

REGION OF OTTAWA-CARLETON
 RÉGION D'OTTAWA-CARLETON

REPORT
 RAPPORT

Our File/N/Réf. Your File/V/Réf.	50 20-99-0101 03-07-99
DATE	07 July 1999
TO/DEST.	Co-ordinator Transportation Committee
FROM/EXP.	Acting Deputy Commissioner Environment and Transportation Department
SUBJECT/OBJET	MOTIONS RELATED TO THE WALKING SECURITY INDEX - MOTION TC-2-99

DEPARTMENTAL RECOMMENDATION

That the Transportation Committee receive this report for information.

BACKGROUND

At the 21 April 1999 meeting of Transportation Committee, a Brief was submitted by Marjorie Fulton of the Audible Pedestrian Signals Committee as a result of their review of the Walking Security Index. Transportation Committee passed a motion that staff bring forward a report on the Fulton Brief commenting on what may be acted on and what may not. The Fulton Brief deals with a wide variety of issues including turning movement restrictions, signage, intersection design, traffic control, maintenance, snow removal and universal access for persons with disabilities. A copy of the Fulton Brief is attached as Annex A.

A letter was also received from Mr. and Mrs. Crout whose review of the Walking Security Index led them to call for a study of the needs of the disabled. Their letter, which is attached as Annex B, also identified a number of specific problems which present impediments to their mobility. These problems represented a wide range of issues. A response to these specific issues was co-ordinated by the Mobility Services Division (Annex B refers).

DISCUSSION

At its meeting of 04 November 1998, Transportation Committee received my report on the formation of the Mobility Management Branch. The issues raised by both the Fulton Report and the letter from Mr. and Mrs. Crout fall within the mandate of the Mobility Management Branch to lead. The Mobility Services Division is currently in the process of hiring the Manager for this Branch. Once this position has been staffed, both of these documents will be passed to the

Manager for inclusion in the Branch work plan. The current staffing levels in the Mobility Services Division are not sufficient to take on the kind of comprehensive reviews suggested by the two submissions.

As noted in my presentations to the Transportation Committee, the new Branch Manager will have to undertake staffing and the development of a work plan, some of the elements of which were presented to the Committee last November (Annex C refers).

The issues identified in the two submissions will have to be considered in light of other work plan priorities and appropriate study budgets established.

*Approved by
Doug Brousseau*

BM/DB

Attach. (3)

-----Original Message-----

From: cp173@freenet.carleton.ca [SMTP:cp173@freenet.carleton.ca]
Sent: Wednesday, July 07, 1999 1:27 PM
To: NELSONRO@rmoc.on.ca
Subject: Re: Brief re Walking Security Index

I have not retained a copy of the email message I sent you. However, I attach a copy of the brief itself. I hope this will meet the need.

marjorie fulton

>Hi Marjorie. On 10 April 1999, you e-mailed to me a brief on behalf of the
>Audible Pedestrian Signals Committee with respect to the Walking Security
>Index. Staff is in the process of preparing a report in response to your
>brief and would like to incorporate your original e-mail. The copy I have
>has ink through a portion of it and I no longer have a copy in my mailbox.

>

>I was wondering if perhaps you still have a copy of this in your sent mail
>box or perhaps your deleted mail box.

>

>If you do, could you please forward it to me.

Brief for presentation to the Transportation Committee
on the Walking Security Index

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.

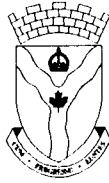
Recommendation Q dealing with issues of concern to disabled persons: the aps committee recommends that the region develop, in consultation with stakeholders, a research program that will clarify the required changes to ensure environmental access for persons with disabilities, and, further, that the 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)
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ANNEX B

30 June 1999

File: 50 08-99-0020, 20-99-0101

Mr. Robert Crout and
Mrs. Grace McClelland-Crout
74 Viscount Avenue
Ottawa, ON K1Z 7M9

Dear Mr and Mrs Crout

Re: Accessibility Issues

This is further to our correspondence of 21 April 1999. As agreed, a copy of your letter was forwarded to the area municipalities and Ottawa-Carleton Regional Police Service with the request that they consider your suggestions and reply to you directly. It is my understanding that some have responded already.

We have circulated your letter internally to the appropriate departments and will now address items 11, 14, 15, 17, 18, 20 and 21 as previously promised.

Item 11 - Problem: posts and signs in curb cuts affecting manoeuvrability

Response: The Signs and Pavement Marking Section advises that sign posts are not installed in depressed curbs or sidewalks although they may be installed a few feet from the depression. In any case they are never installed in the path where a wheelchair would travel. If you know of any locations where a sign pole is a problem please contact us and it will be investigated.

Item 14 - Problem: location of crosswalk light push button

Response: Particular intersections where you find this to be a problem should be brought to our attention immediately. To respond to your specific concern, the small island in the northwest corner of the intersection of Merivale Road and Carling Avenue does not have curb depressions and thus the push button on the island is not accessible to persons in wheelchairs. You had suggested that the push button be placed on a pole accessible from the sidewalk. We do not recommend that this be done. The crossing from the sidewalk is not controlled by traffic signals, and placing the push button on the sidewalk would give pedestrians a false and hazardous sense of security.

It has been many years since this intersection was designed and built, and the island does not meet current geometric design and accessibility standards. We contacted the City of Ottawa to request that they install proper curb depressions on the east side of the intersection as part of their ramp installation program. Unfortunately, funding for this program was cut. Therefore, we will install proper wheelchair ramps in the southeast corner for both crossings and in the northeast corner to better align with the east-west crossing. When completed, it should be more convenient to use the easterly northsouth crossing and thus avoid the need to access the push button on the island in the northwest corner of the intersection.

Item 15 - Problem: duration of pedestrian cross light

Response: In Ottawa-Carleton pedestrian signals are timed in accordance with standards specified in the Ontario Traffic Manual. At most intersections the Walk display is on for at least seven seconds. It is followed by a flashing Don't Walk indication of sufficient duration to allow a complete crossing before conflicting traffic is allowed to enter the intersection. A very conservative walking speed is used in these calculations. At locations where elderly or disabled pedestrians or young school children are known to cross, an even slower walking speed is assumed. Studies have shown that these speeds enable over 99% of pedestrians to make a comfortable crossing.

The pedestrian signals at the intersection of Merivale Road and Carling Avenue are timed to provide a longer Walk indication to take advantage of the fact that the centre median provides a refuge area for pedestrians. At this intersection the Walk display is timed to enable pedestrians to cross from the curb to the far side of the first lane beyond the centre median. The flashing Don't Walk indication is timed to enable a complete crossing from the centre median to the curb.

Staff from our Traffic Operations Branch would be pleased to meet you at the intersection to review the operation of the pedestrian signals and make adjustments to the timing if required. If you wish to do this please call Mr Brian Millar at 560-2111, ext. 3125.

Item 17 - Problem: street repairs or new construction

Response: On all Regional contracts we have stressed to the contractors that pedestrian access must be maintained at all times. Any access or crossing point is ramped to maintain wheelchair access. Crossings over excavated sub-grade areas are bridged with a wooden boardwalk and hoarding. Unfortunately, not all contractors are vigilant in adhering to these standards, and our field staff often have to remind contractors of their obligations.

Item 18 - Problem: broken glass and oil

Response: Maintenance crews clean debris from roads and sidewalks during routine patrols and in response to specific complaints. If you are aware of locations where debris exists please inform us and a crew will be dispatched to investigate.

Item 20 - Problem: holes in pavement surface

Response: Regional roads are patrolled on a continual basis and deficiencies are noted and repaired at the first opportunity. It should be noted however that the patrols are done by vehicle and the driver may not notice a pavement crack at a crosswalk. As above, if you are aware of locations where cracks exist that may create a problem for a wheelchair please inform us and a crew will be dispatched to investigate.

Item 21 - Problem: garbage cans on garbage pick-up days

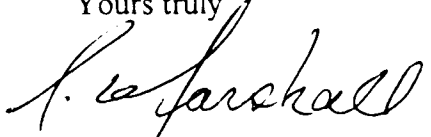
Response: The Region instructs its collectors to put cans and boxes back on the private property side of the curb or sidewalk after collection. Further, we instruct residents not to place their garbage or recycling containers on the sidewalk as it does obstruct pedestrians, including visually impaired and disabled pedestrians. It is an ongoing educational process. If there is a particular problem area please notify us and we will remind the residents and the contractor in that area to follow instructions.

Except for the purpose of arranging for a member of our Traffic Operations Branch to meet you at the intersection of Merivale Road and Carling Avenue, the problems described above, when encountered, can be reported to the Region's 24 Hour Information and Service Section at telephone number 560-1335. All concerns are passed along to the appropriate Department for action.

The issues discussed above are under Regional jurisdiction and it is hoped that this has answered your questions. As indicated previously, the majority of issues identified in your letter are under area municipality jurisdiction and have been passed on for their information and action.

Thank you again for taking the time to bring these issues to our attention, and if you wish to discuss them further please do not hesitate to call me at 560-6001, ext. 1252.

Yours truly



S.E. Marshall
By-laws Administrator
By-laws and Administration Section

SEM

cc: Councillor W. Stewart
G. Malinsky, Manager Safety and Traffic Studies Branch
B. Millar, Senior Traffic Engineer

fileG:sidewk99

Robert Crout
Grace McClelland-Crout
74 Viscount Avenue
Ottawa, On, K1Z 7M9

Councillor Wendy Stewart
Regional Municipality of
Ottawa-Carleton
111 Lisgar Street
Ottawa, On, K2P 2L7

February 18, 1999

Dear Councillor Stewart

Thank you for lending me your copy of Walking Security Index.
We must complement the region with being foresighted in ordering this study. We are both impressed and at the same time disappointed with it. Impressed with the detail, disappointed with the disabled being relegated to a further study. As long as the disabled are considered as "additional work" we will never be fully integrated into society, & never have the place in society as promised by the 1983 Charter of Rights & Freedoms. In other words we don't integrate by doing segregated studies.

Furthermore the report seems to have a common ailment that TABS (temporarily able bodied persons) come down with when dealing with disabled issues. The author writes about talking to professionals. We the disabled are the most knowledgeable and best spokespersons for ourselves, not occupational therapists, not doctors etc. We hope in the next study the author will talk to all segments of the disabled community.

Robert uses an electric wheelchair and Grace uses a scooter. In 1998 after a number of near accidents, mostly in the vicinity of our home, we decided to document the problems with streets, sidewalks, shopping centers, and medical buildings etc. We have not finished. However when we learned about this study from the radio, and Councillor Stewart said it would be dealt with on March 17, 1999; we decided to give you an abbreviated version. Our comments apply equally to streets under regional and city of Ottawa jurisdiction.

We believe the region could do much better. What really irks us is that a major intersection such as Merivale & Carling was dug up just a few years ago. Yet today it is hazardous & has many of the problems listed. The south east corner does not even have a curb cut. Heavy equipment has worn away the very corner to give a slight appearance of a curb cut. Do planners not consider making an intersection accessible when it is going to be dug up? Do city auditors not look at such things during audits? We feel that random audits of plans & sites should be done. If necessary mention on performance appraisals of the discriminatory action of

omitting to ensure accessibility should be made. Only then will all staff realize accessibility is not just talk.

This is not an exhaustive list of the problems, that we or other persons in wheelchairs & scooters have with the region. Nor does it mention problems that people using other mobility aids have. Nor does it cover the problems people with other disabilities encounter. However it will give you a little idea of SOME of the daily problems people using wheelchairs & scooters encounter as they go about Ottawa-Carleton. It should be noted that improved access for wheelchairs & scooters would also benefit baby carriages & people pulling carts for their groceries.


We hope it will spur the councillors to have a proper study done. Also we hope in future that no more studies will be conducted in which the disabled are DISCRIMINATED AGAINST by being excluded. We suggest that a generic paragraph prohibiting discrimination be written. That paragraph would have to be included in all new contracts for all kinds of work.

We believe before action is taken to implement the recommendations it would be prudent to complete the study on the needs of the disabled. Otherwise the region has no idea what effect these recommendations would have on the disabled. We believe some recommendations such as modifying posted & painted roadway signage & modifying roadway marking would need to be re done. Why do it twice? Furthermore priorities of what should be done & where might change completely.

Also if this study is implemented without a study of disabled needs, the latter will never be done. What usually happens in such cases is that no more studies are done, because of cost, or because TABS think little more need or can be added. Here are 2 persons who will not accept those excuses.

Thank you again for lending me your copy. We thank you in advance for taking the time to read this. If you have any further comments or questions please call us.

Yours truly


Robert Crout
725-9477


Grace McClelland-Crout

CC. Mr Rick Chiarelli,
Mr. Peter McGrath, Indep Living

1. PROBLEM - HEIGHT OF PERSON IN WHEELCHAIR/SCOOTER

Some wheelchair/scooter users are very short or the wheelchairs may be low to the ground. Consequently this can make the wheelchair user the height of a child with all the inherent problems of not being seen in crowds or, over the top of hedges & parked cars in driveways. This is particularly so when vans and pickup trucks are backing up out of driveways or, in shopping center parking lots which we must travel through to get to the mall. This lack of height can make some of the following problems more serious.

2. PROBLEM - ACCESSIBILITY TO MALLS

Pedestrians & wheelchairs cannot go from the sidewalk into most shopping centres. It is assumed even local people will always drive cars to the mall. No one will walk or drive their wheelchair to their local mall. Consequently we must travel through parking lots & across or along thoroughfares used by buses & cars. Compounding the problem often only one or a few entrances to the buildings have curb cuts & or accessible doors.

Take Westgate Shopping Centre as an example. There is no sidewalk access from either Merivale or Carling. In fact on Merivale there are trees & grass between the sidewalk & parking lot in order to force the wheelchair to use the roadway used by buses & cars. This is dangerous.

RECOMMENDATION

1. In future all new malls large or small should be accessible from the sidewalk without requiring wheelchairs & pedestrians to go through parking lots and across or along thoroughfares used by buses and cars.
2. For existing malls there should be requirement to retrofit it making a curb cut from the closest sidewalk to the closest entrance. This is necessary for the wheelchair person's safety.
3. All entrances should have curb cuts & automatic door openers.

3. PROBLEM - WIDTH OF SIDEWALK

Sidewalks must be wide enough too accommodate both the wheelchair/scooter and the person passing in the opposite direction. Every person using a wheelchair or scooter has a story about being forced too close to the edge of the sidewalk by pedestrians, having the wheel drive off the sidewalk onto the street, and the wheelchair or scooter tipping over. Not only does the disabled person fall into the path of oncoming traffic, but he/she is usually hurt and the wheelchair damaged.

RECOMMENDATION

Sidewalks must be wide enough to accommodate both the wheelchair/scooter and persons or wheelchairs passing in the opposite direction. Wheelchair users must be encouraged to stay on the inside of the sidewalk, & TABS (temporarily able bodied) educated to take the outer side next the street.

4. PROBLEM - SLOPE OF SIDEWALK

Some sidewalks slope toward the street. When the sidewalk is wet or covered with ice wheelchairs/scooters are more likely to skid into the street & tip over, injuring the occupant & damaging the wheelchair.

5. PROBLEM - INTERSECTION DESIGN-DRAINAGE

Intersection and sidewalk design could be improved to prevent puddles and to facilitate drainage. Most scooters sold here are made in the southwest U.S.A. These manufacturers instruct operators not to travel through more than one inch (1") or, one and a half inches (1 1/2") of water. Our occupational therapist from the region was unaware of this when advising Robert on choice of wheelchair/scooter.

When snow is involved this is a very small snowfall. Often ridges of snow on sidewalks are greater in height than this. Grace's scooter just stops when it encounters a little ridge of snow on an otherwise dry sidewalk.

RECOMMENDATION

Training of all planners & work crew supervisors (white hats), & snowplow operators as to the requirements for sidewalks & curb cuts with regard to wheelchairs/scooters. Retrofits must be done. Audits should also be done.

6. PROBLEM - CURB CUT WIDTH

Width of curb cuts vary greatly. The width of a wheelchair, the distance between the back wheels can vary from about 17 inches to 28 inches. We have seen special order chairs even larger. Very often TABS assume that if one wheelchair can fit in the space all wheelchairs can.

RECOMMENDATION

The width of the curb cut should accommodate everyone and be standard form not adhoc as is now the case.

7. PROBLEM - LOCATION OF CURB CUTS AT THE CORNER

Some curb cuts cover a very small area and are only at the very corner. This requires the wheelchair user crossing in either direction to pull out into the path of the oncoming traffic. This is very dangerous! An example of this is on the south east corner of Merivale & Carling which really isn't a curb cut but just a little of the cement worn away at the corner.



RECOMMENDATION

Curb cuts should be on each side of the corner.

8. PROBLEM - LOCATION OF CURB CUT-TOO FAR FROM CORNER

When a curb cut is located too far from the corner of the street the wheelchair person's safety is comprised by vehicles turning right.

RECOMMENDATION

All curb cuts must be visible to traffic.

9. PROBLEM - LOCATION-CURB CUTS-ON EITHER SIDE OF STREET

Often curb cuts are not opposite each other, sometimes not even in the crosswalk. This makes it difficult for a wheelchair/scooter especially if in a crowd. The crowd prevents the wheelchair person from seeing the the lack of or new location of the curb cut. Futhermore even if the wheelchair/scooter person knows the location of the curb cut on the other side of the street it requires the wheelchair to forge into oncomming pedestrians or, cut across the path of people following the wheelchair, in order to arrive at the curb cut.

RECOMMENDATION

Locate curb cuts directly across from each other in standard format in the crosswalk.

10. PROBLEM - LACK OF SNOWPLOWING OF MISPLACED CURB CUTS

When the curb cut is not in the crosswalk section of the sidewalk, a wheelchair operator finds the crosswalk has been snowplowed but there is a snowbank on the curb cut, proibitting its use.

RECOMMENDATION

Training of all work crew supervisors (white hats), & snowplow operators as to sidewalk & curb cut requirements for the wheelchairs/scooters. Eventually all these curb cuts should be relocated in the crosswalk. Meanwhile supervisors must ensure that they are plowed! There should be audits done of both.

11. PROBLEM - POSTS & SIGNS IN CURB CUTS-REMANOEUVURABILITY

Posts and signs may be placed in the curb cut. Scooters especially the 4 wheel type (which may be up to 54 inches long) may have difficulty manoeuvring around the sign or post at the best of times. Any wheelchair or scooter may tip over as it tries to go around the post or sign, particularly if the curb cut is very steep or, if there is insufficient space and the wheelchair/scooter wheel falls off the sidewalk onto the street.

RECOMMENDATION

Posts and signs should not be placed in the curb cut, existing ones must be moved.

12. PROBLEM - CURB CUTS & CARS TURNING RIGHT ON RED

At busy intersections cars turning right on red lights stop in the crosswalk requiring pedestrians to walk around them. However wheelchairs/scooters often don't have the manoeuvrability and often there is insufficient space between cars to do this. Even if the wheelchair can manoeuvre around the car the access to the curb cut is blocked. For persons like Grace with environment sensitivities such close proximity to car exhaust may cause further problems.

13. PROBLEM - CURB CUTS & MEDIANS

Medians may or may not have a curb cut. Or a median may have a curb cut on only one side and not on the other. In a crowd this is difficult to see. Furthermore in a crowd it is almost impossible to backup to go around the median. However the wheelchair must leave the safety of the crosswalk and pull out into the passing traffic in order to go around the median. Not only does this put the wheelchair person at risk from oncoming traffic, but it also takes extra time not permitted by the lights. Grace's scooter stopped in traffic after her scooter jumped off a median which was missing a curb cut on one side. The light changed and there she sat.

Furthermore cars sitting in a crosswalk may block access to the median curb cut & force the wheelchair out into oncoming traffic in order to cross the street. This happens regularly at Merivale & Carling & at the Carling entrance to Westgate.

RECOMMENDATION

All medians should have adequate curb cuts on both sides.
Why should medians used by pedestrians be elevated at all?

14. PROBLEM - LOCATION OF CROSSWALK LIGHT PUSH BUTTON

Sometimes crosswalk light push buttons are put on inaccessible median islands. An example of this can be seen on the northwest side of Merivale & Carling. It is impossible for a person in wheelchair to push it. If the median/island was made accessible it would be too small to accommodate a wheelchair.

RECOMMENDATION

Posts such as this one should have been located at the corner of the Monkey Joe's Restaurant parking lot.

15. PROBLEM - DURATION OF PEDESTRIAN CROSS LIGHT

Lights are often too short in duration, especially if one or more of the following conditions exist.

1. several lanes of traffic,
2. too steep a curb cut. Consequently the wheelchair must back off the curb in order to reduce the risk of tipping over. Then it must do a 180 degree turn and cross the street,
3. people who use canes or manual wheelchairs and are too weak to cross the street in the time the light permits.
4. for persons who can't walk fast. In the past Grace often found herself just half way across the street at the end of a light, even though she had started to cross the street the moment the walk light sign appeared. If there was no median she could take refuge on, it was very scary for her!

RECOMMEND LONGER LIGHTS

16. PROBLEM - COBBLESTONES

Cobblestone sidewalks are impossible to drive on in a wheelchair. Some widths of wheels get caught between the cobblestones, requiring extra effort to get over them. They are slippery when wet and ice forms between them in spring, fall, and winter making them very slippery under such conditions. People using walkers and manual wheelchairs require extra physical effort to get over them. Cobblestones can deplete the batteries of electric wheelchairs and scooters.

RECOMMENDATION

If used there should be adequate regular sidewalk available for wheelchairs and scooters. Furthermore posts with crosswalk light push buttons should not be placed in or near cobblestones.

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17. PROBLEM - STREET REPAIRS OR, NEW CONSTRUCTION

When new construction occurs it is assumed that months or years later when it is all finished it can be made accessible for the disabled. Until it is finished we disabled are to disappear. This happened on Merivale at Central Park.

During street repairs when the asphalt is stripped from a street for repaving the curb cuts becomes inaccessible. A few years ago when Carling and Merivale were dug up, we witnessed a woman fall into the path of oncoming traffic as her chair tipped over as she tried to climb up too sharp an incline to get onto the sidewalk. She appeared to have no use of her lower body. She was not strong enough to right the chair. Consequently with only the use of her hands, she was trying to pull/drag herself out of the way of the oncoming traffic. She was alone with no one to help her.

RECOMMENDATION

1. Therefore in the future regional work crews must construct some sort of solid ramping in order that intersections under construction/repair are still accessible to wheelchairs.

2. When repairs are finished formerly accessible intersections should still be accessible, & formerly inaccessible intersections should be made accessible. Random audits should be done.

18. PROBLEM - BROKEN GLASS & OIL

Because wheelchairs must use curb cuts, we have no choice about driving over glass. Very seldom after an accident is all the glass & oil cleaned away. Consequently those of us with tubed tires get flats. When we drive through oil, it gets over all our floors at home. TABS wearing boots can take off dirty boots at the door. People in wheelchairs can't take off their tires when they go home. Also oil is slippery & dangerous.

Getting a flat tire may mean missing one or more days of work, not being able to go to the doctor or school, etc. Plus there is the extra expense.

RECOMMENDATION

All glass and oil even the smallest must be picked up. Police and regional work crews must be more diligent, especially after accidents. Random audits should be done.

19. PROBLEM - JOINTS, CRACKS & BUCKLES IN SIDEWALKS

The mode of side walk construction causes pain for many disabled persons. The joints resulting from the forms during construction cause perpetual bumps and cause pain. So do cracks & buckles in the sidewalk. The vast majority of wheelchair users do not have shock absorbers in their wheelchairs. We have been informed such wheelchairs retail price starts at about \$16,000.00, far out of reach of most disabled persons. Reduced repairs caused we believe by budget cuts have:

1. increased pain and need for pain killers,
2. required greater effort by manual wheelchair users,
3. increased the number of tipped wheelchairs due to the buckle in the sidewalk
4. increased the number of injured persons
5. increased the number of wheelchair repairs especially the frequency of wheel repairs and or tire replacements.

RECOMMENDATION

We personally prefer asphalt sidewalks because they are less bumpy. We don't know how other disabled feel. Maybe the question could be asked in the next survey. What would the cost differential be? Sidewalk repair needs to have a higher priority. For a wheelchair/scooter a buckle in a sidewalk is equivalent to what a hole in pavement is to a car.

20. PROBLEM - HOLES IN PAVEMENT SURFACE

Often crosswalks have holes in the pavement. This causes problems see above. Example Carling & Marivale. Alone or combined with other conditions it may force the wheelchair out into oncoming traffic in order to cross the street.

21. PROBLEM - GARBAGE CANS ON GARBAGE PICK UP DAYS

One day a week every sidewalk becomes inaccessible to wheelchairs and scooters. After emptying blue boxes & garbage cans, garbage men throw them onto the sidewalk and therefore into the path of wheelchairs/scooters. Some disabled persons have sufficient strength and flexibility to move them. Many don't! Consequently on such days wheelchairs often must drive on the streets. This is dangerous!

RECOMMENDATION

The garbage men and homeowners must be educated to place all blue boxes & garbage cans on lawns.

POTENTIAL WORK PLAN COMPONENTS

1. Walking

- Review practices and standards:intersection design
- Review practices and standards:lighting
- Review practices and standards:signal timing
- Review practices and standards:maintenance
- Pedestrian safety education programmes
- Promote walking and increase profile of pedestrian issues
- Review design circulations for Transportation Master Plan conformance

2. Cycling

- Identify one-year programme for the cycling transportation network improvements
- Participate on the Regional Cycling Advisory Committee
- Review practices and standards:intersection design
- Review design circulations for TMP conformance
- Increase cycling amenities at transitway stations
- Increase cycling amenities elsewhere in the transportation system
- Review practices and standards:signal timing
- Review practices and standards:maintenance
- Cycling safety education programmes
- Promote cycling and increase profile for cycling issues
- Maintain and update cycling map

3. Roadway

- Implement employer-based traffic reduction programmes
- Implement community/household-based traffic reduction programmes
- Promote car-pooling
- Implement car pool parking lot programme
- Provide ridesharing information and services to targeted markets
- Develop and implement HOV programme

4. Travel Environment

- Identify areas for potential traffic calming initiatives
- Develop and maintain traffic calming priority ranking system
- Undertake neighbourhood and arterial traffic calming studies
- Implement approved traffic calming measures
- Develop and pilot new traffic calming approaches
- Create and implement education programmes with regard to individual driving behaviour