

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 updates T10-19 regarding 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 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 primarily 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. Existing DPADs may be subject to a safety evaluation (see section 4 under Policy).

Policy:

- 1) DPADs shall not be located within Provincial highway right-of-way.
- 2) DPADs shall not be located such that they are visible to road users on Schedule 1 Highways, as defined in Section 19 of the Motor Vehicle Act Regulations.
- 3) 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 display video, animation, flashing, movement, or appearance of movement.
- iv. DPADs shall not physically rotate or move.
- v. DPADs shall not use scrolling text.
- vi. DPADs shall not use message sequencing. Message sequencing refers to the segmentation of a single message over multiple successive display phases on a single DPAD or along multiple DPADs on a corridor. Each DPAD shall be a stand-alone message and not reliant on, or refer to, other DPADs or static billboards.
- vii. DPADs shall not display advertising content that interacts with, or is specific to, individual drivers or vehicles through any observed or obtained personal information.
- viii. The DPAD screen shall not be split to display multiple advertisements on one screen.
- ix. Only DPADs with ambient light sensors which adjust display brightness due to time of day and surrounding conditions shall be permitted.
- x. 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.
- xi. 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. The DPAD support structure shall be located outside the highway clear zone. 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.
- iii. DPADs shall not interfere, or overlap with, the line of sight to any traffic control devices or signal heads. (Figure 1)
- iv. DPADs shall not interfere, or overlap with, the line of sight to intersections (signalized or unsignalized), on and off ramps, or crossing points for other road users (i.e. pedestrians and cyclists).
- v. DPADs shall not be located within a distance, in metres, of $2.5v$ (measured along the highway) of any regulatory, warning or guide sign. Where v is the posted speed limit in km/h.
- vi. For low-speed corridors (posted speed limit ≤ 60 km/h), DPADs shall have a longitudinal spacing greater than or equal to 150 m from each other or from a static billboard so that only one (1) display surface is visible to approaching vehicles at any given time.
- vii. For high-speed corridors (posted speed limit ≥ 70 km/h), DPADs shall have a longitudinal spacing greater than or equal to 500 m 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.



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

**Longitudinal DPAD Spacing on High-Speed Corridors
 (for low-speed corridors, replace 500 m with 150 m)**

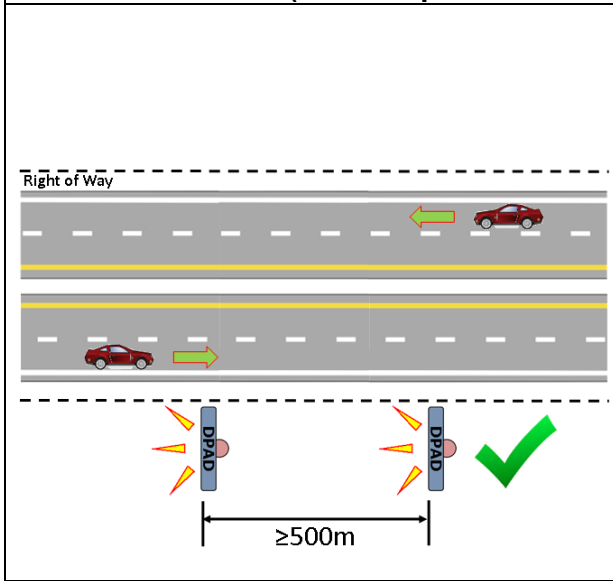


Figure 2: DPAD spacing is greater than or equal to 500 m, therefore this spacing is compliant.

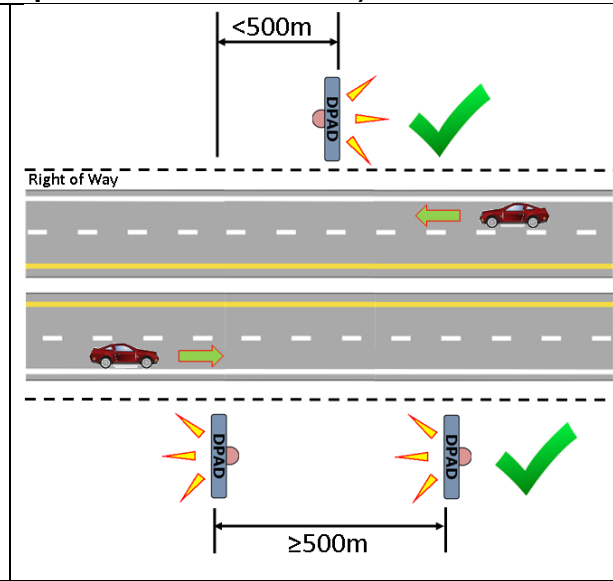


Figure 3: DPAD spacing is less than 500 m and display face is in opposing direction, therefore this spacing is compliant.

viii. For high-speed corridors (posted speed limit of ≥ 70 km/h), DPADs shall not be placed within an outward distance of 500 m measured from the centreline or centre of the following Decision Making Points:

- Signalized intersections (Figure 4)
- Unsignalized intersections
- Interchanges (see also 3 b-ix)
- Pedestrian crossings
- At-grade railroad crossings
- Roundabouts

Low speed corridors are exempt from this item assuming item 3(b-iv) is fulfilled.

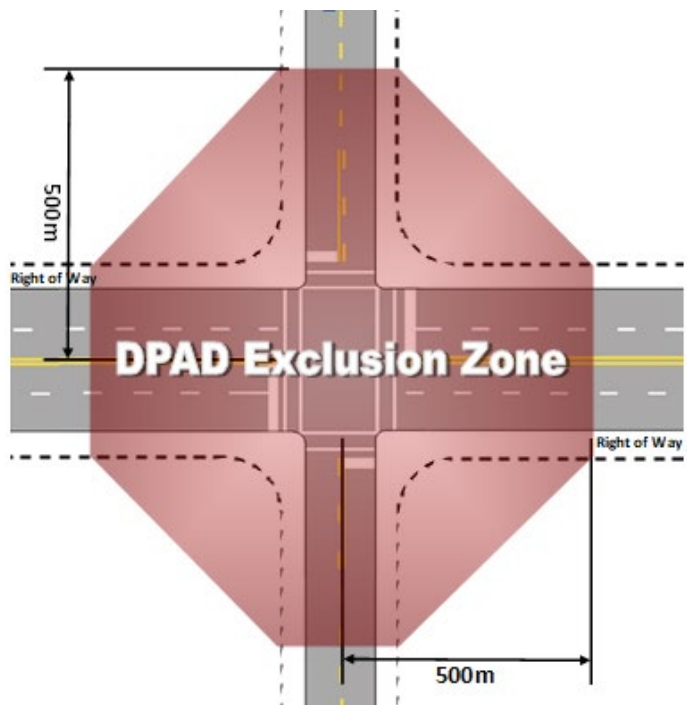


Figure 4: DPAD Exclusion zone for signalized intersections

- ix. For high-speed corridors (posted speed limit of ≥ 70 km/h), the DPADs shall not be placed within a distance of 500 m measured outward from the centre of an interchange, or the following distances from ramps, whichever is greater:
 - a. **Off-ramps:** A distance of $4.5v$ plus a conflict distance approaching the gore area, and a distance of $2v$ following the gore area (where v is the posted speed limit in km/h). See Figures 5a and 5b.

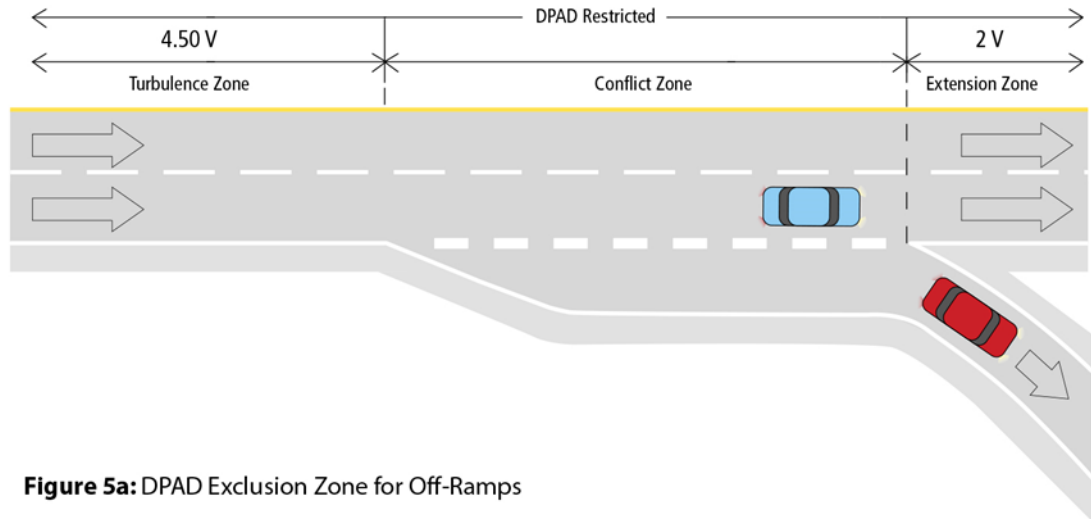


Figure 5a: DPAD Exclusion Zone for Off-Ramps

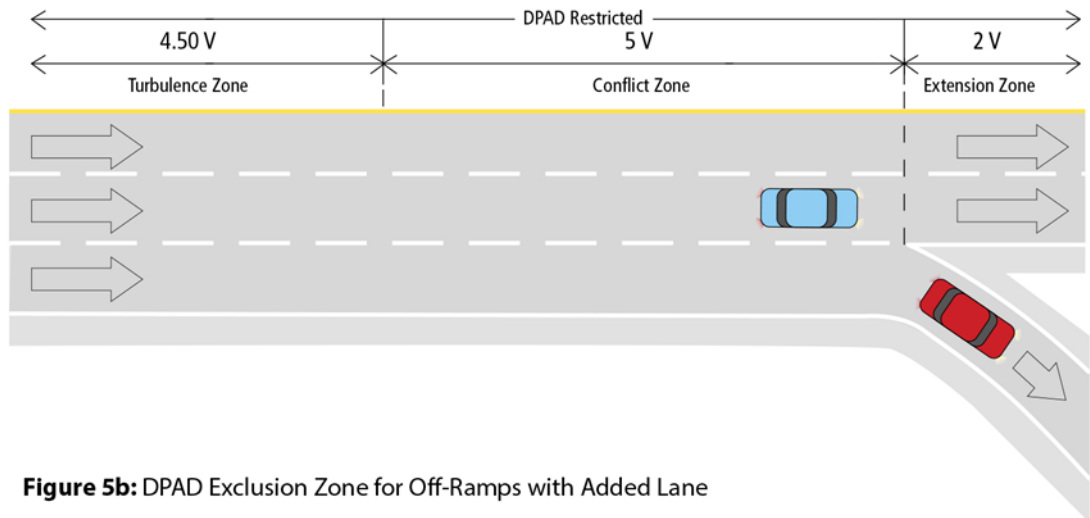


Figure 5b: DPAD Exclusion Zone for Off-Ramps with Added Lane

- b. **On-ramps:** A distance of $3.5v$ approaching the gore area, and a conflict distance (if exists) plus a distance of $4.5v$ following the gore area (where v is the posted speed limit in km/h). See Figures 6a and 6b.

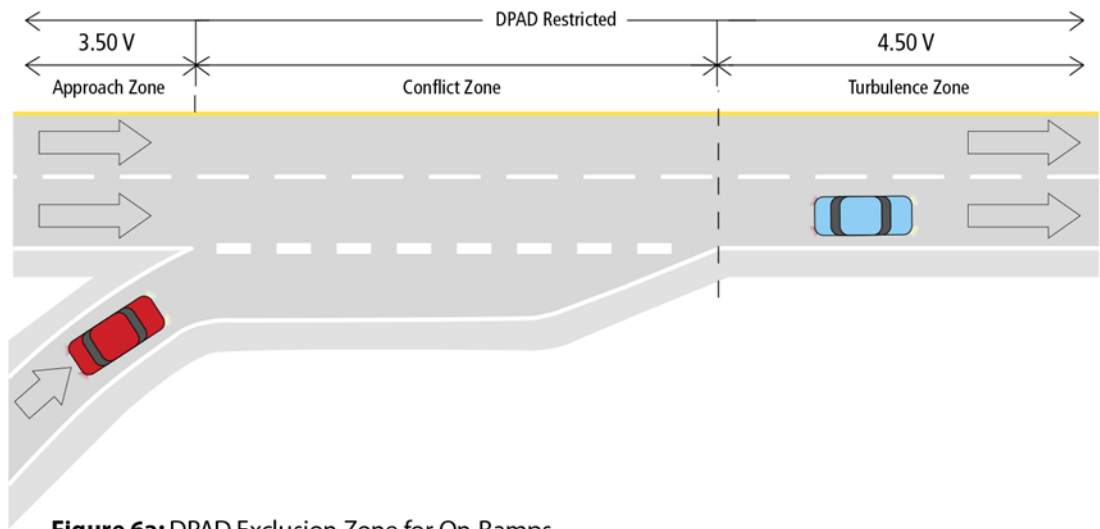


Figure 6a: DPAD Exclusion Zone for On-Ramps

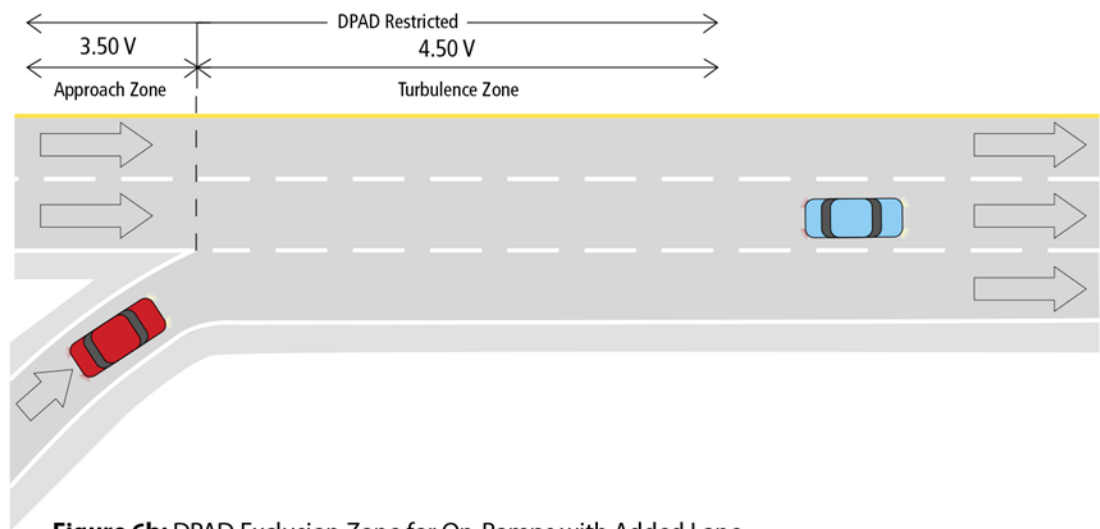


Figure 6b: DPAD Exclusion Zone for On-Ramps with Added Lane

4) Safety Considerations:

Additional restrictions to DPAD location may be applied based on location specific safety performance measures such as collision frequency, collision severity, collision rate, collision-proneness, collision patterns and overrepresentations.

Permitted DPADs are subject to a safety evaluation five years following installation. If the Ministry's Highway Safety Engineers find a significant deterioration in the safety performance of the highway segment or location (e.g., the segment/intersection became collision-prone), removal of the DPAD, at the owner's expense, may be required.

Contacts:

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

Mohamed Essa, P.Eng., Ph.D., RSP1
Senior Road Safety Engineer
604-916-1041

A handwritten signature in black ink, appearing to read "Ian Pilkington". The signature is fluid and cursive, with a large initial "I" and "P".

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:
$$\text{Measurement Distance (m)} = \sqrt{\text{Area of Display Face (m}^2\text{)} \times 100}$$
- 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 7)
- 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.

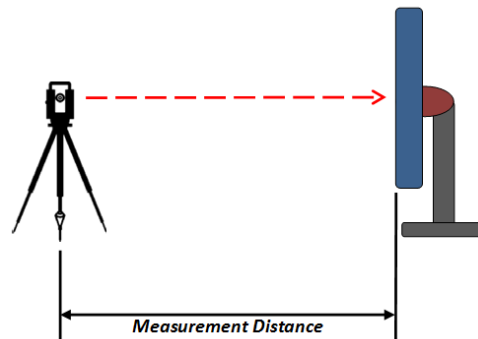


Figure 7: Illuminance Meter Placement