# **Area Traffic Management Guidelines**

DRAFT

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# 1. INTRODUCTION

### WHAT IS AREA TRAFFIC MANAGEMENT?

Area Traffic Management (ATM) encompasses a process and a set of measures used to ensure that the streets within neighbourhoods are used appropriately. The primary concern is to ensure that the impact of motorized vehicles on these neighbourhoods is minimized, to improve safety and the quality of life of other street users and those impacted by the use of the street.

In order to achieve this, a variety of regulatory measures, physical measures, and programs can be used to address such issues as excessive vehicular speed, higher than desired traffic volumes, and inappropriate driver behaviour. Over the past decade, the term "traffic calming" has become popular in many locations to describe the process of dealing with traffic issues. In Ottawa, the City has chosen to use "area traffic management" as the term to describe the *process* of dealing with neighbourhood traffic concerns, and "traffic calming measures" as one specific set of physical *measures* (such as speed humps and mini traffic circles) among a broader set of measures that can be used to achieve the desired improvement. The City also uses other physical measures, regulatory measures (e.g. closures, turning prohibitions), and educational programs (e.g. neighbourhood speed watch) depending on the nature of the problem and the range of options.

It is important to realize that measures used to address problems typically have secondary impacts that can negatively affect some street users or residents. In deciding how to deal with problems, the expected improvement must be balanced against any such impacts that could occur. The net result of any area traffic management initiative should be positive, when all points of view are considered.

### NEED FOR AREA TRAFFIC MANAGEMENT GUIDELINES

The City of Ottawa decided to prepare guidelines for Area Traffic Management due to concerns over the multitude of approaches that were used by the twelve municipal governments before amalgamation in 2001. The new City's staff and council had been left with an assortment of policies and approaches that in some cases were in conflict. The harmonized approach and consistent set of measures, outlined in these Guidelines will ensure that the City can move forward and deal with neighbourhood traffic issues in a consistent and understandable manner.

These Guidelines implement the City of Ottawa's Official Plan and Transportation Master Plan policies as they relate to the impact of motorized vehicle traffic on neighbourhoods.

### ROLE OF AREA TRAFFIC MANAGEMENT

In June 2002, Council approved seven principles to guide the development of its Ottawa 20/20 Growth Management Strategy (including the Official Plan and Transportation Master Plan), and to influence subsequent day-to-day decisions.

Several of these principles are related to how the City deals with traffic-related issues in its neighbourhoods:

- A Caring and Inclusive City calls for safety and security within communities
- A Green and Environmentally-Sensitive City calls for a focus on walking, cycling and transit, and protection of air, water, earth and other natural resources
- A City of Distinct, Liveable Communities calls for accessibility of facilities by walking, cycling and transit, ease of mobility within communities, and physical beauty in public spaces
- An Innovative City Where Prosperity Is Shared Among All calls for a businesssupportive environment, and accessibility to opportunity for individuals
- A Responsible and Responsive City calls for municipal leadership, fiscal responsibility, open and participatory processes, community partnerships and public awareness

Transportation systems play a major part in the creation of liveable neighbourhoods, and can either help or hinder the achievement of objectives like those listed above. The City's new Official Plan reiterates the need for a balanced transportation system as an integral component of liveable communities. Area traffic management is, however, just one of many disciplines through which the City will work to bring transportation into balance with other community needs. These include:

- Public Transit Services
- Community Design Processes
- Cycling and Walking Programs
- Development Approvals
- Transportation Demand Management
- Road Safety Programs
- Parking Services
- Road Design Standards
- Police Fire And Paramedic Services
- Healthy Community Initiatives, and,
- Area Traffic Management.

Area traffic management (ATM) is, therefore, just one of many areas in which the City will work to bring transportation into balance with other community needs. The City's draft Transportation Master Plan defines Area Traffic Management as follows:

> "Area traffic management is a term that describes both the process and techniques of preserving neighbourhood liveability by mitigating undesirable effects of vehicular travel including excessive volumes and speeds, aggressive driver behaviour and the creation of unfavourable conditions for walking and cycling."

There are three aspects commonly related to the use of motorized vehicles that result in neighbourhood concerns: excessive traffic speeds, excessive traffic volumes (especially through traffic), and inappropriate driver behaviour. These are best examined in terms of their effects on people: how they impact on personal or public safety, and the effect on the liveability of neighbourhoods.

The ATM Guidelines also address a secondary problem related to the process by which area traffic concerns are dealt with: the lack of any established process results in an inconsistent approach and inconsistent application of measures, and also does not provide the City with any means to prioritize concerns and deal with the most serious problems.

It is important to recognize that area traffic management is primarily an operational process intended to address existing traffic issues deemed to be of a significant nature (i.e. not easily resolved through an operational review) within neighbourhoods. The ATM Guidelines provide staff with the ability to deal with these significant traffic issues in a consistent manner.

## 2. AREA TRAFFIC MANAGEMENT PRINCIPLES

The City recognizes that the speed, volume and behaviour of motorized vehicles in neighbourhoods are significant concerns of some residents, and that area traffic management measures can improve public safety and liveability. This section recommends a number of principles to guide the area traffic management process. These principles are categorized according to three main governing objectives—community equity, effectiveness and efficiency—and are presented in the following sections.

### COMMUNITY EQUITY

Area traffic management should ensure the equitable and consistent treatment of those who use Ottawa's streets, and those who are impacted by that use.

- **Principle 1:** Define and follow a consistent process. Citizens have a right to know how their concerns will be addressed. Equity requires that area traffic management processes be clearly identified and consistently applied. This does not imply that "one size fits all", but rather that a sound methodology be followed that takes into account both the similarities and differences among situations.
- **Principle 2: Do good planning.** The City should follow widely accepted "good planning" principles considering a range of solutions, systematically evaluating alternatives, consulting with affected stakeholders, and documenting results. The process should be open, thorough, understandable and inclusive.
- **Principle 3: Recognize diverse interests.** Ottawa's streets affect adjacent residents, businesses and institutions, all of who should be considered in making decisions on the physical arrangement and regulation of streets. The streets also have a multitude of users, both non-motorized (pedestrians, cyclists) and motorized (cars, trucks, buses, emergency vehicles, maintenance vehicles), whose interests are also critical.
- **Principle 4: Recognize the diverse role of streets:** Ottawa's streets play an important role in building our community and serving a transportation function. The priority of different interests on a given street will vary according to the *community context* and *street type*. Both the context and street type need to be considered in order to develop effective solutions to area traffic management problems.

*Community Context*: The community context of a street includes consideration of surrounding land uses, the character of the neighbourhood, and how the community uses the street.

*Street Types*: The definition of street types used by the city typically reflects their transportation function. They may be considered part of the bicycle, pedestrian or transit network. The City's Transportation Master Plan specifically defines four street types according to how they address mobility

and access needs. The four street types are: *Arterial Streets, Major Collector Street, Collector Streets* and *Local Streets*.

- **Principle 5: Preserve community access.** Area traffic management measures should consider the neighbourhood access needs of neighbourhood residents, employees, students, visitors and business patrons.
- **Principle 6: Consult all stakeholders.** Community participation and partnerships are an essential component of area traffic management initiatives. They are vital not only to identify problems, suggest possible solutions, and evaluate these alternative solutions, but also to build a consensus around the ultimate solution and assure its long-term success. In addressing neighbourhood traffic issues, the City should engage those who are affected by street activities and those who need to use the street. Typical stakeholders include residents, community associations, business owners, school administrators, pedestrians, cyclists, drivers, and providers of transit, emergency and maintenance services.
- **Principle 7:** Ensure equity of access to resources. The City recognizes that some communities may have the desire and ability to invest in their neighbourhood infrastructure. However, the City needs to maintain equity among communities, and should address problems (including the allocation of resources to study these problems) on the basis of need, rather than ability to pay. The City should assume responsibility for funding area traffic management study processes and the development of solutions. However, the City may consider community-funding (such as the Local Improvement Act process) to advance the implementation of measures that have been previously approved and are already on a priority list for implementation.

### **E**FFECTIVENESS

Area traffic management should effectively address problems while minimizing or mitigating any related secondary impacts.

- **Principle 8: Confirm problems objectively.** The City needs to maximize its ability to justify, predict and assess the effectiveness of possible solutions to area traffic management problems. Observation, data collection and analysis should provide an objective determination of the nature and severity of neighbourhood traffic concerns. The City recognizes that some liveability concerns are difficult to verify through direct measurement.
- **Principle 9:** Use the right tool for the job. Area traffic management initiatives should consider the potential effectiveness of all potential measures in the ATM "toolbox", and should apply them consistently using accepted Guidelines and standards.
- Principle 10: Improve non-auto travel. Measures to reduce the impact of motorized vehicles on neighbourhoods should also enhance (or at least preserve) the safety, comfort and convenience of walking, cycling and transit use. The various modes of travel accommodated on Ottawa's streets may require trade-

offs to be made, and the priority given to each mode may vary depending on the type of street, demand for its use, and the surrounding environment.

- **Principle 11:** Solve the problem, don't move it. The City should avoid measures that divert traffic to other streets with similar characteristics within a community or an adjacent community (e.g. from one local street to another), or that cause problems like speeding to develop elsewhere. In some cases it may be appropriate to consider measures that divert traffic to streets that can more appropriately accommodate the traffic (e.g. arterial streets).
- **Principle 12: Protect the public interest.** Protection of the public interest requires that all area traffic management initiatives meet the same standards of equity, effectiveness and efficiency. To be viewed as credible in the wider community, it is important that area traffic management initiatives be carried out in a consistent manner, in such a way as to balance the general public interest with the interests of stakeholders. The City has a responsibility to ensure that those leading initiatives balance these interests. Plans brought forward directly by a community will be reviewed to ensure conformity with the approved screening, prioritization and threshold requirements of the Area Traffic Management Guidelines.
- **Principle 13:** Follow up with monitoring and evaluation. The City should monitor area traffic management measures, evaluate their effectiveness, and make results available to the community. The evaluation will include recommendations for any required adjustments to the Plan.

### EFFICIENCY

Area traffic management initiatives should aim to achieve the greatest possible benefits with the available resources.

- **Principle 14:** Take a measured approach to solving problems. During the planning stages, the City should consider simple, inexpensive measures before more complex and costly ones. This approach can address concerns, while minimizing the potential for secondary impacts, municipal costs (including operations and maintenance), road user costs, vehicle emissions and negative public reaction.
- Principle 15: Prioritize problems and solutions. The order in which the City addresses area traffic concerns should correspond to the severity of those concerns and the City's ability to verify them. Area traffic management measures, once approved for implementation, should be prioritized in a manner that uses resources most effectively.
- **Principle 16:** Take advantage of opportunities. The City should consider the need and ability to incorporate area traffic management measures in all projects involving road reconstruction, as an inexpensive way to improve safety and liveability. This consideration should not, however, unreasonably compromise the City's ability to address the highest priority problems, or the following of a "good planning" process that is open, thorough, understandable and inclusive. Due to

the significant timelines often involved in the planning process within area traffic management, this may only be possible if potential opportunities can be identified well in advance of their scheduled reconstruction.

Principle 17: Don't create new problems. The City should ensure that new roads and reconstructed roads are laid out and designed to minimize the likelihood of future area traffic management concerns.

## 3. AREA TRAFFIC MANAGEMENT PROCEDURES

The establishment of a focused, consistent Area Traffic Management (ATM) process addresses two major problems:

- Inconsistent public expectations The City's former constituent municipalities employed diverse terminologies, policies and practices related to area traffic management and traffic calming. A single, harmonized approach is required to "level the playing field" in terms of the public's understanding of how the City will address these issues, what tools it is willing to use, and so on.
- Resource constraints The City does not have sufficient funds and staff time to address every traffic concern that is raised. A process is required to help identify the most serious problems and address them efficiently.

This chapter describes procedures that City staff will follow when undertaking Area Traffic Management (ATM) studies. The procedures are organized in a step-by-step format in three study phases: pre-study, study and implementation. A general process overview is provided below.

For each step, a list of support materials is included, such as a list of data needs or reporting forms. Project file requirements are also listed in order to ensure a consistent approach to record keeping.

It is not always clear at the beginning of an ATM study as to whether the Environmental Assessment (EA) process will need to be followed, as only certain measures are subject to the process. The procedures described in this chapter show all studies beginning with the assumption that the EA process applies, and also show a decision point where it is determined whether the study needs to conclude under the EA process. Specific project requirements to conform with EA requirements are highlighted. It is particularly important that steps required by the EA process are fully documented in the project file.

It is expected that almost all ATM studies subject to the EA process will be Schedule "B" projects, as the cost of implementation will usually be less than \$1.5 million. The process outlined assumes this is the case. The following list includes definitions of schedules A through C as contained in the Class Environmental Assessment document for municipal projects.

#### Schedule A

- Generally includes normal or emergency operational and maintenance activities
- The environmental effects of the activities are usually minimal and, therefore, these projects are pre-approved.

#### Schedule B

- Generally includes improvements and minor expansions to existing facilities
- There is the potential for some adverse environmental impacts and therefore the proponent is required to proceed through a screening process including consultation with those who may be affected

#### Schedule C

- Generally includes the construction of new facilities and major expansions to existing facilities
- These projects proceed through the environmental assessment planning process outlined in the Class EA.

#### **Exhibit 3-1 ATM Process Overview**



# PHASE ONE – PRE-STUDY

### **STEP ONE – CONCERNS REPORTED TO CITY**

Community identification of traffic issues is the primary method for initiating the Area Traffic Management process. Residents (applicant) initial contact with the City will follow the Request Tracking System (RTS), which logs concerns reported and distributes them to the appropriate Division within the Traffic and Parking Operations Branch for action and response.

To ensure consistent and equitable treatment of concerns, requests made to City Councillors will follow the same process as other requests.

#### Determine Appropriate Response

Before moving forward with an Area Traffic Management (ATM) study, three other responses should be considered; a quick fix, an operational response, or a referral/no further action.

**1.** Quick Fix: In some cases, a *quick* fix may be attempted for localized issues, especially those that relate to speed or driver behaviour. Rather than moving forward to the study stage, many concerns can be resolved in this way, in some cases by fixing the problem, or by providing information to the complainant. *Quick fixes* can include:

- Speed survey (to inform residents of actual speeds and/or to identify a specific issue);
- Use of portable radar board; and,
- Targeted enforcement by police services.

**2. Operational/Safety:** A significant safety issue may require an immediate response, such as missing stops signs. Other operational concerns may be addressed through the City's existing procedures. These issues are immediately referred to appropriate City staff and do not follow the ATM Guidelines.

**3. Referral/No Further Action:** For some issues, area traffic management measures may not be appropriate or effective and the issue should be referred to the appropriate contact. Examples of issues that may suggest a referral include land use issues, commercial operations, road maintenance, transit service, and utilities among others. In some cases, if the issue cannot be confirmed by City staff, a letter should be sent to the applicant describing the process, considerations and reasons why no further action is being taken.

**4. Area Traffic Management Project Screening:** Any issue that cannot be resolved quickly, or addressed by the responses listed above, will be moved forward for screening, where the primary responsibility for neighbourhood traffic concerns resides. In particular, this will include volume related issues that, in most cases, will not be addressed by actions 1 through 3.

#### Staff Actions

- □ Advise applicant on action taken and next steps
- Forward Community Area Traffic Management Guide (Pamphlet) to applicant if action is referral to ATM screening

#### Step One - Support Material

Community Area Traffic Management Guide

#### Step One – Project File

□ As per existing Request Tracking System (RTS) process

### **STEP TWO – SUBMISSION OF REQUEST**

In order to ensure that others on the street or in the area share traffic concerns, requests must be received from one of the following:

• The community association, school council, or business association for the area;

or,

 Groups representing at least 10 households or businesses OR a minimum of 25% of households/businesses on the affected street/area.

If initial requests do not satisfy this requirement, they will be returned to the original requestor noting that broader support is required.

#### Staff Actions

- Forward application package to applicant
- Acknowledge receipt of completed application

#### Step Two - Support Material

- Application Package
  - 1. Cover letter with overview of process and staff contact identified
  - 2. Community Area Traffic Management Guide
  - 3. Community Traffic Issue Reporting Form (Exhibit 3-2)
- Acknowledgement of application including description of next steps, timing, and contact information (to be developed later by City)

#### Step Two - Project File

□ Filled out *Community Traffic Issue Reporting Form* 

### Exhibit 3-2 Sample - Community Traffic Issue Reporting Form (1 of 2 pages) AREA TRAFFIC MANAGEMENT

Use this form to report a community traffic problem or safety issue to the City. City staff will follow up and conduct a preliminary investigation to determine the nature and extent of the concern. If the problem can be confirmed and is an appropriate application of Area Traffic Management (ATM) measures, it will be prioritized against other community requests and a study will be undertaken that includes further community consultation. Urgent safety concerns, such as missing stop signs, should be immediately reported to the City.

Area Traffic Management (ATM) includes a wide variety of measures that address neighbourhood traffic concerns such as speeding, safety, or through traffic issues among others. Measures can range from non-physical measures such as education, enforcement, and transportation demand management, to physical measures such as reduced lane widths, speed humps, and street closures.

#### Street or area of concern:

(e.g. Sunnyside between Bank and Bronson, or Chapel Hill)

#### Type of Problem

Pedestrian Safety	Other Safety Issues (cyclists, motor vohicles)
<ul> <li>Speeding Vehicles</li> <li>Through Traffic</li> </ul>	Parking
Traffic Volume	Other
Description of the problem:	

Specific location(s) of the traffic problem(s):

Time of day when problem occurs:

When problem started:

Possible causes of problem (opinion):

Any perceived dangers to pedestrians, residents, or property as a result of the problem (opinion):

What is the desired outcome (i.e., reduced speed, lower traffic volume, fewer collisions, lower risk to pedestrians, etc...):

Petition Sponsor Name:

Address:

Day Phone:

Email:

### Community Traffic Issue Reporting Form (2 of 2 pages)

#### We, the individuals or community group, listed below support this request for the City to undertake a preliminary investigation of traffic or safety issues on the following street or area:

#### Street or area of concern:

(e.g. Sunnyside between Bank and Bronson, or Chapel Hill)

#### List of Petitioners:

1. *Minimum 10 households or b*usinesses (or a minimum of 25% of households/businesses on the affected street/area). Only one signature per household.

#### 

2. Community group, school council, or business association (only 1 group required)

	Individual/Group	Address	Date	Signature
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

### **STEP THREE – SCREENING PROCESS**

Once a request is submitted by a neighbourhood or group, the assigned city staff will conduct a site visit and undertake the screening process.

#### Conduct Site visit

#### Staff Actions

- Determine most appropriate time for site visit based on resident's description of problem.
- □ Identify locations and appropriate times for data collection

#### Collect Data

#### Staff Actions

- Data will be collected by City staff in order to maintain consistency in data collection methods and quality.
- □ Collect data as outlined in the *Data Requirement Prioritization* (Exhibit 3-3)

#### Screening Checklist and Notification

#### **Staff Actions**

- □ Fill out *Screening Checklist* (Exhibit 3-4)
- Determine appropriate response: (1) ATM Project or (2) No Further Action
- □ If ATM project, develop *Draft Problem Statement*
- Notify applicant with letter outlining reason for considering or not considering ATM measures. Include Screening Checklist and draft problem statement.

#### Step Three - Support Material

- □ Screening Checklist (Exhibit 3-4)
- Sample Draft Problem Statement (affected area and/or streets, users, traffic, type of problem, time of day problem occurs, etc...)
- Sample Notification Letter for each type of response and includes next steps

#### **Step Three - Project File**

- Data record
- □ Filled out Screening Checklist
- Notification letter
- Draft Problem Statement

**Environmental Assessment Process** 

Identification and Description of the Problem or Opportunity

 This is the first point where a clear statement of the problem or opportunity starts being developed.

### Exhibit 3-3 Data Needs - Prioritization

The City of Ottawa has established processes and methods for data collection. The following list of data needs is a general guide intended to document the type of data used, to encourage the use of a consistent data set, and to work toward a consistent quality of data.

INDICATOR	INDICATOR DATA	PURPOSE	DATA COLLECTION METHOD	DATA PARAMETERS
Land use	Type of adjacent land use	To identify generators of vulnerable street users To identify traffic generators To identify land use specific traffic issues	Visual survey of existing uses	General land use categories such as commercial, pedestrian-oriented retail, residential, high density residential, schools, or industrial
Pedestrian activity/ facilities	Pedestrian activity and existing facilities	To determine adequacy of facilities	Visual survey	Evidence of pedestrian activity levels for which sidewalks may be appropriate (if no sidewalks exist)
Inappropriate driver behaviour	Complaints / Violations	To determine driver behaviour issues	Consult with police	Multiple violations Complaints from multiple individuals
Speeds	85th percentile speed 95th percentile speeds	To determine speed and thresholds	Radar Laser Automatic traffic recorder	Min. 100 vehicles at time of day when problem has been identified
Volume counts	Motor vehicle traffic volume	To determine peak hour and volumes	Automatic traffic recorder Turning movement counts	Average Annual Daily Traffic Peak hour volume
Through traffic volumes	Motor vehicle traffic volume	To distinguish local from non-local traffic	Observed through traffic	Observed destinations of min. 30 vehicles entering community
Collisions	Collisions and volumes	To determine rate of collisions	Review collision reports	Three years of data where possible Collision rate per million vehicles entering an intersection Collision rate per million vehicle kilometres

#### Exhibit 3-4 Sample - Screening Checklist

In order to ensure that the City's resources are concentrated on the most significant concerns, and to ensure that the number of projects is manageable in relation to program resources, requests will undergo an initial screening, involving two steps that must both be satisfied:

Concerns that satisfy both these steps are considered to have passed the screening stage and become *projects*. Note that this is not intended to condone any situation that does not satisfy these screening criteria. The intent of this process is to generate a manageable number of projects to carry forward for prioritization and possible implementation.

Check All that Apply	Screening Results (complete tests 1 and 2 listed below)
	Is at least <u>ONE of the</u> CONTEXT criteria met?
	Are at least <u><b>TWO</b></u> of the <b>TRAFFIC</b> criteria met?
If both boxes above	e are checked issue is carried forward as a project.

**Test One - Context Criteria:** the street/area must have the proper *context*, demonstrating susceptibility to negative impacts associated with traffic by meeting at least <u>one</u> of the following criteria:

Check All that Apply	Context			
	Presence of schools, parks, community centres, or cluster of vulnerable street users (e.g. care facility)			
	Primarily residential frontage.			
	Pedestrian activity levels which are not adequately served by pedestrian facilities.			
	Pedestrian-oriented retail (e.g. "main street" district).			

#### **Screening Checklist Continued**

**Test Two - Traffic Criteria:** the City will collect or extract from its records sufficient data to determine if **at least <u>two</u>** of the following indicators are satisfied:

Meets Threshold (Check all that apply)		Indicator	Indicator Value	Moasuro
Local or Collector	Arterial	Indicator		WedSule
		Inappropriate driver behaviour		There must be clear evidence of <i>inappropriate driver behaviour</i> , characterized by a history of complaints and verified through enforcement efforts.
Speed		Speed		15% of vehicles are traveling at or above 50 km/h unless the street is posted at a higher speed limit, in which case 15 % of vehicles must be traveling at or above the posted speed limit (i.e. same as the <i>85th percentile</i> measurement).
				<u>or</u>
				5% of vehicles are traveling at or above 60 km/h, unless the posted speed is higher than 50 km/h in which case 15 % of vehicles must be traveling 10 km/h or more above the posted speed limit (i.e. same as <i>95th percentile</i> measurement).
				The average motorized traffic volume is at least:
	Π	Volume		-1000 vehicles per day or 120 vehicles per peak hour, if the street is a local street
N/A				-2500 vehicles per day or 300 vehicles per peak hour, if the street is a collector street
				-5000 vehicles per day or 600 vehicles per peak hour, if the street is a major collector street
	NIA	Through traffic volumes		There must be tangible evidence of <i>"through" traffic</i> (defined as motorized vehicles using a lower classification road during an intermediate portion of a trip) exceeding 20% of the total traffic volume. Through traffic may include vehicles circling a neighbourhood to find parking.
		Collisions		The <i>rate of collisions</i> involving motorized vehicles, pedestrians and/or cyclists must be above the average rate or safety performance function for similar locations.

### **STEP FOUR - CATEGORIZE PROJECTS**

Projects will be categorized to ensure they are studied by City staff in the most appropriate manner. Projects are categorized as requiring either localized or comprehensive studies, with the latter considered to be the more significant undertaking.

Staff will categorize a project as either localized or comprehensive study based on the *Draft Problem Statement* and the general criteria listed below.

#### Localized Studies:

- A few streets, at most, are affected
- The affected streets are local, collector or major collector
- There is a single, clearly defined problem with limited potential for expansion of the problem or study area
- There are few or mild competing interests
- The nature of the solution(s) can be reasonably anticipated
- The time and effort to conduct the project are expected to be limited

#### Comprehensive Studies:

- A number of streets or an entire neighbourhood is affected
- Affected streets may include arterials
- There are a number of concerns, perhaps poorly-defined, with potential for expansion
- There are many or severe competing interests
- Possible solutions are numerous, or not apparent
- The time and effort to conduct the project are expected to be significant

#### Step Four - Support Materials

• Safety Performance Function or similar measure of collision rates

#### **Step Four - Project File**

Brief memo to file indicating how project is categorized and why

### **STEP FIVE – PRIORITIZATION OF STUDIES**

At the time this report was prepared, the City had a significant backlog of approved projects that had not yet been implemented. New requests for studies will be prioritized against both the backlogged projects and other current requests, in order to identify those studies that, if approved, are likely to be implemented within five years. The five-year period was selected based on the environmental assessment process, which requires that approved projects be reviewed (by means of an addendum) if they are not implemented within that time frame. This period is considered to represent the maximum time an approved ATM project should wait before being implemented, in order to avoid unfairly raising public expectations and diminishing the credibility of the City's Area Traffic Management Program.

The City should review its ability to fund implementation of projects regularly, and adjust the number of studies that proceed, to ensure that the backlog does not exceed five years.

The data used for prioritization of studies is the same as that collected for the screening process and is described in Step Three.

#### Localized Study Prioritization

- □ Twice per year, newly identified localized studies will be added to the existing list of prioritized studies based on the Prioritization Worksheet
- □ On those dates, the top ranked localized studies will be selected for detailed investigation over the next six months.
- □ If a selected project is not commenced within the six-month period, it will be carried over into the next period even if new projects have a higher ranking.

#### Comprehensive Study Prioritization

Because comprehensive studies – the more complex studies – will proceed independently of the localized studies, they will be prioritized separately. Arterial road studies, which would typically be conducted as comprehensive studies, will also be ranked using this system. However, as the role of these streets is to carry significant traffic volumes, no points will be assigned for the traffic volume and through traffic indicators. Points assigned to other factors are increased to create a common basis for ranking.

- Potential studies are to be ranked using the same indicators applied to localized studies, but by applying a different point system. Staff will compare all proposed studies on an indicator-by-indicator basis, and assign points according to the *relative* severity of concerns. The study with the most severe collision problem, for example, would receive the full 30 points, while remaining projects would receive fewer points according to the relative severity of the relative severity of issues.
- □ Staff will recommend, once per year in accordance with the annual budget schedule, that the highest-ranking studies proceed over the coming year. The number of studies conducted will correspond with the resources available to conduct the planning phase,

and with the City's expected ability to fund their implementation within five years, in view of their priority relative to any backlog of approved projects.

#### Step Five - Support Materials

- □ *Prioritization Worksheet Localized Studies* (Exhibit 3-5)
- Prioritization Worksheet Comprehensive Studies (Exhibit 3-6)
- □ Data record (from screening process)
- □ Sample Notification Letter indicating how project was categorized, priority of project, next steps, timeline, and contact information (to be developed by City)

#### **Step Five - Project File**

Notification letter to applicant

### Exhibit 3-5 Sample Prioritization Worksheet – Localized Studies

Prioritization Worksheet – Localized Studies*						
Project Name:						
Indicator	Indicator Value	Point Score / Maximum Score	Local Roads	Collector Roads	Major Collector Roads	
Inappropriate driver behaviour		/10	Up to 10 points can be verified th	if there is a history arough enforcement e	of complaints that fforts	
Generators of vulnerable street users		/10	5 points per generator of vulnerable street users (schools, parks and community centres) on or in close proximity to street			
Pedestrian facilities		/10 (5 for local)	5 points if no 10 points if no sidewalk exists; 5 sidewalk exists points if one sidewalk exists			
Abutting land use		/10	Up to 10 points based percentage of street frontage that is primarily residential or pedestrian-oriented retail (e.g. "main street")			
15% of vehicles traveling at or over 50 km/h or speed limit		/15	1 point for every km/h over 50 km/h (or over posted speed limit if it is greater than 50 km/h)			
5% of vehicles traveling at or over 60 km/h (or if speed limit is more than 50 km/h, 15% travelling 10 km/h or more the speed limit)		/15	1 point for every km/h over 60 km/h (or 1 point for every km/h greater than 10 km/h over the posted speed limit if it is greater than 50 km/h)			
Motorized traffic volumes		/15	1 point for every 100 vehicles per day over 1000 or 1 point for every 10 vehicles per hour over 120 (in the busiest hour)	1 point for every 250 vehicles per day over 2500 or 1 point for every 25 vehicles per hour over 300 (in the busiest hour)	1 point for every 350 vehicles per day over 5000 or 1 point for every 35 vehicles per hour over 600 (in the busiest hour)	
Through traffic volumes		/15	1 point for every 2% in the proportion of through traffic over 20% (minimum 20 through vehicles per hour)			
Collisions		/30	Ratio of collision rate to average collision rate (for streets or intersections, whichever is greatest) for motor vehicle, pedestrian and cyclist collisions Less than 0.750 points 0 points 0.75 to 1.250.75 to 1.255 points 1.25 to 2.015 points 2.0 to 3.02.0 to 3.025 points Greater than 3.030 points			
Total Score						

\*Arterial streets are prioritized under comprehensive studies

Prioritization Worksheet – Comprehensive Studies											
Project Name:											
Indicator	Indicator Value	Point Score (Relative to Other Projects)									
		Local or Collector	Arterial								
Inappropriate driver behaviour		/10	/15								
Generators of vulnerable street users		/10	/15								
Pedestrian facilities		/10 (5 for locals)	/15								
Abutting land use		/10	/10								
15% of vehicles traveling at or over 50 km/h or speed limit		/15	/20								
5% of vehicles traveling at or over 60 km/h (or if speed limit is more than 50 km/h, 15% travelling 10 km/h or more the speed limit)		/15	/20								
Motorized traffic volumes		/15									
Through traffic volumes		/15									
Collisions		/30	/40								
Total Score											

### Exhibit 3-6 Sample Prioritization Worksheet – Comprehensive Studies

# PHASE TWO – STUDY STAGE

Comprehensive studies will involve the same basic steps as localized studies, but will be more detailed due to a larger study area, greater number of concerns, or other factors.

(Note that the formal environmental assessment process will only apply to localized studies if required to gain approval for certain measures. It is expected that most comprehensive studies will follow the environmental assessment process due to their scope, consultation requirements and the uncertain nature of solutions.)

### STEP SIX – DATA COLLECTION

Data needs for studies must be appropriate to the nature of the problem identified and must be comprehensive enough to ensure all issues and potential impacts are considered. The Data Guidelines described herein include types of data that may be used for a study and provides guidelines for how data should be collected. The guidelines for data collection serve four purposes:

- 1. To ensure a consistent approach to data collection is used;
- 2. To ensure that similar factors are considered for all city projects;
- 3. To ensure a comprehensive review of conditions so that appropriate measures are put in place; and,
- 4. To establish a baseline of information for future monitoring efforts.

#### Staff Actions

- Determine area included in data collection effort based on *Draft Problem Statement*
- □ Collect data based on Data Guidelines

#### Step Six - Support Material

Data Guidelines (Exhibit 3-7)

#### Step Six - Project File

Data record

### Exhibit 3-7 Data Guidelines

The following data Guidelines provide an overview of data that may be appropriate for an Area Traffic Management study. The Data Guidelines are categorized according to those that are concerned with area characteristics and those that are concerned with traffic characteristics. For data related to traffic characteristics specific "data parameters" are defined that indicate minimum thresholds for each type of dataset. Determining what data is to be used for a study will be based on the nature of the study and the problem to be addressed, and the professional judgement of project staff.

#### Area Characteristics

- Street classification
- Street cross-sections indicating widths of travel lanes, turn lanes, parking, sidewalks and buffer or planting strips
- Diagrams of critical intersections including widths or other information
- Curve radii
- □ Tangent length
- Block length
- Notable grades
- □ Type of curb and height
- Pavement markings inventory
- Sight distances
- □ Base mapping
- □ Aerial photography/orthophotos
- School catchment areas and enrolment
- Catchbasin and manhole locations
- Notable utility locations

- Posted speed limit
- □ Sign inventory
- Bicycle facilities inventory
- Pedestrian facilities inventory
- Trees and notable landscaping features
- Building setbacks
- Number, location and width of driveways
- Location of schools and loading areas
- Emergency response routes
- Truck routes
- Principal access routes for major area land uses
- Transit routes/schedule information/location of stops
- Existing area traffic management measures including physical and non-physical

### **Traffic Characteristics**

INDICATOR	INDICATOR DATA	PURPOSE	DATA COLLECTION METHOD	DATA PARAMETERS				
Pedestrian Volumes	Pedestrian volumes	To determine pedestrian volumes and potential conflicts	Manual recording	As appropriate				
		and location of pedestrian crossings						
Speeds	15% of vehicles traveling at or over 50 km/b or	To determine speed and thresholds	Radar	Min. 30 vehicles at times of day or week when problem has been identified. Actual number should				
	speed limit		Automatic traffic recorder	be appropriate for the needs of study and should reflect a				
	5% of vehicles traveling at or over 60 km/h (or if speed limit is more than 50 km/h, 15% travelling 10 km/h or more the speed limit)							
Volume counts	Motor vehicle traffic volume	To determine peak hour and volumes	Automatic traffic recorder	Average Annual Daily Traffic Peak hour volume				
Motor vehicle classification	Vehicle classification	To determine percentage of vehicles that are cars, trucks, buses, etc.	Automatic traffic recorder Visual survey	Min. 1 hour at times of day or week when problem has been identified				
Daily traffic volume profile	24-hour traffic volume	Determine traffic volume patterns over time	Automatic traffic recorder	Min. 1 day ,in one hour increments, at time of week when problem has been identified				
Through traffic	Motor vehicle	To distinguish local from	Observed through traffic	Min. 30 vehicles				
volumes			Cordon counts	and				
				Min. observation of 1 hour				
Collisions	Collisions and volumes	To determine rate of collisions	Review collision reports	Three years of data where possible				
				Collision rate per million vehicles entering an intersection				
				Collision rate per million vehicle kilometres				
Cyclist Volumes	Cyclist volumes	To determine cyclist volumes and potential conflicts	Manual recording	As appropriate				

INDICATOR	INDICATOR DATA	PURPOSE	DATA COLLECTION METHOD	DATA PARAMETERS
Intersection Turning Movement Counts (all modes)	Turning volume	To determine potential conflicts To determine overall traffic volumes by mode	Manual recording	Min. 1 hour at times of day or week when problem has been identified and at appropriate intersections
On-Street Parking	Parking supply, location, restrictions, and utilization	To inventory parking supply, location, and restrictions To identify parking demand to determine appropriate application of measures	Manual survey of parking supply, location, restrictions and utilization	As appropriate
Inappropriate driver behaviour	Complaints / violations	To determine driver behaviour issues	Consult with police	Multiple violations Complaints from multiple individuals
Noise and Vibration	Noise and vibration levels	To determine secondary traffic impacts	As appropriate	As appropriate
Street Capacity	Number of lanes and classification	To determine problem areas and opportunities or constraints.	Field survey of base mapping	As appropriate

### STEP SEVEN - IDENTIFY STAKEHOLDERS

#### Localized Study

Stakeholders for a localized study will include those residents or groups on the original ATM petition and adjacent residents, affected City departments, business and other groups.

#### Staff Actions

- Identify Stakeholders
- Develop stakeholder list for meeting invitations and notifications

#### Comprehensive Study

Comprehensive studies address the more complex traffic issues and as a result require greater levels of public participation. A key feature that distinguishes a Comprehensive Study from a Localized Study is the use of a Public Advisory Committee (PAC) and a Technical Advisory Committee (TAC). The PAC and TAC may hold combined meetings as appropriate to the project.

#### Public Advisory Committee (PAC)

#### PAC membership

An important consideration in forming a PAC is ensuring that an appropriate diversity of views are represented and that the committee is balanced in terms of membership (i.e. that a minority group does not dominate the committee, such as residents on one street, or those interested in a single localized issue). Potential stakeholders include residents (both homeowners and renters), community associations, local merchants, pedestrian and bicycle advocates, younger and older residents, transit users, parent groups, schools, and community centres or service groups.

#### Size of PAC

The size of a PAC will vary according to the need of the project; however, it should be of a manageable size (no more than approximately seven members) while still representing the different stakeholders in the community.

#### Recruiting a PAC

#### By Invitation

Invitations can be sent to known community groups or to groups or individuals suggested by the Ward Councillor. The invitation should include the draft problem statement and scope of the study so that prospective committee members will understand the project mandate and what the project will and will not address. The letter should state the role of the committee and what the time commitment and study timeframe is.

#### Place advertisement in community paper

Advertisements can be placed in community papers and should include information similar to the invitation letters including the problem statement, role of the committee and time commitment.

#### Forming the PAC

If too many people are interested in being on the advisory committee, City staff, with input from the Ward Councillor, will select members to ensure a diversity of view.

#### Technical Advisory Committee (TAC)

A Technical Advisory Committee will consist on technical City and agency staff as appropriate to the nature of the project. TAC membership and participation levels may be more fluid than the PAC given that the study may broadly effect a group's operations or it may only have a more specific and limited effect. TAC membership can include a variety of groups, such as: Transit, Service And Maintenance, Police Services, Pedestrian and Cycling Program, Development Approvals, etc. The Technical Advisory Committee may participate in the development of the problem statement, identification of data needs, and development and evaluation of alternatives.

#### **Step Seven - Support Material**

□ N/A

#### Step Seven - Project File

• Stakeholder and/or PAC and TAC member list

### STEP EIGHT - PROJECT KICK-OFF MEETING

The project kick-off meeting is focused on confirming the draft problem statement (developed in Step Three – Screening Process) and introducing citizens to the ATM process. For Comprehensive Studies, specific ATM measures are specifically not discussed at the kick-off meeting in order to ensure that potential solutions do not influence how a problem is defined.

# <u>Pre-Meeting Walkabout (optional - based on community</u> interest)

**Environmental Assessment Process** 

Discretionary Public Consultation

 The EA process suggests that for projects where there is expected to be considerable public interest/controversy, public consultation on the problem statement may be advantageous.

A "walkabout" is a tour through the neighbourhood to discuss community traffic issues. The walkabout provides an opportunity for city staff, consultants, the Public Advisory Committee, residents, merchants and other community members to discuss transportation issues informally and observe conditions first-hand.

 Prior to meeting identify a Public Advisory Committee member or community member responsible for organizing a tour. The tour should be community lead with city staff present to listen, to identify issues not already considered by the community, and to exchange ideas.

#### Kick-off Meeting Agenda Outline (optional for Localized Studies)

#### Educate Citizens About Process

#### Staff Actions

 Provide an overview of the ATM process covering what the process does and does not address

#### Review Data

#### Staff Actions

- Provide an overview of the existing data
- Confirm understanding of data with group
- Feedback may result in additional data needs identified

#### Confirm Scope of Study, Problem Statement, and Objectives

In establishing the study scope, the study area will need to be defined so that the original problem location is included, as well as any locations that could be expected to be affected by potential solutions. The scope of comprehensive studies can be complex, and may need to be revisited as the project proceeds due to the potential for unexpected effects. If the study area is expanded, additional data may be needed.

#### Staff Actions

- Present the "draft" problem statement and proposed scope of the study
- List any issues not previously identified
- □ Identify desired objectives (what do stakeholders hope to achieve)
- Confirm final problem statement and scope of study with attendees

#### Identify Candidate Measures (LOCALIZED STUDY ONLY)

#### **Staff Actions**

For localized studies, staff will work with the community to identify a preliminary list of measures that may be appropriate in addressing the identified problem statement. For Comprehensive Studies, specific ATM measures are specifically not discussed at the kick-off meeting in order to ensure that potential solutions do not influence how a problem is defined.

#### **Review Decision Making Process**

#### Staff Actions

 Restate the plan process, focusing on next steps and how and when decisions are made

#### Wrap-up and confirm next steps

#### **Staff Actions**

- Summarize and confirm commonly held public concerns and issues
- □ Review next steps and timeline
- Consider holding a neighbourhood workshop if sufficient support and interest exists in the neighbourhood.

#### Step Eight - Support Material

- ATM Process Background Material
- Comment Sheet (Exhibit 3-8)
- □ Sign-in Sheet (Exhibit 3-9)

#### Step Eight – Project File

- Meeting notes recording commonly held public concerns and issues
- Comment sheets

#### **Exhibit 3-8 Sample Comment Sheet**

### Comment Sheet - Feuille de commentaires

Glebe Traffic Management Implementation Study
Étude de mise en œuvre d'un plan de circulation dans le quartier Glebe
What are your thoughts on the recommended measures that affect you?
Quel est votre opinion au sujet des mesures recommandées qui vous touchent?

Please leave this comment sheet in the box by the door, fax it to 560-6069, or mail it to: 100 Constellation Crescent, 5<sup>th</sup> Floor, Nepean ON K2G 638 Veuillez déposer votre feuille de commentaires dans la boîte par la porte, l'envoyer par télécopieur à 560-6069, ou l'envoyer à : 100, croissant Constellation, 5<sup>e</sup> étage, Nepean (Ontario) K2G 638

NAME/NOM :	PHONE #/N° DE TÉL. :							
ADDRESS/ADRESSE :	E-MAIL/COURRIEL :							

### Exhibit 3-9 Sample Sign-in Sheet



**Open House / Journée portes** 

ouvertes

**Glebe Traffic Management Implementation Study** Étude de mise en œuvre d'un plan de circulation dans le quartier

Glebe

Thursday, June 5, 2003

Glebe Community Centre

690 Lyon Street 6 p.m. to 9 p.m. Le jeudi 5 juin 2003 Centre communautaire Glebe 690, rue Lyon de 18 h à 21 h

#### ATTENDANCE SHEET/ FEUILLE DE PRÉSENCE

 
 Print Name
 Mailing Address
 Postal Code
 Telephone Number/
 E-mail Address

 Nom (en caractères d'imprimerie)
 Adresse postale
 Code postal
 N de téléphone
 Courrier électronique

 Image: Image

### STEP NINE - NEIGHBOURHOOD WORKSHOP (COMPREHENSIVE STUDY ONLY - OPTIONAL)

A workshop is a focused and intense interactive work session with the public where facilitators educate participants and encourage the interaction of participants through a variety of activities designed to allow the participants to express their opinions and to understand the opinions of others. The workshop would provide the participants with an opportunity to identify potential measures and to develop alternative solutions.

The workshop is an optional step that may be requested by the community during the project kick-off meeting.

#### <u>Agenda</u>

#### **Problem Statement**

#### Staff Actions

- Review major data findings
- Restate problem statement and objectives identified during project kick off meeting

#### **Selecting Candidate Measures**

#### Staff Actions

- Provide overview of ATM measures
- Describe candidate measures and the reasons for considering these measures
- □ Amend and/or confirm candidate list of measures with public input. In order to amend the candidate list of measures, any proposed measure must directly address the problem or reinforce other candidate measures.

#### Plan Development

Break out into working groups with a facilitator identified for each group. The working groups will undertake the following activities:

#### Develop Options

- Develop basic plan what is the minimum that would likely have desired effect?
- Develop comprehensive plan What set of measures would address the problem?
- Record plans on map sheets with notations as appropriate
- Distinguish between physical and non-physical measures

#### Evaluate Plan Options

Discuss how proposed plans address problem statement

- Discuss anticipated benefits of each option
- Discuss anticipated impacts of each
- Compare with *Status Quo*
- Each group should identify a member of the group to summarize the plans the group development

#### Wrap-up and confirm next steps

#### Staff Actions

- Summarize and confirm commonly held public concerns and issues
- Review next steps and timeline

#### Step Nine - Support Material

- □ ATM measures background material
- Measures Summary Sheet
- □ Sample Invitation
- □ Sample Newspaper Recruiting Ad
- □ Comment Sheet (Exhibit 3-8)

#### Step Nine - Project File

- Meeting notes recording commonly held public concerns and issues
- Comment sheets

### **STEP TEN - DEVELOP ALTERNATIVE SOLUTIONS**

#### **Develop Alternative Solution Packages**

City staff will attempt to develop more than one solution package. The number of solutions developed will depend on the context of the situation. Typically, three options, in addition to a *status quo* option, will present enough variation to ensure that all viable options are considered. The solution packages should represent distinct approaches to addressing the problem statement. For example, different solution packages may have a greater or lesser emphasis on non-physical vs. physical measures, they may include different types of measures, improvements to arterial streets, or they may represent different levels of required capital investment (i.e. basic vs. comprehensive set of measures).

#### Staff Actions

 Develop candidate list of measures based on a review of the *Measures* Toolbox (see Appendices) and *Measures Matrix* (see Exhibit 4-1)

#### **Environmental Assessment Process**

Identification of alternative solutions to the problem

- All reasonable and feasible solutions shall be identified and described.
- At this point, if the alternative solutions do not involve traffic calming measures, or other measures that are subject to the environmental assessment process, the project can be considered to fall under "Schedule A" and is preapproved. No further environmental assessment is required.
- Distinguish between physical and non-physical measures
- □ Attempt to develop more than one alternative solution packages (preferably three)
- Record plans on map sheets with notations and sketches as appropriate. Other support documentation, such as description of proposed non-physical measures, should also be included
- Develop estimated capital and operating costs

#### Step Ten - Support Material

- □ *ATM Measures Toolbox* (see Appendices)
- ATM Measures Application/Effect Matrix
- □ ATM Sample Concept Plan

#### Step Ten - Project File

Record plans on map sheets with notations and sketches as appropriate. Other support documentation, such as description of proposed non-physical measures, should also be included

### **STEP ELEVEN – ANALYZE AND EVALUATE ALTERNATIVES**

The ATM alternatives are analyzed and evaluated using criteria that consider three basic aspects:

- 1. Benefits that will result from the solution;
- 2. Secondary impacts associated with the solution; and,
- 3. Cost of the solution (both capital and operating costs).

Benefits are the positive features associated with the solution, while the secondary impacts are the negative features that result from the solution. The overall purpose of the analysis and evaluation is to select a solution that maximizes the benefits while minimizing the secondary impacts and costs.

**Environmental Assessment Process** 

Inventory natural, social and economic environment; Identify impact of alternative solutions on the environment, including mitigation measures; Evaluate alternative solutions and identify recommended solution.

 These steps involve the formal analysis and evaluation of alternative solutions, as required under the EA process.

The analysis involves the development of a series of factors, each with one or more indicators, which measure the effect of each solution on the factor/indicator. The analysis should be non-judgmental, indicating only what is predicted to occur, not whether this is considered to be positive or negative. Where possible, numerical indicators should be used, though this is not always possible.

The following table of *Potential Evaluation Factors and Indictors* outlines a "long list" of possible factors and indictors from which those that are appropriate for a particular study can be selected. It may also be desirable to develop other indictors if those on the long list do not adequately bring out the differences between solutions in a particular case.

The evaluation should also include a *Status Quo* option, to assess whether the overall effect of the proposed solutions are better than the existing situation. The evaluation stage uses the analysis to determine which solution should be selected. The evaluation can be either *subjective* – a narrative description of the trade-offs between the solutions under consideration, using reasoned argument, or *objective* – typically using a good/fair/poor assessment of each factor, with the decision based on the solution that has the best overall benefits and fewest impacts/lowest cost. Note that some factors may be more significant than others; this should be considered when conducting the evaluation. For example, the relative significance of the effects on the community and on street users may vary, depending on the situation. It is also important to recognize that the solution should be effective – it should, to some degree, address the originally-identified problem – if any solution is to be proposed.

#### Analyze and Evaluate Alternatives

#### Staff Actions

- Develop list of project appropriate indicators based on *Potential Evaluation Factors and Indicators*
- Conduct and document analysis of alternatives using chosen indicators
- Compare with *Status Quo* option

□ Select and document selection of draft recommended alternative.

#### PAC Review (Comprehensive studies only)

A meeting with the PAC will be held following development of a draft set of alternatives and a preliminary evaluation. Based on PAC comments, staff will revise the alternatives as appropriate and will refine the evaluation of alternatives in preparation for the Public Open House.

#### Staff Actions

- Summarize and confirm commonly held concerns or issues with the PAC at end of meeting.
- Staff will consider PAC comments and will respond to commonly held concerns or issues by indicating how the comments have been addressed, or if they have not been addressed, the reasons why should be documented.

#### **Technical Review**

Technical review may take two forms

**Environmental Assessment Process** 

Consult review agencies and public re: alternative solutions

- The PAC meeting, together with the open house (or alternative) indicated in Step 12, and the technical review indicated immediately below, satisfy this step of the EA process.
- □ For major projects with extensive potential secondary impacts, a Technical Advisory Committee (TAC) should be established to review and comment on proposals.
- □ For other projects, ATM staff may seek out specific departments or expertise to comment on proposals as appropriate. Potential staff reviewers may include but are not limited to the following groups or departments: fire, police, urban design, utilities, traffic, maintenance, and transit.

#### Step Eleven - Support Material

Potential Evaluation Factors and Indicators (Exhibit 3-10)

#### Step Eleven - Project File

- Memo describing analysis factors used and results of analysis
- Memo indicating recommend alternative and reasons for selection
- □ PAC/TAC meeting notes
- Staff memo indicating commonly held concerns or issues and staff response.

Factor	Indicator (Positive or Negative Effects)								
Effectiveness in addressing traffic problem	Traffic Volume								
	Traffic Speeds								
	Driver Behaviour								
Associated community traffic effects	Traffic Diversion								
-	Accessibility for neighbourhood residents								
	Accessibility to businesses, schools, other major uses in neighbourhood								
	Parking								
Pedestrian Effects	Environment								
	Crossing conflicts								
Cycling Effects	Environment								
	Crossing conflicts								
Emergency Vehicle Operations	Routes/response times								
	Effect on vehicles								
	Safety/comfort for vehicle occupants (e.g. ambulances)								
Noise and Vibration	Noise								
	Vibration								
Vehicular User Effects	Effect on mobility function of the street								
	Comfort for vehicle occupants								
Safety	Potential effect on collision rates								
Transit Operations	Effect on routes/operation								
	Safety/comfort for occupants								
Natural Environment	Natural features								
	Air quality								
Urban Environment / Aesthetics	Effect of Measures								
	Effect of Signage								
Cost	Capital Cost								
	Operation Cost								
	Maintenance Cost								
	Enforcement Cost								

### **Exhibit 3-10 Potential Evaluation Factors and Indicators**

### **STEP TWELVE - PUBLIC OPEN HOUSE**

The recommended conceptual plan and preliminary cost estimate will be presented to the neighbourhood in a public meeting. The following information may be included on boards and/or in a presentation.

- 1. Overview/education on what ATM is (definition, types of problems, measures, and process)
- 2. Major data features and general conclusions
- 3. Scope of study
- 4. Problem statement
- 5. Project objectives
- 6. Summary of plan development process
- 7. Conceptual ATM plan and support materials

#### Environmental Assessment Process

Consult review agencies and public re: alternative solutions

 The Open House, along with the PAC and technical review indicated in Step 12 above, satisfy this step of the EA process.

For localized studies, an informational mail-out or an on-street meeting may also be appropriate in lieu of a more formal Public Open House.

#### Staff Actions

- □ Prepare for meeting
  - 1. Book Venue
    - Should be in study area
    - Should be large enough to accommodate the expected attendees
    - Book early to ensure availability of venue
  - 2. Advertising / Education
    - Newspaper ads in daily and community paper as per City policy
    - Optional: flyers
    - Prepare draft text (6 weeks before event)
    - Finalize and get approval of text (5 weeks before event)
    - Translate text (4 weeks before event)
    - Layout and graphics design (3 weeks before event)
    - Place ads/deliver flyers (1-2 weeks before event)
  - 3. Display Panels
    - Prepare draft text (4 weeks before event)
    - Finalize and get approval of text (3 weeks before event)
    - Translate text (2 weeks before event)

- Layout and graphics design (1 week before event)
- Produce panels
- Conduct Meeting
- □ Review and confirm commonly held public concerns and issues at meeting close
- Consider public comments and respond to commonly held public concerns and issues by indicating how the comments have been addressed or, if they have not been addressed, the reasons why should be documented.
- **D** Revise recommendations as appropriate

#### Step Twelve - Support Material

- Comment Sheet (Exhibit 3-8)
- □ Sign-in Sheet (Exhibit 3-9)
- Other material deemed necessary

#### Step Twelve - Project File

• Summary of commonly held public concerns and issues and staff response

### STEP THIRTEEN – APPROVAL AND STUDY REPORT

#### <u>Approval</u>

#### **Localized Studies**

 Approval of localized studies will follow the City of Ottawa's current delegated authority process.

#### **Comprehensive Studies**

 Comprehensive studies will normally require approval by City Council, on the recommendation of the Transportation Committee.

# Environmental Assessment Process

#### Select preferred solution

• The "approval" as noted constitutes the selection of the preferred solution.

#### Study Report

A report will be prepared that documents the study process and conclusions as well as an overview of the intended implementation process. A notice of study completion will be submitted to review agencies and the public, and will include a summary project sheet, indicating issues addressed and measures proposed.

#### **Step Thirteen - Support Materials**

□ As per delegated authority process

#### Step Thirteen - Project File

- As per Delegated Authority Process
- Study Report
- Summary project sheet indicating issues addressed and measures proposed

#### **Environmental Assessment Process**

# Notice of Completion to review agencies and the public.

 The notice shall note the availability of the project file for review for at least a 30 day period, and the ability to request a Part II order (formerly know as a "bump up request".)

# PHASE THREE - IMPLEMENTATION STAGE

Once studies have been completed and approved, the recommended measures will be implemented in accordance with priorities and funding availability.

### STEP FOURTEEN - PRIORITIZATION OF MEASURES FOR IMPLEMENTATION

Comprehensive studies will typically be implemented in a staged fashion based on logical groupings of measures. The order in which measures (examined either as localized studies or components of comprehensive studies) will be implemented will be determined by their priority (as determined through the process discussed in Step Five), adjusted to reflect any division into subsets, in comparison to other new projects or groups of measures and any existing backlog of projects, or groups of measures, awaiting implementation. As well, a maximum of 25 additional points will be assigned to reflect the relative costs of groups of measures using the following formula:

Cost of lowest-cost group of measures / Cost of group of measures under consideration x 25 = no. of points

For example, three groups of measures from different projects costing \$50k, \$150k and \$350k, would receive the following additional points:

\$50k group of measures:	50/50 x 25 =	25 points
\$150k group of measures	50/150 x 25 =	8 points
\$350k group of measures	50/350 x 25 =	4 points

Note that the assignment of points to reflect the cost of a group of measures is done on a relative basis, in comparison to the groups of measures being brought forward from other projects. If a new group of measures introduced into the backlog is of lower cost than other groups of measures already in the backlog, it will be necessary to recalculate the costs for all the groups to reflect the new baseline cost.

The actual timing of implementation will depend on available resources. The City will consider adjusting the priority and delaying or advancing the timing of implementation depending on the cost and effectiveness of the measures and the potential to achieve a more effective implementation program in any given year.

Elements of approved area traffic management projects that can be incorporated into roads being reconstructed for other purposes will not be subject to prioritization but will proceed directly with the reconstruction, to take advantage of the opportunity provided. Likewise, highly ranked measures may be delayed to coincide with planned reconstruction schedules.

The City may consider community-funding (such as the Local Improvement Act process) as a means of advancing the implementation of measures that are already on the prioritization list for implementation. Of note, however, this community-funding option is only available for the

implementation of previously approved measures, and not for advancing the undertaking of studies or the approval of new measures. In order to maintain an equitable implementation process, and to ensure that other priority measures are not being delayed, confirmation of full funding will be required before proceeding with the implementation of these measures. The implementation of these measures, while being independent of the prioritization of other approved measures, would still be dependent upon available staff resources for detailed design approval and implementation.

#### Step Fourteen - Support Material

• Summary project sheet (developed in Step Thirteen)

#### Step Fourteen - Project File

□ To be completed by City staff

### **STEP FIFTEEN - IMPLEMENTATION**

Measures will be designed and constructed in accordance with the Area Traffic Management Guidelines, and other relevant City standards and specifications, such as minimum sidewalks widths and warrants for stop signs and traffic signals.

Based on the principle of maintaining equity among communities, and addressing problems on the basis of need rather than ability to pay, the City will assume responsibility for funding area traffic management processes and solutions. However, there may be instances in which the City may consider community-funded enhancements (e.g. landscaping, gateways) that do not compromise planning principles or implementation priorities (e.g. "queue jumping" or "buying a speed hump").

Projects may be implemented on a staged basis, especially if the set of measures and the associated cost is substantial. Staging plans should recognize that preserving the effectiveness of overall plans could require the appropriate grouping of measures.

The City may conduct pilot projects to test **<u>new</u>** types of measures, where they are believed to be the most appropriate solution, and where the appropriate processes are followed. However, measures will not be implemented in an experimental manner that bypasses these Area Traffic Management Guidelines under the guise of being "pilot projects".

All physical devices will be constructed using quality materials and will be built to permanent standards. Temporary measures have proven problematic in Ottawa, particularly as a result of poor aesthetics and maintenance issues.

Appropriate City departments and agencies should be notified on completion of physical measures.

#### Step Fifteen - Support Material

□ To be developed by City

#### Step Fifteen - Project File

□ To be developed by City

### STEP SIXTEEN – MONITORING, EVALUATION, REVISION/REMOVAL

#### <u>Monitoring</u>

Implemented measures will be monitored and evaluated. Sufficient data will be collected to assess the level of improvement that the project has achieved. This typically will involve the collection of traffic speed and volume data, and may be expanded to include other indicators, such as noise and vibrations, if the project measures were intended to achieve improvement in these areas. A public survey may also be undertaken. ATM staff may seek out specific departments or expertise to comment on projects as appropriate. Potential staff reviewers may include but are not limited to the following groups or departments: fire, police, urban

design, utilities, traffic, maintenance, and transit. Collision rates and patterns will be reviewed and compared with pre-installation experiences.

Evaluation reports will be prepared and results made available. The reports may recommend adjustments to the original plan, if concerns have not been adequately addressed or if unacceptable secondary impacts have occurred as a result of implemented measures.

Once the evaluation has been conducted, the project will be considered complete and reviewed only if a request to do so is submitted in accordance with the ATM application process. Measures will only be reviewed outside this timetable if there is evidence of safety issues associated with the installation.

For measures implemented over a series of years, a review should be undertaken at project completion or as appropriate given the nature of measures and neighbourhood context.

#### **Evaluation**

#### **Staff Actions**

- □ Collect "after" data
- Analyze and evaluate project results considering two key questions:
  - Were the stated project objectives met?
  - What is the nature and extent of secondary impacts?
- Seek out appropriate technical input
- Document Findings

#### Revisions / Removal

#### Staff Actions

- □ Staff will undertake minor revisions to the ATM plan as appropriate and in consultation with the community and Ward Councillors.
- □ Removal of measures must follow the EA process if traffic calming measures are included.
- Staff may initiate a review of *legacy* measures that may no longer serve their intended function and represent an ongoing maintenance and operation cost (e.g. new development patterns or transportation infrastructure in a neighbourhood may have eliminated the need for a specific measure). Any such review will include appropriate public consultation.

#### Step Sixteen - Support Materials

□ To be develop by City

#### Step Sixteen - Project File

Data record

Evaluation Report Document

# 4. AREA TRAFFIC MANAGEMENT MEASURES

When making decisions on the type of measure(s) to use, it is necessary to consider several aspects.

- The role of various measures in addressing identified problems by categories;
- Use and limitations of certain measures; and,
- Thresholds that establish where measures should be considered.

These aspects are outlined in the following subsections.

### CATEGORIES OF MEASURES

The City's toolbox of Area Traffic Management Measures are listed in Table 5.1. They are organized into the following eight broad categories and are described in more detail below.

- Traffic Management (Volume)
- Traffic Management (Speed and Behaviour)
- Physical Measures (Traffic Calming)
- Physical Measures (Other)
- Transportation Demand Management
- Education and Enforcement
- Street Environment
- Traffic Control

The City will seek to resolve concerns by considering the possible use of measures from all of the categories listed above. Every measure involves three elements: *effectiveness* in solving the identified problem, undesired *secondary impacts* of various types and degrees, and capital and operating *cost*. Developing a plan to address a neighbourhood concern should strike an appropriate balance between these three elements.

#### Traffic Management (Volume)

Physical and regulatory traffic management measures can reduce traffic volumes in one of two ways: they close streets or prohibit turning movements to eliminate traffic, or remove bottlenecks on preferred alternative streets (typically arterials) to encourage traffic diversion to these routes. Closures (which can be either partial or total) can have significant secondary impacts, as they eliminate both through and local traffic, as well as access for emergency vehicles (turning prohibitions can exempt emergency vehicles but may be less effective if violations occur). The removal of bottlenecks tends to have fewer secondary impacts but may not be as effective as they may not specifically address issues on a given street. Physical measures can be costly; regulatory measures tend to be less so.

The following are traffic management measures that address traffic volume issues.

- Directional Closure
- Full Closure
- Diverters
- Forced Turn Island
- Right-in/Right-out Island
- Median Barriers
- Turn and Movement Prohibitions
- One-Way Street
- Arterial Road Modification

#### Traffic Management (Speed and Behaviour)

The following are a number of regulatory and physical measures that can be used to address speed or driver behaviour issues.

- Speed Zoning
- One-Way to Two-Way Street Conversion
- On-Street Parking
- Pavement Markings
- Narrowing the Street
- Realigned Intersection

#### Physical Measures (Traffic Calming)

These are measures with the primary purpose of reducing vehicular speeds and improving driver behaviour by causing a horizontal or vertical deflection in the vehicle's travel path. Included are such measures as speed humps, tables, raised intersections, mini traffic circles and chicanes. Traffic calming measures can be quite effective in reducing speeds, can be inexpensive (although some are quite costly), are self enforcing, and usually have few secondary impacts when used on local roads. However, undesired secondary impacts, including delays to emergency vehicles and diversion can be a greater concern when traffic calming measures are used on higher classification roadways. These measures may require Environmental Assessments (EA). The following are traffic calming measures.

- Speed Humps/Table
- Raised Crosswalks
- Raised Intersection
- Traffic Circle (Mini)
- Chicanes

#### Physical Measures (Other)

There are a number of other physical modifications to streets that can be implemented, including intersection or midblock narrowings, curb radii reductions, medians, and lateral shifts. Many of these measures improve the pedestrian environment, or improve driver

behaviour by better defining the travel path that motorized vehicles must follow. The following are potential physical measures.

- Intersection Narrowings
- Mid-Block Narrowings
- Centre Island Narrowings (Median)
- Curb Radii Reduction
- Lateral Shift

#### Transportation Demand Management

The City will work to reduce motor vehicle demand through measures that encourage walking, cycling, transit use, teleworking, ridesharing and other options. TDM measures for Area Traffic Management will rely on the City's ongoing TDM program and may be tailored to the specific needs of a project. The following TDM measure is particularly relevant to ATM.

Neighbourhood-Based TDM Toolkit

#### Education and Enforcement

Education and enforcement are intended to address issues of speeding and driver behaviour. They typically have limited secondary impacts, but can be relatively costly if widely implemented. Enforcement is considered to have limited effectiveness unless it is applied frequently. Some education tools, such as radar speed boards, are popular within Ottawa's communities and can have positive results, particularly if coordinated with enforcement.

In cases where neighbourhood traffic problems are not caused by through traffic, the City will attempt to work with affected communities to develop and implement programs to increase the awareness of the impacts of inappropriate use of motorized vehicles.

The Ottawa Police Service will be encouraged to coordinate enforcement efforts with education and other elements of an overall area traffic management program. Enforcement should respect both safety and the liveability aspects of neighbourhoods.

The following are education and enforcement measures.

- Neighbourhood Speed Watch
- Safety and Education Campaigns
- Targeted Enforcement

#### Street Environment

Landscaping, streetscaping, gateways and surface treatments on streets can be used to create an environment where the dominance of the motorized vehicle is reduced, and to communicate to drivers the need to respect the community they are passing through.

The following are street environment measures.

- Streetscaping
- Gateways
- Textured Crosswalk
- Textured Surfaces
- Sidewalks
- Woonerven (extensively traffic calmed and landscaped local street)

#### Traffic Control

Regulatory measures such as stop signs and signals conform to warrants (established criteria that define thresholds for the use of traffic control). Unwarranted stops signs typically result in compliance problems and in some cases can result in higher speeds. Unwarranted signals can result in increased emissions, delay, and collisions. Traffic control measures include the following.

- Stop Signs
- Modern Roundabouts

### THRESHOLDS FOR USE OF MEASURES

Indicator thresholds for traffic speeds, through volumes, and overall volumes establish minimum levels at which action may be taken to address an identified problem. These thresholds are generally higher than those used for screening a project. The screening thresholds establish minimum levels for undertaking a study of the problem in the first place. The following section describes indicators and minimum thresholds for taking action.

#### Traffic Speeds

In addressing traffic speed concerns, the following criteria should be used as Guidelines to determine situations where measures may be introduced to reduce speeds or the impact of speeds:

1. The *85<sup>th</sup> percentile speed* is at least 50 km/h, unless the posted speed limit is greater than 50 km/h in which case the 85<sup>th</sup> percentile speed must be at least the posted speed limit;

or

2. The 95<sup>th</sup> percentile speed is at least 60 km/h, unless the posted speed limit is greater than 50 km/h in which case the 95<sup>th</sup> percentile speed must be at least 10 km/h above the posted speed limit.

These thresholds may be adjusted up or down to suit the street context. If it can be demonstrated that the speeds have a clear effect on other street users or adjacent residents, lower speed threshold *may* be appropriate. Likewise, higher speeds may not require measures if no effects on safety or liveability can be demonstrated.

#### Through Traffic Volumes

In addressing concerns over through traffic, measures should only be considered if:

1. The proportion of through traffic exceeds 20% of the total traffic, or there has been a dramatic increase in through traffic as a result of a land use or road network change;

<u>and,</u>

2. The solution is not expected to divert traffic to other streets of similar or lower classification that would result in traffic volumes on these other streets increasing by more than 10%.

#### **Overall Traffic Volumes**

High traffic volumes where almost all traffic is generated by local residents and neighbourhood activities is a problematic issue that is difficult to resolve other than through public education, and better options for walking, cycling and transit travel. Physical or regulatory measures will, at most, divert traffic to other similar streets. If high volumes are causing safety or operational problems but reducing these volumes is not practical, measures to reduce speed and/or improve driver behaviour may be considered to reduce the overall impacts of these volumes

### COMBINING MEASURES

Guidance on how measures may be combined is provided in the *Canadian Guide to Neighbourhood Traffic Calming*, Transportation Association of Canada, Ottawa, Canada, December 1998

### **EMERGING MEASURES / PILOT PROJECTS**

The City may conduct pilot projects to test **<u>new</u>** types of measures, where they are believed to be the most appropriate solution, and where the appropriate processes are followed. However, measures will not be implemented in an experimental manner that bypasses these Area Traffic Management Guidelines under the guise of being "pilot projects".

All physical devices will be constructed using quality materials and will be built to permanent standards. Temporary measures have proven problematic in Ottawa, particularly as a result of poor aesthetics and maintenance issues.

### MEASURES TOOLBOX

The Appendices describe each of the area traffic management measures in detail. A page is devoted to each measure and includes the following information:

- General description
- Other terms commonly used to describe the measure
- Intended purpose
- Streets on which the measure is appropriate

- Type of problem the measure addresses
- Approximate costs
- Illustration and/or photo
- List of local examples
- Advantages and disadvantages of each measure

The Measures Toolbox draws on institutional experience within the City of Ottawa and the following two resources:

*Canadian Guide to Neighbourhood Traffic Calming*, Transportation Association of Canada, Ottawa, Canada, December 1998.

Ewing, R. *Traffic Calming: State of the Practice*, Institute of Transportation Engineers, Washington, D.C., 1999.

### **APPLICATION AND LIMITATIONS OF MEASURES**

Table 5-1 lists each measure in the traffic management toolbox and identifies the appropriate application of the measure and potential positive or negative effects.

#### **Emergency Response Network**

Vertical measures, such as speed humps, speed tables and raised intersections, can result in delays for fire and ambulance vehicles. Most cities reviewed as part of this project keep vertical measures (and in some cases, all traffic calming measures) off primary emergency response routes, which define the streets where delays would have the most serious effects. On all remaining roads, the impact on emergency response is considered when developing solutions, but the providers of emergency services take no firm position.

In Ottawa, a primary emergency response network does not currently exist. It is proposed that the City develop a primary emergency response network on which the use of vertical measures would be inappropriate, and therefore prohibited. Until such a network is established, Emergency Service Providers should review all proposals for vertical measures carefully.

#### Arterial and Collector Streets

The City should consider the potential of area traffic management measures to negatively impact the service function of collector and arterial streets. The City relies substantially on the arterial network for the movement of people and goods, and on both arterials and collectors in providing effective transit services. Careful consideration should also be given to the potential for area traffic management measures on these streets to divert traffic onto similar or lower classification streets.

### Exhibit 4-1– Measures Application / Impact Matrix

	Ap	Application Type of Problem					Potential Effect														
	Street							<b></b>		8	Enviro Other Moder					O&M					
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Movement Prohibitions		0	$\otimes$	0	۲	0	0	0	0	0	$\otimes$	$\otimes$	0	0	0	0	0	0	\$	$\otimes$	$\otimes$
One-Way Street	•	0	$\otimes$	$\otimes$	•	0	0	0	0	$\otimes$	$\otimes$	$\otimes$	0	0	0	$\otimes$	0	0	\$	$\otimes$	$\otimes$
Arterial Street Modification		•	$\otimes$	0	•	0	0	0	0	•	0	0	0	0	0	0	0	0	\$\$\$\$	$\otimes$	•
Traffic Management (Speed and Behav	riour)		82		0	0	0	0				0	0							0	- 02
Speed Zoning		-	8		0	0	8	8	-	$\otimes$	0	0	0	0	8	Ø	8		\$	Ø	8
One-way to Two-way Conversion		-	-		0	0	0	0		0	0	0	-	0	8	0	0	-	\$	Ø	
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Realigned Intersection	ŏ	ō	Ø	ŏ	ŏ	ŏ	ŏ	Ō	Ō	$\otimes$	ŏ	ŏ	ŏ	$\otimes$	Ō	$\otimes$	Ō	Ō	\$\$\$	$\overline{\otimes}$	$\otimes$
Physical Measures (Traffic Calming)																					
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Raised Crosswalks	•	0	$\otimes$	۰	0	0	0	0	•	$\otimes$	$\otimes$	0	0	$\otimes$	0	$\otimes$	0	۲	\$\$	$\otimes$	•
Raised Intersections	•	0	$\otimes$	0	0	0	0	0	•	0	$\otimes$	0	0	$\otimes$	0	$\otimes$	0	•	\$\$\$	$\otimes$	•
Traffic Circles (mini)	•	0	$\otimes$	•	0	0	۲	0	0	$\otimes$	$\otimes$	0	0	0	0	$\otimes$	0	0	\$\$	$\otimes$	۲
Chicanes	•	0	$\otimes$		0	0	0	0	0	$\otimes$	$\otimes$	0	$\otimes$	0	0	$\otimes$	0	0	\$\$\$	$\otimes$	•
Physical Measures (Other)			-		-	0	-	-				0		-	-					-	
Intersection Narrowings			0	0	0	0	0	$\otimes$		0	$\otimes$	0	0	0	0	$\otimes$	$\otimes$	•	\$\$	$\otimes$	•
Mid-Block Narrowings		-	0	0	0	0	8	8		0	$\otimes$	0	8	0	0	0	$\otimes$		\$\$	× ×	
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Transportation Demand Management	1°	-		-	<u> </u>	-				<u> </u>		<u> </u>	<u> </u>						- 44		<u> </u>
Neighbourhood-Based TDM Toolkit		•	۰	0	۰	0	0	0	0	0	0	0	0	0	0	•	0	0	\$\$	$\otimes$	•
Educational and Enforcement							l		in the second second											1	
Neighbourhood Speed Watch	•	•			0	•	0	0	0	0	0	0	0	0	0	0	0	0	\$	$\otimes$	•
Safety and Education Campaign	•	•	۲	0	0	•	0	0	0	0	0	0	0	0	0	0	0	0	\$\$	$\otimes$	•
Targeted Enforcement		•	٠		0	•	0	•	•	0	0	0	0	0	0	0	•	•	\$	$\otimes$	$\otimes$
Street Environment											1										
Streetscaping	•	•	•	0	0	•	0	0	•	0	0	0	0	0	•	0	0	•	\$\$\$	$\otimes$	•
Gateways		•	0	•	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$\$	$\otimes$	•
Textured Crosswalks		-		0	0	0	0	0		0	0	0	0	8	0	0	0		\$\$	× ×	
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Sidewalks		8	8		-	0	0	0		8	8	0	0	0		8	0	-	¢¢ 0000	8	-
Traffic Control	-	1CX	XX	-	-	0		0	-	NOV.	KCY	0	0		-	101		-	4444	XX	-
Stop Signs		0	$\otimes$	0	0	0			0	0	0	0	0	$\otimes$	0	$\otimes$		0	s	$\otimes$	(x)
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LEGEND	App	lica	tion		Туре	of F	robl	em /	Effec	t	Cost						0&1	/Enf	orcen	nent	
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