

REGION OF OTTAWA-CARLETON  
RÉGION D'OTTAWA-CARLETON

REPORT  
RAPPORT

Our File/N/Réf.                   **50 20-99-0201**  
Your File/V/Réf.

DATE                               21 December 1999

TO/DEST.                         Co-ordinator Transportation Committee

FROM/EXP.                       Director Mobility Services and Corporate Fleet Services  
Environment and Transportation Department

SUBJECT/OBJET                 **AUDIBLE PEDESTRIAN SIGNALS ADVISORY COMMITTEE -  
PROGRESS REPORT - 1999**

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**DEPARTMENTAL RECOMMENDATION**

**That Transportation Committee recommend Council receive the progress report prepared by the ad-hoc Audible Pedestrian Signals Committee and approve the recommendations set out in this staff report.**

**BACKGROUND**

The background for this report is summarized in the accompanying Audible Pedestrian Signals (APS) Committee report (See Appendix 1).

**DISCUSSION AND RECOMMENDATIONS**

The APS Committee's report makes a number of recommendations under three separate categories. For the purposes of this staff reply, the recommendations of the APS Committee are italicized and are followed in bold by staff recommendations. Some of the recommendations contained in the APS Committee progress report cannot be supported by staff. In these cases an amended recommendation has been made for the consideration of Committee and Council. The reasons for any suggested changes are discussed below.

1. *Policy changes requested at the Region*

- a) *"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 (Annex B)".*

**It is recommended that the Environment and Transportation Department continue to seek out advice from the APS Committee on audible pedestrian signal issues.**

- b) *“That the next 12 months be a transition period for the APS Committee to begin focusing on other issues raised in the Fulton Brief (Annex B) namely, the broader issues of pedestrian safety and related issues for citizens who are blind, including design and operation of pedestrian facilities as they impact on the mobility of persons who are blind”.*

The issues contained in a brief (Annex K) submitted by Marjorie Fulton were previously received by the Transportation Committee in response to the Walking Security Index report. A number of items were outside the scope of the APS Committee mandate and therefore have already been forwarded to the Mobility Management Branch.

**It is recommended that individuals or groups be consulted in the development of strategies for persons with disabilities and these broader issues be addressed by the newly created Mobility Management Branch.**

- c) *“That the Region adopt a policy requiring the installation of audible pedestrian signals at intersections which are being signalized for the first time or when existing traffic control light systems are replaced at existing intersections”.*

The Audible Pedestrian Signals Committee advocates the installation of audible pedestrian signals at all signalized intersections within Ottawa-Carleton, irrespective of demand. In keeping with this position the APS Committee has put forth this recommendation for consideration of Committee and Council. Factors that need to be considered with regards to this recommendation include the following:

#### Cost

The average cost to equip a newly signalized intersection with audible pedestrian signals is \$8,000. This represents an increase of about 10% in the overall capital cost to install a new set of traffic signals.

There is currently \$50,000 per year budgeted towards the installation of audible signals. However, at this year’s budget deliberations Regional Council added \$50,000 more to the programme for the year 2000. This coupled with the unused funds carried over from previous years, would support 8 to 16 installations in the year 2000 and 3 to 6 per year thereafter. The variation in cost and thus the number of installations staff can carry out per year depends on whether or not the intersection is new or existing and if existing, what equipment and cabling currently exists at the intersection.

It has been suggested that signals which are being rebuilt should be equipped with audible signals. While it is true there would be savings to installing audible signals when a major rebuild is undertaken, it would still increase the overall cost of the project by at least \$8,000.

It is often argued that audible signals should be installed at all new intersections because it is less expensive at that time. Due to increased standardization and flexibility in traffic control equipment, this is no longer really the case. That is, at an intersection installed to current standards it is not much cheaper to install audible indications when the traffic signals are installed than to come back and install the audibles at some later point should the need become evident.

### Maintenance

Audible signals are a high maintenance item. Average annual maintenance costs for traffic signals is approximately \$4,000 per intersection. Equipping an intersection with audible signals increases annual maintenance costs by \$500. The useful life time of an audible signal is estimated at ten years, requiring complete replacement of the device at the end of that period. Increased numbers of audible signals must therefore be accompanied by corresponding increases in the annual signal maintenance budget.

### Noise Issues

Staff have previously received complaints about noise from residents who live near intersections equipped with audible signals. Normally these complaints occur either when audible signals are being activated inadvertently and frequently by sighted pedestrians or if they malfunction and sound continuously. These complaints have been addressed. A feature requiring the push button for the audibles to be held for 5 seconds was introduced and has been used successfully for a number of years. Some municipalities are forced to discontinue the operation of audible signals during the late evening hours due to complaints received from residents concerning noise. This is not the case in Ottawa-Carleton.

Staff feel complaints about noise are no longer an issue provided push buttons can continue to be operated with the hold feature and if funding is available for increased levels of maintenance as more audibles are installed.

### Intersection Geometry

Some intersections are not suitable for the installation of APS. Intersections which, due to the angle and number of approaching roadways, have skewed crossings or multiple crossings which are permitted with different traffic movements can result in confusing indications and therefore potentially hazardous situations if equipped with audible indications. Similarly, confusion may occur if audible signals are installed at intersections that are too closely spaced. Intersections with these types of difficulties are rare exceptions and with new techniques and technologies will become even fewer, however it does stress the need to review each location prior to committing to installing APS.

- i) It is recommended that all signalized intersections within the limits of capital road reconstruction projects be equipped with APS and the installation costs be borne by the capital project;**

- ii) **It is recommended that the installation of all new traffic control signals funded by a developer be equipped with APS and that the additional costs associated with both the installation and maintenance of the APS be funded by the developer;**
  - iii) **It is recommended that APS be installed at signalized intersections undergoing major upgrade and/or rehabilitation work;**
  - iv) **It is recommended that intersections identified for signalization through the Region's Annual Traffic and Pedestrian Signal Program be equipped with APS and the installation costs be borne by this capital budget;**
  - v) **It is recommended that in rural areas with little or no pedestrian activity that the local councillor be consulted with regard to the need to install an APS and where installations are not made that the cost savings be applied to locations on the outstanding list of requests; and**
  - vi) **It is recommended that the installation of APS in conjunction with recommendations i) to iv) noted above, only be carried out at intersections where it is technically feasible at this time.**
- d) *“That the Transportation Committee ask staff to make recommendations on how to best deal with intersections equipped with left-turn arrow systems which cannot be accommodated with audible pedestrian signals at this time and that Transportation Committee be asked to suspend further installation of intersections equipped with left-hand turning arrows until such time as the engineering staff can address audible signal issues to this advanced green reality in the intersection”.*

Left-turn arrow displays are installed at signalized intersections in order to reduce injuries resulting from collisions. They also serve to reduce overall delay.

Over the course of the past six months, Traffic Operations staff have spent considerable time and resources on the development of traffic controller software that ensures audible signals can function safely at intersections equipped with left-turn arrow indications without sacrificing other operational requirements. This is an innovative approach to a unique problem and was done at considerable expense to the Region (approximately \$23,000). Funding was obtained from the annual Traffic Signal Rebuilding and Modernization budget. This feature is not provided on commercially available controllers and staff are not aware that any other municipality has taken similar steps to resolve this issue.

Due to the recent implementation of this technique there is no need to suspend the installation of left-turn arrow displays.

**It is recommended that the practice of installing left-turn arrow indications continue.**

- e) *“That the Transportation Committee ask the Transportation Association of Canada to make a presentation in 1999 on its efforts to improve its Audible Pedestrian Signal Standard including how people who are blind have been consulted and the results of that consultation”.*

The Transportation Association of Canada (TAC) are in the process of establishing a committee to review the audible signal standard. It should be noted that while the need for the project was acknowledged, it should be clear that the intent was to refine existing standards, not eliminate them. With these guidelines in place staff will work with other interested members of TAC on a review of this standard.

**A recommendation is not required.**

## 2. Administration by the Region

- a) *“That following the public consultation and finalization of the criteria, the Transportation Department hold an annual public meeting with citizens to review applications and select intersections for audible traffic signals installations in the following year”.*

Staff have previously recommended that in the future, members of the APS Committee meet to discuss the results of the ranking process and recommend locations for installation of APS. Staff feel this can be accomplished through a meeting of APS Committee members and therefore does not require a full public meeting.

**It is recommended that the Environment and Transportation Department continue to consult with members of the visually impaired community to discuss future installations.**

- b) *“That the Transportation Department set up an audible pedestrian signals application registry, publicly call for audible pedestrian signal requests and that an official application form and procedure be established for this purpose”.*

Since the formation of the APS Committee, staff have been keeping a record of requests for APS. Locations and names of requesters along with other pertinent information is currently being retained. This is no different than requests received for the installation of traffic or pedestrian signals. Prior to the process now being followed, staff would install APS based on a prioritized list forwarded each year by the Canadian National Institute for the Blind (CNIB).

Staff do not see a requirement to formalize this process any further.

**It is recommended that staff maintain a record of requests for audible pedestrian signals.**

- c) *“That requests for audible pedestrian signals for other jurisdictions received by the Region be costed by the Transportation Department and referred to the appropriate other jurisdiction within 60 days of receipt by the Region and a copy of the referral be given to the applicant”.*

The Environment and Transportation Department has always maintained a number of traffic signals on behalf of other agencies, including municipalities and developers. Therefore the costs to install APS requested at these intersections would be forwarded to the appropriate agency for their consideration. This process will continue in as timely a fashion as possible.

**It is recommended that staff continue the existing practice of forwarding requests and cost estimates for APS at non-Regionally owned intersections to the appropriate agency for consideration.**

- d) *“That the installation of all future audible pedestrian signals be accompanied by a news release and an inauguration ceremony starting with a public event around the installation of audible pedestrian signals as part of the Elgin Street Rehabilitation Project”.*

There is currently no policy with regard to an inauguration ceremony for the installation of new traffic or pedestrian signals. Similarly staff cannot justify this treatment for each new APS but are prepared to support one ceremony per year, at a location chosen by the APS Committee, to mark the installation of an audible pedestrian signal.

In addition, staff will contact the requester of the APS, the members of the APS Committee, the residents registered with the Region’s BVMD (broadcast voice message delivery) service, and post the information on the Region’s Web site and the Audible Pedestrian Signal electronic listing to inform the community when APS have been installed. Staff will also forward this information to the CNIB and ask that they publicize this information to their membership.

**It is recommended that the APS Committee select one location per year to be marked by an inauguration ceremony and that staff notify the requester and the CNIB as to APS installation dates and that this information be posted on the Region’s Web page.**

- e) *“That the Transportation Committee accept the draft criteria (Annex H) and authorize a full public consultation”.*

The APS Committee completed the draft prioritization criteria in the Fall of 1998. Staff used this document to rank the 41 outstanding locations. A prioritized list was forwarded to the Committee in January 1999. Included with this list were concerns raised by staff regarding certain criteria they felt were difficult to measure and assign a value. Staff felt some of the criteria would be best assessed by a Mobility and Orientation Specialist from the CNIB. Members of the Committee acknowledged these concerns and it was agreed that because this was a draft, further work was required before the criteria could be considered final.

In some cases it may not be possible to equip a particular intersection with audible signals due to geometry, signal phasing, proximity to adjacent audible signals, etc.

Staff have prepared a public consultation strategy, which is attached as Annex L. Staff concur that public consultation is required prior to this document being finalized. Information and Public Affairs, with input from the APS Committee, is currently preparing a survey that will be mailed to organizations that work with residents who are blind or have low vision within Ottawa-Carleton. A copy of the consultant's report will be forwarded to the APS Committee for their information.

**It is recommended that Transportation Committee accept that public consultation regarding the criteria be in the form of a survey to be distributed to the organizations listed within the consultation plan (Annex L) and that the results be provided to the members of the Transportation and APS Committees for information.**

- f) *“That the Transportation Department, in co-operation with the APS committee, inform citizens who are blind or who have low vision of the audible pedestrian signals application procedure and solicit public comment on related matters including the draft selection criteria (Annex H) at a public meeting as well as other communication activities (Annex J)”.*

Requests for APS can be made through a number of different methods including the Regional Councillor, Region's 24 hour telephone service, Web site, the local office of the CNIB, or by contacting a member of the APS Committee. As previously noted staff will maintain a list of requests for yearly prioritization.

Staff will incorporate information on the APS application procedure into the previously discussed survey being prepared by Information and Public Affairs.

General communication initiatives undertaken by staff include:

- Region has established a one year pilot BVMD (broadcast voice message delivery) service and/or E Mail service with a registry of participants who receive minimum monthly updates from the Region on public meetings, forums, and general announcements;
- Staff subscription to the Audible Pedestrian Signal electronic mail listing;
- Enhanced telephone touch tone service, including an accessibility menu;
- Twenty-four hour Information Line;
- Networking with agencies such as the CNIB, Guide Dog Users of Ottawa, Canadian Council for the Blind; and

- Advertising of assistance program to anyone requiring help through the downtown construction zones.

In addition when traffic signal changes are made, staff will post the information on the Region's Web page.

**It is recommended that the survey being prepared also include information on how to make an application for APS and that the Region continue to make available existing means such as the 24 hour information line, Web page, etc. so that citizens can register their requests for APS.**

- g) *“That the Transportation Committee signify its support of the APS Advisory Committee's recommendation that the Communications Department ensure that its documents are accessible and available to citizens with unique communications needs just as it is to the general public”.*

The Region currently provides information to citizens with unique communication needs in alternate formats upon request.

**It is recommended that the Region continue to supply information upon request in alternate format where ever possible.**

### 3. Infrastructure and Investment

- a) *“That the Transportation Department adopt a push button locator system in consultation with users and install these audible locators at existing intersections with audible pedestrian signals by the year 2001”.*

Staff acknowledge the outstanding request for a push button locating device and as a result are, as work load permits, reviewing available devices. These types of devices emit a low sound from a modified push button assembly and assist the visually impaired in locating the poles on which the push buttons are mounted. This need has also been identified in other cities by visually impaired committees similar to Ottawa-Carleton's. Unfortunately neither the Committee nor staff are in a position to recommend a specific device and there is no guarantee that they will be in by 2001.

**That staff and the visually impaired continue to identify, obtain, and test push button locator systems with a view to implementation when a suitable device has been successfully evaluated and funds are available.**

b) *“That the Transportation Committee endorse the results of the application of the draft criteria and the selection of the three intersections that are to receive audible pedestrian signals for 1999 as part of the pilot project sanctioned by the Transportation Committee of RMOC in 1998. The three intersections are as follows;*

- a) Bank Street and Hunt Club Road*
- b) Champlain Drive and Shopping Centre/Place d’Orleans Drive*
- c) St. Laurent Boulevard and Montreal Road”.*

Transportation Committee does not need to approve the installation of APS. At the time this report was written, APS had been installed at Bank St. and Hunt Club Rd. and Montreal Rd. and St. Laurent Blvd. It is anticipated that the APS at Champlain St. and Place d’Orleans Dr. will be installed in the beginning of the new year.

**A recommendation is not required.**

#### CONSULTATION

A copy of this staff reply was distributed to members of the APS Committee prior to the Transportation Committee meeting.

#### FINANCIAL IMPLICATIONS

The installation of more audible pedestrian signals will result in increased maintenance costs.

*Approved by  
Doug Brousseau*

CFB/ks

Attach.

REGION OF OTTAWA-CARLETON  
RÉGION D'OTTAWA-CARLETON

REPORT  
RAPPORT

Our File/N/Réf.  
 Your File/V/Réf.

APPENDIX 1

DATE 7 October 1999

TO/DEST. Co-ordinator, Transportation Committee

FROM/EXP. Chair, Audible Pedestrian Signals Advisory Committee

SUBJECT/OBJET **AUDIBLE PEDESTRIAN SIGNALS ADVISORY COMMITTEE  
 PROGRESS REPORT - 1999**

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### **REPORT RECOMMENDATIONS**

**That the Transportation Committee recommend Council approve the following recommendations:**

**1. Policy Changes Requested At The Region**

- a) **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 (Annex B);**
- b) **That the next 12 months be a transition period for the APS Committee to begin focusing on other issues raised in the Fulton Brief (Annex B) namely, the broader issues of pedestrian safety and related issues for citizens who are blind, including design and operation of pedestrian facilities as they impact on the mobility of persons who are blind;**
- c) **That the Region adopt a policy requiring the installation of audible pedestrian signals at intersections which are being signalized for the first time or when existing traffic control light systems are replaced at existing signalized intersections;**

- d) That the Transportation Committee ask staff to make recommendations on how to best deal with intersections equipped with left-turn arrow systems which cannot be accommodated with audible pedestrian signals at this time and that Transportation Committee be asked to suspend further installation of intersections equipped with left-hand turning arrows until such time as the engineering staff can address audible signal issues to this advanced green reality in the intersection;
- e) That the Transportation Committee ask the Transportation Association of Canada to make a presentation in 1999 on its efforts to improve its Audible Pedestrian Signal Standard including how people who are blind have been consulted and the results of that consultation;

## **2. Administration By The Region**

- a) That following the public consultation and finalization of the criteria, the Transportation Department hold an annual public meeting with citizens to review applications and select intersections for audible traffic signals installations in the following year;
- b) That the Transportation Department set up an audible pedestrian signals application registry, publicly call for audible pedestrian signal requests and that an official application form and procedure be established for this purpose;
- c) That requests for audible pedestrian signals for other jurisdictions received by the Region be costed by the Transportation Department and referred to the appropriate other jurisdiction within 60 days of receipt by the Region and a copy of the referral be given to the applicant.
- d) That the installation of all future audible pedestrian signals be accompanied by a news release and an inauguration ceremony starting with a public event around the installation of audible pedestrian signals as part of the Elgin Street Rehabilitation Project;
- e) That the Transportation Committee accept the draft criteria (Annex H) and authorize a full public consultation;
- f) That the Transportation Department, in co-operation with the APS Committee, inform citizens who are blind or who have low vision of the audible pedestrian signals application procedure and solicit public comment on related matters including the draft selection criteria (Annex H) at a public meeting as well as other communication activities (Annex J);

- g) **That the Transportation Committee signify its support of the APS Advisory Committee's recommendation that the Communications Department ensure that its documents are accessible and available to citizens with unique communications needs just as it is to the general public;**

### **3. Infrastructure And Investment**

- a) **That the Transportation Department adopt an audible push button locator system in consultation with users and install these audible locators at existing intersections with audible pedestrian signals by the year 2001;**
- b) **That the Transportation Committee endorse the results of the application of the draft criteria and the selection of three intersections that are to receive audible pedestrian signals for 1999 as part of the pilot project sanctioned by the Transportation Committee of RMOC in 1998. The three intersections are as follows:**
  - i) **Bank Street and Hunt Club Road**
  - ii) **Champlain Drive and Shopping Centre/Place D'Orleans Drive**
  - iii) **St. Laurent Boulevard and Montreal Road**

### BACKGROUND

On 3 September 1997, citizens of Ottawa-Carleton who are blind or who have low vision 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 a motion creating an ad hoc committee called the Audible Pedestrian Signals (APS) Advisory Committee (Annex A) and that it be established with an initial one year mandate and composition be as set out in the Fulton brief entitled: Audible Signals: A Way to Resolve the Issues (Annex B).

In accordance with the founding motion, a review of the mandate formed part of the November 3, 1998 discussion of this issue on the occasion of the presentation of the Committee's first report at which time Transportation Committee made further recommendations (Annex C).

### DISCUSSION

1. In accordance with Transportation Committee direction, the first meeting was convened on November 18, 1997. The APS Advisory Committee has continued its efforts since that date, in accordance with the vision set out in the Fulton brief (Annex B). The Current membership is diverse and reflects interested parties in the Region (Annex D). The Mission Statement as adopted at the March 5, 1998 APS Committee Meeting is attached as Annex E.

2. Following the November 3, 1998 Transportation Committee meeting, newly appointed Councillor Advisor Clive Doucet joined the group and has played an active, positive and helpful role. The APS Committee publicly acknowledges this constructive and positive contribution with thanks.
3. Citizens who are blind assumed the posts of Chairperson (Chris Stark), Vice Chairperson (Dr. D. E. Foohey), Administrative Manager (Marjorie Fulton) and Recording Secretary (Valerie Collicott). The Committee has functioned smoothly holding eight productive and results-oriented meetings. All notices of meetings, agendas, minutes and related materials were made available in the alternative format requested by each Committee participant, in a timely and professional manner. The Committee continues to make innovative use of electronic communication, through both e-mail and computer diskette as required to enhance information dissemination and dialogue between participants. All minutes and supporting documents are available upon request.
4. Based on its mandate and Mission Statement, the Committee continued to concentrate on:
  - a) Review and improvement of audible pedestrian signals location prioritisation criteria
  - b) Examination of various technical issues:
    - (i) Related to audible pedestrian signals, including: signal location indicators, signal sound characteristics and timing, use of sound, signal features
    - (ii) Related issues involving intersection configuration, engineering and operation, including professor Wellar's walking security index;
  - c) Development of a communication strategy for audible pedestrian signal installations and reporting;
  - d) Examination of funding requirements for improved pedestrian safety at intersections.
5. During this reporting period, the APS Advisory Committee has made a number of constructive suggestions and these decisions, taken by the APS Committee, are documented in (Annex F). Highlights of this work are:

Recommendations on a communication strategy, technical issues and funding for audible pedestrian signals are among the issues which continue to require extensive work towards resolution.

#### ISSUES ARISING FROM PREVIOUS TRANSPORTATION COMMITTEE DECISIONS STANDARDS

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The APS Committee's efforts to participate in the TAC Review Committee have not provided an opportunity to assess 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. The status quo remains and the 1997 directive of the Transportation Committee has yet to be achieved. The Transportation Association of Canada (TAC) was advised that the RMOC requested the Association:

- 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 the TAC invite member communities to provide input.

It was reported in our last submission that in the spring of 1998, the TAC established a national committee to review the audible pedestrian signals standard. As part of its review, this committee had committed itself to seeking input from users across the country, including the RMOc's APS Advisory Committee. The TAC Committee was to have begun its work in September 1998.

To date, no public written minutes or reports have been made available and persons who are blind from across Canada including the citizen members of this committee have not been consulted. Meanwhile, the United States has developed a draft standard which will soon become the industry norm for North America (Annex G).

Furthermore, several jurisdictions have initiated radically different pilot projects, most notably Halifax, which is currently testing a digital signal system. The advantage of this approach is universal access for minimal cost. The disadvantage is that a device has to be used in addition to a white cane or guide dog making for an ergonomically difficult arrangement for users.

#### CRITERIA FOR SELECTING EXISTING SIGNALIZED INTERSECTIONS FOR AUDIBLE PEDESTRIAN SIGNALS INSTALLATION

Work was undertaken to implement the 1998 Transportation Committee motion "that the Draft Localization Prioritization Criteria, as set out in Annex H of the report be tested and evaluated by the Environment and Transportation Department, supported by the APS Committee in a pilot Project of up to three installations and that the criteria and resulting priority lists be presented for public review and comment".

The draft criteria was used to select three intersections for audible signal installation this year namely:

1. Bank Street and Hunt Club Road
2. Champlain Drive and Shopping Centre/Place D'Orleans Drive
3. St. Laurent Boulevard and Montreal Road

It should be acknowledged with grateful thanks that Transportation Department identified additional opportunities to install an additional two audible pedestrian signals as part of revitalization projects in the downtown core.

When reviewing the existing long standing list of requests for audible pedestrian signals on file with the Region, it was found that several requests were no longer with us. Also, six intersections on the list were in fact the financial responsibility of other governing bodies within the National Capital Region. The APS Committee has asked that they be referred to the appropriate jurisdiction and has presented a recommendation on this matter for your consideration related to new requests received.

Work is underway for the Public Consultation and the APS Committee is supporting this RMOc initiative in every way possible. A proposed RMOc APS application form (Annex I) was developed by Committee members.

### RESEARCH

A research project as presented by Dr. Laroche, Dr. Giguère and Ph.D. Candidate Tony Leroux was accepted and awarded. The APS Committee is eagerly awaiting the results of this work when the findings of the research team come back to the Transportation Committee per your direction.

There is a lot of exciting work and developments taking place in the United States and other Canadian cities. These developments are being actively monitored by this committee so that citizens who are blind benefit as soon as possible from innovations that can improve our well being and safety.

### INTERSECTIONS WHICH ARE BEING SIGNALIZED FOR THE FIRST TIME OR VISUAL SIGNALS REPLACED

The Transportation Committee approved a request "that the RMOc practice of providing audible pedestrian signals at signalized intersections be clarified". This consultation by the Transportation Department was to include consultation with the APS Committee. At the time of writing this report, such consultation had not taken place despite numerous inquiries and requests for participation from Committee Members. Based on the 1998 discussion by Transportation Committee members, the Citizen Members of the APS Committee feel it is vital that the issue be formally presented to the Transportation Committee and that all perspectives be included in the report to contribute to the decision-making process.

## 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 wishes to continue to focus on the immediate safety concerns of pedestrians who are blind 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 signalized intersections in each of the next four years.

## PUBLIC CONSULTATION

The APS Committee remains committed to broader public consultation as part of the ongoing process. To this end, extensive dialogue has taken place with RMOC communications specialists and the draft report and work plan is attached, for information only, as Annex J.

The APS Committee hopes to see the following activities take place in the very near future:

1. A public launch of new audible pedestrian signals installations with media coverage;
2. A public meeting to discuss pedestrian safety issues of concern to persons with disabilities which includes an draft audible pedestrian signals component where the criteria will be explained and discussed along with other issues, as identified in the Fulton Brief (Annex B) or raised by attendees;
3. Active participation in the Civil Society initiative;
4. Active participation in traffic calming initiatives of RMOC.

## EXPENDITURE JUSTIFICATION

Properly designed and installed audible pedestrian signals greatly enhance the safety and mobility individuals who are blind and visually impaired as well as other citizens, particularly seniors and persons with a cognitive disability, thereby significantly reducing the potential for incidence of personal injury. Funding to support research, planning and public consultation that assists the decision-making process for audible pedestrian signals is well spent. Such initiatives enhance the security, comfort and convenience of all pedestrians, furthering the transportation goals of the region's official plan.

*To:* Doug Brousseau, Director, Mobility Services  
Regional Municipality of Ottawa-Carleton  
  
Rosemary Nelson, Co-ordinator, Transportation Committee  
Regional Municipality of Ottawa-Carleton

*From:* Chris Stark, Chairperson  
Audible Pedestrian Signals Advisory Committee

*Date:* September 20, 1999

*Subject:* Progress Report to the Transportation Committee from the Audible  
Pedestrian Signals Advisory Committee

It is with pleasure that I forward to you a copy of the 1999 report of the Audible Pedestrian Signals Advisory Committee. Your assistance in facilitating the arrangements for the presentation of this report to the Transportation Committee of Regional Council would be appreciated.

You will recall that on November 25, 1998, Regional Council approved the following Transportation Committee recommendations:

☺ That 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;
2. That the APS Advisory Committee present a report to Transportation Committee by September 1999. 📎

In keeping with this directive, the attached progress report was approved by the Audible Pedestrian Signals Advisory Committee at a meeting on September 3, 1999 for forwarding to the Transportation Committee.

The Audible Pedestrian Signals Advisory Committee acknowledges with thanks the time and expertise RMOC staff have provided to help us in our work during the past year.

Chris Stark

C.C Diane Holmes, Chair, Transportation Committee  
Clive Doucet, Member, Transportation Committee  
Deirdre Luesby, Manager, Corporate Communications

**COUNCIL MOTIONS MANDATING THE CREATION OF THE AUDIBLE PEDESTRIAN SIGNALS (APS) COMMITTEE**

25 September 1997

File No. 03 07-97-0126

Marjorie Fulton  
345 Waverley Street, Apt. 506  
Ottawa, ON K2P OW4

Dear Ms. Fulton:

Re: Audible Pedestrian Signals

On 24 September 1997, Regional Council approved the following Transportation Committee recommendations with respect to the above:

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", with a review of the mandate in one year.
4. 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.

If you require a copy of the item as approved by Council, please contact Rosemary Nelson, Transportation Committee Co-ordinator at 560-1243.

Mary J Woollam  
Regional Clerk

## **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 push-buttons;
- advised on signals usable by deaf-blind pedestrians;
- drawn up criteria for the prioritising of locations for the installation of audible signals;
- resolved concerns about noise for neighbouring 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 prioritising locations for installation of APS;
  - choice of sounds to be used;
  - selection of technology to signal the blind pedestrian where the APS push-button is located;
  - how APS will be operated so as to ensure safety of blind pedestrians and to mitigate any unfavourable impact on adjacent communities;
  - recommend ways to ensure that push-buttons 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 traveller;
- 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 newslines, 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, CNIB);
- 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

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### **Audible Pedestrian Signals and Related Traffic Operation Issues in Ottawa-Carleton**

#### Objective

The implementation by the Regional Municipality of Ottawa-Carleton (RMOC) of a policy on the location and operation of audible pedestrian signals that makes provision for the safety of blind and visually impaired pedestrians which is ergonomically appropriate, effective and comparable to that provided to other pedestrians, by giving blind and visually impaired pedestrians the same information about when it is safe and legal to cross an intersection. The issue is one of social equity, for which a range of technical solutions may be considered. The various measures proposed here will improve walking conditions for all pedestrians, and especially for elderly citizens, children, and people with disabilities.

## Rationale

The volume of motor traffic continues to increase. The design and operation of traffic control systems become ever more complex and sophisticated in order to move more vehicles more quickly. These systems take advantage of technological advances >to introduce computer controlled timing of traffic signals responsive to the changing volume of traffic at the given intersection. Accompanying computer-controlled signals for vehicles are push-buttons for visual pedestrian signals. Once upon a time it was illegal to make a right turn on a red light (and still is in Quebec). Now it is permitted under certain conditions to make a left turn on a red light. Here and there are exclusive left turn cycles. Uncontrolled right turn channels are increasingly used. These turning movements cross the pedestrian path, their timing cannot be anticipated by the blind pedestrian and their sound obscures the directional cues from straight-through traffic.

The techniques used by pedestrians, sighted as well as blind people, to make their way safely through traffic respond to this growing complexity by heightened skill and sophistication. Blind people judge traffic by sound, whether they travel with a white cane or with a dog guide. People with low vision supplement visual cues with sound cues, too. However, the sound cues provided by traffic no longer tell enough about when it is appropriate to cross an intersection. This is because traffic signals for vehicles are less and less often accompanied by automated walk signals. Moreover, sound cues are obscured by the ambient noise level in traffic which is much greater than it used to be. At the same time, some vehicles run much more quietly than before and their movement is harder to hear in the general cacophony.

It is time for further evolution in the standards and operation of audible pedestrian signals to bring them into the era of computer-controlled traffic signals.

It is time also for modification to related components of design and operation to actualize the region's commitment to its pedestrian citizens. Further background is provided by an extract from the working paper on pedestrian facilities (November 1996) prepared in support of the region's Transportation Plan.

## What Is Needed

1. There are about 36 intersections equipped with audible pedestrian signals at this time, perhaps five per cent of the region's intersections. Policy should provide that, within a specified period of time, audible signals will be in place wherever there are push-buttons for visual pedestrian signals. This is a matter of equal access to information that affects blind citizens in a very direct way.

To accomplish this in the most economical manner, RMOC should immediately begin installing audible signals whenever they install or service push-buttons for visual signals. This will minimize the more costly business of retrofitting.

The necessary retrofitting could be carried out over a period of, say, five years. Criteria will need to be developed for deciding which locations to retrofit first. We suggest the following factors be considered:

- locations identified by two or more blind or visually impaired individuals as presenting practical problems/safety hazards;
- locations with high pedestrian volume;
- any intersection where there is a separate turn cycle;
- any intersection whose design is other than a simple right angle.

2. A consultative mechanism should be established which provides a structured means for continuing involvement of blind and visually impaired residents of the region in the process of developing the policy and advising on its implementation.

3. A standardized set of sounds should be used which consistently indicate the direction for crossing, and which are modulated to indicate changing phases of the walk signal (i.e., the point at which it is no longer permitted to leave the curb although time remains to complete the crossing for those already in the intersection).

4. To enable blind and visually impaired persons to locate the push-button, a chip should be incorporated that emits a low sound (hum, click or beeps) that can be heard within a few feet.

5. Directional guidance should be provided to blind and visually impaired pedestrians to keep to a safe route across the more difficult intersections by having audible signals sound at the destination side as well as at the starting side of the intersection (where the crossing is more than four lanes, and in any intersection whose design is other than a simple right angle).

6. The crossing time should be lengthened at these more difficult intersections, and also at any intersections with high pedestrian volume, and at intersections in neighbourhoods with a substantial population of elderly people and/or children. Timing should be based on an estimated walking speed of 1.2 metres per second, rather than 1.8, the estimate generally used.

7. Right turn channels present much difficulty for pedestrians. Motor vehicles are supposed to yield, but may or may not do so. Sighted pedestrians handle this situation by visually assessing the gap in traffic flow and by making eye contact with the approaching driver. The blind pedestrian can't assure by eye contact that an approaching driver has seen her, and the sounds from farther traffic lanes make it difficult to judge the distance and speed of a car in the turning lane. We recommend either installing stop signs in place of the present yield signs, placing right turn cut-offs under signal control, or discontinuing their use altogether. We further recommend prohibiting right turns on red lights (throughout the region or at least in pedestrian-frequented areas). It works in Quebec and is very inexpensive.

8. Tactile labels on push-buttons must use raised letters as well as braille, since many blind and visually impaired persons do not know braille.

### Related Issues

We challenge the region to address the following issues in partnership with local authorities.

Designate the crosswalk by means of tactile markings on sidewalk and curb at corners.

Ensure that the path to the walk light button is cleared of snow in a timely manner (within twelve hours of beginning of storm). This must include the crosswalk on an island where there is a button to require pedestrians, whether sighted or blind, to use a manually operated signal and then to make it impossible for them to do so is unacceptable.

Sandwich boards and other obstructions must be removed from the immediate vicinity of signal poles including crosswalks on islands.

We urge the implementation of "traffic calming" measures which will slow traffic down initially, and will reduce it eventually. Where it results in shorter turning radii and/or the narrowing of lanes, it will do two other good things for pedestrians of all stripes:

- a) reduce the width of the crossing, and
- b) ensure that the curb at each end of a crosswalk is perpendicular to the walking route.

This will make it easier for the blind pedestrian to avoid straying from the crosswalk.

Conclusion

This proposal is put forward with the aim of equalizing the safety and security of blind and visually impaired citizens, and of all the region's pedestrians. The measures proposed are not add-ons for a special interest group, but a re-balancing of traffic operations so as to support walking, especially in those areas where the volume of pedestrian traffic is greater.

November 1996

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**1998 TRANSPORTATION COMMITTEE RECOMMENDATIONS**

30 November 1998

File No.: 03 07-98-0099

Mr. Chris Stark  
Canadian Association of Guide Dog Users  
1738 Harvest Crescent  
Gloucester, ON K1C 1V4

Dear Mr. Stark:

Re: Audible Pedestrian Signals Advisory Committee - Progress Report

On 25 November 1998, Regional Council approved the following Transportation Committee recommendations with respect to the above:

That 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 (Annex B);
2. That the APS Advisory Committee present a report to Transportation Committee by September 1999;
3. That the Draft Localization 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 in a pilot Roject of up to three installations and that the criteria and resulting priority lists be presented for public review and comment;
4. That the proposal for a research project as presented by Drs. Laroche and Giguère and Ph.D. Candidate Tony Leroux be accepted and Warded and that the findings of the research team come back to the Transportation Committee;
5. That the RMOC practice of providing audible pedestrian signals at signalized intersections be clarified;
6. That Councillor Doucet be appointed to the APS Advisory Committee.

If you require a copy of the item as approved by Council, please contact Rosemary Nelson, Transportation Committee Co-ordinator at 560-1243.

Yours truly,

Mary Jo Woollam  
Regional Clerk

**AUDIBLE PEDESTRIAN SIGNALS (APS) COMMITTEE MEMBERSHIP**

Valerie Collicott, Gloucester, Ontario

Dr. Ed Foohey, Ottawa, Ontario

Marjorie Fulton, Ottawa, Ontario

Dr. Christian Giguhre, 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

Diane MacLaren, Acting Training Manager, Canadian Guide Dogs for the Blind

Ian Martin, Gloucester, Ontario

Bob Murray, President, Canadian Council of the Blind, Ottawa Chapter, Ottawa, ON

Hugh Pearson, Views, Gloucester, Ontario

Lois Smith, Ottawa, Ontario

Chris Stark, Guide Dog Users of Canada, Gloucester, Ontario

Donna Tessier, Kanata, Ontario

Chris Brinkmann, Traffic Operations Branch, RMOC

Blair Patacairk, Information and Public Affairs, RMOC

Advisor: Councillor Clive Doucet, RMOC

**AUDIBLE PEDESTRIAN SIGNALS COMMITTEE MISSION STATEMENT**

To facilitate the implementation by the Regional Municipality of Ottawa-Carleton (RMOC) of a municipal policy on the location and operation of audible pedestrian signals that makes provision for the safety of blind and visually impaired pedestrians which is ergonomically appropriate, effective and comparable to that provided to other pedestrians, by giving blind and visually impaired pedestrians the same information about when it is safe and legal to cross an intersection.

By developing policies and procedures for the installation and operation of audible traffic signals transportation authorities will have a working framework for assuming municipal responsibility for the installation and operation of audible traffic signals in a community based approach.

To achieve this goal, RMOC will work with this inter-organizational access committee including visually impaired and blind citizens, representatives of interested community groups, and technical specialists.

The Committee is committed to the following Core Values:

**QUALITY SERVICES**

Members believe in delivering high-quality proposals and recommendations. Members strive to provide the highest level of expertise. We reach our decisions through an impartial, transparent and fair process.

**OPEN COMMUNICATIONS**

The Committee believes in timely and comprehensive communications. We encourage a free exchange of ideas and promote open and constructive contacts with those who have an interest or involvement in positively addressing the needs of pedestrians who are blind or partially sighted. A similar open and frank dialogue is actively promoted among committee members.

**RESPECT FOR OTHERS**

We believe in treating people fairly. We promote a cooperative and rewarding environment that fosters personal growth, independence and democratic involvement of all citizens who are blind in crafting solutions to traffic related access barriers in the Region.

**1999 AUDIBLE PEDESTRIAN SIGNALS (APS) COMMITTEE HIGHLIGHTS AND MOTIONS**

1. The APS Committee crafted a set of draft criteria to provide Regional staff guidance on the decision of when to install APS at particular intersections. The Committee is working with staff to resolve and clarify issues of concern.
2. The Committee continues to provide input and advice on how staff can best deal with intersections equipped with left-turn arrow systems which cannot be accommodated with APS at this time. This is a high priority item as a high number of intersections on our outstanding request list are equipped with this system. It should be noted that the three intersections recommended for APS installation in 1999 all have these left-turn arrow signals.
3. The Committee, along with staff, applied the draft criteria and made the selection of three intersections that would receive APS for 1999 as part of the pilot project sanctioned by the Transportation Committee of RMOC. The three intersections are as follows:  
  
Bank Street / Hunt Club Drive  
Champlain Drive / Shopping Centre / Place D'Orleans Drive and  
St. Laurent Boulevard / Montreal Road
4. To assist RMOC staff, the APS Committee has devised an application form to be completed at the time of APS requests. In addition, means for updating the request list to ensure its accuracy have been identified and implemented.
5. The APS Committee remains committed to working with staff on the consultation process on the issue of installing APS at all newly signalized intersections. Unfortunately, staff have not yet contacted Committee members to participate in that consultation process as directed by the Transportation Committee on November 4, 1998.
6. The Committee has provided advice to TAC through the Chair of its Review Committee on how to address the issue of "the standard for APS". We recommended that this review committee take the opportunity to consult directly with users of APS at their meeting in Toronto in April. However, this opportunity was not seized and the Committee remains distanced from the users of the audible pedestrian signals systems.
7. The APS Committee members have organized and maintained an effective communications link, namely, the aps-l, (an electronic e-mail discussion list), whereby lister members can post information, pose questions, share information and provide comment on draft documents, reports and distribute committee minutes, etc. Committee members have arranged for RMOC staff to subscribe, as well as representatives from other organizations. The e-mail list has drawn attention of international scope and has list members from other provinces in Canada as well as from the mainland U.S. and New Zealand.
8. The APS Committee has been supporting staff in their attempt to prepare documentation regarding APS requests for installation for other jurisdictions. The Committee has suggested including background material on the Committee and has offered to speak with municipality councils and the National Capital Commission should they be invited.

9. The APS Committee has been instrumental in promoting and supporting a research project on sounds used for audible signals by researchers at the University of Ottawa. It is anticipated that researchers will identify effective sounds that can help APS users localize and follow on the right path in the intersection. Committee members continue to provide advice and are involved as project participants. Members were also involved in a research study on sounds commissioned by a group in Montreal.

10. Our Committee has undertaken to consult with the Region on their draft policy consultations on communications and on APS. We have been involved in the initial phases by providing comment on draft versions and identifying areas of concern before the consultations are finalized for connection with blind and visually impaired individuals in the community.

11. The Committee has provided support to other initiatives and groups in the community through direct communication, involvement in the consultations (i.e. the Airport Parkway Traffic Impact Study and the Pedestrian Linkages Project) or by submitting briefs to the Transportation Committee (i.e. Dr. Barry Weller's Walking Security Index Study). We may also support other initiatives such as Civil Society Week, a proposed campaign by Councillor Doucet to encourage automobile drivers to respect the needs of pedestrians. The message about the challenges of pedestrians with visual disabilities are expected to be integral in this campaign.

12. The APS Committee is dedicated to working with Regional staff to organize a public event around the installation of APS as part of the Elgin Street Rehabilitation Project. Together, it would be an excellent opportunity to educate the public on APS and at the same time, highlight the fine work of revamping the downtown by RMOC.

13. The Committee continues to gather information on the advancement of pedestrian issues from other jurisdictions. For example, one Committee member delivered a report to the APS Committee on APS in Australia. We also heard a report on APS from a Committee member who visited Holland.

14. The Committee continues to work on improving issues of access for people with disabilities to RMOC publications. It was recommended by the Committee that the Communications Department ensure that its documents are accessible and available to citizens with unique communications needs just as it is to the general public.

15. The APS Committee has worked hard over the past several months to revamp its method of operation. It has become a much more effective committee with members who are blind performing the duties of Chair, Notetaker and Facilitator. Communications have been much more efficient and timely than previously experienced. As a result, the Committee has achieved considerable success in re-involving valued citizen members who had dropped their active role in the Committee.

## **MAIN POINTS FROM APS WORK IN 1999**

January 14, 1999

1. Re: Discussion on left-hand turning arrows

Chris Stark reported that rewriting software was a high priority.

2. Moved by Chris Stark and seconded by Ian Martin that we thank Chris Brinkman for his excellent work and report.

Adopted

3. Moved by Chris Stark and seconded by Marjorie Fulton that the criteria and Chris Brinkman's report be sent back to the Criteria Sub-committee to work with Chris Stark and resolve issues and return to full Committee by the March meeting.

Adopted

4. The Chair clarified that once we had a consensus and a definite finished proposed criteria, a public meeting was going to be held.

5. Moved by Valerie Collicott: That the Transportation Committee be asked to suspend further installation of intersections equipped with left-hand turning arrows until such time as the engineering staff can address audible signals to reflect the reality in the intersection.

Upon discussion, the motion was tabled to give engineering staff time to deal with the issue of software design.

6. Chris Brinkman's report confirmed that all the highest priority locations among outstanding requests have left-turn phases.

Moved by Chris Stark and seconded by Valerie Collicott: That the APS Committee express deep concern about not having the capacity at this time for using APS at intersections with left-hand turning systems and that we ask the Transportation Department to do its best effort to rectify that need in time to have those intersections included in the intersections to be installed this year; so that they are not left out.

Adopted

7. Re: Regional policy on APS at newly signalized intersections

Chris Brinkman advised that RMOC staff are preparing a reply to the Transportation Committee. APS Committee members have not been involved in the process yet.

Action: Chris Brinkman was asked to indicate to the Transportation Department that this Committee wishes to be involved in consultation in accordance with the original motion of the Transportation Committee.

8. Re: TAC Standard Update

Chris Brinkman reported that there is no progress on the issue to report. He is still gathering names of volunteers to work on the issue.

The APS Committee strongly urged: That TAC Review Committee consider meeting with some people who are blind in Toronto to discuss APS and familiarize members of TAC with feedback from users of APS.

In an attempt to help facilitate the issue and move the issue forward, it was moved by Chris Stark and seconded by Ian Martin: That the APS Committee express a desire that the national standard discussion move forward as quickly as possible because of the problems it causes here in Ottawa-Carleton.

Adopted

## 9. Re: Committee Communications

Action: That we encourage people to join the aps-l list to facilitate easy communication. Chris Stark and Valerie Collicott will work with Marjorie Fulton to devise means of improving communication links.

February 11, 1999

## 1. Re: Draft Criteria

Action: Brian Millar will ask Chris Brinkman to provide a list of issues or problem areas to be posted on aps-l for consideration in advance of the meeting of the sub-committee which will work on resolving outstanding issues of concern.

## 2. Re: Action on intersections in other jurisdictions

Brian Millar reported that the documentation is still being prepared to go out to other municipalities. The list of intersections effected is:

- a) Colonel By Campus and Ottawa University Campus Station (NCC)
- b) Bronson Avenue and Gloucester Street (City of Ottawa)
- c) Woodridge and Bayshore Shopping Centre Access (City of Nepean)
- d) Albion Road and d'Aoust (City of Gloucester)
- e) RR 34 (St. Joseph Boulevard) and Grey Nun's (City of Gloucester)

3. Suggestion: That Terry Keough inform CNIB clients who made original requests that their requests are on the list and that they may be dealt with by the municipality in question.

4. Re: Addressing intersections equipped with left-hand arrows with respect to their inclusion for consideration in the selection of the three pilot installations for 1999.

Brian Millar reported that Traffic Operations has gone over the matter with their software supplier and they are aiming for a May 1 date. It is anticipated that McKain Traffic Systems, the software supplier, will have the software ready for April 1 at which time it would be installed and tested. It was suggested that Chris Brinkman could give us some feedback at our April meeting.

## 5. Re: Newly signalized intersections and consultation

Staff will be producing a report but there is nothing ready yet. The Committee recommended that consultation take place before any report is written as it is better to take a position, consult with all parties and gain consensus that all stakeholders can live with.

Moved: That the Region pull together a meeting of the parties to be consulted to begin the dialogue.

Carried

## 6. Update on research project

Dr. Giguere reported on audible signal system in Holland.

Update on current sound research project - site on Industrial has been selected. Anticipate April start for research.

7. Review of Sub-committees, their membership, and convener status

- a) The Technical Committee has not met since past July while sound research is ongoing.
- b) Criteria Sub-committee is currently reviewing the draft criteria and will report back to main committee by March. Their communication responsibility for this sub committee is still outstanding.

Moved by Chris Stark and seconded by Ian Martin: That the Criteria Sub-committee finish its work next week and that following the March 11 meeting, we reconstitute new committees to focus on specific tasks.

Carried

8. It was noted that the Region has undertaken an initiative to gather names of individuals who are blind and visually impaired that would want to receive public notice information in a pre-recorded announcement in their voice mail. Laura Bergen, Councillor Holmes' assistant, will investigate and inform the Committee with full details re: this initiative.

9. The Chair has agreed to write to the local CNIB to encourage their participation on our e-mail discussion list aps-l.

10. Moved: That the Chair write a letter of thanks to Brian and post a draft to aps-l for comment.

Carried

11. Moved by Ian Martin, seconded by Terry Keough: That at the March 11 meeting, we establish a membership committee to review existing membership and Marjorie Fulton's original brief about the composition of this committee and to explore more ways to get people to attend meetings.

Carried

12. Moved by Ian Martin, seconded by Valerie Collicott: That a representative from the APS Committee appear before the Transportation Committee in support of Dr. Weller's Walking Security Index.

Carried

March 11, 1999

1. The Committee received the report from the Criteria Sub-committee, who had met to resolve issues of concern to staff. All the intersections under RMOC jurisdiction were ranked using these draft criteria.

The Sub-committee looked at a mechanism for applying the criteria to establish priority ranking. It was decided that first, objective/quantitative criteria would be applied which awarded a certain number of points for the existence for various criteria. Examples of these would be number of lanes and the existence of turning lanes. Secondly, in the event of a tie, the list of secondary/subjective criteria would then be applied. Initially, these subjective criteria did not possess any point value. It was agreed that, a point value of one (1) each would be assigned. (to be confirmed by the larger APS Committee)

Secondary criteria included such factors as consideration for every person asking for a crossing at that location, consideration for incidence of higher pedestrian accident rates and consideration for frequency of usage.

Thirdly, if a tie still existed between intersections, then the date of request would establish the priority ranking.

2. Staff encountered additional problems applying two factors in the process of establishing priority ranking:

- a) reduced visibility
- b) crossing delay

The Committee recommended the following:

Moved by Committee members: That the two factors would not be assessed against already installed intersections nor, against those on the outstanding request list, but would be assessed for new applications if they applied.

Carried

It was felt that the two factors of visibility and crossing delay would be looked at separately in a future meeting and further considered at the April meeting during the discussion of the Weller Walking Security Index Report.

3. Moved by Committee members: That the secondary criteria factors carry a single point value each when applied in priority ranking in a tie of intersections.

Carried

4. Selection of 3 installation locations for 1999 APS

Two intersections received high ranking with the draft criteria - Bank Street/Hunt Club Road and Champlain Drive/Shopping Centre/Place D'Orleans Drive. Thus, these intersections were selected as the first two locations. The third could not be established as there was a tie.

The Committee recommended that we delay a decision in order to assess secondary subjective criteria to those tied locations and also, to determine the dates of request if discernible.

5. Rehabilitation Project

As part of the Elgin Street Rehabilitation Project, two additional APS MAY BE installed at the following locations:

- a. Elgin Street / Laurier Avenue, and
- b. Elgin Street / Slater Street

6. Broadening the APS Committee's mandate

A consensus view was expressed to broaden the mandate to encompass issues heretofore not addressed by the Committee, i.e. the Region's Communication with citizens who are blind or have low vision. The Committee invited the Director of Communications to speak to the Committee and explain their communication practices.

7. The Committee felt it beneficial to liaise with other organizations and groups, such as the Airport Parkway Extended Traffic Impact Study group and identify itself to the consultant and convey the message that our Committee wished to be included in the consultations re modification of existing signals and for requests for new signals.

8. To allay concerns that an expanded mandate would dilute the focus on APS, it was affirmed that APS would be the primary focus of the Committee, but that a host of other pedestrian infrastructure-related issues had to be addressed as mentioned in the Fulton Brief.

#### 9. APS Committee Presentations

It was decided that for public presentations on behalf of the Committee could be made from the perspective of the citizen members and not represent the organizational representatives.

#### April 8, 1999

1. Reminder by Chair, that consultation on APS installation at newly signalized intersections by Regional staff has not yet taken place. It is an outstanding issue.

2. The Committee worked on applying subjective criteria toward selecting the third APS for the pilot project. It was decided to delay final decision to the May meeting to verify certain information.

3. Despite the crafting of the criteria for APS installation, the Committee recognized that there are many intersections in the Ottawa-Carleton area that do not possess all the characteristics to make them eligible for consideration for an APS installation, BUT NONETHELESS PRESENT PARTICULAR CHALLENGES TO PEDESTRIANS WHO ARE BLIND AND VISUALLY IMPAIRED, (i.e. Bronson Avenue/Fifth Avenue).

4. The Committee agreed to support the concept of a Civil Society Week (a proposed campaign by Councillor Doucet, to encourage drivers to respect and understand issues for pedestrians in the Ottawa-Carleton area). Messages regarding the challenges facing pedestrians with visual disabilities would be an integral part of the campaign.

5. The Committee strongly endorsed the suggestion for a public event around the installation of APS as part of the Elgin Street Rehabilitation Project. The Committee will consult with Communications on this issue.

6. The Committee identified various strategies for solidifying Committee membership:

- a) contact inactive members to relay changes in Committee operations
- b) consider flexible meeting times
- c) public consultations
- d) utilize opportunities through RMOC website regarding membership recruitment and information dissemination
- e) propose and coordinate with RMOC, a special workshop on pedestrian issues for blind and visually impaired pedestrians (i.e. a session on the modern intersection with a recognized high-profile speaker like Lukas Franck).

7. The Committee received the report on APS from Australia by a Committee member and was interested to hear about the prevalence of APS and about the additional information points accompanying the audible signals (i.e. the tactile markings conveying specific information and locators enabling pedestrians with visual disabilities to find the poles).

8. Dr. Giguere reported that the research study on APS sounds conducted for a Montreal group was complete and the English version is in translation. The results will be published as soon as possible. The current research study is getting underway and is progressing on schedule.

9. Re: TAC Review

Our Committee asked Chris Stark to take the message to the meeting in Toronto that there is an expectation that TAC will broaden the standard and modernize its approach to the intersection design and include recommendations from blind and visually impaired pedestrians. People who are blind want to be involved and are looking for opportunities to be included.

10. Staff report preparing documentation on APS installations for other jurisdictions which will be ready by next month. The Committee recommended that Chris include a covering letter to the municipalities explaining the process and the purpose of this committee and informing them that our committee would be pleased for the opportunity to speak with them about the importance of APS and related issues if it would speed the process along.

11. A delegation of citizen members from the Committee was identified to present the committee's brief in support of Dr. Barry Weller's Walking Security Index Report. The delegation will present to the Transportation Committee on April 21.

12. Software testing for left-hand turn systems is still ongoing.

May 13, 1999

1. Further delay in preparation of documentation for other jurisdictions has been incurred because of the detection and repair of faulty APS equipment during monitoring of APS-equipped sites. Staff expect the process to be finished by end of May.

2. Two representatives from the Communications Department presented the first draft of the Region's policy on consultations with people with disabilities on communications and APS.

Moved by Marjorie Fulton and seconded by Ian Martin: That we read the report and obtain some initial feedback from everyone and then provide electronic versions for people to read and make comments in writing after today's feedback was incorporated.

Adopted

3. Decision on final third APS installation

Moved by Marjorie Fulton and seconded by Ed Foohey: That St. Laurent Boulevard /Montreal Road be named as the third location to receive an audible pedestrian signal in this year.

Adopted

#### 4. TAC Review Committee Meeting

The TAC Review Committee Chair reported that he met for 45 minutes with colleagues and that no special meetings were planned as TAC does not have any money. Engineers reported satisfaction with the sounds. There was no consultation with APS users.

5. The Committee received the report from delegates who made a presentation of a brief on behalf of the APS Committee. The Transportation Committee directed staff to explore the feasibility of recommendations put forward in the brief and report back. Best estimate - approximately a month.

The Transportation Committee recommended to council to proceed with pilot projects proposed to test the walking security index, and that the APS Committee be involved in the study.

6. Committee members will draft an application form to facilitate the request procedure for citizens requesting APS from the Region. Aps-I will be the point for information exchange for revising draft format.

#### June 17, 1999

1. Update on documentation for other municipalities has still not been provided by staff to date of published minutes.

#### 2. Communications and APS Consultation Reports

The Region provided a new version of the draft report and requested Committee members to reply in writing within two weeks. Committee members were invited to make suggestions and give advice on communications issues to staff.

Moved by Marjorie Fulton and seconded by Diane McLaren: That Chris Stark work with Blair to develop a communication strategy for the APS that includes target audience, risk analysis and other information and report back to committee.

Adopted

3. Committee members continue to show initiative by sharing with Regional staff, information pertaining to other jurisdictions on studies, reports, etc., regarding issues of interest pertaining to our work (i.e. Dr. Benson's update to the U.S. Access Board and the B.C. checklist on pedestrian issues).

4. It was endorsed by our committee members that material available to the public be made accessible by the Region (i.e. the proposal for phase 2 of Dr. Barry Weller's Walking Security Index Study). The Transportation Committee directed that the APS Committee be involved in Dr. Weller's current project so access to this material is necessary. The APS Committee wishes communications to follow-up and report back and include issues of access to such documents in their policy.

5. Inactive Committee members have been contacted and been informed about new committee procedures and practices. Diane McLaren has agreed to represent Canadian Guide Dogs for the Blind on the Committee. It was recommended that we keep the Committee as is, until such time as the report is presented to the Transportation Committee, after which determination can be made about Committee composition changes.

6. The APS Committee will utilize a participatory approach to preparing a report to the Transportation Committee. Last year's format will provide the basis for the report with updated information and new recommendations for their consideration. It is expected that the Committee might have a finalized document for consideration at the beginning of August.

7. Update on the Montreal sound study

Researchers from the University of Ottawa have advised us that they are presenting a scientific paper on the research in the fall and don't wish to reveal the entire report at this time, but a comprehensive two-page summary will be posted on aps-l for list members' information. Once the paper has been published, it can then be posted on the web.

8. It was noted that the issue of the Committee's consultation by the Regional staff on signaling all newly installed intersections is still outstanding and has not yet been addressed as directed by the Transportation Committee.

9. In order to facilitate an updated request list for APS, the Committee directed Terry Keough to contact names on the list who made requests for APS to ascertain if the request is still outstanding or not necessary for that person at this time. The Committee directed Terry Keough to keep Chris Brinkmann informed on the updated information in order to coordinate an updated relevant list by the end of August. The new list will be appended to the report to the Transportation Committee due in the fall.

10. It was determined that it would be advantageous to maintain information in an archived file at the Region for statistical purposes and tracking. It was recommended that we implement a coding system to track the number of people making requests for certain locations. This will help with assessing volume and frequency of requests for locations.

11. Re: a push-button locator at

- a) newly installed APS, and
- b) retrofitted APS

The Committee decided that we will have to make it a recommendation in the report for consideration.

12. Communications staff will follow-up and report back with information on issues from Disability Coalition paper intended for Regional government. Committee members have not yet attained a copy of the paper.

## **ACCESSIBLE PEDESTRIAN SIGNALS**

### **Introduction and Background**

The Signals Technical Committee (STC) over the past 15 years has discussed the topic of “audible pedestrian signals, and always failed to reach a consensus to propose addition of any language in the MUTCD regarding this. Recently in 1997, the issue was given to the Pedestrian Task Force to explore and provide recommendations on proposed language, on a much broader issue than just audible pedestrian signals.

The Americans with Disabilities Act (ADA) requires access to public right-of-way for people with disabilities. The US Access Board commissioned a paper by Dr. Billie Louise Bentzen and Lee S. Tabor entitled “Accessible Pedestrian Signals<sup>1</sup>.” The paper was published in August 1998, and has had wide circulation among the community concerned about equal access to public ways for all. The material in this report is summarized briefly in this narrative, and served the Pedestrian Task Force as well as the Signals Technical Committee as a very useful reference documenting the problems faced today, which are different from those faced 20 years ago when the Signals Technical Committee first discussed the issue.

“Access to traffic and signal information is an important feature of accessible sidewalks and street crossings for pedestrians who have vision impairments. While most intersections pose little difficulty for independent travelers who are blind or have low vision, there are some situations in which the information provided by an accessible pedestrian signal is necessary for independent and safe crossings.”<sup>1</sup>

“Techniques and cues used in crossing streets are diverse and vary by location and individual. Many visually impaired pedestrians have trained with an Orientation and Mobility Specialist who has an undergraduate or graduate degree in teaching and travel skills to persons who have visual impairments. In the most common technique utilized for crossing at signalized intersections, pedestrians who are blind begin to cross the street when there is a surge of traffic parallel to their direction of travel.”<sup>1</sup>

“Vehicular sounds are often sufficient to determine the onset of the WALK interval and the direction of the crosswalk. However, there are some intersection geometries, acoustic conditions and traffic control systems which make it very difficult for persons who are visually impaired to obtain the cues necessary to cross streets independently and safely. Accessible traffic signal technologies can be helpful to pedestrians in these situations.”<sup>1</sup>

“Federal and model code accessibility standards in the US do not yet include scoping or technical provisions for Accessible Pedestrian Signals (APS) or other means of communicating

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<sup>1</sup> Bentzen, B.L and L.S. Tabor, “Accessible Pedestrian Signals,” U.S. Architectural and Transportation Compliance Board, 1331 F Street NW, Washington, D.C., August, 1998

visible signal information to pedestrians who have vision impairments. Regulators have been reluctant to standardize on any current device or system until more research and development is done on applications of emerging intelligent transportation systems and related communications technologies.”<sup>1</sup>

“Although audible crossing indicators have been available for more than 25 years, they have not been well received by traffic planners in the United States. This is probably attributable to two factors: one is noise pollution and consequent community opposition; the other is disagreement among blind people on the need for and effectiveness of audible pedestrian signals.”<sup>1</sup>

### **The Problem Today**

Traffic volumes have increased substantially in the last 20 years. Highways and streets have been widened, with multiple through and exclusive turn lanes. Volumes of traffic have created greater background noise. Traffic signal phasing has become more complex, with more protected and exclusive turn phasing. Right Turn on Red is now common among most jurisdictions. All of these changes have made it more difficult for visually impaired people to know when it is safe to cross the street, and whether a push button is present or required.

In a communication to the Federal Docket on Part IV of the MUTCD, the Association for Education and Rehabilitation of the Blind and Visually Impaired (AER) submitted extensive wording requesting recognition and standards for Accessible Pedestrian Signals. The communication noted, that “as Orientation and Mobility Specialists, the professionals in the field of blindness who teach blind pedestrians to travel the streets and roads which you design, we have noticed increasing difficulties in the area of access, and particularly access to crossing time information at intersections with timing and geometric challenges. Further, we decry the lack of standardization in the area of Audible Pedestrian Signals” (Letter of Lucas Franck, AER, August 29, 1997.)

Members of the Signals Technical Committee (STC) have viewed videotapes of the type of problems encountered in training visually impaired pedestrians, and understand the challenges faced at certain intersections. They believe these problems can no longer remain unaddressed. The STC collaborated with several groups, reviewed research provided on both the problem and potential solutions, and addressed the problem with these proposed changes.

Both the American Council of the Blind (ACB) and the AER have conducted surveys of signalized intersection problems. The ACB survey included 158 pedestrians who are legally blind regarding their experiences in independently crossing signalized intersections with and without audible pedestrian signals. Briefly, 91 percent indicated they had difficulty knowing when to begin crossing. The problem can often be confusing traffic phasing, or too little traffic at times, which results in no cues for beginning of traffic flows to cue the time to begin crossing. Problems with push buttons were reported by 90 percent, including knowing if a button is present or where it is located.

In the AER survey of 349 Orientation and Mobility Specialists (specially trained to teach independent travel skills to the visually impaired), respondents from 36 states indicated there were audible pedestrian signals in the area in which they taught. Eighty-five (85) percent indicated their students sometimes had difficulty knowing when to begin crossing, for the same reasons listed in the ACB survey, and 87 percent indicated student problems with push buttons. Even with audible pedestrian signals present, 64 percent indicated students couldn't tell which crosswalk had the WALK signal, for a variety of reasons, including confusing an actual bird call with a bird call audible signal.

### **Time for Action**

A lot of activity is going on at this time to address the problems. Since work of the Signals Technical Committee will be ongoing, other activities related to it are reported here.

TEA 21 was adopted by Congress in 1998, and continues and expands provisions to improve facilities and safety for bicycles and pedestrians. The AASHTO Strategic Plan elements include comprehensive programs to impact impaired pedestrians (Rudy Umbs, presentation, TRB, January 1999).

The ITE has created a task force to develop a Tool Box for Accessible Pedestrian Control. Members of the STC's Pedestrian Signals Task Force as well as members of the ACB and AER also serve on that committee. The work of Dr. Benzten,<sup>1</sup> documenting both the problems and solutions now in use worldwide will serve as a beginning document for the ITE Tool Box. That report is also referenced in the proposed language attached for consideration of sponsors, and if approved, will direct users to a source document describing the problems and potential solutions.

The proposed language attached is the first effort by the Signals Technical Committee, NCUTCD to standardize methods of dealing with the problem. The Committee deliberately chose to avoid standardizing on devices, and instead standardize on methods of dealing with the problem, allowing agencies to explore the new technologies that are coming on the market. Accessible Pedestrian Signals are not mandated anywhere, but guidance given when and how an agency chooses to address problems caused by the lack of such devices. The areas where standardization is clearly warranted for safety reasons are intended to shape operation of any new technologies, while still allowing continued use and development of a wide variety of devices.

The language attached was developed with substantial input from both the blind community (ACB) as well as Orientation and Mobility Specialists (AER). More than 19 hours of meeting time was devoted to developing and modifying the proposal attached. The Signals Technical Committee recognizes and appreciates the input of all involved, and their names are included for that purpose. The proposed language was adopted unanimously by the Signals Technical Committee, January 7th, 1999, in Washington, D.C., and is recommended to Sponsors for approval and/or comment.

Draft Changes to Chapter 4E as modified by comments submitted by the American Council of the Blind (ACB) and the Association for Education and Rehabilitation of the Blind and Visually Impaired (AER). Text below reflects final draft resulting from January 7, 1999 Signals Technical Committee (1:00 - 6:00 PM) meeting, Following a Pedestrian Task Force meeting all day on January 6, 1999. Both meetings had extensive representatives from the visually impaired community. A copy of attendees is attached.

## **New Section**

### **1 4E.6 Accessible Pedestrian Signals**

#### **2 Support**

3 Local organizations providing support services to visually impaired pedestrians or  
4 pedestrians who are both visually and hearing impaired can often act as advisors to the  
5 traffic engineer when consideration is being given to the installation of devices to assist  
6 such pedestrians. Orientation and mobility specialists or similar staff may be able to  
7 provide a wide range of advice. Information may range from assessing the needs of a  
8 single individual to commenting on the operation of proposed devices.<sup>2</sup>

#### **9 Standard**

10 **Accessible pedestrian signals provide information in non-visual format, which**  
11 **includes audible tones or verbal messages, and/or vibrotactile information. Such**  
12 **devices, when used, shall be used in combination with pedestrian signal timing.**  
13 **Accessible pedestrian signals shall clearly indicate the direction of the pedestrian**  
14 **crossing served by devices, such as tactile arrows.**

15 **Under stop-and-go operations, accessible pedestrian signals shall not be limited in**  
16 **operation by time of day or day of week.**

#### **17 Guidance**

18 *The installation of accessible pedestrian signals at signalized intersections should be*  
19 *based on an engineering study, which should consider the following factors:*

20 *a. Potential demand or a request for accessible pedestrian signals*

21 *b. Light traffic, complex traffic signal phasing, complex geometrics or heavy right*  
22 *turn on red.*

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<sup>2</sup> For guidance relative to techniques for making pedestrian signal information accessible to persons with visual impairments, including directly audible tones, transmitted speech messages, and vibration, refer to U.S. Access Board Document A-37 "Accessible Pedestrian Signals" and the Federal Highway Administration.

1 Support

2 Technology which provides different sounds for each non-concurrent signal phase, has  
3 frequently been found to provide ambiguous information.

4

5 **Standard**

6 **When choosing audible tones, possible extraneous sources of sounds (such as wind,  
7 rain, vehicle back-up warnings or birds) shall be considered in order to eliminate  
8 potential confusion to visually impaired pedestrians.**

9 *Guidance*

10 *Audible pedestrian tones should be carefully selected to avoid misleading visually  
11 impaired pedestrians when the following conditions exist:*

12 *a. Where there is an island that allows unsignalized right turns across a  
13 crosswalk between the island and the sidewalk.*

14 *b. Where multi-leg approaches or complex signal phasing require more than two  
15 pedestrian phases, such that it may be unclear which crosswalk is served by  
16 each audible tone.*

17 *c. At intersections where a diagonal pedestrian crossing is allowed, or where one  
18 street receives a WALK indication simultaneously with another street.*

19 **Standard**

20 **Accessible pedestrian signals, which have an audible tone(s), shall have a tone for  
21 the WALK interval, which has a faster repetition rate and higher pitch than the  
22 locator tone. The audible tone(s) shall be audible from the beginning of the  
23 associated crosswalk.**

24 *Guidance*

25 *Where ambient background noise is not a factor, the accessible WALK signal tone should  
26 be no louder than the locator tone.*

27 *Automatic volume adjustment in response to ambient traffic sound level should be  
28 provided up to a maximum volume of 90dB. Where automatic volume adjustment is used,  
29 tones should be 5dB louder than ambient sound. The A-weighted sound pressure level is  
30 to be measured according to ISO 1996-1:1982 and ISO 1996-2:1987 at a distance of 1  
31 meter (3.3 feet) from the transmitter.*

1           **Standard**

2           **When verbal messages are used to communicate pedestrian timing, they shall**  
3           **provide a clear message that the WALK interval is in effect, as well as to which**  
4           **crossing it applies.**

5           **The verbal message that is provided during the timing of the WALK interval shall**  
6           **be the term “Walk Sign”, which may be followed by the name of the street to be**  
7           **crossed.**

8           **A verbal message is not required when the WALK interval is not timing, but, if**  
9           **provided:**

10           **a. It shall be the term “Wait”**

11           **b. It need not be repeated for the entire time that the WALK interval is not**  
12           **timing.**

13           **Option**

14           **Accessible pedestrian signals that provide verbal messages may provide similar messages**  
15           **in languages other than English, if needed, except for the words “WALK SIGN” and**  
16           **“WAIT”.**

17           **Standard**

18           **A vibrotactile pedestrian device communicates information about pedestrian signal**  
19           **phasing through a vibrating surface by touch. Vibrotactile pedestrian devices,**  
20           **where used, shall indicate that the WALK interval is in effect, and for which**  
21           **direction it applies, through the use of a vibrating directional arrow or some other**  
22           **means.**

23           *Guidance*

24           *When provided, vibrotactile pedestrian devices should be located next to, and on the*  
25           *same pole as, the pedestrian push button, if any, and adjacent to the intended crosswalk.*

26           **4E. 67 Pedestrian Detectors**

27           **(Renumbered, and text same as previously approved by NCUTCD)**

1 **New Section**

2 **4E. 8 Accessible Pedestrian Signals Detectors**

3 **Standard**

4 **At accessible pedestrian signal locations with pedestrian actuation, each push button**  
5 **which activates the WALK interval shall also activate the accessible pedestrian**  
6 **signal.**

7 *Guidance*

8 *At accessible pedestrian signal locations, push buttons should clearly indicate which*  
9 *crosswalk signal is actuated by each push button. Push buttons and tactile arrows*  
10 *should have high visual contrast<sup>3</sup>. Tactile arrows should point in the same direction as*  
11 *the associated crosswalk. Push buttons serving two crosswalks at the same corner*  
12 *should be on separate poles separated by a distance of at least 10 feet.*

13 *Push buttons for accessible pedestrian signals should be located as follows:*

- 14 *a. Adjacent to a level, all-weather surface to provide access from a wheelchair*
- 15 *b. Within 1.5 meters (five feet) of the crosswalk extended*
- 16 *c. Within 1.5 meters (five feet) of the edge of curb or shoulder*
- 17 *d. Parallel to the associated crosswalk (see Figure 1)*

18 *A push button should be audibly locatable by means of a slowly pulsing, highly localized*  
19 *tone, having intensity responsive to ambient sound and audible a minimum of 5 meters*  
20 *(17 feet) from the push button.*

21 **Option**

22 **At locations with pretimed traffic signals or non-actuated approaches, pedestrian push**  
23 **buttons to activate the accessible pedestrian signals may be used.**

24 **The audible tone(s), may be made louder (up to a maximum of 90 dB) by holding down**  
25 **the push button for a minimum of 3 seconds. The louder audible tone(s), may also**  
6 **alternate back and forth across the crosswalk, thus providing optimal directional**

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1 information.

2 Option

3 The name of the street to be crossed may also be provided in accessible format, such as  
4 braille and raised print.

**REGIONAL MUNICIPALITY OF OTTAWA-CARLETON**  
**AUDIBLE PEDESTRIAN SIGNALS PRIORITIZATION CRITERIA**

Once a request for audible pedestrian signals has 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 and illumination, etc. \_\_\_\_\_
3. Add points, using the table below, for increasingly complex crosswalk geometry.

Intersection configuration points:

Normal = 4

Leg right-angle intersection = 1

Three-leg tee-intersection = 4

Three or four-leg skewed intersection = 6

Four leg offset intersection, or right turn cutoffs = 8

Other complex or multiple leg intersections = 10

4. Add 1 point for each centre 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 secondary criteria factors carry a single point value each when applied in priority ranking in a tie of intersections).

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.

**REGIONAL MUNICIPALITY OF OTTAWA-CARLETON AUDIBLE TRAFFIC SIGNAL APPLICATION FORM**

For alternative format versions of this form or for further information contact:

Chris Brinkmann, P. Eng.  
 Environment and Transportation Department  
 Regional Municipality of Ottawa-Carleton  
 175 Loretta Avenue North  
 Ottawa ON K1Y 4L8  
 Tel: (613) 560-2111 Ext. 3187  
 Fax: (613) 725-1742  
 E-mail: brinkmanch@rmoc.on.ca

Please submit your completed form to the address above.

Please place an x next to your choice for yes and no answer options and when making selections from item lists.

Intersection street names:

Describe your understanding of the intersection layout and traffic patterns, such as:

Estimated waiting time  
 Four-cornered square intersection  
 Intersection with 4 traffic islands and turning lanes  
 Intersection with 2 traffic islands and turning lanes  
 Intersection with advanced green arrow for automobiles  
 T intersection  
 Accessibility concerns/difficulty experienced crossing this intersection

What would you estimate to be your waiting time to cross this intersection?

How many legs or approaches of the intersection do you typically cross at any one time you are at the intersection?

Overall intersection comments:

How frequently do you use this intersection?

Are there other persons who are blind who use this intersection?

Yes

Don't know

If yes, approximately how many?

Are there any large facilities such as schools, places of worship, shopping centres or retirement homes near this intersection?

Yes

No

If yes, do you know approximately how many blocks they are from the intersection?

Applicants name:

Address:

Telephone number(s):

Work

Home

E-mail address:

Would you like to be contacted by:

a. An orientation and mobility specialist

Yes

No

b. A guide dog training instructor

Yes

No

c. A peer who is blind

Yes

No

Would you like to participate in meetings to consider your application for audible traffic signal installations?

Yes

No

Would you like additional information about the audible pedestrian signals advisory committee?

Yes

No

Date this form was completed (day/month/year):

**RMOC COMMUNICATIONS PLAN 1999-2000****Audible Pedestrian Signals and related Pedestrian Transportation Information Needs of Persons who Are Blind or Have Low Vision****07-12-99****Emerging issues**

- The community of persons with disabilities is increasingly questioning the impact of the accessibility of the urban environment on their lifestyles.
- Citizens who are blind are becoming increasingly concerned about their safety when travelling through the community
- Growing traffic volumes and increasing intersection complexity is resulting in heightened expectations for accommodation from the Region among citizens who are blind.
- Growing requests for access to the same information provided to all citizens in formats that citizens who are blind can easily use to derive the same level of benefit.
- Increasing level of participation in Regional Government consultations and Community Activities by persons who are blind.
- 1999 has been declared the International Year of Older Persons. A numbers of events and forum give the Region the opportunity to reach that specific group with unique pedestrian transportation needs.

**Communications objectives***General**Specific***Publics**

persons with disabilities  
 Citizens who are blind  
 Citizens who have low vision  
 Citizens with Learning Disabilities  
 Other citizens with unique transportation communications needs  
 seniors

**General Messages****Communications activities and tools**

**Evaluation**

All communications vehicles should offer some way for the Transportation Department to receive feedback from the target audiences, and to address concerns that may have otherwise gone unnoticed. Issues to request input on include:

- ↳ Anticipated challenges or concerns
- ↳ Other areas on which to concentrate
- ↳ Whether the message is reaching consumers, and if it is working.

*Tools***ACTION PLAN (Activity Time frame Responsibility)**

# ANNEX K

the Audible pedestrian signals (aps) Committee was mandated in 1997 by the Transportation Committee to advise on matters affecting blind and visually impaired pedestrians. it consists of a number of citizen members, many of whom are end users of APS, that is, blind and visually impaired persons. The committee's work benefits from the expertise of RMOC staff and from specialists in audiology and in orientation mobility training.

The citizen members of the APS Committee strongly support the recommendations of Professor Wellar's Walking Security Index. We are very pleased that staff support many of his recommendations.

Staff point out that the region already restricts right turns on red for safety reasons. we urge that immediate action be taken to restrict right turns on red at the intersections identified by professor Wellar and by community associations and advisory groups. We urge that the APS committee be included in all such consultations.

in regard to professor Wellar's recommendation that yield signs be changed to stop signs, the staff report says only that staff are looking into this for the southwest corner of laurier/nicholas. Professor Wellar's proposal is that candidate intersections be selected through use of indices and advice from community organizations.

Citizen members of the aps committee urge that  
the use of channelized intersections be discontinued, and that  
existing intersections be closed;  
if this is not possible, that channelized intersections be placed  
under signal control;  
if this is not possible, that yield signs be changed to stop  
signs at all channelized intersections and that enforcement be  
supported by the installation of video cameras.

this is of particular concern to blind pedestrians. We ordinarily judge when it is safe to cross by analyzing the sound of traffic. The movement of vehicles in a right turn channel is masked by the sound of traffic moving straight through the intersection. Yet, even if there is a pedestrian push button, and even if it activates an audible pedestrian signal, the blind pedestrian must somehow cross the uncontrolled right turn channel to reach the pushbutton. We would prefer that the right turn channel be placed under signal control. At the very least, however, a stop sign would reduce the danger. therefore, we urge that consultation with blind persons form part of the process of selecting candidate intersections.

professor Wellar stresses the need for adequate maintenance. The aps committee highlights the need for a fundamental reconsideration of the approach used to snow clearance, in support of the Official Plan objective of enhancing conditions for transportation modes other than the private automobile. the present approach is well designed to give maximum benefit to motor vehicle traffic, by clearing first a lane for cars, moving the snow to the side of the road, incidentally blocking crosswalks for pedestrians. sooner or later, this snow has to be moved a second time, into the centre of the road to be removed. We recommend that a new approach be tested through a pilot project, in which the first step would be to pile the snow in the centre of the road, where it would not have to be moved a second time. Even so, care would have to be taken to ensure that the piles do not encroach on the crosswalks.

Recommendation Q dealing with issues of concern to disabled persons: the aps committee recommends that the region develop, in consultation with stakeholders, a research program that will clarify the required changes to ensure environmental access for persons with disabilities, and, further, that the region develop a transition plan with timeframes and periodic reports to achieve a universally accessible environment for its citizens.

Among specifics we would wish to see this study examine are the negative impact of left-turn signal phases on pedestrians, especially those with visual impairments, and the potential benefits for pedestrians of a leading pedestrian interval, sometimes called a pedestrian headstart.

April 1999

Contact person: marjorie fulton (volunteer coordinator)  
tel.: 234-8750  
e-mail: cp173@ncf.ca

## **Audible Pedestrian Signals Communication Strategy**

In June of 1999, the Region of Ottawa-Carleton began working on an important project geared to address the safety needs of blind and low vision individuals living in Ottawa-Carleton. The project's main objective is to consult with members of this community to establish effective prioritization criteria for Audible Pedestrian Signals (APS). This criteria would be used to identify future APS installation locations.

The following is a proposed communication strategy which attempts to address the project's purpose and at the same time, assist in the development of a long-standing working relationship between the Region and members of this community.

The communication strategy is broken down into three stages: the research phase, consultation phase, and reporting phase.

### **1. Research Phase**

The Research stage will begin in early August 1999 and continue until mid-September 1999. The purpose of this phase is to identify target audiences and vested parties. The Region of Ottawa-Carleton, through its Communications Co-ordinator, will consult various agencies in order to identify blind and low vision individuals living in Ottawa-Carleton. This list is key since relevant correspondence regarding APS and APS prioritization criteria will be forwarded to the agencies for distribution to their members. Please see **Appendix A** for a list of agencies.

Please note, all future maintenance of this list will be handled by the APS Committee.

### **2. Consultation Phase**

The development stage of the project is a joint effort between the Region of Ottawa-Carleton and the current APS Committee. The purpose of this stage is to create a communication package for distribution to our target audience. The package will include some background information on APS technology, APS prioritization criteria to date, and a survey to help determine the impact of the current prioritization criteria and any suggestions for improvement.

#### Survey

##### *Research Design*

The survey will consist of a structured questionnaire, designed to be self-completed by the individuals identified in the research phase of the project. In order to make the survey accessible, the questionnaire will be available in alternative formats (i.e. large type, Braille and electronic format).

*Coverage*

Based on the research phase, the agencies listed in Appendix A will be included in the survey. These organizations will be targeted since their members are directly affected by the development of APS criteria and the installation of APS.

*Research Instruments*

A covering introductory letter and a questionnaire will be created by the Region of Ottawa-Carleton and the APS Committee. Upon approval by both groups, the material (including the survey) will be forwarded to the identified agencies (Appendix A). The agencies will then be responsible for forwarding the package to their members. The information package will include a stamped, self-addressed envelope, for return of the completed questionnaire to the Region of Ottawa-Carleton. The Region's policy is to allow one month for responses to such surveys.

However, this may be extended should the Region and APS Committee decided that more time is needed.

*Analysis*

All returned questionnaires will be reviewed by the Region. Comments and recommendations will be considered and a final report will be presented to the APS Committee and Transportation Committee for consideration.

**3. Reporting Phase**

Pending the outcome of the presentation to Transportation Committee, the final report will be made available to the survey participants including those agencies identified in Appendix A.

**Appendix A**

1. Guide Dog Users of Ottawa  
Valerie Collicott  
830-8823
2. Guide Dog Users of Canada (Ottawa)  
Marie Laporte-Stark  
830-1398
3. Canadian Guide Dogs for the Blind  
4120 Rideau Valley Drive North  
Manotick, ON K4M 1A3
4. Canadian Council of the Blind, (Social and recreation group)  
Bob Murray  
742-7208
5. Letson Hall Chorus (choir of visually-impaired and blind people)  
George Adamson  
225-8404
6. VIEWS for the Visually Impaired (Support and advocacy group for parents of blind children)  
Mary Anne Burke  
224-2777
7. L'Association Main dans la Main (Bilingual social group for disabled persons including blind and visually impaired persons)  
The Overbrook Multi-Service Centre  
33 Quill St., Ottawa ON,  
Simone Pilon  
744-8517
8. RP Eye Research Foundation (Support and information to people who have Retinitis Pigmentosa. Fund raising for research).  
910-36 Toronto Street, Toronto ON M5C 2C5  
Sharon M. Colle
9. Canadian Blind Sports Assoc.  
748-5609
10. Ski Hawks (Alpine and X-country skiing),  
Alpine; Bruce Meredith  
725-2472  
X-country; Muriel Arsenault  
731-1599

11. National Capital Eyes (Sport recreation including goalball and beepball)  
Richard Robichaud  
(H) 567-7137  
(W) 994-7703
12. Ottawa Blind Bowling Club  
Irene Ward  
728-2828
13. Ottawa Blind Curling Association  
Joe Wirvin  
565-9079  
Tad Skalski  
820-2421
14. Ontario Visually Impaired Golfers  
Joe Wirvin  
565-9079
15. Amateur Radio Group (Provides training and sponsorship)  
Joe Blanchett (613) 745-0151
16. BAIT (Summer Fishing Tournament)  
Joe Wirvin  
565-9079
17. T.R.O.T.T. (Therapeutic Riding Association of Ottawa-Carleton)  
Lelia Sponsel  
821-1844  
Helen Wallace  
832-3071
18. Gloucester VIP Group (A consumer self help group for blind and visually impaired persons and their spouses)  
Linda Al-Molky  
830-6446
19. Canadian National Institute for the Blind (Ottawa-Carleton and Lanark)  
320 McLeod Street  
Ottawa, ON K2P 1A3  
Jane Parsard (District Manager)  
Mary Hoffman (Administrative Secretary)  
563-4021