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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

Rationale

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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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Vision Zero and the Safe System Approach: A Primer for Canada (2023)

PRM-VZSS-E

Road safety is receiving more global attention than ever, with the Second Decade of Action for Road Safety being declared in 2020 by the World Health Organization and the United Nations.

Canadian roads saw 1,745 fatalities and 7,868 serious injuries in 2020, or an average of five deaths and 22 serious injuries every day that impacted families and communities across the country. In response to this unacceptable toll, Canada's Road Safety Strategy 2025 adopts the Safe System Approach.3 Many provinces, territories and municipalities are also pursuing similar agendas. The objectives of this primer are to establish clear definitions and principles for Vision Zero and the Safe System Approach, to promote greater understanding of these concepts, and to support the development, identification and sharing of Canadian best practices.

Download the free primer »

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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

Developing Highly Qualified Personnel for an Era of Connected and Automated Vehicles
PTM-DHQP-E
Developing Highly Qualified Personnel for an Era of Connected and Automated Vehicles identifies key trends in technology and mobility over the coming 20 years and suggests skillsets that road authorities will need to develop. It examines current measures to educate and train HQP in Canada, inventories key gaps, and recommends a comprehensive action plan that focuses on educating the future transportation workforce, training the existing transportation workforce, and improving human resources practices and agency governance.

The publication will be of interest to organizations including road authorities, post-secondary institutions and instructors, professional and engineering licensing bodies, workforce development agencies, research bodies, and private companies.

The report is supplemented by **two technical appendices (combined) under separate cover**. Appendix A details the literature review discussed in Chapter 2, and Appendix B details the engagement process with road authorities discussed in Chapter 3.

View the table of contents.

A French version of this title is expected later in 2022.

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2022

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TAC Publication Primer: Evaluating Soil and Material Stabilization Products
PRM-ESMSP-E
The Transportation Association of Canada (TAC) has released a Publication Primer on Evaluating Soil and Material Stabilization Products. For more information on the subject, refer to the recently-released national guideline Guide to Evaluating Soil and Material Stabilization Products, which is available for purchase in the TAC Bookstore.

Media type: PDF
Download
2022

Free

Guide to Evaluating Soil and Material Stabilization Products

PTM-ESMSP-E

Guide to Evaluating Soil and Material Stabilization Products addresses the stabilization of roadway pavement structures and focuses on four main types of stabilization processes (mechanical, cementitious, asphalt, and other chemical). It helps readers identify and understand soil and material stabilization products and processes used across Canada and internationally, with a look at their optimal applications and performance. The guide also provides a common framework for agencies to follow in evaluating the engineering and environmental suitability of stabilization products for road construction, and includes a product application form to be completed by suppliers or contractors.

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Download the Supplier/Contractor Application Form (fillable PDF) »

Rationale: Stabilizing poor soils during road construction, rather than replacing them, has become common practice for several important reasons. Numerous soil and material stabilization products are commercially available, and new products emerge regularly. Because conditions vary widely across Canada, it is important that road owners evaluate the suitability of soil and material stabilization products – especially those that are new to market – before approving them for local use. Local approaches to evaluation and approval have varied widely, and the introduction of a clear and consistent process benefits product suppliers and contractors, as well as road designers and owners.

Cette publication est disponible en français.

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Media type: eBook, Print
2022

Member Price: $ 119.00, Regular Price: $ 149.00

Connected and Automated Vehicles: A Primer for Canadian Municipalities (2022 update)

PRM-CAV-E

Connected and Automated Vehicles: A Primer for Canadian Municipalities **was originally published in January 2021.** It provides a high-level overview of connected and automated vehicles (CAVs), addresses myths and offers guidance to help municipal stakeholders make informed decisions.

From making transportation safer to transforming transportation networks, development patterns, businesses and our daily lives, CAVs will have far-reaching impacts. Despite the many claims that have been made, there is still much uncertainty surrounding CAVs, including how and when this technology will be commercially deployed, and the benefits and drawbacks of CAVs for a city's transportation network, economy and society as a whole.

Ce document est disponible en français.

Media type: PDF
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2022

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Guide to Utility Coordination on Public-Private Partnership (P3) Projects (2021)

PTM-UCP3P-E

As road rights-of-way have become more crowded and complex, the lack of effective utility coordination can quickly lead to increased costs and decreased efficiency. ***Guide to Utility Coordination on Public-Private Partnership (P3) Projects*** aims to improve utility coordination on P3 projects by helping project stakeholders create efficient and consistent processes for utility relocations. Public and private agencies with an existing coordination process can use the guide to ensure quality and consistency. For agencies without an existing process, it offers a template that they can customize.

The guide describes the step-by-step coordination of utilities through the five phases of Planning, Request for Proposal (RFP) Documentation Preparation, In-Market Design, Project Implementation, and Post-Construction. An accompanying flow chart summarizes the five phases presented in the guide.

View the Table of Contents

Guide to Utility Coordination on Public-Private Partnership (P3) Projects was developed by a team of 12 volunteers from TAC's Public Utilities Management Subcommittee. Free distribution of the guide in PDF format has been made possible by the financial support of the following organizations:

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2021

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Performance-Based Decision Making for Asset Management: Lessons Learned and Practitioner Toolkit (2021)

PTM-PBDM-E

Transportation agencies are increasingly required to make investments using cross-asset trade-offs and optimization methods. These performance-based approaches to decision making can support desired outcomes while encouraging fiscal responsibility, accountability and transparency in governance.

There is still much to learn about performance-based decision making techniques, and many agencies seek examples and practical tools. This report helps close that gap by synthesizing lessons learned, presenting several case studies, and providing a toolkit to help practitioners optimize asset management decisions.

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This publication is available in French.

Media type: PDF
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2021

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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.

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2021

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PACKAGE: Manual of Uniform Traffic Control Devices for Canada, Sixth Edition - one print & one e-book

PKG-MUTCDC21-E

This package bundles one print copy and one e-book copy of the *Manual of Uniform Traffic Control Devices for Canada, Sixth Edition* (2021) at a special price. Included are:

PTM-MUTCDC21-E: a print format copy packaged in a three-ring binder.

PTM-MUTCDC21-E-EBK: an e-book format copy. TAC's e-books are proprietary digital files, not a PDF, accessed through VitalSource software downloaded to desktop or mobile devices, OR a VitalSource Bookshelf online account (first 2 years only). Read our FAQs to learn about e-books, the limits of their use by different devices or people, and their general functionality.

Visit the descriptions for each individual item code to learn more about the Manual itself.

TAC offers a separate *Sign Pattern Manual* to support the accurate and consistent production of road signs in the MUTCDC. It was updated in 2022 to complement the Sixth Edition.

Visit the dedicated MUTCDC webpage for more information.

TAC is looking forward to providing the French version, «*Manuel canadien de la signalisation routière, 6e édition*» in the coming months.

Visit the Bookstore to buy »

Media type: eBook, Print
2021

Member Price: $ 925.00, Regular Price: $ 1,175.00

Manual of Uniform Traffic Control Devices for Canada, Sixth Edition

PTM-MUTCDC21-E

The *Manual of Uniform Traffic Control Devices for Canada* (MUTCDC) is an essential tool for professionals involved in traffic management and control. It is a toolbox of road signs, traffic signals, pavement markings and other devices that communicate to pedestrians, cyclists, motor vehicle drivers and other road users about important regulations, roadway characteristics, potential hazards and temporary conditions. It guides the use of those traffic control devices to support the safe and efficient movement of people and goods, and helps Canadian road authorities apply them in a consistent and harmonized manner which is an important factor in road safety.

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The MUTCDC is packaged in a three-ring binder.

TAC offers a separate *Sign Pattern Manual* to support the accurate and consistent production of road signs in the MUTCDC. It was updated in 2022 to complement the Sixth Edition.

A package of one print copy and one e-book copy of the MUTCDC can be purchased at a discounted rate using item code PKG-MUTCDC21-E.

Visit the dedicated MUTCDC webpage for more information.

TAC is looking forward to providing the French version, «*Manuel canadien de la signalisation routière, 6e édition*» in the coming months.

Visit the Bookstore to buy »

Media type: eBook, Print
2021

Member Price: $ 575.00, Regular Price: $ 750.00

BRIEFING: Understanding Changes to the Fisheries Act, Impact Assessment Act and Canadian Navigable Waters Act

BRF-ENVLEG-E

In 2019, two Bills of Parliament came into force after a comprehensive review of federal environmental and regulatory processes. This briefing provides an overview of key changes associated with the *Fisheries Act*, *Impact Assessment Act* and *Canadian Navigable Waters Act*, focusing on aspects relevant to the transportation sector.

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2021

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Understanding Goods Movement in Canada: Trends and Best Practices (2021)

PTM-GOODSMVMT-E

Understanding Goods Movement in Canada is a comprehensive introduction to the subject for transportation practitioners and individuals working in other sectors. It provides an overview of the freight industry including its structure and key stakeholders; explains important considerations in planning for goods movement; and describes major trends and disruptors with their benefits and risks. It also includes real-world case studies and self-directed exercises that encourage readers to apply what they've learned.

This title is also available in French.

Media type: PDF
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2021

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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 »

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Media type: PDF
2020

Free

Geometric Design Guide for Canadian Roads: Chapter 11 - Special Roads

PTM-GEODES11-E

The **Geometric Design Guide for Canadian Roads** contains the current design and human factors research and practices for roadway geometric design. It replaces the 1999 edition of the Guide and subsequent revisions. The Guide provides guidance to planners and designers in developing design solutions that meet the needs of a range of users while addressing the context of local conditions and environments. The Guide is organized into chapters to cover the entire design process from design philosophy and roadway classification to design parameters and specific guidelines for the safe accommodation of vehicles, cyclists and pedestrians on linear road elements and at intersections.

Chapter 11- Special Roads provides design guidance for special roads such as low-volume rural roads, resource roads, recreational roads, and winter roads. A summary of road surface characteristics and their impact on alignments and vehicles is included for reference. The chapter includes discussion on two-lane two-way roads, one-lane two-way roads, and one-lane one-way roads, and is to be used in conjunction with other chapters in this guide. Guidance for roadside safety for low-volume roads is included.

View the Table of Contents

The Guide can be purchased in its entirety (package of all chapters) 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.

Visit the Bookstore to buy »

Media type: eBook, Print
2020

Member Price: $ 59.00, Regular Price: $ 75.00

Integrating Health and Transportation in Canada

PTM-IHTC-E

Traditionally, transportation systems have been designed for motorized vehicles to move people, goods and services efficiently. Excluding more active and sustainable modes of travel from these systems in meaningful ways has often influenced Canadians to use motorized vehicles.

The design of transportation systems and land use can help achieve public health goals such as increased physical activity, reduced chronic diseases, and reduced exposure to air and noise pollution. Good health can be facilitated or negatively impacted by transportation policies, plans, analyses, funding levels, and infrastructure design decisions – all of which impact the relative safety, efficiency, costs, and overall desirability and relative utility across modes of travel. As a result, the potential health consequences of transportation decisions and land use actions are a growing part of the fields' lexicons.

Integrating Health and Transportation in Canada

Provides a review of literature and best practices on the topic;

Describes input provided by practitioners about knowledge and resources needed;

Describes the methodology used to develop recommendations for improvement; and

Provides, for each recommendation, resources related to the champions, preliminary actions and challenges identified.

The Transportation Association of Canada (TAC) gratefully acknowledges the project funding partners of *Integrating Health and Transportation in Canada* that provided financial support to both develop the report and distribute the final publication. These partners are listed in the document's Acknowledgements.

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Best Practices for Pothole Repairs in Canada (2019)

PTM-BPPRC-E

Potholes are a dangerous and costly nuisance, and the only way to keep them from coming back is to repair them effectively. However, long-lasting fixes aren't easy.

This report identifies and describes current Canadian and international agency pothole repair best practices. It also recommends seasonal strategies for temporary and long-term patching, and for evaluating and selecting patching products that lead to improved performance of asphalt and chip seal roadways. Finally, it provides guidelines for evaluating new patching products, including laboratory and field testing.

Recommendations in the report address public communications; repair guidelines; performance measurement; prevention, maintenance and preservation; and training.

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2019

Member Price: $ 99.00, Regular Price: $ 129.00

Primer on Best Practices for Pothole Repairs in Canada (2019)

PRM-BPPRC-E

For more information on this subject, refer to *Best Practices for Pothole Repairs in Canada* (2019)

Media type: PDF
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2019

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PACKAGE: Migratory Birds Practices and Operational Guidance Documents (2019)

PKG-MBBPOG-E

This package consists of three documents:

1) PTM-BPCMB-E: *Beneficial Practices for Compliance with the Migratory Birds Convention Act and Regulations* (2019)

2) PTM-MBVM-E: *Operational Guidance for Migratory Birds and Vegetation Management for Existing Transportation Facilities and Infrastructure* (2019)

3) PTM-MBNBC-E: *Operational Guidance for Migratory Bird Nests under Bridges and in Culverts* (2019)

Detailed information and individual copy pricing on these documents is available under their separate listings.

Background: Environment and Climate Change Canada (ECCC), through the Canadian Wildlife Service (CWS), administers the Migratory Birds Convention Act, 1994 and associated Migratory Bird Regulations to protect and conserve the vast majority of birds encountered in Canada. Migratory birds are frequently identified and encountered along transportation rights-of-way within natural habitats, as well as on culverts, bridges and other human-made structures. The presence of migratory birds can significantly delay a project or routine maintenance operation if it has not been accounted for during the project's planning and design phase.

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Media type: eBook, Print
2019

Member Price: $ 175.00, Regular Price: $ 225.00

Beneficial Practices for Compliance with the Migratory Birds Convention Act and Regulations (2019)

PTM-BPCMB-E

Beneficial Practices for Compliance with the Migratory Birds Convention Act and Regulations provides a synthesis of mitigation measures, case studies and beneficial practices from a variety of settings, industries and activities (i.e. roadways, utilities, oil and gas, land development and forestry), for compliance with the Act and the Regulations during facility creation, operation, maintenance and renewal. It:

Provides an overview of key legislation including the *Migratory Birds Convention Act, the Migratory Bird Regulation, and the Species at Risk Act* (SARA);

Presents a primer on bird biology;

Directs proponents to essential information sources and tools provided by the Canadian Wildlife Service;

Consolidates case studies of reasonable mitigation measures to prevent adverse impacts during common activities across industries;

Synthesizes general mitigation measures that emerge from the case studies and legislation; and

Recommends a strategy for the development of a national-level Canadian transportation and roadway sector-specific framework to assist proponents in conserving migratory birds, their nests and populations.

This is part of a series of documents which are intended to be used alone or in conjunction with each other.

PKG-MBBPOG-E (PACKAGE): PTM-BPCMB-E, PTM-MBVM-E and PTM-MBNBC-E: $175 member / $225 non-member. Available in print or ebook.

PTM-BPCMB-E: *Beneficial Practices for Compliance with the Migratory Birds Convention Act and Regulations* $129 member / $169 non-member. Available in print or ebook.

PTM-MBVM-E: *Operational Guidance for Migratory Birds and Vegetation Management for Existing Transportation Facilities and Infrastructure* $45 member / $65 non-member. Available in print or ebook.

PTM-MBNBC-E: Operational Guidance for Migratory Bird Nests under Bridges and in Culverts: $45 member / $65 non-member. Available in print or ebook.

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Member Price: $ 129.00, Regular Price: $ 169.00

Operational Guidance for Migratory Birds and Vegetation Management for Existing Transportation Facilities and Infrastructure (2019)

PTM-MBVM-E

Operational Guidance for Migratory Birds and Vegetation Management for Existing Transportation Facilities and Infrastructure provides measures to conserve migratory birds and their nests during common vegetation management activities necessary for maintaining sight lines, removing hazards, or similar activities, such as pruning or removing woody vegetation, and mowing during the General Nesting Period of migratory birds.

It provides guidance to minimize the risk of non-compliance with the Migratory Birds Convention Act and associated Migratory Bird Regulations. The guidance provided is intended to be non-prescriptive and allows for the flexible application of principles for a variety of contexts.

This is part of a series of documents which are intended to be used alone or in conjunction with each other. It is recommended that practitioners have an understanding of the principles outlined in *Beneficial Practices for Compliance with the Migratory Birds Convention Act and Regulations* (2018) before applying any guidance proposed.

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Operational Guidance for Migratory Bird Nests under Bridges and in Culverts (2019)

PTM-MBNBC-E

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Member Price: $ 45.00, Regular Price: $ 65.00

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.

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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

Package (chapters 1-11): Geometric Design Guide for Canadian Roads
PKG-GEODES17B-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

Chapter 11 was added in April 2020.

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.

The 11 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; 10 – Interchanges; and 11 – Special Roads.

The Guide can be purchased in its entirety (package of chapters 1-11) 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 (student rates apply to the e-book version 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: $ 575.00, Regular Price: $ 749.00

Guidelines for Defining and Measuring Urban Congestion (2017)
PTM-DMUC-E
The *Guidelines for Defining and Measuring Urban Congestion* assist practitioners and researchers define, measure, and monitor traffic congestion in urban areas. The Guidelines provide directions on quantifying traffic congestion for both urban freeway and arterial corridors, and are applicable for motorized roadway transportation, including public transit mixed with other motorized modes of transportation. They identify a range of performance metrics to measure and monitor traffic congestion. 29 common congestion measures were identified and categorized, in order to develop an objective procedure that would assess and compare congestion.

The Guidelines are based on both findings from published literature and results from a survey of Canadian and international municipalities with experience in measuring traffic congestion in urban areas.

Background: Traffic congestion has become a major challenge in most urban areas. In recent years, the development of measures to mitigate traffic congestion has become a priority for many road agencies. To this end, identifying congestion characteristics is an essential step in selecting appropriate mitigating measures.
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Media type: eBook, Print
2017

Member Price: $ 99.00, Regular Price: $ 129.00

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

Member Price: $ 59.00, Regular Price: $ 79.00

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
Download
2017

Free

Traffic Monitoring Practices Guide for Canadian Provinces and Municipalities (2017)

PTM-TMPG-E

The *Traffic Monitoring Practices Guide for Canadian Provinces and Municipalities* provides the first national-level guidance on the planning, design, and implementation of traffic monitoring programs in Canada. The Guide is intended to promote uniformity in the approach and techniques used to deliver traffic monitoring programs, and to improve the quality of the traffic data provided by these programs. It makes frequent reference to existing guidance and standards available elsewhere (principally in the United States), but accounts for the uniqueness of the Canadian context.

The scope of the Guide covers all functions within a traffic monitoring program: design and evaluation; data collection and analysis; and reporting traffic data. Separate guidance is provided for motorized and non-motorized modes. It also addresses the unique issues and challenges associated with monitoring interrupted traffic flow conditions, which are common in urban environments.

This publication is intended for transportation professionals involved in the planning, design, implementation, and management of traffic monitoring programs, as well as those with responsibilities involving the application of traffic data.

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Media type: eBook, Print
2017

Member Price: $ 199.00, Regular Price: $ 259.00

Design, Construction, Maintenance and Inspection Guide for Mechanically Stabilized Earth Walls (2017)

PTM-MSEW-E

Mechanically stabilized earth (MSE) walls are a mature earth retention technology but concerns sometimes arise over who retains ultimate responsibility for wall design, quality assurance, asset management and repairs, and post-construction in-service monitoring, particularly if significant construction or performance problems occur.

Design, Construction, Maintenance and Inspection Guide for Mechanically Stabilized Earth Walls provides owners, engineers, suppliers and contractors of MSE walls with practical guidance on the selection, design, construction, and inspection of these structures with a focus on public works projects. The guide was developed through reviews of published literature supplemented by a survey of industry stakeholders. It is not intended to reproduce the large volume of published design guidance and related information; rather the guide highlights aspects of the current state of practice in Canada and suggests modifications of current practice where deficiencies are apparent.

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Media type: eBook, Print
2017

Member Price: $ 149.00, Regular Price: $ 199.00

PRIMER: Mechanically Stabilized Earth Walls (2017)

PRM-MSEW-E

For more on this subject, refer to *Design, Construction, Maintenance and Inspection Guide for Mechanically Stabilized Earth Walls* (PTM-MSEW-E), available for purchase in the TAC Bookstore.

Media type: PDF
Download
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.

View the Table of Contents

View the Index

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 3 - Alignment and Lane Configuration

PTM-GEODES3-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 3 – Alignment and Lane Configuration focuses on the design procedures and domains dealing with horizontal alignment, vertical alignment, the coordination of these two critical design elements, and a number of directly related issues including cross-slopes, lane widening, lane balance and continuity, and the use of specialized traffic lanes. Each major section in this chapter generally consists of the following elements:

discussion of the theoretical and/or empirical basis for the topic;

a review of design considerations, and where applicable, discussion of the appropriate design domain;

worked examples as appropriate; and

cross references to other relevant topics in this Guide, as well as key external references offering additional guidance to designers.

View the Table of Contents

View the Index

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.

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Media type: eBook, Print
2017

Member Price: $ 69.00, Regular Price: $ 89.00

Geometric Design Guide for Canadian Roads: Chapter 5 - Bicycle Integrated Design

PTM-GEODES5-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 5 – Bicycle Integrated Design provides guidance and examples on how to holistically integrate the design of bicycle facilities into the roadway design to achieve a balanced solution for all modes and road users. Guidance is provided on bicycle and in-line skater design needs, types of bicycle facilities, and a framework for the selection of an appropriate type of facility, and specific design elements.

View the Table of Contents

View the Index

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.

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Media type: eBook, Print
2017

Member Price: $ 65.00, Regular Price: $ 82.00

Geometric Design Guide for Canadian Roads: Chapter 6 - Pedestrian Integrated Design

PTM-GEODES6-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 6 - Pedestrian Integrated Design provides guidance and examples on how to holistically integrate the design of pedestrian facilities into roadway design to achieve a balanced solution for all modes and road users. Guidance is provided on pedestrian and wheelchair design needs, use of a framework approach to design, which subdivides the roadside into frontage, pedestrian through and furnishing zones and specific design elements. Integration with other design elements including adjacent roadway lane widths, roundabouts and bridges, and other travel modes is addressed.

View the Table of Contents

View the Index

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.

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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.

View the Table of Contents

View the Index

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.

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Media type: eBook, Print
2017

Member Price: $ 65.00, Regular Price: $ 82.00

Geometric Design Guide for Canadian Roads: Chapter 8 – Access

PTM-GEODES8-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 8 – Access provides guidelines for access management for the full range of road classifications. Guidance is provided for each classification of roadway in balancing traffic mobility needs and access to adjacent lands. Design guidance is provided for access location and geometrics and the use auxiliary lanes, two-way left-turn lanes and service roads to accommodate access safely.

View the Table of Contents

View the Index

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.

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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.

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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.

View the Table of Contents

View the Index

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.

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2017

Member Price: $ 69.00, Regular Price: $ 89.00

Geometric Design Guide for Canadian Roads: Chapter 10 - Interchanges
PTM-GEODES10-E
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Chapter 10 – Interchanges provides a summary of relevant human factor aspects and warrants for interchanges. Guidance is provided on interchange location, spacing, coordination and a range of interchange types. Detailed guidance is provided for interchange exit and entrance ramp design.

View the Table of Contents

View the Index

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.

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Media type: eBook, Print
2017

Member Price: $ 65.00, Regular Price: $ 82.00

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.

View the Table of Contents

View the Index

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.

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Media type: eBook, Print
2017

Member Price: $ 65.00, Regular Price: $ 82.00

Geometric Design Guide for Canadian Roads: Chapter 4 - Cross Section Elements
PTM-GEODES4-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 4 – Cross Section Elements provides guidance on the design procedures and domains dealing with cross section design and related elements including the use of special purpose lanes, drainage features, grading, snow removal, bridge considerations, and shared use of the right-of-way by public and private utilities.

View the Table of Contents

View the Index

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.

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Visit the Bookstore to buy »

Media type: eBook, Print
2017

Member Price: $ 65.00, Regular Price: $ 82.00

Guide to Load Management for Weak Pavement Structures (2017)
PTM-LMWPS-E
The *Guide to Load Management for Weak Pavement Structures* provides a synthesis of Canadian and international practices for managing weak pavement structures in northern climates. It includes a set of recommended best practices for managing these pavements through periods of freezing and thawing as well as for year-round pavement management. An economic basis for making load management decisions for weak pavement structures is presented. The Guide also contains a decision support framework, which can be adapted by any Canadian road authority and assists in making economically-rational and defensible decisions with respect to restricting loads on weak pavement structures.

View the Table of Contents

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Media type: eBook, Print
2017

Member Price: $ 79.00, Regular Price: $ 105.00

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.

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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

Guidelines for the Coordination of Utility Relocations
RPT-CUR-E
These guidelines are designed as a template that public agencies can refer to for developing a process for the coordination of utility relocations. For those agencies with existing processes, it can be reviewed as a best practices document, ensuring that all key aspects are covered, and consistent practices are followed. For those without an existing process this can be a base document used to develop a manual for agency specific situations.

The document is divided into two main components – the flow chart and the write-up. The flow chart is intended as an overall summary of the processes used on a typical capital works design-bid-build project to coordinate all relocations required. It covers all major components of the project: preliminary design, detailed design, construction and post-construction.

The main body of the document complements the information in the flow chart providing additional detail on each of the various phases of the project.

The intent of the document is to advance the overall coordination of utility relocations across the country for the benefits of both, public agencies and utility companies. The key component of the success is use and implementation of the guidelines.

Media type: PDF
Download
2016

Free

Synthesis of Transportation Asset Management Best Practices for Canada
PTM-STAMBP-E
Associated with: Chief Engineers' Council / Asset Management Task Force
This synthesis of practices is based on information obtained by an extensive literature review, a targeted survey of transportation agencies across Canada, follow-up telephone and face-to-face interviews, and interviews and discussions with asset management experts including technical staff representing private sector, municipal, provincial and federal agencies and not-for-profit industry groups across Canada.

The report is organized according to the International Standard Organization (ISO) 55000 asset management standard, with each chapter, and all sections within the chapters, following the ISO 55000 asset management system elements. Each section of the document includes the following three sub-sections:

International Practice: A summary of the ISO 55000 Asset Management System element;

Canadian Practice Summary: A description of Canadian practice related to the ISO 55000 Asset Management System element; and

Highlight of Canadian Best Practice: Examples or reference to Canadian agency practice related to the ISO 55000 Asset Management System element.

There is a strong movement in Canada for agencies to integrate investment planning and programming and move away from traditional silo-based infrastructure management systems into one comprehensive system. Agencies are moving toward systems that track asset performance from construction to retirement and use life cycle cost to make whole life maintenance and rehabilitation investment decisions. These systems report on achievements in maintaining and improving asset condition as measured by key performance measures. This synthesis can be used to help agencies to develop an asset management plan, as well as to identify gaps and deficiencies for continued improvement.

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Media type: eBook, Print
2016

Member Price: $ 109.00, Regular Price: $ 149.00

Urban Transportation Indicators – Fifth Survey
RPT-UTIP5-E
The fifth Urban Transportation Indicators (UTI) Survey is the latest in a series of surveys that have, individually and collectively, provided an important picture of transportation behaviour and trends across Canada's 33 largest urban areas. In this fifth edition, the UTI was given a major update to account for changing issues and new data sources. Key changes include the introduction of new indicators on health and transportation, economic performance of transportation, and factors that influence mode choice. Readers are still able to make comparisons with 90+ sustainability indicators that were prepared in previous surveys.

The overall goal of this survey program was to build a consistent and reliable database about urban transportation and develop indicators for Canadian municipalities and transportation stakeholders. The UTI Survey Database, which integrates data from the fifth survey as well as previous surveys, is also available in conjunction with this technical report.

Media type: PDF
Download
2016

Free

PRIMER - Transportation Asset Management Best Practices for Canada
PRM-TAMBP-E
This primer provides an overview of the transportation asset management practices followed by Canadian provincial, regional, municipal and transit agencies across Canada.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/Bookstore/sambp-primer-final-april2016.pdf

Media type: PDF
Download
2016

Free

Moving Smarter: Exploring energy and greenhouse gas emission reduction solutions for Canadian cities – TOOLBOX OF MEASURES
PTM-MS-E

In recognition of the significant impacts and risks of climate change, municipalities and regional agencies across Canada are working to reduce energy use and greenhouse gas (GHG) emissions across a broad range of sectors. Moving Smarter was developed to help municipal and regional agencies understand and assess available options for reducing GHG emissions from the urban transportation sector.

Moving Smarter aims to help municipalities and regional agencies understand the three main approaches to reducing urban transportation GHG emissions in urban areas. These are:

Reduce Vehicle Kilometres Travelled: Reducing distances travelled by passengers and goods by vehicle;

Improve Transportation System and Driver Efficiency: Improving the efficiency of the transportation system so that more vehicles travel under more optimal conditions in terms of speed and flow;

Encourage Alternative Vehicle and Fuel Technologies: Adopting and supporting vehicles that use alternative fuels and technologies which are more energy efficient or use less GHG-intensive energy sources for propulsion.

Moving Smarter presents a collection of 30 different measures (a variety of strategies, policies, programs, projects or actions) to address transportation-related GHG emissions, organized according to the three approaches. To help readers identify measures which are appropriate to their context, the applicability of measures by size of municipality, responsibility for implementation, timing of implementation, potential reductions in urban transportation GHG emissions, and timeframe when reductions might occur, are presented.

Download the free PDF »

Media type: PDF
2016

Free

Design and Implementation of Transit Services: Guidelines for smaller communities

PTM-DITS-E

Download the Primer

Design and Implementation of Transit Services provides advice and guidance to planning and transportation professionals in planning for transit services in small communities. The guidelines were developed to tailor to a wide range of different stages of transit service provision in the community:

starting a new service

expanding an existing service

maintaining a service in potential decline

The guidelines include planning directions and technical approaches to effectively plan and design services, as well as to develop transit policies that promote cost effectiveness, maximize ridership, and respond to the needs of small and rural communities. The document outlines specific transit planning activities and topics including: consultation; Service needs and objectives identification; service planning; demand forecasting; resource planning; governance; financial planning; service implementation; and service monitoring.

Background: Transit plays an essential role in improving the social, economic, and environmental conditions of Canada's cities and communities. While there is greater political attention to serving transit needs in larger urban areas, transit services are increasingly vital to improving the well-being of small communities. Providing transit services will become increasingly important in small communities as a result of an increasing aging population, the continued transition to a knowledge economy, the increasing cost of vehicle ownership, and the increasing environmental impacts from atmospheric pollutants.

There are unique challenges faced by small and rural Canadian communities in providing transit services, compared to large, more urban areas. The approaches to planning for transit and the range of solutions appropriate for providing transit is broader for small communities compared to larger urban centres.

A CD containing worksheets is included as part of these guidelines to support the design of fixed-route and demand response transit service. The development of service designs through these worksheets will help to identify the total service hours operated and the estimated operating costs of providing the services. Refer to Appendix B for directions on how to use the service design worksheets.

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Media type: PDF
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

Sustainability Considerations for Bridges Guide

PTM-SCBG-E

The Sustainability Considerations for Bridges Guide helps transportation agencies and bridge professionals improve the sustainable (i.e., social, economic and environmental) benefits of their projects and communicate those improvements to stakeholders in a consistent and objective manner. It provides broad direction on sustainability considerations specific to bridge planning, design, construction and management.

The Guide begins by providing sustainability concepts (what is sustainability; setting priorities and making decisions) and describing 12 sustainability objectives (e.g. reducing energy use and emissions; improving safety, access and mobility). It then offers 22 practices sheets that describe a sustainability topic to be considered in a project. The following are a few of the practice topics included in the Guide:

- Bridge Aesthetics

- Improve Material Reuse and Recycling

- Bridge Lifecycle Cost Analysis

- Maintain or Improve Aquatic Ecosystems

- Reduce Construction Traffic Delay

Background: The road and highway bridge engineering community has long been considering many aspects of sustainability, such as safety, durability, and aesthetics. However, these efforts rarely are coordinated with the goal of improving sustainability, and are sometimes done without a clear understanding of the positive and negative effects to sustainability. Considering the growing awareness of sustainability, most authorities recognize that sustainability will need to become an important consideration when making decisions, setting policies, and meeting performance measures sought by stakeholders.

Errata

Media type: eBook, Print
2015

Member Price: $ 225.00, Regular Price: $ 299.00

PRIMER: Sustainability Considerations for Bridges
PRM-SCBG-E
For more information on this subject, refer to *Sustainability Considerations for Bridges Guide*(2015), PTM-SCBG-E, available for purchase in the TAC Bookstore.

Disponible en français : *NOTIONS ÉLÉMENTAIRES : Développement durable des ponts*

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/Bookstore/primer-scbg-e.pdf

Media type: PDF
Download
2015

Free

TAC Conference Proceedings - 2015
CPR-TAC2015-E
The TAC conference papers are posted online, organized by author, title and category. They are available to view or download in PDF format.

Disponible en français : *Compte rendu du congrès de l'ATC - 2015*

http://conf.tac-atc.ca/english/annualconference/tac2015/english/index.htm

Media type: PDF
Download
2015

Free

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

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

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

Member Price: $ 149.00, Regular Price: $ 199.00

BRIEFING: Complete Streets: Policy and practice in Canada

BRF-CSPPC-E

This briefing reports on the status of complete streets in provincial and municipal transportation agencies across Canada, and accelerates the transfer of information and lessons learned from more experienced TAC members.

Disponible en français : *DOSSIER D'INFORMATION: Rues complètes : Politiques et pratiques au Canada*(2015)

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/Bookstore/briefing-final-e-jan2015.pdf

Media type: PDF
Download
2015

Free

Canadian Guide for Greener Roads

PTM-CGGR-E

The Canadian Guide for Greener Roads (CGGR) promotes smart growth and multi-modal transportation solutions along with safe, enduring roadway infrastructure and more sustainable construction and maintenance principles.

The CGGR helps users self-evaluate and strengthen the benefits of integrating sustainability principles into Canadian roadway projects. The CGGR is written for technical laypersons (e.g. environmental planner, transportation engineer) with some technical understanding but who may not be not subject-matter experts. It also helps decision-makers reduce the less desirable social, economic and environmental impacts of roads while encouraging processes, practices and products that will yield more sustainable outcomes. Not a design document, it encourages users to consult applicable jurisdictional requirements, technical standards and guidance documents, and to obtain professional advice as required.

The Canadian Guide for Greener Roads – User Manual includes:

CHAPTER 1: CGGR goals and scope, and its links to other environmental processes

CHAPTER 2: how to use the CGGR to self-evaluate road projects, strengthen their sustainability benefits, and support agency plans and programs

CHAPTER 3: CGGR's development process

APPENDIX A: sustainability objectives that describe the sustainability benefits related to a road project

APPENDIX B: sustainability practices (such as 'Bicycle Access' or 'Habitat Retention') that can be addressed in a project in order to achieve the sustainability objectives

APPENDIX C: sustainability questions related to the practices that can be used to self-evaluate a road project

The CGGR user manual is accompanied by an interactive tool, which can be opened with Microsoft Access (version 2010 or later) or Microsoft Runtime. The tool filters and links the sustainability practices to sustainability questions and objectives. It helps users access relevant information easily and in a variety of ways, and allows them to choose between finding practices and undertaking the self-evaluation. A PDF-version of the user manual is included in the interactive tool, as are instructional videos via the 'Help' button.

Users can access the CGGR in their choice of two formats:

a printed user manual, accompanied by a CD ROM, which contains: the interactive tool as described above; and PDF versions of each sustainability practice

a CD ROM which contains: the interactive tool as described above; and PDF versions of each sustainability practice

Disponible en français : *Guide canadien pour des routes plus vertes*

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Media type: CD ROM, Print
2015

Member Price: $ 79.00, Regular Price: $ 99.00

The Evolution and Legacy of Transportation Education in Canada

RPT-ELTEC-E

The Evolution and Legacy of Transportation Education in Canada was written as a monograph project in honour of both the Transportation Association of Canada (TAC)'s centennial anniversary in 2014 and the transportation community.

Transportation has always been about moving people and goods, but with varying social, political, economic, technical and environmental considerations. The importance of skills in planning, building, operating and maintaining transportation systems has been long recognized.

Early in the twentieth century, at the time of formation of the Canadian Good Roads Association (CGRA) in 1914, training and education were primarily on-the-job. For long distance travel, rail was dominant at that time, but walking and cycling were the primary modes of transport for the everyday movement of people. Over the years it evolved to road and air travel being dominant, with other modes continuing as vital parts of the safe and efficient movement of goods and people.

The evolution of transportation education, as described in this Monograph recognizes the relative and changing impact of the modes. But it also recognizes that the fundamentals of science and engineering are invariant. There is a legacy of the outcomes of the training and education and the associated advances. The beneficiaries are not only today's professionals but also the leaders of tomorrow and the public at large.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/centennial_monograph_final_june_2014.pdf

Disponible en français : *L'évolution et l'héritage de l'enseignement dans le domaine des transports au Canada*(2014)

Media type: PDF
Download
2014

Free

Synthesis of Environmental Management Practices

PTM-SEMP-E

The *Synthesis of Environmental Management Practices for Road Construction, Operation and Maintenance*is a collection of environmental practices from stakeholders across Canada, synthesized to provide information on the state-of-play for environmental management. This represents an opportunity for transportation agencies, consulting firms, contractors and regulatory agencies to learn from each other when developing or improving their own procedures, specifications, checklists, contracts, etc.

The publication is organized into a two-volume set: Volume 1 – Road Construction; and Volume 2 – Road Operation and Maintenance. Each volume includes a background section that describes the scope, objectives, intended use and primary audience for the document, as well as methodologies used to synthesize environmental management practices for road construction or road operation and maintenance across Canada.

The main component of each volume is syntheses of environmental management practices (SEMPs) that are stand-alone 'practice sheets' which aim to avoid, minimize and mitigate negative environmental effects of road construction and operation and maintenance. SEMPs can be used by Canadian transportation practitioners to develop their own standard operating procedures, specifications, checklists and contract

documents.

Disponible en français : *Synthèse des pratiques de gestion environnementale* (2014)

Media type: eBook, Print
2014

Member Price: $ 169.00, Regular Price: $ 225.00

Changing Practices in Data Collection on the Movement of People
PTM-DCMP-E
Changing Practices in Data Collection on the Movement of People provides a practical, comprehensive framework for the coordination, collection, processing and management of data on the movement of people by all modes in Canadian urban areas and addresses data needs across the range of Canadian transportation agencies.

This framework is based on several building blocks:

A review of survey and data collection literature, including population-based surveys, choice-based sample surveys, technology-based data collection methods. Each type of data collection is examined

A review of data integration/fusion/synthesis methods

An inventory and discussion of a variety of data sources pertaining to urban passenger travel

Results from an original survey of Canadian transportation agencies to identify current Canadian data collection practices, issues and needs

The fundamental proposition of the publication is that practices in Canadian urban passenger transportation data collection and management must evolve to meet changing needs, opportunities and challenges. Transport agencies should have a clear and comprehensive understanding of the technical options available to them, of the strengths and weaknesses, benefits and costs of these options, and clear guidance in terms of cost-effective data collection programs that will best fit their local needs and budgets.

Disponible en français : *Évolution des pratiques de collecte de données sur les déplacement des personnes* (2014)

Media type: PDF
Download
2014

Free

Traffic Signal and Pedestrian Signal Head Warrant Handbook
PTM-TSPSHB-E
This handbook provides traffic operations practitioners with a guide to using the *Canadian Traffic Signal and Pedestrian Signal Head Warrant Matrix Procedure*, a calculation tool which is also provided; and to ensure that the procedure is applied in a consistent and comprehensive way.

The *Traffic Signal and Pedestrian Signal Head Warrant Handbook* describes the matrix warrant methodology, and the principles and assumptions behind the procedure. The handbook identifies the input data required for the warrant analysis and describes how each of the warrant components is calculated. A number of case studies, with variations on each case study, are provided to highlight the sensitivity of each component within the warrant calculation.

Note: This handbook is an updated version of, and replaces, *Traffic Signal Warrant Handbook* (2007).

Disponible en français : *Guide de justification des feux de circulation et des feux pour piétons* (2014)

Media type: Print
2014

Member Price: $ 149.00, Regular Price: $ 198.00

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

Transportation in Canada - Transforming the Fabric of Our Land
RPT-TICTFL-E
This publication highlights some of the major components in the development of Canadian transportation over the past century, and their impact on the lives of Canadians. Each chapter is written by a guest author widely acknowledged as a subject matter expert. Topics for the chapters include railroads, trucking, highways, bridges, public transportation and more.

Disponible en français : *Les transports au Canada : Transformer le tissu de notre pays (2014)*

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/Bookstore/t2014-ebook-e.pdf

Media type: PDF
Download
2014

Free

TAC Conference Proceedings - 2014
CPR-TAC2014-E
The TAC conference papers are posted online, organized by author, title and category. They are available to view or download in PDF format.

Disponible en français : *Compte rendu du congrès de l'ATC - 2014*

http://conf.tac-atc.ca/english/annualconference/tac2014/english/index.htm
Media type: PDF
Download
2014

Free

Truck Lanes in Canadian Urban Areas
PTM-TLCUA-E

Truck Lanes in Canadian Urban Areas assists transportation professionals to make more informed decisions regarding the potential use of truck lanes as a tool for efficient sharing of facilities by all road users. Based on the findings of a literature review, stakeholder interviews, and analyses of various truck lane configurations in Canadian cities, contents are specific to the Canadian context as far as population, traffic volumes, urban roadway design, etc. Eight truck lane types are identified and case studies for six of these types are described to reveal new planning, design, operation, analysis, and evaluation considerations for urban truck lanes in Canada.

Supplementary information provided with this document includes the six detailed case studies and a Technical Report, which synthesizes the findings from an environmental scan about the potential for truck lanes in Canadian urban areas.

What are truck lanes? Truck lanes are those for preferential truck use where trucks are separated from other traffic either through physical or operational treatments. The purpose of these lanes is to reduce travel time, improve system reliability and safety, and reduce emissions in the movement of goods in urban areas. Truck lanes are a relatively new concept and there is little information about them, particularly for Canadian urban areas.

See also: *PRIMER: Truck Lanes in Canadian Urban Areas*(2014)

Disponible en français : *Voies pour camions en régions urbaines au Canada*(2014)

Media type: PDF
Download
2014

Free

Pavement Asset Design and Management Guide
PTM-PADMG-E
This Guide is a consolidation of Canadian pavement design and management practices. It provides a theoretical understanding of issues, a summary of best practices and is intended to be applicable across Canada for varying conditions and jurisdictions. Tools for the management of transportation infrastructure assets are included.

The Guide emphasizes routine maintenance and preservation as important aspects of pavement management. Key industry issues such as sustainability, climate change and new innovations are highlighted. Low volume road design and management is addressed. The Guide explicitly highlights provincial practices in addition to municipal practices. State-of-the-art is explored and future opportunities are identified throughout the Guide.

The document is a guide rather than a comprehensive design manual and each of its fifteen chapters provides numerous additional resources for further reference.

The Guide is intended for a diverse range of users, practitioners and managers. Academic users will find this Guide a valuable reference. The private and public sector will use the Guide as a design and management tool, particularly when training new technologists, engineers and managers.

This Guide replaces the previous version, *Pavement Design and Management Guide*(1997).

Special for students: Full-time students providing proof of eligibility can buy this publication for $199. 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.

Media type: eBook, Print
2013

Member Price: $ 299.00, Regular Price: $ 399.00

PRIMER: Pavement Asset Design and Management Guide
PRM-PADMG-E
For more on this subject, refer to *Pavement Asset Design and Management Guide*(2013), PTM-PADMG-E, available for purchase in the TAC Bookstore.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/padmg_primer_for_publishing.pdf

Media type: PDF
Download
2013

Free

Roadway Lighting Efficiency and Power Reduction Guide
PTM-RLEPR-E
The Roadway Lighting Efficiency and Power Reduction Guide reviews options and provides guidelines for light reductions and energy efficiency practices. It provides information to road jurisdictions, designers, consultants, and suppliers on how to assess, evaluate, select, and deploy energy-efficient roadway lighting while reducing power consumption and cost.

The information presented in the Guide was gathered from international research and studies conducted by organizations such as the US Department of Energy, the Illuminating Engineering Society of North America, the Commission Internationale de l'Eclairage (CIE), the US Federal Highway Administration, and LightSavers Canada.

As of 2013, information about the assessment, design, selection, and deployment of energy-saving lighting technologies has been unavailable. As a result, there has been a resistance in applying these technologies due to lack of understanding about the risks and benefits. The objective of the Guide is to provide the information necessary to allow the selection and deployment of energy-efficient roadway lighting based on the findings that the energy-saving lighting technologies and controls have significant energy-saving benefits. The Guide concludes that improving energy-efficiency can be achieved through the use of new roadway lighting sources such as LED's.

The Roadway Lighting Efficiency and Power Reduction Guide is a supplement to the TAC Guide for the Design of Roadway Lighting (2006).

Keywords: Economics and Administration; Colour, Cost, Efficiency, Energy, Evaluation (assessment), Light emitting diode, Lighting (street), Luminance, Risk assessment, Selection

Media type: eBook, Print
2013

Member Price: $ 99.00, Regular Price: $ 129.00

Best Practices Guide for the Use of Recycled Materials in Transportation Infrastructure
PTM-URMTI-E
Historically, the methods that have been used for evaluating the engineering and environmental suitability of new potentially recyclable materials have varied significantly across jurisdictions. As a consequence, both an 'applicant' (who might be an agency, constructor or supplier) who desires to use a recycled material, and a 'decision maker' (owners, specifiers or designers) who must determine the suitability of the application, in many cases do not have a clear or consistent approach (an evaluation framework) that can be used to proceed with such an evaluation.

The objective of this document is to provide a guide for use by agencies in identifying the various types of recycled materials and technologies which are available to them, along with their most practical/successful uses in transportation infrastructure applications.

The focus of the document is on waste and industrial by-product materials that are suitable as replacements for natural aggregates in transportation infrastructure projects. Twenty-two materials have been evaluated and grouped into six main categories: asphalt concrete, portland cement concrete, granular base and subbase materials, embankment and fill construction, stabilized bases and flowable fills.

Keywords: Aggregate, Bituminous mixture, By-product, Concrete, Evaluation (assessment), Fly ash, In service behaviour, In situ, Recycling (Mater), Road construction, Slag, Tyre

Media type: PDF
Download
2013

Free

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 itskind 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

Guidelines for Planning and Implementation of Transit Priority Measures

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

Salt Management Guide - Second Edition

PTM-SALTMGMT-E

The *Salt Management Guide (Second Edition)*provides an update to TAC's title of the same name, published in 1999, in order to incorporate the research and lessons learned in the past ten years.

This guide and the related syntheses of best practices (available free of charge from TAC) continue to identify and describe ways of handling and using salt – the de-icer of choice on more than one million kilometres of Canadian roads – to maintain its usefulness within winter maintenance while reducing its adverse effects to the environment.

The Guide is organized into three chapters:

Chapter 1 tackles the effect of transportation on the Canadian economy, and also the effect of winter maintenance practices (and in particular road salt) on the economy.

Chapter 2 examines the environmental impact of road salting practices. The process by which road salt enters into a specific environment, and the ensuing environmental results are examined in relation to surface water, groundwater, vegetation, wildlife, and human health and more.

Chapter 3 addresses road salt management, including resources, material storage, salt science, operational planning and control, and key success factors.

Disponible en français : *Guide de gestion des sels de voirie (2013)*

Visit the Bookstore to buy »

Media type: eBook, Print
2013

Member Price: $ 169.00, Regular Price: $ 225.00

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

Guidelines for Underground Utility Installations Crossing Highway Rights-of-Way

PTM-UUICH-E

Guidelines for Underground Utility Installations Crossing Highway Rights-of-Way is intended to assist various road authorities in establishing and administering reasonably uniform criteria for the accommodation of utilities crossing highway (and freeway) rights-of-way. Ideally, existing utility accommodation guidelines should be updated in light of these guidelines, as appropriate.

These guidelines have been written for both the road industry and the utility industry. They are specifically aimed at: public and private sector managers; consulting engineers practicing in the highway/utility field; and individuals entering the highway/utility field, although they can be used by anyone interested in an overview of the complex series of highway/utility interactions.

Background
Utility companies provide essential services to the public. They often install their facilities within the rights-of-way of public roads. If the utilities were not allowed to use the rights-of-way, they could be required to purchase their own land, which would drive up the overall cost to the utility company. This could significantly increase the cost to the public. The responsibility of road authorities includes operating the highway rights-of-way in a manner that ensures the safety, traffic-carrying ability and physical integrity of their installations. The presence of a utility within the right-of-way can affect these characteristics, so it is necessary for road authorities to reasonably regulate the presence of utilities.

Keywords: Planning of Transport Infrastructure, Administration, Cable, Carriageway, Corridor (Transp), Crossing the Road, Electricity, Fuel, Maintenance, Pipe, Risk Assessment, Safety, Subterranean

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/ptm-uuich-e-finalpub.pdf

Media type: PDF
Download
2013

Free

Guidelines for Selecting Sign Sheeting to Meet Minimum Retroreflectivity Levels
PTM-SSSRR-E
Guidelines for Selecting Sign Sheeting to Meet Minimum Retroreflectivity Levels have been developed to assist transportation agencies in selecting sign sheeting types and maintenance strategies to provide sufficient levels of retroreflectivity for night-time drivers. This guideline provides guidance for minimum levels of sign retroreflectivity adopted for the Manual of Uniform Traffic Control Devices for Canada.

The guidelines consist of the following sections:

Section 1 provides background information on the subject;

Section 2 describes the various sheeting types available for manufacturing signs;

Section 3 provides an overview of retroreflectivity concepts;

Section 4 describes factors affecting sheeting selection;

Section 5 provides specific guidelines for various sign classes and delineators; and

Section 6 describes options for maintaining retroreflectivity levels for traffic signs and delineators.

Keywords: Miscellaneous Materials, Traffic Control, Decision Process, Demand (Econ), Evaluation (Assessment), Legibility, Luminance, Maintenance, Material (Construction), Night, Reflectivity, Specifications, Traffic Sign

Disponible en français : *Lignes directrices pour la sélection d'une pellicule conforme aux seuils de rétroréfléchissance des panneaux routiers (2013)*

Media type: eBook, Print
2013

Member Price: $ 69.00, Regular Price: $ 89.00

Syntheses of Best Practices - Road Salt Management (2013): 10.0 – Salt use of Private Roads, Parking Lots and Walkways
BP-RSM10-E
Disponible en français : *Synthèses des meilleures pratiques : Gestion des sels de voirie (2013) - 10.0 – Utilisation des sels sur les routes privées, les stationnements et les allées*

https://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-10.pdf

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Syntheses of Best Practices - Road Salt Management (2013): 11.0 – Successes in Road Salt Management - Case Studies
BP-RSM11-E
Disponible en français : *Synthèses des meilleures pratiques : Gestion des sels de voirie (2013) - 11.0 – Réussite en matière de la gestion des sels de voirie : Études de cas*

http://tac-atc.ca/sites/tac-atc.ca/files/site/salt-11-successesinroadsalt.pdf

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Syntheses of Best Practices - Road Salt Management (2013): 1.0 – Salt Management Plans
BP-RSM1-E
Disponible en français : *Synthèses des meilleures pratiques : Gestion des sels de voirie (2013) - 1.0 – Plans de gestion des sels de voirie*

https://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-1.pdf

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Syntheses of Best Practices - Road Salt Management (2013): 2.0 – Training
BP-RSM2-E
Disponible en français : *Synthèses des meilleures pratiques : Gestion des sels de voirie (2013) - 2.0 – Formation*

https://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-2.pdf

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Syntheses of Best Practices - Road Salt Management (2013): 3.0 – Road, Bridge and Facility Design
BP-RSM3-E
Disponible en français : *Synthèses des meilleures pratiques : Gestion des sels de voirie (2013) - 3.0 – Conception des routes, ponts et installations*

https://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-3.pdf

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Syntheses of Best Practices - Road Salt Management (2013): 4.0 – Drainage
BP-RSM4-E
Disponible en français : *Synthèses des meilleures pratiques : Gestion des sels de voirie (2013) - 4.0 – Drainage*

https://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-4.pdf

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Syntheses of Best Practices - Road Salt Management (2013): 5.0 – Pavements and Salt Management
BP-RSM5-E
Disponible en français : *Synthèses des meilleures pratiques : Gestion des sels de voirie (2013) - 5.0 – Gestion des chaussées et des sels de voirie*

http://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-5.pdf

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Syntheses of Best Practices - Road Salt Management (2013): 6.0 Vegetation Management
BP-RSM6-E
Disponible en français : *Synthèses des meilleures pratiques : Gestion des sels de voirie (2013) - 6.0 – Gestion de la végétation*

/sites/default/files/site/roadsalt-6.pdf

Media type: PDF
Download
2013

Free

Syntheses of Best Practices - Road Salt Management (2013): 7.0 Design and Operation of Maintenance Yards
BP-RSM7-E
Disponible en français : *Synthèses des meilleures pratiques : Gestion des sels de voirie (2013) - 7.0 – Conception et exploitation des centres d'entretien*

https://www.tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-7.pdf

Media type: PDF
Download
2013

Free

Syntheses of Best Practices - Road Salt Management (2013): 8.0 – Snow Storage and Disposal
BP-RSM8-E
Disponible en français : *Synthèses des meilleures pratiques : Gestion des sels de voirie (2003) - 8.0 – Stockage et élimination de la neige*

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-8.pdf

Media type: PDF
Download
2013

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Syntheses of Best Practices - Road Salt Management (2013): 9.0 – Winter Maintenance Equipment and Technologies
BP-RSM9-E
Disponible en français : *Synthèses des meilleures pratiques : Gestion des sels de voirie (2013) - 9.0 – Matériel et technologies d'entrentien hivernale des routes*

https://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/roadsalt-9.pdf

Media type: PDF
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TAC Conference Proceedings - 2013
CPR-TAC2013-E
The TAC conference papers are posted online, organized by author, title and category. They are available to view or download in PDF format.

Disponible en français : *Compte rendu du congrès de l'ATC - 2013*

http://conf.tac-atc.ca/english/annualconference/tac2013/english/index.htm

Media type: PDF
Download
2013

Free

Effective Strategies to Influence Travel Behaviour: Practical Guide
PTM-ITB
Various governments and organizations across Canada are investigating strategies to motivate sustainable travel habits among Canadians. Social marketing is one of the tools that can be used to shift long-term consumer behaviour. It emphasizes the need for a thorough understanding of target markets, motivators and barriers to desirable behaviours.

Users of this Guide will understand the need for holistic, market-based social marketing approaches to influence travel behaviour. Public and private sector organizations will also learn which transportation demand management tools are effective in their jurisdictional, community and strategic contexts.

Keywords: Traffic and transport planning; behaviour; journey to work; legislation; marketing; policy; publicity; road user; selection; textbook; traffic control; transport mode.

Disponible en français : *Stratégies efficaces pour influencer les habitudes de déplacement : Guide pratique (2012)*

Download the Primer

Media type: PDF
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2012

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Synthesis of Practice for Implementing Public-Private Partnerships in Transportation Related Projects

PTM-P3S-E

Canada is one of the leading practitioners of public-private partnerships (P3) in the transportation sector. Some provinces have adopted this delivery format for infrastructure including hospitals, municipal buildings and detention centres. More recently, this format is increasingly used for larger transportation infrastructure projects.

As these larger infrastructure projects are completed, and as their operations and concessions begin and evolve, there are opportunities to determine if a project is successful during the implementation phase both for the public and the private side of the equation. In order to capture these relevant experiences the document synthesizes lessons learned from the implementation of P3 projects for transportation infrastructure, with a focus on roads and highways.

Most of the information to prepare this synthesis was gathered through a comprehensive literature review and from public entities that have managed or are about to implement road transportation projects using a form of P3 delivery. This publication:

Describes P3 projects and their key components;

Outlines and discusses the key steps and considerations to initiate, develop and implement transportation P3 projects; and

Provides an overview of the experience Canadian and American public sector agencies have gained in relation to the administration of transportation P3 projects.

Keywords: Economics and Administration; Administration; Construction; Evaluation (Assessment); Financing; Highway; Public Private Partnership; Specifications; Textbook

Disponible en français : *Synthèse des pratiques de mise en œuvre des partenariats public-privé des projets liés au transport (2012)*

Media type: PDF
Download
2012

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Guidelines on the Use and Installation of Chevron Alignment Signs

PTM-CHASI-E

The safety risks of horizontal curves are generally related to vehicles leaving the roadway and striking fixed objects such as trees, utility poles or rock faces, often resulting in severe or fatal collisions. Guidelines on the Use and Installation of Chevron Alignment Signs is intended to provide engineers and practitioners across Canada with the understanding of the key considerations in the use and installation of chevron alignment signs – a chief traffic control device considered for improving warning and guidance where there is a change in the horizontal alignment of a roadway.

The provided guidance on the use of chevron alignment signs addresses rural/urban locations, road classification and network elements. The correct/incorrect placement of chevron alignment signs, hierarchy of curve delineation devices and temporary conditions are also addressed.

The guidelines are intended to supplement the section documenting the use and installation of chevron alignment signs in the *Manual of Uniform Traffic Control Devices for Canada (MUTCDC)*

Disponible en français : *Lignes directrices concernant l'utilisation et l'installation des panneaux chevrons d'alignement (2012)*

Media type: PDF
Download
2012

Free

Performance Measures for Highway Road Networks

PTM-PHWYN-E

Performance measurement in transportation departments has long been used as part of pavement and bridge management systems but is increasingly becoming a core component of public sector management processes, as well as extending to applications in construction and maintenance, and operations and safety programs. All Canadian provinces and territories use some form of performance measures to evaluate their road networks, however the type of performance measures used and the implementation practices vary significantly between jurisdictions. Performance Measures for Highway Road Networks identifies performance measures that could be used by all jurisdictions in the country to effectively manage rural highway infrastructure in the areas of transportation system preservation and safety.

The recommended performance measures will provide a means to compare roads in different jurisdictions to one another, and assist senior officials and transportation professionals in decision-making on planning, evaluation, investment, asset management and day-to-day operations. The recommended performance measures could be used to communicate with and report to the public regarding the importance and performance of transportation systems.

Keywords: administration; economics; efficiency; evaluation (assessment); measurement; network (traffic); network (transport); pavement management system; planning; safety

Disponible en français : *Mesures de performance des réseau routiers (2012)*

Media type: PDF
Download
2012

Free

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

TAC Conference Proceedings - 2012

CPR-TAC2012-E

The TAC conference papers are posted online, organized by author, title and category. They are available to view or download in PDF format.

Disponible en français : *Compte rendu du congrès de l'ATC - 2012*

http://conf.tac-atc.ca/english/annualconference/tac2012/english/index.htm

Media type: PDF
Download
2012

Free

Recommended Practices for LED-Embedded Traffic Signs (LETS)

PTM-LEDSGN-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 Construction and Operation of Winter Roads

PTM-COWINRD-E

Winter roads play an important role in servicing remote communities with no all-weather road access within the territories and northern regions of Canadian provinces. The development of resource projects in northern Canada relies heavily on winter roads.

The main objective of these guidelines is to provide recommendations for design, construction and operation of winter roads. These guidelines were developed based on information and experience gathered by experts in the field of winter road planning, construction and operation.

Building an all-season road network over long distances would prevent or delay exploration efforts due to high costs. Winter roads provide an excellent, cost effective means for moving equipment and goods in and out of a remote location. Drilling activities, for example, can be completed within a few months while the ground is frozen and water bodies are covered with an adequate ice sheet to support the operation.

The information in this document is intended for technically trained personnel in leading management positions and transportation departments who will develop their own specific guidelines as well as a general reference guide for other organizations to develop their specific documents for planning, building and operating winter roads.

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

Media type: eBook, Print
2011

Member Price: $ 225.00, Regular Price: $ 299.00

A Guide for the Accommodation of Utilities Within Freeway Rights-of-Way

PTM-ACUTFRW-E

Utility firms provide essential services to the public. They often install their facilities within the right-of-way of public roads. If the utilities were not allowed to use the right-of-way, they could be required to purchase their own land, which would increase the overall costs to the utility firms and to the public.

This guide provides assistance to various road authorities with establishing and administering reasonably uniform guidelines for the accommodation of utilities within freeway rights-of-way in order to maintain safety, traffic-carrying ability, and the physical integrity of freeways across Canada.

The *Guide to the Accommodation of Utilities Within Freeway Rights-of-Way* is provided for consideration and use by provincial road authorities in regulating the use and occupancy of freeway rights-of-way by utilities. The Guide makes no reference to the legal right of utilities to use or occupy freeway rights-of-way, or to the financial responsibility involved in the adjustment or installation of utilities within such rights-of-way.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/ptm-acutfrw-finalpub-e.pdf

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

Recommended Practices for Posting Ramp Speeds
PTM-RAMPSPEED
The purpose of this publication is to outline recommended practices for ramp speed signing in a useful and widely accepted form for Canadian practitioners. It has been primarily developed as a reference document for traffic engineering professionals responsible for selecting and implementing traffic control devices for managing speeds on ramps.

Accurate, up-to-date and full coverage of issues relating to ramp speed signing in Canada is provided. The recommended practices have largely been created according to accepted human factors principles defined by wide-spread use of guidelines across a variety of Canadian jurisdictions. When possible, the documented practices provide quantitative guidance for the use and placement of ramp speed signs and associated devices.

The document also proposes an amended version of a ramp advisory speed limit sign contained in TAC's *Manual of Uniform Traffic Control Devices for Canada (MUTCDC)* The importance of standards, uniformity and consistency is emphasized throughout the publication. However, these tenets of road safety engineering should not be used in place of sound engineering judgement.

Disponible en français : *Pratiques recommandées pour la signalisation des limites de vitesse dans les bretelles (2011)*

Media type: eBook, Print
2011

Member Price: $ 59.00, Regular Price: $ 79.00

Quantifying and Forecasting Greenhouse Gas Emissions from Urban Passenger Transportation - TECHNICAL APPENDICES
RPT-QFGGEAPP-E
This report captures the presentations used at the "Quantifying and Forecasting Greenhouse Gas Emissions from Urban Passenger Transportation" workshop held by TAC, which was a forum for exchanging ideas and knowledge.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/report-ghg-appendices.pdf

Media type: PDF
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2011

Free

Guidelines for the Application and Display of Transit Signals
PTM-DISPLAY
Guidelines for the Application and Display of Transit Signals will help practitioners in Canadian jurisdictions identify the changes needed in applicable legislation and policies in order to implement transit signal displays, and prepare intersection designs and operations on transit routes.

These guidelines were prepared in response to the increased interest in public transit systems as a reliable form of transportation. Over the past few years, transit priority measures have been implemented to improve sustainable transportation and surface transit systems. Some of these measures require the use of transit signal displays, which can provide the right-of-way for public transit vehicles. To help address the application and display of transit signals and to achieve consistency, various displays for transit throughout Canada were consolidated to nationwide implementation.

Disponible en français : *Lignes directrices d'application et d'affichage des signaux lumineux pour le transport en commun (2011)*

Media type: eBook, Print
2011

Member Price: $ 79.00, Regular Price: $ 119.00

TAC Conference Proceedings - 2011
CPR-TAC2011-E
The TAC conference papers are posted online, organized by author, title and category. They are available to view or download in PDF format.

Disponible en français : *Compte rendu du congrès de l'ATC - 2011*

http://conf.tac-atc.ca/english/annualconference/tac2011/english/index.htm

Media type: PDF
Download
2011

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Knowledge Management Framework
RPT-KMF-E
This document provides background and key definitions, presents a framework of knowledge management activities, and describes an implementation process.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/report-knowledge-mgmt-2010.pdf

Disponible en français : *Cadre de gestion des connaissances (2010)*

Media type: PDF
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2010

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Active Transportation - Making it Work in Canadian Communities
PTM-ACTIVE
With growing concern over issues such as climate change and public health, addressing the active transportation needs in Canadian communities is of high importance. In a survey of TAC member municipalities, respondents enthusiastically identified many upcoming initiatives and works-in-progress. This report is an attempt to uncover relatively undocumented success stories that are developing throughout Canada to assist local, regional, provincial and federal Canadian governments in understanding the critical factors for successful implementation of active transportation strategies.

The report is an exploration of experiences based on interviews and focus group discussions with practitioners in the field, as well as the survey of TAC member municipalities. Drawing on this extensive material, the study team articulated 11 principles for consideration by those working to improve active transportation in Canadian cities.

Download the Primer

Media type: PDF
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2010

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PRIMER: Developing and Managing Transportation Infrastructure in Permafrost Regions

PRM-DMTIPR-E

A primer of the TAC publication *Guidelines for Development and Management of Transportation Infrastructure in Permafrost Regions* (2010), PTM-PERMAFROST, available for purchase in the TAC Bookstore.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/primer-permafrost2010.pdf

Media type: PDF
Download
2010

Free

Urban Transportation Indicators - Fourth Survey

RPT-UTIP4-E

This report presents data and statistics based on information submitted in response to the Urban Transportation Indicators Survey questionnaire prepared and administered by the Transportation Association of Canada (TAC).

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/report-uti-survey4.pdf

Disponible en français : *Indicateurs de transports urbains - Quatrième enquête (2010)*

Media type: PDF
Download
2010

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Guidelines for Transit Lane Conspicuity Through Surface Treatment

PTM-LANEMARK

Surface treatments, including the coloration of asphalt, continually convey the "special transit only status" message to motorists without drawing their attention off the road. Transit lane violation has a negative impact on both transit travel times and the image of the transit facility. By making transit lanes more obvious to the eye and mind, lane violation can be significantly decreased or eliminated. This TAC guideline recommends using red for the coloured surface treatment of transit lanes.

The guidelines were developed based on four key principles:
1) The use of strict conditions for implementation instead of widespread implementation;
2) A focus on restricted areas versus conflicting areas;
3) Partial and full-length application; and
4) Compatibility with other transit lane design elements.

Agencies designing transit lanes should follow existing guidelines or standards for transit lane markings and signage.

Download the Primer

Media type: PDF
Download
2010

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Guidelines for Development and Management of Transportation Infrastructure in Permafrost Regions

PTM-PERMAFROST

These guidelines provide a compendium of best practices for the development, planning, design, construction management, maintenance and rehabilitation of transportation facilities in regions of northern Canada with permafrost terrain.

Divided into nine chapters, the publication focuses on the context and challenges of Northern Canada, route investigation in permafrost regions, embankment and pavement materials, engineering considerations, and drainage and erosion control. It also includes a glossary of permafrost terms.

The guidelines are intended as a general reference for senior management to gain an understanding of the challenges of developing and managing transportation infrastructure in permafrost regions. This practical, easy-to-read guide will help those directly involved in any aspect of the life cycle of infrastructure in northern Canada, as well as project managers, planning / design engineers and maintenance personnel to conduct their day-to-day work.

Disponible en français : *Lignes directrices de développement et de gestion des infrastructures de transport dans les régions de pergélisol (2010)*

Media type: eBook, Print
2010

Member Price: $ 249.00, Regular Price: $ 359.00

Synthesis of Practices for Median Design

PTS-MEDIAN

On higher speed arterial roadways or highways, opposing traffic is usually separated by a centre median. Pedestrians at controlled and uncontrolled crossings often use medians as a refuge halfway across an arterial roadway or highway.

Adjacent landowners are increasingly concerned by the effects medians might have on their business and property values. Efficient design of a median therefore needs to address not only vehicular safety and efficiency but also the safety of vulnerable road users and other users.

Various treatments such as barrier curbs, rolled or mountable curbs, depressed medians, painted medians and centre median barriers have been used as methods to separate traffic. This guide highlights the advantages and disadvantages of these methods for various traffic volumes and speeds, as well as specific guidance on the explicit evaluation of road safety outcomes with various median design treatments.

The guide provides comprehensive guidelines or warrants for:

the design and application of medians for different traffic volumes, functional classifications and speeds encountered in Canada in both rural and urban roadways,

the location of medians, edge treatments and features considered for application to particular design situations,

the provision of median barriers in various situations, including the protection of non-motorized road users, and

• the inclusion or consideration of active transportation modes and accommodation of transit modes related to median treatments.

Disponible en français : *Pratiques de conception des zones médianes (2010)*

Media type: eBook, Print

2010

Member Price: $ 109.00, Regular Price: $ 159.00

Structural Concrete Deck Protection Systems

PTM-DECKPRO

This report contains information on the selection, design, construction, maintenance and rehabilitation of structural deck protection systems (SCDPS) for Canadian conditions. It focuses on structural waterproofing systems commonly used on infrastructure reinforced concrete components to provide an impermeable barrier to protect from corrosion damage.

An illustrated overview of concrete bridge deck waterproofing systems, performance problems, corrosion, and concrete deterioration is highlighted within the report. A list of recommended current SCDPS technical resources and a summary of North American standards for deck protection systems is also provided.

The technical and financial comparison and evaluation of generally available current SCDPS for a new bridge deck project involves three main components: feasibility assessment; a comparative rating of the features and performance; and a life-cycle cost analysis. The report includes an example illustrating this evaluation methodology.

A significant portion of the cost of concrete bridge components is related to the deterioration of reinforced concrete decks subjected to heavy loadings, harsh weather conditions, and regular winter use of anti-icing and de-icing salts across Canada. Enhanced technical and cost-effective structural concrete deck protection systems can play a key role in reducing maintenance, repair, and rehabilitation costs.

Media type: PDF
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2010

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Guide to Bridge Traffic and Combination Barriers

PTM-BARRIER

This guide discusses issues relating to current practices in Canada, and summarizes the available resources, research and design guidance accepted by major North American agencies and jurisdictions. The guide was developed to synthesize and help unify the Canadian bridge barrier design practices.

Divided into eight chapters, the publication specifically focuses on barrier performance levels, conceptual design guidance for new traffic barriers, combination barriers and multi-modal protection, bridge barrier end treatments, as well as evaluation and upgrade of existing systems.

This publication is intended to serve as a comprehensive summary rather than a design specification guide. No crash testing was conducted during the project and all findings noted in the guide are based solely on literature review and interviews with expert researchers and representatives of major Canadian jurisdictions.

The content of the publication is consistent with the requirements of the Canadian Highway Bridge Design Code, which is the principal design code specification for bridge barriers in Canada.

Disponible en français : *Guide des glissières de sécurité et des glissières combinées pour les ponts (2010)*

Media type: eBook, Print
2010

Member Price: $ 199.00, Regular Price: $ 279.00

Guidelines for the Planning, Design, Operation and Evaluation of Reversible Lane Systems

PTM-REVERSE

This publication presents a set of national guidelines and list of considerations for the planning, design, operation and evaluation of reversible lane systems (RLS).

Reversible roadways and lanes are considered to be one of the most cost-effective means of increasing roadway capacity under certain conditions. In a reversible lane or roadway, the direction of traffic flow is reversed to the opposing direction for some period of time. This takes advantage of the unused capacity of the minor flow direction to increase capacity in the major flow direction, potentially negating or deferring the need to construct additional lanes.

These guidelines offer roadway design practices and suggested warrant guidelines / thresholds, as well as an evaluation of multiple configurations, addressing left turn issues and safety considerations. Systems capacity and evaluation / assessment methods are also included.

Various themes are discussed in the guidelines, such as:
• Operational and safety implications and potential benefits of the RLS system.
• Traffic control measures including evaluation of appropriate system timings, clearance methods, and monitoring and lane reversal change thresholds.
• Quantifying the improvement in roadway operations in terms of volume capacity, travel time / speed and safety.

Disponible en français : *Lignes directrices pour la planification, la conception, l'exploitation et l'évaluation des systèmes de voies à sens réversible (2010)*

Media type: PDF
Download
2010

Free

Phase 2 of the Framework for High Quality Data Collection of Urban Goods Movement in Canada

RPT-2FHQDC-E

This report presents a recommended framework and a program for gathering high-quality data for urban goods movement surveys in Canada.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/report-goodsmovement-phase2.pdf

Disponible en français : *Cadre de collecte de donnés de qualité supérieure sur le transport urbain des marchandises : Phase 2 (2010)*

Media type: PDF
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TAC Conference Proceedings - 2010

CPR-TAC2010-E

The TAC conference papers are posted online, organized by author, title and category. They are available to view or download in PDF format.

Disponible en français : *Compte rendu du congrès de l'ATC - 2010*

http://conf.tac-atc.ca/english/resourcecentre/readingroom/conference/conf2010/english/table_of_contents.htm

Media type: PDF
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2010

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Winter Maintenance Performance Measurement Using Friction Testing

PTM-FRICTION

Winter Maintenance Performance Measurement Using Friction Testing provides developments in winter friction testing and a survey of practices throughout Canada and abroad. The study investigates the approaches of road agencies related to communicating road conditions and friction levels to motorists during winter. The types of equipment used and their effectiveness based on the experience of road agencies are also reviewed.

The benefits of winter road surface friction testing include facilitating winter maintenance planning, evaluating the effectiveness of winter maintenance operations, minimizing environmental impacts, and enhancing road safety by clearly communicating friction levels to motorists.

Winter road surface friction measurement has been implemented by Finland, Norway and Sweden as a quality standard. Scandinavian road agencies found it to be a useful tool to enhance traffic safety. The study highlights lessons learned from the usage of friction measurements as well as research gaps, such as a thorough evaluation of winter friction devices; harmonization of winter friction measurement; an evaluation of actual vehicle performance on winter roads; and a selection of friction devices for Canadian applications.

Disponible en français : *Évaluation du rendement de l'entretien hivernal à l'aide d'essais de frottement (2009)*

Media type: PDF
Download
2009

Free

Canadian Guidelines for Establishing Posted Speed Limits
PTM-POSTEDSPEED
This publication offers recommendations to help engineers and traffic practitioners determine speed limit management procedures, which enhance the effectiveness and credibility of posted speed limits.

Road safety may be enhanced through credible posted speed limits that match the expectation of drivers for a given roadway and its surrounding area. The guidelines provide an evaluation tool to assess appropriate posted speed limits based on the classification, function and physical characteristics of a roadway. It is an objective assessment based on engineering factors.

The risks associated with the engineering factors determine the appropriate posted speed limit. The higher the level of risk, the lower the recommended posted speed limit. The application of the methodology determines posted speed limits, consistent with the roadway's physical characteristics. An automated spreadsheet is provided to facilitate the evaluation of posted speed limits.

The guidelines were developed through a review of current domestic and international practices, technical documentation and testing.

Disponible en français : *Lignes directrices canadiennes pour l'établissement des limites de vitesse prescrites (2009)*

Media type: Print
2009

Member Price: $ 79.00, Regular Price: $ 99.00

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

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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

TAC Conference Proceedings - 2009

CPR-TAC2009-E

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Disponible en français : *Compte rendu du congrès de l'ATC - 2009*

http://conf.tac-atc.ca/english/resourcecentre/readingroom/conference/conf2009/english/table_of_contents.htm

Media type: PDF
Download
2009

Free

Environmental Management Systems User Guide for Transportation Practitioners

PTM-EMSGUIDE

This comprehensive user guide is designed for Canadian jurisdictions when making decisions on Environmental Management System (EMS) framework planning, design, implementation, maintenance and related costs (including operations and maintenance implications). The Guide was the basis of a highly successful session at the recent TAC Conference in Toronto.

EMS is comprised of a set of management procedures that allows an organization to analyze, control and reduce the environmental impact of its activities, products and services, and operate with greater efficiency and control. The Guide includes outlines of EMS best practices, success stories and lessons learned.

The Guide is divided into two parts:

A "How-to" for developing an EMS in an organization

Examples and Case Studies; practical experience from agencies in developing and implementing an EMS

Clear symbols and tables are used throughout to emphasize key points, help focus information and provide examples, tools and advice.

Keywords: Environment; environmental management system; planning; administration; policy; guidance; operational research

Disponible en français : *Systèmes de gestion environnementale - Guide d'utilisation à l'intention des praticiens du transport (2008)*

Media type: PDF
Download
2008

Free

Management of Utilities in and Adjacent to the Public Right-of-Way: Survey of Practices

RPT-MUAPRW-E

The intention of this effort was to gather practices from across Canada supplemented by a project-specific questionnaire distributed to the road authorities of each province and territory as well as one municipality in each province.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/report-mgmt-utilities-row.pdf

Media type: PDF
Download
2008

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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

Best Practices for the Technical Delivery of Long-Term Planning Studies in Canada - Final Report

RPT-BPTDLTP-E

This report describes the findings of research focused on the analytical tools and associated data that support long-term transportation planning practices of small- and medium-sized communities in Canada.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/report-bp-techdelivery.pdf

Disponible en français : *Bonnes pratiques techniques d'exécution des études de planification des transports à long terme au Canada - Rapport final (2008)*

Media type: PDF
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Free

Handbook of Recommended Information Sign Symbols for Canada

PTM-SYMBOL

The *Handbook of Recommended Information Sign Symbols for Canada* is a reference guide for recommended information sign symbols whose comprehensive nature excludes its contents from TAC's *Manual of Uniform Traffic Control Devices for Canada (MUTCDC)* due to that document's large breadth and scope.

The Handbook is useful to Canadian jurisdictions implementing new sign initiatives or reviewing current programs that use standard symbols in their sign design. For example, Tourism-Oriented Directional Signing (TODS) programs, increasingly adopted by Canadian jurisdictions, rely on the availability of many specific information sign symbols.

Part 1 of the Handbook provides context and important information on general application and guidelines, facility eligibility, and multiple activity/facility signing for proper sign symbol use.

Part 2 of the Handbook provides listings of the sign symbols, organized into 19 facility type groups.

Customers may purchase the Handbook of Recommended Information Sign Symbols for Canada and/or its related electronic vector image files (EPS) in the following options or combinations:

PKG-SYMBOL (PACKAGE: print version Handbook + vector image files): $249 member / $325 non-member

PKG-SYMBOL-EBK (PACKAGE: e-book version Handbook + vector image files): $249 member / $325 non-member

PTM-SYMBOL (Handbook only: print version): $149 member / $199 non-member

PTM-SYMBOL-EBK (Handbook only: e-book version): $149 member / $199 non-member

FLS-SYMBOL (vector image files only): $149 member / $199 non-member

See the written description for the vector image files – FLS-SYMBOL – for more information.

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Media type: eBook, Image files, Print
2008

Member Price: $ 149.00, Regular Price: $ 199.00

PACKAGE: Handbook of Recommended Information Sign Symbols for Canada

PKG-SYMBOL

This package consists of two components:

1) the Handbook of Recommended Information Sign Symbols for Canada

2) electronic vector image files (EPS format) of the related sign symbols

The Handbook of Recommended Information Sign Symbols for Canada is a reference guide for recommended information sign symbols whose comprehensive nature excludes its contents from TAC's Manual of Uniform Traffic Control Devices for Canada (MUTCDC) due to that document's large breadth and scope.

The Handbook is useful to Canadian jurisdictions implementing new sign initiatives or reviewing current programs that use standard symbols in their sign design. For example, Tourism-Oriented Directional Signing (TODS) programs, increasingly adopted by Canadian jurisdictions, rely on the availability of many specific information sign symbols.

Part 1 of the Handbook provides context and important information on general application and guidelines, facility eligibility, and multiple activity/facility signing for proper sign symbol use.

Part 2 of the Handbook provides listings of the sign symbols, organized into 19 facility type groups.

The electronic vector image files of the Handbook of Recommended Information Sign Symbols for Canada are intended to assist jurisdictions with the proper reproduction of the sign symbols presented in the document of the same name. The files are provided in EPS format in order to maintain their resolution, if resizing is required. The image files are organized into the 19 facility type groups represented in Part 2 of the Handbook. The sign symbol images for each group are accompanied by a PDF overview listing.

Customers may purchase the *Handbook of Recommended Information Sign Symbols for Canada* and/or its related electronic vector image files (EPS) in the following options or combinations:

PKG-SYMBOL (PACKAGE: print version Handbook + vector image files): $249 member / $325 non-member

PKG-SYMBOL-EBK (PACKAGE: e-book version Handbook + vector image files): $249 member / $325 non-member

PTM-SYMBOL (Handbook only: print version): $149 member / $199 non-member

PTM-SYMBOL-EBK (Handbook only: e-book version): $149 member / $199 non-member

FLS-SYMBOL (vector image files only): $149 member / $199 non-member

Customers ordering image files will be sent an email confirmation which includes a website link and license ID to use to download the files using the Vault process. After a few simple steps, the vector image files will download into a compressed 'zip' folder.

Media type: eBook, Image files, Print
2008

Member Price: $ 249.00, Regular Price: $ 325.00

TAC Conference Proceedings - 2008

CPR-TAC2008-E

The TAC conference papers are posted online, organized by author, title and category. They are available to view or download in PDF format.

Disponible en français : *Compte rendu du congrès de l'ATC - 2008*

http://conf.tac-atc.ca/english/resourcecentre/readingroom/conference/conf2008/english/table_of_contents.htm

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Phase 1 of the Framework for High Quality Data Collection of Urban Goods Movement in Canada

RPT-1FHQDC-E

This project was conducted to develop an understanding of the types of data that are needed to address urban goods movement issues as they relate to land use planning, infrastructure planning, traffic safety and operations, demand management and sustainable transportation.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/report-goodsmovement.pdf

Disponible en français : *Cadre de collecte de donnés de qualité supérieure sur le transport urbain des marchandises au Canada : Phase 1 (2007)*

Media type: PDF
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2007

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Guide for Bridge Repair and Rehabilitation

PTM-BRIDGEREP

The Guide for Bridge Repair and Rehabilitation was developed for bridge owners who may be confronted with requirements for managing a bridge population, or an individual bridge, but who may not have all the detailed knowledge of the state-of the-art in bridge rehabilitation and repair. It is intended that such users be able to refer to this document to obtain a general overview of bridge rehabilitation and repair, and to enable them to understand when expertise, in the form of external agencies or bridge engineering consultants, should be brought to bear on the issues.

Chapter 1 provides an introduction to the issues of bridge repair and rehabilitation;

Chapter 2 reviews the types of bridge structures that are associated with short, medium, and long span structures, as well as other types of structures such as hybrid, movable, and temporary moveable bridges;

Chapter 3 provides information on construction material, including asphalt, concrete, steel, masonry, timber, and many more that are used in the construction of bridges;

Chapter 4 explores the elements of bridges and the types of deterioration that occur on each;

Chapter 5 reviews materials used in bridge repair and rehabilitation;

Chapter 6 describes rehabilitation methodologies;

Chapter 7 explores special considerations for bridge repair and rehabilitation, including maintenance, life cycle costing and the aesthetics of rehabilitation. It also reviews social, economic, and environmental considerations;

Chapter 8 provides a glossary of terms used in the industry; and

Chapter 9 provides a list of references used throughout the Guide.

Media type: eBook, Print
2007

Member Price: $ 199.00, Regular Price: $ 349.00

Development of Winter Severity Indicator Models for Canadian Winter Road Maintenance

PTM-WINTERSEV

This report discusses the development of a TAC Winter Severity Index. (For report purposes, a winter severity index is defined as a measure of the relative impact of winter weather on winter road maintenance (WRM) operations using historical meteorological or Road Weather Information System (RWIS) data.)

A set of models were developed using Canadian WRM, Meteorological Service of Canada (MSC) and RWIS data. WRM data were collected from across Canada from eight provincial road authorities and seven cities. Salt usage in tonnes (salt (t)/lane-km/day) was chosen as the dependent variable, standardized to account for differences in road network and the number of days in the observation period.

The first model developed, based on MSC data alone, achieved a goodness of fit of 0.54. Explanatory variables were based on snowfall occurrence, air temperature, freezing rain occurrence, and an east-west dummy variable to account for differences in winter road maintenance practices in different parts of Canada. A second model was developed based on MSC data together with RWIS data. This achieved a goodness of fit of 0.60, but was based on a significantly smaller sample size.

Calibration factors were developed for twenty different homogeneous groupings across Canada using the Bayesian method. Based on the calibration, thirteen of the twenty groups achieved a better goodness of fit compared to the national model results.

The report is accompanied by a spreadsheet designed to calculate the winter severity index using Environment Canada data.

Keywords: Winter maintenance; winter; weather; storm; impact study; measurement; mathematical model; maintenance; planning; Canada

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Media type: PDF
2007

Free

Synthesis of Quality Management Practices for Canadian Flexible Pavement Materials and Construction

QM-PAVMAT

The Synthesis of Quality Management Practices for Canadian Flexible Pavement Materials and Construction reviews practices for the quality management of materials, production and placement in flexible pavement construction. More specifically it describes:
1) Design considerations;
2) Flexible pavement materials: granular sub-base / base; hot-mix asphalt aggregates and asphalt cements (typical performance graded asphalt cements); and miscellaneous materials such as reclaimed asphalt pavement, tack coat, fillers, fibres and polymer modified asphalt cements;
3) Subgrade preparation;
4) Placement and compaction of granular sub-base and base;
5) Hot-mix asphalt production and transportation, including environmental control; and hot-mix asphalt paving and compaction - trial section, substrate preparation, tack coats, material transfer devices, joint construction and working with polymer modified asphalts.

The publication also summarizes the quality control and quality assurance sampling, testing and inspection associated with each of these materials and methods in terms of technician and testing equipment/laboratory requirements to monitor compliance with flexible pavement project quality requirements.

Lastly, the Synthesis of QM Practices offers recommendations for a QM system template based on a contractor's quality control plan and an agency's quality assurance plan. The template is, however, subject to the specific project requirements of an agency for flexible pavement materials and construction.

The importance of a contractor's and agency's commitment to quality and teamwork, at all stages of flexible pavement materials and construction methods, in order to ensure enhanced life-cycle costs and performance, is emphasized throughout.

Media type: PDF
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TAC Conference Proceedings - 2007

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Disponible en français : *Compte rendu du congrès de l'ATC - 2007*

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Media type: PDF
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2007

Free

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

TAC Conference Proceedings - 2006

CPR-TAC2006-E

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http://conf.tac-atc.ca/english/resourcecentre/readingroom/conference/conf2006/english/table_of_contents.htm

Media type: PDF
Download
2006

Free

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.

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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

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

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
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2005

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National Guide to Erosion and Sediment Control on Roadways Projects

PTG-EROSION

The National Guide to Erosion and Sediment Control on Roadway Projects is a "must have" publication for road agency personnel, consultants, contractors and regulators. It identifies tools and steps to design and implement erosion and sediment control plans for road system planning, construction and maintenance, in both the urban and rural context.

The publication provides guidance in terms of defining risk and level of effort, selecting methodologies for analysis and design, choosing mitigation measures, and meeting legislation and regulatory requirements. It also highlights regional differences in soil, vegetation and climate conditions that must be taken into account when creating a control plan.

The Guide contains both a theory section covering legislation, physical processes and risk assessment, and an applied section addressing factors such site assessment and selection of best practices.

Disponible en français : *Guide national du contrôle de l'érosion et de la sédimentation associées aux projets routiers (2005)*

Media type: eBook, Print
2005

Member Price: $ 79.00, Regular Price: $ 99.00

Urban Transportation Indicators - Third Survey

U-INDIC05

This publication contains the results of TAC's third survey on the health of transportation in major urban Canadian centers. Conducted in 2003 and based on the 2001 census, the survey represents a comprehensive look at a variety of transportation trends and revisits issues such as land use and urban structure, transportation demand and supply, transportation financing and spending and overall transportation use and environmental implications. All 27 Census Metropolitan Areas participated, although the level of their participation does vary.

The 2-volume report describes the survey process and results, draws conclusions on trends from the resulting database and discussed progress towards achieving the TAC Vision for Urban Transportation, in light of the survey findings and in comparison to international data.

An Excel database of the information upon which the report and the profiles are based is provided, as well as the raw data for the previous 1991 and 1996 surveys.

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/complete_0.pdf

Disponible en français : *Indicateurs de transports urbains - 3e enquête (2005)*

Media type: PDF
Download
2005

Free

TAC Conference Proceedings - 2005

CPR-TAC2005-E

The TAC conference papers are posted online, organized by author, title and category. They are available to view or download in PDF format.

Disponible en français : *Compte rendu du congrès de l'ATC - 2005*

http://conf.tac-atc.ca/english/resourcecentre/readingroom/conference/conf2005/english/table_of_contents.htm

Media type: PDF
Download
2005

Free

Guide to Bridge Management

PTM-BRIDGEMGMT

Many Canadian bridges have reached the end of their serviceable lives (50 to 80 years) and many more are approaching the same condition. In addition, the cost of bridge maintenance has been rising over the years and deficient bridges are becoming more prevalent. TAC's Guide to Bridge Management provides tools and strategies for professionals to identify conditions and deficiencies, to assess needs and to evaluate costs, such that appropriate investments are made in the areas of greatest need. The Guide may also be a valuable reference tool for owners and consultants, providing assistance in the judgment of engineering services for bridge management, on the basis of a common terminology and attributes.

The Guide provides a description of existing bridge management functions and the most effective practices and activities that could be implemented. Chapter topics cover:

bridge management overview (for senior managers)

bridge anatomy and components

bridge deficiencies

management, operations and maintenance (for managers)

bridge inspection

evaluation

references.

The Guide will be of use to both municipalities and provinces/territories, to assist in the development of reasonable management practices for bridge infrastructure. It is designed so that it can be applied to unique bridge structures or elements, or an overall network of bridges.

For those with a bridge management best practice in place, this Guide will provide a wealth of additional information. For those without such a system and looking to establish one, this Guide will prove very helpful in needs determination.

Media type: eBook, Print
2004

Member Price: $ 49.00, Regular Price: $ 69.00

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: $ 239.00

TAC Conference Proceedings - 2004

CPR-TAC2004-E

The TAC conference papers are posted online, organized by author, title and category. They are available to view or download in PDF format.

Disponible en français : *Compte rendu du congrès de l'ATC - 2004*

http://conf.tac-atc.ca/english/resourcecentre/readingroom/conference/conf2004/english/table_of_contents.htm

Media type: PDF
Download
2004

Free

Supplemental Guide for Guide and Information Signage in Canada

PTM-INFOSIGNS

Supplemental Guide for Guide and Information Signage in Canada is a stand-alone document to be used as a companion to the Manual of Uniform Traffic Control Devices for Canada (MUTCDC). Specifically, it provides additional guidance to two MUTCDC sections: Division A4 (Guide and Information Signs) and Division A5 (Freeway Guide Signs).

The key objective of the Supplemental Guide is to provide additional information about the guide and information signage for non-freeway and freeway applications in both rural and urban environments. The Supplemental Guide contains summaries of extensive literature reviews of various provincial, federal, USA and international guide signage manuals, other related guides and manuals and various publications relating human factors to the guide signage. The literature review findings were complemented by a jurisdictional survey on guide signage practices within North America.

The MUTCDC has been revised based on the findings from this document. However, numerous sections of the Supplemental Guide were not included, in order that the MUTCDC provide clear, easy-to- follow and easy-to-locate information. The Supplemental Guide is a stand-alone, unique reference document that provides information and guidance on various topics that will not be published as revisions to the MUTCDC.

Media type: eBook, Print
2003

Member Price: $ 149.00, Regular Price: $ 199.00

TAC Conference Proceedings - 2003

CPR-TAC2003-E

The TAC conference papers are posted online, organized by author, title and category. They are available to view or download in PDF format.

Disponible en français : *Compte rendu du congrès de l'ATC - 2003*

http://conf.tac-atc.ca/english/resourcecentre/readingroom/conference/conf2003/pages/contents.html

Media type: PDF
Download
2003

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What Was Heard - A Report Documenting the Results of consultation on the Transportation Association of Canada's Business Plan

RPT-WWH-E

Disponible en français : *Les membres se sont prononcés! Sommaire des consultations concernant le prochain plan d'affaires de l'Association des transports du Canada (2002)*

http://tac-atc.ca/sites/tac-atc.ca/files/site/doc/resources/report-businessplan.pdf

Media type: PDF
Download
2002

Free

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

Guide to Bridge Hydraulics (Second Edition)

PTM-BRIDGE-HYD

Floods and erosion continue to be important causes of bridge damage and failures worldwide, and to be a key consideration in bridge design, construction and maintenance. In some jurisdictions, concern over the security of bridges against the action of water has led to extensive re-evaluation of existing foundations. This Guide aims to assist bridge designers by outlining the factors to be considered in the location, layout and hydraulic design or re-evaluation of bridges and by suggesting criteria and procedures to do so.

The Guide is directed at civil engineers and other professionals responsible for bridge design, construction and maintenance but who may not be specialists in hydraulics and hydrology.

Media type: eBook, Print
2001

Member Price: $ 199.00, Regular Price: $ 349.00

Study of Natural Gas Pipeline Placement in Rural Road Right-of-Ways

PTR-NATGAS

The placement and location of hydrocarbon pipelines with respect to road geometries and cross sections can have an effect on
1) the safety of the highway system, its users and adjacent residents and
2) the operational and economic impacts of highway maintenance.

TAC's study is intended to provide readers with a qualitative and quantitative understanding of the implications of locating pressurized natural gas pipelines in various locations within rural road right-of-ways. The study's conclusions and recommendations include definition of compatible and incompatible combinations of pipeline and location installations in terms of safety, cost and constructibility; various risk and impact mitigation measures to enhance safety and reduce costs; and long-term approaches to optimize the situation.

Keywords: Network (transp); Highway; Pipe; Gas; Safety; Operational Research; Economics; Location

Media type: PDF
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2001

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Illumination of Isolated Rural Intersections

PTM-IIRI

*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

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Media type: Print
2001

Member Price: $ 49.00, Regular Price: $ 69.00

Standardization of IRI Data Collection and Reporting in Canada

PTM-IRIDATA

The International Roughness Index (IRI) is a widely used, internationally recognized index of roadway surface roughness. This TAC study was commissioned to develop practices to standardize collection, reporting and use of IRI data in Canada. The scope of the study was limited to the use of IRI on rural roadway applications (recognizing that urban conditions will be encountered in some instances), and on flexible (asphalt concrete) pavements systems which comprise virtually all rural highway infrastructure in Canada.

The study focused on identifying: The "State-of-the Technology" as it relates to data collection hardware, data collection methodology and practices, and software and processing that will provide an IRI value from a roadway longitudinal profile measurement, and The "State-of-the-Practice" as it relates to how the processed IRI data are stored, assembled, interpreted and used by transportation agencies.

A survey to obtain and update the practices of Canadian, US and International jurisdictions that use or are in the process of implementing IRI for network, project and construction smoothness QC/CA purposes was carried out. A survey of manufacturers of intertial profiler systems to solicit detailed electrical, technical and operational information was also undertaken. This study has resulted in the development of the "Best Practices Guidelines" that will standardize the measurement, calibration and verification of roadway longitudinal profile data collected using high-speed laser-based profilers, and profile analysis and IRI reporting procedures.

Media type: eBook, 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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Urban Transportation Indicators – Survey 2, 1996

PTR-UTI99

In 1993, the Urban Transportation Council (UTC) of the Transportation Association of Canada (TAC) proposed a New Vision for Urban Transportation, describing 13 principles which point the way to desirable future transportation sysems and related urban land use. The Council reconized that periodic surveys of transportation indicators would be required to monitor progress towards achieving the Vision. To this end, a pilot survey was carried out in 1995 using 1991 as the study year and including eight urban areas. This report describes the second survey which included 15 urban areas and was carried out in 1999 for the 1996 study year.

Media type: PDF
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1999

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PRIMER: Highway Asset Management Systems

PRM-ASSETMGMT

TAC's primer on highway asset management systems introduces the concepts of asset management, outlines the potential benefits and describes how to successfully plan and implement an asset management system. Managing highway assets is not a new concept; highway agencies have been using pavement, bridge and maintenance management systems for decades. What sets asset management systems apart today is the move to merge these single-asset management systems into an integrated whole. Asset management is a comprehensive process that allocates funds effectively and efficiently among competing pavement, structure and other infrastructure needs.

This document will be of interest to all government transportation and finance departments at the federal, provincial and municipal levels, as well as academics, associations and private sector firms who have an interest in asset management systems and procedures.

Disponible en français : *NOTIONS ÉLÉMENTAIRES : Les systèmes de gestion des éléments d'actif routiers : notions fondamentales*(1999)

Media type: PDF
Download
1999

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In-Line Skating Review Phase II

INLINE

In-line skating in Canada is worthy of consideration as a mode of transportation. In TAC's In-line skating review it was revealed that in-line skating represents a concern for many municipalities in terms of their ability to manage, regulate and enforce this activity on the transportation system. As the activity grows in scope and scale, a need becomes evident for the development of design, operational and safety guidelines.

The objective of the In-line Skating Review: Phase 2 was to undertake a comprehensive investigation of some pertinent issues relating to in-line skating and to establish guiding principles with respect to:

1) the appropriateness of permitting in-line skating on any roads, sidewalks, bicycle routes and offroad facilities and
2) the need for and type of protective equipment that should be used.

The report includes a thorough assessment of the current technology, the basic operational characteristics of in-line skating, performance characteristics/constraints, the safety record of the equipment, a review of enforcement issues and suggested criteria to be used in assessing the capability of infrastructure elements to safely accommodate in-line skaters.

http://tac-atc.ca/sites/tac-atc.ca/files/site/inline.pdf

Disponible en français : *Synthèse sur le patinage sur roues alignées : deuxième étape (1997)*

Media type: PDF
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1997

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Determining the Winter Design Temperature for Asphalt Pavements
WINT
This document develops a method to enable the selection of asphalt binders that resist thermal cracking in very cold winter climates. An algorithm is developed which estimates design temperatures for a pavement test site from the local winter temperature history. This equation includes a factor for the desired reliability, and can be used with the SUPERPAVE paving mix design system.

http://tac-atc.ca/sites/tac-atc.ca/files/site/determining_winter.pdf

See also: *Determining the winter design temperature - Supplement for air and pavement temperature data*

Media type: PDF
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1997

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Urban Transportation Indicators in Eight Canadian Urban Areas
U-INDIC
The publication presents 24 indicators which will serve as a basis for the continuous monitoring of transportation development in Canadian municipalities.

http://tac-atc.ca/sites/tac-atc.ca/files/site/u_indic-urban-indicators-eight.pdf

Related publication: *Urban Transportation Indicators: 1996 survey 2 (1999)*

Media type: PDF
Download
1996

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Drainage manual - Volume 1 (1982) & Volume 2 (1987)
PTM-DRAIN-EBK
Volume 1 - Hydrology and open channels
Volume 2 - Culverts and storm sewers

Reflects Canadian drainage practice, as of date of publication, with particular reference to transportation facilities. The solution of typical problems is well illustrated through numerous worked examples.

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Media type: eBook
1982

Member Price: $ 35.00, Regular Price: $ 46.00

Metric Curve Tables: Circular and Spiral Curve Functions for Layout Purposes
METRICCURV
Prepared mainly to facilitate field layout work using both horizontal circular curves defined by the radius and spiral curves defined by the spiral parameter. Adequate information is also included for design purposes.

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