



City of
Peterborough

Memorandum

AAC15-023 Appendix A

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To: Accessibility Advisory Committee (AAC)

From: Mark Buffone, Accessibility Compliance Coordinator

Date: May 6, 2015

Subject: Information on how an Accessible Pedestrian Signal (APS) operates

At the last AAC meeting, there was a short discussion on the general operation of an Accessible Pedestrian Signal (APS), formerly known as an Audible Pedestrian Signal. The following information is intended to explain the general operation of an APS.

Pedestrian Pushbuttons

Where an intersection is equipped with APS technology, it will have pedestrian pushbuttons mounted on a pole on each corner of the intersection. It is easier for pedestrians with vision loss to orient themselves when a corner has a pushbutton on two separate poles, one for each direction of travel. However, some corners will have two pushbuttons on a single pole. The poles must be installed within 1500mm of the inside edge of the street curb.

Pushbuttons must have tactile arrows with a vibrotactile feature. The arrows point to the direction of travel to cross the intersection. Where two pushbuttons are located on one pole, they must have a verbal announcement to clearly state which crossing is active.



Figure 1 – pedestrian pushbutton on the south-west corner of Hunter and Burnham Streets

Locating Tones

Where an intersection is equipped with APS technology, the pedestrian pushbuttons have locating tones that operate at all times, except during the walk interval. The sound of the locating tone comes from speakers on the pushbutton devices and helps people with vision loss find the buttons. The locating tone is not what helps pedestrians cross the street.

The volume of the locating tone is generally set to be heard up to 3.7m (12 feet) from the pushbutton. It is not ideal to hear the locating tone much before getting to the corner, or during the entire time while crossing the street. Setting the locating tone to be as quiet as reasonable allows pedestrians with vision loss to hear traffic sounds better.

All audio features of modern APS systems have sophisticated volume controls. The volume of the locating tone can respond to sound around it, getting louder when traffic is loud and quieter when traffic is quieter. The volume can also be set as fixed.

Activating a Pushbutton

There are two methods to activate APS features from a pushbutton. The first method is the press-and-release method and the second is the press-and-hold method.

All APS installations in the City of Peterborough use a press-and-hold method to activate the APS features. This means the pedestrian pushbutton must be pressed and held from 3 to 6 seconds to activate the APS features.

If a pedestrian uses the simple press-and-release method, the traffic control signal will cycle the traffic signals to the visual “walk” signal without starting the APS features.

The APS Audible, Visual and Vibrotactile Features

Various APS features may start upon activating the APS system with the pushbutton:

1. Acknowledgement of activation:

- Audible acknowledgement (2 pushbutton locator tones sound within 0.5 seconds)
 - Visual acknowledgement (small lamp illuminates on the pushbutton)
 - Vibrotactile acknowledgement (plate behind the raised tactile arrow vibrates)
2. Wait Voice Message (ie/ “Wait to cross Burnham Street at Hunter Street. Wait”)
 3. Walk Voice Message (ie/ “Walk sign is on to cross Burnham Street”)
 4. Directional Indications:
 - North-south direction of travel: “cuckoo” sound.
 - East-west direction of travel: “[Canadian APS melody](#)” or “chirp” sound.
 5. Countdown Message (ie/ “11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1”)

The City of Peterborough uses the “chirp” sound for all east-west directional indications. Note: Many Canadian associations and organizations recommend the “chirp” sound be avoided in Canada because it sounds too much like a northern cardinal.

Similar to the pedestrian pushbutton locating tones, it is commonly recommended the APS audible features be set at a volume that is heard within 3.7m (12 feet) from the pushbutton.

The City of Peterborough generally sets the APS audio features at a higher volume so that they can be heard throughout the crosswalk and across the street.

APS Beaconsing

APS beaconing is an alternative method to setup an APS system. APS beacons use the same APS audio features but operate at a higher volume so that they can be heard throughout the crosswalk and from across the street.

Beacons have been widely deployed in North American applications. However, research indicates that the broader community of organizations representing people with vision loss no longer favours the use of APS beacons. The reasoning provided is that beacons tend to mask parallel traffic noise.

However, audible beaconing may provide benefits under a number of scenarios, such as intersections with unusual geometry or long crossing distances. In these circumstances, the setup for activating the APS should be a press-and-hold of the pedestrian pushbutton.

Resources

[Integrated Accessibility Standards Regulation 191/11, section 80.28](#)

(<http://www.ontario.ca/laws/regulation/110191>)

[TAC Guidelines for Understanding, Use and Implementation of Accessible Pedestrian Signals](#)

(<http://www.peterborough.ca/Assets/City+Assets/Accessibility+Advisory+Committee/TAC+Guidelines+for+Understanding+Use+and+Implementation+of+Accessible+Pedestrian+Signals.pdf>)

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