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Access Management: Synthesis of Practice

PTM-AMSP-E

This report includes the findings of an in-depth literature review of technical and local resources from across Canada, a case study review, a series of interviews with agencies and municipalities, and a survey of practitioners. While the foundations of many locally used resources are rooted in the Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads* (GDG) Chapter 8 principles, adaptations are commonly made to align access management practices to local contexts. While the review confirmed that the guidance in Chapter 8 was generally comprehensive, there were several emerging practices that warrant further consideration in a future update to Chapter 8. These practices include the following topics, discussed in more detail in this report:

Intersection functional area (interchanges and roundabouts)

Access spacing by classification and context

Strategies to reduce or consolidate accesses

Multimodal integration

Safety evaluation of access management strategies

In addition, the results of the surveys and interviews identified several additional areas of potential updates to Chapter 8, including a number of overlapping areas:

Safety considerations

Type of context and locational attributes

Multimodal integration

Operational requirements

Navigation

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2024

Free



Emerging Practice Briefing: Continuous Sidewalks and Bike Paths

EPB-CSBP-E

Continuous sidewalks and bike paths prioritize pedestrians and cyclists over turning motor vehicles at crossings of local streets.

The designs of continuous sidewalk and bike path treatments in Canada have varied, and this briefing provides a synthesis of the techniques used and lessons learned. It also identifies several examples and references. It is important to note that continuous sidewalks and bike paths are already used widely at residential and commercial driveway crossings and laneways. However, the purpose of this document is to specifically address their use at the intersection of two public rights-of way, where at least one is a local street.

This briefing does not represent technical guidance.

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Media type: PDF

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2023

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TAC Sign Patterns (2022)

PKG-TSPALL-B

TAC Sign Patterns (TSP) complements the *Manual of Uniform Traffic Control Devices for Canada* (MUTCDC). It encourages traffic control uniformity across Canada and compatibility throughout North America and provides users and manufacturers with accurate patterns to be used when producing traffic control signs. Previous editions of this product were known as TAC's *Sign Pattern Manual*.

It is available either in separate Parts, or as a Package. [View the list of signs in each Part](#)

Code	Description	Member	Regular
PKG-TSPALL-B	Package: TAC Sign Patterns – ALL PARTS (1-4)	\$350	\$465
PTM-TSP1REG-B	TAC Sign Patterns – PART 1 – Regulatory Signs	\$100	\$135
PTM-TSP2WARN-B	TAC Sign Patterns – PART 2 – Warning Signs	\$100	\$135
PTM-TSP3INFO-B	TAC Sign Patterns – PART 3 – Guide and Information Signs	\$100	\$135
PTM-TSP4TEMP-B	TAC Sign Patterns – PART 4 – Temporary Conditions Signs and Devices	\$100	\$135

Each Part of the TSP includes:

Electronic image files. Each sign is provided in three electronic file formats: AI, EPS, and PDF files. All of the signs are vector-based and are scalable without loss of quality.

A **user guide** that provides brief information on proper scaling and sign design.

All components are provided bilingually (i.e. include both English and French).

Users require commercially available software to open the files(e.g. Adobe Illustrator, Adobe Acrobat/Reader, Macromedia FreeHand, CorelDraw or other programs to import AI, EPS or PDF files). They are reminded to refer to the MUTCDC for guidance on proper sign selection as well as on the required methods and conditions for installation.

The **font used in the patterns**, FHWA Series 2000 Standard Edition or FHWA 2000EX Expanded Edition (includes accents and other special characters), series B, C, D, E, E(m), and F, is **not provided with the TAC Sign Patterns** and must be purchased separately from a supplier. The text in the provided sign patterns has been converted to outlines, therefore the font is only required to customize text or numerals on a standard sign.

These items are delivered using the same software as TAC's e-books, eVantage by VitalSource. Users will need to both **create an account and download this software.** After Bookstore checkout, customers will receive an order confirmation email and another email with both their license code and instructions to create their account and redeem their license code. After logging in and redeeming the code, the user guide will be available. Click the "resources" (paper clip) icon beside the cover of the user guide to download the sign pattern files. **There are NO REFUNDS provided after the license code has been redeemed.**

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Media type: Image files

2022

Member Price: \$ 350.00, Regular Price:
\$ 465.00



Managing and Enhancing Terrestrial Road Ecology

PTM-MTRE-E

Road ecology has developed into an established research and applied science discipline that offers mitigative practices and management approaches to address impacts to natural ecosystems, as well as to public safety and adjacent land use.

This synthesis identifies Beneficial Management Practices to help avoid, minimize or compensate for the direct and indirect effects of roads, across Canada's diverse geographic environments and road systems.

Media type: PDF

[Download](#)

2021

Free



Safety Performance of Bicycle Infrastructure in Canada (2020)

PTM-SPBI-E

Safety Performance of Bicycle Infrastructure in Canada characterizes the safety performance of various bicycle facility types to help Canadian practitioners evaluate the potential safety performance of new bicycle infrastructure. The report is designed as a resource document and is based on a comprehensive literature review, a series of local and international case studies, and jurisdictional and end-user surveys. It contains a facility selection flowchart that identifies issues to consider when selecting bicycle facilities and intersection treatments, and is accompanied by **separate technical appendices**.

Rationale: The increasing popularity of bicycling as a mode of travel in Canada is leading many jurisdictions to develop new bicycle infrastructure that better meets the safety and mobility needs of bicyclists. However, there is an overall lack of understanding regarding the safety performance of different types of bicycle facilities in the Canadian context.

The Transportation Association of Canada (TAC) gratefully acknowledges the project funding partners of Safety

Performance of Bicycle Infrastructure in Canada that provided financial support to both develop the report and distribute the final publication free of charge. These partners are listed in the document's Acknowledgments.

[Download the publication »](#)

[Download the technical appendices](#)

»

Media type: PDF

2020

Free



Pedestrian Crossing Control Guide (2018)

PTM-PCCG18-E

The *Pedestrian Crossing Control Guide* promotes uniformity of how pedestrian crossing controls are implemented in Canada. It encourages a holistic perspective to pedestrian crossing control by incorporating both numeric criteria and qualitative engineering judgement into a systematic approach to supporting decisions, implementation, monitoring and evaluation. This approach provides the flexibility needed to address unique local conditions.

The *Pedestrian Crossing Control Guide* is intended for use by those involved in the design, operation, and maintenance of the road system; it may also be of value to educators and students. The Guide includes a decision support tool to help identify the type of traffic control device that is most suitable for a location's cross section, vehicular exposure, and pedestrian demand.

The Guide is intended to augment the information about pedestrian crossing control devices and their applications contained in the *Manual of Uniform Traffic Control Devices for Canada* (MUTCDC). This is the third edition of the Pedestrian Crossing Control Guide, replacing the second edition which was published in 2012.

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Media type: eBook, Print

2018

Member Price: \$ 129.00, Regular Price:
\$ 169.00



Canadian Model Rules of the Road (2018)

PTM-RULES18-E

The *Canadian Model Rules of the Road* presents a generic set of traffic rules that road users must know and observe while using the road system. This 2018 edition replaces the one from 1996.

The document is a reference guide for professionals responsible for preparing legislation which governs the use of Canadian roadway facilities as well as practitioners who are responsible for implementing traffic control devices. As such, this document may assist practitioners in understanding how road users are expected to respond to various elements, including traffic control devices, passing, use of roadway, lanes, headway, right of way, pedestrians, turns, driver signals, special stops, speed restrictions, parking, alternate vehicles, bicycles, transit and other provisions.

[View the Table of Contents](#)

Media type: PDF

[Download](#)

2018

Free

Canadian Guide to Traffic Calming – Second Edition (2018)

PTM-TRAFCALM18-E



The *Canadian Guide to Traffic Calming* (Second Edition) presents traffic calming as a method to reduce the speed and/or volume of non-local traffic infiltrating into neighbourhoods. It explains principles and suggests a process for introducing and implementing traffic calming, and describes the applicability, effectiveness, and design principle for a wide range of traffic calming devices. The devices are categorized in terms of vertical deflection, horizontal deflection, roadway narrowing, surface treatment, pavement markings, access restriction, gateways, enforcement, education, shared space, and emerging technologies and measures.

The original *Canadian Guide to Neighbourhood Traffic Calming* was published in 1998. This second edition reflects changes in road conditions, attitudes toward vulnerable road users, and available technologies, and valuable experience regarding the efficacy of options. Changes and additions include:

Recognizing education and enforcement as valid, and/or preferred alternatives to physical measures;

Describing measures applicable to arterial roads and rural roads;

Adding traffic calming devices, some well-accepted and others not fully-proven but used with success and considered ready to be further tested and evaluated; and

Referencing performance outcomes where new information has become available since the first edition.

The Guide is a complete tool; each chapter has a specific and integrated intent and no chapter should be used independently from the rest of the Guide. It was created through a partnership between the Transportation Association of Canada and the Canadian Institute of Transportation Engineers (CITE).

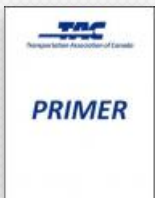
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Media type: eBook, Print
2018

Member Price: \$ 169.00, Regular Price:
\$ 225.00



Primer on Traffic Calming (2018)

PRM-TRAFCALM18-E

For more information on this subject, refer to the *Canadian Guide to Traffic Calming - Second Edition* (2018)

Media type: PDF
[Download](#)
2018

Free



Application Guidelines for Speed Display Devices (2017)

PTM-SDD-E

Application Guidelines for Speed Display Devices reflects best practices and provides guidance for speed display devices design and application in Canada. Developed through an extensive literature review, the Guidelines enable and encourage uniformity in the application of devices, and are best used in conjunction with the *Manual of Uniform Traffic Control Devices for Canada* (MUTCDC). They provide the practitioner with general guidelines, criteria, considerations and viable options upon which to build jurisdiction-specific policies and standards.

Dynamic speed display signs are being used in jurisdictions across Canada. The devices display the speed of passing vehicles, typically alongside the posted speed limit. Intended to increase driver awareness of speed limits and to provide instant feedback to motorists about the speed being travelled, the devices are an effective speed-reduction tool.

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Media type: eBook, Print
2017



Primer on Speed Display Devices (2017)

PRM-SDD-E

For more information on this subject, refer to *Application Guidelines for Speed Display Devices* (PTM-SDD-E).

Media type: PDF

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2017

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Geometric Design Guide for Canadian Roads: Chapter 1 - Design Philosophy

PTM-GEODES1-E

The *Geometric Design Guide for Canadian Roads* is a fundamental reference document for roadway design practitioners in Canada. It contributes to the consistent and safe development and expansion of regional, provincial, and national roadway and highway systems in Canada.

The 2017 Guide contains the current design and human factors research and practices for roadway geometric design. **Updates to technical content in chapters 2, 5, 7, 9 and 10 will be included as of August 19, 2019.** [Summary of Revisions](#)

The Guide provides guidance in developing design solutions that meet the needs of a range of users while addressing the context of local conditions and environments. Design guidelines for freeways, arterials, collectors, and local roads, in both urban and rural locations, are included as well as guidance for integrated bicycle and pedestrian design.

Chapter 1 – Design Philosophy provides an introduction to the design objectives, its evolving approach and the design domain concept utilized throughout the Guide. Guidance on benefit cost analysis, value engineering and design exceptions is also provided.

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The 10 chapters in the Geometric Design Guide for Canadian Roads are: 1 – Design Philosophy; 2 – Design Controls, Classification and Consistency; 3 – Alignment and Lane Configuration; 4 – Cross Section Elements; 5 – Bicycle Integrated Design; 6 – Pedestrian Integrated Design; 7 – Roadside Design; 8 – Access; 9 – Intersections; and 10 – Interchanges.

The Guide can be purchased in its entirety (package of chapters 1-10) or by separate chapters, and is available in either hard copy or e-book formats.

Full-time students providing proof of eligibility can buy the package for \$225 or each separate chapter for \$39 (e-book versions only). Email publications@tac-atc.ca your academic program name, course title, name of professor or dean, and copy of your student ID, for instructions. Call 613-736-1350 with questions.

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Media type: eBook, Print

2017

Member Price: \$ 59.00, Regular Price:
\$ 75.00

Geometric Design Guide for Canadian Roads: Chapter 7 - Roadside Design

PTM-GEODES7-E

The *Geometric Design Guide for Canadian Roads* is a fundamental reference document for roadway design practitioners in Canada. It contributes to the consistent and safe development and expansion of regional, provincial, and national roadway and highway systems in Canada.



The 2017 Guide contains the current design and human factors research and practices for roadway geometric design. **Updates to technical content in chapters 2, 5, 7, 9 and 10 will be included as of August 19, 2019.** [Summary of Revisions](#)

The Guide provides guidance in developing design solutions that meet the needs of a range of users while addressing the context of local conditions and environments. Design guidelines for freeways, arterials, collectors, and local roads, in both urban and rural locations, are included as well as guidance for integrated bicycle and pedestrian design.

Chapter 7 – Roadside Design introduces road safety concepts and the use of quantitative analysis to evaluate roadside safety design options. The fundamental concept of the clear zone is outlined, as is how the concept can be applied by providing appropriate cross section and drainage elements to allow for driver recovery. Mitigation and protection techniques to reduce the severity of fixed-object collisions with roadside furniture including signs, luminaires and traffic barriers are outlined. A discussion of roadside design in urban environments and for low volume roads is also included.

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Media type: eBook, Print
2017

Member Price: \$ 65.00, Regular Price:
\$ 82.00



Geometric Design Guide for Canadian Roads: Chapter 9 - Intersections

PTM-GEODES9-E

The *Geometric Design Guide for Canadian Roads* is a fundamental reference document for roadway design practitioners in Canada. It contributes to the consistent and safe development and expansion of regional, provincial, and national roadway and highway systems in Canada.

The 2017 Guide contains the current design and human factors research and practices for roadway geometric design. **Updates to technical content in chapters 2, 5, 7, 9 and 10 will be included as of August 19, 2019.** [Summary of Revisions](#)

The Guide provides guidance in developing design solutions that meet the needs of a range of users while addressing the context of local conditions and environments. Design guidelines for freeways, arterials, collectors, and local roads, in both urban and rural locations, are included as well as guidance for integrated bicycle and pedestrian design.

Chapter 9 – Intersections provides design guidance on intersections including roundabouts, innovative intersections and at-grade railroad crossings. A summary of relevant human factor aspects and an intersection planning and design process are provided. The design process identifies the relevant inputs and possible constraints. Guidelines on intersection spacing, layout and alignment and sight distance needs are summarized. Design details and guidance for simple intersections, channelization, tapers, auxiliary and turning lanes are outlined.

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Media type: eBook, Print
2017

Member Price: \$ 69.00, Regular Price:
\$ 89.00



Geometric Design Guide for Canadian Roads: Chapter 2 - Design Controls, Classification and Consistency

PTM-GEODES2-E

The *Geometric Design Guide for Canadian Roads* is a fundamental reference document for roadway design practitioners in Canada. It contributes to the consistent and safe development and expansion of regional, provincial, and national roadway and highway systems in Canada.

The 2017 Guide contains the current design and human factors research and practices for roadway geometric design. **Updates to technical content in chapters 2, 5, 7, 9 and 10 will be included as of August 19, 2019.** [Summary of Revisions](#)

The Guide provides guidance in developing design solutions that meet the needs of a range of users while addressing the context of local conditions and environments. Design guidelines for freeways, arterials, collectors, and local roads, in both urban and rural locations, are included as well as guidance for integrated bicycle and pedestrian design.

Chapter 2 – Design Controls, Classification and Consistency

discusses how design controls such as human factors, speed, design vehicles and sight lines influence geometric design;

demonstrates how to classify links in a road network to provide a hierarchical and readily-understood road system that appropriately serves different purposes; and

outlines the principles of providing consistency in cross section, operating speed and driver workload.

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Media type: eBook, Print
2017



Canadian Roundabout Design Guide (2017)

PTM-CRDG-E

The *Canadian Roundabout Design Guide* (CRDG) provides information and guidance related to the planning, design, construction, operation, maintenance and safety of roundabouts in Canada. The CRDG serves as a companion to the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDG), providing direction specific to the application and [design](#) of roundabouts. The reader is referred to the overarching document for general guidance on roadway geometric design.

The CRDG has been written and compiled based on reviews of national and international best practice documents and research, while considering the experience of Canadian jurisdictions with roundabouts already in service. It is organized into 10 chapters:

Chapter 1 – Introduction

Chapter 2 – Considerations in Roundabout Application

Chapter 3 – Planning

Chapter 4 – Operational Analysis

Chapter 5 – Safety

Chapter 6—Geometric Design

Chapter 7 – Traffic Control Devices

Chapter 8 – Illumination

Chapter 9 – Landscaping

Chapter 10 – Construction, Rehabilitation and Maintenance

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Media type: eBook, Print
2017

Member Price: \$ 169.00, Regular Price:
\$ 225.00



Roundabouts in Canada (2017)

PRM-CRDG-E

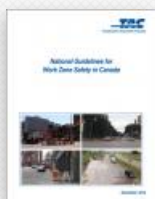
For more on this subject, refer to Canadian Roundabouts Design Guide (PTM-CRDG-E), available for purchase in the TAC Bookstore.

Media type: PDF

[Download](#)

2017

Free



National Guidelines for Work Zone Safety in Canada

PTM-WZS-E

National Guidelines for Work Zone Safety promotes and facilitates consistent work zone safety practices across Canada by providing information that addresses common work zone issues from human factors and safety perspectives.

The Guidelines were developed based on a comprehensive review of practices and literature, which are included as a complementary document to the Guidelines, and application of human factors and road safety engineering principles. They are intended for use by private contractors, consultants, utility companies, and provincial/municipal personnel, and provide a supplement to existing local manuals and potential content for creating or updating local manuals.

The Guidelines are organized into five parts:

Part A: Fundamental Concepts

Part B: Transportation Management Plans

Part C: Work Zone Road Safety Audits

Part D: Guidance for Temporary Traffic Control Plans

Part E: Temporary Traffic Control Layouts

This guide is not intended to be used as a stand-alone document on work zone safety; rather it should be used in conjunction with the Manual of Uniform Traffic Control Devices for Canada and/or local traffic control guidance.

[Visit the Bookstore to buy](#)



Media type: eBook, Print

2016

Member Price: \$ 149.00, Regular Price:
\$ 199.00



Primer on Work Zone Safety in Canada (2016)

PRM-WZS-E

For more on this subject, refer to *National Guidelines for Work Zone Safety in Canada* (PTM-WZS-E), available for purchase in the TAC Bookstore.

Media type: PDF

[Download](#)

2016

Free



Speed Management Guide: A Book in the Canadian Road Safety Engineering Handbook (CRaSH)

PTM-SMG-E

The *Speed Management Guide* provides information and tools to facilitate safer Canadian roadways through speed management. Since speed management is first and foremost a road safety issue, the focus of the Guide is on the safety aspects of speed.

The Guide is intended for engineers and those responsible for roadway planning, design, operation, and maintenance, with the focus on infrastructure methods of managing speeds. However, it is recognized that speed management practices transcend the bounds of engineering, and therefore the Guide includes discussion on enforcement, education, and encouragement measures, and the need for road authorities to collaborate with public health officials, enforcement personnel, and others with a stake in speed management.

Chapters are as follows: Introduction; Speed Management in Canada; The Impact of Speed on Safety; The Driver's Choice of Speed; Speed Management Policy; Setting Speed Limits; Speed and Road Design; and Engineering and Other Measures.

The Speed Management Guide is part of the Canadian Road Safety Engineering Handbook (CRaSH), a series of 10 titles and anticipated titles developed under the auspices of the Road Safety Standing Committee of the Chief Engineers' Council. Although each book is specifically designed to be self-contained, taken together they comprise a comprehensive, authoritative and highly complementary set of practical guidelines. Other books in the series provide information on subject areas such as road safety audits and applied human factors in road safety engineering.

[Visit the Bookstore to buy](#)



Media type: eBook, Print

2016

Member Price: \$ 169.00, Regular Price:
\$ 225.00



Snow Removal Equipment Visibility Guide

PTM-SREVG-E

The Snow Removal Equipment Visibility Guide (2015) provides information, analysis and testing to assist road authorities and winter maintenance service providers to make their snow removal equipment as visible as possible. It is hoped that establishing guidelines for this purpose will provide increased consistency in the appearance of snowplows and other snow removal equipment across Canada. Increased visibility of and consistency in the appearance of this equipment will enhance motorists' ability to detect, recognize and respond to snowplows which will, in turn, increase road safety.

Background

Snowplows operate in some of the most adverse winter driving conditions while clearing the roads of snow and ice for the safety of the motoring public. The efficient detection and recognition of snowplows is critical in helping motorists to respond appropriately to these vehicles, for the safety of all road users.

Media type: eBook, Print

2015

Member Price: \$ 39.00, Regular Price:
\$ 49.00



Digital and Projected Advertising Displays: Regulatory and road safety assessment guidelines

PTM-DPAD-E

Digital and Projected Advertising Displays: regulatory and road safety assessment guidelines is intended to help road safety professionals including engineers, technicians, and planners within jurisdictions:

- develop their own digital and projected advertising display (DPAD) regulations

- evaluate DPAD permit applications

- assess their potential road safety impact.

The guidelines are:

- applicable to all road types and are specific to road safety; they do not consider the aesthetic, nuisance, economic, or other factors associated with these types of signs

- based on a comprehensive literature review, survey of Canadian jurisdictions, review of sign by-laws, interviews with international jurisdictions, discussions with advertising and sign industry representatives, and the application of human factors and road safety engineering principles

- designed to encourage consistent practice across Canada and promote transparency, reasonableness, and flexibility in regulating and permitting DPADs

- founded on the five guiding principles of safety, consistency, specificity, evidence and pragmatism, which provide a framework for controlling DPADs without knowing precisely their impact on road safety.

Readers may also consult the primer, available free of charge, Digital and Projected Advertising Displays: Regulatory and road safety assessment guidelines (2015).

Background: Rapid changes to digital and projected advertising display (DPAD) technologies, and associated reductions in costs of these devices, have greatly increased requests for application approvals of installations of these devices near roadways. With the increase in light intensity, resolution, animation functions and size of these devices, road authorities are challenged with establishing appropriate application guidelines for this quickly-changing technology. Without appropriate regulations in place for these devices, more of them are being installed without understanding potential negative impacts to road users and this has resulted in growing concerns of road authorities and the motoring public of driver distraction and other potential safety related outcomes.

The print version of the guidelines document is accompanied by a CD ROM containing a knowledge base and environmental scan. The-book document contains the guidelines, knowledge base and environmental scan within the e-book format.

Errata

Media type: eBook, Print

2015



PRIMER: Digital and Projected Advertising Displays: Regulatory and Road Safety Assessment

PRM-DPAD-E

For more on this subject, refer to *Digital and Projected Advertising Displays: Regulatory and Road Safety Assessment Guidelines* (2015), PTM-DPAD-E, available for purchase in the TAC Bookstore.

Disponible en français : *NOTIONS ÉLÉMENTAIRES : L'affichage numérique et par projection de la publicité : Réglementation et évaluation de la sécurité routière* (2015)

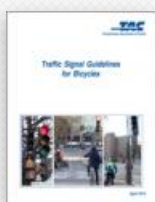
<http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/digitaldisplay-primer.pdf>

Media type: PDF

[Download](#)

2015

Free



Traffic Signal Guidelines for Bicycles

PTM-TSGB-E

Traffic Signal Guidelines for Bicycles helps practitioners plan, design and implement traffic signals for bicycles in Canada.

Bicycle signals are used to facilitate safer traffic flows of, and between, motor vehicles and bicycles. The signals may be installed at intersections where significant bicycle traffic volumes or conflicts exist.

Conventional traffic control signals provide safe and convenient passage for cyclists through the vast majority of intersections. However, there are circumstances in which the addition of bicycle-specific traffic signals can make cycling safer and more attractive. The objective of doing so isn't necessarily to give cyclists priority over other roadway users but rather to permit the safe and efficient shared use of intersections and roadways.

Media type: eBook, Print

2014

Member Price: \$ 59.00, Regular Price:
\$ 79.00



Climate Change and Road Safety: Projections Within Urban Areas

PTM-CCRS-E

Climate Change and Road Safety

documents the ways in which climate change may affect road safety in Canada,

estimates the magnitude of associated risks and identifies which motor vehicle collision types could be most affected by climate change and where they will take place in the future.

Using police reports of road collisions that occurred from 2000-2009, quantitative estimates of collision risk during different weather conditions are provided. These risk estimates are combined with projections of climate change to provide insights into the magnitude and nature of the safety risks associated with climate change in the future.

This publication represents the most comprehensive assessment of its kind to date.

Keywords: Environment; Accident Statistics; accident; analysis (math); collision; forecast; risk; risk assessment; safety; statistics; urban area; variability; weather

Media type: PDF

[Download](#)

2013

Free



PTM-PITPM-E

Guidelines for Planning and Implementation of Transit Priority Measures provides practitioners with the required tools and frameworks for selecting the appropriate transit priority measures (TPM) in their jurisdiction, based on identified needs.

In recent years there has been an increasing interest in sustainable transportation and surface transit systems. The reliability of transit systems have been a concern with growing congestion on roadways. To improve the performance of these systems, transit priority measures (TPM) have been implemented in various jurisdictions across Canada. The overall objective of TPM is to improve transit travel time, travel time reliability, and/or safety. A number of TPM applications, classified as regulatory, transit priority and physical measures can meet these objectives.

The development of these guidelines was based on a literature review identifying TPM and different processes used to select the most appropriate TPM as well as a current practices survey to gauge the experience in selection of the TPM in various jurisdictions in Canada.

The material gathered through the literature review generated the supporting document Guidelines for Planning and Implementation of Transit Priority Measures: Background Information Report, which is available through the Transportation Association of Canada (TAC) library.

Keywords: Bus, Planning, Priority (traffic), Public Transport, Safety, Sustainability, Textbook, Traffic Control, Traffic Lane, Traffic Regulations, Traffic Signal, Urban Area

Disponible en français : *Lignes directrices relatives à la planification et à la mise en oeuvre des mesures de priorité au transport en commun (2013)*

Media type: eBook, Print
2013

Member Price: \$ 119.00, Regular Price:
\$ 169.00



Applied Human Factors in Road Safety Guide: A Book in the Canadian Road Safety Engineering Handbook (CRaSH)

PTM-AHFRS-E

Applied Human Factors in Road Safety Guide is a practical guide for the application of human factors to road design and traffic operations, with a focus on road safety for a Canadian audience. The guide provides practitioners with a basic understanding of the road user capabilities, performance and behaviours, and also includes several practical tools for the application of human factors, including: design consistency, positive guidance, self-explaining roads, driver information load analysis and human factors axioms for road safety. The material is designed to be applicable to all road users including motorists, pedestrians and cyclists.

Applied Human Factors in Road Safety is intended to identify, define, and share good practices in road safety engineering in order to assist Canadian road authorities and road safety engineering practitioners in providing service to the public and addressing road safety issues at the local level. Implementing good road safety engineering practices will help achieve the targets set in local road safety plans as well as in Canada's Road Safety Vision.

The Guide is part of the Canadian Road Safety Engineering Handbook (CRaSH), a series of 10 titles and anticipated titles developed under the auspices of the Road Safety Standing Committee of the Chief Engineers' Council. Although each book is specifically designed to be self-contained, taken together they comprise a comprehensive, authoritative and highly complementary set of practical guidelines. Other books in the series provide information on subject areas such as road safety audits and speed management.

Disponible en français : *Guide d'application des facteurs humains en sécurité routière (2013)*

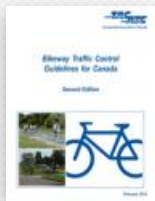
Media type: eBook, Print
2013

Member Price: \$ 169.00, Regular Price:
\$ 225.00

Bikeway Traffic Control Guidelines for Canada (Second Edition)

PTM-BIKEGD2-E

Bikeway Traffic Control Guidelines for Canada outlines the appropriate traffic control for the installation of signs and pavement markings on bikeways and contains diagrams of typical installations. Many of the guidelines may be applicable to both on-road and off-road bikeways.



This 118-page document was produced with the intention of providing guidance in the application of bicycle-related traffic control devices on bikeways that are within the public right of way. Signs and pavement markings must be designed carefully and installed properly to maximize their effectiveness. It is important that agencies responsible for the application of these guidelines use sound engineering judgement and principles when implementing bicycle-related traffic control devices.

These guidelines are expected to evolve over time, depending on prudent engineering judgement, experimentation and testing which is anticipated to take place in an effort to continue addressing the needs of cyclists in Canada.

Disponible en français : *Guide canadien de signalisation des voies cyclables - 2e édition (2012)*

Media type: eBook, Print
2012

Member Price: \$ 150.00, Regular Price:
\$ 199.00



Recommended Practices for LED-Embedded Traffic Signs (LETS)

PTM-LEDSEGN-E

This document provides guidelines for use of LED-embedded static traffic signs (LETS) on Canadian roads. The conspicuity of a static traffic sign may be increased by embedding light emitting diodes (LEDs) on the sign face. LEDs on the sign face may also serve to increase the legibility distance of the sign by highlighting the sign message or the outline of a uniquely shaped static sign. Due to the potential for LED-embedded traffic signs to be distracting, and because excessive use may decrease the effectiveness of similar static signs, LED-embedded traffic signs use should be limited.

To take advantage of the shape-recognition advantage provided by LETS, LETS should be restricted to STOP signs, YIELD signs, and the stop side of the STOP/SLOW paddle as these are uniquely shaped signs and are most easily recognized from shape alone.

The document is intended as a reference for traffic engineering practitioners and supplements the Manual of Uniform Traffic Control Devices for Canada (MUTCDC), which is the primary reference document for practitioners concerning traffic control devices design and use.

Disponible en français : *Pratiques recommandées pour les panneaux de signalisation à DEL (PSD) (2011)*

Media type: PDF
[Download](#)
2011

Free



Guidelines for the Network Screening of Collision-Prone Locations: A Book in the Canadian Road Safety Engineering Handbook (CRaSH)

PTM-CLLSN-E

Recognizing that collision-prone location (CPL) screenings depend on a number of variables as well as the needs and approach of each agency, *Guidelines for the Network Screening of Collision-Prone Locations* features recommended and interim screening methods including methodology, illustrations, and, where possible, implementation steps such as the development or acquisition of analytical tools. This publication will help practitioners and safety consultants use network screening analytical procedures and statistical concepts to identify and prioritize locations with the highest potential for safety improvement. Road authorities will also be able to implement state-of-the-art screening methods to modify and improve the safety performance of the network.

The document also provides guidance for agencies to select the methods that are compatible with their current resources and screening needs, as well as required data and resources to move from interim to advanced methods.

This Guide is part of the Canadian Road Safety Engineering Handbook (CRaSH), a series of 10 titles and anticipated titles developed under the auspices of the Road Safety Standing Committee of the Chief Engineers' Council. Although each book is specifically designed to be self-contained, taken together they comprise a comprehensive, authoritative and highly complementary set of practical guidelines. Other books in the series provide information on subject areas such as road safety audits and applied human factors in road safety engineering.

Background: To determine high-risk locations on a road network where motorists and other road users are killed or

seriously injured, some road authorities undertake scientific investigations such as CPL screening activities, black spot programs, or network analysis. These activities are intended to identify road infrastructure deficiencies and traffic operations and control features that may have contributed to the collisions and establish appropriate mitigation measures. This process is critical in developing effective road safety management programs in line with Canada's road safety vision.

Disponible en français : Lignes directrices pour l'identification des sites les plus problématiques du réseau routier (2011)

Media type: eBook, Print
2011

Member Price: \$ 169.00, Regular Price:
\$ 225.00



Winter Road Condition Terminology User Guide

PTM-CONDITION-E

This national guide presents winter road condition vocabulary and definitions tested with the driving public. The guide will help road operations staff to assess and report on road and visibility conditions in a consistent manner. It will also enable communications personnel and media to consistently report driving conditions across Canada.

Many provinces post winter road condition information on their websites; this information is also disseminated by media outlets. Due to inconsistencies in definitions and reporting of driving conditions across Canada, planning long trips can be challenging, particularly when crossing provincial / territorial boundaries.

Recognizing this need, Canadian road authorities have worked together to develop a new and consistent vocabulary as part of 511 systems being implemented by jurisdictions throughout the country. This system is designed to provide the travelling public with information on road conditions that is reported consistently in every province and territory.

Disponible en français : Lignes directrices relatives à la construction et à l'exploitation des routes d'hiver (2011)

Media type: PDF
[Download](#)
2011

Free



Road Safety Engineering Management Guide: A Book in the Canadian Road Safety Engineering Handbook (CRaSH)

PTM-RSHANDBOOK

The *Road Safety Engineering Management Guide* identifies, defines and shares good practices in road safety engineering to assist Canadian road authorities and engineering practitioners in servicing the public and addressing road safety issues at the local level. It presents fundamental concepts and principles related to managing road safety engineering.

The Guide outlines a definition of road safety, identifies industry-accepted measures of road safety and includes a brief discussion of collision data management. It provides a description of the basic requirements for managing road safety in an engineering context and identifies linkages to other road safety stakeholders. It also identifies how road safety engineering can be included at each stage of the project life cycle and the benefits of considering road safety early on, and defines good practice in road safety engineering and provides a recommended framework for practitioners to make informed decisions concerning road safety.

The *Road Safety Engineering Management Guide* is the anchor publication in the Canadian Road Safety Engineering Handbook (CRaSH), a series of 10 titles and anticipated titles developed under the auspices of the Road Safety Standing Committee of the Chief Engineers' Council. Although each book is specifically designed to be self-contained, taken together they comprise a comprehensive, authoritative and highly complementary set of practical guidelines. Other books in the series provide information on subject areas such as road safety audits and applied human factors in road safety engineering.

Media type: eBook, Print
2009

Member Price: \$ 149.00, Regular Price:
\$ 219.00



Guidelines for the Application and Implementation of the School Bus Stop Ahead (WC-9) Sign

PTM-SCHOOLBUS

Guidelines for Application and Implementation of the School Bus Stop Ahead (WC-9) Sign consolidates the best available information to develop national guidelines for the application and installation of warning devices in advance of school bus stops. In particular, guidelines are presented for the MUTCDC approved WC-9 sign.

Section A3.7.5 of the Manual of Uniform Traffic Control Devices for Canada (MUTCDC) introduces the School Bus Stop Ahead Sign (WC-9). This sign is meant to warn drivers that they are approaching a school bus stop when the sight distance to the bus stop is limited to less than the minimum stopping sight distance.

Other signs also exist that provide regulatory information or warning regarding school bus operations. However, no specific guidelines have been developed regarding their application and implementation. Various jurisdictions have developed their own practices, which has led to a lack of consistency in application and implementation across Canada. Due to the sensitive nature of school bus transportation, the signs have become overused in some jurisdictions, and the removal of unnecessary warning signs has been a challenge.

Media type: PDF

[Download](#)

2009

Free



Synthesis of Current Practices for Enhancing Traffic Signal Conspicuity

PTM-CONSPICUITY

Conspicuity refers to the attention-attracting quality of a signal and depends on the signal characteristics, the interaction of the signal with the background in which it is seen, and whether and where the driver expects to see it.

This synthesis includes a compilation of regulations regarding the installation of traffic signal displays from traffic signal guideline manuals and technical papers in North America, the United Kingdom and Australia, and current practices from across North America.

The following elements are discussed:

Placement (primary, secondary, auxiliary, pedestrian)

Signal head orientation (horizontal, vertical)

Lens type (halogen, LED, incandescent, etc.)

Lens shape (square, circle, diamond, arrow, etc.)

Lens size (300 mm, 200 mm, etc.) and lens orientation

Backboard colour

Use of reflective tape (use, colour, etc.)

Visors or hoods

Colour of backside of backboard

Media type: eBook, Print

2009

Member Price: \$ 79.00, Regular Price:
\$ 99.00



Guidelines for Understanding, Use and Implementation of Accessible Pedestrian Signals

PTM-ACCPED

This publication on accessible pedestrian signals (APS) contains guidelines that were prepared in response to:

the evolving needs of people with vision loss;

technological advances in the accessible pedestrian signals industry; and

the need to address the high degree of variability amongst APS installations in Canada.

The publication's objective is to act as a set of stand-alone national guidelines for the understanding, use and implementation of APS in Canada and to expand upon the APS provisions within the Manual of Uniform Traffic Control Devices for Canada.

The guidelines are intended to provide deploying agencies with practical information on public liaison, accessible pedestrian signals installation prioritization and design, installation, operations and maintenance. Above all, they are intended to provide the instructions necessary to meet the accessible pedestrian signal needs of people with vision loss.

Disponible en français : *Lignes directrices pour la compréhension, l'utilisation et la mise en oeuvre des signaux sonores pour piétons (2008)*

Media type: eBook, Print
2008

Member Price: \$ 59.00, Regular Price:
\$ 79.00



Guide for Lateral and Vertical Roadside Sign Placement

PTM-SIGNPLACE

This guide is designed to provide engineers and practitioners across Canada with both an understanding of the key factors that affect roadside sign placement and a tool to determine optimal practical roadside sign placement distances for new signs and existing signs that need to be replaced. The guidelines are intended to supplement the guidance for lateral and vertical placement of roadside sign set out in TAC's *Manual of Uniform Traffic Control Devices for Canada (MUTCDC)*.

The development of the guide involved surveying road agencies in Canadian and other North American jurisdictions regarding current practices and policies on roadside sign placement, conducting a literature review, examining and identifying the key factors and criteria that influence roadside sign placement, developing guidelines for determining optimal roadside sign placement distances, and testing these guidelines in various Canadian jurisdictions.

Disponible en français : *Guide relatif aux dégagements latéral et vertical des panneaux de signalisation (2008)*

Media type: eBook, Print
2008

Member Price: \$ 59.00, Regular Price:
\$ 79.00



School and Playground Areas and Zones: Guidelines for Application and Implementation

PTM-SCHOOL

School and Playground Areas and Zones: Guidelines for Application and Implementation is a uniform set of guidelines to cover school and playground areas and zones, as well as the application of traffic control devices for them. This publication:

Reviews current practices and existing warrants used in Canada for the application and implementation of school and playground areas and zones;

Provides direction for practitioners to objectively assess the need for school and playground areas and zones using sound principles and a transparent, repeatable process; and

Provides direction on the proper implementation of school and playground areas and zones, including the selection and location of the signs and pavement markings relative to school and playground properties, as well as for various road classifications.

The Guidelines, which are applicable in both rural and urban areas and to large and small road jurisdictions, are aimed at engineers and practitioners who require a tool to help them decide where school and playground areas and zones may be considered, to prioritize the locations with the greatest need and to implement them effectively.

The Guidelines publication is intended to be one objective tool for assessing the need for school and playground areas and zones. Road jurisdictions will also want to consider other factors such as stakeholder concerns, sound engineering judgment and local procedures or policies, when considering the use of school and playground areas and zones as a traffic safety tool. The Guidelines are intended to support and supplement TAC's *Manual of Uniform Traffic Control Devices for Canada (MUTCDC)*.

Disponible en français : *Aires et zones scolaires et de terrains de jeux (2006)*

Media type: eBook, Print
2006

Member Price: \$ 69.00, Regular Price:
\$ 99.00



Guide for the Design of Roadway Lighting - Design Examples

TOOLS-GDRW

Design examples of lighting installations, site plans, wiring documents, elevations, street lighting, pathway lighting, parking lot lighting, etc.

Media type: PDF

[Download](#)

2006

Free



Guide for the Design of Roadway Lighting

PTM-LIGHTING06

This Guide is intended to promote uniformity in lighting across Canada by providing guidance in the planning and design of roadway lighting and related outdoor lighting systems. The publication is divided into two major sections - Fundamentals and Design:

1) "Fundamentals" contains information on lighting theory, obtrusive light, the planning and design process, standards and codes, calculations and the use of computer software in roadway design and maintenance.

2) "Design" applies the principles and information presented in the first section to specific facilities that may require lighting, such as roadways, interchanges, intersections, roundabouts and tunnels. Also included are off-road facilities such as pedestrian and bicycle pathways, weigh scales, rest areas and road signs. This section also provides guidelines for streetscapes, temporary roadway lighting and work zone lighting for road construction areas.

The Guide offers warranting criteria for each roadway application, with the warrants provided as a point-score system, a narrative definition or a combination of both. In addition, the Guide covers a number other related topics. It emphasizes that roadway lighting, if properly designed, installed and maintained, should reduce vehicle collisions, improve safety for cyclists and pedestrians and enhance personal security. It also discusses ongoing trends in the development of more energy-efficient light sources, as well as the need to consider alternatives to lighting.

\$100 from the sale of each Guide is placed in a designated TAC reserve fund to support future updates and revisions of the Guide.

[Errata](#)

Disponible en français : *Guide de conception des systèmes d'éclairage routier*(2006)

Media type: eBook, Print
2006

Member Price: \$ 399.00, Regular Price:
\$ 599.00



Synthesis of Practices for Work Zone Speed Management

PTM-WORKZONE

Speeding in work zones is one of the most common traffic violations observed by road builders and road maintenance crews. It creates an unsafe environment for road workers and all types of road users.

Synthesis of Practices for Work Zone Speed Management is intended to help address this situation by reviewing work zone speed management efforts in Canada and the United States. The report provides an overview of technologies and methods for managing speed in work zones, with topics ranging from posted speed limit reductions and narrowing lanes to portable variable message signs and enforcement. In addition, the report discusses other methods for speed management, including merge control, driver and worker education, and real-time traffic information systems. The report also provides a number of conclusions and recommendations based on the synthesis, which identify some of the key problems and solutions.

[Download the free PDF](#)[Download the Excel spreadsheet](#)

Media type: PDF

2005

Free



Advance Warning Flashers: Guidelines for Application and Installation

PTM-AWF

Until this guide was released, no set practice or uniform guide for the application and implementation of Advanced Warning Flashers (AWFs) existed in Canada. As a result, there was a wide range of practice in the use of AWFs across the country. TAC was interested in consolidating the best available knowledge and developing a national guideline for the application and installation of AWFs.

This document (plus six appendices) provides the following information:

A review, evaluation and summary of literature;

A determination of the advantages and disadvantages of AWFs;

A review of the Manual of Uniform Traffic Control Devices for Canada (MUTCDC) and application and installation examples of AWFs in Canada;

A review of current North American practices regarding AWF warrants and guidelines;

The development of a national guide for applying and installing AWFs across Canada; and

An identification of research gaps and the development of a suggested research plan.

It also offers the following installation guidelines at locations meriting an AWF:

Location Relative to Stop Line;

Timing Relative to Start of Intergreen Phase;

Size and Content of the Traffic Sign and,

Placement Relative to Number of Lanes.

Users should note, however, that the report focuses on dynamic systems interconnected to traffic signal operations and does not include continuously flashing signs or beacons.

Media type: eBook, Print

2005

Member Price: \$ 69.00, Regular Price:
\$ 99.00



Synthesis of Practices for the Implementation of Centreline Rumble Strips

PTM-CENTER-RS

Rumble strips are raised or grooved patterns installed on the road surface to provide an auditory warning (rumbling sound) and a physical vibration to alert drivers that they are leaving the travel lane.

Centreline rumble strips (CRS) are applied along the centre of undivided roadways and generally used to prevent head-on collisions. The purpose of this publication is to review and synthesize current literature and practices on CRS's in North America and internationally and to recommend an appropriate update to TAC's Geometric Design Guide for Canadian Roads.

The report:

Reviews current practices, including design elements and documented issues;

Outlines conclusions based on the literature, including recommendations for design elements and application guidelines;

Presents potential future research topics; and

Provides appendices containing design drawings from several jurisdictions and the provincial and state CRS policy documents reviewed.

Media type: PDF

[Download](#)

2005

Free



Best Practice Guidelines for the Design and Application of Transverse Rumble Strips

PTM-TRANS-RS

Rumble strips are raised or grooved patterns installed on the road surface to provide an auditory warning (rumbling sound) and a physical vibration to alert drivers that they are leaving the travel lane.

Transverse rumble strips (TRS) are used to warn drivers of an imminent and unusual change in the driving environment that requires greater driver awareness, such as approaches to stop controlled intersections, roundabouts, work zones, etc.

This report addressed an identified need for cohesive guidelines that could be applied on a national level, and :

Describes the background knowledge about the use of TRS in North America and the United Kingdom;

Guides the user through a network level screening for the identification of candidate sites for the installation of TRS treatments;

Focuses on the selected site assessment process, design configurations, installation, maintenance, environmental impact and costs of permanent TRS installations;

Summarizes the key findings and provides conclusions; and

Provides appendices offering the survey questions and summary of results, findings from the literature review and design configurations from different agencies.

Disponible en français : *Lignes directrices sur les bonnes pratiques de conception et de mise en place de bandes d'alerte transversales (2005)*

Media type: eBook, Print

2005

Member Price: \$ 59.00, Regular Price:
\$ 79.00



Canadian Guide to In-service Road Safety Reviews: A Book in the Canadian Road Safety Engineering Handbook (CRaSH)

PTM-INSERVICE

The *Canadian Guide to In-service Road Safety Reviews* is a practical guide for conducting reviews on existing roads, based on the current experience and expertise in Canada and internationally. A companion guide to TAC's *Canadian Road Safety Audit Guide*, this publication provides guidelines to traffic practitioners on how to upgrade the operational and physical characteristics of existing in-service roads to be more compatible with current traffic conditions and safety knowledge.

The Guide is divided into the following sections: Introduction; Safety Management Systems; Data Management; Network Screening; Engineering Analysis, Countermeasures; Evaluating Road Safety Improvements; and Getting Started.

The Guide would be of greatest interest to those individuals responsible for commissioning and conducting in-service road safety studies.

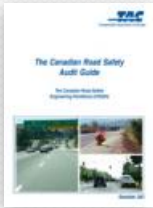
The *Canadian Guide to In-service Road Safety Reviews* is part of the Canadian Road Safety Engineering Handbook (CRaSH), a series of 10 titles and anticipated titles developed under the auspices of the Road Safety Standing Committee of the Chief Engineers' Council. Although each book is specifically designed to be self-contained, taken together they comprise a comprehensive, authoritative and highly complementary set of practical guidelines. Other books in the series provide information on subject areas such as speed management and applied human factors in road safety engineering.

Disponible en français : *Guide des études de sécurité des routes en service (2004)*

Media type: eBook, Print

2004

Member Price: \$ 169.00, Regular Price:



The Canadian Road Safety Audit Guide: A Book in the Canadian Road Safety Engineering Handbook (CRaSH)

PTM-CRSAG

This practical work is a comprehensive review of the safety audit process intended for road authorities, consultants and other interested groups. This publication contains chapters on basic road safety audit concepts, procedures, conducting audits, audit teams and pilot programs. Appendices include case studies, further reading suggestions and an audit prompt list.

The *Canadian Road Safety Audit Guide* is part of the Canadian Road Safety Engineering Handbook (CRaSH), a series of 10 titles and anticipated titles developed under the auspices of the Road Safety Standing Committee of the Chief Engineers' Council. Although each book is specifically designed to be self-contained, taken together they comprise a comprehensive, authoritative and highly complementary set of practical guidelines. Other books in the series provide information on subject areas such as speed management and applied human factors in road safety engineering.

Order together with *Canadian Guide to In-service Road Safety Reviews* using the code PTM-CRSAG-SET and receive a discounted price.

Media type: eBook, Print
2001

Member Price: \$ 150.00, Regular Price:
\$ 199.00



Illumination of Isolated Rural Intersections

PTM-IIIRI

Illumination of Isolated Rural Intersections is an update to the illumination practices found in TAC's 1983 Guide for the Design of Roadway Lighting.

Existing and/or proposed lighting warrants and practices of all Canadian provinces, the TAC warrant and three U.S. states are reviewed in order to develop a Canadian warrant for illumination of isolated rural intersections. The warrant is based on Geometric, Operational, Environmental and Collision factors. The critical factors determining the need for illumination are traffic volumes, night-time collisions attributable to lack of lighting and the extent of raised channelization.

The warrant indicates whether full intersection lighting, partial lighting or delineation lighting is needed. Full intersection lighting denotes illumination covering an intersection in a uniform manner over the traveled portion of the roadway. Partial lighting is the illumination of key decision areas, potential conflict points, and/or hazards in and on the approach to an intersection. The illumination of vehicles on a cross street or median crossing, or lighting that marks an intersection location for approaching traffic, is referred to as sentry or delineation lighting.

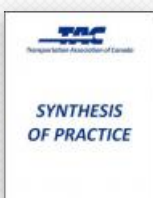
The warrant provides a method for selecting and prioritizing intersections at which lighting will be beneficial and identifies an appropriate lighting system. Layouts for partial and delineation lighting concentrate on illumination of the main traffic conflict areas with additional lighting in spot areas for potential hazards. Also discussed are the safety benefits of lighting at rural intersections and other intersection safety measures. Examples of various applications of the warrant are included. 25 p. + appendices

[Visit the Bookstore to buy](#)



Media type: Print
2001

Member Price: \$ 49.00, Regular Price:
\$ 69.00



Best Practices for the Implementation of Shoulder and Centreline Rumble Strips

PTS-RUMBLE

Synthesis of Practice No. 8

A number of Canadian provinces have developed guidelines and policies for the implementation of shoulder rumble strips. Alberta has implemented centreline rumble strips. This document provides a summary of current practices and would be of particular use to agencies looking to develop local guidelines and policies.

For ease of use, the Executive Summary has been designed to be a quick reference tool, providing an overview of the best practices and key recommendations.

<http://tac-atc.ca/sites/tac-atc.ca/files/site/pts-rumble.pdf>

Media type: PDF

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2001

Free

Listing 1 - 47 of 47 Results
