual

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### PART A – TRAFFIC MANAGEMENT

Key traffic management principles and requirements, and processes for developing consistent Traffic Management Plans for the Ministry. Other Road Authorities may use the information for reference, modifying it to suit their own requirements.

#### Section 2: Fundamentals of Traffic Management and Control

Key traffic management and traffic control principles and requirements, and practical processes for the consistent development of Traffic Management Plans for the Ministry.

#### Section 3: Traffic Management Plans

Information about Ministry project categories and the planning requirements for each category, the inspection, maintenance, and documentation of traffic control, and instructions for developing project-specific Traffic Management Plans, each of which will have one or more of these components:

- Traffic Control Plan
- Incident Management Plan
- Public Information Plan
- Implementation Plan

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### PART B – TRAFFIC CONTROL

Basic principles and minimum standards for the design, application, installation, and maintenance of traffic control through work zones.

#### Section 4: Temporary Traffic Control Devices

Information about temporary traffic control devices (signs, signals, lighting, channelizing devices, pavement markings, etc.) and the standards for their use and placement.

#### Section 5: Traffic Control Persons

Information about Traffic Control Persons, including their responsibilities, conduct, apparel, equipment, communications, and safety.

#### Sections 6 to 19: Traffic Control Layouts

General instructions, descriptions, standards, guidance, options, and diagrams regarding traffic control layouts for typical roadway projects.

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## APPENDICES

### **Appendix A: Glossary**

Definitions of terms and acronyms used in this manual.

### **Appendix B: Standard Construction Signs**

Illustrations, sizes, and applications of standard construction signs.

### **Appendix C: Templates for Traffic Management and Traffic Control Plans**

Templates for developing Traffic Management Plans and Traffic Control Plans for Category 1, 2, and 3 projects.

### **Appendix D: Traffic Management Plan Audit Forms**

Ministry forms for auditing a Traffic Management Plan both before the project commences and when it is under way.

### **Appendix E: Lane Closure Request Form**

Sample of the Ministry's Work Notification/Lane Closure Request and Approval Form and link to the online form.

### **Appendix F: Tables A to D**

Tables A to D repeated in one location for quick reference and printing.

### **Appendix G: Pilot Car Load Movement Guidelines**

Guidelines for pilot cars used in the movement of oversize and overweight loads.

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### 1.1.5 Using the Manual

The Manual—including any updates—shall be used for planning and implementing traffic control for work on Provincial highways.

- **Part A - Traffic Management** (Sections 2 and 3) is used for work on Provincial roadways and may be used for work on municipal roadways.
- **Part B - Traffic Control** (Sections 4 to 19) is mandatory for work on Provincial roadways and may be used for work on municipal roadways.

All users of this manual should have a thorough understanding of its contents, including the definitions found in [Appendix A: Glossary](#).

All provisions for driver, pedestrian, cyclist, and worker protection established in this Manual shall be implemented by:

- The Ministry and its contractors
- Public utilities and their contractors
- Others who have authorization to work on, or adjacent to, Provincial roadways

The Manual has several features that may help users to find the information they need:

1. Sections are numbered 1 through 19, and Appendices are labelled A through F.
2. Sections and subsections are numbered using a decimal system whereby a notation like 2.5.7 refers to Section 2, subsection 5, sub-subsection 7. Each section and subsection deals with one topic or one aspect of a larger topic.
3. Cross-references to information within the Manual are shown in italics (e.g., see [Section 5.1.1: Traffic Control Supervisor](#)), whereas other publication titles are not italicized. Hence, every italicized reference resides within the Manual.
4. Tables A, B, C, and D are shown and referenced in Sections 6 to 19, and collected together in Appendix F for quick access.
5. To find a topic in a printed Manual, use the Manual Table of Contents at the beginning of the Manual or the individual Section Contents at the beginning of each section.
6. To find a topic in the digital Manual, search for key words or phrases, or use the Manual Table of Contents or individual Section Contents. To navigate to cited websites, click on the links.

### 1.1.6 Updating the Manual

1. Insert new and revised pages into printed copies of the Manual as soon as they are available. Remove and discard obsolete pages.
2. The insertion of new and revised pages should be recorded in the Manual Update Record on the page following the cover page at the beginning of the Manual.
3. Users are encouraged to contribute to this process by submitting suggestions for corrections and new content to the Director of Traffic and Safety Engineering, Ministry of Transportation and Infrastructure at [MoTITMM@gov.bc.ca](mailto:MoTITMM@gov.bc.ca).

## 1.2 Road Authority and Prime Contractor Responsibilities

### 1.2.1 Jurisdiction

Provincial legislation and municipal bylaws authorize Road Authorities to control traffic for work.

- Federal roadways, such as highways through National Parks, fall under the jurisdiction of the Federal Government.
- The Ministry is the Road Authority for, and has jurisdiction over, all Provincial highways, as well as roads outside incorporated areas.
- In municipalities, the Road Authority is the municipal government, which has jurisdiction over the entire incorporated area except for the Provincial highways.

### 1.2.2 Work Permits

The Road Authority shall authorize the work or provide a work permit before any work zone or lane closure may be established. Road Authorities may grant “continuing” permits for frequent activities, such as those undertaken by utility providers.

See [Appendix E: Lane Closure Request Form](#) for a sample of the Ministry’s Work Notification/Lane Closure Request and Approval Form and a link to the online form, which can be populated online and printed for submission to the Ministry.

### 1.2.3 Traffic Control Responsibilities

The Road Authority shall clearly assign traffic control responsibility in writing through a permit, contract, or protocol agreement to ensure that:

- All supervisors and crews are thoroughly familiar with and trained in the applicable safe work practices.
- Immediate and decisive action is taken when safe and approved work methods are not followed.
- Each crew member wears the required personal safety equipment and apparel when working on or crossing the highway.
- Traffic control is provided where necessary by using temporary traffic control devices and/or traffic control persons, as outlined in this Manual.

The responsibilities identified on the following pages shall be assigned and implemented to ensure a successful Traffic Management Plan. The assignment of specific individuals to specific roles will vary with the size and complexity of the work.

### 1. Road Authority

For contracted works, the Road Authority identifies hazards, provides known information to the Prime Contractor, issues permits or authorization to commence work, periodically audits traffic control setups on the roadway, and monitors traffic issues.

1. If the Road Authority is supervising and directing work being completed by in-house staff, the Road Authority is also the Prime Contractor.
2. If the Road Authority is using a Consulting Services contract where traffic control is to be managed by the Consultant, then a [Notice of Assignment](#) should be completed, designating the Consultant as the Prime Contractor.

### 2. Prime Contractor

For all works on Provincial highways, the Ministry designates an individual or organization as the Prime Contractor—through a signed agreement, such as the [Notice of Assignment](#)—and the Prime Contractor is responsible for traffic management and control.

Many utility companies operate on Ministry right-of-way (electrical, telecommunications, gas, etc.). Work carried out by utility companies on Ministry right-of-way is tied directly to the conditions specified in the permit, including the [H1080 – Work Notification/Lane Closure Request and Approval](#) form (see [Appendix E](#)). The permit and its associated conditions that specify requirements for utility operations on Ministry right-of-way are issued by the Ministry of Transportation and Infrastructure's local District office where the utility company operates.

For the purposes of this Manual, the Prime Contractor is the organization directly constructing or maintaining works on a Provincial highway and is responsible for:

1. Obtaining Ministry authorization to work on the roadway;
2. Developing an acceptable Traffic Management Plan; and
3. Implementing the Traffic Management Plan in accordance with Ministry requirements.

### 3. Management

Traffic control activities associated with work should have a management structure for these activities to ensure that all supervisors and workers are thoroughly familiar with, and trained in, the applicable safe work practices.

Management and site supervision personnel shall monitor the effectiveness of traffic control, take immediate and decisive action when safe and approved work methods are not followed, and document and make necessary changes as issues arise.

Individuals assigned traffic control responsibilities shall have adequate knowledge and training in all facets of traffic control, including:

- traffic control operations (those conducting traffic control shall be trained in a manner acceptable to WorkSafeBC)
- Part 18 of WorkSafeBC's Occupational Health and Safety Regulation
- the content of this Manual, other relevant publications and technical circulars, and manuals and regulations that govern other jurisdictions (when and where required by particular projects)

#### **4. Site Supervisor/Foreman/Superintendent**

The Site Supervisor/Foreman/Superintendent shall ensure that:

- Each crew member is familiar with the Traffic Control Plan.
- Each crew member wears the required safety apparel and uses the required equipment when working on or crossing the highway.
- The work area is protected by implementing the Traffic Control Plan which uses various signs, channelizing devices, and other temporary traffic control devices and measures described in this Manual.

The Site Supervisor/Foreman/Superintendent cannot be a Traffic Control Manager, Traffic Control Supervisor, or Traffic Control Person for the project unless the dual functions are authorized by the Road Authority in the contract or permit.

#### **5. Traffic Engineer**

The Traffic Engineer is a Professional Engineer who is licensed in British Columbia and qualified and experienced in traffic management planning and highway safety. They are a requirement for Category 3 Traffic Management Plans, and may be required, as specified by the Road Authority, on Category 2 Traffic Management Plans.

Traffic Engineers may also sign-off in cases where minimum standards cannot be met. In all cases, the matter shall be discussed with the Road Authority and documented.

#### **6. Traffic Control Manager**

The Traffic Control Manager is appointed by the Prime Contractor, and is responsible for preparing, implementing, and managing the Prime Contractor's Traffic Management Plan and sub-plans. This includes reviewing, evaluating, and approving the details in the Traffic Control Plan, including the traffic control layouts.

These are the typical duties and responsibilities of the Traffic Control Manager:

- fully implements the Traffic Control Plan
- monitors traffic operations to determine the effectiveness of the Traffic Control Plan
- ensures that the Traffic Management Plan remains current
- oversees modifications to the Traffic Management Plan as required by changes to the construction schedule, accommodation of special events, and changes to sub-plans
- ensures that daily traffic control logs are maintained
- exercises full line authority over all Traffic Control Persons on the work site
- finalizes traffic control measures with the Prime Contractor's Traffic Engineer where these are required by the Road Authority or the standards in this Manual
- sets up and implements a monitoring schedule for both active and inactive work periods throughout the course of the project
- directs the Prime Contractor's Incident Management Plan
- directs the Prime Contractor's Public Information Plan
- directs the Prime Contractor's Implementation Plan



- attends regular meetings with the Road Authority Representative on behalf of the Prime Contractor to discuss project performance, issues, and plans

The role of Traffic Control Manager should be assigned only to a qualified person who is knowledgeable about traffic management principles and requirements, and who has suitable traffic management work experience or training. The Traffic Control Manager may be an employee of the Prime Contractor or a sub-contractor to the Prime Contractor, and may be the designated Traffic Control Supervisor or another qualified person.

## 7. Traffic Control Supervisors and Traffic Control Persons

For the roles and responsibilities associated with these positions, see [Section 5.1.1: Traffic Control Supervisor](#) and [Section 5.1.2: Traffic Control Persons \(TCPs\)](#).

### 1.2.4 Road Work Authorization

The Road Authority authorizes the Prime Contractor to work on a Provincial (or municipal) roadway where the work will impact road users. There is typically conditions (requirements) associated with the authorization which may be outlined in a:

- **Contract:** Traffic management requirements may form part of the contract conditions.
- **Permit to Construct Works upon Highways/Roadways:** Traffic management requirements may form part of the permit conditions.
- **Lane Closure Request/ Acceptance:** The Ministry's Work Notification/Lane Closure Request and Approval Form may be useful where traffic is impacted but no physical works are being constructed that require a permit (see [Appendix E: Lane Closure Request Form](#)).
- **Letter of Authorization:** May be used when no standard form suits the circumstances. Care should be taken to ensure that the appropriate requirements and conditions are communicated to the Prime Contractor in writing when authorizing work on a highway.

### 1.2.5 Plan Submission and Review Process

The Prime Contractor shall plan and document the Traffic Management that will be implemented based on the requirements set by the Road Authority. No work may be performed on the roadway unless the Prime Contractor's Traffic Management Plan meets the requirements and has been reviewed and accepted by the Road Authority.

[Section 2.5: Establishing Work on Roadways](#) outlines the submission and review process in detail used by the Prime Contractor.