

Position Statement on Accessible Pedestrian Signals

May 5, 2014

Issue

Across Canada, the operation and features of accessible pedestrian signals (APS) are far from standardized. In order to enhance the safety and independence of Canadians who are blind, deafblind, or partially sighted, as well as to ensure consistency that is easily recognized by pedestrians who rely on APS systems across the country, accessible pedestrian signals require agreed upon operating standards. In this position statement, organizations serving and representing Canadians with vision loss have agreed to a series of recommendations that will promote consistency in the operation and features of APS systems throughout Canada.

Background

Pedestrians who are blind, deafblind, or partially sighted cannot always determine when it is legal or safe to cross streets without audible and/or vibrotactile indications that coincide with the visual traffic signals available to sighted pedestrians.

Accessible pedestrian signals (APS) provide non-visual indications to pedestrians to assist them to independently cross a street. By indicating when a crossing interval begins, APS allow pedestrians

to begin the crossing before turning cars enter the intersection and to complete the crossing with less delay. These non-visual signals can also provide directional guidance that can assist in the crossing of non-perpendicular intersections and multi-lane crossings. Accessible pedestrian signals provide audible and vibrotactile indications that confirm when it is legal and safe to make a street crossing not only for pedestrians who are blind, deafblind, or partially sighted, but also for many other users who may benefit from non-visual prompts, such as children, seniors, and people with cognitive disabilities.

In the United Nations Convention on the Rights of Persons with Disabilities (CRPD), which the Canadian Government (with the support of all provinces and territories) ratified in March 2010, Article 9 states, in part, that “States Parties shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, and to other facilities and services open or provided to the public, both in urban and in rural areas.”¹ Part of what it takes to provide equal access to the physical environment is the installation of accessible pedestrian signals.

Over a four-year period, an APS Committee consisting of Canadian consumer representatives, orientation and mobility instructors, and traffic engineers put together a set of

¹ See the United Nations Convention on the Rights of Persons with Disabilities. Available at <http://www.un.org/disabilities/convention/conventionfull.shtml>

recommendations that were officially submitted to the Transportation Association of Canada and culminated in the release of the "***Guidelines for Understanding, Use, and Implementation of Accessible Pedestrian Signals***" in May 2008.²

The guidelines, while comprehensive in some areas, leave room for the discretion of deploying agencies that has resulted in a wide variety of APS operations across Canada. For example, many deploying agencies are installing APS with an acoustic locator tone pulsating at 60 tones per minute (once per second) while others employ 30 tones per minute (once every two seconds). Another example of variation has to do with verbal messaging. In some cases, verbal messaging is used to provide strictly way finding information, whereas other APS installations will employ verbal messaging as both a way finding message as well as a WALK indication message. Finally, the use of a "buzzer" tone, "chirp" tone and four-note "Canadian Melody" to indicate an east/west crossing in one city alone is just one more example of the wide variety of APS operations. These inconsistencies are confusing and ultimately dangerous to pedestrians who are blind, deafblind, or partially sighted.

Chapter 5 of the "***Guidelines for Understanding, Use, and Implementation of Accessible Pedestrian Signals***", which addresses APS operational guidelines, is the primary source of information for the recommendations that follow. The goal of

² The Guidelines may be purchased at <https://vws3.primus.ca/dev.tac-atc.ca/english/bookstore/products.cfm?catid=12&subcatid=21&subcatid=0>

these recommendations is to promote consistency from one jurisdiction to another. To realize this goal, APS must be installed in accordance with agreed upon standards. The undersigned organizations have agreed to the following recommendations.

Recommendations

1. APS installations must favour “accessible pedestrian signals” only (as opposed to audible pedestrian signals).
2. Signalized intersections that include pedheads (visual WALK/DON'T WALK signals) must be equipped with accessible pedestrian signals.
3. Where a traffic signal cycles automatically through visual “walk” and “don’t walk” indications, the audible and vibrotactile indications should likewise be activated and deactivated automatically – without the need to push a button.
4. Accessible Pedestrian Signals must be included in all new traffic control signal installations.
5. Accessible Pedestrian Signals must be included when a traffic signal is replaced or rebuilt, for example, due to geometric changes to the intersection.
6. Pushbutton or acoustic locator tones shall be set at a rate of 30 tones per minute or once every two seconds.
7. APS sites must be accompanied by orientation guides that include pedestrian information that is accessible to all pedestrians. Whether the text of the orientation sign is incorporated into the pushbutton housing or on an adjacent sign, it must provide the name of the street associated with the pushbutton housing in both uncontracted braille and tactile letter formats. A cardinal locator must also be

included in the lower right-hand corner of the orientation guide.

8. The name of the intersecting streets must be provided as an audible, verbal message, delivered in its entirety, in response to a single, standard pushbutton activation. The name of the parallel street must precede the name of the street to be crossed and separated by the word "crossing" (i.e. "Broadway crossing Main"). Such audible messages must be short and concise, eliminating words such as "Street", "Avenue" or "Drive" unless it is deemed essential to eliminate any possible ambiguity.
9. At crosswalks and intersections employing flashing amber signals, the press of an APS button should result in a verbal announcement stating the following: "Amber lights are now flashing. Use caution. Vehicles may not stop immediately".
10. A tactile arrow, parallel to the direction of travel, must be provided as part of the pushbutton housing or incorporated into the orientation guide.
11. Tactile crosswalk mapping must follow the standards set forth by [Braille Literacy Canada](#) and must be incorporated into the orientation guide wherever recommended by an organization representing persons who are blind, deafblind, or partially sighted.
12. Except where APS activation is automatic, actuation of the APS system must be accomplished through the use of pushbutton technology. A single pushbutton must actuate both the visual "walk" indication and the audible and vibrotactile indications of the APS.
13. The pushbuttons must have a minimum diameter of 50mm. The surface of the pushbutton should be raised from

its casing and be slip resistant. In all instances, a person should be able to operate the pushbutton with a closed or gloved fist (or with an equivalent sized object).

14. There must be a high contrast ratio in light reflectance between the pole and the pushbutton casing.
15. Access leading up to the pushbutton housing must be clear of any obstacles or snow accumulation so that the pushbutton housing is accessible to all pedestrians throughout the year.
16. When the pedestrian pushbutton is pressed and held for a 1.5 second period (press-and-hold actuation), the traffic control signals shall cycle to the visual "walk" indication requested, and the APS features (i.e. audible and vibrotactile indications) of the associated pedestrian crosswalk will be actuated along with enhanced features including:
 - a beaconing feature;
 - an amplified pedestrian clearance indication that shall consist of the acoustic locator tone operating at a rate of 60 tones per minute or once every second, as opposed to the standard rate of once every two seconds. The amplified pedestrian clearance indication that consists of the acoustic locator tone operating at a rate of 60 tones per minute is the only audible indication, verbal or otherwise, that is to be used during the pedestrian clearance phase; and
 - a 5dB amplification (above normal) of all audible tones and messages.
17. Actuation of the APS must include an audible, visual, and vibrotactile acknowledgement of the actuation. The

audible indication should be achieved via the verbal street identification message outlined in Recommendation 8.

18. Unless beaconing is used – as per Recommendation 16, the volume level for the APS 'walk' indication should be no less than 2dB and no more than 5dB greater than the ambient sound. Where the “push and hold” activation is employed, the volume level for audible messages, the 'walk' indication and the pedestrian clearance indication should be no less than 5dB greater than the ambient sound.
19. Except where audible indications are amplified due to ambient sounds or where an extended button push has invoked additional features, the acoustic locator tone and the APS “walk” indication should be adjusted to be audible at no more than 3.7m from the pushbutton (presumed to be co-located with the preferred pedestrian waiting area), or at the closest building line, whichever is less.
20. APS systems must accept pedestrian actuations during the pedestrian clearance and “don’t walk” displays. When a pedestrian arrives at an APS system where the “walk” indication is already active and accompanied by the APS features (i.e., audio and vibrotactile indications), The APS system should not acknowledge the actuation, but instead should complete the “walk” indication. If the audible and vibrotactile APS features are inactive (i.e. “walk” display only), and where technically feasible, the APS system should accept the actuation and hold the actuation through to the next APS indication opportunity.
21. The “walk” indication for crossings of a north/south direction should employ the current, well recognized “cuckoo” repetitions’. The “walk” indication for crossings of an east/west direction should use the current, well

recognized "chirp" tone. Any changes or amendments to these audible indications must be pre-empted by a 90 day national multi-media education/awareness campaign and the changeover must be national in scope with a clearly defined, uniform completion date.

22. Additional pedestrian crossing time must be considered in those conditions that could slow or delay a pedestrian crossing the street. These conditions could include (but are not limited to) the following:

- The pushbutton cannot be located within 3m of the curb, thereby significantly increasing the pedestrian crossing distance;
- The running grade of the crosswalk exceeds 1:20;
- The cross-slope of the crosswalk exceeds 1:48;
- Long crosswalk lengths; and
- Observed pedestrian crossing skills would suggest that additional walking time be provided.

23. Post-installation inspections, in collaboration with local representatives of people who are blind, deafblind, or partially sighted must occur to assess the potential for sound conflicts during various traffic conditions.

24. An APS must be operational at all times (except during repairs, maintenance, intersection or sidewalk construction, or temporary shutdowns for special events).

25. Intersections configured to accommodate pedestrian scramble phasing must provide all visual "walk" indications. APS features (i.e. verbal and vibrotactile indications) of all associated pedestrian crosswalks must be actuated with a normal button push. Standard "walk" indications (e.g.,

cuckoo/chirp sounds) should not be employed. The verbal "walk" message should include "The 'walk' sign is on to cross in all directions."

26. Given it is outside the capabilities of an APS device to regulate the extent of the WALK phase, we recommend due consideration be given to the length of the WALK phase, such that it be adjusted (or increased) from the current average walking pace of 1.2 meters per second down to an average walking pace of .90 meters per second or less to accommodate the aging population.

Supporting Organizations

As at May 5, 2014, the following organizations have endorsed the above:

[Access for Sight Impaired Consumers](#)

[Alliance for Equality of Blind Canadians](#)

[Alberta Society for the Visually Impaired](#)

[Canadian Council of the Blind](#)

[CNIB](#)

[Canadian National Society of the Deaf-Blind](#)

[Guide Dog Users of Canada](#)

[Views for the Visually Impaired](#)

[Vision Impaired Resource Network \(VIRN\)](#)

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