Canadian Guidelines for Establishing Posted Speed Limits

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Opus International Consultants

Presentation to the

2009 Quad Conference - Vancouver

Canadian Guidelines for Establishing Posted Speed Limits

Note: This presentation describes a Work In Progress. The project is not yet final and is not yet an official publication of the Transportation Association of Canada.

Project Goals

- Identify factors and characteristics that influence the establishment of speed limits
- Develop an objective, technical, proactive and risk-based assessment based on engineering factors
- Consider special circumstances
- Provide consistency across jurisdictions, while respecting jurisdictional laws, policies and procedures

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Sponsoring Agencies

- British Columbia Ministry of Transportation and Infrastructure
- Alberta Transportation
- Saskatchewan Highways and Transportation
- Manitoba Infrastructure and Transportation
- Ontario Ministry of Transportation
- Ministère des Transports du Québec
- New Brunswick Department of Transportation
- Prince Edward Island Transportation and Public Works
- Newfoundland and Labrador Transportation and Works
- Yukon Highways and Public Works
- Northwest Territories Department of Transportation
- City of Ottawa
- City of Calgary
- City of Edmonton
- City of Hamilton
- City of Winnipeg
- City of Toronto
- City of Surrey
- Ville de Montreal
- Transport Canada

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Study Methodology

- Literature review
- Current practices review
- Guidelines development and testing
- Documentation

Study Methodology

- Literature review – Completed April 2008
- Current practices review – Completed April 2008
- Guidelines development and testing – From May 2008 to April 2009
- Documentation – October 2008 to April 2009

Project Milestones

5 PSC Teleconferences

Aug 07, Feb 08, Aug 08, Feb 09, Apr 09

4 PSC Meetings

Oct 2007, Apr 2008, Sept 2008, Apr 2009

Concept

- Transparent, Objective, Repeatable Procedure
- Posted Speed Limits determined according to the road engineering characteristics
- Higher risk elements result in lower posted speeds
- Elements considered: geometry, roadside, classification, land use, access and intersection density, vulnerable road users
- 85th percentile speed used as check, not as a determining factor

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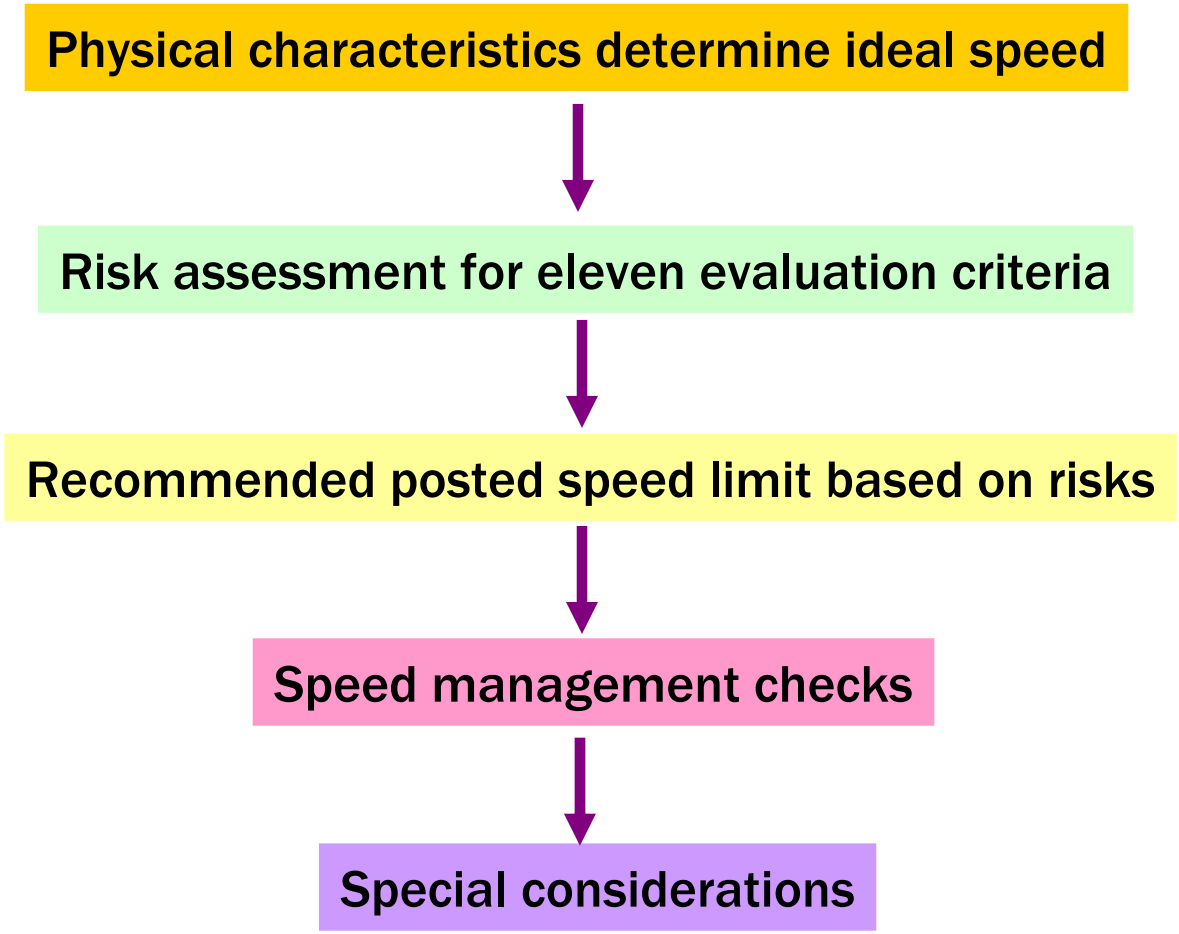
Major Classifications

- Freeways, Expressways, Highways, Arterials, Collectors, Locals
- Major and Minor
- Urban and Rural
- Divided and Undivided
- 1 lane per direction or 2+ lanes per direction

Posted Speed Limit Guidelines



Posted Speed Limit Guidelines

Physical characteristics determine ideal speed

Ideal speed (for arterial, collector and local roads) is a combination of:

- Land use
- Laning
- Median separation
- Road classification

Ideal speed = Design speed for freeways, expressways and highways

Posted Speed Limit Guidelines

Risk assessment for eleven evaluation criteria

Evaluation criteria

- Horizontal alignment
- Vertical alignment
- Average lane width
- Roadside hazards
- Pedestrian exposure
- Cyclist exposure
- Pavement Surface
- Intersections with public roads
- Intersections with private access driveways
- Interchanges
- On-street parking

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Posted Speed Limit Guidelines

Recommended posted speed limit based on risks

The higher the risk, the lower the recommended posted speed limit

Risk points based on simple Lower / Medium / Higher risk scale according to typical expectations for the specified road class.

Risk points calibrated using extensive testing. Visible to user in the spreadsheet tables.

Range of recommended posted speed limits: 40–130 km/h

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Guidelines Testing: May 2008 to April 2009

Is the recommended posted speed limit using the proposed Guidelines reasonable compared to the best engineering judgement of what the reasonable posted speed limit should be?

- Extensive testing conducted by the 20 agencies on the PSC and by Opus.
- April 2009: Final testing results indicate that the Guidelines are calibrated for the wide variety of tested conditions, and are ready for widespread use.

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Posted Speed Limit Guidelines

Speed management checks

- Check against prevailing speeds
- Check safety performance
- Check after implementing speed limit changes
- Other speed limit management issues

Posted Speed Limit Guidelines

Special Issues and Considerations

The Guide also addresses:

- Speeds set by Policy
- Highways through towns
- Transition zones
- Congestion
- Animal collision risks
- Narrow bridges
- Directional differences
- Truck issues
- Day / Night considerations

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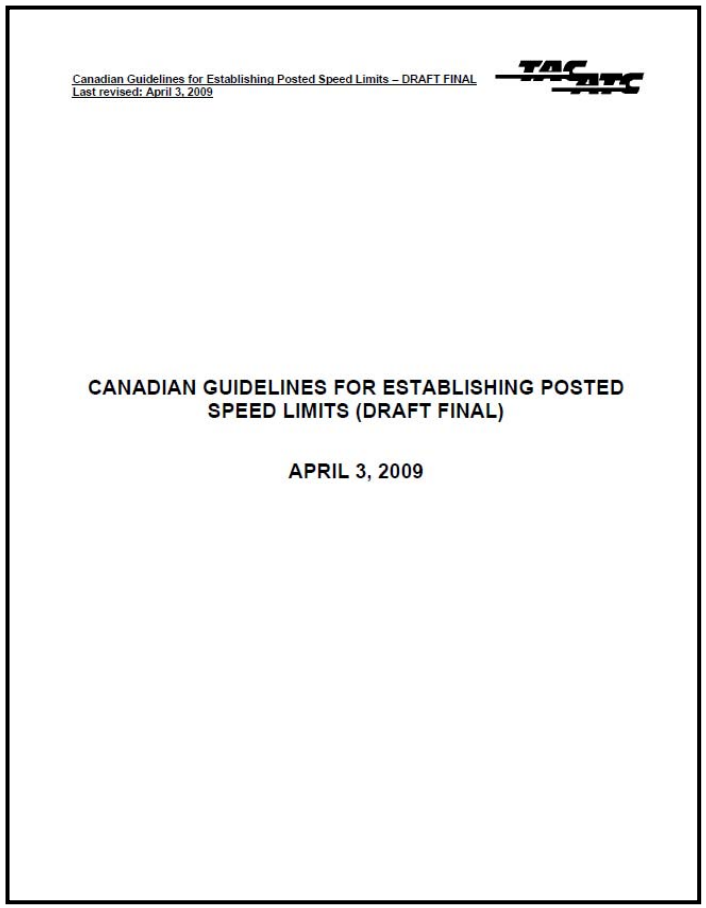
Project Deliverables

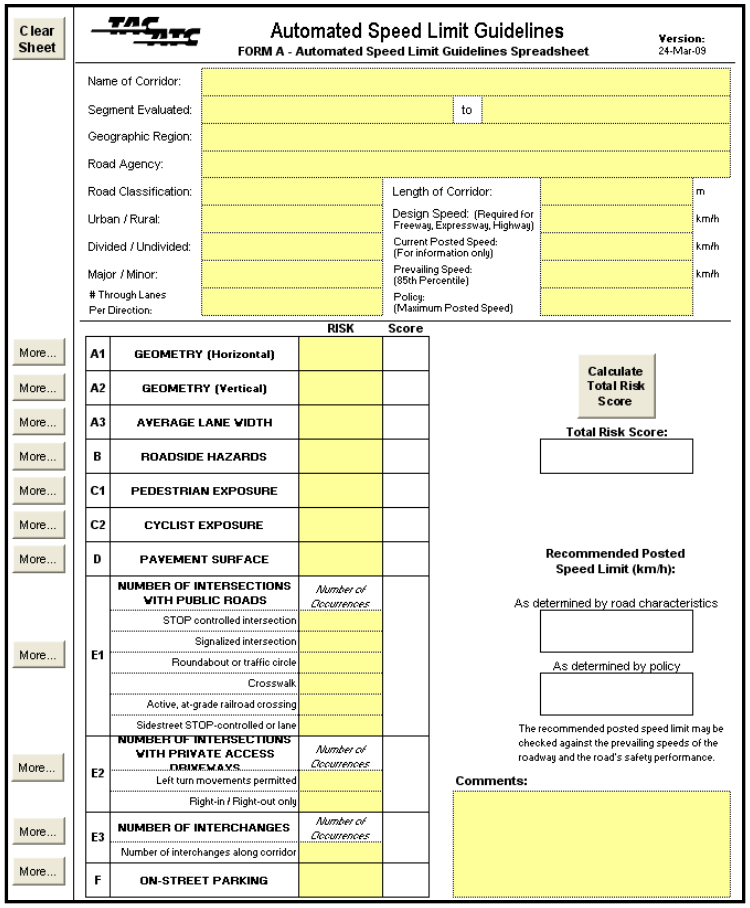


Canadian Guidelines for Establishing Posted Speed Limits – DRAFT FINAL
Last revised: April 3, 2009

CANADIAN GUIDELINES FOR ESTABLISHING POSTED SPEED LIMITS (DRAFT FINAL)

APRIL 3, 2009

Draft Final Report



Clear Sheet

Automated Speed Limit Guidelines
FORM A - Automated Speed Limit Guidelines Spreadsheet
Version: 24-Mar-09

Name of Corridor:
Segment Evaluated: to
Geographic Region:
Road Agency:
Road Classification:
Urban / Rural:
Divided / Undivided:
Major / Minor:
Through Lanes Per Direction:
Length of Corridor: m
Design Speed: (Required for Freeway, Expressway, Highway) km/h
Current Posted Speed: (For information only) km/h
Prevailing Speed: (85th Percentile) km/h
Policy: (Maximum Posted Speed)

		RISK	Score
A1	GEOMETRY (Horizontal)		
A2	GEOMETRY (Vertical)		
A3	AVERAGE LANE WIDTH		
B	ROADSIDE HAZARDS		
C1	PEDESTRIAN EXPOSURE		
C2	CYCLIST EXPOSURE		
D	PAVEMENT SURFACE		
E1	NUMBER OF INTERSECTIONS WITH PUBLIC ROADS	Number of Occurrences	
	STOP controlled intersection		
	Signalized intersection		
	Roundabout or traffic circle		
	Crosswalk		
	Active, at-grade railroad crossing		
	Sidestreet STOP-controlled or lane		
E2	NUMBER OF INTERSECTIONS WITH PRIVATE ACCESS DRIVEWAYS	Number of Occurrences	
	Left turn movements permitted		
	Right-in / Right-out only		
E3	NUMBER OF INTERCHANGES	Number of Occurrences	
	Number of interchanges along corridor		
F	ON-STREET PARKING		

More...

Calculate Total Risk Score

Total Risk Score:

Recommended Posted Speed Limit (km/h):

As determined by road characteristics

As determined by policy

The recommended posted speed limit may be checked against the prevailing speeds of the roadway and the road's safety performance.

Comments:

Automated Spreadsheet

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Possible Future Updates

- A feedback form will be included in the Guide to encourage feedback from practitioners to the TAC Secretariat
- Based on the feedback, TOMSC can decide if future updates / revisions are needed

Status and Next Steps

- April 2009: The TAC Chief Engineers' Council voted to submit the study deliverables to the review and ballot process.
- If approved, the Final Report will be available from TAC within about 12 months.

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Thank you!

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