

Infrastructure

Traffic Control Device: **Signs**Division: **Regulatory (Information)**Subject: **Speed Display Devices**Page **1 of 4**

Purpose

Speed Display Devices (also known as speed reader boards) are devices that inform drivers of their current travel speed and encourage them to slow down if they are travelling above the posted speed limit. The use of these signs can be an effective measure in reducing average and 85th percentile speeds, as evidenced in a wide range of experience in Canada and beyond. The devices can be ground mounted on a pole, displayed on a portable trailer assembly, or affixed directly to the rear of a maintenance vehicle.

MI prefers to use these devices on a temporary basis, as there is evidence that their effectiveness may reduce over time. Permitting a proliferation of permanent installations could result in a lessening of the overall impact of the device in general.

A request for a speed display device on the Manitoba highway network may also be initiated by:

- A municipal representative
- Departmental staff
- RCMP

Standard

A typical Speed Display Device consists of a radar unit and a changeable message sign (which is capable of displaying a motorist's current travel speed) mounted together with a sign displaying the posted speed limit (RB-1) at the location.

Applications

MI follows the Transportation Association of Canada (TAC) Application Guidelines for Speed Display Devices (2017). The Guidelines recommend that Speed Display Devices should be used only for preventative safety applications and/or incident evidence-based applications. The following table outlines recommended applications.

RECOMMENDED: ORIGINAL SIGNED BY
Director, Traffic Engineering

APPROVED: ORIGINAL SIGNED BY
Executive Director
Highway Engineering

Urban & Rural Roadways	Work Zones
<ul style="list-style-type: none"> • School Zones • Narrow lanes and bridges • Highway community entry • Neighbourhood traffic calming • Curves 	<ul style="list-style-type: none"> • Work zone entry point • Reaffirmation at active work area • Other areas where Traffic Control Person protection is required
<p>In other areas,</p> <ul style="list-style-type: none"> • On a case-by-case basis, where there are safety concerns directly related to speeding. 	

- Use Speed Display Devices only as a stand-alone system and not in combination with other dynamic systems.
- To limit the risk of driver-attention overload, Speed Display Devices should not be used where other devices and roadway environments are already making intensive demands on driver attention (e.g. close to other traffic control devices, upstream of intersections, close to pedestrian crossings, within transition zones, etc.).
- Speed Display Devices should only be expected to provide a reduction in operating speeds at the point where the device is placed, as speeds will gradually increase as motorists move away from the device. If excessive operating speeds over a large distance are a concern, other speed mitigating techniques should be considered.
- In construction or maintenance work zones, Speed Display Devices will be either trailer-mounted or affixed to the back of a maintenance vehicle. The devices shall be used sparingly and strategically within a work zone to avoid overuse.

A Speed Display Device is appropriate if:

- There is a collision history at a location, particularly involving pedestrians.
- A major pedestrian generator (e.g. school, church, shopping centre, etc.) is located within 500 m and results in high pedestrian and bicycle activity.
- A speed limit transition of greater than or equal to 20 km/h is in place.
- Other hazardous roadway conditions.

In Urban and Rural areas, candidate locations for Speed Display Devices should include the following conditions:

- Evidence of speeding, if speed data exists (i.e. the 85th percentile speed exceeds the posted speed by 15 to 20%);
- The posted speed is considered appropriate;
- Static signing will not help;

Average Daily Traffic (ADT) should be at least 300 vehicles per day (vpd). (Note, however, that Speed Display Devices may be less effective when ADT exceeds 10,000 vpd per lane). Other requirements are;

- Terrain or other road characteristics allow the vehicle headway to be great enough to have time to read the message;
- No more than 2 lanes per direction; and
- A suitable site exists for correct installation of the device(s) as described in the TAC Guidelines.

In work zones, the warrant should be based on the following priorities (in order of importance):

1. Work duration of at least 24 hours
2. Night time work
3. More than one shift per day
4. Presence of Traffic Control Persons
5. Presence of workers adjacent to open traffic lane.

Display

Static Component

The static component of the display of the Speed Display Device (i.e. YOUR SPEED) must comply with the Manual of Uniform Traffic Control Devices of Canada (MUTCDC) and should be the appropriate colour for the device classification (i.e. orange in a work zone, and white in other cases).

Dynamic Component

The dynamic component of the device displays the measured travel speed and **MUST NOT** include any strobe effects, rapid flashing, or animation.

Additional display requirements include:

- A maximum speed that may be displayed (to discourage motorists from “racing” the speed display) should be programmed into the device and is outlined in the table below. All speeds measured greater than the maximum threshold will result in a blank display or a “Slow Down” message.

Posted Speed Limit	Maximum Speed Display Threshold*
50 km/h	80 km/h
60 km/h	90 km/h
70 km/h	99 km/h
80 km/h	99 km/h

* This table assumes a two-digit speed display device is used.

- The radar device shall be aimed to measure the travel speed of the vehicles in the fastest moving lane at no more than 10 seconds of travel time upstream of the device.

- The display shall be visible from a distance of 800 m at all times (i.e. both night and day) and shall be legible from a distance of 200 m.
- The display shall have an adjustable brightness level to minimize glare at night.
- The location of the device, when used in a construction area, shall be reviewed periodically as work progresses through the work zone to ensure optimal effectiveness.

Device Removal

Speed Display Devices placed at locations with a temporary reduction in the posted speed limit (i.e. work zones) must be removed once the temporary speed limit is removed, or earlier if indicated in the site's traffic control plan.

Speed Display Devices placed at locations with a permanent reduction in the posted speed limit should be removed after approximately 3 months of operation, pending availability of staff to complete the removal.