

Government of Alberta Transportation	SCHOOL BUS STOP AHEAD SIGN		<i>Issued: NOV 2004</i>
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RECOMMENDED PRACTICES	PART	HIGHWAY SIGNS	
	SECTION	WARNING SIGNS	
	SUB-SECTION		

General

In Alberta, school buses travel over 400,000 kilometers a day picking up and returning more than 200,000 students. While travelling, school buses are easily identified by their unique yellow-orange colour, black *SCHOOL BUS* message and red and yellow lights at the top of the bus.

The potential for a pedestrian-vehicle incident is usually the highest when passengers enter or leave a bus or cross a highway.

Many of these incidents can be prevented through education, adequate planning of a school bus route, and safe design of a bus stop. More information on school bus safety and related educational programs is provided at the end of this guideline.

When a school bus stop is located in an area having roadway geometric constraints affecting the visibility of the bus stop, the potential for an incident or collision significantly increases.

If these roadway conditions cannot be easily improved, an advance warning School Bus Stop Ahead sign may be introduced to warn motorists about school bus maneuvers ahead.

Provincial Legislation

In Alberta, the operation of school buses along a highway is regulated through the Traffic Safety Act, Regulation 304/2002, Sections 71 and 72 of Division 3 entitled "School Buses". Regulation 304/2002, Section 73 also outlines the responsibilities of motorists approaching a school bus that

is slowing down or stopping.

Based on Regulation 304/2002, motorists approaching a school bus which is operating flashing amber lights must reduce their speed and proceed with caution. When approaching a school bus which is operating flashing red lights, motorists must stop their vehicle before they reach the bus. The law applies everywhere, regardless of the posted speed limit or highway type.

Standard

A standard School Bus Stop Ahead sign consists of a black silhouette of a bus on a yellow background.



WC-9	750 mm x 750 mm 900 mm x 900 mm	
Colour	Symbol and Border Background	Black Yellow
Sheeting	ASTM, Type III or IV	

The educational School Bus Stop Ahead tab sign (WC-9-T) may be attached to the WC-9 sign to communicate in words the meaning of the stopped school bus symbol.



WC-9-T	750 mm x 300 mm	
Colour	Symbol and Border Background	Black Yellow
Sheeting	ASTM, Type III or IV	

Sign sizes

The standard size of a School Bus Stop Ahead sign is **750 mm x 750 mm**.

Oversize signs **900 mm x 900 mm** are permitted in special situations where an investigation has shown that a larger sign is needed for greater visibility or emphasis.

There is no simple warrant for the use of an oversize sign; each case must be evaluated on its own merit.

Guidelines For Use

A School Bus Stop Ahead sign may be required if it is determined that a particular pickup location has a sight distance restriction and other means of remedying the problem have been considered.

A sight distance restriction may require a School Bus Stop Ahead sign if the following criteria are met:

- The location is actively in use as a site for the pick-up and drop-off of

students.

- The required stopping sight distance (Section B-2.3 of Highway Geometric Design Guide) is greater than the actual stopping sight distance at the location.

If a sight distance restriction does exist at a school bus stop, the following three options must first be considered prior to installing a School Bus Stop Ahead sign:

- Eliminate the sight obstruction through realignment, crest curve flattening, or trimming vegetation.
- Relocate the bus stop further from the sight obstruction, or on the other side of the highway. If relocating the bus stop to the other side of the highway is considered, the trade offs between the limited sight distance and having the student cross the highway must be compared.
- If there is only one property from which children are picked up, encourage the driver to enter the driveway (with permission). In this case, a school bus entrance sign (WC-12) could be considered in advance of the driveway.

If it has been determined that there is a sight constraint at an active school bus stop location, and the alternative solutions listed above have been considered, a School Bus Stop Ahead sign may be installed in advance of the school bus stop.

Table 4.1 from the *TAC Guidelines for the Application and Implementation of the School Bus Stop Ahead Sign (WC-9)* report has been included at the end of this document to assist in the School Bus Stop Ahead sign need assessment.

A School Bus Stop Ahead sign is usually not required in urban or semi-urban areas where posted speeds are 60 km/h or lower, or where a school bus stop can be seen for more than 300 meters.

Guidelines for Placement

A School Bus Stop Ahead sign should be placed in advance of the bus stop a distance equal to or greater than the stopping sight distance for that roadway. Stopping sight distance is defined in Section B.2.3 of the Highway Geometric Design Guide. The table below provides the suggested sign placement for various posted highway speeds, based on minimum stopping sight distance.

Suggested Advance Placement of WC-9 Sign	
Speed Limit (km/h)	Suggested Advance Placement (m)
50	85 – 110
60	105 – 130
70	135 – 180
80	155 – 210
90	190 – 265
100	235 – 330
110	260 – 360

Source: Table 4.1, TAC Guidelines for the Application and Implementation of the School Bus Stop Ahead Sign (WC-9)

The School Bus Stop Ahead sign is installed on the right-hand side of the highway. On divided highways and one-way roadways with visibility problems, an additional sign should be installed on the left-hand side of the roadway. Signs are usually installed for both directions of travel.

Vertical and lateral placement of the WC-9 sign should be in accordance with the

Recommended Practices Placement of Signs guideline.

Safety Issues

The question of traffic signs can become very emotional when children are involved.

However, with some 40,000 school bus stops in the province, it is important that the School Bus Stop Ahead sign is used where it is most needed.

The integrity of the School Bus Stop Ahead sign may be jeopardized if the sign is used indiscriminately. Indiscriminant use may cause the sign to lose its effectiveness and be ignored in a critical situation.

To ensure that the sign is not used where it is not needed, School Bus Stop Ahead sign locations should be evaluated on an annual basis to ensure that the school bus stop is still in use. If the school bus stop is no longer in operation (or if the sight obstruction has been eliminated), the associated School Bus Stop Ahead signs should be removed immediately.

Removal of Activated School Bus Stop Ahead Signs

Several Activated School Bus Stop Ahead signs have been installed in the Province. These devices consist of a WC-9 sign with warning flashers that can be activated by the school bus operator.

There are several concerns with the use of these active warning devices:

- The devices may not be activated as intended or in a consistent manner by school bus operators, which could lead to driver confusion.

- The devices may create the perception of a tiered warning system, and thus reduce the effectiveness of the non-activated WC-9 sign.

As result of these findings, no new Activated School Bus Stop Ahead signs should be installed. Existing Activated School Bus Stop Ahead signs should be removed when the opportunity arises (i.e., the school bus stop is no longer in use, or the sight obstruction has been removed).

References to Standards

<i>Highway Geometric Design Guide</i>	Section B.2 – Sight Distance
<i>TAC Guidelines for the Application and Implementation of the School Bus Stop Ahead Sign (WC-9)</i>	Section 4.0 – Guidelines for Application
<i>Recommended Practices</i> Section: General	Placement of Signs

**TABLE 4.1 SCHOOL BUS STOP AHEAD (WC-9) SIGN – NEED
ASSESSMENT FORM**

STEP	DESCRIPTION	RESPONSE / VALUE
1.	Verify that the candidate location is actively in use for the pick-up and drop-off of students by school buses.	Active? _____
2.	Calculate minimum required Stopping Sight Distance (SSD). Refer to the GDGCR Table 1.2.5.4.	Minimum Required SSD: _____ metres
3.	<p>At the candidate location, identify the cause(s) of the sight obstruction. It should be one (or a combination) of:</p> <ul style="list-style-type: none"> • Horizontal curvature (i.e. roadside objects) • Vertical curvature • Foliage • Fog • Glare • Darkness 	Sight Obstruction(s): _____ _____
4.	At the candidate location, measure the available SSD. Refer to FIGURES 5.3(a) to (c) for the relevant condition. If fog, glare or darkness is relevant, conduct the measurement or estimate based on these conditions. Use the eye and object height specified in Section 4.5 of this Guide.	Available SSD: _____ metres
<p align="center">If the Available SSD is greater than the Minimum Required SSD, then do not provide the sign. Otherwise, proceed to Steps 5 through 8.</p>		
5.	Is it possible to eliminate the sight obstruction? (for example, to realign the roadway, flatten the crest or trim the trees). If so, do not provide the sign. Otherwise, proceed to Step 6.	Possible to eliminate? _____
6.	Consult with school district. Discuss whether it is possible to: (a) Relocate the bus stop (further from the constraint, including on the opposite side of the roadway). (b) Have the bus operator enter a nearby driveway (and provide the Bus Entrance sign if necessary).	Possible to: Relocate?: _____ Use driveway? _____
7.	Provide the School Bus Stop Ahead Sign, in accordance with the Guidelines for Implementation (Section 5.0 of this Guide)	
<p><i>Then, at subsequent intervals in the future, when site conditions change or at the start of each school year, conduct this assessment again. Set a target date for the next assessment.</i></p> <p>Date of next assessment: _____</p>		