

REGION OF OTTAWA CARLETON  
 RÉGION D'OTTAWA CARLETON

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REPORT  
 RAPPORT

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Our File/N/Réf.	03 07-98-0095
DATE	29 September 1998
TO/DEST.	Co-ordinator Transportation Committee
FROM/EXP.	Audible Pedestrian Signals Advisory Committee
SUBJECT/OBJET	<b>AUDIBLE PEDESTRIAN SIGNALS ADVISORY COMMITTEE - PROGRESS REPORT</b>

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### **REPORT RECOMMENDATIONS**

**That Transportation Committee recommend Council approve:**

- 1. That the mandate of the Audible Pedestrian Signals (APS) Advisory Committee be continued, in order to carry on work as approved by the Transportation Committee and by Council in 1997, as set out by the Fulton brief, see Annex B;**
- 2. That RMOC staff provide support to the APS Committees by co-ordinating meetings and public consultation, providing technical support, and drafting policy and procedure;**
- 3. That the APS Advisory Committee present a report to Transportation Committee by September 1999;**
- 4. That the draft Location Prioritization Criteria, as set out in Annex E of the report, be tested and evaluated by the Environment and Transportation Department supported by the APS Committee; and that the criteria and resulting priority lists be presented for public review and comment;**
- 5. That a portion of the \$50,000 allocated in the 1998 budget for the installation of audible pedestrian signals be used to fund scientific research, in order to determine the best choice and use of sounds for audible pedestrian signals per the motion approved 25 August 1998 by the APS Committee;**

6. That the RMOC practice of providing audible pedestrian signals at signalised intersections be clarified;
7. That new installations of APS continue during 1998, using currently available technology employed by RMOC, based on the list of outstanding requests.

## BACKGROUND

On 3 September 1997, some blind and visually impaired citizens of Ottawa-Carleton made a presentation to the Transportation Committee detailing their difficulties related to safety at intersections and the use of audible pedestrian signals. As a result of the presentation, the Committee adopted the following motions:

1. *That an ad hoc committee called the "Audible Pedestrian Signals Advisory Committee" be established and that the mandate and composition be as set out in the Fulton brief entitled "Audible Signals: A Way to Resolve the Issues", with a review of the mandate in one year.*
2. *That the Transportation Association of Canada (TAC) be advised that the RMOC requests the Association to:*
  - b. reconsider the audible pedestrian signal standard;*
  - c. establish guidelines for the use of bells and buzzers as audible signals as developed in the RMOC for the complete walk cycle as determined by the ad hoc committee;*
  - d. that TAC invite member communities to provide input.*

## DISCUSSION

1. In accordance with Transportation Committee direction, a meeting of interested parties was convened on 18 November 1997 to establish the APS Advisory Committee. Councillor Cantin chaired this meeting, and it was decided that membership would include:
  - a. those individuals present at the meeting who were interested in serving on the Committee;
  - b. representatives of organisations of blind and visually impaired persons, and of agencies that provide orientation and mobility programs, as set out in the Fulton brief;
  - c. various professionals and experts with pertinent knowledge of various subjects to be discussed, particularly in reviewing technical matters related to audible pedestrian signals.

Annex C is current membership list.

2. *The Mission Statement* adopted at 5 March 1998 meeting states: “*The mission of the APS Committee is to facilitate the creation and implementation, by the Regional Municipality of Ottawa-Carleton (RMOC), of a policy on the location and operation of audible pedestrian signals by following a community based approach. This policy should provide blind and visually impaired pedestrians with the same level of safety and efficiency when using crosswalks as that provided to other pedestrians. This policy should also incorporate a communications strategy in order to provide blind and visually impaired pedestrians information on where and when it is safe and legal to cross an intersection.*

*To achieve all this, the Committee endorses the following core values:*

A. *QUALITY SERVICES*

*Members believe in delivering recommendations of the highest quality by reaching decisions through an impartial, transparent and fair process.*

B. *OPEN COMMUNICATIONS*

*Members believe in encouraging a free exchange of ideas and promote open and constructive communications among themselves and with those who have an interest in addressing the needs of blind and visually impaired pedestrians.*

C. *RESPECT FOR OTHERS*

*Members believe in treating people fairly by promoting a co-operative and rewarding environment that fosters personal growth, independence and democracy.”*

3. Based on this *Mission Statement*, the Committee agreed to concentrate on:
  - c. Review and improvement of audible pedestrian signals location prioritisation criteria;
  - d. Examination of various technical issues related to audible pedestrian signals, including: signal location indicators, signal sound characteristics and timing, use of sound, signal features and related issues involving intersection configuration and engineering;
  - e. Development of a communication strategy for audible pedestrian signals installations and reporting;
  - d. Examination of funding requirements for improved pedestrian safety at intersections.

4. The complete Issues and Deliverables Lists accepted at the March meeting is attached as Annex D. At the April 23, 1998 meeting, three subcommittees were recommended. Two subcommittees met over the summer and focused on specific issues associated with request criteria prioritisation, and technical issues. To date, the APS Advisory Committee and its sub-committees have produced the following results:
  1. A draft location prioritisation criteria. (Annex E)
  2. Technical issues were identified and grouped. (Annex F).
  3. A representative of the APS committee made a presentation to the TAC Annual Conference seeking review of TAC technical standards in support of the RMOC written request that TAC reconsider national standards.
  4. The technical committee has provided a sounding board, and research candidates, to research on acoustic characteristics for audible pedestrian signals being undertaken by audiologists at the University of Ottawa.
  5. Recommendations on funding made to continue installation of APS in 1998, and to support sound characteristic research.
  6. Formal communications strategy has yet to be developed for APS, however, the committee work has resulted in increased awareness leading to increased requests for audible pedestrian signals ( i.e. from 11 to 52 in 1998).

Decisions taken by the APS committees are documented in (Annex G). Recommendations on a communication strategy, technical issues, and funding for audible pedestrian signals are among the issues which still require extensive discussion and research.

This spring, the TAC established a national committee to review the audible pedestrian signal standard. As part of its review, this committee has committed itself to seeking input from users across the country, including the RMOC's APS Advisory Committee. The TAC Committee, set to begin its work this September, will be chaired by Chris Brinkmann, an Engineer and a member of RMOC Environment and Transportation Department, as well as the staff representative on the RMOC's APS Advisory Committee. These developments should be seen as significant steps towards improving the audible pedestrian signal standards in Canada but should not affect local priorities or installation programs.

## CONCLUSION

The partnership between the RMOC and the community has made progress in resolving long standing issues of pedestrian safety at intersections in the Region. The APS Advisory Committee will continue to focus on the immediate safety concerns of pedestrians in the region. Due to these safety concerns, it is considered vital that the installation of audible signalling continue to receive funding. The Committee notes with appreciation the RMOC's commitment to funding of \$50,000 per year for the addition of APS on existing signalised intersections in each of the next four years.

The APS Committee's efforts in partnership with the TAC Review Committee will provide a model for Canadian and North American standards on audible pedestrian signals that will greatly enhance the safety and mobility of blind and visually impaired individuals and significantly reduce the potential for incidence of personal injury.

### PUBLIC CONSULTATION

Members of the APS Committee were chosen from the public at large, from organisations of blind and visually impaired persons, and from agencies that provide orientation and mobility programs, as set out in the Fulton brief. The APS Committee remain committed to broader public consultation as part of the ongoing process.

### EXPENDITURE JUSTIFICATION

Properly designed and installed audible pedestrian signals greatly enhance the safety and mobility of blind and visually impaired individuals as well as other citizens particularly seniors and those with a cognitive disability thereby significantly reducing the potential for incidence of personal injury. Funding to support research, planning, and public consultation that supports the decision making process for APS is well spent.

*Approved by  
The Audible Pedestrian Signals Advisory Committee*

Attach. ( 7 )

## PRESENTATION

### 1. AUDIBLE PEDESTRIAN SIGNALS

- Co-ordinator, Transportation Committee report dated 19 Aug 97
- Councillor D. Holmes memorandum dated 26 Aug 97

*Chris Stark, a resident of Orléans*, related the difficulties he and other visually impaired people are faced with at intersections in his community. He explained that when he first moved to the Region, Orléans was a smaller, more comfortable community; but, over time, development occurred and with that growth came increased traffic volumes. He has concerns about the intersections of St. Joseph Boulevard and Jeanne d'Arc, and Highway 417 at Jeanne d'Arc. He has a particular concern about the intersection of Jeanne d'Arc Boulevard and Youville Drive/Grey Nun's Drive because of the new audible signals at that location.

The difficulties they face at this five-laned intersection include having to locate the pedestrian crossing button to activate the lights (hoping it does in fact activate because there is no way of telling), finding the corner followed by crossing the road when the audible signals is activated. To add to these difficulties, the signal emits a sound much like a bird which is difficult to hear above the traffic noise. Mr. Stark added that half-way across the road the bird-like sound stops. This leaves the pedestrian without a signal for direction while vehicles continue to pass in front of and behind them. The crossing is also not straight across, so combined with the loss of the signal half-way, the blind pedestrian is left in sheer terror wondering in which direction to continue walking. He has difficulties with the intersections mentioned because of the way they are designed i.e. advance greens, islands and right-hand turn lanes and intersections that are not squared as they are more difficult to navigate.

He explained he has raised his concerns with several levels of government, the Transportation Association of Canada (TAC) and others, but nothing has been done. Mr. Stark further explained that the national standard for audible signals is based on certain types of intersections and has nothing to do with his abilities as a blind person. The problem with the current standard is the "walk" indicator is very short compared to the "don't walk" display. This type of signalization causes some difficulty because the visually impaired can get disoriented when the displays change. Further to this, travel for a blind person with a white cane is different from travel with a guide dog. So he would like to see guide dog users/organizations involved in this process as well because it would help to understand the difference between those methods of mobility

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He made reference to the installation of audible signals in the Region, noting there were many intersections that already have them and approximately 11 intersections on a waiting list. Although only two signals are installed each year, he requested that consideration be given to installing audible signals along the length of St. Joseph Boulevard and the crossing of Highway 417 at Jeanne d'Arc.

In closing, Mr. Stark asked that the original audible signal be reinstated at Jeanne d'Arc and Grey Nuns Drive or, failing that, some upgrading of the system be carried out to ensure it assists the visually impaired more than just getting them started to cross the road.

He asked that consideration be given to having an open process where all the needs of blind people can be addressed and considered, with direct involvement from those in the community. As well that steps be taken to re-examine the existing national standard with a view to ensuring it meets the needs of the visually impaired.

*Ian Martin, a resident of Orléans*, echoed some of the comments raised by Chris Stark. He cited examples where the proliferation of traffic noise makes it difficult to hear the audible signal, especially when hearing is very important to a blind person's sense of direction. The bell and buzzer audible signals were more efficient because their very distinctive sound is easily identified amongst traffic noise. They are also located on both sides of the street, providing a guidance system for the blind. He indicated he was not aware of anyone consulting the blind community when these signals were changed.

Councillor Meilleur was surprised to hear there was no committee of blind people to advise staff because she thought such direction was given in March when this issue was first raised. The Commissioner confirmed this is one of the recommendations outlined in the documentation before committee today. He agreed the committee should be comprised of those individuals best suited to make recommendations on what is appropriate, as is done with other Regional advisory committees.

Councillor Holmes proposed the following Motions:

1. The former system of audible signals be reinstalled at Jeanne d'Arc Boulevard and Grey Nuns Drive in the interim.
2. That staff advise on the installation of the 11 locations on the waiting list for audible signals.
3. That an ad hoc committee called the "Audible Pedestrian Signals Advisory Committee" be established and that the mandate and composition be as set out in the Fulton brief entitled "Audible Signals: A Way to Resolve the Issues".

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Councillor Holmes agreed there was a need for input by users of audible signals. With respect to the composition of this committee, she suggested bringing together as many people with different experiences as possible who could make recommendations on the types of signals to be installed and where they should be located. She suggested the committee could report back with specific recommendations for locations and numbers per year, depending on the need, et cetera.

With respect to the councillor's Motion about reinstating the original audible signals at Jeanne d'Arc and Grey Nuns, Mr. Martin inquired whether a freeze could be put on all other installations to be changed. The Committee Chair advised he has given such direction to staff until this issue is resolved. In response to a question posed by the Committee Chair, D. Brousseau, Director of Mobility Services indicated audible signals were invented in Canada and bells and buzzers were created by Regional staff. Although the Department has lobbied the TAC for many years for the installation of these types of signals, they have chosen to do otherwise. He added that recommendations from the TAC with respect to audible signals are more of a guideline and the Region can vary somewhat.

He recognized the importance of conformity because blind people may be visiting from other communities and if others are going to the national standard, the Region should be cognizant of that. He agreed that if there is a ground-swell of opposition to the existing standard perhaps it can be re-examined. Mr. Martin suggested the guidelines should not have to be adhered to if they do not fit the needs of the community. Staff reiterated that the Department does not have the expertise to solve problems raised by the visually-impaired and have always relied on the Canadian National Institute for the Blind to provide input.

Councillor Kreling recognized there are areas where the Region needs to show leadership. He notes that as frustrating as it has been for Mr. Stark, it has been equally frustrating for this committee not to be able to rely upon a group that speaks on behalf of blind individuals and their needs. He believed the Motion will give the Region an opportunity to address this situation, recognizing that a system in Ottawa-Carleton should conform to the needs of the blind, and therefore may be different from other areas.

Councillor Beamish suggested time frames be established for this group to illustrate a sense of urgency to address the issue. Councillor Holmes agreed they should be requested to report back in one year on their progress and the Motion was amended to reflect that direction.



The Committee Chair noted the budget for improvements to St. Joseph Boulevard was slated for intersection improvements and questioned whether some of those funds could be directed to installing audible signals at most of the intersections along that roadway as requested by the delegation. As an additional comment, he related a personal concern he had about the roadworks currently underway at Jeanne d'Arc and Orléans Boulevard and the difficulties this is causing to a visually impaired neighbour. He requested feedback from staff, in consultation with Gloucester, as to the timeline for this roadwork to be completed.

Moved by D. Holmes

**The former system of audible signals be reinstalled at Jeanne d'Arc Boulevard and Grey Nuns Drive in the interim.**

CARRIED

Moved by D. Holmes

**That staff advise on the installation of the 11 locations on the waiting list for audible signals.**

CARRIED

Moved by D. Holmes

**That an ad hoc committee called the "Audible Pedestrian Signals Advisory Committee" be established and that the mandate and composition be as set out in the Fulton brief entitled "Audible Signals: A Way to Resolve the Issues", with a review of the mandate in one year.**

CARRIED

Councillor Kreling proposed that the Transportation Association of Canada (TAC) be advised that the RMOC requests the Association to:

- a. reconsider the audible pedestrian signal standard;
- b. establish guidelines for the use of bells and buzzers as audible signals as developed in the RMOC for the complete walk cycle.

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Councillor Legendre believed this Motion prejudices the work that the proposed committee will do and preferred to wait for their recommendations since they will undoubtedly go well beyond what the Motion proposes. Councillor Kreling explained his Motion is based on comments from staff and he wanted to draw to the attention of the TAC the Region's displeasure with the national standard. To alleviate Councillor Legendre's concerns, he suggested a covering letter from the

Commissioner or the Committee Chair could be included detailing to the Association that an ad hoc committee of the Region will be examining this matter in detail; however, he strongly felt the TAC should realize that the community the Region is trying to serve, is dissatisfied with the national standard because it does not address their needs. The Committee Chair suggested adding a point to his Motion "that the TAC be asked to canvas the member municipalities for input" and Councillor Kreling agreed with this suggestion.

Moved by H. Kreling

**That the Transportation Association of Canada (TAC) be advised that the RMOC requests the Association to:**

- a. reconsider the audible pedestrian signal standard;**
- b. establish guidelines for the use of bells and buzzers as audible signals as developed in the RMOC for the complete walk cycle as determined by the ad hoc committee;**
- c. that TAC invite member communities to provide input.**

CARRIED

## AUDIBLE PEDESTRIAN SIGNALS (APS): A WAY TO RESOLVE THE ISSUES

The increasing volume and complexity of traffic and of intersection design and operation has led to requests from the region's blind and visually impaired residents for review of the issues related to audible pedestrian signals (APS). This is a proposal to involve blind and visually impaired citizens in responsible problem-solving in a time-limited process to deal with these concerns. The present document:

- illustrates the various forms a consultative process has taken in several Canadian cities; and
- proposes an approach that could work in Ottawa-Carleton with a minimum of demands on resources.

### Consultative Process in Several Canadian Cities

In cities such as Metro Toronto, Winnipeg Victoria and Quebec City transportation authorities have taken responsibility for developing policy and procedures for the installation and operation of audible traffic signals by working with an inter-organizational access committee including visually impaired and blind persons, representatives of interested others, and technical specialists. These committees have

- advised on the selection of signals (bird calls, verbal messages, etc.)
- means to enable blind people to locate pushbuttons,
- advised on signals usable by deaf/blind pedestrians,
- drawn up criteria for the prioritizing of locations for the installation of audible signals.
- resolved concerns about noise for neighboring residents. The cities have differed as to whether they go on to use the committee as a mechanism for the application of criteria in selection of locations, or whether they devise a quantifiable, objective set of factors with a weighting scale which is then to be applied as a warrant by staff.

## Proposed for Ottawa Carleton

We suggest the following approach for use in Ottawa-Carleton:

- an ad hoc committee, to be called the Audible Pedestrian Signals Advisory Committee, to prepare for the Transportation Committee a plan for audible pedestrian signals, including - preparing a mission statement for the APS program;
- factors to be considered and criteria to be used in prioritizing locations for installation of APS;
- choice of sounds to be used;
- selection of technology to signal the blind pedestrian where the APS pushbutton is located.
- how APS will be operated so as to ensure safety of blind pedestrians and to mitigate any unfavorable impact on adjacent communities;
- recommend ways to ensure that pushbuttons are accessible (access to islands, snow clearing practices, etc.)
- during a trial period, review and evaluate requests for the installation of APS at particular locations and advising on the application of criteria as to their relative priority;
- advise on awareness training for staff whose work relates to APS, and especially those whose work involves problem-solving with individual blind/visually impaired residents about APS at particular intersections.
- evaluate the trial phase, and recommend modifications to the criteria and plan as indicated.
- recommend to the Transportation Committee the procedures to be followed by the Transportation Department after the trial period and the conclusion of the ad hoc committee's work.
- bring to the attention of the Transportation committee any remaining issues regarding APS, and identify for the Committee any other traffic issues affecting blind and visually impaired pedestrians which remain unresolved.

### Composition of the Ad Hoc Committee

To capture differing consumer perspectives, the participants should include:

- at least one blind person who is an experienced cane traveler;
- at least one blind person who is an experienced guide dog user;
- at least one person with low vision who is experienced in using adaptive travel skills;
- at least one person who is the parent of a blind or visually impaired child.

It would be advantageous to have on the committee a blind/visually impaired resident of each local municipality, as being familiar with and concerned about local conditions. Councillors may wish to identify such persons among their constituents. We recommend that the region also seek applicants through public advertisement on its automated telephone information line; on the vision BBS, the CNIB telephone newswire, and local radio stations.

We recommend that the following individuals/organizations be invited to take part:

- representatives from local organizations of blind and visually impaired persons, such as the Ottawa chapter of the Canadian Council of the Blind and the Gloucester Visually Impaired Persons Group, deaf-blind self-help group, etc.
- an orientation and mobility specialist experienced in teaching cane travel skills (Terry Keough, C.N.I.B.);
- an experienced guide dog trainer (Brian Francis, Training manager, Canadian guide Dogs for the Blind, Manotick);
- liaison with the Ottawa pedestrian Advisory Group.

We recommend that the committee be chaired by a member of the region's Transportation Committee. Alternatively, the committee should select its own chair from among its members.

### Resources Needed for the Ad Hoc Committee

The work is likely to require half a dozen meetings over perhaps a year. It is likely that there will need to be a one-day conference of blind and visually impaired people and/or some site visits to selected intersections to assess problems and solutions.

There will need to be staff support for the committee. However, both RMOC staff and local activists have already done some of the research required. Documents may be required in various alternative formats as the needs of the committee members may vary.

## Conclusion

Concerns about the design and operation of audible pedestrian signals have been growing over the past ten or fifteen years, not only in Ottawa-Carleton, but in other Canadian cities as well. This reflects the increasing volume and complexity of traffic and of roadway and intersection design and operation. RMOC can draw on its experience and on the experience of other cities, and of its blind and visually impaired citizens so as to address the concerns that are vexing RMOC and worrying the region's blind and visually impaired persons.

August 1997

**Audible Pedestrian Signals (APS) Advisory Committee Membership**

Chris Brinkmann, Traffic Operations Branch, RMOC  
Councillor Wendy Byrne, Bay Ward, RMOC  
Councillor Richard Cantin, APS Advisory Committee Chair, Innes Ward, RMOC  
Valerie Collicott, Gloucester, Ontario  
Dr. Ed Foohey, Ottawa, Ontario  
Brian Francis, Training Manager, Canadian Guide Dogs for the Blind  
Marjorie Fulton, Ottawa, Ontario  
Dr. Christian Giguère, Audiology Department, University of Ottawa  
Terry Keough, Mobility Instructor, Canadian National Institute for the Blind (CNIB)  
Dr. Chantal Laroche, Audiology Department, University of Ottawa  
Honourable James Lunney, Ontario Court Judge (Ret.), Gloucester, Ontario  
Ian Martin, Gloucester, Ontario  
Diane McIntyre, Technical Observer, Urban Geography Department, Carleton University  
Bob Murray, President, Canadian Council of the Blind  
Hugh Pearson, Views, Gloucester, Ontario  
Lois Smith, Ottawa, Ontario  
Chris Stark, Canadian Association of Guide Dog Users, Gloucester, Ontario  
Donna Tessier, Kanata, Ontario

LIST OF ISSUES TO BE ADDRESSED BY THE APS COMMITTEE AND SUB-COMMITTEES

- A. Installation of audible pedestrian signals whenever push-buttons for visual pedestrian signals are installed or serviced.
- B. Selection of appropriate sounds for audible pedestrian signals: bird calls, clicks, verbal messages, etc.
- C. Means to enable blind and visually impaired individuals to locate audible and non-audible pedestrian signal push-buttons.
- D. Problems related to the activation and confirmation of audible pedestrian signal.
- E. Suggest an appropriate standard of pedestrian signals also usable by deaf/blind pedestrians.
- F. Concerns related to the time required to cross, pedestrian signals, length of walk cycles and sound changes.
- G. Problems related to right hand channel, advanced green arrows, right turns on red lights, medians, advance/lag green lights and other design and procedure barriers.
- H. Identification of visual and tactile aids.
- I. Selection of criteria for prioritising locations for the installation of audible pedestrian signals for new and existing visual pedestrian signal systems.
- J. Need for an appropriate municipal application process to deal with requests for the installation of audible pedestrian signals for the new and existing visual signal installations.
- K. Creation of a plan for the replacement of existing audible pedestrian signals with whatever type of audible pedestrian signal is approved by Transportation Committee.
- L. Identify and resolve concerns about noise, related to audible pedestrian signals, for neighbouring residents.
- M. Awareness training for RMOC staff whose work involves audible pedestrian signals or issues relating to the mobility of blind and visually impaired individuals.
- N. Recommend a communications strategy for informing citizens who are blind and visually impaired of the existence, location and issues related to audible pedestrian signals.



O. Public consultation options.

P. Research the activities of other jurisdictions regarding audible pedestrian signals.

## 2. DELIVERABLES

A. Criteria to be used in prioritising locations for the installation of audible pedestrian signals.

B. Choice of sounds to be used for audible pedestrian signals.

C. Selection of appropriate technology to indicate to the blind visually impaired pedestrian where push buttons are located on audible pedestrian signals.

D. Operating standards for audible pedestrian signals which will ensure the safety of blind and visually impaired pedestrians as well as mitigate any unfavourable impact on adjacent communities.

E. Operational guidelines to ensure that audible pedestrian signals are accessible and kept barrier free (access to islands and push buttons, snow clearing practices, etc.).

F. Establish a trial period to test, review and evaluate the criteria used to analyse requests for the installation of audible pedestrian signals and recommend changes if necessary.

G. Identify for the Transportation Committee any unresolved issues relating to audible pedestrian signals and the mobility of blind and visually impaired pedestrians.

I. Recommend a detailed awareness training program for RMOC staff whose work involves audible pedestrian signals or issues relating to the mobility of blind and visually impaired individuals.

J. Create a written communications strategy for informing citizens who are blind and visually impaired of the existence, location and issues related to audible pedestrian signals.

K. Provide a written summary of all the research done.

L. Provide a summary report of public consultations.

## **REGIONAL MUNICIPALITY OF OTTAWA-CARLETON**

### **AUDIBLE PEDESTRIAN SIGNALS PRIORITIZATION CRITERIA**

Once a request for audible pedestrian signals as been received, the following criteria shall be used to prioritize its installation.

#### **Primary Decision Factors:**

##### **A- Traffic characteristics:**

1- Add 4 points for high traffic flow including heavy trucks and other commercial vehicles at the crosswalk. \_\_\_\_\_

2- Posted speed limit at the crosswalk:

- Add 4 points for a posted speed limit of 50km/h \_\_\_\_\_
- Add 6 points for a posted speed limit of 60km/h \_\_\_\_\_
- Add 8 points for a posted speed limit of 70km/h \_\_\_\_\_
- Add 10 points for a posted speed limit of 80km/h and over \_\_\_\_\_

##### **B- Intersection configuration:**

1- Add 1 point for each lane of traffic, as counted at the crosswalk. \_\_\_\_\_

2- Add 4 points for reduced visibility of pedestrian(s) by drivers at the crosswalk: i.e. poles, elevation, curvature of the corner, signs, lighting & illumination, etc... \_\_\_\_\_

3- Add points, using the table below, for increasingly complex crosswalk geometry.

Intersection configuration	Points
“Normal” 4-leg right-angle intersection	1
3-leg “Tee”-intersection	4
3 or 4-leg “skewed” intersection	6
4—leg “offset” intersection, or right turn cutoffs	8
Other “complex” or multiple leg intersections	10

4- Add 1 point for each center median at the crosswalk. \_\_\_\_\_

5- Add 1 point for each median 12 feet or more wide. \_\_\_\_\_

6- Add 1 point for each permitted “Right-turn-on-red” traffic movement at the crosswalk\_\_\_\_\_ and add 1 extra point if all 4 right-turn movements are permitted (possible total of 5 points).

7- Add 1 point for each left-turn arrow phase at the crosswalk (whether “fully” or only “partially” protected) \_\_\_\_\_ and add 1 extra point if all 4 left-turn arrow phases are permitted (possible total of 5 points).

**C- Proximity to facilities for visually impaired or senior citizens:**

1- Add points, using the table below, for increasing proximity of the crosswalk to facilities for the visually impaired or senior citizens.

Proximity	Points
4 to 6 blocks	1
3 blocks	2
2 blocks	3
1 block	4
at subject facility	5

**D- Proximity to key facilities for all pedestrians (visually impaired and sighted):**

1- Add points, using the table below, for increasing proximity of the crosswalk to key facilities for all pedestrians (visually impaired and sighted).

Key facilities providing essential services to the public, should be considered to be such places as: a medical centre, a major transit bus transfer point, an educational institution, a library, a government facility, a bus depot or train station, funeral home, places of worship and any other such institutions.

Proximity	Points
4 to 6 blocks	1
3 blocks	2
2 blocks	3
1 block	4
at subject facility	5

**E- Reported crossing delay:**

- 1- Add points, using the table below, for increasing crossing delays at the crosswalk as reported by pedestrians with visual impairments.

Reported delay	Points
1 minute	0
2 minutes	2
3 minutes	5
4 minutes or more	10

**Secondary Decision Factors:**

**The following factors shall be considered and used to break a tie, if and only if a tie exists.**

- 1- Add consideration for every person asking for or indicating they would use an audible pedestrian signal at the crosswalk.
- 2- Add consideration for the existence or potential for the existence of any ambient noise that may mask auditory cues at the crosswalk.
- 3- Add consideration for the existence of higher pedestrian accident frequency rate at the crosswalk.

**Final Decision Factor:**

If a tie still exists after all the secondary factors have been considered, the date the request was submitted will be the final decision factor considered and therefore, audible pedestrian signals shall be granted on a first come first served basis.

APS TECHNICAL SUB-COMMITTEE  
WORK PLAN

- 1- Selection of signal sounds:
  - choice of sounds
  - verbal messages
  - localisation of sounds
  - auditory perception
  - sound direction
  - sound attenuation
  - spectral components of sounds
  - alternating signals
- 2- Use of signal sounds:
  - Walk/don't walk signal
  - directional use
  - verbal messages
  - alternating signals
- 3- Engineering of intersections:
  - geometry
  - turn lanes
  - hierarchy of equipment solutions
- 4- APS equipment features:
  - push buttons
  - push buttons locators
  - activation/confirmation
  - length of signal cycle
  - tactile aids

Decisions taken to date by the APS Technical Sub-Committee:

1. The adoption of a work plan (see attached).
2. A request to Chris Brinkmann to determine the availability of funding from the TAC (Transportation Association of Canada) for sound studies being conducted in Montreal by Dr. Chantal Laroche of the Audiology Department from the University of Ottawa.
3. A request to Councillor Richard Cantin, Chair of the APS Committee, to write a letter to TAC to determine the availability of funding for sound studies being conducted in Montreal by Dr. Chantal Laroche.
4. The decision to set aside issues involving the selection of signal sound until such time as Dr. Chantal Laroche has completed her sound studies.
5. The decision to recommend to Transportation Committee and Council that changes be made to the programming of APS in order that one push of the button automatically activates the system for two consecutive cycles.