

<b>Title:</b>	<b>Design and Posted Speed on Freeways</b>
<b>Division:</b>	Transportation Infrastructure Management (TIM)
<b>Branch:</b>	Standards and Contracts Branch (SCB)
<b>Office:</b>	Highway Design Office
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**Implementation**

This memorandum is effective as of the date of issue.

This memorandum replaces previous policy memo SCB-HDO-2022-02, Design Speed on New Freeways and takes precedence over guidance in the 2023 MTO Design Supplement.

**Purpose**

To provide guidance for selection of difference between design and posted speed (Factor of Safety) on freeways.

**Background**

Historically, Ontario applied a Factor of Safety of 20 km/h, unless circumstances warranted a reduction. A design speed equal to the posted speed is acceptable and normal practice on Secondary highways due to low traffic volumes, rugged terrain and economic considerations.

In free-flow conditions, the 85<sup>th</sup> percentile operating speed tends to be roughly equal to the design speed. This reflects the principle that motorists select their travel speed based on perceived safety, which is dependent on roadway characteristics and context such as geometry, traffic composition, interchange frequency and adjoining land use, rather than the posted speed.

In 2019, the ministry increased the posted speed on three segments of 400-series freeways from 100 km/h to 110 km/h as a pilot. In 2022, and then again in 2024, more freeway segments were added, bringing the length of freeway segments posted at 110 km/h to 873 kilometres. No significant upgrades were made to the freeway segments to accommodate speed limit increases. No significant increases were observed in operating speed, collision frequency or severity. As no adverse effects were observed with respect to the operational performance, a reduction of the factor of safety is considered reasonable, subject to continued monitoring.

A jurisdictional scan by the Highway Design Office revealed varied application of Factor of Safety among Canadian, United Kingdom, Australian and American jurisdictions. American jurisdictions tend to post at the design speed in accordance with national-level guidance, which equates to a Factor of Safety of zero. Some Canadian provinces use a Factor of Safety of 20 km/h while others use zero.

### **Policy**

This policy establishes a consistent approach for application across the provincial freeway network. A Factor of Safety of 10 km/h is established as the baseline on all freeways currently posted at 100 km/h, and all future freeways.

Freeway sections with a design speed of 120 km/h as documented in the most recent Design Criteria, with approved exceptions, may be posted at 110 km/h, effectively reducing the Factor of Safety to 10 km/h.

Alternatively, where a Design Criteria does not exist, a review of geometric parameters in conjunction with 85<sup>th</sup> percentile operating speed and collision history, may be used to inform the suitability to increase the speed limit to 110 km/h.

Sections with a posted speed less than 100 km/h should retain their current design and posted speeds.

A review shall be conducted prior to increasing posted speeds to identify locations where enhanced advisory signage, minor capital works, illumination, roadside safety devices, or warning devices are required.

**Approved By**

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