



# *Community Traffic Calming Program*

*Updated September 2004  
Prepared by Urban Systems Ltd.*



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## SUMMARY

This document presents an updated Community Traffic Calming Program for the City of North Vancouver. A separate Technical Appendix contains technical information regarding the selection, design and construction of traffic calming devices.

The Community Traffic Calming Program provides a comprehensive approach to identifying and resolving neighbourhood traffic and transportation problems through the application of traffic calming measures. The advantages of this approach are:

- **Traffic problems will be minimized or eliminated**, rather than creating new problems or simply shifting problems to neighbouring streets. The nature of problems will be precisely determined, to ensure that the correct traffic calming solutions are implemented.
- **Funds allocated to traffic calming will be spent cost-effectively.** The methodology and technical guidelines contained in the Community Traffic Calming Program will help to ensure that expensive solutions and ineffective solutions are avoided in favour of solutions that provide maximum benefit at a reasonable cost.
- **A process will be established to address problems in the future**, as they arise. Neighbourhood Transportation Committees will be established in each neighbourhood after a traffic calming plan has been prepared, to liaise with staff and assist in monitoring the effects of traffic calming. Not only will this enable residents and others in the community to avoid bureaucratic “run around,” it will also streamline staff efforts and minimize transportation complaints at Council meetings.
- **Safety and livability will be enhanced and preserved.** Traffic calming provides a means of improving safety for all road users, and enhancing the livability of neighbourhoods by minimizing the negative impacts of traffic and improving streetscapes.



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The Community Traffic Calming Program was prepared with input from community representatives, key stakeholders including emergency services, and municipal staff. The key features of the Community Traffic Calming Program include:

- The residential areas of the City are divided into 12 neighbourhoods for the purposes of preparing traffic calming plans, and for establishing permanent Neighbourhood Transportation Committees. The boundaries of each neighbourhood are defined along major traffic corridors, to ensure that any potential effects of diverting traffic would be addressed within each neighbourhood, and would not be overlooked.
- To date, traffic calming plans have been prepared for four neighbourhoods — the Ridgeway, Grand Boulevard, Marine/Hamilton and Cloverley neighbourhoods.
- Priorities for preparing traffic calming plans are identified, based on an assessment of the current level of negative traffic impacts within each neighbourhood, as well as consideration of future changes. Priority neighbourhoods include Central Lonsdale East, Central Lonsdale West, Lower Lonsdale East and Lower Lonsdale West.
- The capital costs of implementing traffic calming plans for the eight remaining neighbourhoods are estimated to be a total of \$1,070,000. Costs of implementing traffic calming plans would be funded from general tax revenues, and could be reduced through cost-sharing with ICBC.

## **Policy Statement**

This Policy Statement summarizes the goals and objectives for implementation of the Traffic Calming Program.

### **Goals**

Traffic calming will be undertaken to achieve the following goals:

- To make streets safe for everyone.
- To preserve and enhance the liveability of a neighbourhood.



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These goals will be achieved by pursuing the following objectives in applying traffic calming measures:

- Reduce vehicle speeds
- Discourage through traffic
- Minimise conflicts between all road users

To help achieve the goals and objectives, and to enhance the effectiveness of traffic calming, the following techniques and principles will be used in developing traffic calming plans:

- Involve the community in identifying and quantifying the underlying issues.
- Enhance the neighbourhood environment where possible with the traffic calming installations.
- Identify and address issues as they arise.
- Use the Transportation Association of Canada's Canadian Guide to Neighbourhood Traffic Calming and other resources for guidance in the selection of traffic calming measures.
- Consider improvements to the arterial network as a first step in traffic calming.
- Use self-enforcing measures in preference to regulatory measures.
- Minimize restrictions and impediments on property access.
- Consider the impact of traffic calming on emergency service vehicles and alternative forms of transportation.
- Implement measures on a temporary basis for evaluation prior to permanent installations.
- Implement traffic calming on a Local Area wide basis.
- Monitor traffic conditions after implementation to confirm effectiveness and review installations if necessary.

### **Neighbourhood Priorities**

The City is divided into 12 neighbourhoods as illustrated in Figure 4.1 of the Community Traffic Calming Program. Neighbourhoods represent the minimum area considered for traffic calming plans.



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For the purpose of determining the order in which traffic calming plans will be undertaken, neighbourhoods are evaluated using the following criteria and weightings. Neighbourhood priorities are reviewed on a regular basis.

<b>Criteria</b>	<b>Measure</b>	<b>Weighting</b>
Collisions	Number of reported collisions in the past three years	2.0
Speeds	Vehicle speeds in excess of posted speeds	1.5
Volumes	Traffic volumes on neighbourhood streets	1.5
Known problems	Number and severity of traffic problems	1.0
Neighbourhood interest	Amount of interest and support for traffic calming within a neighbourhood	1.0
Pedestrian and cyclist activity	Number of destinations which attract pedestrian and cyclist traffic	0.5



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# 1. INTRODUCTION

This document presents an updated Community Traffic Calming Program for the City of North Vancouver. This material in this document provides guidance regarding a process for developing and implementing traffic calming measures. A separate Technical Appendix contains technical information regarding the selection, design and construction of traffic calming devices.

The Community Traffic Calming Program and the associated policy document are intended to address concerns which residents, Council and staff have regarding negative impacts of traffic on local neighbourhood streets. The process for undertaking traffic calming described in this document can also be applied to arterial and collector roads to mitigate the negative impacts of traffic, while still maintaining the ability of these roads to effectively transport goods and people.

## 1.1 Why A Program Is Needed

As in most urban municipalities, traffic has become an issue on neighbourhood streets in North Vancouver. With increasing traffic congestion on major roads, some motorists begin looking for short-cuts along residential streets. As a result, many residents have become concerned about speeding, short-cutting and safety for pedestrians, cyclists and motorists on their streets.

Many municipalities have responded to these concerns by implementing traffic calming measures — speed humps, traffic circles, curb extensions, diverters and a range of other measures intended to slow, discourage or obstruct unwanted traffic. Although most municipalities have been successful with traffic calming efforts, some municipalities have created more problems than they have solved. Typically, this has happened when traffic calming measures have been applied in a piecemeal manner, without an overall plan and without consideration of the implications of traffic calming.

To avoid this, Council and staff developed this Community Traffic Calming Program to proactively address traffic problems, to ensure that funds spent on traffic calming are spent cost-effectively, that reported problems are resolved, and that no new problems are created in the process.



### Community Traffic Calming Program

The Community Traffic Calming Program was prepared with input from a working group comprised of eight community representatives, the majority of whom were also members on other City committees. In addition, input was solicited from key stakeholders, including fire, ambulance and police services, TransLink and the Joint Bicycle Advisory Committee.

The Community Traffic Calming Program was adopted by Council in March 2001. Since then, traffic calming plans have been developed and implemented in four neighbourhoods through the Community Traffic Calming program — the Ridgeway, Grand Boulevard, Marine/Hamilton and Cloverley neighbourhoods.

## 1.2 Other Traffic Calming Resources

The City's Community Traffic Calming Program is intended to supplement the information contained in the *Canadian Guide to Neighbourhood Traffic Calming*, which was published in December 1998. The Guide was prepared for the Transportation Association of Canada and the Canadian Institute of Transportation Engineers, and is intended to provide consistent guidelines for traffic calming measures in Canada.

Rather than replicate the information contained in the Guide, this document provides additional information specific to conditions in North Vancouver, such as goals for traffic calming, neighbourhood boundaries and priorities, and means of involving the community in preparing traffic calming plans. The separate Technical Appendix updates design information contained in the Guide, and also provides information regarding implementation of traffic calming devices not contained in the Guide.

The Community Traffic Calming Program also incorporates and is consistent with the practices described in the City's *Public Involvement Program Guidelines 2000*, in particular the "tools and techniques" used for involving the community in a variety of situations.





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## 2. GOALS

This section describes the goals of the Community Traffic Calming Program, and describes means of achieving these goals with specific objectives and principles. These goals, objectives and principles provide the basis for developing other aspects of the Community Traffic Calming Program, described in subsequent sections.

### 2.1 Goals and Objectives

Residents and other community members wish to achieve two key goals in undertaking neighbourhood traffic calming in North Vancouver:

- **Safety.** Traffic calming can make streets safe for everyone, including all road users — pedestrians, cyclists, motorists and others. Many conflicts and collisions which occur on local streets are the result of excessive speeds and excessive through traffic — the very problems that traffic calming can correct. Research has shown that specific traffic calming devices can reduce collision rates by as much as 90%.
- **Livability.** Traffic calming can help to preserve and enhance the livability of a neighbourhood by minimizing the negative impacts of traffic — noise, pollution and visual intrusion. Attractively designed and landscaped traffic calming devices can also enhance the streetscape, enhancing livability as a result.

It is intended that these goals be pursued in a manner which is consistent with the City's Official Community Plan. This means that traffic calming measures are applied to improve safety and livability, while maintaining the effectiveness of the road network — particularly arterial and collector roads — for transporting people and goods

Objectives to achieve the goals of improving safety and livability include:

- **Reduce vehicle speeds.** Speeds which are suitable for one type of road — a major arterial road, for example — may be considered excessive on a collector road or local street within a neighbourhood. Measures which reduce vehicle speeds help to improve safety on neighbourhood streets for pedestrians, cyclists, motorists and other



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road users, and also help to improve the livability of a community by reducing noise and other negative impacts of traffic.

- **Discourage through traffic on neighbourhood streets.** Neighbourhood streets are primarily intended for access to properties, not for accommodating through traffic. Reducing through traffic helps to improve safety by reducing the potential for conflicts. Reducing through traffic also reduces delays for local traffic, pedestrians, cyclists and other road users, and helps to improve livability by reducing noise and other negative impacts of traffic.
- **Minimize conflicts between street users.** Reducing conflicts between road users helps to improve safety, as well as improve the livability of a community.
- **Enhance the neighbourhood environment.** Reducing vehicle speeds, traffic volumes and conflicts helps to enhance the livability of a community by reducing the apparent dominance of traffic. This means reducing noise from traffic, reducing air pollution and reducing congestion on neighbourhood streets. Traffic calming measures can also enhance the streetscape by providing opportunities for landscaping and public art.
- **Establish an on-going process to address problems.** New roads, additional development and other changes may result in changes in traffic patterns within a neighbourhood, and may create new traffic problems in the future. Establishing an on-going process of monitoring and review will help to ensure that these problems are corrected when they occur, or better yet, are anticipated and corrected before they occur.

Another important objective — although not directly related to the goals of improving safety and livability — is to allocate funds cost-effectively. Ensuring that the costs of traffic calming are minimized and that the most cost-effective solutions are implemented will mean that traffic calming initiatives can be pursued as quickly as possible throughout the City, and that other transportation improvements will not be unnecessarily deferred as a result of traffic calming plans.



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## 2.2 Traffic Calming Principles

The Community Traffic Calming Program presented in this document does not attempt to define “rules” for traffic calming by establishing “thresholds” for speeds, traffic volumes and other conditions. Some municipalities have followed this approach, establishing thresholds below which traffic conditions are not considered a problem and no action will be taken. This approach is typically used in large municipalities where traffic problems occur in only a few isolated locations. On the other hand, the approach used in the City’s Community Traffic Calming Program addresses the wide variation in traffic conditions and community expectations throughout all neighbourhoods in the City, and results in complete solutions to traffic problems with solid community support.

Given the range of traffic conditions and expectations that can be encountered in a community, it is not advisable to define thresholds of traffic speed or volumes to govern the application of traffic calming solutions. Instead, it is best to define several “principles” of traffic calming which are relevant to all conditions. These principles are described in this section. Applying these principles in North Vancouver will maximize the effectiveness of resulting traffic calming plans, and will help to avoid mistakes which others have made. Applying these principles will also help to build community support for the traffic calming plans, rather than opposition, by ensuring that plans meet the community’s needs.

- **Involve the community.** Residents, business operators and others who live and work in a community must be involved in developing traffic calming plans. Their input is essential in identifying problems and in selecting traffic calming solutions. Involving the community builds support for a traffic calming plan, and enhances the credibility of a plan. It also minimizes the potential influence of special interest groups who might otherwise unduly influence the preparation of a plan. If the community is not adequately involved in preparing a traffic calming plan, residents and others in a community might oppose the plan — regardless of its technical merit — because they feel they were not properly consulted, that they were not listened to, or that the plan does not recognize the unique circumstances of their neighbourhood.



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- **Identify the real problem.** Frequently, the perceived nature of a traffic problem is substantially different from the real problem. In some cases, the difference is so great that a solution intended to eliminate the perceived problem might make the real problem worse. For example, residents often mention “traffic volume” and “speeding” as problems on their streets, but in many cases the problem is one or the other. It is important to identify the real problem, so as to select the appropriate measure. If the real problem is speeding, for example, a measure that significantly reduces the traffic volume on a street might inadvertently encourage speeding if fewer cars remain on the street to slow traffic.
- **Quantify the problem.** Some problems are more significant than other problems. Some problems are all-day problems, whereas other problems occur only at certain times, in certain seasons or in certain directions. Some reported problems are not really problems at all. In order to ensure that appropriate traffic calming measures are implemented, it is essential that the extent of problems is quantified. This means collecting data, including traffic volumes, accident data, counts of pedestrians and cyclists, measures of delay and other data as appropriate.
- **Consider improvements to the arterial street network first.** No one shortcuts through a neighbourhood unless there's a reason to do so, and the reason is often congestion on adjacent arterial roads. There is a wide range of low-cost options available to improve arterial operations, including fine-tuning signal timings, adding turn bays, and implementing turn prohibitions and parking restrictions. Improvements to the arterial road network should be considered first, as these might avoid or reduce the need for traffic calming measures on neighbourhood streets, and would enhance the effectiveness of the traffic calming plan.
- **Apply traffic calming measures on a neighbourhood-wide basis,** not on a localized, site-by-site basis. In considering measures to resolve a traffic problem in one location, any potential effects on adjacent streets must be considered. These effects might be caused by traffic diverted to other streets, motorists who speed up further down a street from a traffic calming measure, or changes in turning movements which increase delays at intersection. If these effects are not considered in advance, a traffic calming measure might fail to solve a problem and at the same time create new problems or exacerbate existing problems elsewhere in the neighbourhood.



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- **Use self-enforcing measures** — those that maintain a 24-hour presence, and do not require police enforcement to be effective. For example, traffic circles should be used instead of 4-way stops, speed humps should be used instead of speed restrictions, and directional closures and diverters should be used instead of turn prohibitions. Measures that can be circumvented — such as a turn prohibition or a directional closure — should be used only at intersections with major roads, where visibility and the presence of traffic discourage motorists from circumventing these measures.
- **Minimize access restrictions.** Generally, residents and other members of the community will be more supportive of traffic calming measures that do not restrict their access into and out of a neighbourhood. Diverters, barriers and closures restrict access for people who live or work on a particular street, and support for such measures is directly related to the severity of traffic problems. Where problems can be addressed with other traffic calming measures that are not as restrictive to access, these should be considered instead, or residents should at least be given a choice of measures.
- **Target automobiles and trucks only.** The purpose in implementing traffic calming measures is to affect automobiles and trucks, but not other modes. Consequently, traffic calming devices should be designed to permit transit buses, cyclists and pedestrians to pass through, while obstructing automobiles and trucks. Similarly, traffic calming devices should be located and designed so as not to impede emergency and service vehicles.
- **Implement measures on a temporary basis.** Some traffic calming devices cost as much as \$40,000 to construct. Where possible, inexpensive temporary devices should be installed to ensure that these devices will achieve the intended results, prior to constructing the devices on a permanent basis. A temporary installation also provides an opportunity to alter the geometrics of a device or make other changes prior to permanent installation.
- **Monitor conditions.** Traffic patterns change, and consequently it is important that traffic volumes, vehicle speeds, accident rates and other indicators of potential traffic problems are recorded and analyzed on an on-going basis. Engineering staff currently collect much of this information, and consequently on-going monitoring can be carried out without a significant increase in data collection efforts.



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## 3. PROCESS

This section describes the process of preparing and implementing traffic calming plans in the City, and describes how traffic problems can be addressed on an on-going basis.

### 3.1 Community Involvement

Traffic calming should never be undertaken without involving the community in the process. For a traffic calming plan to be successful, the community must support and be committed to the plan. The only means of gaining this support is to involve the entire community from the earliest stages of developing the plan. Although community involvement requires significant effort during the preparation of a plan, it usually results in far less conflict and cost over the longer-term, during and after the time the plan is implemented.

Community involvement also enhances the credibility of a traffic calming plan, both from the perspective of the community and from the perspective of Council. Decision-makers are often reluctant to commit to a potentially controversial plan, but won't hesitate to endorse a plan which they consider credible because it has broad community support.

Another benefit of an effective community involvement process is that by involving the entire community, the influence of special interest groups is minimized. For example, persons who request extreme solutions to traffic problems are typically counter-balanced by the majority of the community who prefer more moderate solutions. Similarly, persons who attempt to focus efforts on localized problems are offset by the community's desire to consider the entire neighbourhood.

This section describes various means of involving the community in addressing traffic problems. The techniques described in this section are based on information presented in the *Canadian Guide to Neighbourhood Traffic Calming*, as well as the City's *Public Involvement Program Guidelines 2000*.

#### 3.1.1 Before Initiating a Plan

In preparing a traffic calming plan, the most important activity is establishing a Neighbourhood Traffic Residents Association of



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interested residents, businesspeople and others within the neighbourhood. This is best done at the outset, before work preparing a plan begins in earnest.

The role of the Residents Association is to provide input to the study team regarding traffic problems in the neighbourhood, to assist in community involvement activities, and to review proposed plans prior to presentation to the entire neighbourhood. A Terms of Reference for Neighbourhood Traffic Residents Associations is included in the appendix.

The key consideration in establishing a Residents Association is to ensure that all important groups are represented. Institutions, shopping centres and major employers within the neighbourhood need not be represented on the Residents Association — they are best involved in the study through direct contact and consultation. Although not members of the Residents Association, staff should attend Residents Association meetings to respond to questions and provide input to the process.

### **3.1.2 While Preparing a Plan**

During the preparation of a traffic calming plan, various methods can be used to involve the community in the process, as described below:

- **A walkabout** is a two-hour to four-hour walking tour through the neighbourhood. It provides an opportunity for staff, the Neighbourhood Traffic Residents Association, consultants, residents and other community members to discuss transportation issues and observe conditions firsthand. It also provides an effective means of publicizing the traffic calming plan early in the process. This helps to minimize the possibility that an important traffic issue is overlooked, and helps build support for the traffic calming plan.
- **An open house** is most effective in presenting proposed traffic calming plans to the community, at a time during the preparation of the plan when community feedback regarding various plans and options is desired. An open house provides an opportunity for people to ask questions, and they can take as long as they need to view materials. Display materials might include plans indicating locations of traffic calming measures, illustrations and photographs of traffic calming devices, and a description of the study process.



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The Neighbourhood Traffic Residents Association should host the open house. This reinforces the point that the community is involved in the study, and that the municipality is working with the community to develop the traffic calming plan. Presentation materials would be prepared by the consultants or City staff. For open houses, a "drop-in" format is most effective. Members of the community are invited to drop in at any time between 4:00 and 7:00 p.m., for example. The open house format avoids confrontations, grandstanding and mob reactions. Instead, it allows people to discuss the issues which are of concern to them, to take however long they want inspecting the displayed materials, and ask questions at any time.

- **Public meetings** are generally best for presenting information, when there is less expectation of input and feedback from the community. Examples of opportunities for public meetings include an information meeting to describe what traffic calming is, and a meeting to present the final recommended traffic calming plan. Public meetings should be avoided in cases where considerable feedback is desired, or where there are controversial issues.
- **Focus groups and workshops** are of limited use in preparing traffic calming plans. They are most effective with selected groups of stakeholders, as a means of addressing specific issues in detail. Generally, workshops and focus groups should be limited to one or two key issues, and should not extend for more than two hours.

Public information can be provided through a variety of “passive” and “active” means, including a telephone information hot line, flyers and other materials distributed door-to-door or through schools, a web site and e-mail (“electronic democracy”), advertisements and press releases, information repositories and displays in community centres and shopping malls.

### **3.1.3 After a Plan Is Implemented**

During the preparation of a traffic calming plan, a lot of effort will have been spent developing a good working relationship between the community and municipal staff. It is important that the relationship continue after the plan is implemented. There will always be transportation problems — either new problems which occur as a result of changing conditions in the neighbourhood, or existing problems which weren't completely resolved by the local transportation plan. A





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permanent Neighbourhood Transportation Committee provides a link between the community and municipal staff so that transportation problems can be effectively addressed as they arise.

A permanent Neighbourhood Transportation Committee should be established following approval of the traffic calming plan. Often, members of the Neighbourhood Traffic Residents Association become members of this new, permanent committee. The Neighbourhood Transportation Committee would function as a "clearinghouse" for all concerns and requests for transportation improvements from residents and other members of the community. This ensures that a request that is forwarded to the municipality has the support of the community at large, and does not simply reflect the concerns of one person. The Neighbourhood Transportation Committee knows whom to contact at the municipality, thereby streamlining communications and substantially reducing the numbers of phone calls and letters to which staff must respond.

A Neighbourhood Transportation Committee should meet as needed to address traffic or transportation issues. Committees may meet as frequently as every week at times when there are urgent issues to address, and at other times may only meet every three months to discuss "housekeeping" issues. Determining the need for meetings should be the joint responsibility of each committee chair and the corresponding staff liaison.

Eventually, when traffic calming plans have been developed for all neighbourhoods in the City, there would be as many as eleven Neighbourhood Transportation Committees in existence. These committees could report to a City-wide "Transportation Committee," which would in turn report to Council. This City-wide committee would deal with traffic and transportation issues of municipal and regional scope, whereas issues limited to a specific location or neighbourhood would be dealt with by the appropriate Neighbourhood Transportation Committee. To ensure good communication between committees, one member of each Neighbourhood Transportation Committee should also be a member of the City-wide Transportation Committee.



## 3.2 Preparing a Plan

The *Canadian Guide to Neighbourhood Traffic Calming* describes a four-stage process for developing traffic calming plans (Section 1.8 of the Guide), as well as a comprehensive community involvement process (Section 2 of the Guide). A single integrated process is illustrated in **Figure 3.1** and is summarized in this section, describing how the traffic calming process is best applied to developing neighbourhood traffic calming plans in North Vancouver.

### 3.2.1 Stage 1 — Initiate the Study

This first stage involves preparatory activities and publicity activities, including :

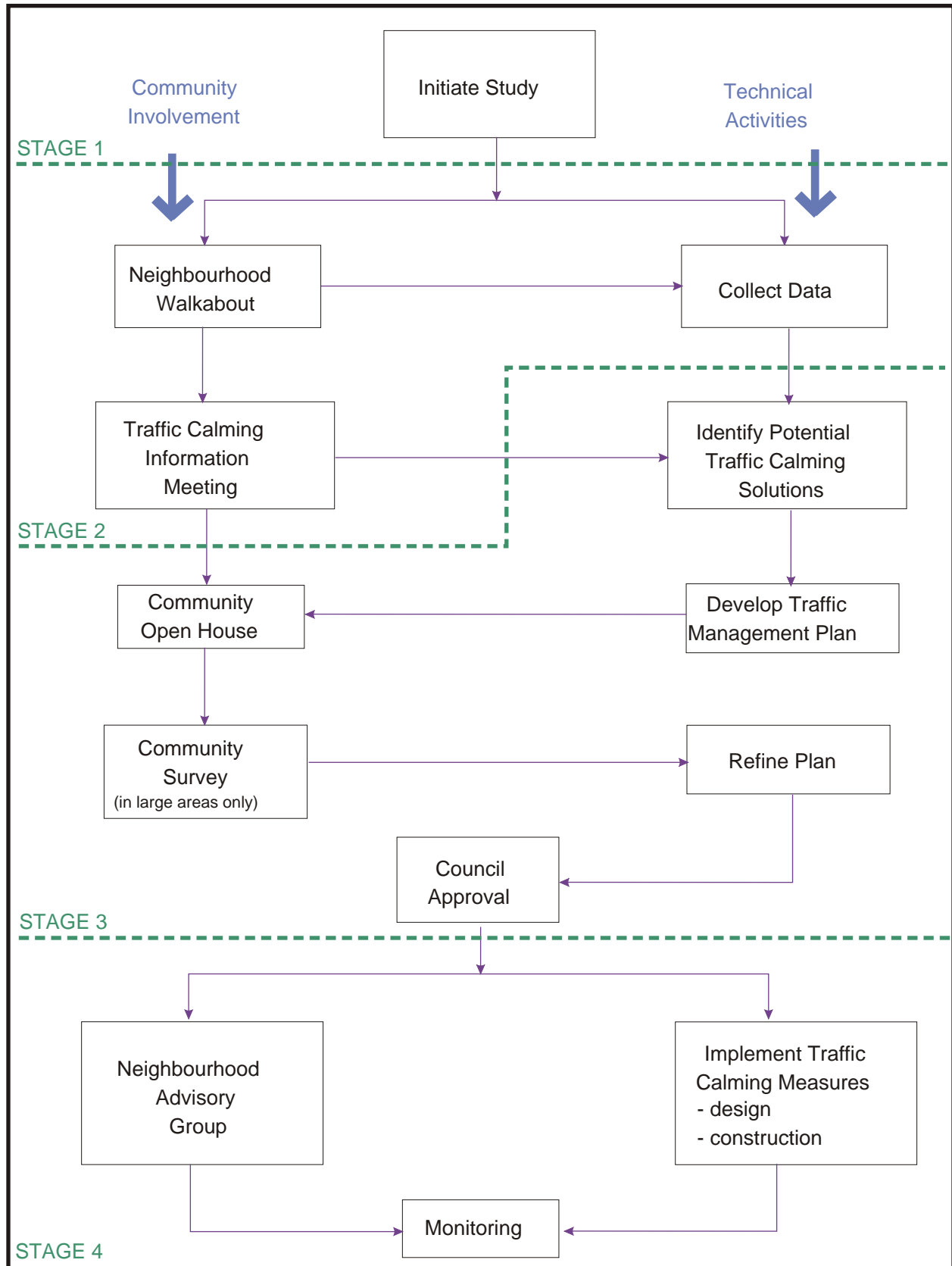
- Approval to prepare a neighbourhood traffic calming plan, including allocation of funding for plan preparation and subsequent implementation.
- Select a consultant (if the plan is to be prepared by a consultant).
- Establish a Neighbourhood Traffic Residents Association. Members of the committee can be identified from previous contact regarding transportation issues, through other City committees, and through advertisements recruiting Committee members.
- Publicity, including press releases, flyers delivered to every household and business in the neighbourhood, and a “walkabout” through the neighbourhood.

### 3.2.2 Stage 2 — Identify Problems

Prior to developing a traffic calming plan, it is essential that all traffic and transportation problems in the neighbourhood be identified. Clearly, not every issue can be identified at this stage, and some issues might arise late in the study, when it may be too late to incorporate solutions in the plan to address these issues. However, the objective at this stage is to minimize the potential for significant issues to arise at a later date, by identifying as many issues as possible.

Many issues will be identified which cannot be addressed within the scope of the traffic calming plan. Some of these will relate to municipal, regional or provincial transportation issues, and are best

Figure 3.1  
Neighbourhood Traffic Management Plan Process





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addressed through City and regional transportation plans. Other issues will relate to other aspects of municipal responsibility (such as bylaw enforcement, garbage collection and so forth). And some issues will be isolated to specific developments or streets (such as circulation within a strata complex or a feud between neighbours). These issues should be documented, and an appropriate action identified for each (such as “referred to bylaw department”), so that members of the community are assured that their concerns have been considered.

Activities which are undertaken in this stage include:

- **Walkabout.** In addition to publicizing the traffic calming study, the walkabout is an effective means of identifying traffic problems. At this stage of the study, it is advisable not to discuss potential solutions — this discussion is best left until after data are collected and more is known about specific problems.
- **Data collection.** Issues which are relevant to the traffic calming plan should be quantified to determine the nature and magnitude of the problem (location, time, direction and vehicle types, for example). Some of the required data will have been collected through the Engineering department's on-going transportation data collection program. This includes 24-hour traffic counts, manual intersection counts, pedestrian counts and accident reports. This information is available for many locations throughout the City. Additional information will need to be collected at locations for which municipal data are not available, or which are not typically part of the City's on-going data collection program (such as speed data and vehicle classification counts).
- **Traffic calming information meeting.** At this stage of the study, it is often useful to hold a public meeting to discuss traffic problems and identify any additional problems, and to discuss traffic calming opportunities. Feedback from this meeting provides input to the development of traffic calming plans in the next stage of the study.

### **3.2.3 Stage 3 — Develop Plans**

Efforts in Stage 3 involve identifying potential traffic calming solutions, and developing plans which combine preferred solutions to problems. The outcome of Stage 3 is a recommended traffic calming plan, approved by Council. For neighbourhoods which are adjacent residential areas of the District of North Vancouver, development of



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traffic calming plans should involve liaison and coordination with District staff.

- **Identify potential traffic calming measures**, and the benefits and impacts associated with each measure. Tables 3.2 and 3.3 in the Guide provide a starting point in identifying potential measures to address specific problems. In many cases, more than one measure will be appropriate in addressing a particular problem. These will be considered in the next step, and the number of potential measures reduced as appropriate based on their effects on adjacent streets and interaction with other traffic calming measures.
- **Develop preliminary plans.** The potential measures identified to resolve traffic problems should now be combined into a preliminary traffic calming plan. With input from the Neighbourhood Traffic Residents Association, staff and key stakeholders, potential measures should be combined into one traffic calming plan — with options for specific locations as necessary — or two separate plans. Options should be considered where two or more measures would be equally effective — in this case, neighbourhood preference would determine the preferred option, based on the relative advantages and disadvantages of each. Options should also be considered where a specific measure might be controversial. This permits residents and others who might oppose the specific measure to indicate support for the entire plan without supporting the specific measure.
- **Community survey.** The purpose of the community survey is to determine the level of support for the proposed traffic calming plan, and to select optional measures. Words such as "ballot" and "vote" should be avoided when describing the community survey. It is important that residents and other community members understand that this is a survey intended to measure community support for the proposed traffic calming plan, and is not a binding referendum. Consequently, it is important to explain that following the survey, there will still be an opportunity to refine and improve the plan if there are any significant outstanding concerns.

The proposed traffic calming plan(s) should be explained clearly, in non-technical language and with as much visual material as possible. The survey should include maps of the neighbourhood, illustrating the plan and options, and sketches of various traffic calming measures. Where appropriate, background information should be included describing the nature of specific problems (such as observed traffic



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volumes or speeds on specific streets). Respondents should be given three choices for each question. They should be asked to indicate whether they support the plan, do not support the plan or are neutral. The “neutral” choice is important. Some people might hesitate to actively support a plan, but might not want to condemn it either with a vote of no support. A third option allows them to say, in effect, “I do not care strongly one way or another.” Without the “neutral” option, the number of persons who do not support a plan might appear to be significantly higher than the actual number, and might make it difficult to identify those who have legitimate concerns with the plan.

The survey should be distributed to every residence (property owners and tenants) and business in the neighbourhood. One response is permitted per address. To maximize response rates, convenient locations in the neighbourhood should be designated for people to drop off their completed questionnaires. These can include community centres, schools and stores.

In reviewing the results of a neighbourhood survey, the key question is what is the minimum level of support necessary to proceed with a traffic calming plan. Although this minimum level could be set as low as 50% plus one, it is recommended that to ensure solid support for a plan and minimum opposition, a higher level of support be required — a minimum of 67% support. As well, it is recommended that an upper limit be established for “do not support” responses. Ideally, no more than 20% of respondents should not support a traffic calming plan. Typically, many respondents who do not support a plan do so because of a single concern, and it is often possible to make minor changes to the plan to address these outstanding concerns, thereby reducing the proportion of “do not support” within a neighbourhood.

If the required level of support is not achieved, a community meeting should be held to identify outstanding concerns and refine the plan to resolve these concerns. If all significant concerns can be successfully resolved in this manner, the plan could then be submitted to Council for approval. If there is uncertainty as to whether the refined plan has sufficient support in the community, a second survey should be undertaken — either of the entire neighbourhood or of the parts of the neighbourhood where there are outstanding concerns.

- **Community open house.** Prior to the deadline for returning community surveys, and open house should be held to provide



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residents, business people and others with the opportunity to ask questions about the proposed traffic calming plan and review background information.

- **Refine plan.** Following the community survey, minor refinements can be made to the traffic calming plan in order to address outstanding issues. If major changes to the plan are required, the community survey should be repeated (or a similar means of gauging community support).
- **Approval.** The refined traffic calming plan should now be presented to Council for approval and allocation of funding. It may also be desirable to invite members of the public and representatives of community groups to attend the presentation and voice their support for the traffic calming plan.

#### 3.2.4 Stage 4 — Implement the Plan

Once approved, a traffic calming plan can typically be implemented within a few months. Implementation activities include:

- **Design.** To ensure that traffic calming measures are constructed properly, designs should be prepared for most devices based on accurate survey information. It is usually not necessary to prepare designs for individual speed humps and raised crosswalks — instead, a standard design can be used and a map prepared illustrating the exact location of speed humps and raised crosswalks. Designs should be based on information in the *Canadian Guide to Neighbourhood Traffic Calming*, and supplementary design information contained in the Technical Appendix of the Community Traffic Calming Program.
- **Phasing.** Desirably, traffic calming plans should be implemented all at once. However, in some cases it may not be possible nor desirable to implement all traffic calming measures at the same time, and instead implementation might be phased over a period of two or more years. If implementation is to be phased, priorities for implementation should be determined using the following criteria:
  - Safety improvements should be given priority. These might include traffic calming measures to reduce vehicle speeds and reduce conflicts at intersections, as well as pedestrian and bicycle facility improvements.



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- Low-cost measures should be given priority. Generally, it is preferable to implement several low-cost measures rather than one higher-cost measure. Low-cost measures might include signage, pavement markings, speed humps and crosswalks, for example.
- Measures should be implemented in groups. For example, measures on two parallel local streets should be implemented at the same time, so as to avoid diverting traffic from the street with a measure to the street without a measure.
- **Temporary devices.** Where possible, traffic calming devices should be first implemented on a temporary basis. After a period of six months to a year, if it has been determined that a device has achieved the intended results, it should then be constructed on a permanent basis. This avoids the risk of removing or modifying a permanent installation that was constructed at a much higher cost than a temporary installation. It also provides an opportunity to alter the geometrics of a device or make other changes prior to permanent installation. Guidelines for temporary devices are included in the separate Technical Appendix.
- **Construction.** Guidelines for the construction of traffic calming devices are included in the separate Technical Appendix.
- **Monitoring.** Data collected during the preparation of the traffic calming plan represents “before” data. Following implementation of the plan, “after” data should be collected at the same locations and in the same conditions in order to determine whether desired results have been achieved. Data should also be collected at other locations where new problems are identified, and data collected through the municipality's annual data collection program should be reviewed to identify potential problems which might arise as a result of changes in travel patterns.

### **3.2.5 Schedule**

The first three stages of the traffic calming process (from initiation through to approval of the plan) typically require a period of at least six months. A longer time period may be necessary when work continues past the Christmas holiday period or summer months. For this reason, it is generally best to initiate a traffic calming study in September, October or November, as it can then be concluded and the plan approved prior to the summer.





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Following this schedule, construction of traffic calming devices can be undertaken in the summer, when schools are not in session and traffic volumes are often lower on neighbourhood streets. Construction of permanent devices to replace temporary devices can then occur the following spring or summer.

## **3.3 Responding to Reports of Problems**

The Community Traffic Calming Program described in this document is based on a program of preparing and implementing traffic calming plans in neighbourhoods throughout the City. A traffic calming plan will address all traffic problems identified during the time period when the plan is prepared. This section addresses the issue of how reported traffic problems should be addressed prior to preparing a traffic calming plan, in cases where it may be several years before the plan is developed, and how to address new traffic problems which arise after a plan is developed.

- **Existing traffic problems.** Generally, it is best to address traffic problems within the scope of a comprehensive neighbourhood traffic calming plan. However, in cases where traffic problems create significant safety concerns and generate continued complaints, and where it will be two or more years before a traffic calming plan is developed, the City should consider whether traffic calming solutions can be applied to resolve these existing problems. Action should only be taken to correct these problems if they can be addressed in isolation, without creating problems elsewhere and without requiring mitigating improvements in other locations. Nearby residents and businesspeople should be involved in the selection of isolated traffic calming measures, and the principles and guidelines described in this document and the separate Technical Appendix should be followed in selecting and designing these measures.
- **Future traffic problems.** New traffic problems may arise months or years after a traffic calming plan is implemented. It would not be desirable to undertake a neighbourhood-wide traffic calming study every time a new problem arises. Instead, as described in Section 3.1, reports of new problems should be referred to the Neighbourhood Transportation Committee following the completion of a traffic calming plan. This Committee provides a link between the community and municipal staff so that transportation problems



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can be effectively addressed as they arise. The Neighbourhood Transportation Committee would be a sub-committee of a new City-wide Transportation Committee, and would function as a “clearinghouse” for all concerns and requests for transportation improvements from residents and other members of the community. This ensures that a request that is forwarded to the City has the support of the community at large, and does not simply reflect the concerns of one person. The Neighbourhood Transportation Committee knows whom to contact at the municipality, thereby streamlining communications and substantially reducing the numbers of phone calls and letters to which staff must respond.



## 4. NEIGHBOURHOODS

This section describes how the City has been divided into neighbourhoods for the purposes of preparing traffic calming plans, and establishes priorities for preparing neighbourhood traffic calming plans.

### 4.1 Boundaries

**Figure 4.1** illustrates the twelve neighbourhoods established for the purposes of preparing traffic calming plans. For the purposes of traffic calming, neighbourhood boundaries are defined by geographical barriers, such as arterial roads, freeways, rivers and parks. The boundaries of the neighbourhood for which a traffic calming plan is to be developed are defined so as to include all streets which might be affected by implementation of traffic calming measures on other streets. Generally, traffic calming measures implemented on one side of an arterial road, railway line, open space area or other major barrier do not have any significant effect on traffic conditions on the other side of the barrier.

To date, traffic calming plans have been completed for four neighbourhoods, as indicated in yellow on **Figure 4.1**. The following section describes how the remaining eight neighbourhoods have been prioritized for implementation of traffic calming plans.

### 4.2 Priorities

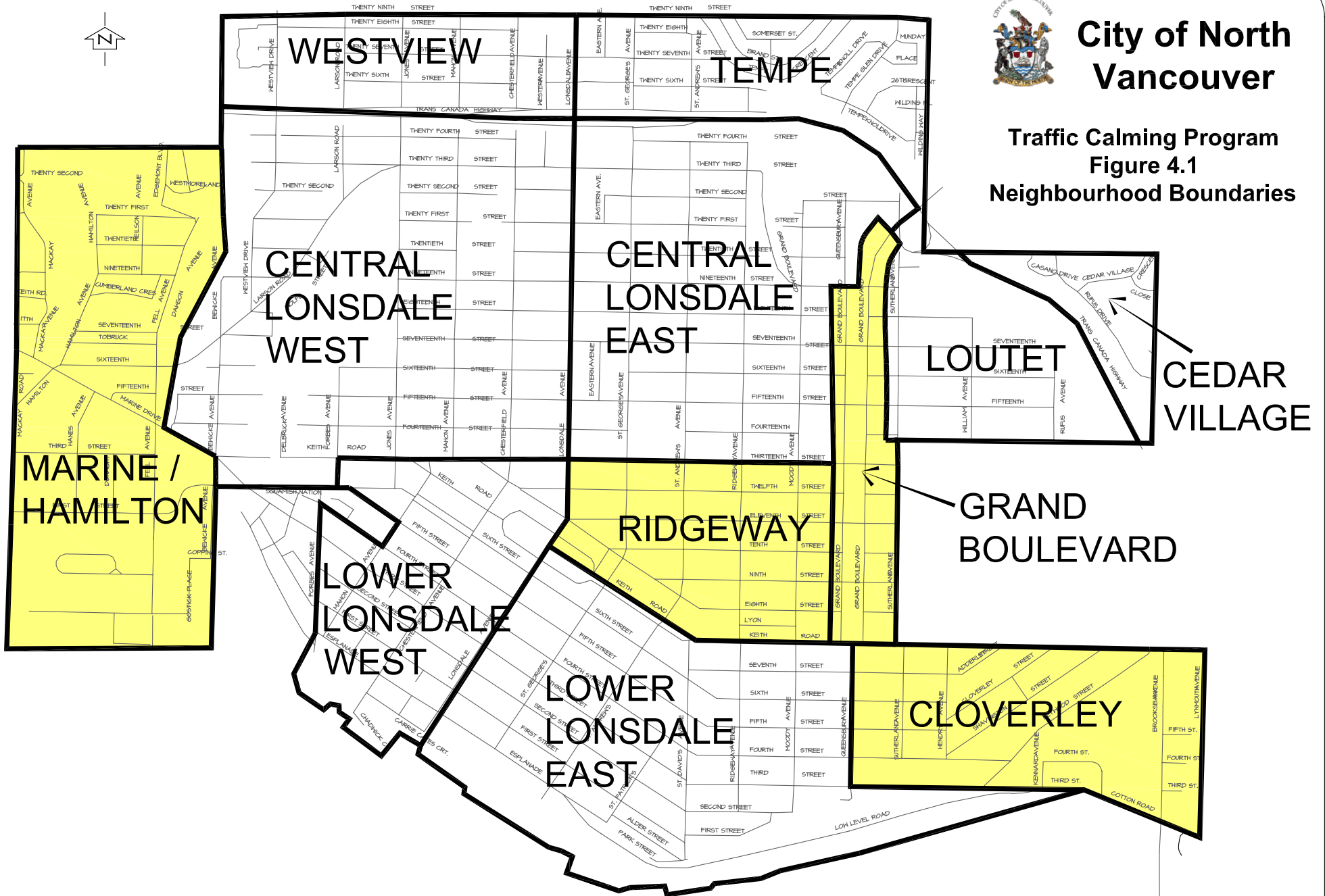
This section presents recommended priorities for preparing and implementing traffic calming plans. Priorities are determined based on a number of criteria, described below. For each criterion, a rating of 1 through 5 is applied to each neighbourhood, where 5 indicates the highest priority. Each rating is then multiplied by a weighting factor, which indicates the relative importance of various criteria.

Quantitative (measurable) criteria account for two-thirds of the evaluation, and include reported collisions, vehicle speeds and traffic volumes, as described below. Raw scores are calculated for each neighbourhood, and the neighbourhood with the highest raw score is assigned a rating of 5. The neighbourhood with the lowest raw score is assigned a rating of 1, and ratings for all other neighbourhoods are pro-rated between 1 and 5 based on the calculated raw scores.

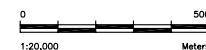


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## Traffic Calming Program Figure 4.1 Neighbourhood Boundaries



**Completed Traffic Calming Plans  
(As of August, 2004)**





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- **Reported collisions** (weighting factor of 2.0). This criterion is based on the number of reported collisions in the past three years. Raw scores are calculated based on the severity (fatality, injury or property damage only), whether a pedestrian or cyclist was involved, and the classification of roadway on which the collision occurred.
- **Vehicle speeds** (weighting factor of 1.5). This criterion provides a measure of the speed of traffic in excess of the posted speed limit (which is typically 50 km/h on local streets, but may be reduced to 30 km/h adjacent schools and playgrounds). Raw scores are calculated based on the maximum difference between the average 24-hour 85<sup>th</sup> percentile vehicle speeds in each direction and the posted speed limit in each location where traffic counts are conducted.
- **Traffic volumes** (weighting factor of 1.5). This criterion provides a measure of the volume of through traffic travelling through a neighbourhood on local residential streets. Raw scores are calculated based on the difference between the actual daily traffic volume and thresholds for local and collector roads of 750 and 3,500 vehicles per day, respectively.

Qualitative (subjective) criteria account for one-third of the evaluation, and include:

- **Known problems** (weighting factor of 1.0). This criterion provides a subjective measure of the severity of identified traffic-related problems in a neighbourhood, and the extent to which these problems would not be addressed by current City plans. Neighbourhoods with a high number and severity of known problems relative to other neighbourhoods are rated 4 or 5, whereas neighbourhoods with few known problems or with relatively minor problems are rated 1 or 2.
- **Neighbourhood interest** (weighting factor of 1.0) This criterion provides a subjective measure of the amount of interest and support for traffic calming within a neighbourhood, as indicated by the number of requests and input from members of the community.
- **Pedestrian and cyclist activity** (weighting factor of 0.5). Neighbourhoods with a relatively high number of destinations which



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attract pedestrian and cyclist traffic (such as schools, community centres and bicycle routes) receive a rating of 4 or 5.

Current neighbourhood priorities are summarized in **Table 4.1**. Neighbourhoods that currently experience the greatest negative impacts from traffic have been assigned highest priority.

**Table 4.1  
Neighbourhood Priorities**

N-hood	Priority Evaluation						Total Score
	Quantitative Criteria			Qualitative Criteria			
	Collisions	Traffic Speeds	Traffic Volumes	Known Prob's	N-hood Interest	Ped/Bike Activity	
	x 2.0	x 1.5	x 1.5	x 1.0	x 1.0	x 0.5	
C. Lonsdale E.	9.0	3.8	4.5	4.5	5.0	2.5	29.3
C. Lonsdale W.	8.0	3.8	6.0	5.0	4.0	2.5	29.3
L. Lonsdale E.	10.0	6.0	4.5	4.0	3.0	0.8	28.3
L. Lonsdale W.	5.0	6.8	7.5	3.5	2.0	1.8	26.6
Westview	2.0	7.5	7.5	4.5	2.0	0.8	24.3
Loutet	1.0	3.8	0.8	3.0	2.0	0.5	11.1
Tempe	2.0	2.3	2.3	1.0	1.0	0.8	9.4
Cedar Village	1.0	0.8	0.8	1.0	2.0	0.5	6.1

It is important to note that the ratings indicated in **Table 4.1** are based on current data. Priorities are re-evaluated on a regular basis, to account for changes in traffic and road conditions, and to incorporate additional data not currently available.



## 5. FINANCIAL

This section identifies the costs associated with traffic calming, and identifies means of funding traffic calming plans.

### 5.1 Costs

This section provides estimates of the costs of preparing and implementing a traffic calming plan. It should be noted that these costs can vary, particularly for implementation, depending on the extent of community involvement in developing the plan, and the type and number of traffic calming devices included in the plan.

- **Preparing a traffic calming plan.** If consultants are employed to undertake a traffic calming study and develop a traffic calming plan, it is recommended that a budget of \$25,000 to \$40,000 be established, depending on the size and complexity of the neighbourhood. The total cost to prepare traffic calming plans for the eight remaining neighbourhoods in the City would be as much as \$227,000 if all traffic calming plans are prepared by consultants.

Consultants should be used to prepare plans for neighbourhoods with significant traffic problems. City staff may wish to prepare plans for neighbourhoods with less severe problems, as a means of minimizing the costs of preparing plans. In determining which plans are to be prepared by consultants and which by staff, availability of staff resources and community perceptions should also be considered. Preparing a traffic calming plan requires periods of intensive work, and staff often do not have sufficient time available. More importantly, the involvement of staff can create the perception among many residents and other members of the community that the process is biased towards the City's desires. For these reasons, the availability and perceived impartiality of consultants can be a significant advantage.

- **Implementing a traffic calming plan.** Costs of implementing a traffic calming plan vary widely, depending on the size of the neighbourhood and the extent of traffic problems. **Table 5.1** summarizes the estimated capital costs to implement traffic calming plans in the eight remaining neighbourhoods in the City. These estimates are calculated based on the numbers of households in each



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neighbourhood and area of each neighbourhood, using per household and per hectare costs from recently-implemented traffic calming plans in the City and other communities. The total estimated capital cost of implementing traffic calming plans is \$1,070,000 (including inflation).

**Table 5.1  
Traffic Calming Capital Cost Estimates  
(inflation included)**

<b>Neighbourhood</b>	<b>Priority</b>	<b>Anticipated Year of Implementation</b>	<b>Estimated Capital Cost</b>
Central Lonsdale East	1	2006/2007	\$200,000
Central Lonsdale West	2	2007/2008	\$280,000
Lower Lonsdale East	3	2008/2009	\$205,000
Lower Lonsdale West	4	2010	\$125,000
Westview	5	2011	\$95,000
Loutet	6	2012–2014	\$43,000
Tempe	7	2012–2014	\$96,000
Cedar Village	8	2012–2014	\$26,000
<b>Total</b>			<b>\$1,070,000</b>

## 5.2 Funding Sources

The costs of preparing and implementing traffic calming plans can be funded from general tax revenues or through a local improvement levy. Funding from general tax revenues is the current approach for the City, and it is recommended that this be maintained. The rationale for doing so is that other road and transportation improvements are funded from general revenues, and that causes of traffic problems within neighbourhoods are typically city-wide or regional in nature and not specific to a neighbourhood. The disadvantage of this approach is that it requires either an increase in property taxes or reallocation of funds from other municipal services.

All municipalities in B.C. fund traffic calming plans from general tax revenues. Attempts to have residents pay directly for traffic calming measures have not been successful. In Saanich, for example, initial attempts to impose a local improvement levy met significant opposition from residents who objected to having to pay to fix problems which they perceived as being caused by factors outside their neighbourhoods.





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In the face of this opposition, municipal Council decided to fund traffic calming from general tax revenues.

Supplementary funding sources, such as ICBC's Road Safety Program, can be used to reduce the costs of implementing traffic calming plans. ICBC's program makes funds available for roadway improvements that are anticipated to reduce collisions and ICBC's resulting claims costs. Funding is provided based on 50% of the estimated reduction in claims costs during the two years following implementation. In other words, if ICBC's analysis indicates that a proposed traffic circle is likely to reduce claims costs by \$6,000 over a two-year period, then ICBC would contribute \$3,000 to the cost of constructing the traffic circle.



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# APPENDIX

## Neighbourhood Traffic Residents Association Terms of Reference

### Mandate

The Neighbourhood Traffic Residents Association role shall be to provide in-depth knowledge of local issues and conditions in the development of a traffic calming plan for the neighbourhood. Specifically, the Residents Association shall:

- Provide input to the study team (City staff and/or consultants) to identify transportation-related issues in the neighbourhood as early in the study process as possible. Review and endorse the list of issues to be addressed by the traffic calming plan, which will be prepared by the study team.
- Assist the study team in organizing, publicizing and facilitating community events, such as a walkabout, open houses, neighbourhood surveys and community meetings.
- Review materials intended for presentation or distribution to the community (door-to-door, at open houses or at community meetings, for example). Provide input and suggestions regarding the language of the materials, and help to ensure that no relevant issues are inadvertently omitted.
- Review traffic calming plans developed by the study team. Provide input regarding the likely acceptance of these plans within the neighbourhood, and identify any potential negative impacts.

### Structure

- The Committee should nominate one of their members as the Committee Chairperson (or two members as co-Chairpersons), to serve as the contact with the study team.



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- The Neighbourhood Traffic Residents Association is intended to be a temporary committee for the duration of the Neighbourhood Traffic Calming Study. To maintain continuity and a means of communication after the study is complete, the Residents Association should consider establishing a permanent Neighbourhood Transportation Committee to liaise with municipal staff and stakeholders in the community.

## Meetings

- In order to minimize the effort and costs for all involved, meetings will be held at key milestones during the study, when there is material to review and discuss, and when input is needed from the Neighbourhood Traffic Residents Association. These milestones include:
  - *Approx. 2 weeks prior to the walkabout* — discuss study objectives and approach, review publicity materials, confirm walkabout route and time.
  - *Approx. 2 weeks after the walkabout* — review issues identified by community, discuss data collection needs and potential solutions.
  - *Approx. 2 weeks prior to distributing neighbourhood survey* — review data and preliminary traffic calming plan(s).
  - *One week prior to community meeting* — review results of neighbourhood survey, discuss refinements to traffic calming plan.
  - *Prior to Council presentation* — review draft report and presentation content.