

WORK ZONE BULLETIN #8/2017

Alternatives to Manual Flagging

****Automated Flagger Assistance Devices and Portable Traffic Signals are currently trial devices. Project Sponsors may choose to use these devices as an alternative to manual flagging where appropriate. Details outlined in this bulletin may be modified in the future based on the results of the trials.****

Summary

This Bulletin is issued to inform consultants, contractors and department staff of the department's standards for Automated Flagger Assistance Devices (AFADs) and Portable Traffic Signals. Products that meet these specifications can be used on provincial highways as an alternative to manual flagging, where appropriate for roadway and traffic characteristics.

AFADs mimic the manual flagging process by indicating to motorists to stop or slow down in a work zone. Alberta Transportation allows both "STOP/SLOW" AFADs, which switch between signage to provide traffic control, and Red/Yellow Signal AFADs. They reduce flagger exposure to traffic, as the flagger can shift between the device's two modes from a protected area of the work zone including outside the travelled way.

Portable Traffic Signals control traffic flow using standard traffic signal heads attached to a moveable trailer. These devices do not require a flagger but operate using either fixed time or actuated design.

Key Changes

Standard for AFADs

The following requirements apply to both STOP/SLOW AFADs and Red/Yellow Signal AFADs:

- They shall meet the MASH TL-3 standards for crashworthiness.
- They shall be illuminated by overhead lighting if used in hours of darkness.
- They shall be operated by flaggers that have received training for the AFAD. These flaggers shall also be certified in manual flagging in case of device failure.

STOP/SLOW AFADs

STOP/SLOW AFADs use either digital signage or mechanical flipping to display the sign modes of “stop” and “slow”. The sign must be octagonal in shape, with minimum dimensions of 600 mm by 600 mm. The “stop” mode shall display a standard RB-1 sign, with a red background and white lettering. In the “slow” mode, a diamond shaped warning sign with an orange background and the black text “SLOW” shall be displayed. If the AFAD uses a physical sign with mechanical flipping, it shall have a Type IX retro-reflectivity as well as a locking mechanism to ensure it stays in place.

Warning beacon(s) that can display red and yellow lights shall be attached to the top of the sign to further attract motorist attention. The red warning beacon shall face traffic and flash continuously during the “stop” mode. The yellow beacon shall face traffic and flash continuously during the “slow” mode. The beacons must meet the LED specifications outlined in Design Bulletin #32/2006. Flash rate and other operational considerations shall follow “Recommended Practices for Beacons”.

The sign shall be mounted on a support such as a trailer, with the bottom of the sign being at least 1.8 metres from the pavement. STOP/SLOW AFADs shall include a gate arm that descends on the stop mode, with a length that is sufficient to extend at least two-thirds across the closed lane. The gate arm shall have full retro-reflectivity, with alternating red and white stripes that are each 400 mm in length. The gate arm shall have a vertical profile of at least 100 mm.

A “WAIT ON STOP” sign and a “GO ON SLOW” sign may be included with the AFAD to provide motorists with further direction on the expected behavior. These signs are regulatory, with a white background and black lettering.

Red/Yellow Signal AFADs

Red/Yellow Signal AFADs are composed of a signal head, support structure, and gate. The signal head has two circular lenses with a 300 mm diameter. In the “stop” mode, the top lens will illuminate with a steady red. In the “slow” mode, the other lens shall display flashing yellow. A change interval, displaying steady yellow, shall be provided for at least 3 seconds between the “stop” and “slow” modes. The lenses must meet the LED specifications outlined in “Design Bulletin #32/2006”.

The signal head shall be mounted on a support such as a trailer, with the bottom of the sign being at least 2.1 metres from the pavement. Red/Yellow Signal AFADs shall include a gate arm that descends on the stop mode, with a length that is sufficient to extend at least two-thirds across the closed lane. The gate arm shall have full retro-reflectivity, with alternating red and white stripes that are each 400 mm in length. The gates shall have a vertical profile of at least 100 mm.

A regulatory sign with black lettering and a white background that indicates “STOP HERE ON RED” with an arrow pointing where motorists should stop should be provided in front of or on the AFAD.

Standard for Portable Traffic Signals

Portable traffic signals use conventional traffic signal heads, with three 300 mm diameter lenses for displaying red, yellow, and green lights. They use at least two traffic signal heads, with one mounted overhead and the other mounted to the side of a moveable structure. The battery source must be operable within a temperature range of -40 to 40 degrees Celsius and shall be able to provide sufficient light intensity.

Portable traffic signals have the operational characteristics of regular traffic signals systems. This includes but is not limited to:

- Presence of a conflict monitor to detect system failure, including the activation of simultaneous green on both approaches.
- Programming to switch to flashing red in the event of device malfunction
- Ability to provide notification of low power

Effective Date

May 9, 2017

Contact

Elena Yin at (780) 415-4827

Operations, Programming and Planning Branch, Alberta Transportation

References

["Design Bulletin #32/2006"](#)

["Recommended Practices for Beacons"](#)

Approved

*Original signed
by Tom Loo*

Tom Loo
Assistant Deputy Minister, Delivery Services Division