

March 18, 1999

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(File: EW-2040-6)

Department of Urban Planning and Public
Works

Ward/Quartier
City Wide

- Community Services and Operations
Committee / Comité des services
communautaires et des opérations
- City Council / Conseil municipal

Action/Exécution

Cycling - Regulations - Contra-Flow Bicycle Lanes

Cyclisme - Règlements - Voies cyclables à contresens

Recommendations

1. That, within the scope of the Council- approved *Comprehensive Cycling Plan*, City Council approve in principle the use of “contra-flow” reserved bicycle lanes on roadways under the jurisdiction of the City of Ottawa, as a matter of policy and approve the “Implementation Policy” for the establishment of “contra-flow” bicycle lanes as set out in **DOCUMENT 1**.
2. That, subject to the approval of Recommendation 1, in implementing the policy decision, a contra-flow bicycle lane be established, *as a pilot project*, on Stewart Street between Waller Street and Cumberland Street, with “closure” of the lane during winter months, by erecting advisory signage; and
3. That, subject to the approval of Recommendations 1 and 2, the notification requirements of the Municipal Act, Section 314 (2) be commenced respecting the proposed “contra-flow” reserved bicycle lane and consequential traffic regulations, and indicating the date and time CSOC will hold the hearing to consider the amendments, pertaining to the establishment of a “contra-flow” bicycle lane on Stewart Street (Waller to Cumberland) and complimentary traffic regulations on Stewart Street (Waller to Cobourg) to the Traffic and Parking By-law Number 1-96 as detailed in **DOCUMENT 6**; and

4. That staff prepare a report to CSOC in the fall of 1999 on the findings and operation of the Stewart Street pilot project, and potential for further use of contra-flow bicycle lanes.



March 23, 1999 (10:55a)

Edward Robinson
Commissioner of Urban Planning and Public
Works

DAH:lf

Contact: Robert Orchin - 244-5300 ext. 1-3662



March 23, 1999 (1:30p)

Approved by
John S. Burke
Chief Administrative Officer

Financial Comment

Subject to City Council approval, funds in the amount of \$15,000 are available in Comprehensive Cycling Plan Implementation - Capital Project 984950 and a new sub-project will be opened as follows:

Sub-Object	GROSS	RVP
984951 Stewart Street Bicycle Lane	\$15,000	\$15,000

The evaluation of the pilot project is to be done by City staff and from within the Department of Urban Planning and Public Works approved 1999 operating budget.



March 23, 1999 (10:03a)

for Mona Monkman
City Treasurer

JG:cds

Executive Report

Reasons Behind Recommendations

EXECUTIVE REPORT

Background

City Council approved the Comprehensive Cycling Plan (CCP) in 1994. The CCP is a statement of Council direction for the promotion and encouragement of cycling as a means of transportation. It contains both policy and technical guidelines for the implementation of cycling facilities.

In selecting and implementing cycling facilities, it is important to give consideration to two guiding principles in particular, of the ten guiding principles that are part of the CCP. The first is that “*every road is a cycling road*”. This principle asserts that barriers to access by cyclists will be overcome wherever possible. The second applicable principle is that “*access to all destinations will be provided by the most direct route*”. The basis for this principle is that direct, continuous routes are essential to encouraging the use of bicycles as transportation.

The CCP, in describing the types of bicycle facilities which may be implemented on roadways, states:

“Contra-flow bicycle lanes may be used in certain situations. Contra-flow bicycle lanes permit cyclists to ride against the flow of traffic (normally on a one-way street).”

Contra-flow bicycle lanes, therefore, have been identified as an on-road bicycle route facility option that meets the objectives of providing safe, convenient access to all destinations for cyclists. They may be considered in situations where direct access by any other means is not possible or practical.

Recommendation 1

A contra-flow bicycle lane may be described as a “modified” two-way road - bicycles and motor vehicles traveling in one direction and bicycles only traveling in the other direction. Contra-flow bicycle lanes are implemented only on roads which are otherwise restricted to one-way motor vehicle traffic. The lane designated for contra-flow bicycle traffic is separated from the remaining lane(s) by a double-width (200 mm or 8") solid yellow line.

Currently in Ottawa, there are several examples of dedicated bicycle facilities that have been implemented to provide a direct connection for cyclists between two routes without using contra-flow lanes. On Percy Street, between Catherine Street and Flora Street, a *bicycle boulevard* has been constructed to provide northbound cyclists a connection to the Bay Street bicycle route. There are several disadvantages to this type of facility:

- it does not promote the basic principle that bicycles are vehicles and should, therefore, be on the roadway;
- boulevards are more costly to build and to maintain; and
- parking of vehicles by residents or placing garbage on the boulevard for collection impedes the passage of bicycles.

The implementation of bicycle boulevards for contra-flow travel does, however, show that bicycles do travel against the flow of motor vehicle traffic, while not separated by a barrier. The recreational pathways along Colonel By Drive and at several other locations are immediately adjacent to the roadway with the bicycles on the pathway traveling in the opposing direction of travel to the vehicles on the roadway. Staff are not aware of any safety-related issues pertaining to these existing facilities.

A search of other jurisdictions has been carried out to identify other experiences with implementing contra-flow lanes. In Canada, there is only one city that has initiated a contra-flow lane project. Toronto implemented a contra-flow lane in November 1998. The project is not yet complete and no data is available at this time. Contra-flow bicycle lanes, however, have been implemented successfully in many American jurisdictions to address situations where there is no other viable option to provide cyclists with a direct cycling route to specific destinations. They have also been used effectively where cycling hazards on an adjacent, often longer route are considered a greater risk than any potential risks from a contra-flow lane.

While, to our knowledge, Toronto is the only city in Ontario to have implemented a contra-flow lane, the Transportation Association of Canada (TAC) has included this type of facility in its most recent review (1998) of bicycle signs and pavement markings and provides a guideline for the implementation of contra-flow lanes which is applicable in Ontario. It is acknowledged that neither the TAC guideline nor the City's own Comprehensive Cycling Plan promote the use of contra-flow lanes over more typical road configurations. However, based on the information obtained from TAC as well as from various American sources and discussions with staff at the City of Toronto, a policy for the implementation of contra-flow lanes on City of Ottawa streets has been developed.

Contra-flow bicycle lanes can be considered for implementation where there is a need to accommodate cyclists, and there is no effective, reasonable alternative. This is included as part of the implementation policy detailed in **Document 1, Contra-flow Bicycle Lanes - Implementation Policy.**

A diagram showing a typical configuration is shown in **Document 2 - Transportation Association of Canada Guidelines. Document 3 - Contra-flow Bicycle Lanes - Background** sets out the definition for contra-flow lanes and details the advantages and disadvantages of them. **Document 4 - Summary of Experience on Contra-flow Bicycle Lanes** gives testimonial statements from some of the professionals in other jurisdictions where contra-flow lanes have been implemented.

Legal Authority

Neither the Municipal Act nor the Highway Traffic Act specifically authorize the establishment of "contra-flow" bicycle lanes. The Municipal Act (Section 314 (1), para. 10), however, does authorize the establishment of reserved bicycle lanes as lanes solely or principally for the use by bicycles and for prohibiting and regulating its use by other vehicles, if such regulation is not in conflict with the Highway Traffic Act.

The Office of the City Solicitor has indicated that there is a degree of risk in establishing contra-flow bicycle lanes as there is no specific authority to authorize the establishment of "contra-flow" bicycle lanes and no specific provisions dealing with these lanes and traffic movement (although there is authority to establish reserved bicycle lanes).

The risks, among others, is that creating a condition where bicycle/vehicular accidents would be more likely to occur than otherwise as a result of the "contra-flow" of cyclists to vehicular traffic. Currently, there is no Federal or provincial government sanction that such lanes are

permissible and thus do not pose a safety hazard to cyclists and motorists. However, the City can help to limit its liability exposure in implementing “contra-flow” lanes by having regard to and utilizing, where appropriate, measures adopted in American jurisdictions concerning safety issues. If such steps are taken, it is anticipated that any risks associated with “contra-flow” lanes could be adequately managed, and would not be disproportionate to the anticipated advantages.

Council can, based on the Implementation Policy established, make a policy decision to implement “contra-flow” bicycle lanes in accordance with Policy. This would also further reduce the chance of successful litigation in the event of adverse consequence.

Given the provisions of the Municipal Act, which authorizes the establishment of reserved bicycle lanes, contra-flow lanes would be established as reserved bicycle lanes under City of Ottawa By-law Number 1-96, Section 41A (1), and regulated as provided for in Section 41A (2). Cyclists are also required to abide by the regulations in Section 72 of the same by-law.

To ensure that the contra-flow lane does not conflict with the Highway Traffic Act, it would be necessary to:

- rescind the one-way designation, establishing the road for two-way traffic;
- restrict “wrong-way” motor vehicle traffic by using prohibited movement signage for motor vehicle traffic;
- designate the contra-flow bicycle lane as a Reserved Bicycle Lane;
- maintain compliance with the Highway Traffic Act requirements.

The Highway Traffic Act provisions are in addition to a common law obligation to exercise due care - they will be regarded as no more than a minimum requirement.

Maintenance and Liability

Bike lanes currently do not receive “special” treatment. Current maintenance practices are consistent with established quality standards for the class of road.

Road maintenance levels are based on current Council-approved standards and are not specific to the type of vehicle using the facility, such as bicycles. Currently, cycling facilities are not given specific winter maintenance. Based on the Winter Cycling Pilot Project, conducted during the winters of 1995 and 1996, it was determined that current winter cycling levels did not warrant the additional expenditure of funds on special treatment of cycling facilities. Recently constructed cycling facilities (e.g. Percy Street Bicycle Boulevard, pathway links at Cobourg Street, Hardy Avenue) do not receive any specific winter maintenance as current funding levels are not sufficient to accomplish this.

Consistent with this approach, staff cannot recommend that the proposed Stewart Street contra-flow bicycle lane receive any special winter treatment outside the regular street maintenance. Stewart Street is currently maintained as a “Class 1” street, therefore, the highest standard which could be applied under approved standards is already being applied to this street. As such, a high level of service (relative to most other roadways) will be available to those cyclists who wish to use Stewart Street during the winter months. However, snowbanks will build up on the side

of the street (as occurs with the “standard” level of winter maintenance) and, therefore, cyclists may be forced, on occasion, to ride outside of the marked contra-flow lane, and against the flow of motor vehicle traffic. Based on this fact, the Office of the City Solicitor has advised that there may be an obligation (liability) on the part of the City to provide increased winter maintenance of the contra-flow lane. This would entail complete snow removal on one side of the street, and an extra level of snow and ice control. It is estimated that this level of “special” maintenance activity could cost up to \$25,000 per winter season. Staff cannot recommend this level of service be provided for this pilot project, as it is inconsistent with the current Council-approved standards for roadways, and winter maintenance practices for bicycle facility maintenance.

As staff cannot recommend an increased level of winter maintenance be provided, and to address the issue of liability as identified by the staff of the Office of the City Solicitor, staff have examined the three situations:

1. Contra-flow lanes be maintained based on current approved standards and no advisory signage erected;
2. “closure” of the contra-flow lanes during winter months, by erecting advisory signage as follows: *“Contra-flow Reserved Bicycle Lanes do not receive winter maintenance - use solely at own risk”*;
3. “closure” of the contra-flow lanes during winter months, by erecting advisory signage referred to above and establishment of an alternative route.

Situation 1 would be the status quo for cycling facilities.

Situation 2 would include the erecting of signs at the beginning of contra-flow bicycle lanes indicating that the lane does not receive specific winter maintenance with the wording: *Contra-flow Reserved Bicycle Lanes do not receive winter maintenance - use solely at own risk*. With respect to this situation, the Office of the City Solicitor advises that the legal issues can be addressed in several ways, one of which is to approve the establishment of reserved bicycle lanes as a policy decision and therefore significantly reduce the chance of legal liability as the result of the implementation of the Council-approved policies. Situation 2 has been recommended as the best approach to address these concerns.

Situation 3 - the establishment of an “alternate” route for the winter months, would require additional signage, and the associated annual expenses. Additional modifications to the existing road system may be required, to accommodate bicycles. This may, in some areas, result in a major detour of the “desired” bicycle route, thus contrary to the intent of establishing or considering contra-flow bicycle lanes and, therefore, it has not been investigated further.

Recommendation 2

As part of the implementation process of the Comprehensive Cycling Plan (CCP), and discussions with representatives of the Ottawa Cycling Advisory Group (OCAG), several locations have been identified for consideration of the implementation of contra-flow bicycle lanes. These locations, as follow, are part of the Bicycle Route Network, as identified in the CCP:

- Stewart Street from Waller Street to Cumberland Street
- Gladstone Avenue from Elgin Street to Cartier Street
- Cameron Avenue from Bank Street to Seneca Avenue
- Bay Street from Wellington Street to Gloucester Street

These locations are described in further detail in **Document 5 - Candidate Locations for “Contra-flow” Bicycle Lanes (including Stewart Street Contra-flow Bicycle Lane Proposal)**.

Rationale for Recommended Contra-flow lane on Stewart Street:

Stewart Street, between Waller Street and Cumberland Street, is recommended by staff for implementation in accordance with the Implementation Policy as an appropriate location for a pilot contra-flow bicycle lane, as:

- the Region completed construction of the Mackenzie-King Bridge, including bike facilities in 1998, and an easterly connection is required;
- Stewart Street, King Edward Avenue to Waller Street is included in the proposed 1999 Road and Sewer Program, and the contra-flow bike lane can be incorporated within the reconstruction project; and
- the section of Stewart Street is one block long, which is ideal for the pilot of a contra-flow bicycle lane.

Stewart Street is currently signed as one-way westbound and is designated as part of the bicycle route on the north side of the street for bicycles traveling in a westbound direction. Cyclists traveling eastbound may use the designated bicycle lane on Wilbrod Street (from Cumberland Street to Cobourg Street). The extension of Wilbrod Street between Waller Street and Cumberland Street, however, belongs to the University of Ottawa, which does not wish it to be designated as a bicycle route. Implementing a contra-flow bicycle lane on Stewart Street between Waller Street and Cumberland Street will, therefore, provide a connection for cyclists traveling eastbound and will complete an important link in the larger Bicycle Route Network which designates the Albert/Slater and Stewart/Wilbrod corridor as the east - west bicycle route in this region. The Region has completed the Mackenzie-King Bridge reconstruction, which includes a central two-way bicycle facility. The Stewart/Wilbrod pair forms the last component of this route.

Further, it is noted that the Region has provided the opportunity for westbound bicycles to turn left from Stewart Street onto Waller Street by creating an opening in the median on Waller Street. They are also considering signing the bicycle route from the Mackenzie-King Bridge along Waller Street to Stewart Street, therefore, the implementation of the contra-flow lane on Stewart Street in the near future is key to the completion of this route.

The proposed contra-flow bicycle lane facility would be promoted through a variety of means. The statutory requirement for notification in the papers is the first method of advising the public of the proposed change to the roadway, details of which are dealt with in Recommendation 3. This would be followed up with an advertisement notifying the public of the implementation of the facility. Signage on site during the construction period could also advise potential users of the change. In addition, the facility would be promoted through the various cycling networks in the Region - through their newsletters and websites.

Recommendation 3

Required Notification and Changes to Traffic Regulations and Parking

Section 314 (1), paragraph 10, of the Municipal Act provides the authority for a municipality to establish reserved lanes for bicycles. The City of Ottawa Traffic and Parking By-law 1-96 [Section 41A (1)] provides for the establishment and regulation of the use of reserved bicycle lanes. Thus, it is possible to designate a lane on the roadway as “reserved for bicycles only”.

The above proposal is subject to public notification as required by subsection 314(2) of the Municipal Act. Notice of the proposed by-law must be advertised for four consecutive weeks including publication of the date at which time the by-law will be considered by Council. As, by virtue of subsection 56 (4) of the Procedure By-law, the Community Services and Operations Committee (CSOC) is appointed to hear parties interested in a proposed by-law designating reserved bicycle lanes in the place and stead of Council, the required notice will include the date at which CSOC will hold the hearing to consider the proposed by-law.

In order to establish this contra-flow bicycle lane within the framework of existing legislation and by-laws, it is necessary to remove the one-way signs on the block of Stewart Street between Waller Street and Cumberland Street, thus permitting two-way traffic; however, this two-way designation would apply to bicycles only. Motor vehicle traffic would still be restricted to westbound only (as currently exists) by the use of “Prohibited Turn” restrictions. If approved by Committee and Council, the Region of Ottawa-Carleton will be requested to amend its By-law 1-96, to incorporate required turning prohibitions on Waller Street at Stewart. The required markings and signage are shown in **Document 5 - Candidate Locations for “Contra-flow” Bicycle Lanes (including Stewart Street Contra-flow Bicycle Lane Proposal)**.

Existing parking restrictions on this block of Stewart Street include “No Parking” restrictions and “No Stopping” during peak hours on the north side of the street and “No Parking” restrictions and “No Stopping” with specific time periods on the south side of the street. As part of this proposal, the peak hour no stopping restrictions will be eliminated on both sides of the road. As well, the no parking on the north side would be replaced with “full-time” parking. Should the bicycle lane on the north side be deemed necessary, it would be placed at a point 2.5 metres from the curb, to allow for on-street parking. “No Stopping” restrictions would be implemented on the south side of the street effective at all times. These proposed changes to the parking regulations have been circulated to adjacent landowners. No comments were received. The required amendments to the schedules of the City’s Traffic and Parking By-law number 1-96 are detailed in **Document 6 - Proposed Revisions to the City of Ottawa Traffic and Parking By-law 1-96**.

Complimentary to this proposal, there are a number of existing provisions within the City’s Traffic and Parking By-law 1-96 pertaining to parking and stopping on Stewart Street. It is necessary to amend several schedules of the said by-law which relate to Stewart Street between Waller Street and Cobourg Street.

On Stewart Street east of Cumberland Street (east of the contra-flow bicycle lane as proposed) there are no significant changes to existing signage or regulations, other than the removal of peak hour no stopping regulations. The by-law amendments pertaining to the section of Stewart Street east of Cumberland Street are required as a result of amendments to accommodate the contra-flow bicycle lane between Waller Street and Cumberland Street..

Signs will be installed to notify users that “*contra-flow reserved bicycle lanes do not receive winter maintenance - use solely at own risk*”. This will limit the risk of the City to liability with respect to the use of the contra-flow lanes in winter.

Recommendation 4

As noted under the reasons for Recommendation 2, staff have identified a number of locations for potential implementation of contra-flow bicycle lanes. However, because no contra-flow lanes have been established within the city, it is recommended that a complete evaluation of the proposed pilot project on Stewart Street be completed before any further contra-flow lanes are implemented. The evaluation period should be during prime cycling season.

As part of the evaluation, close monitoring of the pilot project would be undertaken. This will include vehicle volume counts, actual and perceived safety, and compliance with posted signage. Opinions of motorists and cyclists will be sought. In addition, roadway conditions and current maintenance standards will be examined to determine if the current Council-approved Quality Standards are appropriate for exclusive cycling facilities. The analysis of data and findings related to the evaluation and an assessment of the overall safety of the facility will be used to determine whether or not additional contra-flow lanes should be implemented. Staff will prepare a report to CSOC following the evaluation of the pilot project. Specific Council approval will be required prior to the consideration of contra-flow bicycle lanes at other candidate locations.

Economic Impact Statement

Funds will be required for the cycling-related component of the proposed 1999 Road and Sewer reconstruction of Stewart Street. The estimated cost for the pilot project is up to \$15,000. This includes pavement markings, signage, and modifications to curbs. Sufficient funds are available within the CCP Implementation Capital Budget.

As cycling facilities receive the level of road maintenance based on the current Council-approved Quality Standard, no additional maintenance costs would be incurred.

Environmental Impact

No environmental impact is anticipated as the recommendations fall within the MEEP Automatic Exclusion List - Section 1 (f) Routine Operations.

Consultation

Public consultation has been undertaken to address three main areas pertaining to this project; the concept of contra-flow bicycle lanes, the proposed changes to parking provisions and the proposed physical roadway changes. This consultation is summarized below and detailed in **Document 7 - Compatibility with Public Participation Policy**.

On the issue of the concept, staff have consulted with the Ward Councillor and with the Ottawa Cycling Advisory Group (OCAG). OCAG supports the recommendations of staff on the concept of contra-flow bicycle lanes and the Stewart Street pilot project proposed in this report.

On the issue of changes to parking provisions, staff have consulted with the Ward Councillor and with adjacent landowners. This was done by way of a flyer that was distributed to each building along the affected block of Stewart Street. The flyers were distributed July 29, 1998. No comments were received. A public meeting was held on January 20, 1999, to present the proposed road layout for Stewart Street, Waller to King Edward. This included discussion of the contra-flow bicycle lane. No concerns or objections were raised.

On the issue of physical roadway changes, the Municipal Act, Section 300, requires that public notice of any modifications to the roadway or traffic operations be given in the daily papers for 4 consecutive weeks. The notices were placed in the daily papers commencing August 14, 1998. No comments were received.

Staff have consulted with Action Sandy Hill. As several of the proposed physical changes are in keeping with the Sandy Hill Traffic Calming Plan and have already been approved by Council, these measures do not have to be re-advertised.

Further, Section 314 (2) requires that notice of a proposed by-law to establish a bicycle lane be published for four consecutive weeks including the time and date of the meeting at which CSOC will consider the by-law. If the policy and pilot project proposed in this submission are approved by Council, the appropriate notification will be given as described in Recommendation 3.

Options and Analysis of Options

Bicycle Facility:

There is one option to the implementation of a contra-flow bicycle lane - the construction of a bicycle boulevard along the south side of Stewart Street. This facility would provide a raised bicycle lane beside the sidewalk. Such a facility presents problems with respect to conflicts with pedestrians at the intersections. Cyclists turning onto Stewart Street from Waller Street would cross the pedestrian sidewalk before reaching the bicycle boulevard. The OCAG and Citizens for Safe Cycling (CfSC) have indicated strong disapproval of this type of design. OttaWalk has also indicated a negative response to any design that creates a potential conflict between pedestrians and cyclists.

A bicycle boulevard along Stewart Street could cost approximately \$20 - 40,000.

Departments Consulted

Ottawa-Carleton Regional Police Service

The Ottawa-Carleton Police Service note that their mandate pertains to the enforcement of the Highway Traffic Act and Ottawa By-laws. They recommend that all signs directing traffic be clearly posted for both cars and bicycles in order to facilitate enforcement. They further recommend that a stop sign for cyclists be erected at the end of the contra-flow lane if no other traffic control is present. Directional signage should also be installed.

Departmental Response

The Department agrees with the recommendation for signage.

The Police Service makes a further recommendation; that a by-law be passed requiring cyclists to remain in the (contra-flow) lane in order to limit the risk they would incur in riding outside of this lane. Cyclists should also not be permitted to travel in the wrong direction in the bicycle lane.

Departmental Response

The Department cannot agree with this recommendation as it is contrary to general rules of the road, Highway Traffic Act and which permit vehicles to travel outside of their designate lane for specific reasons.

Operations Branch, Department of Urban Planning and Public Works

Department of Corporate Services, Office of the City Solicitor

Comments from the Office of the City Solicitor and Operations Branch are incorporated within this report.

Disposition

Recommendation 2:

Department of Urban Planning and Public Works to implement the contra-flow bicycle lane on Stewart Street as a pilot project, including the required changes to parking signs and parking stall markings.

Recommendation 3:

Office of the City Solicitor to prepare and process the amending by-law to Council.

Department of Urban Planning and Public Works to carry out the required public notification.

Department of Urban Planning and Public Works to request Region of Ottawa-Carleton to process a by-law amendment to introduce turn restrictions on Waller Street, at Stewart Street.

Recommendation 4:

Department of Urban Planning and Public Works to carry out the monitoring and evaluation and prepare a report to CSOC on the findings.

List of Supporting Documentation

- Document 1: Contra-flow Bicycle Lanes - Implementation Policy
- Document 2: Transportation Association of Canada Guidelines
- Document 3: Contra-flow Bicycle Lanes - Background
- Document 4: Summary of Experience on Contra-Flow Bicycle Lanes
- Document 5: Candidate Locations for “Contra-flow” Bicycle Lanes (including Stewart Street Contra-flow Bicycle Lane Proposal)
- Document 6: Proposed Revisions to the Traffic and Parking Bylaw 1-96
- Document 7: Compatibility with Public Participation Policy

Part II - Supporting Documentation

CONTRA-FLOW BICYCLE LANES - IMPLEMENTATION POLICY Document 1

The policy of the Council of the City of Ottawa with respect to contra-flow bicycle lanes shall be as follows:

Contra-flow bicycle lanes can be implemented where there is a need to accommodate cyclists, and there is no effective, reasonable alternative.

Policy for Implementation

Selection of a potential location and implementation of a contra-flow bicycle lane shall be in conformity with the following policy statements:

1. Contra-flow lanes shall only be implemented on one-way streets; these streets may typically exhibit the following characteristics:
 - low motor vehicle traffic volumes
 - moderate to high bicycle volumes or may expect moderate to high bicycle volumes (there are currently no absolute figures given for this calculation; factors to consider include destination points, proximity of other bicycle routes, existing classification of road)
 - observation of current travel patterns among cyclists may identify a potential location for a contra-flow lane
2. Bicycle lanes shall be implemented in BOTH directions except in specific cases.
 - low-volume, residential streets
 - streets with insufficient pavement width to accommodate two bicycle lanes
 - in all cases, the contra-flow bicycle lane shall be implemented
3. The width of the road shall be sufficient to support bicycle movements in both directions.
 - a typical cross-section may include one or two lanes of travel in one direction or may include one travel lane and one parking lane
 - only one of the bicycle lanes will be a contra-flow lane; the other reserved bicycle lane (if applicable) will travel with the normal flow of traffic on the street
 - the standard bicycle lane width of 1.5 metres should be widened if there are obstacles in the travel path of cyclists (e.g. sewer grates consistently located within the lane).
4. The contra-flow bicycle lane shall be designed to merge cyclists safely back into regular traffic at both ends of the contra-flow section.
5. There should be a minimum of intersections along the contra-flow lane, including driveways and cross-streets, as intersections with cross-streets present a potential conflict point for cyclists and motorists.

6. On-street parking may be permitted, however, the parking shall only be on the right-hand side of the street (relative to the direction of motor vehicle travel - opposite side of street to contra-flow bicycle lane).
 - should a reserved bicycle lane be provided in the direction of motor vehicle traffic, it shall be a minimum of 1.5M in width
 - should a reserved bicycle lane not be implemented next to the parking lane, the travel lane width shall be wide enough for bicycles to travel adjacent to the parked vehicles while maintaining sufficient clearance to avoid open vehicle doors
 - parking bays should be provided where feasible to discourage motor vehicles from driving in the parking lane

S the side of the street where the contra-flow bicycle lane is established shall be designated as “No Stopping”

8. Signs and pavement markings shall include the following:
 - a double-width (20 cm or 8") solid yellow directional dividing line adjacent to the contra-flow bicycle lane
 - a solid white line adjacent to the bicycle lane traveling with the normal flow of traffic (if applicable)

S “Except Bicycles” tab signs installed below applicable turn prohibition and no-entry signs

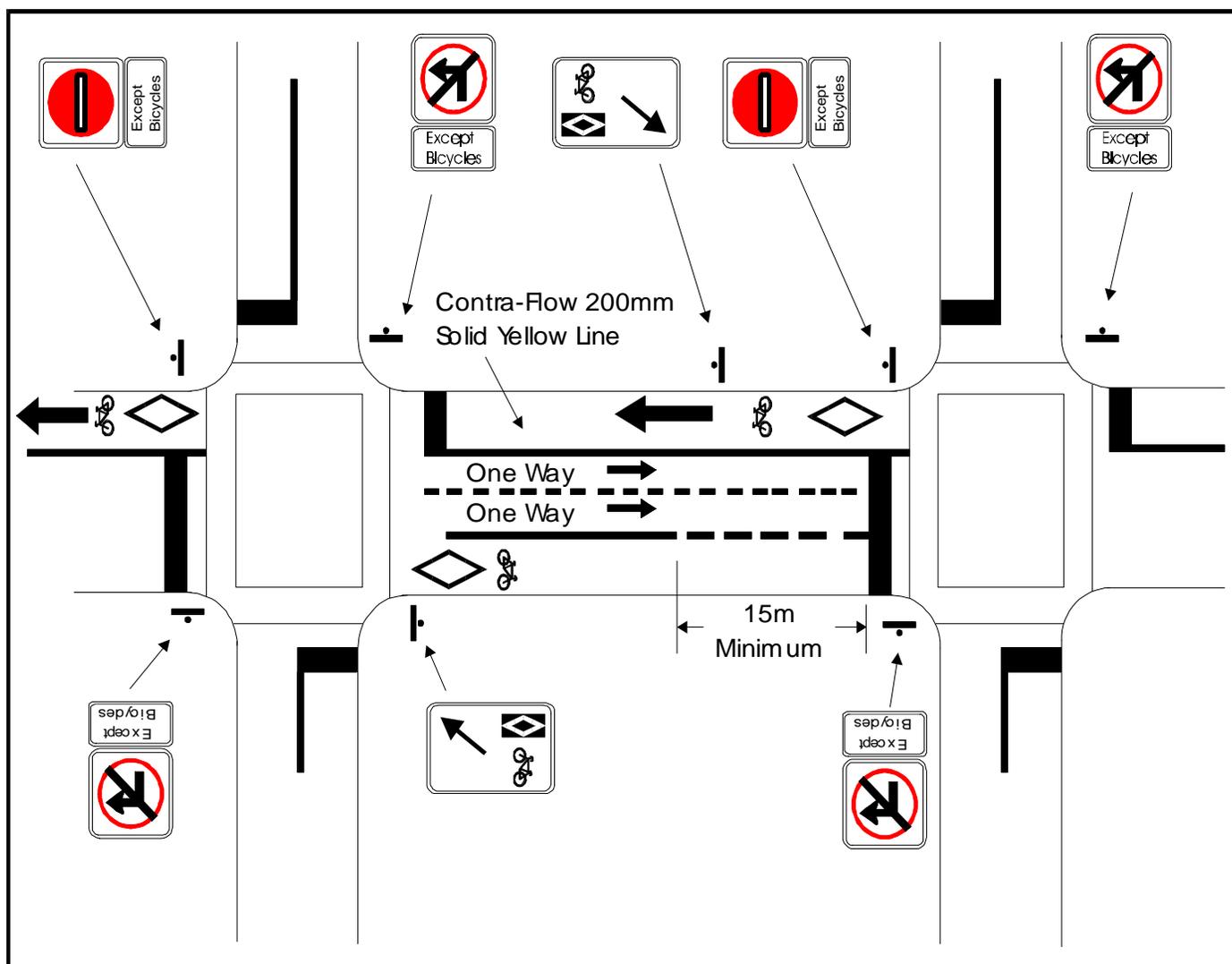
 - “Two-way Traffic - Bicycles Only Ahead” signs installed on approach to section with contra-flow bicycle lane
 - “Bicycles Crossing” signs on approach to intersection with contra-flow lane
 - “Contra-flow Reserved Bicycle Lanes do not receive winter maintenance - use solely at own risk” signage on section with contra-flow bicycle lane
 - signalized intersections shall require new signal head(s) facing cyclists in the contra-flow lane, to be signed as “Bicycle Signal”
 - non-signalized intersections having stop controls shall require appropriate stop signs and markings facing cyclists in the contra-flow bicycle lane

Transportation Association of Canada Guidelines

The Transportation Association of Canada (TAC) recently reviewed all signage and pavement markings which pertain to bicycles. A recommended package for implementation in Canada has been developed. Contra-flow lanes for bicycles are recommended only in exceptional cases, on roadways where the motorized traffic is restricted to one-way flow. In these cases, contra-flow bicycle lanes may be implemented in the following manner:

- wide (200 mm or 8") solid yellow directional dividing line adjacent to contra-flow bicycle lane
- 100 mm solid white line adjacent to "with-flow" bicycle lane
- "Except Bicycles" tab signs installed below applicable turn prohibition and no-entry signs

Full-Time Contra-Flow Bicycle Lane (Transportation Association of Canada)



CONTRA-FLOW BICYCLE LANES - BACKGROUND

Document 3

Definition

A contra-flow bicycle lane is described as follows:

A contra-flow bicycle lane is technically a two-way road - bicycles and motor vehicles going in one direction and bicycles only going in the other direction. Contra-flow bicycle lanes are implemented only on roads which are otherwise restricted to one-way traffic. The lane designated for contra-flow bicycle traffic is separated from the remaining lane(s) by a double-width (200 mm or 8") solid yellow line.

Contra-flow Lanes - Advantages and Disadvantages

Advantages

- A contra-flow lane provides substantial savings in out-of-direction travel for cyclists.
- A contra-flow lane provides direct access to high use destinations.
- There is improved safety because of reduced conflicts compared to the longer route.
- There are a substantial number of cyclists using the street or there will be a substantial number of cyclists using the street as a result of changes in adjacent roads, which the contra-flow lane will accommodate.

Disadvantages

- Motorists on cross streets must be educated to expect cyclists traveling in a direction contrary to the motor vehicle flow.
- The implementation of a contra-flow bicycle lane may involve the removal of on-street parking.
- The intersection of one-way streets with other one-way streets must be designed to prohibit motorists from the otherwise permitted left turn on a red light.
- All users must be educated on the correct use of contra-flow lanes.
- Contra-flow lanes must be designed to safely re-integrate cyclists with traffic at the end of the contra-flow lane.

SUMMARY OF EXPERIENCE ON CONTRA-FLOW BICYCLE LANES

Ontario Experience

The City of Toronto has implemented a contra-flow bicycle lane (November 1998), however, given the short period of time that it has been in place, no evaluation data is available. The contra-flow lane is located on Strathcona Avenue, a local street with low traffic volumes and provides a bypass to the congested Danforth Avenue. At time of writing, the signage had not yet been installed.

Comments from Other Jurisdictions Already Using Contra-flow Bike Lanes

An inquiry about experience with contra-flow bicycle lanes was sent to members of the Association of Pedestrian and Bicycle Professionals via e-mail. The following comments were received:

- **Oregon (Eugene)**
Michael Ronkin, *Bicycle/Pedestrian Co-ordinator*
State of Oregon

“Eugene , Oregon has had good success with Contra-flow bike lanes. They have installed contra-flow bike lanes on residential streets. It is very, very important that you segregate the contra-flow bike lane with a double yellow line; by doing this, you have created a legal travel lane - otherwise you are encouraging wrong-way riding.

Signing and marking is important - the double yellow stripe creates a very visible clue to motorists entering the roadway. All ONE-WAY signs have to have an “EXCEPT BIKES” or “WATCH FOR BIKES” rider.

Contra-flow bike lanes must be placed on the right side of the roadway (otherwise you’re in violation of one of the most fundamental rules of the road). So bicyclists aren’t “wrong-way” riders, they’re simply in a travel lane (albeit narrow) where motor vehicles aren’t allowed.

It’s not ideal nor is it as bad as one might expect. We work very hard at discouraging wrong-way riding, because we know how bicyclists appear in unexpected locations ; by creating a contra-flow bike lane, we can take preventative and proactive measures.”

Oregon Bicycle and Pedestrian Plan (excerpt from 1995)

Contra-Flow bike lanes on one-way streets are not usually recommended. They may encourage cyclists to ride against traffic, which is contrary to the rules of the road and a leading cause of bicycle/motor vehicle crashes. There are however special circumstances when this design may be advantageous:

- A contra-flow bike lane provides a substantial savings in out-of-direction travel
- The contra-flow bike lane provides direct access to high-use destinations
- Improved safety because of reduced conflicts on the longer route
- There are few intersecting driveways, alleys or streets on the side of the contra-flow-lane
- Bicyclists can safely and conveniently re-enter the traffic stream at either end of the section
- A substantial number of cyclists are already using the street
- There is sufficient street width to accommodate a bike lane

A contra-flow bike lane may also be appropriate on a one-way, residential street recently converted from a two-way street (especially where this change was made to calm traffic).

For a contra-flow bike lane to function well, these changes should be incorporated into the design:

- The contra-flow bike lane must be placed on the right side of the street (to the motorist's left) and must be separated from on-coming traffic by a double yellow line. This indicates that the bicyclist's are riding on the street legally, in a dedicated travel lane.
- Any intersecting alleys, major driveways and streets must have signs indicating to motorists that they should expect two-way bicycle traffic.
- Existing traffic signal should be fitted with either loop detectors or push-buttons (these should be easily reached by cyclists without having to dismount).

NOTE: under no circumstances should a contra-flow bike lane be installed on a two-way street, even where the travel lanes are separated with a raised median.

- **Oregon (Eugene)**
Diane Bishop, *Bicycle/Pedestrian Co-ordinator*
Department of Transportation
City of Eugene, Oregon

“We think that the reason Contra-flow bike lanes work so well in Eugene, Oregon, is that motorists have to move slowly and carefully because of the number of pedestrians walking all over and crossing mid-block.”

- **Oregon**
John Ciccarelli, *Bicycle Program Manager*
Stanford University Parking and Transportation Services
Stanford, California

“Oregon’s safe and effective contra-flow bike lane orientation:

I agree that a median island with a double yellow line reinforces that such a street is one-way for cars.”

- **Colorado (Boulder)**
Joseph Gellings

“We have a fairly successful contra-flow bicycle lane through the middle of downtown Boulder, Colorado.”

“The 13th Street contra-flow lane runs through downtown for a 3-block stretch where the road is one-way for motor vehicles. 13th Street is a low volume street, with approximately 250 peak hour motor vehicles. The typical section throughout the contra-flow lane consists of an 8' bike lane (curb face to buffer zone), a 6' buffer zone which consists of alternating trees and concrete planters, a 10' motor vehicle lane and a 16' parking lane. Standard MUTCD bicycle lane signage and pavement markings are used at the beginning of each block. Also at the beginning of each block facing the bike lane traffic is the MUTCD standard “DO NOT ENTER” with a “BICYCLES EXCEPTED” plaque beneath. The other standard signage treatment for intersections involving a one-way street is applied. Essentially the segment with the contra-flow bike lane is signed as any one-way street the only difference being the addition of a few “BICYCLES EXCEPTED” plaques.

The contra-flow bike lane was built in 1993 with a large education campaign associated with it. Planted trees in the buffer must have their foliage above the sightlines we’re finding and in a re-design, we might also narrow the width of the bike lane.”

- **Massachusetts (Cambridge)**
Cara Seiderman, Bicycle/Pedestrian Co-ordinator
 City of Cambridge
 Cambridge, Massachusetts

“We have a contra-flow lane in Cambridge, MA on a short one-way street with low motor vehicle traffic volumes and lots of bicycles.”

In addition to the foregoing, a response was also received from a Canadian consultant involved in reviewing contra-flow lanes in a Canadian context.

- **Kevin I. Pacheco-Phillips, P.Eng.**
Marshall Macklin Monaghan Ltd.
Transportation Engineers, Toronto, ON

“Recently, I participated in a review of contra-flow bicycle lanes planning and traffic control schemes for use in Canada. Our group’s recommendation for the installation of a contra-flow bicycle lane is below. We do provide a caveat: this configuration is to be utilized only in exceptional cases on roadways where motorized traffic is restricted to one-way flow.

To address signing and pavement markings for the contra-flow bike lane, we denote the following:

- Wide (200mm) solid yellow directional dividing line adjacent to contra-flow bike lane;
- 100mm solid white line adjacent to with-flow bike lane; and
- “Except Bicycles” tab signs installed below applicable turn prohibition and no-entry signs.

The requirement of a 200 mm lane line may present a hazard situation for cyclists under wet conditions. This, combined with the “unusual” or “non-standard” operation of a contra-flow bicycle lane, requires caution in the design and application of this treatment.”

CANDIDATE LOCATIONS FOR CONTRA-FLOW BICYCLE LANES IN OTTAWA (including Stewart Street Contra-flow Bicycle Lane Proposal)

Several locations have been identified for consideration of the implementation of contra-flow bicycle lanes. These locations are part of the Bicycle Route Network, as identified in the Comprehensive Cycling Plan. They are as follows:

- **Stewart Street**

Stewart Street is one-way, westbound and has a designated bicycle lane on the north side of the street for bicycles traveling in a westbound direction. Cyclists traveling eastbound must use Wilbrod Street, which also has a designated bicycle lane. The section of Wilbrod Street between Waller Street and Cumberland Street, however, belongs to the University of Ottawa, which does not wish it to be designated as a bicycle route. Consideration is being given, therefore, to implementing a contra-flow bicycle lane on Stewart Street between Waller Street and Cumberland Street to accommodate cyclists traveling eastbound. The contra-flow lane would be located on the south side of Stewart Street. The Contra-flow bicycle lane proposal for Stewart Street is detailed in Appendix A of this document.

Details of the Proposed Contra-Flow Bicycle Lane on Stewart Street

If implemented, the eastbound contra-flow lane would be located on the south side of Stewart Street between Waller Street and Cumberland Street. Cyclists approaching Stewart Street from the Mackenzie-King Bridge would turn left (north) on Waller Street and then would turn right onto Stewart Street. Cyclists wishing to continue in an eastbound direction at Cumberland Street would be directed south on Cumberland Street to Wilbrod Street which now provides a designated bicycle lane for eastbound cyclists. This would be the normal travel pattern for a vehicle if Stewart Street was designated for two-way travel. Cyclists traveling westbound on Stewart Street would continue to use the existing designated bicycle lane which is located on the north side of Stewart Street.

Currently, Stewart Street is a typical local street with a road width of approximately 9.3 metres. It is proposed that an intersection narrowing be installed on the southeast corner of Stewart Street at Cumberland Street to divert motor vehicle traffic away from the contra-flow bicycle lane. Similarly, an intersection narrowing may have to be installed on the northwest corner of Cumberland Street at Stewart Street to divert southbound motor vehicle traffic away from the bicycle lane, next to the curb, that will run between Stewart Street and Wilbrod Street. The changes can be constructed permanently as part of the scheduled 1999 reconstruction of Stewart Street. Technical circulation and detailed design for the proposed facility is required.

The approved Traffic Calming plan for the Sandy Hill area identifies a narrowing of the pavement width on Stewart Street, between King Edward Avenue and Cumberland Street, as well as intersection narrowings (curb extensions) at the Stewart/Cumberland intersection. While the traffic calming proposals and the proposed contra-flow bicycle lane are

compatible for the most part, some minor revisions to the Sandy Hill plan will be required. However, the resulting widths of roadway available for motorized traffic will be consistent with the plan.

Two other alternatives were examined; i) conversion of the one block of Stewart Street to two way (thus eliminating the need for a contra-flow bicycle lane); and ii) providing a wider contra-flow bicycle lane (to help address the winter maintenance issue). With the limitation of this existing road width, neither alternative was found to be practical, and were not considered further. The first alternative (two-way roadway) was not feasible, as a total of 7.0M is available (9.5 M less 2.5M for parking) for two-way, mixed vehicle-cycle traffic. While perhaps sufficient in some cases, it is not of appropriate width to form part of the east-west cycling route (Stewart/Wilbrod-Waller; MacKenzie King Bridge, Albert/Slater). Providing a wider contra-flow lane to be able to accommodate some buildup would require an estimated width of 3.0M. The remaining width of 6.5M (9.5M less 3.0M) is insufficient to accommodate on-street parking, and mixed bicycle-vehicle traffic.

- **Gladstone Avenue**

Gladstone Avenue is one-way, eastbound between Elgin Street and Cartier Street. It forms part of a long, continuous bicycle route which includes Byron Avenue and the remainder of Gladstone Avenue. It connects with Cartier Street which is also part of the Bicycle Route Network. Implementation of a contra-flow bicycle lane would permit cyclists to travel in both directions on this connecting link of the Bicycle Route Network without having to travel on a street with higher volume of motor vehicles (Elgin Street). Consideration is being given to implementing a contra-flow bicycle lane on the north side of Gladstone Avenue to accommodate cyclists traveling in a westbound direction. To complement this facility, a designated bicycle lane would also be implemented on the south side of Gladstone for cyclists traveling in an eastbound direction. This section of Gladstone comprises one block with residential dwellings on one side of the street only. The other side of the street is a City park with a fence running the length of the block. There is no parking permitted on the street at this time.

- **Cameron Avenue**

Cameron Avenue is one-way, eastbound between Seneca Avenue and Bank Street. It forms an important link between the pathway through Brewer Park (and Carleton University) and Bank Street/Riverdale Avenue. Cameron Avenue has a signalized crossing at Bank Street which is a key element in cyclist preference of routes. Consideration is being given to implementing a contra-flow bicycle lane on the north side of Cameron Avenue to accommodate cyclists traveling in a westbound direction. A stop control for bicycles would be necessary at the intersection of Cameron Avenue and Seneca Avenue (for westbound cyclists) in conjunction with an intersection bulb-out to provide clearer visibility both for and of cyclists.

- **Bay Street**

Bay Street is one-way, northbound from Catherine Street to Wellington Street. There is currently a designated bicycle lane on the east side of the road accommodating cyclists traveling in a northbound direction. The southbound couplet to Bay Street is Percy Street, however, it can only be accessed by cyclists at Gloucester Street. The connection to Gloucester Street has been the west sidewalk along Bay Street. This route was implemented as an experiment long before any comprehensive cycle planning was undertaken. Current guidelines discourage the use of sidewalks shared between cyclists and pedestrian and therefore, an alternate route is being sought. Consideration is being given, therefore, to the implementation of a contra-flow bicycle lane on Bay Street between Wellington Street and Gloucester Street. This would accommodate cyclists traveling in a southbound direction to reach the Gloucester Street/Percy Street bicycle route.

PROPOSED REVISIONS TO THE TRAFFIC AND PARKING BYLAW 1-96

BY-LAW NUMBER ??-99

A by-law of The Corporation of the City of Ottawa amending By-law Number 1-96.

The Council of The Corporation of the City of Ottawa enacts as follows:

1. Schedule I of By-law Number 1-96 entitled "A by-law of The Corporation of the City of Ottawa regulating traffic and parking on highways" as amended, is amended by striking out the following:

PARKING PROHIBITED - SPECIFIED TIMES
AND PLACES - SIGNS

<u>Column 1</u> <u>Highway</u>	<u>Column 2</u> <u>Side</u>	<u>Column 3</u> <u>Between</u>	<u>Column 4</u> <u>Prohibited</u> <u>Times or Days</u>
Stewart St.	North	Waller St. and Cumberland St.	Anytime
Stewart St.	South	A point 30m east of Waller St. and Cumberland St.	9:00 a.m. to 3:30p.m. (e x c e p t S a t u r d a y s , S u n d a y s a n d P u b l i c H o l i d a y s)
Stewart St.	South	Waller St. and a point 30m east of Waller St.	Anytime

2. Schedule II of the said By-law Number 1-96 is amended by adding thereto the following:

STOPPING PROHIBITED IN SPECIFIED PLACES - SIGNS

<u>Column 1 Highway</u>	<u>Column 2 Side</u>	<u>Column 3 Between</u>	<u>Column 4 Prohibited Times or Days</u>
Stewart St.	South	Waller St. to Cumberland St.	Anytime

and striking out the following:

<u>Column 1 Highway</u>	<u>Column 2 Side</u>	<u>Column 3 Between</u>	<u>Column 4 Prohibited Times or Days</u>
Stewart St.	North	Waller St. and Cumberland St.	7:00 a.m. to 9:00 a.m. 3:00 p.m. to 5:30 p.m. (except Saturdays, Sundays and Public Holidays)
Stewart St.	South	Waller St. and King Edward Ave.	7:00 a.m. to 9:00 a.m. 3:00 p.m. to 5:30 p.m. (except Saturdays, Sundays and Public Holidays)

3. Schedule IV of the said By-law Number 1-96 is amended by adding thereto the following:

SPECIFIED PARKING PERIOD - SPECIFIED HIGHWAYS

<u>Column 1 Highway</u>	<u>Column 2 Side</u>	<u>Column 3 Between</u>	<u>Column 4 Times or Days</u>	<u>Column 5 Maximum Period Permitted</u>
Stewart St.	South	A point 15 m east of Cumberland St. and a point 15 m west of King Edward Ave.	8:00 a.m. to 6:00 p.m. Mon. to Sat.	1 Hour
Stewart St.	North	A point 15 m east of Waller St. and a point 15 m west of Cumberland St.	8:00 a.m. to 6:00 p.m. Mon. to Sat.	1 Hour

and striking out the following:

<u>Column 1 Highway</u>	<u>Column 2 Side</u>	<u>Column 3 Between</u>	<u>Column 4 Times or Days</u>	<u>Column 5 Maximum Period Permitted</u>
Stewart St.	South	King Edward Ave. and Cumberland St.	7:00 a.m. to 7:00 p.m.	1 Hour

4. Schedule XI of the said By-law Number 1-96 is amended by striking out the following:

THROUGH HIGHWAYS

Column 1 Highway Column 2 Between

Stewart St. The east street line of Waller St. and the west street line of King Edward Ave.

5. Schedule XII of the said By-law Number 1-96 is amended by adding thereto the following:

STOP SIGNS AT INTERSECTIONS

<u>Column 1</u> <u>Intersection</u>	<u>Column 2</u> <u>Direction</u>	<u>Column 3</u> <u>Highway</u>
Cumberland St. and Stewart St.	Northerly Southerly	Cumberland St.
Cumberland St. and Stewart St.	Easterly Westerly	Stewart St.

6. Schedule XV of the said By-law Number 1-96 is amended by adding thereto the following:

PROHIBITED MOVEMENTS

<u>Column 1</u> <u>Intersection,</u> <u>Property or</u> <u>Part of Highway</u>	<u>Column 2</u> <u>Direction</u>	<u>Column 3</u> <u>Prohibited</u> <u>Movement</u> <u>Directions</u>	<u>Column 4</u> <u>Prohibited</u> <u>Times or Days</u>
Cumberland St. and Stewart St.	Easterly	Straight	Anytime

7. Schedule XVI of the said By-law Number 1-96 is amended by adding thereto the following:

ONE WAY HIGHWAYS

<u>Column 1</u> <u>Highway</u>	<u>Column 2</u> <u>Between</u>	<u>Column 3</u> <u>Prohibited</u> <u>Times or Days</u>	<u>Column 4</u> <u>Direction</u>
Stewart St.	Cumberland St. and Cobourg St.	Anytime	in a westerly direction

and striking out the following:

Stewart St.	Cobourg St. and King Edward Ave	Anytime	in a westerly direction
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8. Schedule XVIII A of the said By-law Number 1-96 is amended by adding thereto the following:

RESERVED BICYCLE LANES

<u>Column 1</u> <u>Highway</u>	<u>Column 2</u> <u>Between</u>	<u>Column 3</u> Lane Reserved for <u>Bicycles</u>	<u>Column 4</u> Effective Times or <u>Days</u>	<u>Column 5</u> Direction of <u>Bicycles</u>	<u>Column 6</u> Distance for Right <u>Turns</u>
Stewart St.	Cumberland St. and Cobourg St.	Adjacent to north curb	Anytime	Westbound	15 m
Stewart St.	Waller St. and Cumberland St.	Adjacent to south curb	Anytime	Eastbound	Nil

and striking out the following:

<u>Column 1</u> <u>Highway</u>	<u>Column 2</u> <u>Between</u>	<u>Column 3</u> Lane Reserved for <u>Bicycles</u>	<u>Column 4</u> Effective Times or <u>Days</u>	<u>Column 5</u> Direction of <u>Bicycles</u>	<u>Column 6</u> Distance for Right <u>Turns</u>
Stewart St.	King Edward Ave and Cobourg St.	Adjacent to north curb	Anytime	Westbound	15 m

COMPATIBILITY WITH PUBLIC PARTICIPATION POLICY

Document 7

Publics Identified

The City of Ottawa Cycling Advisory Group was consulted on the proposed policy and pilot project. They support the recommendations of staff on the concept of contra-flow bicycle lanes and on the Stewart Street pilot project proposed in this report.

The City of Ottawa Pedestrian Advisory Group was consulted on the proposed policy and pilot project.

Residents on Stewart Street between Waller Street and Cumberland Street were notified of the proposed changes to the parking provisions by way of a flyer that was delivered to each building along the affected block of Stewart Street. No objections or comments were received.

Members of the general public were notified of the proposed physical changes to the roadway by way of an advertisement in the daily papers which ran for four (4) consecutive weeks. This is in compliance with requirements in the Ontario Municipal Act. No objections or comments were received. A public meeting was held on January 20, 1999, to present the proposed road layout for Stewart Street, Waller to King Edward. This included discussion of the contra-flow bike lane. No concerns or objections were raised.

Feedback to the Public and Further Notice

Given that no objections were received, there is no need to provide a response to the public. Prior to implementation, notice will be given to residents on Stewart Street in the affected area by flyer delivered to each building. Prior to major construction projects, staff hold "Open House" meetings in the various communities to provide the abutting residents an opportunity for comment. This will be carried out for Stewart Street, in preparation for the 1999 Road & Sewer work, and will include any proposed and/or approved cycling facilities.