

Date 2007-06-29

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To: All Manual Holders

Re: *BC Supplement to TAC Geometric Design Guide, 2007 edition*

This manual (in a red three ring binder) replaces the 2001 edition of the *BC Supplement to TAC Geometric Design Guide* (blue binder). Refer to the list on page 2 which outlines the most significant updated material.

Designers are advised to read the Preface of the manual which explains the policy of the BC Ministry of Transportation in using the 2007 edition of the *BC Supplement to TAC Geometric Design Guide* to produce designs for roads under the Ministry's jurisdiction.

The holder of the manual should visit the Internet site of the BC Ministry of Transportation on a regular basis, and particularly at the start of a design assignment, to verify that his/her manual is up-to-date.

For any questions or comments on the content of the *BC Supplement to TAC Geometric Design Guide*, contact the following persons:

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There have been revisions throughout the 2007 edition; however, some of the most noteworthy updated material includes:

Chapter 300 Alignment:

- new section on increasing the minimum horizontal radius on steep downgrades
- incorporation of Technical Bulletins

Chapter 400 Cross Section:

- new cut and fill slopes in accordance with Clear Zone
- 1.8 m wide sidewalks

Chapter 500 Low-volume Roads:

- re-issue of material dated August 1995

Chapter 600 Safety Elements:

- updated the roadside barrier index figure to show e and f values for max. 6% S.E.
- new section on Roadside Safety
- updated material and drawings on flares for roadside barriers
- incorporation of Technical Bulletins on rumble strips
- new section on fencing for pedestrians and cyclists

Chapter 700 Intersections & Accesses:

- protected left turn intersection added
- new drawing for a collector intersection with a raised median
- new section on the design of accesses to private property
- new section on roundabouts

Chapter 900 Auxiliary Facilities:

Incorporation of Technical Bulletins on

- Slow Moving Vehicle Pullout
- Truck Climbing Lane Warrants and Design
- Passing Lane Warrants and Design

Chapter 1000 Hydraulics:

- revised culvert diameter that defines a structure
- revised language on detention storage
- revised cover requirements
- new durability discussion

Chapter 1100 Railway Crossings and Utilities:

- revised level railway crossing construction application requirements
- revised pedestrian crossing requirements
- revised sightline (clear view triangle) requirements

Chapter 1200 Contracts and Drawings:

- new section on Issuing of Drawings for Tender
- revised section on Property Acquisition Plans (Right-of-Way drawings)

Chapter 1500 Alpine Ski Village Roads:

- new section



Ministry of
Transportation



**BC Supplement to TAC
Geometric Design Guide
2007 Edition**

Library and Archives Canada Cataloguing in Publication Data

British Columbia. Ministry of Transportation

BC supplement to TAC geometric design guide. – 2007 ed.

Loose-leaf for updating.

Supplement to: Geometric design guide for Canadian roads (TAC guide)

ISBN: 978-0-7726-5800-5

1. Roads - Design and construction - Handbooks, manuals, etc. 2. Roads - British Columbia - Design and construction - Handbooks, manuals, etc.

3. Highway engineering - British Columbia - Handbooks, manuals, etc. I. Title: British Columbia supplement to Transportation Association of Canada geometric design guide. II. Title: Geometric design guide for Canadian roads.

TE27.B7B74 2007

625.7'25

C2007-960145-6

ACKNOWLEDGEMENTS

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MoT Section	Preface		TAC Section	
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PREFACE

The **BRITISH COLUMBIA SUPPLEMENT TO TAC GEOMETRIC DESIGN GUIDE** serves many purposes:

- It provides the designer with specific information and instructions related to the production of Contract Documents and Drawings for the tendering of Construction Projects;
- It provides, in one location, certain operational and procedural instructions pertaining to established BC Ministry of Transportation's (BC MoT) process for highway design projects.
- It summarizes geometric design elements as well as other non-geometric standards that are relevant to the designer, complementary to the TAC Guide, and specific to BC MoT projects. Most of the non-geometric standards are matters of policy while most geometric design elements are governed by basic rules of physics.

The **BRITISH COLUMBIA SUPPLEMENT TO TAC GEOMETRIC DESIGN GUIDE** explains the preferred recommended practice for use on BC MoT projects. The latest edition of the **Transportation Association of Canada's "Geometric Design Guide for Canadian Roads" (or TAC Guide)** is the principal source for basic design principles. The AASHTO publication "A Policy on Geometric Design of Highways and Streets" is also recommended as a secondary reference.

The Guidelines contained in the BC Supplement are not meant to be universally applicable. The dimensions shown are either "typical values" (i.e. those which are most commonly used) or "limiting values", specifically stated as recommended minimum or maximum. The "limiting values" are the limits within which a design will lead to the construction of a safe and economical highway. The designer should also note that the BC Supplement recommends certain values or practices to ensure consistency of design on the Provincial Highway system and to achieve life cycle economies.

The application of geometric elements should be carefully considered within the context of the goals of the project. In the absence of other specific Ministry policy, the geometric elements provided in this Manual are applicable to all Highway Designs, tempered by engineering judgement. The Ministry Executive has recently endorsed "**Corridor Ambient Geometric Design Elements Guidelines Policy**" (See TAB 13). Highway Projects that fall under this Policy are not constrained to the geometric elements within this Manual or the TAC Guide; however, the designer should still consider these two manuals as references for geometric design. *For all projects, including those governed by the Ambient Corridor Policy, Ministry operational instructions, process and Contract Drawing preparation is still governed by the applicable sections of this Manual.*

Highway Designers are urged to use the **BC Supplement and the TAC Guide** in a manner that will not stifle their technical judgement and creativity, particularly with regard to staying away from the "limiting values". The designer should evaluate the safety risks of using several limiting values for a combination of design elements at any one location. Higher values are more appropriate where the incremental life cycle benefits in terms of safety, aesthetics, operational efficiency and flexibility in future upgrading, would offset any present increase in construction costs. It is often preferable to use higher values for those design parameters that govern alignment, as modification at a later stage is more costly. Lower values may be appropriate, where safety and operational efficiencies are not adversely affected; yet construction costs can be decreased. This is particularly relevant on rehabilitation or local improvement projects, when the decreased geometric elements are consistent with present geometric elements and the driving experience.

MoT Section	Preface		TAC Section	
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Manual Format:

The BC Supplement is a compilation of BC MoT recommended design practices and instructions to be used for Ministry projects. These are issued in the form of Technical Documents each one deals with a specific subject and is cross-referenced to the TAC Guide for background information.

The BC Supplement is not meant as a complete design guide but as a complement to the TAC Guide.

The **BRITISH COLUMBIA SUPPLEMENT TO TAC GEOMETRIC DESIGN GUIDE (or BC Supplement)** should be used concurrently with the **TAC GEOMETRIC DESIGN GUIDE FOR CANADIAN ROADS (or TAC Guide)** as the main references on all BC MoT design work.

Updates to the BC Supplement are effective immediately for all MoT projects that have not yet reached pre-tender meeting stage. Any case for exception must be justified in writing using primarily the design principles contained in the TAC Guide (or alternatively the AASHTO Guide) and approved by the Ministry Design representative on the project.

Ministry Publication Policy:

The following Contact is provided for ordering copies of the most current BC Supplement. **It is the responsibility of the Manual Holder to acquire updates and to maintain the currentness of the BC Supplement:**

Queen's Printer Online Publications
ID Stock Number is **7610003312**

Web Page address is: www.publications.gov.bc.ca

An electronic version of the BC Supplement is available from the Ministry of Transportation Web Page. There is no charge for the electronic version. Updates will also be available from this site.

Web Page address is: http://www.th.gov.bc.ca/publications/eng_publications/geomet/TAC/TAC.htm

The TAC Geometric Design Guide for Canadian Roads must be purchased directly from the Transportation Association of Canada in Ottawa.

Web Page address is: <http://www.tac-atc.ca/>

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