Technical Circular T-10/19
December 18, 2019

To: All HQ Directors: Highways, Planning and Major Projects
Executive Directors, South Coast
Executive Directors, Southern Interior
Executive Director, Northern
All Engineering Directors
All Senior Traffic Operations Engineers
All District Managers Transportation
All Project Managers
All Area Managers
All Senior Development Services Technicians
Manager Provincial Sign Program
All MoTI Highway Maintenance Contractors

Subject: Policy for Digital and Projected Advertising Displays (Electronic Billboards)

Purpose:

This Technical Circular introduces policy and guidelines for the use of Digital and Projected Advertising Displays (DPADs) visible from Provincial highways. These devices are not permitted within provincial right of way. DPADs are also known as electronic billboards.

Background:

DPADs display content dynamically and sequentially through illumination. Research suggests that DPADs placed adjacent to highways may have the potential to distract road users. Therefore, the intent of this policy is to establish guidelines to mitigate the impact of DPADs.

The Ministry has the authority to enforce this policy through the B.C. Motor Vehicle Act Section 214 and the B.C. Transportation Act Section 16.

As per Section 214 of the B.C. Motor Vehicle Act, a sign or other advertising device cannot be erected within a distance of 300 m of a rural highway right-of-way without the approval of the Minister of Transportation. In addition, as per Section 16 of the B.C. Transportation Act, the Minister may require remedial action if there is a sign or other device that in the Minister's opinion "is a nuisance that might distract the operator of a vehicle" or "impair the operator's ability to drive safely", regardless of whether or not the sign is near provincial property.

The guidelines presented in this circular were developed primarily referencing the Transportation Association of Canada (TAC) document *Digital and Projected Advertising Displays: Regulatory and Road Safety Assessment Guidelines* published March 2015.

Application:

This circular applies to new DPAD installations (from the publication date of this circular forward). Meeting all the requirements of this policy is not a guarantee of Ministry acceptance. Additional information and analysis may be required, particularly in high speed, high volume urban highway environments.

The *DPAD Operation* portion of this policy, regarding display characteristics, can be used to review or request adjustments to any billboards existing prior to the publication of this circular.

Policy:

1) DPADs **shall not** be located within Provincial highway right-of-way.

2) For DPADs adjacent to Provincial highway right-of-way where their displays are visible to road users, the following apply:

a) DPAD Operation

i. The minimum duration of a display shall be 8 seconds.

ii. Transitions between successive displays must last less than 0.25 seconds with no visual effects including, but not limited to: fades, dissolves, or animations.

iii. DPADs shall not use message sequencing or scrolling text. Message sequencing refers to the segmentation of a single message over multiple successive display phases on a single DPAD.

iv. DPADs shall not display video, animation, flashing, movement, or appearance of movement.

v. DPADs shall not display advertising content that interacts with or is specific to individual drivers or vehicles through any observed or obtained personal information.

vi. Only DPADs with ambient light sensors which adjust display brightness due to time of day and surrounding conditions shall be permitted.

vii. DPADs' illuminance shall be a maximum of 0.3 foot-candles or 3.2 lux above ambient light levels. Refer to Appendix A: Methodology for Determining DPAD Illuminance Compliance.

viii. If the DPAD malfunctions, the display shall default to a black screen.

b) Location and spacing of DPADs:

i. DPADs shall not be located within any Provincial highway right-of-way.

ii. DPADs with structures that, in the event of a failure, may land on a highway right-of-way shall be inspected annually. The inspection record shall be signed and sealed by the owner's Professional Engineer. It is the owner's responsibility to maintain the records of these inspections and to correct any structural deficiencies. Furthermore, the owner is responsible for notifying the Ministry annually of the inspection, the structural competency of the DPAD, and if any maintenance is required.

Figure 1: Overlapping DPAD and signals (Source: Scenic America)

iii. DPADS shall not interfere or overlap with the line of sight of any traffic control devices or signal heads. (Figure 1)

iv. For low-speed corridors (posted speed limit ≤60 km/h), DPADs shall have a longitudinal spacing greater than or equal to 150m from each other or from a static billboard so that only one (1) display surface is visible to approaching vehicles at any given time.

v. For high-speed corridors (posted speed limit ≥70 km/h), DPADs shall have a longitudinal spacing greater than or equal to 300m from each other or from a static billboard so that only one (1) display surface is visible to approaching vehicles at any given time. Figures 2 and 3 outline acceptable DPAD spacing for high-speed corridors.

Longitudinal DPAD Spacing on Corridors
(for low-speed corridors, replace 300m with 150m)

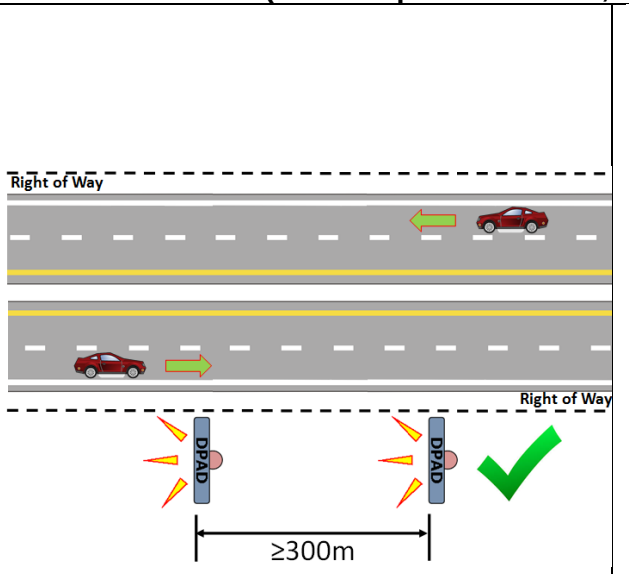

Figure 2: DPAD spacing is greater than or equal to 300m, therefore this spacing is compliant.

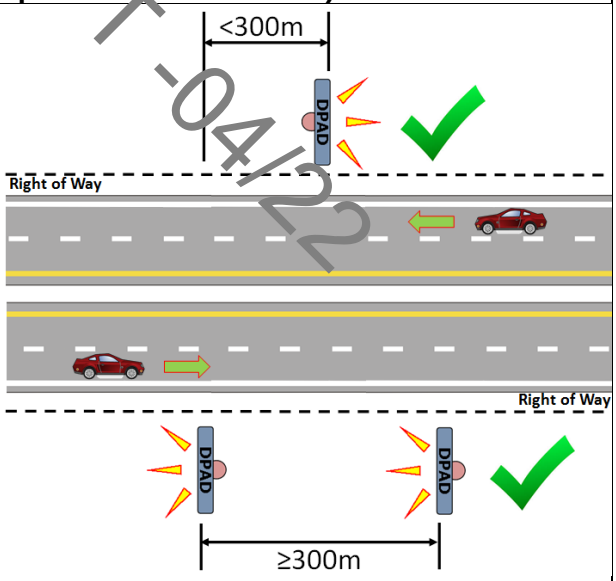

Figure 3: DPAD spacing is less than 300m and display face is in opposing direction, therefore this spacing is compliant.

vi. For high-speed corridors (posted speed limit of ≥70 km/h), DPADs shall not be placed within an outward distance of 300m measured from the centreline or centre of Decision Making Points including, but not limited to:

- Signalized intersections *(Figure 4)*
- Interchanges *(Figure 5)*
- Pedestrian crossings
- At-grade railroad crossings
- Roundabouts

Low speed corridors are exempt from this item assuming item 2(b-iv) is fulfilled.

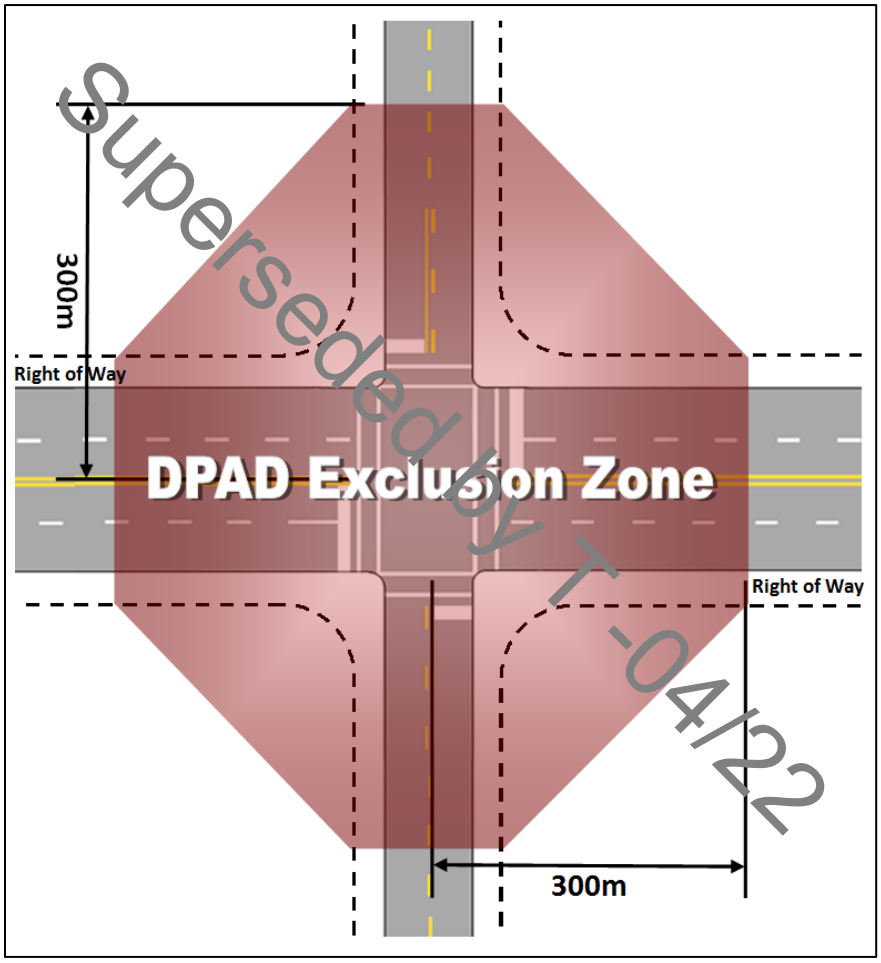

Figure 4: DPAD exclusion zone for signalized intersections.

Figure 5: The above image shows the McCallum Road and Highway 1 interchange in Abbotsford BC. A distance of 300m measured from the centerline of the McCallum Road overpass is illustrated. For interchanges the centreline of the overpass or underpass is used when determining the exclusion zone. The existing DPAD is located at a distance of approximately 400m from the centreline and is therefore compliant.

Contacts:

Jennifer Hardy, P.Eng
Senior Traffic Standards Engineer
778-974-5336

Jerry Froese, P.Eng, PTOE
Manager, Traffic Engineering Policy and Standards
778-974-5272

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Ian Pilkington, P. Eng.
Chief Engineer

Appendix A:
Methodology for Determining DPAD Illuminance Compliance

Illuminance should be measured using a Lux or Illuminance Meter using the following methodology:

a. Measure area of the DPAD face.
b. Determine the *Measurement Distance* using the following formula:

$$Measurement\ Distance\ (m) = \sqrt{Area\ of\ Display\ Face\ (m^2) \times 100}$$

c. Securely set up Illuminance Meter, preferably using a tripod, having the receptor pointing to the DPAD face at the calculated *Measurement Distance* away from the DPAD. *(Figure-5)*
d. Measure illuminance readings with DPAD off to determine ambient conditions. (Alternatively, background illuminance can be measured by "blocking" the light from the billboard using a large board or sign. This requires a second person to hold up a blocking board.)
e. Measure illuminance readings with DPAD on to determine display illuminance.
f. Subtract the two values. If the difference between the two values is less than or equal to 0.3 foot-candles or 3.2 lux then the DPAD is compliant.

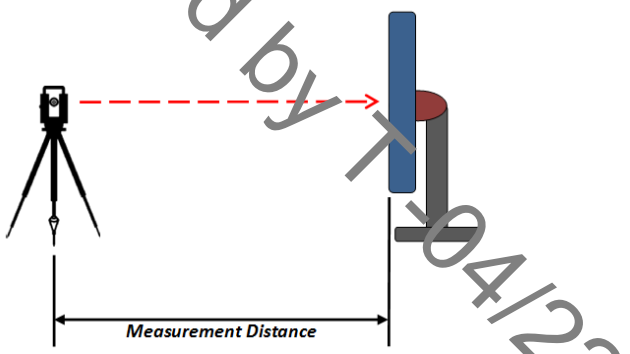

Figure 6: Illuminance Meter Placement