

Primer on **Speed Display Devices**

Introduction

Speed display devices (SDD) measure the speed of approaching vehicles, typically with radar, and display the measured speed. They can be temporary or permanent installations, used at speed-sensitive locations to reduce vehicle speed. SDD are not intended to directly enforce speed limits, but rather to inform motorists and modify their driving behaviour, either when approaching a danger zone or to generally comply with the speed limit.

Speed display devices are known by a variety of different names, including: driver feedback signs, dynamic speed display signs, mobile roadside speedometer, radar speed feedback signs, radar speed signs, speed awareness devices, speed displays, speed feedback signs, speed indicator devices, speed monitoring displays, speed reader boards and speed trailers.

SDD signing features a dynamic component displaying information (e.g. numerical display of vehicle speed) and/or feedback on the speed of the approaching vehicle.

Applications

Speed display devices in Canada should be used only for preventative safety applications and/or incident evidence-based applications.

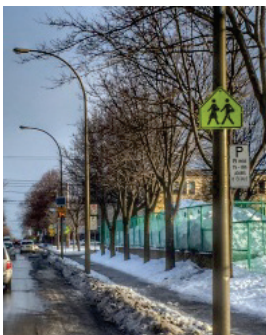
Table 1 – Speed Display Device Applications – Preventive Safety

| URBAN AND RURAL ROADWAYS | WORK ZONES |
|-------------------------------------|---|
| School Zones | Work zone entry point |
| Narrow lanes and bridges | Reaffirmation at active work area |
| Highway community entry | Other areas where Traffic Control Person protection is required |
| Neighbourhood traffic calming | |
| Reduced speed section (tight curve) | |



Example of SDD in school zone without speed displayed. Cleveland Avenue, Riverview, NB

Photo: WSP



Example of SDD in school zone without feedback. Bellechasse Avenue, Montreal, QC

Photo: WSP

Preventative safety applications include designated situations on urban and rural roadways and within work zones, where there is a high safety risk associated with excessive vehicle speeds. They are typically used at locations where a speed limit transition occurs or where driving at the appropriate speed limit for conditions is particularly crucial, for example in school areas.

Applications outside the designated preventative safety applications may also be considered for speed display device utilization, where there is evidence that drivers are not heeding the speed limit, directly resulting in high rates of collisions. SDDs should be used for these incident evidence-based applications only if the speed-related incident problem has not been satisfactorily remedied by static signing, and where traffic calming or other infrastructure modifications would not be an appropriate solution.

Warrants for Use

Over and above functionality-based principles of acceptability for SDD applications, warrants for use are additional physical and engineering conditions for determining eligibility of acceptable applications and prioritizing them.

Design of Display

Speed display devices can be comprised of both a static component and a dynamic component.

Adding a static component to the dynamic component is not mandatory however may be required depending on installation type and practices of the municipality where the SDD is installed.

Installation

Speed display device installation guidelines include device location and placement. Location guidelines cover general areas where SDD installation is acceptable, taking into consideration physical, environmental, and operational factors affecting SDD. Placement guidelines cover the more fine-tuned aspects of SDD positioning, in three dimensions: longitudinal (along the roadway alignment), lateral (horizontal offset from the roadway) and vertical (height above the roadway surface).

Operation

SDD operation focuses on how the display of the activated SDD changes in response to the speeds of the approaching vehicles. Guidelines for other operational parameters of the activated display are also provided. In addition to active operations, the guideline suggests operations support required before, during and after SDD activation.



Example of SDD as a temporary traffic calming application

Photo: Saskatchewan Highways and Infrastructure



Example of SDD without feedback. Rothesay Avenue, Saint John, NB.

Photo: WSP



Example of SDD in School Zone. Feedback with color only. Bellechasse Avenue, Montreal, QC.

Photo: WSP



Example of SDD with textual feedback. Molson Street, Montreal, QC.

Photo: WSP

Table 2 – Stages of operation

| STAGE | | INTENT OF DISPLAY |
|---------|--|--|
| Stage 0 | No data to display | Blank dynamic component to indicate: <ul style="list-style-type: none"> • No approaching vehicles; • Part-time SDD is inactive (e.g., school zone SDD outside of school operational hours); or • SDD is being calibrated, tested or maintained or is used as a data collector (e.g. before / after analysis). |
| Stage 1 | Compliance or near-compliance with speed limit | Positive or neutral speed-related information |
| Stage 2 | Moderate speeding | Moderate advisement to slow down |
| Stage 3 | Extreme speeding | Strong advisement to slow down without speed |

Technology

Technology used for SDD evolves rapidly. It is recommended to always use the most advanced technology when deploying SDD, however without undue haste.

More Information

This primer is based on the Transportation Association of Canada publication *Application Guidelines for Speed Display Devices*, which readers can purchase from TAC’s online bookstore at www.tac-atc.ca.

Disclaimer

Every effort has been made to ensure that this primer is accurate and up-to-date. The Transportation Association of Canada assumes no responsibility for errors or omissions. The primer does not reflect a technical or policy position of TAC.

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