

Traffic Management Guidelines

For

Work On Roadways



September 2001

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Preface

When works take place on provincial highways there may be significant disruption or delay to existing traffic, and resultant inconvenience to highway users. There is need to ensure the continued effective function of the highway during any such works, and careful consideration of acceptable delays is necessary before approval to proceed should be given.

The **purpose** of these Traffic Management Guidelines is to provide information and guidance for District Highway Managers and others who authorize such use of existing highways, and the impact to existing traffic.

These Traffic Management Guidelines outline a structured approach to the development of a traffic management strategy, and requirements for a traffic management plan, which will minimize delay and inconvenience for highway users. In general, project documentation is as follows:

- **Traffic Management Strategy** – General requirements for traffic management, and a Traffic Management Plan, set out by a project team and Project Manager for the approval of the District Highway Manager. The Traffic Management Guidelines provides Ministry staff with a practical process to consistently develop effective traffic management strategies.
- **Traffic Management Plan** – A project specific document prepared by Proponents who undertake works on highways with existing traffic, for the review and acceptance of the District Highway Manager. The Traffic Management Plan contains or makes provision for the following sub-plans as required by the project's Traffic Management Strategy:
 - ◇ Traffic Control Plan(s)
 - ◇ Public Information Plan
 - ◇ Incident Response Plan or Incident Management Plan
 - ◇ Implementation Plan

Every effort has been made to ensure that the Traffic Management Guidelines address the needs of the full range of project types dealt with by the Ministry throughout the province. Accordingly, a small rural project will require less effort for traffic management than will a large urban project where existing traffic volumes are high. We hope that all parties involved in traffic management for projects will find these guidelines to be helpful.

Comments or suggestions for improvement should be sent to the Manager, Traffic & Electrical Engineering for South Coast Region or the Senior Traffic and Electrical Engineer at Victoria. Notification of revisions will be broadcast to users.

*Project Development Team
Traffic Management Guidelines Project*

PART 1
INTRODUCTION

1. INTRODUCTION

1.1 THE GOAL

Traffic must be accommodated while work is performed on provincial highways¹. On many roadways, temporary closures or peak period capacity reductions are unacceptable. Even minor problems with traffic management can create huge problems for the travelling public, contractors, emergency response agencies and the Ministry². Traffic management may therefore be critical to the success of a project³.

An effective traffic management plan seeks to ensure that:

- traffic control plans accommodate project and site specific considerations
- traffic impacts are evaluated using accepted standards
- stakeholders⁴ are notified of potential impacts in an acceptable manner
- there is a mechanism for change in response to unsatisfactory performance



1.2 THE CHALLENGES

There are a number of challenges to ensuring that traffic is accommodated while work is performed.

1. *Parties involved in a project must share a common understanding of requirements.* Most work on roadways is performed by organizations other than the Ministry. While the Ministry will develop a project's traffic management strategy, the traffic management plan will be developed and implemented by a **Proponent** (most often a contractor) for the acceptance of the District Highways Manager. Performance and process requirements must be clearly stated at the beginning of a project.
2. *Requirements for traffic management plans must be consistent from project to project.* Plans that vary in format, content and requirements may cause confusion resulting in delays, increased costs and poor service to the

¹ Highways – the term highway or highways as used in this manual is as per the Highway Act.

² Ministry – British Columbia Ministry of Transportation.

³ Project – any work operation or activity requiring traffic control undertaken on a provincial highway.

⁴ Stakeholders – individuals or organizations using the highway or affected by the project.

travelling public. To achieve consistency, a uniform process is required that also accommodates project specific issues.

3. *Traffic management must be part of the project life cycle*⁵. Traffic management is not an activity that can be performed once during the project and then never dealt with again. As illustrated in Figure 1, traffic management design issues need to be resolved during the project design phase. Plan implementation is related to construction activities and so these issues need to be resolved during the construction phase. Performance must be monitored and plans modified to match changing construction schedules and commissioning deadlines. Finally, a review of the effectiveness of the traffic management plan needs to be undertaken and any lessons learned incorporated into future projects.

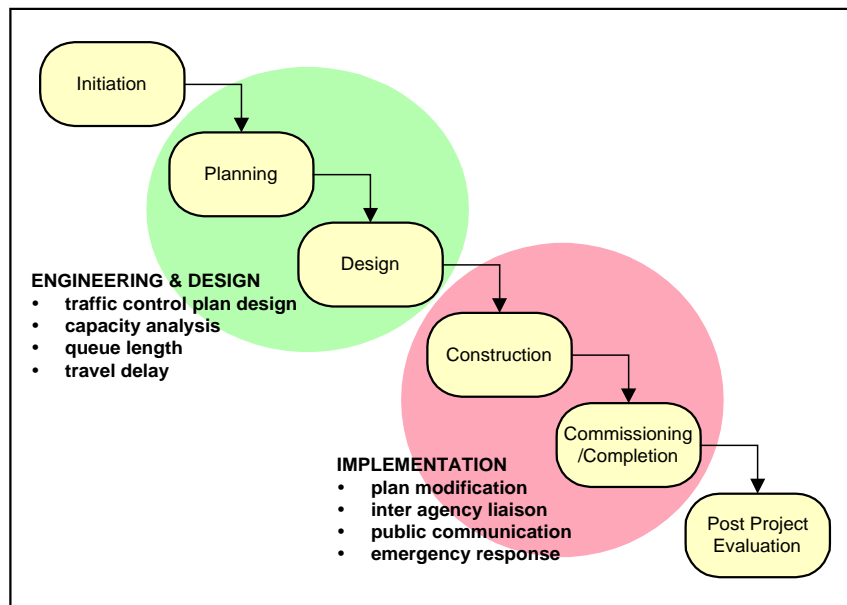


Figure 1 – Traffic Management Project Life Cycle

4. *Traffic management plans must be performance oriented.* In spite of prior engineering analysis, a plan may not be performing acceptably. Perhaps an assumed design lane capacity cannot be achieved because a nearby project is affecting traffic operations or perhaps traffic volumes have increased since the plan was designed. Regardless, the public is not well served if a plan is static and does not adapt. An effective plan development and implementation process must include mechanisms for reviewing and modifying plans throughout the project life cycle. Before work begins, all parties must understand that change to meet performance goals may be necessary.

⁵ Project life cycle - term used to describe the complete range of activities and phases of a project starting with initiation and planning through to construction, commissioning and turn over to the client.

1.3 PURPOSE

The purpose of these Guidelines is to provide information and guidance to Ministry staff who plan and authorize works on existing highways that will impact normal traffic operations.

These Guidelines have been designed to assist in determination of requirements for traffic management in a quick and consistent manner. Five objectives have been defined:

- Define well understood roles and responsibilities
- Develop effective traffic management strategies
- Determine clear and consistent traffic management plan requirements
- Provide effective tools for evaluating Traffic Management Plans
- Ensure proper management of ongoing changes



1.4 SCOPE OF THESE GUIDELINES

The use of these Guidelines is recommended for all works on provincial highways for which traffic control is required, and is intended to ensure that any impacts to existing traffic are minimized. Requirements for Traffic Control Plans (sub-plans) that will be set out in overall Traffic Management Plans, shall comply with the Ministry's *Traffic Control Manual for Work on Roadways* and all Workers' Compensation Board (WCB) regulations.

1.5 USERS OF THESE GUIDELINES

These guidelines are primarily intended for District Highway Managers, who authorize work on highways, and for Ministry staff who develop strategies for traffic management and evaluate traffic management plans. This group may include Area Managers, District Engineers, District Technicians, Development Approvals Technicians, and Regional Traffic Engineers.

Secondary users of these Guidelines are Project Managers and Directors, Project Technicians, Project Supervisors and others. This group will ensure that the standard contract language and requirements are included whenever the Ministry sets out its requirements for proponents who undertake work on provincial highways.

Engineering consultants, construction contractors, work supervisors, traffic control contractors and utility companies may also use these guidelines. Each of these groups has a role to play in preparing and implementing traffic

management for projects on provincial highways. A partnership with the Ministry is implied in order that traffic management is successful. However, the Ministry maintains responsibility for preparing specifications and defining requirements for traffic management and may be involved in other aspects of the process depending on the nature and location of the work.

1.6 HOW THESE GUIDELINES ARE ORGANIZED

Material contained in these guidelines is organized as follows:

- **PART 1 - INTRODUCTION**

- ◇ Section 1 - [Introduction](#)
- ◇ Section 2 - [Terminology and Concepts](#) - fundamental terms are defined and concepts relating to the various plans required for projects are discussed.
- ◇ Section 3 - [Traffic Management Overview](#) – provides an overview of the development, review and approval processes and introduces the reader to concepts underlying strategy development procedures.

- **PART 2 - DEVELOPING STRATEGIES AND PLANS**

- ◇ Section 4 - [Risk Assessment](#) – provides risk assessment guidelines for evaluating projects.
- ◇ Section 5 - [Developing Traffic Management Strategies](#) - identifies traffic management strategies for each project category and outlines a step-by-step procedure for Ministry staff to develop a traffic management strategy.
- ◇ Section 6 - [Developing Traffic Management Plans](#) - defines specific requirements and standards for traffic management plans and outlines a step-by-step procedure for the Proponent to develop a traffic management plan. Covers information such as documentation, plan approval and management requirements for each project category.

- **PART 3 - IMPLEMENTING STRATEGIES AND EVALUATING PLANS**

- ◇ Section 7 - [Policies](#) - defines policies for notification, plan review and acceptance, municipal approval, WCB compliance and minimum documentation for traffic control plans.
- ◇ Section 8 - [Standard Contract Language](#) – contains standard contract language clauses from which appropriate clauses may be selected for a given project.
- ◇ Section 9 - [Evaluating a Traffic Management Plan](#) – provides an overview of the process and outlines a step-by-step procedure for MoT staff to evaluate a Proponent's traffic management plan.

1.7 CONVENTIONS

Traffic control terms used in these guidelines follow the definitions contained within the *Traffic Control Manual for Work on Roadways*. Additional terms specific to these guidelines are defined in footnotes following their first occurrence. Where a term has been defined in the body of these guidelines or when a definition is too lengthy for a footnote, the term is identified as “defined term” and the reader is referred to the Glossary.

References to other documents and manuals are shown in Italics.

The online version of these guidelines will contain hyperlinks to related web sites. These links are indicated by [blue underlined text](#). Clicking on these links will open a new web browser window and load the web page in future.

Links to information within these guidelines is shown by [blue text](#). Clicking on such a link will move the reader to the location in the guidelines allowing the reader to “jump” to additional information if needed.

1.8 STANDARDS

Traffic management plans shall be developed and evaluated in accordance with following standards:

- *Ministry of Transportation Traffic Control Manual for Work on Roadways*
- *Ministry of Transportation Standard General Specifications Section 194*
- *Ministry of Transportation Electrical and Traffic Engineering Manual*
- *Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads*
- *BC Supplement to the TAC Geometric Design Guide*

2. TERMINOLOGY AND CONCEPTS

To work effectively people must use common terminology. Terms such as "traffic management plan" and "traffic control plan" mean different things to different people. In this section, fundamental terms and concepts are defined. The purpose and function of components of a traffic management plan and their relationship to a traffic management strategy are explained.

2.1 FUNDAMENTAL DEFINITIONS

2.1.1 Proponent

For all works on provincial highways, the Ministry will designate an individual or agency as the Proponent, and the Proponent will be responsible for traffic management. For the purposes of these Guidelines, the Proponent is:

The party directly constructing or maintaining works on provincial highways who is responsible for obtaining authorization from the Ministry to work on the roadway, developing an acceptable traffic management plan, and for implementing the plan in accordance with Ministry requirements.

In the case of a Ministry day labour project, the Proponent shall be the Ministry Project Supervisor. For a tendered Ministry project, the Proponent shall be the prime contractor. In the case of a municipality or public utility performing work on the roadway, the Proponent may be either the municipality or public utility or their prime contractor (whichever is directly performing the work).

2.1.2 Traffic Manager

The Proponent is responsible for ensuring that the Traffic Management Plan meets MoT requirements and all other governmental regulations. The Proponent will be required to designate a Traffic Manager, and this individual will be responsible for the Proponent's Traffic Management Plan.

The Proponent's **Traffic Manager** is:

The individual tasked by the Proponent with the responsibility for preparing, implementing and managing the Proponent's Traffic Management Plan and sub-plans, including reviewing, evaluating and approving the details of the Traffic Control Plan (including traffic control layouts).

The following are typical duties and responsibilities for a Traffic Manager:

- ensure that daily traffic control logs are maintained
- exercise full line authority over all of the traffic control personnel on site

- finalize traffic control measures with the contractor's Traffic Engineer where such has been required by MoT
- direct the implementation of the Traffic Control Plan
- monitor traffic operations to determine the effectiveness of the Traffic Control Plan
- direct the contractor's Public Information Plan
- direct the contractor's Incident Management Plan
- oversee modifications to the Traffic Management Plan required by construction schedule changes, accommodation of special events or changes to sub plans
- ensure that the Traffic Management Plan is up to date
- attend regular meetings with the Ministry Representative on behalf of the contractor to discuss performance, issues and plans

The designated Traffic Manager may be the same individual that is designated as the Traffic Control Supervisor (next section), or may be a separate individual qualified for the different responsibilities of this function. The Traffic Manager may be an employee of the Proponent or may be a contractor to the Proponent.

2.1.3 Traffic Control Supervisor

The Proponent is responsible for designating a qualified Traffic Control Supervisor as per requirements of WCB regulations Section 18. This should be a separate person from the Proponent's Site Supervisor where the functional requirements require full-time or frequent attention.

The designated Traffic Control Supervisor may be the same individual that is designated as the Traffic Manager, or may be a separate individual qualified for the responsibilities of this function. The Traffic Control Supervisor may be an employee of the Proponent or may be a contractor to the Proponent.

Typical duties and responsibilities for a traffic control supervisor are defined in Section 18.3 of the WCB regulations. In general, a traffic control supervisor is responsible for ensuring that:

- the required traffic control devices are in place,
- each member of the traffic control crew wears the required personal protective clothing and equipment,
- traffic control persons are positioned in a safe location clear of potential environmental hazards such as a slide or avalanche,
- traffic control persons perform traffic control duties competently and safely, and
- if 2 or more traffic control persons are required to work as a team at the worksite, responsibility for coordination of changes in traffic flow is assigned.

2.1.4 Traffic Engineer

The Ministry may require that a Proponent retain a Traffic Engineer to review and approve Traffic Control Plans for the Traffic Manager, including drawings and layouts, where the works will involve particularly complex traffic movements or impact existing high speed traffic. In these cases the Traffic Engineer is required to be a Professional Engineer, licensed in the Province of BC, and qualified and experienced in traffic management planning and highway safety. This individual may also be required to be certified as a “Professional Traffic Operations Engineer (PTOE)” from the Institute of Transportation Engineers (ITE).

2.1.5 Traffic Management Strategy

A Traffic Management Strategy (TMS) is defined as follows:

A **Traffic Management Strategy** defines the Ministry’s requirements for traffic management for a project. A Traffic Management Strategy identifies requirements the Traffic Management Plan made up of the following sub plans: Traffic Control Plan, Public Information Plan, Incident Plan and Implementation Plan.

A strategy is developed to ensure that project needs are identified and that plans are developed that address those needs over the project life cycle.

2.1.6 Traffic Management Plan

A Traffic Management Plan (TMP) is defined as follows:

A **Traffic Management Plan** details the Proponent’s specific plan to implement the project’s Traffic Management Strategy. A Traffic Management Plan is comprised of sub-plans required by the strategy. A Traffic Management Plan integrates these plans into a single document that demonstrates an understanding of site specific issues and project requirements. A Traffic Management Plan shall make provision for updates and revisions throughout the project life cycle to address issues as they occur.

2.1.7 Authorization

This refers to the authorization given by District Highway Managers to proponents to work on a provincial highway where there may be impact to existing traffic. Normally there are conditions associated with such authorization, such as a requirement that the proponent must undertake traffic control in accordance with the Traffic Control Manual for Work on Roadways. In some cases the requirements are more onerous as the potential for significant disruption to traffic movement, and delay for highway users, increases. That is where a full Traffic Management Plan may be required, and this must be acceptable to the District Highway Manager before authorization will be given.

There are several ways in which these conditions may be passed to a proponent, and the choice or option for the most effective or appropriate process is left to the District Highways Manager to determine:

- *Contract Requirements (contract language)* - whenever works are being undertaken by contract. See Section 8 for standard language
- *Permit to Construct Works Upon Highways* - conditions regarding the management of traffic while undertaking the works may form part of the permit. See Appendix D
- *Lane Closure Request/Permit* - this form may be useful where traffic is being impacted but no physical works are being constructed which require permit. Again conditions regarding the management of traffic are included. See Appendix C
- *Letter of Authorization* - this may be useful in instances if any of the standard forms does not suit the circumstances. Care must be taken to ensure appropriate conditions are passed to proponents in giving authorization to undertake works on highways.
- *Verbal Authorization* - this is only recommended where traffic volumes are low and resultant impacts due to works are minimal. The basic requirement of adherence to proper traffic control procedure must be imparted upon the proponent.

2.1.8 Approval

This refers to the approval of specific plans, drawings, layouts, etc. but the process will vary somewhat for different plans:

Traffic Management Plan

- The overall Traffic Management Plan prepared by a proponent is reviewed by the District Highway Manager, or delegated staff, and a determination is made regarding its **acceptability**. If acceptable, authorization to proceed with the works on the highway is given. This is not a formal approval of the details contained within the Plan or sub-plans.

Traffic Control Plan

- Approval of the Traffic Control Plan (sub-plan) is required due to the need to clearly have a responsible and accountable agency in accordance with WCB Regulations. **Proponents must approve** the Traffic Control Plan before it is submitted to the Ministry for acceptance (along with the overall Traffic Management Plan as the case may be). District Highway Managers, or delegated staff, will need to look for such approval or sign-off by a qualified person before that Plan can be considered acceptable. Normally, proponents will designate or hire a qualified Traffic Manager for

the works, who would be qualified to sign-off or approve a Traffic Control Plan, but this may also be done by the Traffic Control Supervisor where qualified. The Ministry does not approve Traffic Control Plans.

2.2 TRAFFIC MANAGEMENT SUB PLANS

2.2.1 Traffic Control Plan

Traffic control plans are required for all projects involving work on or near traveled roadways. An approved traffic control plan ensures that workers and the public are safe and that negative impacts on traffic operations are minimized. The definition of a traffic control plan is as follows:

A **Traffic Control Plan** is a combination of text, layouts⁶ and, if required, drawings⁷ that define specifically what traffic control measures will be provided for the project, how they will be implemented and on what schedule. For longer-term projects, traffic control plans shall be modified and re-approved by the proponent, and the revised document be accepted by the District Highway Manager, throughout the project life cycle to address issues as they occur. Traffic control plans are made up of the following elements:

- **Text**, or a description of the location of the work zone⁸, proposed work activities, proposed traffic control measures and the specific times and dates work will be undertaken on the highway.
- **Layouts** are schematic diagrams of the roadway showing the placement and general arrangement of traffic control devices. Standard layouts are contained in the TCM. Custom layouts may be required for a project if standard layouts are inadequate. Layouts need not be to scale but should include dimensions.
- **Drawings** are scale drawings of the highway in the vicinity of the work zone that identify the arrangement of traffic control devices in accordance with the standards incorporated in the TCM. Drawings are only required for a traffic control plan if standard layouts contained in the TCM are not adequate. Drawings shall show all painted markings; physical features (signing, guardrail, lamp standards, etc.) that may affect traffic operations, geometry and lane configurations and shall include dimensions.

It may be useful for proponents to follow a prescribed format for the preparation of a Traffic Control Plan where the nature of the work, the amount of traffic and other circumstances allow for a simpler plan. A typical approach and form are shown in Appendix B.

⁶ layout – defined term see Glossary

⁷ drawing – defined term see Glossary

⁸ work zone – defined term see Glossary

2.2.2 Public Information Plan

Both MoT and the Proponent have a role to play informing the public of project related traffic impacts. The Ministry's Regional Communications offices are responsible for producing and implementing an overall communications plan for Ministry projects. The communications plan addresses corporate objectives ensuring that:

- stakeholders are aware of the project and its impacts
- communications issues are identified to MoT executive and the Minister
- groups directly impacted by specific projects (local residents, businesses, etc.) are appropriately informed
- the travelling public are informed in a timely manner regarding events that may negatively affect traffic operations
- emergency response agencies are informed in a timely manner regarding events that may negatively affect traffic operations



The Ministry implements its plan based in part on information received from the Proponent. To work effectively with the Ministry, the Proponent must also have a plan designed specifically for the project. For the purposes of these guidelines, a Public Information Plan is defined as follows:

A **Public Information Plan** identifies actions and procedures to inform the travelling public, project stakeholders and the Ministry of current traffic operations and planned changes to traffic operations. A Public Information Plan shall be modified throughout the project life cycle to address issues as they arise.

Depending on the complexity and importance of a project, a Public Information Plan may consist of any of the following elements:

- notices to the travelling public placed in print media
- notices to the travelling public provided to radio and TV media
- project signs
- changeable message signing
- notices to the travelling public placed on Internet web pages
- brochures
- direct mail outs to affected businesses and homeowners
- public information telephone line
- public meetings

- stakeholder meetings with emergency response agencies
- other methods as may be available to the project

2.2.3 Incident Plans

A. Incident Response Plan

An Incident Response Plan is intended to address response to unplanned events or incidents for small projects where the project works or local factors (geography, geometry, etc.) pose a hazard to the public. An incident response plan is defined as follows:

An **Incident Response Plan** identifies the Proponent's priorities and procedures for managing traffic control and project works during an unplanned event or incident. An Incident Response Plan is modified throughout the project life cycle to address issues as they occur.

The intent of an incident response plan is to ensure that a Proponent responds appropriately to incidents and maintains public safety. A Proponent is expected to:

- respond quickly with emergency traffic control measures to ensure public safety once an incident has been identified
- contact the appropriate emergency response agencies
- inform MoT of the incident
- assist emergency response personnel when required
- if necessary, stop work operations and clear the work zone to assist restoration of normal traffic operations
- if necessary, stop work operations and clear the work zone to enable emergency response vehicles to travel through the work zone unimpeded
- record details of the incident and provide a report to MoT

A Proponent is not expected to manage detection/verification functions or assist in cleanup operations. These activities will remain the responsibility of the Ministry and emergency response agencies.



B. Incident Management Plan

An Incident Management Plan is intended to address unplanned events or incidents for large, complex projects to ensure incident response operations within the work site are managed effectively. For the purposes of this document an Incident Management Plan is defined as follows:

An **Incident Management Plan** identifies the Proponent's priorities and procedures for detection and response to unplanned events or incidents with the goal of safeguarding the public and restoring traffic flow as quickly as possible.

The plan must define a process of regular review and analysis to identify actions that will reduce incident frequency and severity. An Incident Management Plan shall be modified throughout the project life cycle to address issues as they occur.

The intent of an incident management plan is to ensure that the Proponent takes responsibility for managing traffic operations to ensure public safety. Responding appropriately to an individual incident is obviously important. However, even more important is the identification of actions that will reduce the occurrence of incidents or minimize their impact on traffic operations. An Incident Management Plan shall ensure that:

- procedures are developed to identify and verify that an incident has occurred
- response measures to ensure public safety are taken quickly
- MoT and appropriate emergency response agencies are contacted
- emergency response personnel are assisted by project staff
- an incident's impact on traffic operations is assessed quickly and appropriate response measures determined
- MoT is updated with respect to traffic conditions and actions taken to normalize traffic flow
- action is take to restore normal traffic operations by modifying work plans and activities where necessary
- work operations are stopped and the work zone cleared to enable emergency response vehicles to travel through the work zone unimpeded
- details of the incident are recorded and reported to MoT in a timely manner
- incidents are reviewed and analyzed to determine causes and preventative actions

2.1.1 Implementation Plan

An implementation plan ensures the traffic management sub-plans (Traffic Control Plan, Public Information Plan, and Incident Plan) are implemented and operated in a coordinated manner. An Implementation Plan is defined as follows:

An **Implementation Plan** identifies responsibilities and procedures to ensure that traffic management sub plans are developed and implemented in a coordinated manner. Qualifications, duties and responsibilities for supervisory and management personnel responsible for implementing a traffic management plan shall also be identified. This will include designation of the Traffic Manager and the Traffic Control Supervisor.

Not every project will require a formal implementation plan. For example, a simple paving project on a low volume roadway would require a traffic control plan but would not require an implementation plan. In contrast, a large complex project that significantly impacts normal traffic operations would require an implementation plan.

3. TRAFFIC MANAGEMENT OVERVIEW

This section explains how components of a traffic management strategy relate to a traffic management plan. First, an overview of the complete traffic management development process is given. The principles upon which a traffic management strategy is developed are then explained. Finally, the relationship between a traffic management strategy and a traffic management plan is explained.

3.1 A CLEAR CONSISTENT PROCESS

A structured process for the development of traffic management plans is necessary to ensure that traffic issues are considered appropriately and that both traffic management strategies and plans are reviewed for suitability. The following are key elements of the process:

- predefined criteria and procedures for developing a traffic management strategy
- an approval process to ensure that the strategy is suitable for the project
- clear requirements for traffic management plan content
- a structured TMP plan review process utilizing checklists
- standard contract language to ensure consistent application of traffic management requirements

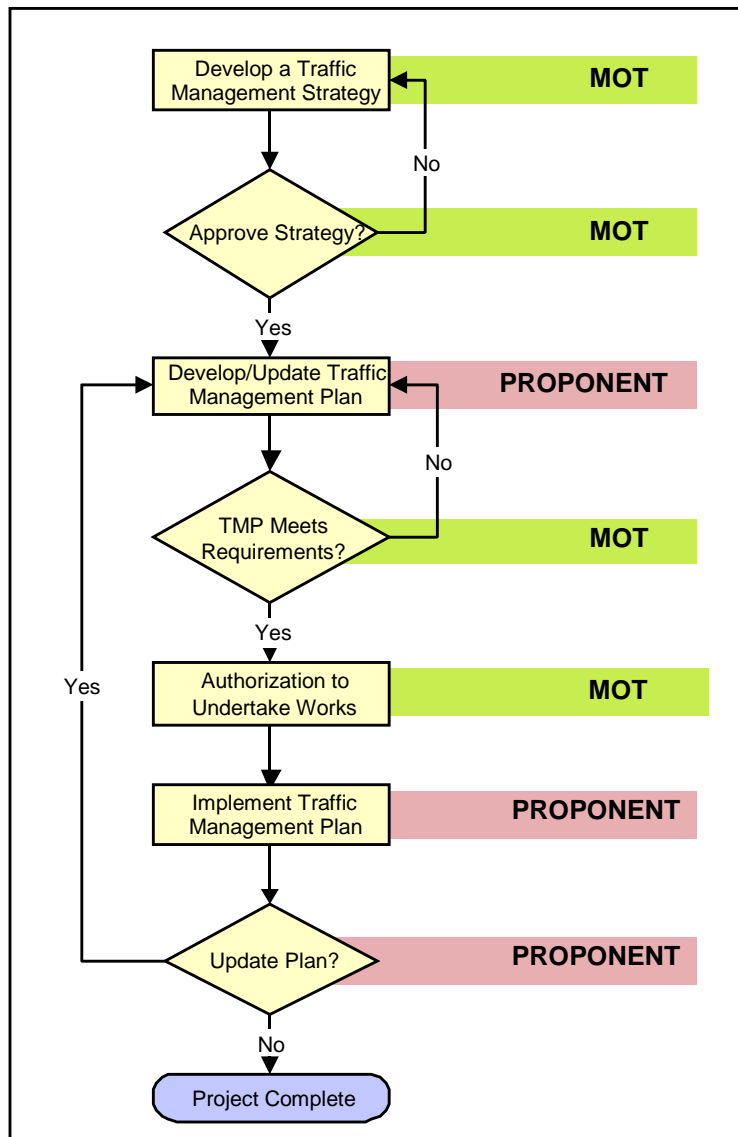


Figure 2 – Overall Process & Responsibility

When examining the process shown in [Figure 2](#), a key point to note is that a traffic management plan is not a static document. However good an initial plan may be, the plan must be updated to reflect changing conditions and circumstances.

3.2 DEVELOPING A STRATEGY - A PRACTICAL APPROACH

Work on the roadway can range from simple maintenance tasks to complex construction and rehabilitation activities. Given the variety and complexity of projects underway on provincial highways, the challenge is to develop traffic management strategies in a clear and consistent manner. When developing a traffic management strategy, three questions must be answered.

1. What type of traffic control is required for the work?
2. What is the likelihood of traffic delays?
3. What special circumstances must be accommodated?

Finding acceptable answers to these questions can often be difficult. A structured process ensures that answers are developed in a balanced objective manner. The process must be practical and yet must also be able to address complex project specific issues. The approach used in this document assists Ministry staff to:

- identify minimum requirements for traffic management plan content based on the project category
- follow a structured process to identify risks and project specific issues

3.2.1 Identify the Type of Traffic Control Required

Identifying the type of traffic control required for a project is fundamental to determining its impact on normal traffic operations. The approach taken in these guidelines is to categorize a project into one of five types of traffic control. Categorization is a tool that allows Ministry staff to quickly and consistently identify minimum traffic management plan requirements. The category definitions are:

Category 1

Work activities typically require single or multilane lane closures but two-way traffic operation is maintained at all times. Works are typically completed in one day. Regardless of the number of days required to complete the works, lane closures are removed at the end of each work period and traffic operations are normalized. Work activities may be performed during the day or at night.



Category 2

Work activities or roadway configuration require alternating single lane traffic operations or temporary road closures. Works are typically completed within one day. Regardless of the number of days required to complete the works, lane closures are removed at the end of each work period and traffic operations are normalized. Work activities may be performed during the day or at night.

Category 3

Work activities require that the highway be closed to one or both directions of traffic and that detours be put in place. Detours remain in place 24 hours per day for the duration of the works. Work activities may be performed during the day or at night.



Category 4

Roadway configuration, traffic volumes and the size of the work zone require staged traffic control plans to accommodate the work activities. Lane operations are affected for the duration of the project. However, primary impacts on traffic operations are confined to the transportation corridor containing the work zone. Work activities may be performed during the day or at night.

Category 5

Roadway configuration, traffic volumes and the size of the work zone require staged traffic control plans to accommodate the work activities. Lane operations are affected for the duration of the project. Impact of the work zone on traffic operations extends beyond the work zone and affects alternate routes. Work activities may be performed during the day or at night.

3.2.2 Identify Likelihood of Traffic Delays

Traffic control has the effect of reducing the capacity of the roadway potentially leading to delays and traffic slowdowns. Two fundamental criteria are used to evaluate the impact of reducing the capacity of the roadway in the area of the work zone. The first criterion is hourly traffic demand as it relates to the number of open lanes and their effective width and the second criterion is road closure duration.

1. Hourly traffic volumes provide an objective measure of the level of use of the roadway relative to capacity and of its relative importance in the transportation network. The relationship between hourly traffic volume demand and the reduction of roadway capacity also provides a method to

objectively evaluate the impact of a proposed project on traffic operations. Traffic Operations staff of MoT can provide this information, and analysis of traffic volumes.

2. The duration of a road closure is a significant factor in determining the impact of closures on local and network traffic operations. Short-term road closures typically affect only local traffic operations while longer-term closures may affect network traffic operations.

For each project category, maximum acceptable traffic volumes for specific lane closure scenarios and maximum acceptable roadway closure duration are identified. These criteria values are not to be used for design purposes. Rather the criteria values are a tool to determine objectively which sub plans should be included in the traffic management strategy.

3.2.3 Assess Risks and Special Conditions

After identifying the type of traffic control required and identifying the likelihood of traffic delays, Ministry staff should have sufficient information to allow an informed assessment of risks posed by the project. Each project has its own unique combination of site-specific issues and for this reason a risk assessment of the project must be undertaken. The following illustrates just a few of the issues that should be considered for any project:

- What is the impact of the project on network traffic operations?
- What is the impact of proposed work hours?
- Are there geographic factors that should be considered?
- Does the project affect emergency services?
- Are signal timings at intersections appropriate?
- Is there a negative impact on specific user groups (local residents, businesses, pedestrians, etc.)?
- Are suitable alternate routes available?
- What is the anticipated travel delay?
- Are there risks to the travelling public created by the project works?
- Does the project affect other jurisdictions?
- Should certain types of vehicles be restricted from transiting the Work Zone?
- Are private access roads blocked by the project?

In some cases, the assessment of site specific issues may lead to inclusion of sub plans additional to those required by the Basic⁹ Traffic Management Strategy. In other situations, the Basic Traffic Management Strategy may adequately define sub plans required in a TMP but may not adequately identify issues that must be addressed by the plans.



3.2.4 Identify the Traffic Management Strategy

A Traffic Management Strategy is developed by:

- Categorizing the project according to the type of traffic control required.
- applying actual highway traffic volumes and anticipated road closure duration data to Basic Traffic Management Strategy for the category to determine recommended sub-plans.
- performing a risk assessment to determine additional requirements.

This resulting Traffic Management Strategy will identify recommended sub-plans and special conditions that must be satisfied by a Proponent’s Traffic Management Plan.

For a given work activity, the Traffic Management Strategy will vary depending on issues such as the time of day work is scheduled, roadway configuration and the number of lanes affected. For example, a TMS may require a Public Information Plan because work is being performed on a high volume roadway in the middle of the day. Scheduling exactly the same work activity for a time period when hourly traffic volumes are lower might eliminate the need for a Public Information Plan. However, the risk assessment for nighttime work might impose the addition of traffic control requirements that makes daytime works more reasonable.

<i>Scenario 1 – travel delays anticipated, public communication issues identified</i>	<i>Scenario 2 – night work, no expected travel delays, no public communication issues identified</i>
Basic TMS: <ul style="list-style-type: none"> • Traffic Control Plan • Public Information Plan 	Basic TMS: <ul style="list-style-type: none"> • Traffic Control Plan (risk assessment identifies higher requirements because of night work)

⁹ Basic Traffic Management Strategy - A traffic management strategy created by applying hourly traffic volume/delay criteria but without performing a risk assessment.

PART 2

DEVELOPING STRATEGIES AND PLANS

4. RISK ASSESSMENT

This section of the guidelines is intended to be used by Ministry staff when assessing the safety risks posed to the travelling public and workers by any works taking place on a public highway. The identification of project specific risks will assist in the development of a Traffic Management Strategy appropriate for the project or works, and subsequent requirements for a Traffic Management Plan. Checklists are provided to promote consistency and to ensure that the most common risk factors are addressed. There may be others.

4.1 RISK ASSESSMENT GUIDELINES

Table 1 lists risks/issues relating to traffic management. Consider first whether the risk or issue applies to the project, and then identify whether action is required and identify the degree of risk.

Note: Where a risk is identified, it must be properly mitigated by the Traffic Management Plan produced by a Proponent.

Table 1 – Risk Assessment Guidelines
Risks and Communications Issues

Issue	Description	Action Required	Risk Factor
1. Falling Objects	Object of any kind (rock, earth, tools or construction materials) that could fall on the roadway, pedestrian walkway or right-of-way accessed by the public.	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
2. Nature of Work Activity	Does the work activity create a hazard? Blasting, rock scaling and excavation are obvious examples. However, excessive dust, dirt or gravel on the roadway, paint over-spray can also cause hazards. Any work activity that distracts a driver or creates unanticipated driving conditions should be considered as a potential hazard.	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
3. Removal of Safety Devices	If the work activity requires that safety devices be removed does this create a hazard that must be mitigated? Examples of safety devices are: guardrail, crash attenuators, lighting, pavement markings, signage, traffic signals or reflectors.	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
4. Equipment movement through work zone	Is equipment movement through the work zone likely to conflict with normal traffic in the work zone? An example would be construction vehicles causing vehicle queues as they arrive at and leave the work area.	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High

Table 1 – Risk Assessment Guidelines
Risks and Communications Issues

Issue	Description	Action Required	Risk Factor
5. Roadway surface condition during construction	Will the roadway surface create a hazard? For example pavement milling may create difficulties for motorcycles and cyclists.	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
6. Storage of Equipment or Materials	Will storage of equipment or materials at the work area create a hazard? A hazard could be a physical obstacle created by an object stored too close to the travelled roadway. Another type of hazard could be created by poor control of material such that vandalism is a possibility.	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
7. Hazardous Materials	Does the work activity require the use of hazardous materials? If so, will they be stored on site? What security measures should be taken?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
8. Load restrictions as a result of construction	Should restrictions on the types of vehicles using the roadway be imposed during construction?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
9. Noise levels created by work activities	Will local residents or business be negatively impacted by noise created by work activities? Will municipal bylaws be a consideration?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
10. Public Access to Work Area	Does the work area create a hazard for normal use of the roadway or right-of-way by the public during non-working periods?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
11. Pedestrian and cyclist through traffic	Will special measures be needed to convey pedestrians or cyclists through the work zone?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
12. Night-time Work	What night-time safety considerations must be addressed to ensure that the work zone is safe for the travelling public and workers? Consider the use of additional traffic control devices optimized for night-time work, work area lighting and traffic control supervision.	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High

Table 1 – Risk Assessment Guidelines
Risks and Communications Issues

Issue	Description	Action Required	Risk Factor
13. Vehicles queue hazards	Consider whether queues are located in an area that could be hazardous. Hazards can be created by a variety of situations. Is there sufficient sight distance for stopping based on the proposed posted speed? Will the queue extend to an area where sight distance is inadequate? Consider geography of the work area. For example, an avalanche area would be an inherently hazardous location to stop vehicles.	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
14. Posted Speed through work Zone	Is the posted speed in the work area reasonable considering the work activities, equipment movement, revised geometrics, road surface condition, lane and shoulder widths?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
15. Lane Widths	Are lane widths in the open lanes reduced below 3.6 metres or are objects located closer to the edge of roadway than acceptable for the highway classification?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
16. Work Zone blocks road access	Is the work zone likely to block road or business accesses?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
17. Bus Access	Will the work zone impede bus access through the work zone? Will the work zone affect bus stops?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
18. Intersection traffic control adequate	Is the existing intersection traffic control adequate to accommodate the possible laning reductions or detoured traffic? If not, have adequate temporary signing, temporary signals or temporary signal timing changes been proposed?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
19. Traffic Impacts Extend beyond Work Zone	Will traffic queues extend beyond the work zone? Is additional signing required to ensure that the travelling public is advised of possible delays? Should the travelling public be informed of alternate routes prior to the start of the project?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High

Table 1 – Risk Assessment Guidelines
Risks and Communications Issues

Issue	Description	Action Required	Risk Factor
20. Volume/ Capacity Ratio	Is the scheduled time of day for the work activity reasonable in light of probable traffic volume demand and reduced laning in the work zone? Should the work activity be scheduled for a different time of day when traffic volumes are lower?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
21. Signage Conflicts	Are there potential conflicts between permanent signs and signals and temporary traffic control signs used for the project? Should signal operation be changed? Should some permanent signs be shrouded?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
22. Impact of Special Events	Is the route on which the project is located likely to be affected by special events? If so, what special events are likely to cause problems for the project?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
23. Public Advisory Signing	Is there a particular need for public advisory signing? Will signing help to reduce the traffic demand by advising the public of the type of traffic disruptions that could be expected? For example, should alternate route information be posted prior to construction starting?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
24. Conflict with existing special traffic operations	Is there a potential conflict between the project and existing specialized traffic operations such as HOV lanes, counterflow or moveable swing bridge operations?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
25. Impact on Local Roads	Will the project impact local roads? For example, will closing a freeway entrance ramp require modifications to traffic operations on municipal roads?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
26. Statutory Holidays	Is the proposed work schedule likely to conflict with statutory holidays? If the work zone is near the Canada US border, will there be a conflict with American statutory holidays?	<input type="checkbox"/> No <input type="checkbox"/> Yes	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High

5. DEVELOPING TRAFFIC MANAGEMENT STRATEGIES

Section 5 is to be used by Ministry staff when developing a project’s Basic Traffic Management Strategy. [Table 2](#) outlines the required and recommended elements of a Basic Traffic Management Strategy. Results of the assessment outlined in [Section 4.1](#) may impose additional requirements or conditions for the Proponent’s TMP.

	Category 1	Category 2	Category 3	Category 4	Category 5
Traffic Control Plan	Required	Required	Required	Required	Required
Public Information Plan	Recommended when: <ul style="list-style-type: none"> Public communication issues identified traffic volumes criteria exceeded 	Recommended when: <ul style="list-style-type: none"> Public communication issues identified traffic volumes criteria exceeded road closures exceed time limits 	Recommended when: <ul style="list-style-type: none"> Public communication issues identified traffic volumes criteria exceeded 	Recommended when: <ul style="list-style-type: none"> Public communication issues identified traffic volumes criteria exceeded <u>Required</u> when: <ul style="list-style-type: none"> road closures exceed time limits 	Required
Incident Plan	Recommended when: <ul style="list-style-type: none"> safety issues identified restricted access through work zone <u>Required</u> when: <ul style="list-style-type: none"> work zone defined by MoT as hazard area for traveling public 	Recommended when: <ul style="list-style-type: none"> safety issues identified restricted access through work zone <u>Required</u> when: <ul style="list-style-type: none"> work zone defined by MoT as hazard area for traveling public 	Recommended when: <ul style="list-style-type: none"> safety issues identified restricted access through work zone <u>Required</u> when: <ul style="list-style-type: none"> work zone defined by MoT as hazard area for traveling public 	Recommended when: <ul style="list-style-type: none"> safety issues identified restricted access through work zone <u>Required</u> when: <ul style="list-style-type: none"> work zone defined by MoT as hazard area for traveling public 	Required
Implementation Plan	Recommended when: <ul style="list-style-type: none"> Public Information Plan included for project <u>Required</u> when: <ul style="list-style-type: none"> Incident Plan included for project 	Recommended when: <ul style="list-style-type: none"> Public Information Plan included for project <u>Required</u> when: <ul style="list-style-type: none"> Incident Plan included for project 	Required	Required	Required

Table 2 - Basic Traffic Management Strategy – Sub Plans by Category

The following are recommended procedures to be used by Ministry staff when developing a traffic management strategy.

STEP 1. GATHER PROJECT INFORMATION.

STEP 2. USE [FIGURE 3](#) TO DETERMINE THE PROJECT CATEGORY.

STEP 3. DETERMINE THE MAXIMUM HOURLY TRAFFIC VOLUME AT THE WORK ZONE FOR THE TIME PERIODS PROPOSED.

STEP 4. DETERMINE THE DURATION OF ANY PLANNED TRAFFIC STOPPAGES OR ROAD CLOSURES.

STEP 5. PERFORM A RISK ASSESSMENT.

On the basis of project information gathered in steps 1 through 4, perform a traffic management risk assessment. Review [Table 1](#) to determine whether any risks or issues are applicable to the project. For each applicable item, determine the risk factor, identify stakeholder groups that would be affected, decide whether action is necessary and identify the plan(s) affected by the risk. Provide comments for each risk or communication issue as necessary.

STEP 6. DETERMINE THE TRAFFIC MANAGEMENT PLAN SUB-PLANS RECOMMENDED BY THE BASIC TMS.

Apply information gathered in Step 3 and Step 4 to the criteria associated with the project category. Evaluate which, if any, sub-plans should be included in the strategy. Consider the actual traffic volumes relative to the guidelines and the presence of risk factors that could be mitigated by including a plan in the traffic management strategy.

STEP 7. STATE THE TRAFFIC MANAGEMENT STRATEGY.

Identify the following:

- Project category
- Required sub-plans
- Results of the Risk Assessment
- Special conditions or limitations

STEP 8. SUBMIT THE TMS TO THE DHM FOR REVIEW AND APPROVAL.

STEP 9. WHEN THE STRATEGY IS APPROVED, SUBMIT COPIES OF THE TMS, TO THE PROJECT MANAGER OR PROPONENT DEVELOPING THE TRAFFIC MANAGEMENT PLAN.

In the case of a Ministry project, the Project Manager shall ensure that the Special Provisions of the Contract or Contract for Service require the Proponent to develop a traffic management plan in accordance with the appropriate category requirements.

In the case of a non-Ministry project, the DHM shall instruct the Proponent to develop a traffic management plan in accordance with the appropriate category requirements.

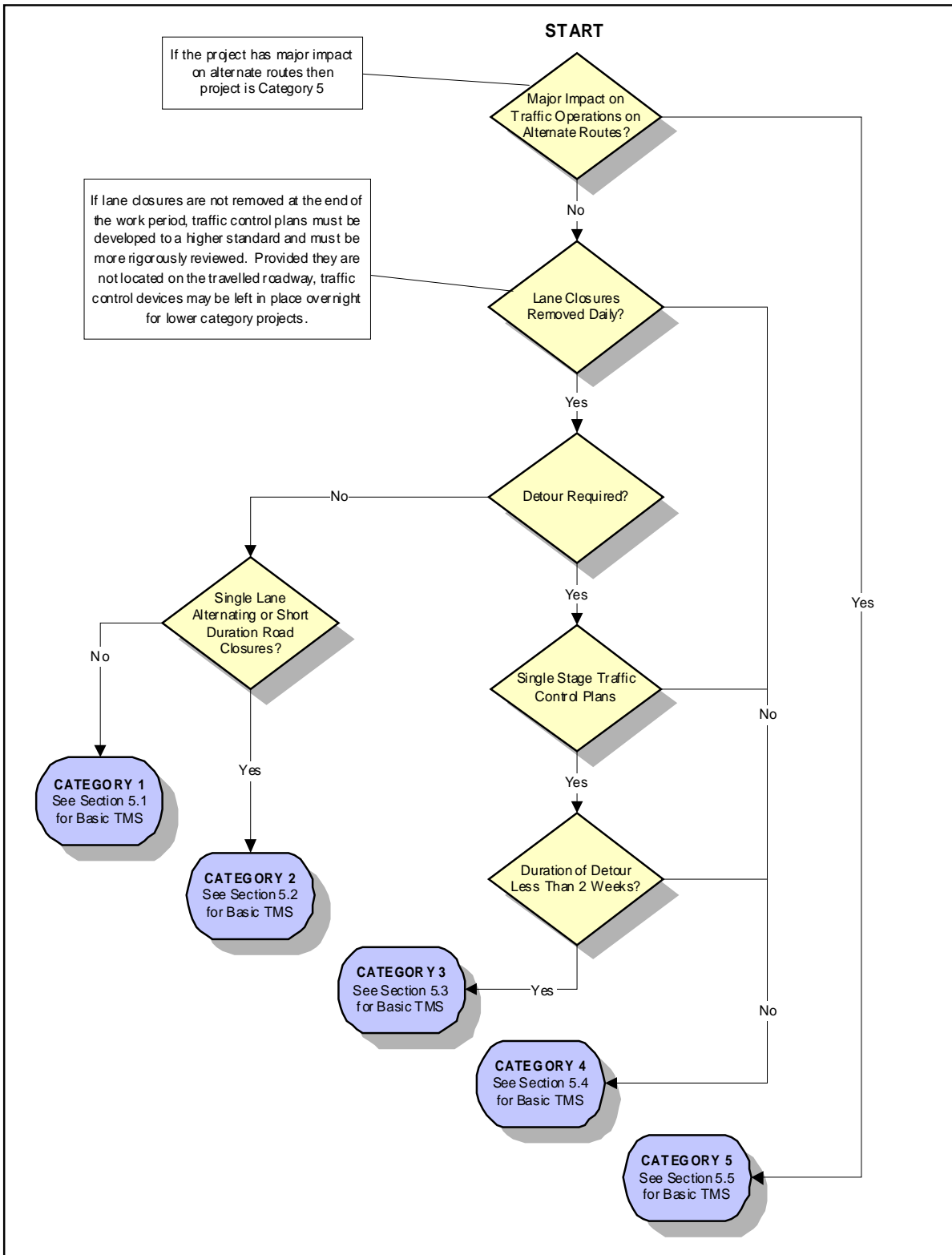


Figure 3 - Flow Chart for Selecting the Project Category

5.1 CATEGORY 1 - BASIC TRAFFIC MANAGEMENT STRATEGY

Characterized by:

- two way traffic at all times
- work on the shoulder, or work requiring single or multi-lane closures
- all lane closures removed and traffic operations normalized at the end of each work period

B. Traffic Control Plan

Required. The plan shall address traffic control issues identified during the evaluation process. See Section 4.1.

C. Public Information Plan

Recommended:

- when evaluation by MoT staff identifies public communications issues
- for projects involving lane closures where:
 - roadway is a three or four lane configuration and traffic volumes in the affected direction exceed 1200 vehicles per hour at any time during the closure periods
 - roadway is a six lane configuration and traffic volumes in the affected direction exceed 2400 vehicles per hour at any time during the closure periods

D. Incident Response Plans

Recommended when:

- an evaluation by MoT staff identifies safety issues that cannot otherwise be mitigated by the Traffic Control Plan or Public Information Plan (See risk assessment guidelines in Section 4.1)
- work zones are greater than 100 metres in length and the traveled lanes are restricted in width

Required if the Ministry designates the work zone as a hazardous area for the travelling public.

E. Implementation Plan

Recommended if a Public Information Plan is implemented for the project.

Required if an Incident Plan is implemented for the project.

If required, the Implementation Plan shall include provisions for the Proponent's Traffic Manager.

5.2 CATEGORY 2 - BASIC TRAFFIC MANAGEMENT STRATEGY

Characterized by:

- single lane alternating traffic or temporary total road closures
- all lane closures removed and traffic operations normalized at the end of the daily work period
- duration of the work is typically between one day and two weeks

A. Traffic Control Plan

Required. The plan shall address any traffic control issues identified during the evaluation process. See Section 4.1.

B. Public Information Plan

Recommended:

- when evaluation by MoT staff identifies public communications issues (See Section 4.1)
- for alternating single lane traffic operation where traffic volumes in either direction exceed 500 vehicles per hour at any time during the lane closure period
- for a closure of the highway where traffic volumes in the affected direction exceed 500 vehicles per hour and the planned closure duration will exceed ten (10) minutes

C. Incident Response Plan

Recommended when:

- an evaluation by MoT staff identifies safety issues that cannot otherwise be mitigated by the Traffic Control Plan or Public Information Plan (See Section 4.1)
- work zones are greater than 100 metres in length where traveled lanes are restricted in width
- project requires a total road closure for any duration

Required if MoT designates the work zone as an area hazardous for the travelling public

D. Implementation Plan

Recommended if a Public Information Plan is implemented for the project.

Required if an Incident Plan is implemented for the project.

If undertaken, the Implementation Plan shall include provisions for the Proponent's Traffic Manager.

5.3 CATEGORY 3 - BASIC TRAFFIC MANAGEMENT STRATEGY

Characterized by:

- detours or traffic diversions with two way traffic at all times
- duration of the project is typically less than two weeks

A. Traffic Control Plan

Required. The plan shall address any traffic control issues identified during the evaluation process. See Section 4.1.

B. Public Information Plan

Recommended when:

- evaluation by MoT staff identifies public communications issues (See Section 4.1)
- the traffic volume in either traveled direction along the diversion or detour route¹⁰ exceeds 500 vehicles per hour

C. Incident Management Plan

Recommended when:

- an evaluation by MoT staff identifies safety issues that cannot otherwise be mitigated by the Traffic Control Plan or Public Information Plan (See Section 4.1)
- the work zone is greater than 100 metres in length and where traveled lanes are restricted in width
- project requires a total road closure for any duration

Required if MoT designates the work zone as a hazardous area for the travelling public.

D. Implementation Plan

Required. Shall include provisions for the Proponent's Traffic Manager.

¹⁰ Detour Route – defined term see Glossary

5.4 CATEGORY 4 - BASIC TRAFFIC MANAGEMENT STRATEGY

Characterized by:

- Long Duration Work requiring staged traffic control plans
- work zone is linear and contained within a transportation corridor
- primary impact on traffic operations is limited to the transportation corridor containing the work zone

A. Traffic Control Plan

Custom traffic control plan is required. The plan shall address any traffic control issues identified during the evaluation process. See Section 4.1.

B. Public Information Plan

Recommended:

- when an evaluation by MoT staff identifies public information issues (See Section 4.1)
- for detours where traffic volumes in either traveled direction along the detour route exceed 500 vehicles per hour
- for alternating single lane traffic where traffic volumes in either direction exceed 500 vehicles per hour at any time during the lane closure period
- for lane closures on a three or four lane roadway where traffic volumes in the affected direction exceed 1200 vehicles per hour at any time during the closure periods
- for lane closures on a six lane roadway where traffic volumes in the affected direction exceed 2400 vehicles per hour at any time during the closure periods

Required for a closure of the highway where traffic volumes in the affected direction exceed 500 vehicles per hour and the planned closure duration will exceed ten (10) minutes.

C. Incident Management Plan

Recommended when:

- an evaluation by MoT staff identifies safety issues that cannot otherwise be mitigated by the Traffic Control Plan or Public Information Plan (See Section 4.1)
- a work zone is greater than 100 metres in length and where traveled lanes are restricted in width
- total road closures of any duration are planned

Required if MoT designates the work zone as a hazardous area for the travelling public.

D. Implementation Plan

Required. Shall include provisions for the Proponent's Traffic Manager.

5.5 CATEGORY 5 - BASIC TRAFFIC MANAGEMENT STRATEGY

Characterized by:

- Long Duration Work requiring staged traffic control plans
- work zone located at a node in the transportation network
- primary impact on traffic operation extends beyond the work zone onto alternate routes

A. Traffic Control Plan

Custom traffic control plan is required. The plan shall address any traffic control issues identified during the evaluation process. See Section [4.1](#).

B. Public Information Plan

A Public Information Plan is required. The plan shall address any public information issues identified during the evaluation process. See Section [4.1](#).

C. Incident Management Plan

An Incident Management plan is required. The plan shall address any risk issues identified during the evaluation process. See Section [4.1](#).

D. Implementation Plan

Required. Shall include provisions for a Proponent's Traffic Manager.

6. DEVELOPING TRAFFIC MANAGEMENT PLANS

This section of the guidelines is for use by the Proponent when developing a Traffic Management Plan. The Ministry's Traffic Management Strategy will identify required sub plans, risks and special conditions that must be addressed by the Proponent and will also identify the project's traffic management category.

Category specific requirements for plan content, format, standards and review processes are identified in Sections 6.1 through 6.5. A procedure for developing a traffic management plan is presented in Section 6.6.

Table 3 - Traffic Management Plan Requirements – Sub Plans by Category

	Category 1	Category 2	Category 3	Category 4	Category 5
Traffic Control Plan	Section 6.1B	Section 6.2B	Section 6.3B	Section 6.4B	Section 6.5B
Public Information Plan	Section 6.1C	Section 6.2C	Section 6.3C	Section 6.4C	Section 6.5C
Incident Plan	Section 6.1D	Section 6.2D	Section 6.3D	Section 6.4D	Section 6.5D
Implementation Plan	Section 6.1E	Section 6.2E	Section 6.3E	Section 6.4E	Section 6.5E
Standards	Section 6.1F	Section 6.2F	Section 6.3F	Section 6.4F	Section 6.5F
Plan Review	Section 6.1G	Section 6.2G	Section 6.3G	Section 6.4G	Section 6.5G

6.1 CATEGORY 1 - TRAFFIC MANAGEMENT PLAN REQUIREMENTS

A. Category Definition

Characterized by:

- two way traffic at all times
- work on the shoulder, or work requiring single or multi-lane closures
- all lane closures removed and traffic operations normalized at the end of each work period

B. Traffic Control Plan

The traffic control plan shall:

- identify hours of work
- identify the work zone location and direction and distance to nearest landmarks
- identify the size of the work zone
- identify lanes affected by the works
- identify lane configuration in the work zone
- indicate whether accesses or intersections will be affected by the work zone or by traffic control devices
- define proposed traffic control by referencing the specific layout(s) contained in the TCM or by showing a custom traffic control layout(s) if layouts in the TCM are not applicable

The Proponent shall contact the Provincial Highway Condition Centre (PHCC) as per conditions of the [Lane Closure Request/Permit](#) whenever a lane closure is implemented or removed.

If required, custom traffic control layouts shall:

- show schematically the placement of all traffic control devices
- place all traffic control devices in accordance with the standards contained in the TCM
- follow symbol conventions for identifying traffic control devices as per the TCM
- have all dimensions and explanatory notes on the layout typed or hand printed

C. Public Information Plan

When required, a Public Information Plan will:

- define a process to routinely notify MoT of scheduled work plans
- define a process to notify the travelling public of scheduled traffic delays and project duration at least one week prior to the start of work
- define a process to notify the travelling public of unscheduled traffic delays

D. Incident Response Plan

If required, an incident response plan shall:

- identify the type of traffic incidents that could occur in the work zone
- identify the Traffic Control Supervisor
- contain a contact list of emergency response agencies
- identify a procedure(s) to respond to a traffic incident that occurs within the work zone
- identify a procedure(s) to inform and update MoT of the following:
 - incident occurrence
 - response measures taken
 - clearance measures required
 - estimated clearance time
 - incident clearance
- identify a procedure(s) to inform the travelling public of estimated duration and, if applicable, alternate routes

E. Implementation Plan

If developed, the Implementation Plan shall:

- Identify the Proponent's Traffic Manager and state his/her qualifications, duties and responsibilities. As minimum requirements, the Proponent's Traffic Manager shall:
 - Ensure compliance with the requirements of Part 18 of the WCB Occupational Health and Safety Regulation regarding supervision of traffic control persons at the work zone
 - ensure that emergency traffic control operations are carried out in accordance with the Incident Response Plan

F. Standards

Ministry of Transportation's Traffic Control Manual (TCM) for Work on Roadways.

G. Traffic Management Plan Review

The following time periods are required for plan review:

- A Traffic Control Plan shall be submitted to MoT at least five (5) working days prior to the planned start of any works.
- If required for the project, a Public Information Plan shall be submitted to MoT at least fifteen (15) working days prior to the start of any works to ensure as much time for public notification as possible.
- If required for the project, an Incident Response Plan shall be submitted to MoT at least five (5) working days prior to the planned start of any works.

6.2 CATEGORY 2 - TRAFFIC MANAGEMENT PLAN REQUIREMENTS

A. Category Definition

Characterized by:

- single lane alternating traffic or temporary road closures
- all lane closures removed and traffic operations normalized at the end of each work period
- duration of the works typically between one day and two weeks

B. Traffic Control Plan

The Traffic Control Plan shall:

- identify hours of work
- identify the work zone location and direction and distance to nearest landmarks
- identify the size of the work zone
- identify lanes affected by the works
- identify lane configuration in the work zone
- indicate whether accesses or intersections will be affected by the work zone or by traffic control devices
- identify requirements for vehicle storage
- identify vehicle storage areas to meet requirements identified above
- if hazards have been identified, provide a Layout showing:
 - the location of the work zone
 - the location of vehicle storage areas
 - the location and nature of hazardous areas and mitigation measure to be implemented
- identify proposed traffic control by referencing the specific layout(s) contained in the TCM or by showing a custom traffic control layout(s) if layouts in the TCM are not applicable
- identify maximum proposed delays or closure times

The Proponent shall contact the Provincial Highway Condition Centre (PHCC) as per conditions of the [Lane Closure Request/Permit](#) whenever a lane closure is implemented or removed.

If required, custom traffic control layouts shall:

- show schematically the placement of all traffic control devices
- place all traffic control devices in accordance with the standards contained in the TCM
- follow symbol conventions for identifying traffic control devices as per the TCM

- have all dimensions and explanatory notes on the layout typed or hand printed

C. Public Information Plan

If required, a Public Information Plan shall:

- define a process to routinely notify MoT of scheduled work plans
- define a process to notify the travelling public of scheduled traffic delays and project duration at least one week prior to the start of work
- define a process to notify the travelling public of unscheduled traffic delays
- ensure that major user groups such as BC Transit, BC Ferries, emergency response agencies and transportation companies are aware of the schedule of alternating lane closures or road closures at least two (2) weeks prior to work starting
- for alternating single lane traffic:
 - ensure that the travelling public is informed about alternate routes at least one (1) week prior to work beginning
- for a planned road closure:
 - ensure that the travelling public is informed about alternate routes at least two (2) weeks prior to the closure

D. Incident Response Plan

If required, an incident response plan shall:

- identify the type of traffic incidents that could occur in the work zone
- identify the Traffic Control Supervisor
- contain a contact list of emergency response agencies
- identify a procedure(s) to respond to a traffic incident that occurs within the work zone
- identify a procedure(s) to inform and update MoT of the following:
 - incident occurrence
 - response measures taken
 - clearance measures required
 - estimated clearance time
 - incident clearance
- identify a procedure(s) to inform the travelling public of estimated duration and, if applicable, alternate routes
- record details of the incident and report the incident to MoT within 24 hours

E. Implementation Plan

If developed, the Implementation Plan shall:

- Identify the Proponent's Traffic Manager and state his/her qualifications, duties and responsibilities. As minimum requirements, the Proponent's Traffic Manager shall:
 - Ensure compliance with the requirements of Part 18 of the WCB Occupational Health and Safety Regulation regarding supervision of traffic control persons at the work zone
 - ensure that emergency traffic control operations are carried out in accordance with the Incident Response Plan

F. Standards

Traffic management plans shall be developed in accordance with the following standards:

- *Ministry of Transportation Traffic Control Manual,*
- *Ministry of Transportation Standard General Specifications Section 194,*
- *Ministry of Transportation Electrical and Traffic Engineering Manual,*
- *TAC Geometric Design Guide for Canadian Roads, and*
- *BC Supplement to the TAC Geometric Design Guide.*

G. Traffic Management Plan Review

The following time periods are required for plan review:

- A Traffic Control Plan shall be submitted to MoT at least five (5) working days prior to the planned start of any works.
- If required for the project, a Public Information Plan shall be submitted to MoT at least fifteen (15) working days prior to the start of any works to ensure as much time for public notification as possible.
- If required for the project, an Incident Response Plan shall be submitted to MoT at least five (5) working days prior to the planned start of any works.

6.3 CATEGORY 3 - TRAFFIC MANAGEMENT PLAN REQUIREMENTS

A. Category Definition

Characterized by:

- detours or traffic diversions with two way traffic at all times
- duration of the project is typically less than two weeks

B. Traffic Control Plan

The custom Traffic Control Plan shall:

- identify hours of work
- identify the work zone location and direction and distance to nearest landmarks
- identify the size of the work zone
- identify lanes affected by the works
- identify lane configuration in the work zone
- indicate whether accesses or intersections will be affected by the work zone or by traffic control devices
- include a scale drawing of the detour route identifying:
 - work zone location using landmarks and LKI where applicable
 - size of work zone
 - lanes affected by work zone
 - lane configuration in the work zone
 - posted speed throughout the work zone
 - accesses or intersections affected by the work zone or by traffic control devices required by the project
 - all local roads used as a detour route including the design speed and the design vehicle for each road used
 - identify traffic control changes such as temporary signals or signal timing changes required by the detour route
- identify proposed traffic control by referencing the specific layouts(s) contained in the TCM or by showing a custom traffic control layout(s) if layouts in the TCM are not applicable
- for all projects on freeways, expressways or roads where the posted speed limit is greater than 60 km/h, be prepared under the direction of a Professional Engineer licensed in the Province of British Columbia

The Proponent shall contact the Provincial Highway Condition Centre (PHCC) as per conditions of the [Lane Closure Request/Permit](#) whenever a lane closure is implemented or removed.

If required, custom traffic control layouts shall:

- show schematically the placement of all traffic control devices
- place all traffic control devices in accordance with the standards contained in the TCM
- follow symbol conventions for identifying traffic control devices as per the TCM
- have all dimensions and explanatory notes on the layout typed or hand printed

C. Public Information Plan

If required, a Public Information Plan shall:

- define a process to routinely notify MoT of scheduled work plans
- define a process to notify the travelling public of scheduled traffic delays and project duration at least one week prior to the start of work
- define a process to notify the travelling public of unscheduled traffic delays
- define a process to ensure that major user groups such as BC Transit, BC Ferries and transportation companies are aware of the detour route and implementation schedule
- ensure that the travelling public is notified of the detour route and possible alternate routes at least two (2) weeks prior to implementation

D. Incident Management Plan

If required, an incident response plan shall:

- identify the type of traffic incidents that could occur in the work zone
- identify the Traffic Control Supervisor
- contain a contact list of emergency response agencies
- identify procedures to respond to traffic incidents that occur in the work zone
- identify a procedure(s) to inform and update MoT of the following:
 - incident occurrence
 - response measures taken
 - clearance measures required
 - estimated clearance time
 - incident clearance
- identify a procedure(s) to inform the travelling public of estimated duration and, if applicable, alternate routes
- identify the duties and responsibilities of the Traffic Control Supervisor with respect to incident response operations
- identify the duties and responsibilities of the Traffic Manager with respect to incident management
- identify procedures to detect and verify incidents that occur in the work zone

- identify a procedure(s) to restore traffic flow around an incident site as quickly as possible
- identify a procedure(s) to clear the incident and restore normal project traffic operations as soon as possible
- define a process to review incidents and propose modifications to the project that will reduce the severity and frequency of incidents

E. Implementation Plan

The Implementation Plan shall:

- Identify the Proponent's Traffic Manager and state his/her qualifications, duties and responsibilities. As minimum requirements, the Proponent's Traffic Manager shall:
 - Ensure compliance with the requirements of Part 18 of the WCB Occupational Health and Safety Regulation regarding supervision of traffic control persons at the work zone
 - ensure that emergency traffic control operations are carried out in accordance with the Incident Response Plan

F. Standards

Traffic management plans shall be developed in accordance with the following standards:

- *Ministry of Transportation Traffic Control Manual,*
- *Ministry of Transportation Standard General Specifications Section 194,*
- *Ministry of Transportation Electrical and Traffic Engineering Manual,*
- *TAC Geometric Design Guide for Canadian Roads, and*
- *BC Supplement to the TAC Geometric Design Guide.*

G. Traffic Management Plan Review

The following time periods are required for plan review:

- A Traffic Control Plan shall be submitted to MoT for review at least fifteen (15) working days prior to the planned start of any works. The following conditions apply:
 - Any plan modifications shall be submitted to MoT at least ten (10) working days prior to any changes being made in the field.
- If required for the project, a Public Information Plan shall be submitted to MoT at least fifteen (15) working days prior to the start of any works to ensure as much time for public notification as possible.
- If required for the project, an Incident Management Plan shall be submitted to MoT at least fifteen (15) working days prior to the planned start of any works.

6.4 CATEGORY 4 - TRAFFIC MANAGEMENT PLAN REQUIREMENTS

A. Category Definition

Characterized by:

- Long Duration Work requiring staged traffic control plans
- work zone is linear and contained within a transportation corridor
- primary impact on traffic operations is limited to the transportation corridor containing the work zone

B. Traffic Control Plan

The custom traffic control plan shall:

- identify hours of work
- identify the work zone location and direction and distance to nearest landmarks
- identify the size of the work zone
- identify lanes affected by the works
- identify lane configuration in the work zone
- indicate whether accesses or intersections will be affected by the work zone or by traffic control devices
- identify traffic volume capacity during project
- identify proposed delays or closure times
- include scale drawing(s) identifying:
 - the location of the work zone using landmarks and LKI where applicable
 - accesses or intersections affected by the work zone or by traffic control devices required for the project
 - traveled lanes affected
 - resultant lane configuration including widths
 - location of restricted width lanes
 - posted speeds
 - location of hazardous areas created by road geometry or local geography
- the location of vehicle storage areas if delays are anticipated
- any local roads used for a detour route
- the design speed and the design vehicle for each road used as a detour route
- identify any traffic control changes such as temporary signals or signal timing changes required by the detour route or project works
- include custom traffic control layout scale drawings showing the placement of all traffic control devices and Traffic Control Persons
- define a process to review incidents and propose modifications to the project that will reduce the severity and frequency of incidents

- be sealed by a Professional Engineer licensed in the Province of British Columbia

The Proponent shall contact the Provincial Highway Condition Centre (PHCC) as per conditions of the [Lane Closure Request/Permit](#) whenever a lane closure is implemented or removed.

Custom traffic control layouts shall:

- show schematically the placement of all traffic control devices
- show traffic operations at all phases of the project
- place all traffic control devices in accordance with the standards contained in the TCM
- follow symbol conventions for identifying traffic control devices as per the TCM
- have all dimensions and explanatory notes on the layout typed or hand printed

C. Public Information Plan

If required, a Public Information Plan shall:

- define a process to routinely notify MoT of scheduled work plans
- define a process to notify the travelling public of scheduled traffic delays and project duration at least one week prior to the start of work
- define a process to notify the travelling public of unscheduled traffic delays
- ensure that major user groups such as BC Transit, BC Ferries, emergency response agencies and transportation companies are aware of the schedule of alternating lane closures, detours or road closures at least two (2) weeks prior to work starting
- for alternating single lane traffic:
 - ensure that the travelling public is informed about alternate routes at least one (1) week prior to work beginning
- for a detour or planned road closure:
 - ensure that the travelling public is informed about the schedule and alternate routes at least two (2) weeks prior to the closure

D. Incident Management Plan

If required, an incident response plan shall:

- identify the type of traffic incidents that could occur in the work zone
- identify the Traffic Control Supervisor
- contain a contact list of emergency response agencies
- identify a procedure(s) to respond to a traffic incident that occurs within the work zone
- identify a procedure(s) to inform and update MoT of the following:

- incident occurrence
- response measures taken
- clearance measures required
- estimated clearance time
- incident clearance
- identify a procedure(s) to inform the travelling public of estimated duration and, if applicable, alternate routes
- identify the duties and responsibilities of the Traffic Control Supervisor with respect to incident response operations
- identify the duties and responsibilities of the Traffic Manager with respect to incident management
- identify a procedure(s) to detect and verify incidents that occur within the work zone
- identify a procedure(s) to restore traffic flow around an incident site as quickly as possible
- identify a procedure(s) to clear the incident and restore normal project traffic operations as soon as possible
- define a process to review incidents and propose modifications to the project that will reduce the severity and frequency of incidents

E. Implementation Plan

The Implementation Plan shall:

- Identify the Proponent's Traffic Manager and state his/her qualifications, duties and responsibilities. As minimum requirements, the Proponent's Traffic Manager shall:
 - Ensure compliance with the requirements of Part 18 of the WCB Occupational Health and Safety Regulation regarding supervision of traffic control persons at the work zone
 - ensure that emergency traffic control operations are carried out in accordance with the Incident Response Plan
 - ensure that daily traffic control logs are maintained
 - not be the Construction Manager or Project Superintendent
 - have full line authority over all of the traffic control personnel on site
 - finalize traffic control measures with the contractor's Traffic Engineer
 - direct the implementation of the Traffic Control Plan
 - monitor traffic operations to determine the effectiveness of the Traffic Control Plan
 - direct the contractor's Public Information Plan
 - direct the contractor's Incident Management Plan

- oversee modifications to the Traffic Management Plan required by construction schedule changes, accommodation of special events or changes to sub plans
- ensure that the Traffic Management Plan is up to date
- attend regular meetings with the Ministry Representative on behalf of the contractor to discuss performance, issues and plans

F. Standards

Traffic management plans shall be developed in accordance with the following standards:

- *Ministry of Transportation Traffic Control Manual,*
- *Ministry of Transportation Standard General Specifications Section 194,*
- *Ministry of Transportation Electrical and Traffic Engineering Manual,*
- *TAC Geometric Design Guide for Canadian Roads, and*
- *BC Supplement to the TAC Geometric Design Guide.*

G. Traffic Management Plan Review

The following time periods are required for plan review:

- A Traffic Control Plan shall be submitted to MoT at least twenty (20) working days prior to the planned start of any works. The following conditions shall apply:
 - A completed [Lane Closure Request/Permit](#) form shall be submitted with the Traffic Control Plan.
 - A Lane Closure Request/Permit form shall be issued to the Proponent and shall be valid for the duration of the project subject to conditions and periodic review of the Traffic Management Plan by the Ministry.
 - Any plan modifications shall be submitted to MoT at least ten (10) working days prior to the any changes being made in the field
 - a staged plan shall be submitted to MoT for review at least ten (10) working days prior to implementation of a new stage
- A Public Information Plan shall be submitted to MoT for review at least fifteen (15) working days prior to the start of any works to ensure as much time for public notification as possible.
- An Incident Management Plan shall be submitted to MoT at least fifteen (15) working days prior to the planned start of any works.

6.5 CATEGORY 5 - TRAFFIC MANAGEMENT PLAN REQUIREMENTS

A. Category Definition

Characterized by:

- Long Duration Work requiring staged traffic control plans
- work zone located at a node in the transportation network
- primary impact on traffic operation extends beyond the work zone onto alternate routes

B. Traffic Control Plan

The custom traffic control plan shall:

- identify hours of work
- identify the work zone location and direction and distance to nearest landmarks
- identify the size of the work zone
- identify lanes affected by the works
- identify lane configuration in the work zone
- indicate whether accesses or intersections will be affected by the work zone or by traffic control devices
- identify traffic volume capacity during project
- identify proposed delays or closure times
- include scale drawing(s) identifying:
 - the location of the work zone using landmarks and LKI where applicable
 - accesses or intersections affected by the work zone or by traffic control devices
 - traveled lanes affected
 - resultant lane configuration including widths
 - location of restricted width lanes
 - posted speeds
 - location of hazardous areas created by road geometry or local geography
 - the location of vehicle storage areas if delays are anticipated
 - any local roads used for a detour route
 - the design speed and the design vehicle for each road used as a detour route
 - any traffic signal changes required by the detour route or project works
- include scale custom traffic control layouts showing the placement of all traffic control devices and Traffic Control Persons

- define a process to review incidents and propose modifications to the project that will reduce the severity and frequency of incidents
- be sealed by a Professional Engineer licensed in the Province of British Columbia

Custom traffic control layouts shall:

- show schematically the placement of all traffic control devices
- place all traffic control devices in accordance with the standards contained in the TCM
- follow symbol conventions for identifying traffic control devices as per the TCM
- have all dimensions and explanatory notes on the layout typed or hand printed
- show traffic operations at all phases of the project

The Proponent shall contact the Provincial Highway Condition Centre (PHCC) as per conditions of the [Lane Closure Request/Permit](#) whenever a lane closure is implemented or removed.

C. Public Information Plan

A Public Information Plan shall:

- define a process to routinely notify MoT of scheduled work plans
- define a process to notify the travelling public of scheduled traffic delays and project duration at least one week prior to the start of work
- define a process to notify the travelling public of unscheduled traffic delays
- ensure that major user groups such as BC Transit, BC Ferries, emergency response agencies and transportation companies are aware of the schedule of alternating lane closures, detours or road closures at least two (2) weeks prior to work starting
- for alternating single lane traffic:
 - ensure that the travelling public is informed about alternate routes at least one (1) week prior to work beginning
- for a detour or planned road closure:
 - ensure that the travelling public is informed about the schedule and alternate routes at least two (2) weeks prior to the closure

D. Incident Management Plan

An incident management plan shall:

- identify the type of traffic incidents that could occur in the work zone
- identify the Traffic Control Supervisor
- contain a contact list of emergency response agencies

-
- identify a procedure(s) to respond to a traffic incident that occurs within the work zone
 - identify a procedure(s) to inform and update MoT of the following:
 - incident occurrence
 - response measures taken
 - clearance measures required
 - estimated clearance time
 - incident clearance
 - identify a procedure(s) to inform the travelling public of estimated duration and, if applicable, alternate routes
 - identify the duties and responsibilities of the Traffic Control Supervisor with respect to incident response operations
 - identify the duties and responsibilities of the Traffic Manager with respect to incident management
 - identify a procedure(s) to detect and verify incidents that occur within the work zone
 - identify a procedure(s) to restore traffic flow around an incident site as quickly as possible
 - identify a procedure(s) to clear the incident and restore normal project traffic operations as soon as possible
 - define a process to review incidents and propose modifications to the project that will reduce the severity and frequency of incidents

E. Implementation Plan

The Implementation Plan shall:

- Identify the Proponent's Traffic Manager and state his/her qualifications, duties and responsibilities. As minimum requirements, the Proponent's Traffic Manager shall:
 - Ensure compliance with the requirements of Part 18 of the WCB Occupational Health and Safety Regulation regarding supervision of traffic control persons at the work zone
 - ensure that emergency traffic control operations are carried out in accordance with the Incident Response Plan
 - ensure that daily traffic control logs are maintained
 - not be the Construction Manager or Project Superintendent
 - have full line authority over all of the traffic control personnel on site
 - finalize traffic control measures with the contractor's Traffic Engineer
 - direct the implementation of the Traffic Control Plan

- monitor traffic operations to determine the effectiveness of the Traffic Control Plan
- direct the contractor's Public Information Plan
- direct the contractor's Incident Management Plan
- oversee modifications to the Traffic Management Plan required by construction schedule changes, accommodation of special events or changes to sub plans
- ensure that the Traffic Management Plan is up to date
- attend regular meetings with the Ministry Representative on behalf of the contractor to discuss performance, issues and plans

F. Standards

Traffic management plans shall be developed in accordance with the following standards:

- *Ministry of Transportation Traffic Control Manual,*
- *Ministry of Transportation Standard General Specifications Section 194,*
- *Ministry of Transportation Electrical and Traffic Engineering Manual,*
- *TAC Geometric Design Guide for Canadian Roads, and*
- *BC Supplement to the TAC Geometric Design Guide.*

G. Traffic Management Plan Review

The following time periods are required for plan review:

- A Traffic Control Plan shall be submitted to MoT for review at least twenty (20) working days prior to the planned start of any works. The following conditions apply:
 - A completed [Lane Closure Request/Permit](#) form shall be submitted with the Traffic Control Plan.
 - A Lane Closure Request/Permit shall be issued to the Proponent and shall be valid for the duration of the project subject to conditions and periodic review of the Traffic Management Plan by the Ministry.
 - Any plan modifications shall be submitted to MoT for review at least ten (10) working days prior to any field changes.
 - A staged plan shall be submitted to MoT for review at least ten (10) working days prior to implementation of a stage.
- A Public Information Plan shall be submitted to MoT for review at least fifteen (15) working days prior to the start of any works to ensure as much time for public notification as possible.
- An Incident Management Plan shall be submitted to MoT at least fifteen (15) working days prior to the planned start of any works.

6.6 DEVELOP A TRAFFIC MANAGEMENT PLAN

6.6.1 Non-Ministry Project

If a project is not initiated or funded by the Ministry it is considered a non-Ministry project. The Proponent may be responsible for supplying the Ministry with much of the information needed to develop a traffic management strategy. First, the Proponent must supply the Ministry with sufficient information to enable the Ministry to develop a Traffic Management Strategy. Then the Proponent must develop a traffic management plan that satisfies the Ministry's strategy.

The following outlines an approach to developing a traffic management plan for non-Ministry projects:

STEP 1. IDENTIFY THE HIGHWAYS DISTRICT IN WHICH THE PROJECT IS LOCATED

STEP 2. SUPPLY THE DISTRICT HIGHWAYS MANAGER WITH ALL NECESSARY INFORMATION ABOUT THE PROJECT

STEP 3. OBTAIN A COPY OF THE PROJECT'S TRAFFIC MANAGEMENT STRATEGY FROM THE DISTRICT HIGHWAYS MANAGER.

STEP 4. NOTE THE PROJECT CATEGORY AND THE PLANS REQUIRED BY THE DISTRICT'S TMS.

See [Section 5](#) for a description of the various project categories and strategy requirements.

STEP 5. REVIEW TMP REQUIREMENTS FOR THE PROJECT CATEGORY DEFINED BY THE TMS.

See [Section 6](#) for TMP requirements for the respective project category.

STEP 6. NOTE ANY RISK OR COMMUNICATION ISSUES IDENTIFIED BY THE MINISTRY.

STEP 7. PERFORM AN INDEPENDENT REVIEW OF THE PROJECT TO IDENTIFY ANY RISKS OR COMMUNICATION ISSUES NOT IDENTIFIED BY THE MINISTRY'S TMS.

STEP 8. DEVELOP A TMP.

Develop a Traffic Management Plan that includes all sub-plans required by the TMS.

Ensure that all information required for the TMP project category is included in the plan.

Ensure that plans are developed in accordance with standards identified in the respective TMP category requirements (see Section 6.1 through 6.5).

Ensure that the proposed TMP includes measures to mitigate all risk and communications issues identified by the TMS and by the review performed in Step 7.

Consider using the forms and guidelines in [Appendix B - Traffic Control Plan Review/Assessment](#) as an aid to developing effective traffic control plans that will be acceptable to the Ministry.

STEP 9. SUBMIT THE COMPLETED TMP TO MOT FOR REVIEW.

STEP 10. BEGIN WORK WHEN THE TMP IS ACCEPTED AND MOT HAS ISSUED AUTHORIZATION TO WORK ON THE ROADWAY.

6.6.2 Ministry Project

For Ministry projects, the Proponent will be supplied with a Traffic Management Strategy. The Proponent's task is to develop a plan that satisfies the Ministry's strategy.

The following outlines an approach to developing a traffic management plan:

STEP 1. OBTAIN A COPY OF THE PROJECT'S TRAFFIC MANAGEMENT STRATEGY FROM MOT.

STEP 2. NOTE THE PROJECT CATEGORY AND THE PLANS REQUIRED BY THE TMS.

See [Section 5](#) for a description of the various project categories and strategy requirements.

STEP 3. REVIEW TMP REQUIREMENTS FOR THE PROJECT CATEGORY DEFINED BY THE TMS.

STEP 4. NOTE ANY RISK OR COMMUNICATION ISSUES IDENTIFIED IN THE MINISTRY'S TMS.

STEP 5. PERFORM AN INDEPENDENT REVIEW OF THE PROJECT TO IDENTIFY ANY RISKS OR COMMUNICATION ISSUES NOT IDENTIFIED BY THE TMS.

STEP 6. DEVELOP A TMP

Develop a Traffic Management Plan that includes all sub-plans required by the TMS.

Ensure that all information required for the TMP project category is included in the plan.

Ensure that plans are developed in accordance with standards identified in the respective TMP category requirements (see Section 6.1 through 6.5).

Ensure that the proposed TMP includes measures to mitigate all risk and communications issues identified by the TMS and by the review performed in Step 5.

Consider using the forms and guidelines in [Appendix B - Traffic Control Plan Review/Assessment](#) as an aid to developing effective traffic control plans that will be acceptable to the Ministry.

STEP 7. SUBMIT THE COMPLETED TMP TO MOT FOR REVIEW.

STEP 8. BEGIN WORK WHEN THE TMP IS ACCEPTED AND THE MINISTRY HAS ISSUED AUTHORIZATION TO WORK ON THE ROADWAY.

PART 3

IMPLEMENTING STRATEGIES AND EVALUATING PLANS

7. POLICIES

In this section, policies applying to traffic management requirements for work on provincial highways are defined. The policies relate to issues such as notification, TMP review and update requirements, and minimum documentation.

7.1 NOTIFICATION

7.1.1 Ministry Projects

For Ministry projects, references to notification shall mean notification of the Ministry Representative. All plans requiring Ministry review shall be submitted to the Ministry Representative who shall in turn notify the District Highways Manager.

7.1.2 Non Ministry Projects

For projects that are not undertaken by the Ministry but which require access to Ministry right-of-way, references to notification shall mean notification of the District Highways Manager.

7.2 REVIEW REQUIREMENTS

7.2.1 Ministry Projects

A. Traffic Management Strategy

The District Highways Manager must approve of the closure of traveled lanes to traffic, or to full highway closure, for any works associated with projects where there will be disruption to normal traffic flow. For Ministry projects, this approval will also be conditional to the development of an acceptable Traffic Management Strategy setting out the requirements for a Traffic Management Plan. The requirements are developed by District Area Managers in consultation with Traffic Operations staff within the Ministry.

B. Traffic Management Plan

No work may be performed on the roadway unless the Traffic Management Plan meets stated requirements and has been reviewed and accepted by the District Highway Manager via the Ministry Representative.

C. Public Information Plan

If required for a project, the following elements of a Proponent's Public Information Plan shall be submitted to the Regional Communications Coordinator via the Ministry Representative for review:

- press releases
- traffic advisory information advertisements for print or electronic media
- project information signing
- brochures or leaflets for public distribution

7.2.2 Non Ministry Projects

A. Traffic Management Strategy

The District Highways Manager must approve of the closure of traveled lanes to traffic, or to full highway closure, for any works associated with projects where there will be disruption to normal traffic flow. For non-Ministry projects, this approval will also be conditional to a set of requirements for traffic management and the submission of a Traffic Management Plan. The requirements, or traffic management strategy, are developed by District Area Managers in consultation with Traffic Operations staff within the Ministry.

B. Traffic Management Plan

The Proponent must submit a Traffic Management Plan to the District Highways Manager for review and acceptance. The Traffic Management Plan shall meet requirements stated by the Traffic Management Strategy defined for the project, and a qualified individual must have approved the Traffic Control Plan. No work may be performed on the highway unless the District Highways Manager has determined that the Traffic Management Plan meets stated requirements and is deemed acceptable.

C. Public Information Plan

If required for public communication, the following elements of a Proponent's Public Information Plan shall be submitted to the Regional Communications Coordinator for review:

- press releases
- traffic advisory information advertisements for print or electronic media
- project information signing
- brochures or leaflets for public distribution

7.3 PLAN UPDATES AND MODIFICATIONS

The Proponent shall submit an updated TMP to the Ministry for review whenever:

- changes to work activities alters traffic control requirements
- change to scheduling of work activities is proposed
- change to project initiation or completion dates is proposed

- change to any sub-plan is proposed

The updated TMP shall be submitted to the Ministry in accordance with schedules for TMP submission and review as defined by the respective project category.

7.4 PROPONENT COMPLIANCE WITH TMP

The Proponent shall perform all works in compliance with the Ministry accepted TMP for the project.

7.5 MUNICIPAL APPROVAL

Prior to submitting a Traffic Management Plan for MoT acceptance, a Proponent shall obtain municipal approval for:

- all works or traffic control plans that substantially affect municipal roadways
- all work practices that require variance from applicable municipal by-laws

7.6 WORKER'S COMPENSATION BOARD REGULATIONS

The Traffic Control Plan component of a Traffic Management Plan developed by the Proponent for work on highways shall comply with the requirements of Part 18 of the WCB Occupational Health and Safety Regulation.

7.7 MINIMUM ACCEPTABLE PLAN DOCUMENTATION

7.7.1 Traffic Control Plan – Category 1 (see Section 2.1.7)

For Category 1 work, there is no minimum level of acceptable documentation. The District Highway Manager determines requirements when authorizing work on the highway.

7.7.2 Traffic Control Plan – Category 2 (see Section 2.1.7)

For Category 2 work, the minimum acceptable documentation for a traffic control plan shall be a completed Permit, a Traffic Control Plan form (see Appendix B), or letter of authorization stating requirements for traffic control as determined by the District Highway Manager.

If required, a custom layout shall be in accordance with the standards incorporated in the *Traffic Control Manual for Work on Roadways*. Custom layouts may be computer generated or may be hand drawn provided they are done in ink and all lettering is hand printed not written, and shall be approved by the Proponent's Traffic Manager or other qualified individual.

7.7.3 Traffic Control Plan – Category 3

For Category 3 work, the minimum acceptable documentation for a traffic control plan shall be a completed formal Traffic Control Plan (approved by a qualified individual) as part of an acceptable Traffic Management Plan, or a

Traffic Control Plan form (see Appendix B) as determined by the District Highway Manager. The work zone drawing(s) shall contain all information required by [Section 6.3B](#).

If required, a custom layout shall be in accordance with the standards incorporated in the *Traffic Control Manual for Work on Roadways*. Custom layouts may be computer generated or may be hand drawn provided they are done in ink and all lettering is hand printed not written, and shall be approved by the Proponent's Traffic Manager or other qualified individual.

7.7.4 Traffic Control Plan – Category 4 and 5

For Category 4 or 5 works, the minimum acceptable documentation for a traffic control plan shall be a completed formal Traffic Control Plan (approved by a qualified individual) as part of an acceptable Traffic Management Plan. This shall include work zone drawing(s) and shall contain all information required by the respective TMP Category requirements for traffic control.

A Professional Engineer must seal traffic control drawings.

7.8 TRAFFIC VOLUME DATA

If traffic volume data and information has been provided from other than Ministry Traffic Operations staff, the Ministry must approve hourly traffic volume data used to develop a Basic Traffic Management Strategy.

8. TYPICAL SPECIAL PROVISIONS

The following pages of this section of the guidelines provide a full set of typical special provision clauses relating to traffic management for use in contracts.

The standard typical clauses provided in this section address specific aspects of traffic management requirements and are intended to allow District Highway Managers, Project Managers and contract managers to select the clauses appropriate to that project. It should be emphasized that not all clauses contained in Section 8 need apply to all projects.

Contract managers shall determine which clauses are appropriate for the project after consultation with the District Highway Manager, Area Manager, Project Manager and other Ministry staff as may be appropriate to the works. This must also carefully consider the risks of traffic disruption, category of work and other pertinent factors for inclusion in special provisions. These clauses may also be used to set out requirements by way of Permits where there is no contract involved.

Aspects of these standard clauses that require changing are indicated in red italic text. The text usually refers to numbering systems for special provisions or to specific conditions that may need to be changed for a particular project.

- Notes:
- a) While many of the clauses are designed for use in the Lower Mainland where traffic volumes are extreme, these clauses may be modified for use in any area of the Province where the information may be of assistance in setting out requirements for Proponents.
 - b) The word “Proponent” may be replaced with the word “Contractor” throughout this section when these clauses are used for special provisions within contracts.

For up-to-date contract language visit the Ministry’s web site at <http://www.gov.bc.ca/th/> or the Ministry’s Construction Engineering’s public drive.

8.1 TRAFFIC MANAGEMENT PLAN REQUIREMENTS

The Ministry has assessed this project to be a Category **X** project in accordance with Section 4 of the Traffic Management Guidelines for Work on Roadways. The following traffic management sub plans are required in accordance with the Guidelines for the Proponent's Traffic Management Plan:

- Traffic Control Plan
- Public Information Plan (*include or delete as necessary*)
- Incident Management Plan (*include or delete as necessary*)
- Implementation Plan (*include or delete as necessary*)

For each stage of the Work that affects traffic, the Proponent shall prepare a customized Traffic Control Plan that addresses stage-specific activities and requirements. For major staging events, and where deemed necessary by the Ministry Representative, the Proponent shall prepare stage-specific Public Information Plans and Incident Management Plans.

The Proponent's Traffic Management Plan shall address all risks set out in Table 1 (page 20) of the Guidelines that are relevant to the project.

8.1.1 Risk Assessment

A. Ministry Assessment

The Ministry has performed a risk assessment and identified the following risks that shall be addressed by the Proponent's Traffic Management Plan:

- *Add list of risks identified for project*

B. Proponent Assessment

Notwithstanding the risk assessment performed by the Ministry, the Proponent shall perform an independent assessment of the project to identify any risks or special conditions that shall be addressed by the Proponent's Traffic Management Plan.

8.2 TRAFFIC MANAGEMENT PLAN REVIEW AND APPROVAL

The Proponent's proposed Traffic Management Plan shall be submitted to the Ministry for review and approval at the time of Proposal submission (*or as specified otherwise, such as at the pre-construction meeting for tendered contracts*). This shall outline the approach to traffic management the Proponent will be following, recognition of the risks identified by the Ministry along with discussion of how these will be addressed, the sub plans that will be used, and the name of the qualified Traffic Manager for the works.

8.3 PROPONENT'S TRAFFIC MANAGER

The Proponent shall designate a qualified Traffic Manager for the works in accordance with the Traffic Management Guidelines for Work on Roadways. This individual shall be responsible for:

- preparing and implementing the Proponent's Traffic Management Plan and relevant sub-plans
- reviewing, evaluating and approving the details of the Traffic Control Plan (including traffic control layouts), and where necessary ensuring that these are signed and sealed by a qualified Traffic Engineer
- monitoring the effectiveness of traffic control during the works, and keeping daily traffic control logs and incident management reports. This shall include nighttime inspection of lighting to ensure appropriate illumination, reflectivity of all signing and to reduce unnecessary glare for the traveling public
- monitoring traffic queue lengths during active traffic control and implementing measures to reduce these when required by the Ministry Representative, or as directed by the District Highway Manager or designate
- making adjustments to the Traffic Control Plan as necessary to ensure safety for traffic and workers, and to ensure minimal disruption or delay to the traveling public at all times
- directing the Proponent's Public Information Plan
- directing the Proponent's Incident Management Plan
- meeting the Ministry Representative regularly to review traffic management

The Traffic Manager or designated alternate shall be on site during any active traffic control operations and shall have full authority over all traffic control personnel and procedures. The Proponent shall not designate the Site Superintendent as the Traffic Manager.

The designated Traffic Manager may be the same individual that is designated as the Traffic Control Supervisor (next section), or may be a separate individual qualified for the different responsibilities of this function. The Traffic Manager may be an employee of the Proponent or may be a contractor to the Proponent.

8.4 TRAFFIC MANAGEMENT SUB PLAN SUBMISSION

Traffic Management Sub Plans shall be submitted to the Ministry Representative for review and acceptance as follows:

- The Implementation Plan ... at least **fifteen (15) working days** prior to the start of any works.
- The Public Information Plan ... at least **fifteen (15) working days** prior to the start of any works.
- The Traffic Control Plan ... at least **ten (10) working days** prior to the start of any works.

The following conditions shall apply:

- ◇ Any plan modifications shall be submitted at least **ten (10) working days** prior to any change being made in the field.

- ◇ A staged plan shall be submitted at least **ten (10) working days** prior to implementation of a new stage.
- The Incident Management Plan at least **ten (10) working days** prior to the start of any works.

8.5 TRAFFIC CONTROL PLANS

8.5.1 Acceptance of Traffic Control Plans

The Proponent shall approve the Traffic Control Plan(s) before submission to the Ministry with the overall Traffic Management Plan for acceptance. Such approval or sign-off by a qualified person is required before the Ministry shall consider the Plan for review. See Appendix B of the Traffic Management Guidelines for Work on Roadways for checklists and forms to assist in planning and assessing for traffic control.

The Ministry will not be liable to the Contractor for the Ministry's decision not to accept a Traffic Control Plan, and this cannot be the basis of a claim by the Contractor.

The Proponent may not begin works or disrupt traffic in any way until the Proponent's Traffic Control Plan has been reviewed and accepted by the Ministry.

8.5.2 Traffic Engineer

The Proponent shall retain a qualified Traffic Engineer in accordance with the Traffic Management Guidelines for Work on Roadways, who is responsible for designing, sealing and approving the Traffic Control Plan(s), including all drawings and layouts.

8.5.3 Proponent's Traffic Control Supervisor

The Proponent shall designate a qualified Traffic Control Supervisor for the works, per the requirements of WCB regulations Section 18.

The designated Traffic Control Supervisor may be the same individual that is designated as the Traffic Manager, or may be a separate individual qualified for the responsibilities of this function.

8.5.4 Traffic Control Schedule

The Proponent shall prepare a weekly traffic control schedule that documents anticipated traffic control activities during the upcoming week. The schedule shall provide brief descriptions of the traffic control activity (e.g. lane closure, lane shift, detour), its location, approximate implementation date and duration. The schedule shall be provided to the Ministry Representative on a weekly basis.

8.5.5 Provision of Services

The Proponent shall be responsible for and shall bear the costs of all traffic control, including the provision of necessary personnel and equipment, on a "lump sum" basis. All traffic control personnel shall be qualified in accordance with WCB regulations.

Traffic control shall be in accordance with Section 194 of the Standard Specifications and with the Traffic Management Guidelines for Works on Roadways.

8.5.6 Documentation

The Proponent shall document traffic control measures and activities in accordance with Clause 1.5.2 of the Traffic Control Manual for Work on Roadways (except that photo logging is not required). This shall include completion of the following records:

- *Traffic Manager's Daily Activity Report*
- Incident Management Report
- *Traffic Managers Daily Report of Traffic Control*
- *Record of Traffic Control Devices and Equipment*

Forms that may assist in keeping the above records may be found in Appendix E of the Traffic Management Guidelines for Work On Roadways as well.

8.5.7 Permitted Work Days

The Proponent is advised that no work will be permitted on ***(INSERT TIME PERIODS)***. *No work will be permitted after 12:00 p.m. (noon) on the day preceding a long weekend. A minimum of a single lane in each direction will be required at all times when work is underway.*

8.5.8 Lane Closure/Reduction Windows

For each pre-approved lane closure, the Proponent shall notify the Provincial Highways Conditions Centre (PHCC) as follows:

- To confirm that the closure will take place, the Proponent shall advise the PHCC no later than 06:00 (i.e. 6:00 a.m.) on the day of the closure. (This is to ensure that the closure is entered on the Road Report.)
- The Proponent shall advise the PHCC upon actual installation of the closure and upon its removal.

The following lane closure/reduction windows shall be used by the Proponent as the basis for the development of the Traffic Control Plan. The Proponent will be allowed to implement lane closures during the following times only:

<i>Lane Direction</i>	<i>Monday</i>	<i>Tuesday to Thursday</i>	<i>Friday</i>	<i>Saturday</i>	<i>Sunday</i>
<i>Eastbound</i>	<i>0100-0600 2300-2400</i>	<i>0000-0530 2300-2400</i>	<i>0000-0530</i>	<i>0030-0700</i>	<i>0100-0800</i>
<i>Westbound</i>	<i>0000-0500 2230-2400</i>		<i>0000-0500</i>	<i>0000-0600</i>	<i>0030-0800</i>

Table 4 Lane Closure/Reduction Times

The above times are maximums. Since special events, long weekends and unforeseen circumstances may cause variations in the traffic flow, the Proponent may be required to modify the working hours as directed by the Ministry Representative.

All other times are defined to be Peak Hours for the Project.

A. Highway 1

During Peak Hours:

- Two Westbound lanes shall be maintained at all times for general traffic.
- Three Eastbound lanes shall be maintained at all times for general traffic between **XXX** and **XXX**.
- Two Eastbound lanes shall be maintained at all times for general traffic between **XXX** and station **XXX**.

Outside Peak Hours:

- One lane Westbound shall be maintained at all times for general traffic.
- Two lanes Eastbound shall be maintained at all times for general traffic between **XXX** and station **XXX**.
- One lane Eastbound shall be maintained at all times for general traffic between **XXX** and station **XXX**.

B. All Other routes

During Peak Hours:

- All lanes open for general traffic.

Outside Peak Hours:

- Minimum single lane of traffic in all directions.

When lane closures are in place, no interruptions to traffic flow (due to construction-related activities) will be allowed in the open lane at any time, except as noted in Special Provisions Clause **XXXX** (Permissible Delays).

Construction vehicles using a closed traffic lane shall travel only in the normal direction of traffic flow unless expressly permitted by the Ministry Representative.

The implementation of any detours and/or changes in traffic patterns shall be completed outside of Peak Hours. During Peak Hours, the Proponent shall not engage in any activity that may significantly impede the flow of traffic. The Peak Hours are deemed minimum and may be adjusted, as determined by the Ministry Representative.

Further to Article 10.00 in the Construction Agreement, where the Contractor is also the Proponent for purposes of traffic management, the Proponent shall comply with all Municipal by-laws, at the Proponent's expense.

A Traffic Events Calendar, as prepared by the Ministry, is available from the PHCC as described in Special Provisions Clause **XXX**. However, the Calendar may not be complete and other special events may arise beyond those listed. The Proponent shall take measures to identify and anticipate such special events and modify the Construction Schedule accordingly.

The lane closure restrictions set out on this clause are based on typical daily traffic flows. The hours may be adjusted at the discretion of the Ministry Representative in consideration of circumstances such as, but not limited to, weekends, statutory holidays, special events, incidents or accidents.

8.5.9 Permissible Delays

Permissible delays shall be approved by the District Highway Manager and shall only be considered outside Peak Hours. Permissible delays are categorized as follows:

- a) Minor Delays - Less than two (2) minutes in duration; for occasional interruption due to construction activities. These delays shall be coordinated with available breaks in the traffic flow.
- b) Major Delays - Maximum ten (10) minutes in duration; for occasional interruption of traffic for construction activities, between **0200** and **0400** hours only. Activities that are anticipated to require Major Delays shall be indicated in a Traffic Control Plan; as well, traffic control measures to be deployed for these activities shall be specified in the Traffic Control Plan.

If traffic delays exceed **(INSERT TIME)**, the Proponent shall immediately cease Highway operations and make all of the travel lanes available to traffic as quickly as possible. Resumption of road operations shall be permitted as traffic levels dictate. No additional payment shall be considered when the hours of work are restricted.

If traffic line-ups develop beyond the area of the lane closure signs, a second set of signs shall be erected before the end of the traffic line-ups to the satisfaction of the Ministry Representative.

The Traffic Manager shall monitor queue lengths and, if traffic cannot be cleared prior to starting another delay, the Traffic Manager shall adjust the duration of the delay and/or the interval between delays. If the Ministry Representative determines that the traffic delays are excessive, the Proponent shall immediately cease construction activities and make all the travel lanes available to traffic as quickly as possible. Resumption of roadway operations will only be permitted as traffic levels dictate.

8.5.10 Obstruction of Traffic

The Proponent is solely responsible for ensuring that the flow of traffic is unimpeded by construction-related activities.

The Proponent shall not, either through action or inaction, cause a traffic stoppage or any other unauthorized traffic delay in any part of the Site in the form of a lane closure or a lane obstruction. If this has not been specifically permitted, either by the Agreement or by prior written permission of the Ministry Representative, the Ministry will require the Proponent to pay a Traffic Disruption Charge.

The Traffic Disruption Charge payable by the Proponent shall be:

- (a) for lane closures or lane obstructions on the **Port Mann Bridge** during peak hours;
 - (i) \$1,500.00 per lane for the first fifteen (15) minutes or portions thereof, and
 - (ii) \$3,000.00 per lane for the second fifteen (15) minutes or portions thereof and all subsequent fifteen minutes periods, and
- (b) for lane closures or lane obstructions on **Highway 1 and ramps** during non-peak hours, at fifty (50) percent of the above rates per lane.

Where, in the opinion of the Ministry Representative or the District Highway Manager, an unauthorized lane closure or lane obstruction was due to an apparent deficiency in the Proponent's Traffic Management Plan, the Ministry Representative may, without further notice, suspend otherwise scheduled and permitted Lane Closures. Prior to authorization to proceed with work, the Ministry must receive an acceptable Traffic Control Plan.

The Proponent shall not be eligible for a Reimbursable Delay nor an Extension of Time due to any suspensions arising from an obstruction of traffic.

8.5.11 Traffic Control Devices

The Proponent shall supply all necessary traffic control devices required to perform traffic control services for the project. Signs and traffic control devices not applying to existing conditions shall be removed. Where operations are carried out in stages, only those traffic control devices that apply to the current stage are to be left in place.

A. Construction and Advisory Signs

Supply, installation, maintenance and removal of all works-related signing shall be the responsibility of the Proponent. The location and type of each sign shall be indicated on the approved Traffic Control Plan, for each stage of the works.

Signs shall be checked daily for legibility, damage, suitability and location. Signs and delineators shall be cleaned as frequently as necessary to ensure full legibility and reflectance.

Sign supports for lane closure shall be "Windmaster" type or approved equivalent, complete with "High Level Warning Devices".

B. Changeable Message Signs (CMS)

The Proponent shall provide portable changeable message signs (CMS's) and shall use the signs to provide advance notification of planned traffic pattern changes a minimum of one (1) week prior to the date of implementation, or as directed by the Ministry Representative. CMS locations and messages shall be shown in the Traffic Control Plan, and are required at **(Location)** and **(Location)**. In addition, the Proponent shall use the CMS's to provide notification of incidents or unplanned traffic pattern changes, as deemed necessary by the Ministry Representative.

Each portable CMS, when in operation, shall be a minimum of two (2) meters from the bottom of the sign display to the road surface, and shall be level and capable of pivoting for sighting purposes.

The specifications of the sign are as follows:

Sign unit	Orange LED display
Sign display	3 lines with 8 characters per line
Character size	18 inches (450 mm) minimum
Character matrix	5 x 7
Remote dial-up access	By cellular phone or equivalent

A full matrix sign may be used provided that it has the above display parameters.

The Proponent shall provide the Ministry Representative with an appropriate and timely means to display and/or change messages on the CMS when the Proponent is not available.

C. Portable Signals

The Proponent shall supply, install and maintain temporary one way traffic signals to suit construction scheduling. In preparing the electrical design and timing plans, the Proponent shall be aware of the following items:

- Signals shall be installed on **(HIGHWAY NAME)**. Traffic queues and delays shall be minimized. To accommodate this the traffic controller shall be fully actuated and automatically allow for different maximum green times by time of day.
- Design and approval of the plan for signal timing is the responsibility of the Proponent, and shall be done by a qualified Traffic Engineer.
- Either loops or microwave/ultrasonic detectors may accomplish signal actuation for vehicles. The Traffic Manager shall be responsible for ensuring the signal detection is not malfunctioning and shall immediately repair any equipment deemed ineffective.
- Electrical design for the signal shall generally conform to Standard Specifications drawing Nos. SP235 61.1 and 61.2. The Ministry recognizes that because of the

nature of the work, the traffic signal may need to be relocated frequently and hence may require a moveable type of traffic signal.

- The Proponent's timing plans shall indicate any speeds and distances assumed. Green times shall be based on volume counts that will be available from the Ministry Representative;
- Signal hardware shall meet ITE standards.

8.5.12 Construction Detours

All detours and lane shifts for the Project shall be paved, with appropriate pavement markings and signs placed in accordance with the Traffic Control Manual for Work on Roadways. The Proponent shall consider the condition of the pavement used for detours and lane shifts, and its impact on the safety and function of the detour. Milled surfaces upon which traffic is to run shall be clean and allow adequate drainage.

The minimum requirements for construction detours are as follows:

Design Speed/Posted Speed	70 km/h or as approved by the Ministry
Design Vehicle	TS7
Maximum Grade	As existing
Maximum Superelevation	6%
Vertical Clearance	The lesser of 5.0 m or existing
Lane Width (westbound)	3.4m (minimum)
Lane Width (eastbound)	Fast lane - 3.1m (minimum) Slow lane – 3.5m (minimum) Auxiliary lane – 3.3m (minimum)
Shoulder (open)	1.0m (minimum), including 0.5m (minimum) paved.
Shoulder (closed by barrier)	0.3m (maximum) paved
Side Slopes	3.5:1 (maximum)

(Note: The above example is for a location on Highway 1 where cyclists are prohibited. For locations where cyclists must be accommodated, or where detours for cyclists must be provided, the above criteria would be different.)

8.5.13 Temporary Lighting

Any existing roadway lighting that is disturbed during construction shall be replaced with sufficient temporary lighting to illuminate the same roadway surface area unless illuminated traffic detours are in effect.

8.5.14 Barrier Requirements

On the Highway 1 and all other routes where physical separation exists prior to start of construction:

- Opposing directions of traffic shall be separated either by existing barrier or by a concrete median barrier at all times.
- All barrier used for temporary detours and lane shifts, or used for the protection of the Site, shall be continuous and inter-connected; traffic shall be adequately protected by terminals or impact attenuators to current Ministry standards (NCRHP Report 350)
- Reflectors on the face of the roadside barrier are required.

8.5.15 Drop-offs

The Proponent shall conduct all operations to minimize any drop-offs (abrupt changes in roadway elevation) left exposed to traffic during non-working hours. Unless otherwise specified in the Traffic Control Plan, drop-offs left exposed to traffic during non-working hours shall be delineated as follows:

- Drop-offs up to 60 millimetres, unless otherwise specified on the Traffic Control Plan, may remain exposed with appropriate traffic control devices alerting motorists of the condition. However, no drop-offs shall be allowed between adjacent lanes of traffic.
- Drop-offs more than 60 millimetres that are in the roadway or shoulder shall be delineated with appropriate traffic control devices and further delineated as indicated in 3(c) below.
- Drop-offs more than 60 millimetres, but not more than 300 millimetres, that are not within the roadway or shoulder shall be delineated with appropriate traffic control devices and further delineated by having one of the following:
 - a) A wedge of compacted stable material (25 mm well-graded crushed base course aggregate or better) placed at a slope of 4:1 or flatter.
 - b) Channelizing devices (Type 1 barricades, plastic safety drums, or other devices one meter or more in height) placed along the traffic side of the drop-off and a new edge of pavement stripe placed a minimum of two (2) metres from the drop-off. Appropriate traffic control devices shall be placed in advance of and throughout the drop-off treatment.
 - c) Temporary concrete barrier or other approved barrier installed on the traffic side of the drop-off with 300 millimetres between the drop-off and the back of the barrier and a new edge of pavement stripe a minimum of 500 millimetres from the face of the barrier. An approved terminal, flare or impact attenuator shall be required at the beginning of the section. For night use, the barrier shall have reflective markers and/or warning lights.

- Drop-offs more than 300 millimetres not within the roadway or shoulder shall be delineated with appropriate traffic control devices and further delineated as indicated in 3(a), 3(b), or 3(c) if all of the following conditions are met:
 - a) The drop-off is less than 600 millimetres,
 - b) The drop-off does not remain for more than three consecutive days,
 - c) The drop-off is not present on any Canadian Statutory/Civic Holidays and
 - d) The drop-off is only on one side of the roadway.
- Drop-offs more than 300 millimetres that are not within the roadway or shoulder, and not otherwise covered by item 4 above, shall be delineated with appropriate traffic control devices and further delineated as indicated in 3(a) or 3(c).
- Excavations within the roadway shall be backfilled and paved to match the existing grade prior to returning the lane to traffic.

All excavation areas and their proposed safety measures shall be shown on the Traffic Control Plan. See Appendix **XXX** of the Special Provisions for a drop-off template.

8.5.16 Accommodation of Pedestrians and Cyclists

The Proponent shall make provision for pedestrians, wheel chairs and bicycles to have safe access across the work zone at all times. If this cannot be readily accommodated then acceptable detours shall be provided.

No payment shall be made for this item as it is considered incidental to the work.

8.5.17 Temporary Pavement Markings

Further to Section 2.2.1 of the Traffic Control Manual for Work on Roadways, the Proponent shall be responsible for the application and removal of all temporary pavement markings and reflective devices.

When traffic lanes have to be redefined for long duration work (more than one daytime shift), the Proponent shall eradicate all redundant temporary or permanent pavement markings that are not required for the intended traffic patterns, and install alternative markings. This shall consist of paint supplemented with raised pavement markers as per the Ministry Pavement Marking Manual. The Ministry, in accordance with the Drawings, shall apply all final pavement markings.

Notwithstanding subsection 194.13 of the Standard Specifications, the Proponent shall supply temporary pavement marking tape.

8.5.18 Use of Pilot Cars

During each (**CONSTRUCTION ACTIVITY**) and for a period of **XX** hours following completion of such work, pilot cars shall be used by the Proponent to guide vehicles through the work area. The pilot vehicle shall not exceed **XX** kilometres per hour through the work zone.

8.5.19 Completed Sections of New Roadway

Sections of new roadway which are completed prior to the physical completion of all the work, but are not yet open to traffic, shall be delineated with flexible drums and Class 1 barricades in an alternating pattern every fifty (50) meters. Completed sections of the roadway may only be opened to traffic prior to physical completion of the work for construction staging purposes.

8.6 PUBLIC INFORMATION PLAN

The Proponent shall consult with the Ministry Representative to identify the major user groups affected by the Project, and shall organize and implement a Public Information Plan in accordance with the Traffic Management Guidelines for Work on Roadways. This Plan shall ensure that major user groups are kept informed of planned traffic pattern changes, including but not limited to the following: detours, lane shifts, lane closures, ramp closures, access restrictions, schedule changes and other traffic control procedures which may delay traffic or disrupt traffic flow. Procedures for disseminating information related to unplanned traffic pattern changes (e.g. due to incidents such as emergency repairs, motor vehicle accidents) shall be addressed by the Proponent in the Incident Management Plan.

The Proponent shall be responsible for all advance notification and arrangements required to inform major user groups of planned changes in traffic patterns caused by the Work. Arrangements for notification shall have the prior approval of the Ministry Representative.

The Ministry shall designate a Communications Representative to act as sole spokesperson to the media on all Project-related issues. All media requests received by the Proponent shall be referred to the Ministry's Communications Representative. Relevant information with regard to the planned traffic pattern changes shall be provided to the Ministry's Communications Representative at least three (3) weeks prior to implementation.

8.7 INCIDENT MANAGEMENT PLAN

The Proponent shall organize and implement an Incident Management Plan in accordance with the Traffic Management Guidelines for Work on Roadways. The primary objectives of an Incident Management Plan are to facilitate incident response and move traffic safely and expeditiously through or around the incident. The Plan shall specify how the Proponent will provide access for emergency vehicles and provide assistance to emergency response personnel. An incident includes, but is not limited to, motor vehicle accidents, emergency road repairs, disabled vehicles, and debris on the road. The immediate response to an emergency shall by necessity make use of available devices and equipment.

The Incident Management Plan shall also address access via the work site for incidents or emergencies external to a project site but for which emergency vehicles and

response personnel require passage. This is particularly relevant for bridge crossings or where no alternate routing is available.

8.8 IMPLEMENTATION PLAN

The Proponent shall prepare and submit an Implementation Plan in accordance with the Traffic Management Guidelines for Work on Roadways. This shall identify the Traffic Manager, the Traffic Engineer, and the Traffic Control Supervisor for these works, along with the qualifications and experience of those named individuals. This Plan shall also define processes to ensure that the Traffic Control Plan, Public Information Plan, and Incident Management Plan are developed and implemented efficiently and appropriately, and that they are kept up-to-date with necessary modifications during the works.

8.9 SNOW AND ICE CONTROL

Provided that the Ministry Representative is satisfied with the condition of any disturbed surfaces, the Ministry will provide snow and ice control, and snow removal, on the pavement of roadways that are open to public traffic within the site. This is subject to satisfactory coordination by the Proponent of its work with the services provided by the Ministry's maintenance Proponent. The provision of these services shall not relieve the Proponent of its responsibility for all other maintenance as required in Article 22.00 of the Construction Agreement.

8.10 PROJECT INFORMATION SIGNING

The Proponent shall supply and install temporary information signs on **(HIGHWAY NUMBER)** at **(LOCATION)** to notify traffic of **(INSERT SPECIAL CONDITIONS)** and the time and dates of lane closures. The signs shall provide current information throughout the duration of the project. Each sign shall be fully reflective, 1220 mm by 2440 mm in size, and shall have wording as agreed to by the Ministry Representative.

8.11 LOCATION AND STORAGE OF MATERIALS AND EQUIPMENT

Unless protected by barrier and/or attenuators, materials and equipment shall not be stored within *six and one half (6.5)* metres of the traveled portion of any roadway.
(Note: Use clear zone standards)

8.12 LUMP SUM PAYMENT

A. Traffic Management Plan

On approval of the Proponents Traffic Management Plan by the District Highways Manager, a Lump Sum payment as per Item #**XX** shall be made to the Proponent on the first progress estimate.

B. Traffic Control

The Proponent shall supply and install all traffic control devices, signing, lighting and shall install all lane closures, detours and traffic diversions required for the project. The cost of all lane closure traffic control shall be considered already included in the price bid for the respective items of Schedule **X** and no additional payment shall be made to the Proponent.

8.13 STANDARD ACCOUNTABILITY MEASURES

A. Lane Rental

For the duration of the Contract the Proponent shall pay to the Ministry a rental charge for lane closures in the work zone. This rental charge shall be per period (Morning, Afternoon or Night) as set out below. These rates shall not be reduced if only a portion of the period is used.

The Proponent shall not be permitted full closures of the roadway. The Proponent's work plan shall clearly indicate how the **(INSERT WORK ACTIVITY)** shall be performed without delaying traffic beyond a single lane closure,

The Proponent shall estimate the cost of Lane Rental required to execute the works in accordance with the following schedule of rental rates, and include the cost as part of the mobilization cost under pay item No. **X**.

	Morning 6am to 2pm	Afternoon 2pm to 10pm	Night 10pm to 6am
No Lanes Closed	0	0	0
One Lane Closed	\$3,500	\$3,800	\$1,500
Total Closure	not permitted	not permitted	not permitted

The rental charge shall be included in the monthly progress estimate by showing this as a negative amount. During certain phases of the work, the rental charge during a payment period may exceed the value of work done. In such case, no payment shall be made and the accounting shall be carried forward into the following payment period.

In addition to the foregoing provisions for rental charge, consideration as defined in clause **XXX** of the Construction Agreement, shall still apply.

9. EVALUATING A TRAFFIC MANAGEMENT PLAN

This section of the guidelines is intended for Ministry staff responsible for evaluating a Proponent's TMP.

9.1 OVERVIEW

The procedures for evaluating a proposed TMP should be appropriate to the complexity of the project. A streamlined evaluation process is described for simple projects and a full evaluation process is described for more complex projects that have significant impacts on traffic operations or that contain risks to the public. Figure 4 illustrates the overall process for evaluating traffic management plans.

A simple project is a Category 1 or 2 project that requires only a traffic control plan. When using the streamlined process, the TMP should be checked to ensure that information is complete and that proposed traffic control layout(s) are appropriate for the work zone location and work hours.

The full evaluation process follows the same basic concept used for simple projects. However, the distinction between the completeness check and the suitability check is more defined. Each sub-plan is evaluated for completeness and if not complete, the entire TMP is returned to the Proponent for further work. Once all sub plans are complete, the Proponent's TMP is then evaluated by the Ministry to determine whether the plan meets stated requirements. If a specific sub plan does not meet stated requirements for the project, the TMP is returned to the Proponent for further work.

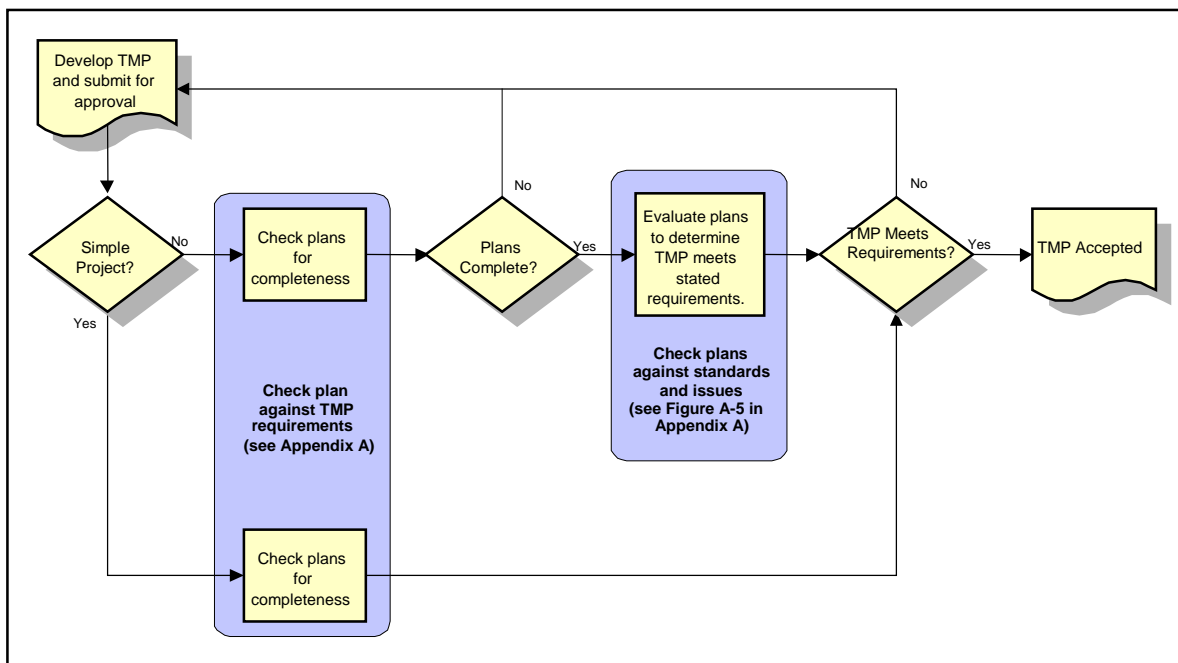


Figure 4 - TMP Evaluation Process

To promote consistency and efficiency, standard checklists and forms are provided to ensure that proposed traffic management plans are evaluated in a consistent manner.

9.2 TMP EVALUATION PROCEDURE

Standards used to evaluate a Proponents Traffic Management Plan are identified in Section 1.8 of these guidelines. The figures and guidelines referenced in the procedures are contained in [Appendix A](#).

9.2.1 Simplified TMP Evaluation Procedure (Suitable for Category 1 and 2 only)

STEP 1. USING [FIGURE A-1](#) CHECK THAT THE PROPOSED TRAFFIC CONTROL PLAN IS COMPLETE.

The traffic control plan should consist of a completed Lane Closure Request/Permit form and information defined in the Category 1 or 2 TMP requirements. Ensure that all information is supplied as required.

STEP 2. RETURN INCOMPLETE PLAN OTHERWISE PROCEED TO THE NEXT STEP

STEP 3. REVIEW THE TRAFFIC CONTROL PLAN TO DETERMINE IF STATED REQUIREMENTS ARE MET

If all information is complete, review the proposed traffic control layouts to ensure that they are suitable for the planned work activities, traffic volumes, route and time of day.

STEP 4. ACCEPT/REJECT THE PROPOSED TRAFFIC MANAGEMENT PLAN.

If the traffic control plan is complete and the proposed layouts meet stated requirements, accept the TMS. If information is missing or if the proposed layouts do not meet stated requirements reject the proposed TMP.

STEP 5. SIGN OFF [FIGURE A-5](#) AND LIST ANY CONDITION OR LIMITATIONS ON TMP ACCEPTANCE.

The Project Manager shall signoff [Figure A-5](#) and list any conditions.

STEP 6. AUTHORIZE THE PROPONENT TO WORK ON THE ROADWAY

Request the District Highways Manager to issue a Lane Closure Request/Permit or alternative authorization.

9.2.2 Full TMP Evaluation Procedure – All Categories

STEP 1. USING [FIGURE A-2](#) DETERMINE WHETHER THE TRAFFIC CONTROL PLAN IS COMPLETE.

For the respective project category, use the plan content requirements to determine whether the plan supplies the information requested and whether the correct formats for traffic control layouts have been used. A No answer indicates that a plan item is not complete. Do not attempt to judge the quality of information. Simply determine whether the required information is supplied.

STEP 2. USING [FIGURE A-3](#) DETERMINE WHETHER THE PUBLIC INFORMATION PLAN (IF REQUIRED) IS COMPLETE.

For the respective project category, use the plan content requirements to determine whether the information is supplied as requested. A No answer indicates that a plan item is not complete. Do not attempt to judge the quality of information. Simply determine whether the required information is supplied.

STEP 3. USING [FIGURE A-4](#) DETERMINE WHETHER THE INCIDENT PLAN (IF REQUIRED) IS COMPLETE.

For the respective project category, use the plan content requirements to determine whether the information is supplied as requested. A No answer indicates that a plan item is not complete. Do not attempt to judge the quality of information. Simply determine whether the required information is supplied.

STEP 4. RETURN THE TMP IF ANY SUB PLANS ARE INCOMPLETE.**STEP 5. REVIEW TMP SUB PLANS TO DETERMINE IF STATED REQUIREMENTS ARE MET AND RECORD THE RESULTS ON [FIGURE A-5](#)**

If information for each of the sub plans is complete, review the sub plans to determine if the TMP meets stated requirements.

STEP 6. RETURN THE PROPOSED TRAFFIC MANAGEMENT PLAN IF ANY DEFICIENCIES ARE DISCOVERED.**STEP 7. SIGN OFF [FIGURE A-5](#) TO ACCEPT THE PROPOSED TRAFFIC MANAGEMENT PLAN**

If all required plans (traffic, communication and incident) have been checked and determined to be suitable, recommend the Traffic Management Plan for acceptance. The Project Manager shall sign off [Figure A-5](#) and list any conditions relating to the TMP.

STEP 8. AUTHORIZE THE PROPONENT TO WORK ON THE ROADWAY

Request the District Highways Manager to issue a Lane Closure Request/Permit or alternate authorization.

Glossary & Abbreviations

Glossary

TERM	DEFINITION
Detour Route	A route that takes traffic off the regular route and, using existing or newly made temporary roadways, guides traffic around a work zone. The detour route must be clearly identified by appropriate detour signs. (Prior to the closing of a roadway and the opening of a detour, it is desirable to erect "Closing Notice" signs at strategically selected locations at least one week in advance of the closing.)
Drawing	Drawings are scale drawings of the highway in the vicinity of the work zone that identify the arrangement of traffic control devices in accordance with the <i>Traffic Control Manual for Work on Roadways</i> . Drawings shall show all painted markings, physical features such as signing, no post guardrail, lamp standards, etc. that may affect traffic operations, geometry and lane configurations and shall include dimensions.
High Volume Roadway	A roadway which carries 1000 or more vehicles per day.
Implementation Plan	An Implementation Plan identifies responsibilities and procedures to ensure that traffic management sub plans are developed and implemented in a coordinated manner. Qualifications, duties and responsibilities are also identified, along with designation of the Traffic Manager and the Traffic Control Supervisor.
Incident Management Plan	An Incident Management Plan defines a plan for detecting incidents and managing response operations. The plan shall define priorities and procedures for detection and response actions that will restore traffic flow as quickly as possible. The plan must define a process of regular review and analysis to identify actions that will reduce incident frequency and severity. An Incident Management Plan shall be modified throughout the project life cycle to address issues as they occur.
Incident Response Plan	An Incident Response Plan defines a plan for responding to incidents. The plan identifies priorities and procedures for managing traffic control and project works during an incident. An Incident Response Plan is modified throughout the project life cycle to address issues as they occur.

TERM	DEFINITION
Lane Closure Request/Permit form	A Lane Closure Request/Permit form identifies the location of the work zone and traffic control measures that a contractor proposes to use for work tasks. A contractor submits the form to the District Highways Manager. A Lane Closure Request/Permit form is the absolute minimum level of documentation that can be supplied by a contractor. The District Manager reviews the request and either approves or rejects the request. If rejected the contractor must modify and resubmit the request until it is approved.
Layout	Layouts are schematic diagrams of the roadway showing the placement and general arrangement of traffic control devices. Standard layouts are contained in the <i>Traffic Control Manual for Work on Roadways</i> . Contractors may supply custom layouts for a project if standard layouts are inadequate. Layouts need not be to scale but should include dimensions.
Long Duration Work	Programmed construction, maintenance and utility activities which require a separate work area for more than one daytime shift. Thus most work at night should, therefore, be considered long duration.
Low Volume Roadway	A roadway which carries less than 1000 vehicles per day.
Project	Any work operation or activity undertaken on provincial highways requiring traffic control
Project Category	A method of characterizing a project based on the affect on traffic operations within the highway network and the traffic control required for the works
Proponent	The party directly constructing or maintaining works on provincial highways who is responsible for developing a traffic management plan, obtaining authorization (where required) from the Ministry to work on the roadway, and for implementing the plan in accordance with Ministry requirements.

TERM	DEFINITION
Public Information Plan	A Public Information Plan identifies actions and procedures to inform the travelling public, project stakeholders and MoT of current traffic operations and planned changes to traffic operations. A Public Information Plan shall be modified throughout the project life cycle to address issues as they arise.
Roadway	The portion of street or highway that is ordinarily used for vehicular traffic, but, does not include the shoulder: and where a highway includes two separate roadways, the term “roadway” refers to any one roadway separately and not to both of them collectively.
Simple Project	A Category 1 or 2 project that does not require a custom traffic control layout, a Public Information Plan or an incident plan nor have any specific risk issues been identified.
Traffic Control Plan	A Traffic Control Plan is a combination of text, layouts and, if required, drawings that define specifically what traffic control measures will be provided for the project, how it will be implemented and on what schedule. Traffic Control Plans shall be modified throughout the project life cycle to address issues as they occur.
Traffic Control Supervisor	An individual designated by the Proponent to fulfill the duties and responsibilities for supervising traffic control and personnel as defined by WCB regulations Section 18.
Traffic Engineer	An Professional Engineer licensed by the Association of Professional Engineers and Geoscientists of BC who shall have certification as a “Traffic Operations Engineer” from the Institute of Transportation Engineers (ITE).
Traffic Management Plan	A Traffic Management Plan details a specific plan to implement the project's Traffic Management Strategy. A TMP is comprised of one or more of the following: Traffic Control Plan, Public Information Plan, and Incident Response/Management Plan. A TMP integrates these plans into a single document that demonstrates an understanding of site specific issues and project requirements. A Traffic Management Plan shall contain processes for updating the plan throughout the project life cycle to address issues as they occur.

TERM	DEFINITION
Traffic Management Strategy	A Traffic Management Strategy defines MoT's project specific traffic management requirements. A strategy is developed to ensure that project needs are identified and that plans are developed to address those needs over the project life cycle. For each individual project, a Traffic Management Strategy identifies requirements for the following: Traffic Control Plan, Public Information Plan, and Incident Response/Management Plan.
Traffic Manager	The Proponent's Traffic Manager is the individual tasked by the Proponent with the responsibility for preparing, implementing and managing the Proponent's traffic control plan. The Proponent's Traffic Manager may be an employee of the Proponent or may be a contractor to the Proponent. A Traffic Control Supervisor, as designated by the WCB, may perform the function of the Proponent's Traffic Manager for simple projects.
Work Area	An area which contains the work activity and is closed to traffic and set aside for exclusive occupation by workers, equipment and construction materials. Work areas may remain fixed in location or may move as work progresses.
Work Zone	An area in which surveying, construction, maintenance or utility activities take place, on or adjacent to a roadway, to the extent that passage of public traffic may be influenced.

List of Abbreviations

DHM	District Highways Manager
MoT	Ministry of Transportation
PHCC	Provincial Highway Condition Centre
TCM	Traffic Control Manual for Work on Roadways
TCP	Traffic Control Person
TMG	Traffic Management Guidelines for Work on Roadways
TMP	Traffic Management Plan
TMS	Traffic Management Strategy
WCB	Workers' Compensation Board

APPENDIX A - TRAFFIC MANAGEMENT PLAN REVIEW AND ASSESSMENT

Notes

1. These forms are for **Ministry use** in assessing submitted Traffic Management Plans for acceptability by the District Highway Manager (DHM). The forms are normally completed by district technical or development approvals staff, or by a Traffic Engineer from Region, who will provide recommendations to the DHM regarding acceptability.
2. In accepting a TMP, the District Highway Manager is agreeing to the approach being taken, including:
 - management of traffic during works affecting existing traffic,
 - the general concepts for traffic control that are planned,
 - the public communications plan, and
 - the persons who will be responsible for detailed traffic control layouts and site safety for the travelling public.
3. This is **NOT** an approval of traffic control plans, nor is it authorization to close lanes or highways to traffic. The former is not a Ministry responsibility, unless the works are being directly undertaken by Ministry crews (eg. Centreline operations, Day Labour construction, etc.). The latter involves separate permission by the DHM (and possibly a permit as shown in APPENDIX C).

TRAFFIC CONTROL PLAN REVIEW– SIMPLE PROJECTS			
Project: _____	No: _____	Date: _____	
1. Work Zone Information			
Work Hours:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Shift Schedule:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Work Zone Location:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Work Zone Length:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Direction of Travel:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Lanes Affected:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Roadway Configuration:	<input type="checkbox"/> Yes <input type="checkbox"/> No		
2. Closure Information <input type="checkbox"/> NA			
Duration Identified:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Duration (min):	_____
Closure times:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Closure Dates:	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Traffic Control Layout Information			
TCM Layout(s):	<input type="checkbox"/> Yes <input type="checkbox"/> No	Layout Number(s) _____	
Custom Layouts Included: <input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No			
4. Work Zone Drawing <input type="checkbox"/> NA			
Placement of traffic control devices identified and in accordance with TCM:			<input type="checkbox"/> Yes <input type="checkbox"/> No
Placement of traffic control persons identified and in accordance with TCM:			<input type="checkbox"/> Yes <input type="checkbox"/> No
Proximity to intersections: <input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No	Accesses identified:		<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Vehicle stopping points : <input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No	Vehicle storage areas :		<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
5. Personnel / Organization Information			
Contact name provided:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Contact number provided:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Traffic control personnel identified	<input type="checkbox"/> Yes <input type="checkbox"/> No	All personnel certified:	<input type="checkbox"/> Yes <input type="checkbox"/> No
6. Comments:			

Meets Stated Requirements: <input type="checkbox"/> Yes <input type="checkbox"/> No			
Reviewed by: _____		Date: _____	

Figure A - 1- Traffic Control Plan Review – Simple Projects

TRAFFIC CONTROL PLAN REVIEW - COMPLEX PROJECTS			
Project: _____		No: _____	Date: _____
1. Work Zone Information			
Work Hours:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Work Schedule:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Work Zone Location:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Work Zone Length:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Direction of Travel:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Lanes Affected:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Roadway Configuration:	<input type="checkbox"/> Yes <input type="checkbox"/> No		
2. Closure Information <input type="checkbox"/> NA			
Duration Identified:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Duration (min): _____	
Closure times:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Closure Dates:	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Detour Information <input type="checkbox"/> NA			
Implementation/Removal date:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Route identified:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Detour speed identified:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Design speed identified:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Municipal approval:	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No		
4. Traffic Control Layout Information			
TCM Layout(s):	<input type="checkbox"/> Yes <input type="checkbox"/> No	Layout Number(s) _____	
Custom Layouts Included:	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No		
5. Work Zone Drawing <input type="checkbox"/> NA			
Drawing of Work Zone:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Distances identified:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Placement of traffic control devices clearly identified:			<input type="checkbox"/> Yes <input type="checkbox"/> No
Placement of traffic control persons clearly identified:			<input type="checkbox"/> Yes <input type="checkbox"/> No
Relevant features identified:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Accesses identified:	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Proximity to intersections:	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No	Vehicle stopping points :	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Vehicle storage areas :	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No	Drawings sealed:	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
6. Personnel / Organization Information			
Contact name provided:	<input type="checkbox"/> Yes <input type="checkbox"/> No	Contact number provided:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Traffic control personnel identified	<input type="checkbox"/> Yes <input type="checkbox"/> No	All personnel certified:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Plan Meets Stated Requirements	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Reviewed by: _____			

Figure A-2 - Traffic Control Plan Review – Complex Projects

PUBLIC INFORMATION PLAN REVIEW			
Project: _____	No: _____	Date: _____	
1. Stakeholder Groups			
Plan identifies stakeholder groups:			<input type="checkbox"/> Yes <input type="checkbox"/> No
Groups identified:			
Motorists <input type="checkbox"/>	Pedestrians <input type="checkbox"/>	Cyclists <input type="checkbox"/>	Transport Companies <input type="checkbox"/>
Businesses <input type="checkbox"/>	Residents <input type="checkbox"/>	Municipalities <input type="checkbox"/>	Emergency Responders <input type="checkbox"/>
Bus Lines <input type="checkbox"/>	Ferries <input type="checkbox"/>	BC Transit <input type="checkbox"/>	
Other: _____			
2. Issues			
Communications issues identified:			<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Communication Processes			
Scheduled delays and project duration:			<input type="checkbox"/> Yes <input type="checkbox"/> No
Process meets schedule requirements:			<input type="checkbox"/> Yes <input type="checkbox"/> No
Unscheduled delays/incidents:			<input type="checkbox"/> Yes <input type="checkbox"/> No
Process meets response requirements:			<input type="checkbox"/> Yes <input type="checkbox"/> No
Roadway closures / detours:			<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Process meets schedule requirements:			<input type="checkbox"/> Yes <input type="checkbox"/> No
Notification of alternate routes:			<input type="checkbox"/> Yes <input type="checkbox"/> No
Process meets schedule requirements:			<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Communication Methods			
Signing <input type="checkbox"/>	Radio <input type="checkbox"/>	Television <input type="checkbox"/>	Newspaper <input type="checkbox"/>
Road Report <input type="checkbox"/>	Internet <input type="checkbox"/>	Mailing <input type="checkbox"/>	Brochures <input type="checkbox"/>
Comments:			

Figure A-3- Public Information Plan – Completeness Checklist

INCIDENT PLAN REVIEW		
Project: _____	No: _____	Date: _____
Incident Response Plan <input type="checkbox"/> Incident Management Plan <input type="checkbox"/>		
1. Management		
Traffic Manager Identified (incident management plan only):		<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Duties identified:		<input type="checkbox"/> Yes <input type="checkbox"/> No
Name: _____		
Organization: _____		
Telephone: _____		Cellular: _____
Traffic Control Supervisor Identified:		<input type="checkbox"/> Yes <input type="checkbox"/> No
Duties identified:		<input type="checkbox"/> Yes <input type="checkbox"/> No
Name: _____		
Organization: _____		
Telephone: _____		Cellular: _____
2. Incidents		
List of probable incident types identified:		<input type="checkbox"/> Yes <input type="checkbox"/> No
List of risk and traffic issues identified		<input type="checkbox"/> Yes <input type="checkbox"/> No
Plans for each type of incident (incident management plan only):		<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Communication Procedures		
Notify MoT/Emergency Responders of incident occurrence:		<input type="checkbox"/> Yes <input type="checkbox"/> No
Notify MoT of response measures:		<input type="checkbox"/> Yes <input type="checkbox"/> No
Notify MoT of clearance measures:		<input type="checkbox"/> Yes <input type="checkbox"/> No
Notify MoT/the travelling public of estimated clearance time:		<input type="checkbox"/> Yes <input type="checkbox"/> No
Notify MoT/the travelling public when incident cleared:		<input type="checkbox"/> Yes <input type="checkbox"/> No
3. Emergency Response Agencies		
Agencies identified:		<input type="checkbox"/> Yes <input type="checkbox"/> No
Telephone numbers for each agency:		<input type="checkbox"/> Yes <input type="checkbox"/> No
Meets Stated Requirements <input type="checkbox"/> Yes <input type="checkbox"/> No		
Reviewed by: _____		

Figure A-4 - Incident Plan – Completeness Checklist

TRAFFIC MANAGEMENT PLAN REVIEW SUMMARY

Project: _____ **No:** _____ **Date:** _____

Risk Assessment Done Yes No

<u>Traffic Management Plan</u>	<u>Required</u>	<u>Meets Stated Requirements</u>
Traffic Control Plan	<input checked="" type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Public Information Plan	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Incident Plan		
Incident Response Plan	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Incident Management Plan	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Implementation Plan	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No

Comments:

TMP Meets Stated Requirements: Yes No Date: _____

Reviewed By: _____

Figure A-5 - Traffic Management Plan Review Summary

APPENDIX B - TRAFFIC CONTROL PLANNING AND ASSESSMENT

Notes

1. These forms are intended as a guide for **Contractor** or **Proponent** use (if they wish, or as instructed by the Ministry locally) in planning and reviewing/assessing the designed Traffic Control Plan, including detailed traffic control layouts.
2. Ministry staff should **ONLY** use these forms when planning, designing or reviewing Traffic Control Plans for works being directly undertaken by Ministry crews (e.g. Centreline operations, Rockscaling or Day Labour construction). For Ministry review of Traffic Control Plans submitted by Contractors or Proponents please see the forms in Appendix A.
3. There are two separate approaches presented in this Appendix as options. One is a Checklist approach, and the other is Plan form.

Part 1 Geometrics and Design Suitable for Posted Speed/Time of Day		
Question	Description	Applicable
Traffic Control devices	Signs (size and stand configuration), cones, barricades, Flashing Arrow Board as per TCM	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Night-time hazards	Have night-time hazards been addressed. Where appropriate have flashing arrowboards, work area lighting, increased sign size and reflectivity, barriers, additional road marking and delineation been employed?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Lane Closure tapers	Taper ratio as per TCM	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Sign placement	Placement of signs in accordance with TCM for lane control and roadway type	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Pavement markings	Permanent markings do not conflict with new traffic operations. Temporary markings are appropriately located and correctly used.	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Number of TCP's	Correct number of traffic control persons considering the traffic control, work activities and physical geography.	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Placement of TCP's	Correct placement of traffic control persons considering the traffic control, work activities and physical geography.	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Adequate site distance	Is sight adequate as vehicles approach the work zone and all points within the work zone?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Lane widths	Traffic control provides adequate lane widths for vehicle types.	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Signal timing on parallel routes	Is signal operation at intersections on parallel routes appropriate for proposed lane closures and anticipated traffic operations.	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Placement of safety devices	Appropriate placement of safety devices particularly in the area of the work zone or identified hazards.	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Shoulder widths	Widths adequate for vehicles and cyclist using the route.	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Number/type of safety devices	The number and type of safety devices used for the project appropriate for identified hazards.	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No

Figure B-1 - Traffic Control Checklist

Part 1 Geometrics and Design Suitable for Posted Speed/Time of Day		
Question	Description	Applicable
Assess to private property	The traffic control plan has provisions to accommodate access to private property.	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Vehicle restrictions	Appropriate restrictions on types of vehicle types. For example if the plan call for narrow lane widths and no shoulder does the plan also restrict cyclists and pedestrians?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Detour Geometrics	Appropriate detour design (horizontal and vertical alignment, taper lengths) for work zone speed	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Part 2 Traffic Volume and Queues		
Question	Description	Applicable
Volume capacity acceptable	Is the capacity of the roadway sufficient to handle traffic demand?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Delays acceptable	Are the proposed delays acceptable for the route and for the time of day?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Queue lengths acceptable	Are the queue lengths acceptable given the roadway configuration, physical geography, time of day and proximity to intersections or access routes.	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Vehicle storage locations	In the case of short term roadway closures, are areas in which vehicles will be stopped safe?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Intersection traffic control adequate	Is the existing intersection traffic control adequate to accommodate the possible laning reductions or detoured traffic? If not, have adequate temporary signing, temporary signals or temporary signal timing changes been proposed?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Part 3 Work Zone		
Question	Description	Applicable
Adequate control of equipment movement within the Work Area	Are traffic control devices appropriately placed to control vehicles in the Work Area and prevent conflicts with the travelling public?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No

Figure B-1 - Traffic Control Checklist

Part 3 Work Zone		
Question	Description	Applicable
Adequate control of equipment moving in the Work Zone	Are traffic control devices and traffic control persons appropriately placed to ensure that work vehicles entering or leaving the work zone do not conflict with the travelling public? Is the movement of vehicles controlled to prevent disruptions to traffic flow?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Acceptable distance between work zone and travelled lanes	Is the distance between the Work Area and travelled lanes acceptable given the type of work and equipment used?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Illumination adequate	Is illumination of the Work Zone adequate or does night-time lighting need to be supplied?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Placement of illumination devices appropriate	Are illumination devices placed to prevent glare or lights shining in motorist's eyes?	<input type="checkbox"/> NA <input type="checkbox"/> Yes <input type="checkbox"/> No
Reviewed by: _____ Date: _____		
Comments: _____		

Figure B-1 – Traffic Control Checklist

Traffic Plan

Traffic control hierarchy:

When deciding on traffic control, traffic control devices such as signs, barricades, delineators, Flashing Arrow Boards, Changeable Message Signs, cones and other methods should be considered before using Traffic Control Persons.

Temporary / Construction Speed Zones

Reduced speed zones are to be kept as small as possible. 30 km/h and 50km/hour temporary speed zones should not extend any further than 1km outside the active work area.

CONSIDER:

- Traffic Control Supervisor
- Site/Procedural Factors
- Types of TC Devices
- Spacing of Devices
- Advanced Warning Area
- Transition Area
- Buffer Area
- Work Area
- Termination Area
- Delineation During Off Hours
- Moving Signs
- Turning/Removing Signs
- Checking Devices
- Traffic Control Persons:
 - Location
 - Qualifications
 - Hours of Work
 - Communications
 - Relief
 - Site Instructions
- Traffic Control Supervisor
- OTHER:

Traffic Plan: Consider the above site factors when determining the traffic control plan. The site factors should support the decisions regarding traffic control.

Site Diagram (use additional page if needed):

Show all site factors affecting traffic control, TC devices, spacing, etc.

Traffic Control Plan Developed by:

Site Discussion:

Name:	Agency:	Signature:

APPENDIX C - LANE CLOSURE REQUEST/PERMIT FORM

Notes

1. The use of this form and Permit are optional as determined by the local District Highway Manager.
2. This form is used by the Proponent to request lane closures as part of traffic control operations, and by the District office (District Highways Manager) to permit or authorize such closure if the Request is acceptable.
3. This form is **recommended** where traffic is significantly impacted due to work on a highway, and replaces any reference to traffic control requirements that would otherwise have been used on the form "Permit to Construct Work Upon Highways (H0021A).
4. This form is for use in those Districts that have chosen to formally register lane closure approvals via Permit. This approach is recommended for highways with high traffic volume.
5. It is assumed that verbal approval is being given where this form or the forms in Appendix D, are not formally registered, or where there is a standing protocol agreement (or other agreement such as the Maintenance Agreement) in place that authorizes such closures.
6. For more complex projects or in areas where there is significant traffic impact, a fuller Traffic Management Plan requirement is still recommended (per the standard clauses set out in Section 8).



LANE CLOSURE REQUEST / PERMIT

THIS FORM MUST BE SUBMITTED FIVE WORKING DAYS PRIOR TO INTENDED CLOSURE DATE.

From: _____
(To) (Company Name)

(Contact Person)

(Traffic Control Supervisor)

Phone: () _____

Fax: () _____

Phone: () _____

We request approval to close the following lane(s) (check more than one if required):

<input type="checkbox"/> Northbound	<input type="checkbox"/> Southbound	<input type="checkbox"/> Eastbound	<input type="checkbox"/> Westbound
<input type="checkbox"/> fast lane	<input type="checkbox"/> centre lane	<input type="checkbox"/> right turn lane	<input type="checkbox"/> all lanes
<input type="checkbox"/> slow lane	<input type="checkbox"/> HOV lane	<input type="checkbox"/> left turn lane	<input type="checkbox"/> work on shoulder

on _____ between/at _____ and _____
(Highway Name) (Landmark) (Landmark)
from _____ [a.m./p.m.] to _____ [a.m./p.m.] from _____, 20____ to _____, 20____ for the purpose of constructing the following works: _____

In the above noted direction, the highway is [1 2 3 4] lane(s) wide and [0 1 2 3 4] traffic lane(s) will be kept open.

PLEASE INDICATE TRAFFIC CONTROL TO BE USED (A, B OR C):

- A) Traffic Control Diagram Figure no. _____ of the Traffic Control Manual for Work on Roadways
- B) Attach a sketch to scale indicating signage, taper lengths, direction of traffic, work area and north arrow
- C) As indicated on project Traffic Control Plan

Your request is denied Your request is approved as submitted Permit Number: _____

Your request is approved with the following changes: _____

This approval is granted subject to: traffic queues being monitored continuously by the Ministry / Project Representative while lane closure or traffic diversion is underway. Delays are not to exceed _____ minutes over the normal travel time. Should this threshold be met, work shall cease and this approval shall be adjusted and re-approved.

THE MINISTRY'S HIGHWAY CONDITIONS CENTRE (660-9770) MUST BE CONTACTED PRIOR TO 6:30 AM ON THE DAY OF THE CLOSURE OR 24 HOURS IN ADVANCE ; UPON INSTALLATION OF CLOSURE(S) ; and AT REMOVAL OF CLOSURE(S).

*** THIS APPROVAL MUST BE KEPT ON HAND AT THE WORKSITE ***

Ministry Use Only – Enter on Road Report? Yes No

Date: _____, 2000

Copy: Provincial Highways Condition Centre (PHCC)
Maintenance Contractor

District Highways Manager or Designate

APPENDIX D - ALTERNATE AUTHORIZATION FORMS

APPLICATION FOR PERMISSION TO CONSTRUCT WORKS WITHIN HIGHWAY
RIGHT-OF-WAY (H0020)

PERMIT TO CONSTRUCT WORKS UPON HIGHWAYS (H0021a)

Notes

1. These forms may be used to add requirements regarding traffic management as a condition of approval as an alternative to the form in Appendix C, letters of authorization or verbal approval when such works will cause delay or disruption to existing traffic.
2. For more complex projects or in areas where there is significant traffic impact, a fuller Traffic Management Plan requirement is still recommended (per the standard clauses set out in Section 8).

APPLICATION FOR PERMISSION TO CONSTRUCT WORKS WITHIN HIGHWAY RIGHT-OF-WAY

The personal information on this form is collected under the authority of the Highway Act. The information collected will be used to process your application for permission to construct, use and maintain works within the limits of a highway right-of-way. If you have any questions about the collection, use and disclosure of this information, contact the local Ministry of Transportation District Development Technician.

I (We) hereby apply for permission to construct, use, and maintain works within the limits of highway right-of-way under the jurisdiction of the Minister of Transportation, British Columbia, in accordance with the particulars, plans,* and specifications submitted herewith in triplicate. It is understood that the completion of this form constitutes an application only and that the works applied for will not be commenced until a covering permit has been issued. The proposed works consist of and are described as follows:

DESCRIPTION OF WORKS

LOCATION OF WORKS *(Include civic address)*

THE FULL LEGAL DESCRIPTION OF THE PROPERTY TO BE SERVED

ROAD NAME(S)

Drawing or sketch number _____ Attached _____

Have the necessary plans for approval been filed with the proper authorities? *(See Note 2 on back)* _____

MAILING ADDRESS *(Include postal code)*

Telephone _____ Fax _____

Signature (Applicant)

Print Name

Date (yyyy/mm/dd)

* See Note 1 on back

NOTE 1

The plans submitted may be blueprints, and shall consist of key-map, general plan, profile, and where necessary, detail plan on the following scales: **Key-map**, according to size of undertaking; **general plan**, 1:5000; **profile**, horizontal 1:5000, vertical 1:250; **details**, on suitable scales. For minor undertakings, such as small water-pipes or culverts, etc., under a road, sketches will be accepted and sections and details as to dimensions, depth of cover, etc.

The plans shall supply at least the following information:

- (a) The boundaries of highway right-of-way affected;
- (b) The position of all existing public works within such boundaries and relative thereto and the name of the authority in control of same;
- (c) The position of all private works (with the names of owners) within such boundaries and relative thereto. (N.B. - Where the proposed works are upon or above the ground only such private works as are upon or above the ground, or as may be interfered with under the ground, need be shown);
- (d) The proposed position within such boundaries and relative thereto which would be occupied by the works;
- (e) The details of all tanks, manholes, lamp-poles, surface boxes, bridges, culverts, retaining-walls, or other structures to be constructed and used for the support of traffic, and details showing the method to be employed in supporting any proposed work, where any public works are affected;
- (f) Full information showing exactly in what manner and to what extent it is proposed to use any land or works under the control of the Minister of Transportation.

Specifications for the carrying-out of the work within the boundaries of all highway right-of-way shall also be submitted.

NOTE 2

When application is made in respect of the following works, the requisite particulars, plans, and specifications must be submitted to the proper authorities before the approval of the application by the Minister of Transportation.

WORKS	AUTHORITY TO WHOM PARTICULARS, ETC., MUST BE SUBMITTED	
1. Electrical Undertakings (a) Telegraph and telephone lines (b) Energy generated otherwise than by water-power (c) Energy generated by water-power (d) Electrical railways	Inspector of Electrical Energy Inspector of Electrical Energy Inspector of Electrical Energy Comptroller of Water Rights Inspector of Electrical Energy Deputy Minister of Transportation	453 West 12th Ave., Vancouver BC V5Y 1V4 Parliament Bldgs., Victoria BC 453 West 12th Ave., Vancouver BC V5Y 1V4 Parliament Bldgs., Victoria BC
2. Steam - railways	Deputy Minister of Transportation	Parliament Bldgs., Victoria BC
3. Logging - railways		
4. Skid - roads	Deputy Minister of Transportation and also Chief Forester	Parliament Bldgs., Victoria BC
5. Sewerage and sewerage - disposal (a) Large systems (b) Small systems	Waste Management Branch Ministry of Environment Local Health Inspector	Regional Office Parliament Bldgs., Victoria BC
6. Water - supply for domestic purposes	Local Water Management Office or Comptroller of Water Rights	Regional Office Parliament Bldgs., Victoria BC
7. Waterworks undertakings other than for domestic supply		
8. Works to be constructed within any municipality	Municipal Office	

PERMIT TO CONSTRUCT WORKS UPON HIGHWAYS

Consent to construct, use, and maintain the works comprising

insofar as they relate to the use of public highways, is hereby granted to _____
_____ (hereinafter referred to as the "Permittee").

The said consent to construct, use, and maintain works is, however, at all times subject to the following conditions, which are agreed to and accepted by the Permittee:

1. That the construction of the said works is carried out in conformity with all legislation applicable to the Permittee or specifications by regulatory bodies having jurisdiction over the Permittee, and that the Regional Director, Highways of the Province of British Columbia, or any person appointed by the Regional Director, Highways shall have free access to all parts of the works for the purpose of satisfying himself that the works are being carried out in accordance with such legislation or regulatory specifications as aforementioned.
2. That before opening up any highway or interfering with any public works, written notice of intention to do so must be given to the District Official at least seven clear days before the work is begun.
3. That the construction of the said works shall be commenced on or before the _____
_____ and shall be prosecuted with due diligence and shall be completed on or before the _____
4. Whenever possible, where the work embraces crossing a hard-surface highway with a pipe, this will be done by pushing the pipe at least 60 cm. below the surface of the road and without disturbing or weakening the surface in any way. Where this is impossible, then not more than half the surface shall be opened at any one time and resurfacing shall be carried out by the Ministry of Transportation under force at the expense of the Permittee.
5. That where the work for which consent is hereby granted comes in contact with any bridge, culvert, ditch or other existing work, such existing work must be properly maintained and supported in such manner as not to interfere with its proper function during the construction of the new work, and on the completion of the new work the bridge, culvert, ditch, or other existing work interfered with shall be completely restored to its original good condition.
6. That when necessary all excavations, materials, or other obstructions are to be efficiently fenced, lit, and watched, and at all times every possible precaution is to be taken to ensure the safety of the public.
7. The Permittee for whom these works are being constructed or maintained shall at all times indemnify and save harmless the Government of the Province of British Columbia against any loss sustained or damage done by the Permittee or its servants or agents for which by law the Permittee would be liable, except in cases where the loss or damage is attributable to the negligence of the Government, its servants or agents.
8. That after receiving notice in writing on the intention on the part of the Provincial Government to construct, extend, alter, or improve any public work, the Permittee being responsible for the maintenance of the works for which consent is hereby granted shall co-operate with the District Official, and within three (3) months from receipt of notice all works shall be completed in moving or altering such work to such new position or in such manner as may be necessitated by the

construction, extension, alteration, or improvement proposed to be carried out by the Provincial Government. The cost of all such work to be borne by the Permittee except in the case of cost sharing arrangement on pole relocations (refer to circular).

9. That while reasonable care will be taken on the part of the Provincial Government to do as little damage as possible to any private work in the carrying-out of the construction, extension, alteration, improvement, repair, or maintenance of public work adjacent thereto, the Provincial Government can accept no responsibility of any kind for such damage.
10. That this permit shall be in force only during such time as the said works are operated and maintained by the applicants or their assignees or successors in conformity with all legislation applicable to the Permittee or specifications by regulatory bodies having jurisdiction over the Permittee.
11. The poles and other structures comprised in this permit shall be placed and maintained in such position within the limits of the public highway right-of-way as may be approved by the Regional Director, Highways of the Ministry of Transportation in writing.
12. That these works shall be identified by the permit number in a manner satisfactory to the Regional Director, Highways or his assistants at the expense of the Permittee. In the case of pole-lines, the permit number shall be scribed on the poles, and for underground work the location shall be marked with concrete blocks having their permit number marked thereon, the concrete blocks not to be less than 30 cm. by 30 cm. by 15 cm.

Agreed to by the _____

Per _____

Approved: _____

For Minister of Transportation

Please Print Name

Please Print Name

Date (yyyy/mm/dd)

Date (yyyy/mm/dd)

APPENDIX E - EXAMPLE PROJECT SPECIAL PROVISIONS

Notes

1. The following example project special provisions are from a project on Highway 1 (Johnston Cut) in North Vancouver, and were “tailored” specifically to the traffic conditions at that location.
2. Of particular interest are forms for (any of these forms may be useful on other projects):
 - Traffic Manager’s Daily Activity Report
 - Incident Management Report
 - Traffic Manager’s Daily Report of Traffic Control

.... Sample ONLY ...
Highway 1 (Johnston Cut) Project

1.21 Traffic Management Strategy

1.21.1 General Requirements

All traffic control measures shall be in accordance with these Special Provisions, the Traffic Control Manual for Work on Roadways (TCM) and Standard Specifications Section 194. Further to Article 61.06 of the Construction Agreement, in the case of conflict the TCM will prevail over Standard Specifications Section 194 and the publications cited therein.

Further to Article 61.13 of the Construction Agreement, Capitalized Terms used in this Clause will have the meaning ascribed in the Glossary of Terms, the TCM or the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads.

Further to Clause 1.2.3 - RESPONSIBILITY, in the TCM, the Contractor is assigned such responsibility and shall at all times make provision for traffic through the Work to a sufficiently high standard to ensure the convenience and safety of public, vehicular and pedestrian traffic, the safety of the workers on the Site and the protection of the works.

Further to Clause 1.4 - TRAFFIC CONTROL (WORK) ZONES, in the TCM, any one or more of the advance warning area, transition area, buffer space, work area and termination area of the traffic control Work Zone may be outside the Limits of Construction. This shall in no way diminish the Contractor's responsibility to meet the requirements of the TCM.

Further to Clause 1.5 - INSTALLATION, MAINTENANCE AND INSPECTION OF TRAFFIC CONTROL, in the TCM, construction signs, specific to an operation, shall be either removed or effectively covered so that their message is obscured whenever the operation is not in progress.

Sign supports for lane closure signs shall be "Windmaster" type or approved equivalent, complete with "High Level Warning Devices".

The Contractor shall provide portable changeable message signs (CMS's) and shall use the signs to provide advance notification of planned traffic pattern changes a minimum of one (1) week prior to the date of implementation, or as directed by the BCTFA Representative. Sign locations and messages shall be shown on the Traffic Control Plan. In addition, the Contractor shall use the CMS's to provide notification of incidents or unplanned traffic pattern changes, as deemed necessary by the BCTFA Representative.

Each portable CMS, when in operation, shall be a minimum of two (2) meters from the bottom of the sign display to the road surface, and shall be level and capable of pivoting for sighting purposes.

.... Sample ONLY ...
Highway 1 (Johnston Cut) Project

The specifications of the sign are as follows:

Sign unit	Yellow LED display
Sign display	3 lines with 8 characters per line
Character size	18 inches (450 mm)
Character matrix	5 x 7
Remote dial-up access	By cellular phone or equivalent

A full matrix sign may be used given that it has the display parameters noted above.

The Contractor shall provide the BCTFA Representative with appropriate and timely means to display and/or change messages on the CMS when the Contractor is not on Site.

The Contractor shall designate a Traffic Engineer who is registered to practice as a Professional Engineer in British Columbia and satisfies the requirements specified in Clause 1.21.8 of these Special Provisions.

The Contractor shall designate a qualified Traffic Manager (TM) who has the Contractor's authority to respond to traffic control requirements and who shall personally perform all the duties of the TM, in accordance with Special Provisions Clause 1.21.9.

The Contractor shall provide the BCTFA Representative with proof of currently valid certification by a body acceptable to the BCTFA of all Traffic Control Persons prior to them performing in that capacity.

1.21.2 Traffic Management Plans

1.21.2.1 General

The Contractor shall prepare the Traffic Management Plan in accordance with the Ministry definitions and guidelines provided in Appendix A. A Traffic Management Plan consists of four (4) types of sub-plans:

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

One of each sub-plan shall be prepared and submitted for Ministry review prior to the planned start of any Work. The initial Public Information Plan, Incident Management Plan and Implementation Plan shall each be prepared to address the general requirements of the entire Project. For each stage of the Work that affects traffic, the Contractor shall prepare a customized Traffic Control Plan that addresses stage-specific activities and requirements. For major staging events,

.... Sample ONLY ...
Highway 1 (Johnston Cut) Project

and if deemed necessary by the Ministry, the Contractor shall prepare stage-specific Public Information Plans and Incident Management Plans.

In addition, the Contractor shall prepare a weekly traffic control schedule that documents anticipated traffic control activities during the upcoming week. The schedule shall provide brief descriptions of the traffic control activity (e.g. lane closure, lane shift, detour), its location, approximate implementation date and duration. The schedule shall be provided to the BCTFA Representative on a weekly basis.

1.21.2.2 Traffic Control Plans

The Contractor shall prepare and submit detailed Traffic Control Plans (TCPs), complete with all required drawings and logistical information.

Each TCP shall be fully integrated with the Contractor's Construction Schedule, in accordance with Clause 1.18 of these Special Provisions. The TCP shall detail the Contractor's provision for all forms of traffic control during all operations required to construct the Work during the specified term of the Traffic Control Plan.

The Contractor shall not work on any operation affecting traffic without a current approved Traffic Control Plan. The Ministry will not be liable to the Contractor for the Ministry's acceptance of an approved Traffic Control Plan; this cannot under any circumstances be the basis of a claim by the Contractor. The Ministry does not approve Traffic Control Plans.

If the Contractor fails to provide for the safe passage and control of traffic or fails to correct forthwith an unsatisfactory condition upon being so directed, the BCTFA Representative will issue a Stop Work Order and any impediments to traffic shall be removed immediately. The Resume Work Order will not be issued until the BCTFA Representative is satisfied that the situation has been rectified and is safe for the road user.

The Contractor shall coordinate traffic control procedures with other contractors, municipalities and/or Ministry crews who are working in the vicinity of the Project in order to eliminate concurrent delays.

Refer to Appendix A for Ministry guidelines on the content of a typical Traffic Control Plan.

1.21.2.3 Public Information Plan

The Contractor shall consult with the BCTFA Representative to identify the major user groups affected by the Project. Major user groups may include any number or all of the following (and others as identified by the Ministry):

- emergency response services

.... Sample ONLY ...
Highway 1 (Johnston Cut) Project

- transit operations
- motorists
- cyclists
- pedestrians
- transport companies
- tour operators
- municipalities
- utility companies
- property owners
- contractors
- business owners
- schools, universities, hospitals and other institutions

The Contractor shall organize and implement a Public Information Plan to keep major user groups informed of planned traffic pattern changes, including but not limited to the following:

- detours
- lane shifts
- lane closures
- ramp closures
- access restrictions
- schedule changes

Procedures for disseminating information related to unplanned traffic pattern changes (e.g. due to incidents such as emergency repairs, accidents) shall be addressed by the Contractor in the Incident Management Plan.

The Contractor shall be responsible for all advance notification and arrangements required to inform major user groups of planned changes in traffic patterns caused by the Work.

The Ministry will designate a Communications Representative to act as sole spokesperson to the media on all Project-related issues. Maintaining good public relations is essential. The cooperation of the media in publicizing the existence of, and reasons for, traffic control changes can be of great assistance in keeping the motoring public well informed.

Relevant information with regard to the planned traffic pattern changes shall be provided to the Ministry's Communications Representative at least three (3) weeks prior to implementation. Arrangements for notification shall have prior approval of the BCTFA Representative. All media requests received by the Contractor shall be referred to the Ministry's Communications Representative.

Refer to Appendix A for Ministry guidelines on the content of a typical Public Information Plan.

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1.21.2.4 Incident Management Plan

The Contractor shall organize and implement an Incident Management Plan. The primary objectives of an Incident Management Plan are to facilitate incident response and move traffic safely and expeditiously through or around the incident. The Plan will specify how the Contractor will provide access for emergency vehicles and assistance to emergency response personnel. An incident includes, but is not limited to, motor vehicle accidents, emergency road repairs, disabled vehicles, and debris on the road. The immediate response to an emergency must by necessity make use of available devices and equipment.

Refer to Appendix A for Ministry guidelines on the content of a typical Incident Management Plan.

1.21.2.5 Implementation Plan

The Contractor shall submit an Implementation Plan that defines processes to ensure that the Traffic Control Plan, Public Information Plan, and Incident Management Plan are developed and implemented efficiently and appropriately.

Refer to Appendix A for Ministry guidelines on the content of a typical Implementation Plan.

1.21.2.6 Standards

Refer to Appendix A for the list of standard-setting documents, which shall apply to this Work.

1.21.2.7 Traffic Management Plan Review

Refer to Appendix A for Ministry requirements with regard to the submission and review of Traffic Management Plans.

1.21.3 Lane Closure/Reduction Windows

For each pre-approved lane closure, the Contractor shall notify the Provincial Highways Conditions Centre (PHCC) as follows:

- To confirm that the closure will take place, the Contractor shall advise the PHCC no later than 06:00 (i.e. 6:00 a.m.) on the day of the closure. (This is to ensure that the closure is entered on the Road Report.)
- The Contractor shall advise the PHCC upon actual installation of the closure and upon its removal.

.... Sample ONLY ...
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1.21.3.1 Highway No. 1 and ramps / Port Mann Bridge to 160th Street

The following lane closure/reduction windows shall be used by the Contractor as the basis for the development of the Traffic Control Plan. The Contractor will be allowed to implement lane closures during the following times:

Direction	Monday	Tuesday to Thursday	Friday	Saturday	Sunday
Eastbound	0100-0600 2300-2400	0000-0530 2300-2400	0000-0530	0030-0700	0100-0800
Westbound	0000-0500 2230-2400		0000-0500	0000-0600	0030-0800

Table 1

All other times are defined to be Peak Hours for the Project.

Trans Canada Highway

During Peak Hours:

- Two Westbound lanes shall be maintained at all times for general traffic.
- Three eastbound lanes shall be maintained at all times for general traffic between the Port Mann Bridge and station 3518+00.
- Two eastbound lanes shall be maintained at all times for general traffic between 3518+00 and station 3548+65.

Outside Peak Hours:

- One lane westbound shall be maintained at all times for general traffic.
- Two lanes eastbound shall be maintained at all times for general traffic between the Port Mann Bridge and station 3518+00.
- One lane eastbound shall be maintained at all times for general traffic between 3518+00 and station 3548+65.

All Other routes

During Peak Hours:

- All lanes open for general traffic.

Outside Peak Hours:

.... Sample ONLY ...
Highway 1 (Johnston Cut) Project

- Minimum single lane traffic in all directions.

When lane closures are in place, no interruptions to traffic flow (due to construction-related activities) will be allowed in the open lane at any time, except as noted in Special Provisions Clause 1.21.4.3 (Permissible Delays).

Construction vehicles using a closed traffic lane shall travel only in the normal direction of traffic flow unless expressly permitted in an approved Traffic Control Plan. During Peak Hours, the Contractor shall not engage in any activity that may significantly impede the flow of traffic.

The implementation of any detours and/or changes in traffic patterns shall be completed outside of Peak Hours.

Further to Article 10.00 in the Construction Agreement, the Contractor shall comply with all Municipal by-laws, at the Contractor's expense.

Since special events, statutory holidays and unforeseen circumstances can cause variations in traffic flow, the Contractor shall use good judgment when scheduling the hours of work and lane closure hours. The Peak Hours are deemed minimum and may be adjusted, as determined by the BCTFA Representative.

A Traffic Events Calendar, as prepared by the Ministry, is available from the PHCC as described in Special Provisions Clause 1.10. However, the Calendar may not be complete and other special events may arise beyond those listed. The Contractor shall take measures to identify and anticipate such special events and modify the Construction Schedule accordingly.

The lane closure restrictions set out on this clause are based on typical daily traffic flows. The hours may be adjusted at the discretion of the BCTFA Representative in consideration of circumstances such as, but not limited to, weekends, statutory holidays, special events, incidents or accidents.

1.21.3.2 Permissible Delays

Permissible delays must be approved by the BCTFA Representative and will only be considered outside Peak Hours. Permissible delays are categorized as follows:

- a) Minor Delays - Less than two (2) minutes in duration; for occasional interruption due to construction activities. These delays shall be coordinated with available breaks in the traffic flow.
- b) Major Delays - Maximum ten (10) minutes in duration; for occasional interruption of traffic for construction activities, between 0200 and 0400 hours only. Activities which are anticipated to require Major

.... Sample ONLY ...
Highway 1 (Johnston Cut) Project

Delays shall be indicated in a TCP; as well, traffic control measures to be deployed for these activities shall be specified the TCP.

The TM shall monitor queue lengths and, if traffic cannot be cleared prior to starting another delay, the TM shall adjust the duration of the delay and/or the interval between delays. If the BCTFA Representative determines that the traffic delays are excessive, the Contractor shall immediately cease construction activities and make all the travel lanes available to traffic as quickly as possible. Resumption of roadway operations shall be permitted as traffic levels dictate, and upon approval by the BCTFA Representative.

1.21.4 Design Criteria

1.21.4.1 Construction Detours

All detours and lane shifts for the Project shall be paved, with appropriate pavement markings and signs placed in accordance with the TCM. The Contractor shall consider the condition of the pavement used for detours and lane shifts, and its impact on the safety and function of the detour. Milled surfaces upon which traffic is to run shall be clean and allow adequate drainage.

The minimum requirements for construction detours are as follows:

Design Speed/Posted Speed	70 km/h or as approved by the Ministry
Design Vehicle	TS7
Maximum Grade	As existing
Maximum Superelevation	6%
Vertical Clearance	The lesser of 5.0 m or existing
Lane Width (westbound)	3.4m (minimum)
Lane Width (eastbound)	Fast lane - 3.1m (minimum) Slow lane – 3.5m (minimum) Auxiliary lane – 3.3m (minimum)
Shoulder (open)	1.0m (minimum), including 0.5m (minimum) paved.
Shoulder (closed by barrier)	0.3m (maximum) paved
Side Slopes	3.5:1 (maximum)

1.21.4.2 Barrier Requirements

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Highway 1 (Johnston Cut) Project

On Trans-Canada Highway and all other routes where physical separation exists prior to start of construction:

- Opposing directions of traffic shall be separated either by existing barrier or by a concrete median barrier at all times.
- All barrier used for temporary detours and lane shifts, or used for the protection of the Site, shall be continuous and inter-connected; traffic shall be adequately protected by terminals or impact attenuators to current Ministry standards (NCRHP Report 350)
- Reflectors on the face of the roadside barrier are required.

1.21.4.3 Signing Requirements

Supply, installation, maintenance and removal of all temporary (construction) signing shall be the responsibility of the Contractor. Locations and types of signing must be indicated on the TCP for Ministry approval at each detour stage.

1.21.5 Additional Design Considerations

1.21.5.1 Drop-offs

The Contractor shall conduct all operations to minimize any drop-offs (abrupt changes in roadway elevation) left exposed to traffic during non-working hours. Unless otherwise specified in the Traffic Control Plan, drop-offs left exposed to traffic during non-working hours shall be delineated as follows:

- 1) Drop-offs up to 60 millimetres, unless otherwise specified on the Traffic Control Plan, may remain exposed with appropriate traffic control devices alerting motorists of the condition. However, no drop-offs will be allowed between adjacent lanes of traffic. Unpaved trenches outside the Limits of Civil Construction will not be allowed outside of a protected work zone as indicated in Clause 4.09 of these Special Provisions.
- 2) Drop-offs more than 60 millimetres that are in the Roadway or Shoulder shall be delineated with appropriate traffic control devices and further delineated as indicated in 3(c) below.
- 3) Drop-offs more than 60 millimetres, but not more than 300 millimetres, that are not within the Roadway or Shoulder shall be delineated with appropriate traffic control devices and further delineated by having one of the following:
 - A wedge of compacted stable material (25 mm well-graded crushed base course aggregate or better) placed at a slope of 4:1 or flatter.

.... **Sample ONLY** ...

Highway 1 (Johnston Cut) Project

- Channelizing devices (Type 1 barricades, plastic safety drums, or other devices one (1) meter or more in height) placed along the traffic side of the drop-off and a new edge of pavement stripe placed a minimum of two (2) metres from the drop-off. Appropriate traffic control devices shall be placed in advance of and throughout the drop-off treatment.
 - Temporary concrete barrier or other approved barrier installed on the traffic side of the drop-off with 300 millimetres between the drop-off and the back of the barrier and a new edge of pavement stripe a minimum of 500 millimetres from the face of the barrier. An approved terminal, flare or impact attenuator will be required at the beginning of the section. For night use, the barrier shall have reflective markers and/or warning lights.
- 4) Drop-offs more than 300 millimetres not within the Roadway or Shoulder shall be delineated with appropriate traffic control devices and further delineated as indicated in 3(a), 3(b), or 3(c) if all of the following conditions are met:
- The drop-off is less than 600 millimetres,
 - The drop-off does not remain for more than three consecutive days,
 - The drop-off is not present on any Canadian Statutory/Civic Holidays and
 - The drop-off is only on one side of the Roadway.
- 5) Drop-offs more than 300 millimetres that are not within the Roadway or Shoulder and are not otherwise covered by item 4 above shall be delineated with appropriate traffic control devices and further delineated as indicated in 3(a) or 3(c).
- 6) Excavations within the Roadway shall be back-filled and paved to match the existing grade prior to returning the lane to traffic.

All areas of excavation and their proposed safety measures shall be shown on the Traffic Control Plan. See appendix "A" for Drop-off template.

1.21.5.2 Location and Storage of Materials and Equipment

Unless protected by barrier and/or attenuators, materials and equipment shall not be stored within six and one half (6.5) metres of the traveled portion of any Roadway.

1.21.5.3 Completed Sections of New Roadway

Sections of new Roadway which are completed prior to the physical completion of all the Work, but are not yet open to traffic, shall be delineated with flexible drums and Class 1 barricades in an alternating pattern every fifty (50) meters. Completed sections of the roadway may only be opened to traffic prior to physical completion of the Work for construction staging purposes.

.... Sample ONLY ...
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1.21.5.4 Snow and Ice Control

Provided that the BCTFA Representative is satisfied with the condition of all Disturbed Surfaces, the Ministry will provide snow and ice control and snow removal on the pavement of Roadways within the Site which are subject to maintenance by the Ministry and which are open to public traffic, subject to satisfactory coordination by the Contractor of its Work with the services provided by the Ministry's maintenance contractor. The provision of these services shall not relieve the Contractor of its responsibility for all other maintenance as required in Article 22.00 of the Construction Agreement.

1.21.6 Temporary Pavement Markings

Further to Section 2.2.1 of the TCM, the Contractor shall be responsible for the application and removal of all temporary pavement markings and reflective devices.

When traffic lanes have to be redefined for Long Duration Work (more than one daytime shift), the Contractor shall eradicate all redundant temporary or permanent pavement markings that are not required for the intended traffic patterns. The Contractor shall install alternative markings, which shall consist of paint supplemented with raised pavement markers as per the Ministry Pavement Marking Manual. All final pavement markings will be applied by the Ministry in accordance with the Drawings.

Notwithstanding subsection 194.13 of the Standard Specifications, the Contractor shall supply temporary pavement marking tape.

1.21.7 Traffic Engineer

The Contractor shall designate a Traffic Engineer with the following qualifications:

- Professional Engineer licensed to practice in BC; and,
- Preferred minimum of ten (10) years of relevant construction-related traffic engineering experience on freeway or high-volume urban roadway projects in Canada or the United States.

The Contractor shall provide the BCTFA Representative with the Traffic Engineer's c.v. for review and acceptance.

The duties of the Traffic Engineer shall include:

- Designing, signing and sealing of the TMP and all TCPs for review by the DHM or designate.
- Verifying that the approved or revised TCP is functioning as intended.

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- Attending regularly scheduled meetings with the Contractor and BCTFA Representative to discuss traffic control. In addition, the Traffic Engineer shall attend all Project meetings with stakeholders where traffic control is discussed.

1.21.8 Traffic Manager

The TM shall be on Site, shall have direct line authority over all of the Contractor's traffic control personnel and procedures on the Site and shall have no other duties. The Contractor shall not designate the Site Superintendent as the TM.

The duties of the Traffic Manager (TM) shall include:

- 1) Finalizing proposed traffic control measures with the Contractor's Traffic Engineer and directing the implementation of the approved TCP.
- 2) Ensuring that appropriate minor modifications are made to the approved TCP and approved by the Traffic Engineer if the specified traffic control measures are not achieving the desired effect. The TM shall mark-up the approved TCP to indicate all modifications, as installed, and maintain a complete record of all original and modified TCPs.
- 3) Directing all traffic control operations on the Site and coordinating with other stakeholders for any adjacent construction or maintenance operation.
- 4) Directing the Contractor's Public Information Plan and liaising with the BCTFA's Communication Representative as required.
- 5) Directing the Contractor's Incident Management Plan. The TM shall report immediately to the BCTFA Representative on traffic/construction incidents involving damage, injuries or fatalities, or on complaints from residents. The TM shall ensure that the Incident Management Report is accurately completed for traffic/construction incidents involving damage, injuries or fatalities. The form shall be submitted to the BCTFA Representative on the next working day. An example of a Ministry-approved Incident Management Report form is provided in Appendix A.
- 6) Directing the installation, maintenance and inspection of all traffic control measures, in accordance with Clause 1.5 of the TCM
- 7) Inspecting nighttime lighting and minimizing the impact of its glare on the traveling public.

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- 8) Monitoring queue lengths during active construction and implementing appropriate measures when such queues become excessive or as directed by the DHM or designate.
- 9) Documenting traffic control measures and activities in accordance with Clause 1.5.2 of the TCM (except that photo-logging is not required). This shall include completion of the following records:
 - TM Daily Activity Report
 - TM Daily Report of Traffic Control
 - Record of Traffic Control Equipment

Refer to Appendix A for details on the use of these forms and examples of acceptable forms.

- 10) Inspecting the condition of all temporary signs and pavement markings and ensuring that these are maintained in accordance with Section 1.5.2 of the TCM. In addition, for the temporary pavement markings, the TM is responsible for ensuring that these are maintained in accordance with guidelines specified in Appendix B.
- 11) Overseeing all requirements of the Contract which contribute to the convenience, safety, and orderly movement of vehicular and pedestrian traffic.
- 12) Attending weekly meetings with the Contractor and BCTFA Representative to discuss traffic control for the following week. In addition the TM shall attend all Project meetings with stakeholders where traffic control is discussed.
- 13) The TM shall be responsible for updating the following: BCTFA Representative; the Ministry's Provincial Highways Conditions Center (PHCC); the BCTFA's Communications Representative; the police, emergency services, transit operators, affected municipalities, directly affected property owners and businesses of specific incidents and commenting on the traffic management strategy as part of a Project-related meeting.
- 14) The TM shall submit a weekly report summarizing traffic control issues; number and nature of calls from the general public; complaints from residents; and, action(s) proposed or taken.

The Contractor shall identify alternate TMs who shall assume the duties of the assigned or primary TM in the event of that person's inability to perform. Such alternate TMs shall be adequately trained and qualified to the same degree as the primary TM.

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Traffic control management shall be provided by the TMs on-site on a 24 hours per day basis whenever there is active construction under way. During non-work periods, the TM shall be on-site within 45 minutes after notification. Within 45 minutes after notification, the TM shall commence with the implementation of appropriate traffic control measures as defined in the approved Traffic Management Plan. The TM shall have appropriate personnel, equipment, and material available at all times in order to expeditiously correct any deficiency in the traffic control set-up.

The Contractor shall provide a vehicle for every TM active on-site. The vehicle used by the TM shall be equipped with a roof or post-mounted flashing amber light visible for 360 degrees.

1.21.9 Obstruction of Traffic

It is a condition of the Agreement that the Contractor is solely responsible for ensuring that the flow of traffic is unimpeded by construction-related activities across the bridge in accordance with the requirements contained in these Special Provisions during the Term.

Except where otherwise specifically permitted either by the Agreement or by prior written permission of the BCTFA Representative, whenever the Contractor causes or permits, either through action or inaction, a traffic stoppage or any other unauthorized traffic delay in any part of the Site, in the form of a lane closure or a lane obstruction, the BCTFA will require the Contractor to pay a Traffic Disruption Charge.

The Traffic Disruption Charge payable by the Contractor shall be:

- (a) for lane closures or lane obstructions on the bridge during peak hours;
 - (i) \$1,500.00 per lane for the first (1st) fifteen (15) minutes or any portion thereof, and
 - (ii) \$3,000.00 per lane for the second (2nd) fifteen (15) minutes or any portion thereof and all subsequent fifteen (15) minutes or any portion thereof, and
- (b) for lane closures or lane obstructions on the TCH and ramps during non-peak hours, at fifty (50) percent of the above rates per lane.

The Province and the Contractor irrevocably agree that the aforementioned Traffic Disruption Charges relate directly to the performance of material conditions, covenants, or promises in the contract and are not to be construed by any party for any reason as punitive but as importing an assessment by mutual consent of the damages caused by the associated events.

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Where, in the opinion of the BCTFA Representative, an unauthorized lane closure or lane obstruction resulting in a Traffic Disruption Charge was due to an apparent deficiency in the Contractor's Traffic Control Plan, Incident Management Plan, or Construction Staging Plan, the BCTFA Representative may, without further notice, suspend otherwise scheduled and permitted Lane Closures until the apparent deficiency has been remedied to the satisfaction of the BCTFA Representative. The Contractor shall not be eligible for a Reimursable Delay nor an Extension of Time due to any suspensions arising from an obstruction of traffic.

1.21.10 Payment

The Lump Sum Price bid for Traffic Management during Construction, Item 1.02 shall be full compensation for all costs resulting from the foregoing requirements for the management of public traffic.

Payment under the Lump Sum will be made in increments as the work progresses, and is contingent on the initial and updated Traffic Control Plan being submitted to and approved by the BCTFA Representative. Progress payments will be made pro-rated on a monthly basis for the value of Work completed to that of the total awarded Contract Price. Any unpaid balance of the Lump Sum will be paid on the final progress estimate.

Payment under the Lump Sum, Mobilization, is contingent on the initial and updated Traffic Control Plan being submitted to and approved by the BCTFA Representative.

APPENDIX A

- Traffic Management -

A.1 DEFINITIONS

Further to Section 107 (Glossary of Terms) of the Standard Specifications, the following definitions shall apply for this Project:

Traffic Management Plan – A Traffic Management Plan (TMP) details a specific plan to implement the project's Traffic Management Strategy. A TMP is comprised of at least one of each of the following sub-plans: Traffic Control Plan, Public Information Plan, Incident Management Plan, and Implementation Plan. A TMP integrates these sub-plans into a single document that demonstrates an understanding of site-specific issues and project requirements. A TMP shall define a process for updating the plan throughout the project life cycle to address issues as they occur.

Traffic Management Strategy – A Traffic Management Strategy (TMS) defines the Ministry's project-specific traffic management requirements. A strategy is developed to ensure that project needs are identified and that plans are developed to address those needs over the project life cycle. For each individual project, a TMS identifies requirements for the following: Traffic Control Plan, Public Information Plan, Incident Management Plan, and Implementation Plan.

Traffic Control Plan – A Traffic Control Plan (TCP) is a combination of text and drawings that define specifically what traffic control measures will be provided for the project, how it will be implemented and on what schedule. A TCP shall be prepared for each unique stage of construction which affects traffic flow; on-site revisions to the approved TCP shall be documented on the TCP.

Incident Management Plan – An Incident Management Plan (IMP) defines a generalized approach for detecting incidents and managing response operations. The plan shall define priorities and procedures for detection and response actions that will restore traffic flow as quickly as possible. In addition, the IMP shall identify processes that are specific to 'Restricted Work Zones' or other unique sub-zones within the Work Zone. The IMP must define a process of regular review and analysis to identify actions that will enhance the Work Zone's safety and ease of use. An IMP shall be modified throughout the project life cycle to address issues as they occur.

Public Information Plan – A Public Information Plan (PIP) identifies actions and procedures to inform the travelling public, project stakeholders and Ministry of current traffic operations and planned changes to traffic operations. In addition, the PIP shall identify actions and procedures which are specific to selected staging events, such a weekend lane closure, which can be expected to have significant disruptive impacts on traffic flow. A Public Information Plan shall be modified throughout the project life cycle to address issues as they arise.

Implementation Plan – An Implementation Plan identifies processes and procedures to ensure that the TCP, IMP and PIP are developed, implemented, and revised efficiently and appropriately. Qualifications, duties and responsibilities of engineering, supervisory and

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management personnel responsible for implementing a Traffic Management Plan shall also be identified. The Implementation Plan shall be modified throughout the project life cycle to address issues as they occur.

Work Area – An area that contains the work activity and is closed to traffic and set aside for the exclusive occupation by workers, equipment and construction materials. Work areas may remain fixed in location or may move as work progresses.

Work Zone – As defined in the TCM.

A.2 TRAFFIC MANAGEMENT PLAN REQUIREMENTS

A.2.1 Traffic Control Plan

The custom Traffic Control Plan shall:

- identify proposed traffic delays or lane closure times
- identify anticipated implementation dates
- identify anticipated duration of each set-up
- include scale drawing(s) identifying:
 - alignment of detour
 - access point(s) for construction vehicles
 - accesses affected by the Work Zone or by traffic control devices
 - traveled lanes affected
 - location of restricted width lanes
 - temporary pavement markings (location, type)
 - temporary signing and delineation (location, type, typical spacing)
 - other traffic control devices (e.g. portable CMS, flashing arrow board, flasher, barricades) (state location, type)
 - placement of barrier
 - conflicting signs to be covered or temporarily removed or relocated
 - conflicting pavement markings to be removed or replaced
 - typical lane width, shoulder width, tapers, curve details (radii, superelevation, spiral lengths)
- identify any local roads used for a detour route
- identify the posted speed, design speed, design vehicle for each road segment used as a detour route
- identify location of Traffic Control Persons

Custom traffic control drawings shall:

- show traffic operations at all phases of the Project

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- place all traffic control devices in accordance with the standards contained in the TCM
- follow symbol conventions for identifying traffic control devices as per the TCM
- be sealed by the Contractor's Traffic Engineer

A.2.2 Public Information Plan

For lane closures, the Public Information Plan shall define a process to notify:

- the travelling public of scheduled traffic delays and project duration as soon as practical
- the travelling public about alternate routes

For detours or diversions, a Public Information Plan shall define a process to notify:

- major user groups of the relevant dates, duration and the anticipated delay at least two (2) weeks prior to start of work
- the travelling public of scheduled traffic delays and project duration at least two (2) weeks prior to the start of work
- the travelling public of alternate routes

For a road closure, a Public Information Plan shall define a process to notify:

- major user groups are aware of the planned closures at least three (3) weeks prior to the planned implementation dates
- the travelling public of scheduled traffic closures at least three (3) weeks prior to the first planned closure
- the travelling public of alternate routes

The defined processes shall specify the following:

- persons responsible for specific actions;
- proposed actions, including information dissemination techniques, media outlets to be used, geographical coverage, frequency/duration of coverage;
- the timetable for implementing the Plan; and,
- verification of effectiveness.

A.2.3 Incident Management Plan

An Incident Management Plan shall:

- identify types of traffic incidents (stalls, motor vehicle accidents, motor vehicle accidents with injuries, damage from falling objects, etc) that may occur in the Work Zone
- identify the duties and responsibilities of the TM and the Traffic Control Persons with respect to incident response operations

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- contain a contact list of emergency response agencies
- identify a procedure(s) to detect and verify incidents that occur within the Work Zone
- identify a procedure(s) to respond to incidents
- identify a procedure(s) to restore traffic flow around an incident site as quickly as possible
- identify a procedure(s) to clear the incident and restore pre-incident traffic operations as soon as possible
- identify a procedure(s) to inform the Ministry immediately of the following:
 - incident occurrence
 - response measures taken
 - clearance measures planned
 - estimated clearance time
 - actual incident clearance time
- identify a procedure(s) to inform major user groups and the travelling public of anticipated delays, estimated duration of the unplanned traffic pattern change, and, if applicable, alternate routes
- define a process to review incidents and propose modifications to the Traffic Management Plan that will enhance the Site's safety and ease of use

A.2.4 Implementation Plan

The Implementation Plan shall:

- identify the Traffic Engineer and state their qualifications, duties and responsibilities.
- identify the Traffic Manager (TM) and state their qualifications, duties and responsibilities.
- identify the Alternate TMs and state their qualifications, duties and responsibilities.
- identify traffic control personnel and show proof of certification.
- state the responsibilities of the Project Manager and Construction Superintendent with regard to the implementation of the Traffic Management Plan.
- identify the process by which specific personnel on the Contractor's team shall be trained on the implementation of the Traffic Management Plan.
- provide a list of key personnel on the Contractor's team and their respective daytime and emergency phone numbers (voice, fax), addresses (street, e-mail) including those of the TM, alternate TMs, Traffic Engineer, Project Manager, Construction Superintendent, and Safety Coordinator.
- describe the verification process that the Traffic Engineer and the TM shall undertake to ensure that the TCP is functioning as intended.

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- describe the Quality Control process that the TM shall undertake to ensure that the approved TCPs are implemented as designed or revised, as appropriate.
- document the inspection and monitoring processes for traffic control, including frequency of inspection, items to be inspected and forms to be used by the TM.

A.2.5 Standards

Traffic Management Plans shall be developed in accordance with standards defined in the latest versions of the following documents:

- MoT Traffic Control Manual for Work on Roadways
- MoT Standard Specifications Section 194
- MoT Electrical and Traffic Engineering Manual
- MoT Highway Engineering Design Manual
- TAC Geometric Design Guide for Canadian Roads.

A.2.6 Traffic Management Plan Review

The following time periods are required for plan review and approval:

- The Implementation Plan shall be submitted to the BCTFA Representative for review at least fifteen (15) working days prior to the start of any Works.
- The Public Information Plan shall be submitted to the BCTFA Representative for review at least fifteen (15) working days prior to the start of any Works.
- The Incident Management Plan shall be submitted to the BCTFA Representative at least ten (10) working days prior to the planned start of any Works.
- A Traffic Control Plan shall be submitted to the BCTFA Representative at least ten (10) working days prior to the planned start of any Works. The following conditions shall apply:
 - Any plan modifications shall be submitted to the BCTFA Representative at least ten (10) working days prior to any changes being made in the field.
 - A staged plan shall be submitted to BCTFA Representative for review at least ten (10) working days prior to implementation of a new stage.

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A.3 DOCUMENTATION OF TRAFFIC CONTROL

Further to Clause 1.21.9 of these Special Provisions, the TM shall document traffic control measures and activities by completing the following records:

TM Daily Activity Report

Description	The TM shall complete this report to summarize TM activities during each calendar day. Activities which shall be noted include but are not limited to, the following: installation, relocation or removal of traffic control devices; lane closures; alternating one-way traffic; incident response; project meetings; implementation of TCPs; etc.
Format	See attached sample form.
Frequency	The TM shall complete this report daily.
Distribution	Daily – BCTFA Representative, Construction Superintendent Weekly – Contractor’s Traffic Engineer

TM Daily Report of Traffic Control

Description	The TM shall complete this report to document individual lane closures implemented during the each calendar day
Format	See attached sample form.
Frequency	The TM shall complete this report daily.
Distribution	Daily – BCTFA Representative, Construction Superintendent Weekly – Contractor’s Traffic Engineer

Record of Traffic Control Equipment

Description	The TM shall keep an up-to-date record of all traffic control equipment that has been installed within the Work Zone. The TM shall provide as much detail as necessary to enable the DHM or designate to review the record and know the location and type of equipment that was in place at any time during the Contract. Traffic control equipment whose location shall be documented includes, but is not limited to, delineators, signs (including sign number or message), CMSs, flashing arrow boards and barricades.
Format	A scale drawing or text, with location specified by station
Frequency	The record must be updated each time construction-related traffic control devices are installed, moved or removed.
Distribution	To be provided to the BCFTA Representative as required.

Incident Management Report

Description	The TM shall complete this report to document the occurrence and nature of an incident and the response provided by the Contractor and emergency services.
Format	See attached sample form.
Frequency	For incidents which involve damage, injuries or fatalities.
Distribution	Next Working Day – BCTFA Representative, Construction Superintendent Weekly – Traffic Engineer



TRAFFIC MANAGER'S ACTIVITY REPORT

Project Number _____ Day _____ Hours _____ Date _____

Photos/Videos taken today for record Yes No

If yes, note locations:

SUMMARY OF TM ACTIVITIES

Contractor's Signature

Traffic Manager's Signature

Traffic Engineer's Signature

TRAFFIC ENGINEER'S COMMENTS

Daily copies to: Construction Superintendent
 BCTFA Representative

Weekly copies to: Traffic Engineer for review



Ministry of
Transportation

BRITISH
COLUMBIA

INCIDENT MANAGEMENT REPORT

LANE One Two Three Four

DIRECTION Eastbound Westbound

STATION _____

TIME Incident Occurred _____ Incident Cleared _____

DETAILS Number of Vehicles _____

Injuries Yes No Fatalities Yes No

Types of Vehicles _____

R.C.M.P. Attended Yes No R.C.M.P. File # _____

Ambulance Attended Yes No Fire Trucks Attended Yes No

DESCRIPTION OF INCIDENT

Traffic Manager's Signature

Daily copies to: Construction Superintendent
BCTFA Representative

Weekly copies to: Traffic Engineer for review



Ministry of
Transportation

TRAFFIC MANAGER'S DAILY REPORT

Date of Work: _____

Scheduled Events: _____

Location _____ Work Zone No. _____

Direction of Closure Eastbound Westbound

Type of Closure Lane # (1,2,3,4) Sidewalk Single Lane Alternating

Time Implemented _____ Cleared _____

Location _____ Work Zone No. _____

Direction of Closure Northbound Southbound

Type of Closure Lane # (1,2,3,4) Sidewalk Single Lane Alternating

Time Implemented _____ Cleared _____

COMMENTS:

Traffic Manager's Signature

Daily copies to: Construction Superintendent
BCTFA Representative

Weekly copies to: Traffic Engineer for review