

PART 1 - GENERAL

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| <u>1.1 Description</u> | .1 | This section is to provide traffic control as stipulated in the Department of Transportation and Works Traffic Control Manual (TCM). |
| | .2 | Given the nature of the highway, its critical transportation link, effect on motorists, etc. it is imperative that Park personnel be kept notified as to the number of construction areas, their locations, duration of work, etc. This information must be provided by the contractor to the Park Communications staff on an ongoing basis. |
| | .3 | A Traffic Control Plan must be approved by the Departmental Representative prior to commencing any work. Traffic Control Plan to be submitted prior to the pre-construction meeting. |
| | .4 | The Departmental Representative reserves the right to direct the contractor to reduce either the number or length of traffic control work areas during peak traffic volumes or when cumulative delays exceed the specified maximum. |
| <u>1.2 Related Work</u> | .1 | Section 01 11 00 - General Instructions. |
| | .2 | Section 01 35 29 - Health and Safety Requirements. |
| | .3 | Section 01 56 00 - Temporary Barriers and Enclosures. |
| <u>1.3 Reference Standard</u> | .1 | Government of Newfoundland and Labrador Department of Transportation and works, Highway Design Division.
.1 Traffic Control Manual (TCM), latest edition. |
| <u>1.4 Protection of Public Traffic</u> | .1 | Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out work or haul materials or equipment. |
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- .2 When working on travelled way:
 - .1 Place equipment in position to present minimum of interference and hazard to travelling public.
 - .2 Keep equipment units as close together as working conditions will permit and preferably on same side of travelled way.
 - .3 Do not leave equipment on travelled way overnight.
- .3 Do not close any lanes of roadway without approval of Departmental Representative. Before re routing traffic, erect suitable signs and devices in accordance with instructions contained in the TCM. Provide sufficient crushed gravel to ensure a smooth riding surface during work.
- .4 Keep travelled way well graded, free of pot holes and of sufficient width that required number of lanes of traffic may pass.
- .5 Ensure at least one (1) lane of alternating two-way traffic at all times.
- .6 When directed by Departmental Representative, provide well graded, detours or temporary roads to facilitate passage of traffic around restricted construction area. Provide and maintain signs and lights and maintain roadway.
- .7 Provide and maintain reasonable road access and egress to property fronting along or in vicinity of work under Contract unless approved otherwise by Departmental Representative.
- .8 All flag persons and traffic control personnel shall have successfully completed a traffic control training course approved by the Workplace Health, Safety and Compensation Commission of Newfoundland and Labrador. Proof of training for all persons shall be available on site at all times.

1.5 Informational and
Warning Devices

- .1 Provide and maintain signs and other devices required to indicate construction activities or other temporary and unusual conditions resulting from project work which may require road user response.
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- .2 All traffic signs are to be bilingual or symbolic and shall be Level 1 reflectivity.
- .3 Supply and erect signs, declinators, barricades and miscellaneous warning devices as specified in TCM.
- .4 Place signs and other devices in locations recommended in the TCM.
- .5 The contractor shall provide an Accredited Sign Supervisor to be on site at all times when active construction is taking place. The Accredited Traffic Control Sign Supervisor will be responsible to supervise the placement and dismantling of all temporary condition signs and devices that indicate to the road user that highway construction activity exist and also to ensure that proper traffic control procedures are carried out in accordance with the TCM. The Accredited Sign Supervisor is considered part of the contractor's supervision and administration staff and compensation for the provision this individual is considered incidental to the work.
- .6 A Traffic Control Plan must be approved by the Departmental Representative prior to commencing any work.
- .7 Continually maintain traffic control devices in use by:
 - .1 Checking signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
 - .2 Removing or covering signs which do not apply to conditions existing from day to day.

1.6 Portable Variable
Message Signs

- .1 General
 - .1 It is a requirement that electronic signage (trailer mounted) be employed at both ends of the work area, notifying the general public that construction will be occurring along with anticipated delay times, etc. Notification signage is critical for this project, given the traffic volumes and potential for accidents to occur.
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.2 Operating Characteristics

.1 The Portable Variable Message Signs (PVMS) shall exhibit the following operating characteristics while in use:

- .1 Light emitting diode (LED) technology or hybrid LED/Flip Disk Technology.
 - .2 Antiglare polycarbonate sheeting.
 - .3 Solar powered.
 - .4 Capable of operating for 7 consecutive days on battery power supply with solar panels disconnected.
 - .5 Shall include all hardware and software necessary to facilitate reliable local and remote sign control.
 - .6 Programmable (25 message sequence for one week duration).
 - .7 Capable of displaying a multiphase message with variable dwell times for each phase.
 - .8 Text of message shall not scroll or travel horizontally or vertically across the face of the sign.
 - .9 Capable of displaying 3 lines of 8 characters, each character being approximately 457 mm high.
 - .10 Each character matrix comprised of 35 pixels, 5 wide by 7 high.
 - .11 Message visible from 500 metres away in all ambient light conditions.
 - .12 Message legible from 50 m to 300 m away in all ambient light conditions.
 - .13 Ability to raise the bottom of the display board a minimum of 1.5 metres above ground level.
 - .14 Flat black background on the display area when the pixels are in the off position.
 - .15 Trailer painted orange or yellow.
 - .16 Capability to accurately level the sign and aim it towards oncoming traffic.
 - .17 Photo sensor array to enable the luminance of the sign to be controlled both automatically and manually in relation to ambient light levels.
 - .18 Locking device to prevent rotation of the sign in winds up to 10-km/hour, while the sign is in display mode.
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.3 Trailer Mounting

.1 The maximum dimensions of the Portable Variable Message Sign and trailer assembly while in display mode shall be as follows:

- .1 Maximum overall height = 4.5 metres.
- .2 Maximum overall width = 3.75 metres.
- .3 Maximum overall length = 5.5 metres.
- .4 Maximum gross unit weight = 2500 kilograms.

.4 Conspicuity Markings

.1 PVMS trailer assemblies shall require high reflectivity micro-prismatic fluorescent sheeting tape (or equivalent) (e.g. diamond grade or Type VII) (meeting ATSM standard E991 and ASTM E1247 for fluorescent materials). The reflectorized tape shall be of alternating, uniform white and orange or white and yellow sections. Sections of reflectorized tape shall be placed around the trailer frame, tongue or other outermost dimension, at uniform height and width such to reflect the light from the headlights of a vehicle approaching from any direction.

.2 PVSM sign assemblies shall require high reflectivity micro-prismatic fluorescent sheeting tape (or equivalent) (e.g. diamond grade or Type VII) ((meeting ATSM standard E991 and ASTM E1247 for fluorescent materials). The reflectorized tape shall be construction orange in colour, and 13 mm in width. The tape shall surround the outside of the sign assembly on all sides and be uniform distance from the outmost pixels.

1.7 Control of Public Traffic

- .1 Provide traffic control personnel who have valid provincial certification and are trained in accordance with and properly equipped as specified in the TCM, in following situations:
- .1 When public traffic is required to pass working vehicles or equipment which may block all or part of travelled roadway.
 - .2 When it is necessary to institute one way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.

.3 When workers or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.

.4 Where temporary protection is required while other traffic control devices are being erected or taken down.

.5 For emergency protection when other traffic control devices are not readily available.

.6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.

.2 All Traffic Control Personnel shall be equipped with portable radios of sufficient range to ensure continuous communication within the traffic control zone.

.3 All construction vehicles shall operate in accordance with and are subject to traffic control restrictions and operations in place on the project.

.4 In addition to traffic control during the normal hours of work, the contractor shall have a responsible person on site at all times to monitor that the traffic signage is working properly (including nights, weekends and holidays).

1.8 Traffic Management .1
Plan Requirement

Contractor to provide a Traffic Control plan, prior to construction, for approval by the Departmental Representative.

1.9 Operational .1
Requirements

Maintain existing conditions for traffic throughout period of contract except that, when required for construction under contract and when measures have been taken as specified herein and approved by Departmental Representative to protect and control public traffic, existing conditions for traffic may be restricted as follows:

.1 In accordance with TCM.

.2 Individual traffic control zone delay shall not exceed **10 minutes**.

- .2 Maintain existing conditions for traffic crossing right-of-way containing work except that, when required for construction under this Contract and when measures have been taken as specified herein and approved by Departmental Representative, to protect and control public traffic.