Variable Message Sign Application Guidelines for Halifax

A variable message sign (VMS) is considered to be any advertising display that is capable of displaying dynamic content or automatically changing content. These include digital and projected advertising displays that are visible from the road.

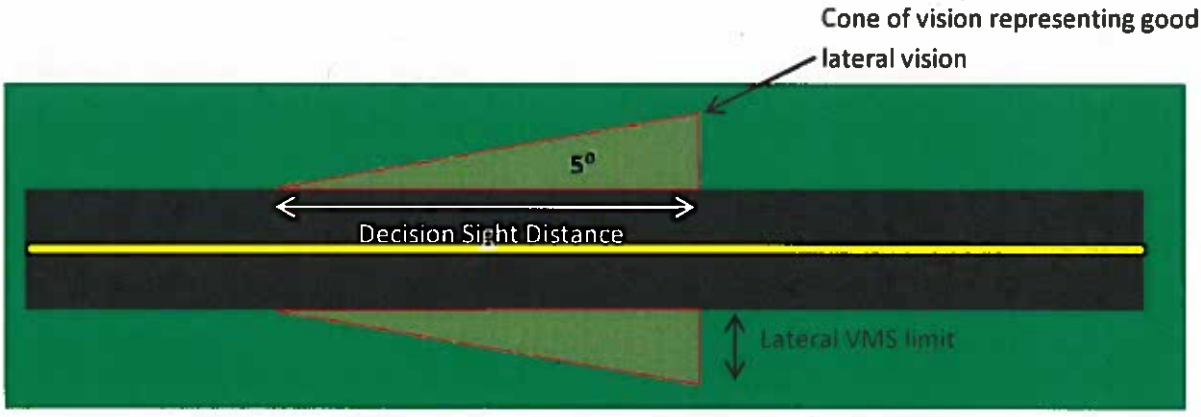
Guidelines have been developed by the Transportation Association of Canada (TAC) to assist jurisdictions in developing rules and regulations for VMSs. Guidelines are necessary to mitigate the road safety impacts of VMSs in terms of the possible increase in collision risk associated with potential driver distraction caused by these types of signs.

Halifax has created this set of guidelines based on the recommendations of TAC and have been adapted to suit the needs of the industry and its regulators. These guidelines are subject to change as engineering standards continue to be developed.

A VMS application will require a number of items to be submitted including recent scaled plans or drawings and photos of the proposed site. The specific criteria can be found listed on the VMS application form.

VMSs will be prohibited around certain key decision making points; traffic signals, stop controlled intersections, marked crosswalks, railway crossings, interchanges and roundabouts. The prohibited area is based on a driver's primary cone of vision, stopping sight distance and/or decision sight distance as defined by the Transportation Association of Canada.

A driver's primary cone of vision is the horizontal cone where a driver has good lateral vision. This cone is an angle of 10 degrees or 5 degrees on either side of a centreline. Since decision sight distance changes with the posted speed limit, the lateral VMS limit will also change.



To simplify measurements for industry users and the review of applications, the restriction area mandated by HRM will be measured from the curb or edge of asphalt.

Stopping sight distance is the distance travelled during perception and reaction time and the braking distance a vehicle travels when bringing the vehicle to a controlled stop. Stopping sight distance changes with the posted speed limit.

In many cases stopping sight distance may be inadequate for drivers to have visibility, make a decision and act on that decision. Decision sight distance is used in these cases where there are complex intersections, interchanges, multiple demands on a driver's attention, or when drivers have to make complex decisions or manoeuvers. Decision sight distance changes with the posted speed limit.

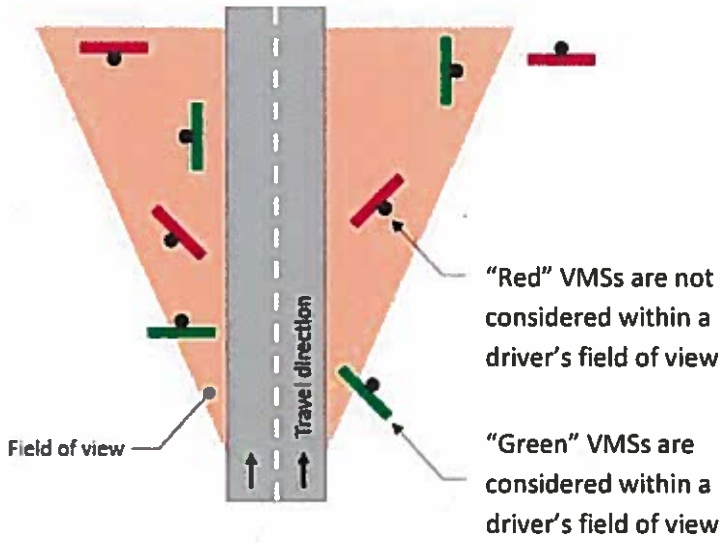
Sign Spacing

Minimum spacing between VMSs is 300m or decision sight distance whichever is greater.

Speed Limit	Decision Sight Distance
50km/h	200m
60km/h	235m
70km/h	275m
80km/h	315m

Field of View

The field of view is determined by a driver's cone of vision but also takes into account sign orientation. All VMSs regardless of their orientation will be reviewed if they fall within the cone of vision (or field of view). VMSs outside the field of view may or may not be permitted based on whether they are located at a key decision making point or not at a key decision making point.



Key Decision Making Points – Prohibited Areas for VMSs

VMSs will be prohibited at certain areas around key decision making points based on TAC guidelines and engineering judgement of site specific conditions. Near a key decision making point, a VMS should be located outside the cone of vision (or field of view). Away from a key decision making point, a VMS should be located within the cone of vision (or field of view). To simplify measurements for industry users and the review of applications, the restriction area will be measured from the curb or edge of asphalt. Prohibited area diagrams have been provided and are for informational purposes only; the prohibited area may be larger based on site specific conditions and engineering judgement.

Traffic Signals

VMSs will be prohibited in certain areas around traffic signals. The prohibited zone begins at stopping sight distance before the signal and extends decision sight distance from this point. The width of the prohibited zone is based on a driver's cone of vision and is based on the posted speed limit of the roadway. For locations that are curved or skewed; the prohibited zone will be carried through the intersection based on the projection of the curb line of the near side of the intersection. For intersections that change speed limits through or near the intersection, the prohibited area will be carried through the intersection based on the speed limit on the near side of the intersection.

Stop (or Yield) Controlled Intersections

VMSs will be prohibited in certain areas around stop signs and yield signs. The prohibited zone begins at stopping sight distance before the sign and extends decision sight distance from this point. The width of the prohibited zone is based on a driver's cone of vision and is based on the posted speed limit of the roadway. For locations that are curved or skewed; the prohibited zone will be carried through the intersection based on the projection of the curb line of the near side of the intersection or parallel to the driver's direction of travel. For intersections that change speed limits through or near the intersection, the prohibited area will be carried through the intersection based on the speed limit on the near side of the intersection.

Crosswalks & Railway Crossings

VMSs will be prohibited in certain areas around crosswalk and railway crossings. Similar to traffic signals the prohibited zone begins at stopping sight distance before the crosswalk or railway crossing and extends decision sight distance from this point. The width of the prohibited zone is based on a driver's cone of vision and is based on the posted speed limit of the roadway. For locations that are curved or skewed; the prohibited zone will be carried through the intersection based on the projection of the curb line of the near side of the intersection. For locations that change speed limits through or near the intersection, the prohibited area will be carried through the intersection based on the speed limit on the near side of the intersection.

Single Lane Roundabouts

VMSs will be prohibited in certain areas around roundabouts. The prohibited zone begins at decision sight distance back from the crosswalk at the roundabout entry point.

Multi-Lane Roundabouts

VMSs will be prohibited in certain areas around roundabouts. The prohibited zone begins at decision sight distance back from the point at which the multilane entrance begins or at the lane use information signage before the roundabout.

Interchanges

VMSs will be prohibited in certain areas around interchanges. The prohibited zone begins at decision sight distance back from where the off-ramp begins.

Locations away from Key Decision Making Points – Prohibited Areas for VMSs

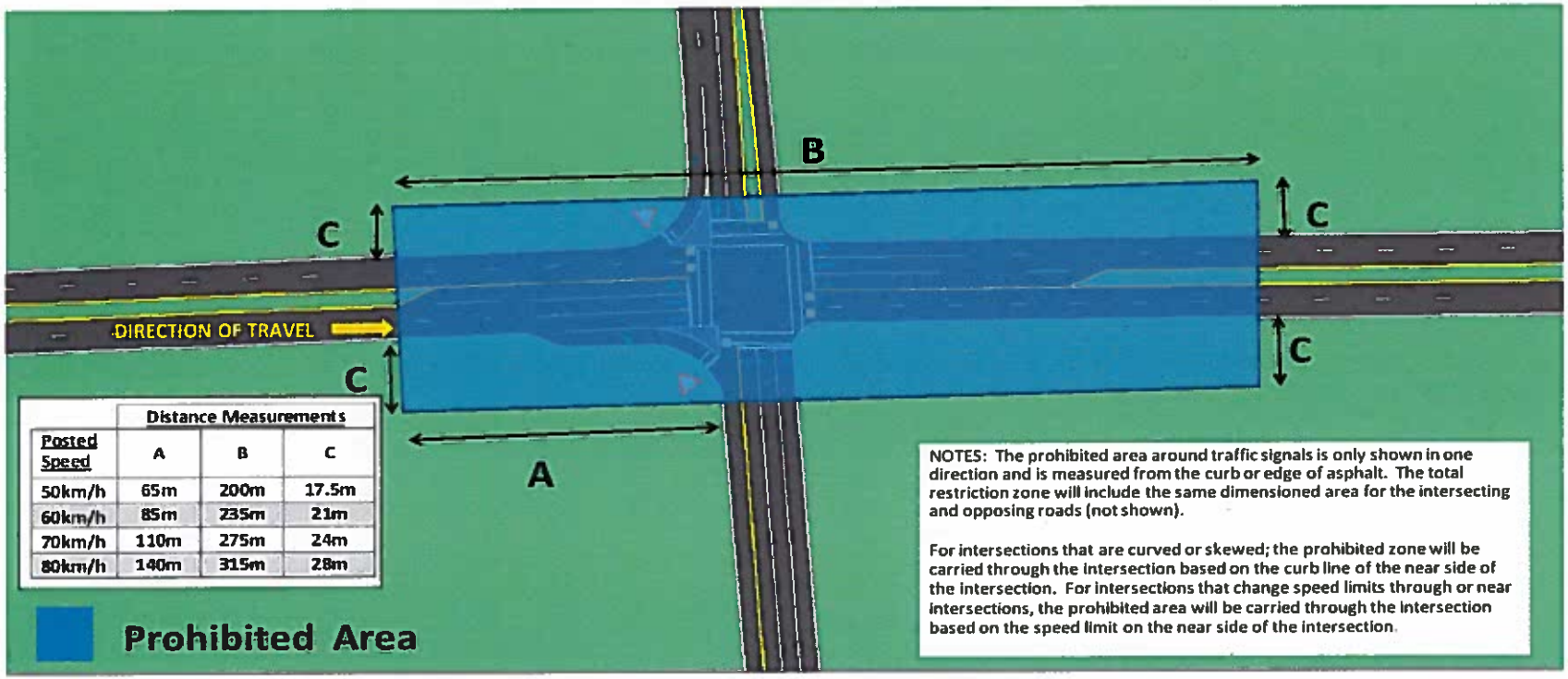
In areas away from key decision making points, VMSs should be within a driver's primary cone of vision. To simplify measurements for industry users and the review of applications, the restriction area will be measured from the curb or edge of asphalt. Prohibited area diagrams have been provided and are for informational purposes only; the prohibited area may be larger based on site specific conditions and engineering judgement.

Sources:

Geometric Design Guide for Canadian Roads, Transportation Association of Canada 2007.

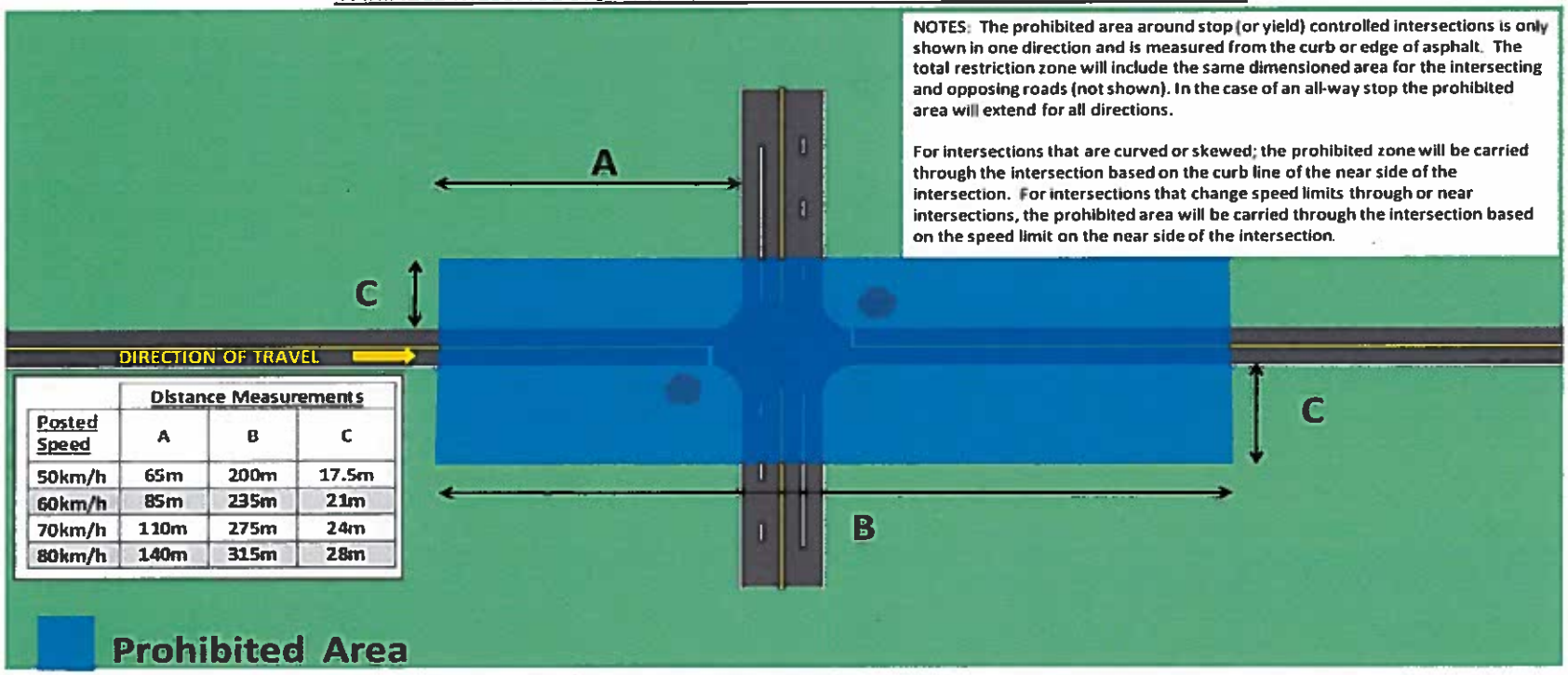
Digital and Projected Advertising Displays: Regulatory and Road Safety Assessment Guidelines Draft Report, Transportation Association of Canada 2014.

VARIABLE MESSAGE SIGN PROHIBITED AREA AROUND SIGNALIZED INTERSECTIONS



A is Stopping Sight Distance
B is Decision Sight Distance avoidance manoeuver on an urban road
C is the offset determined by a drivers primary cone of vision (5°) at the corresponding Decision Sight Distance

VARIABLE MESSAGE SIGN PROHIBITED AREA STOP CONTROLLED INTERSECTIONS



Posted Speed	Distance Measurements A	B	C
50km/h	65m	200m	17.5m
60km/h	85m	235m	21m
70km/h	110m	275m	24m
80km/h	140m	315m	28m

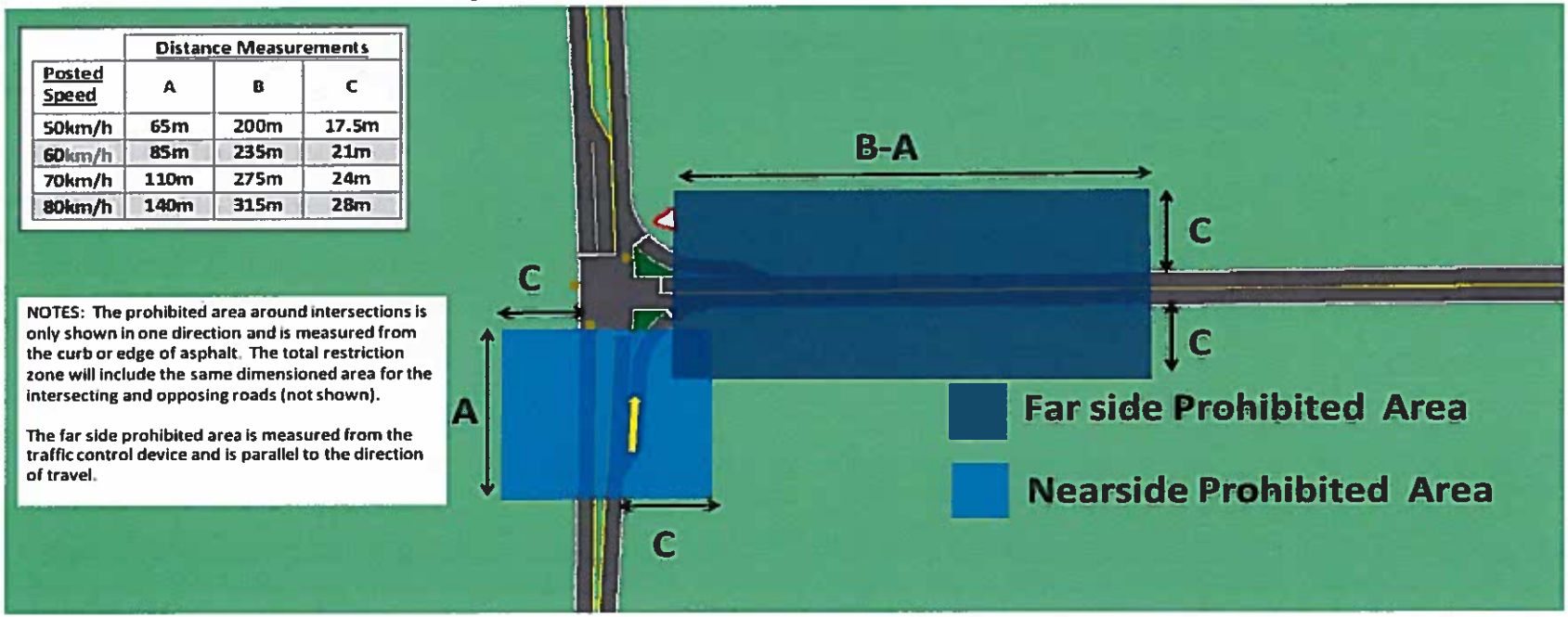
A is Stopping Sight Distance
B is Decision Sight Distance avoidance manoeuver on an urban road
C is the offset determined by a drivers primary cone of vision (5°) at the corresponding Decision Sight Distance

VARIABLE MESSAGE SIGN PROHIBITED AREA YIELD SIGN

Posted Speed	Distance Measurements A	B	C
50km/h	65m	200m	17.5m
60km/h	85m	235m	21m
70km/h	110m	275m	24m
80km/h	140m	315m	28m

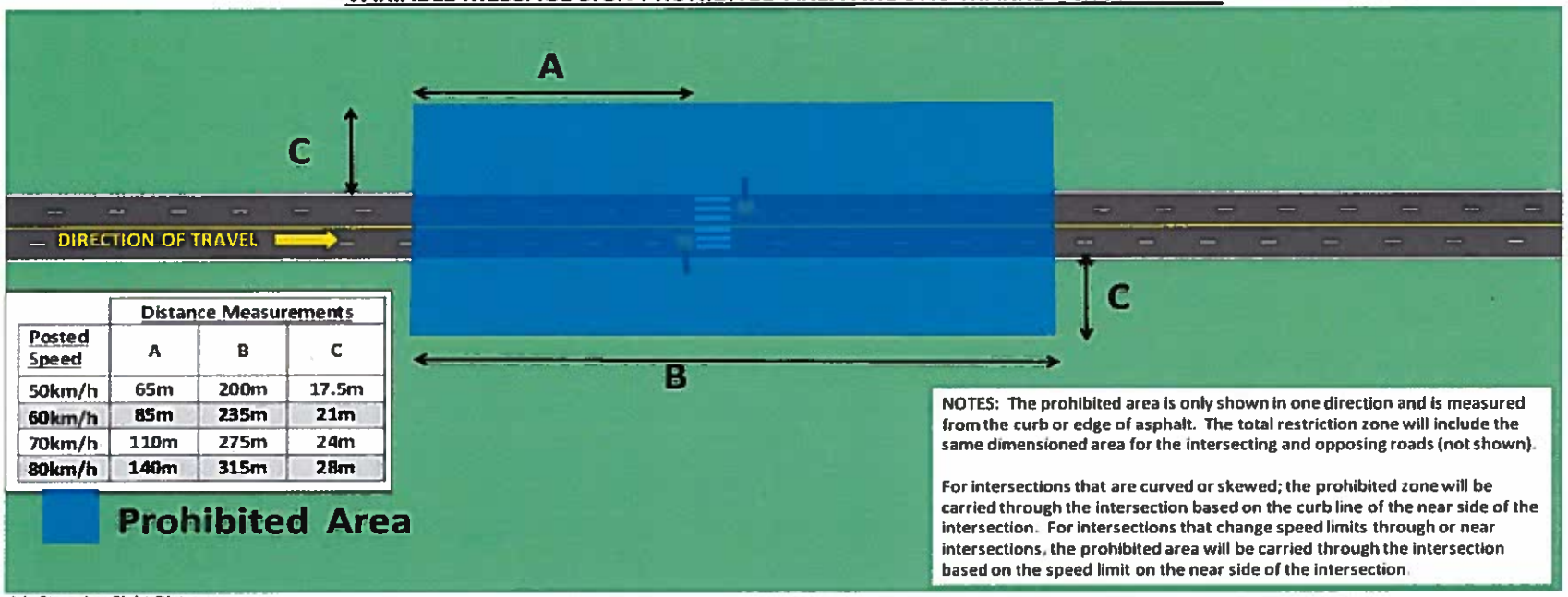
NOTES: The prohibited area around intersections is only shown in one direction and is measured from the curb or edge of asphalt. The total restriction zone will include the same dimensioned area for the intersecting and opposing roads (not shown).

The far side prohibited area is measured from the traffic control device and is parallel to the direction of travel.



A is Stopping Sight Distance
B is Decision Sight Distance avoidance manoeuver on an urban road
C is the offset determined by a drivers primary cone of vision (5°) at the corresponding Decision Sight Distance

VARIABLE MESSAGE SIGN PROHIBITED AREA AROUND MARKED CROSSWALKS



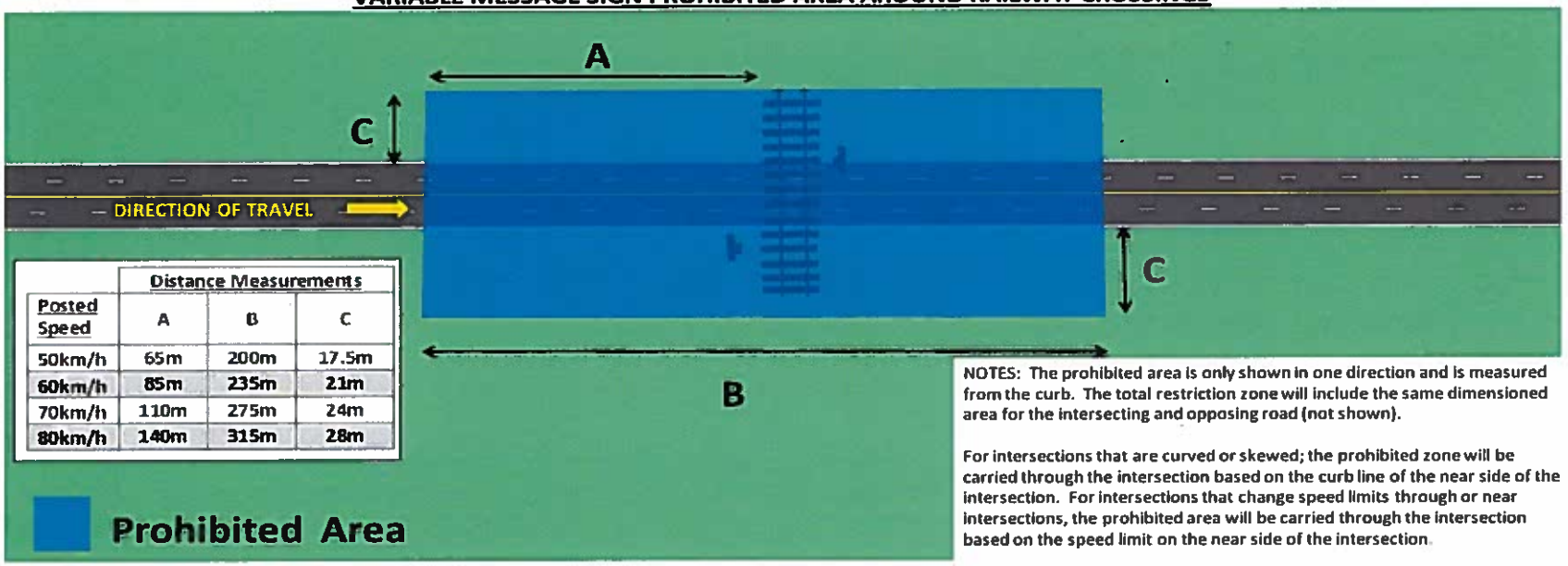
Posted Speed	Distance Measurements A	B	C
50km/h	65m	200m	17.5m
60km/h	85m	235m	21m
70km/h	110m	275m	24m
80km/h	140m	315m	28m

A is Stopping Sight Distance

B is Decision Sight Distance avoidance manoeuver on an urban road

C is the offset determined by a drivers primary cone of vision (5°) at the corresponding Decision Sight Distance

VARIABLE MESSAGE SIGN PROHIBITED AREA AROUND RAILWAY CROSSINGS



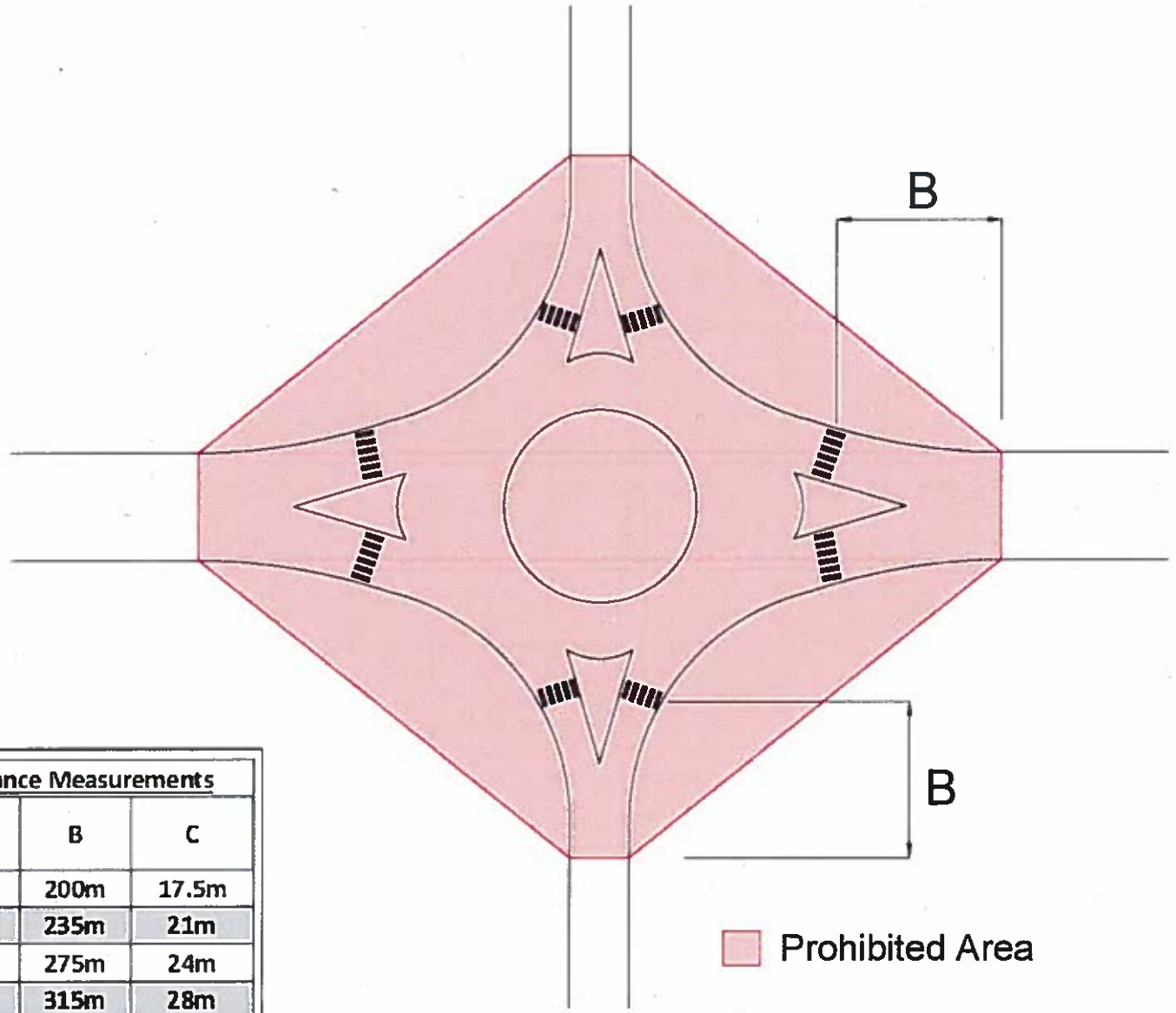
Posted Speed	Distance Measurements A	B	C
50km/h	65m	200m	17.5m
60km/h	85m	235m	21m
70km/h	110m	275m	24m
80km/h	140m	315m	28m

NOTES: The prohibited area is only shown in one direction and is measured from the curb. The total restriction zone will include the same dimensioned area for the intersecting and opposing road (not shown).

For intersections that are curved or skewed; the prohibited zone will be carried through the intersection based on the curb line of the near side of the intersection. For intersections that change speed limits through or near intersections, the prohibited area will be carried through the intersection based on the speed limit on the near side of the intersection.

A is Stopping Sight Distance
B is Decision Sight Distance avoidance manoeuver on an urban road
C is the offset determined by a drivers primary cone of vision (5°) at the corresponding Decision Sight Distance

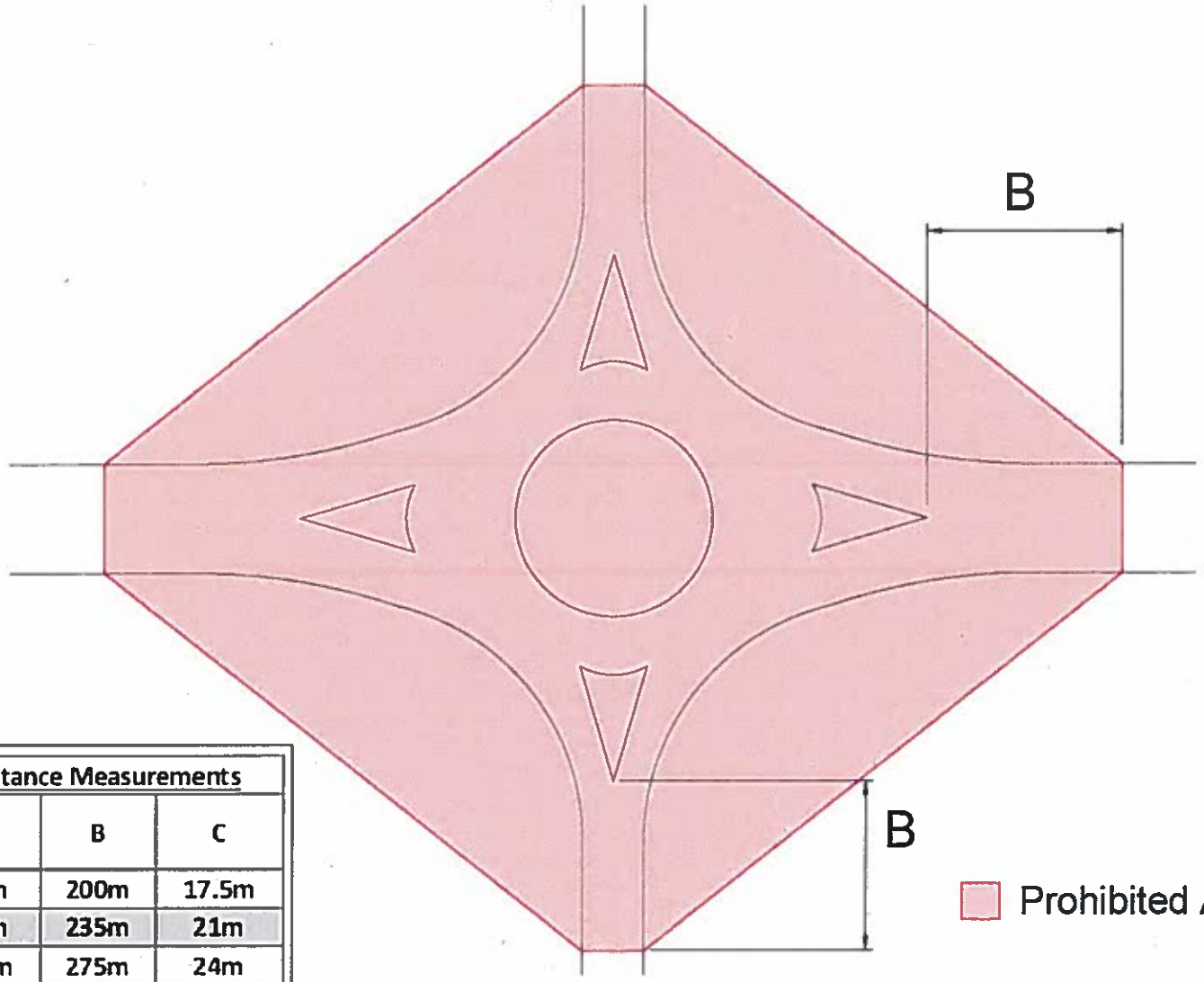
KEY DECISION MAKING POINT: SINGLE LANE ROUNDABOUT



Posted Speed	Distance Measurements		
	A	B	C
50km/h	65m	200m	17.5m
60km/h	85m	235m	21m
70km/h	110m	275m	24m
80km/h	140m	315m	28m

B is Decision Sight Distance for speed/path/direction change on an urban roadway

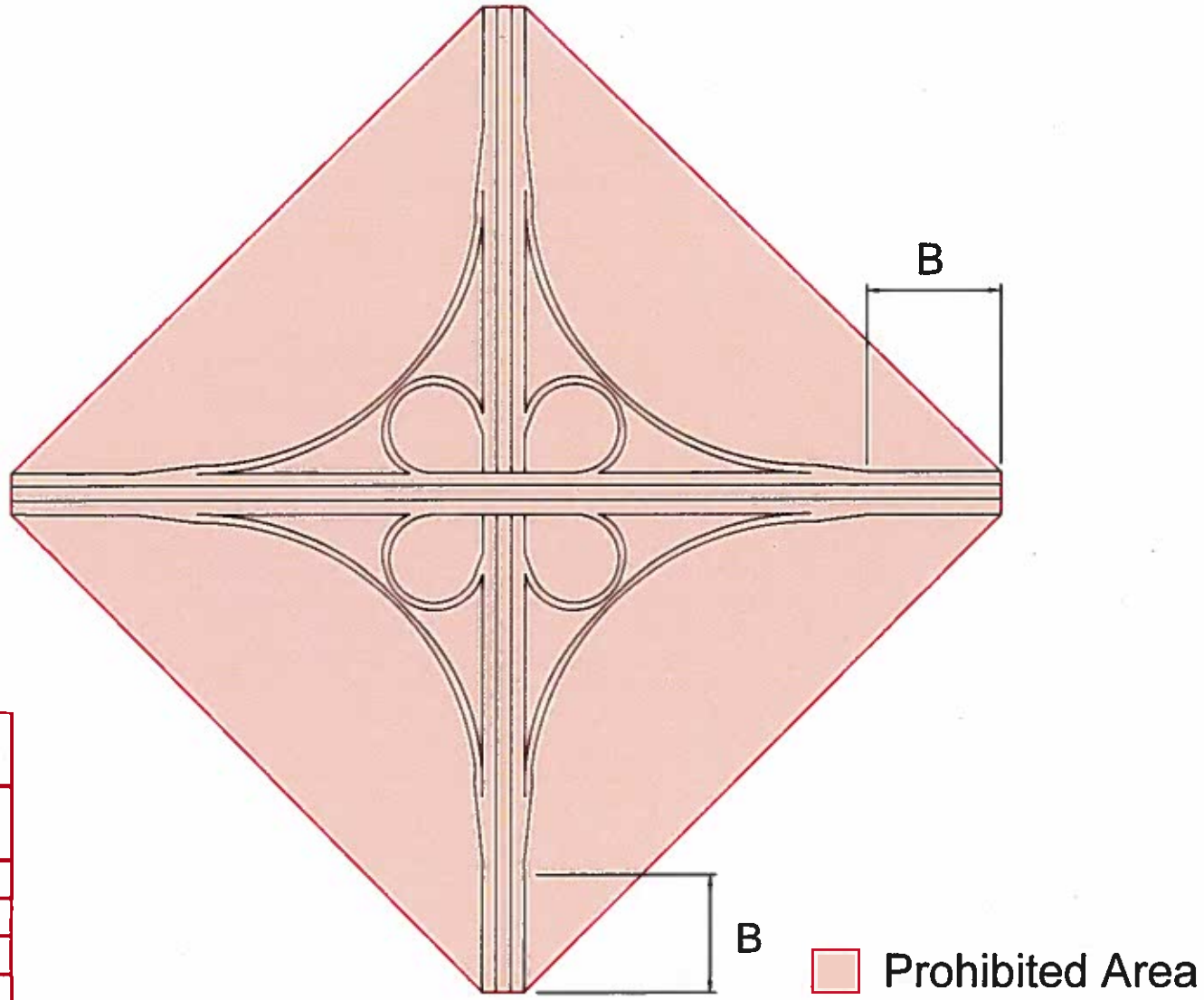
KEY DECISION MAKING POINT: MULTILANE ROUNDABOUT



Posted Speed	Distance Measurements		
	A	B	C
50km/h	65m	200m	17.5m
60km/h	85m	235m	21m
70km/h	110m	275m	24m
80km/h	140m	315m	28m

B is Decision Sight Distance for speed/path/direction change on an urban roadway

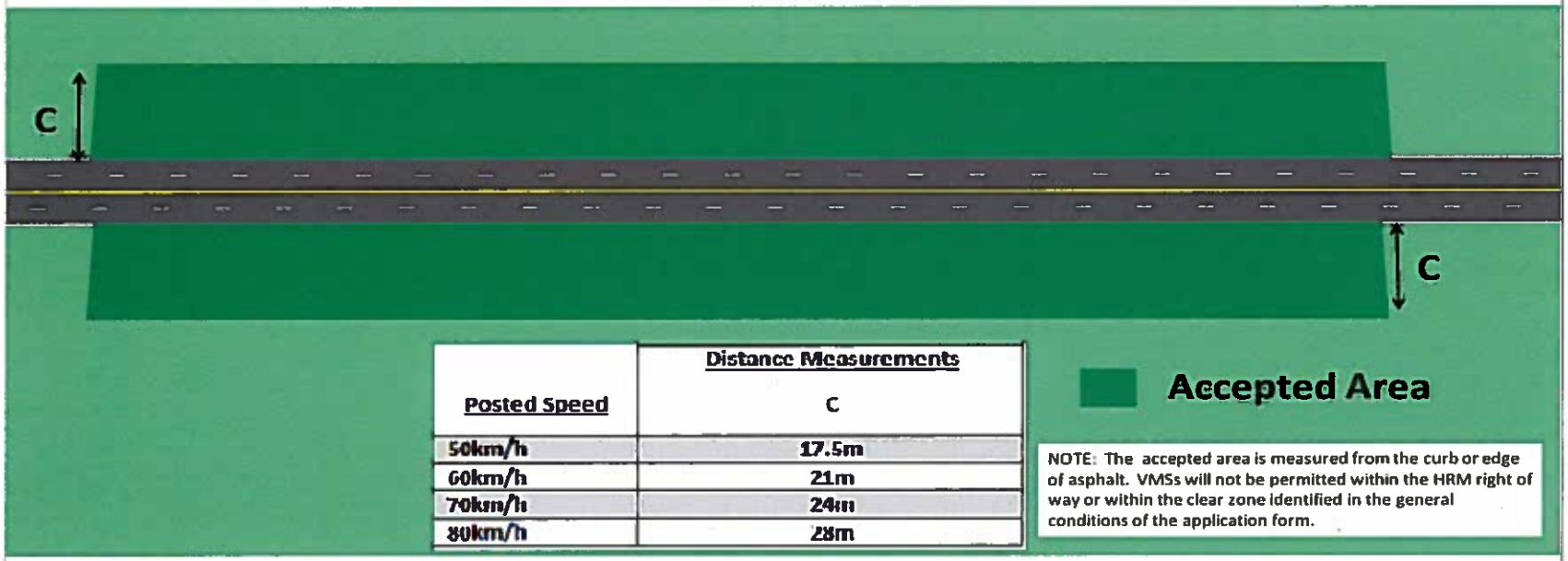
VARIABLE MESSAGE SIGN RESTRICTION AREA AROUND INTERCHANGE



Posted Speed	Distance Measurements B
50km/h	200m
60km/h	235m
70km/h	275m
80km/h	315m

B is Decision Sight Distance for speed/path/direction change on an urban roadway

ACCEPTABLE LOCATIONS FOR VARIABLE MESSAGE SIGNS NOT AT KEY DECISION MAKING POINTS



Posted Speed	Distance Measurements C
50km/h	17.5m
60km/h	21m
70km/h	24m
80km/h	28m

Accepted Area

NOTE: The accepted area is measured from the curb or edge of asphalt. VMSs will not be permitted within the HRM right of way or within the clear zone identified in the general conditions of the application form.