

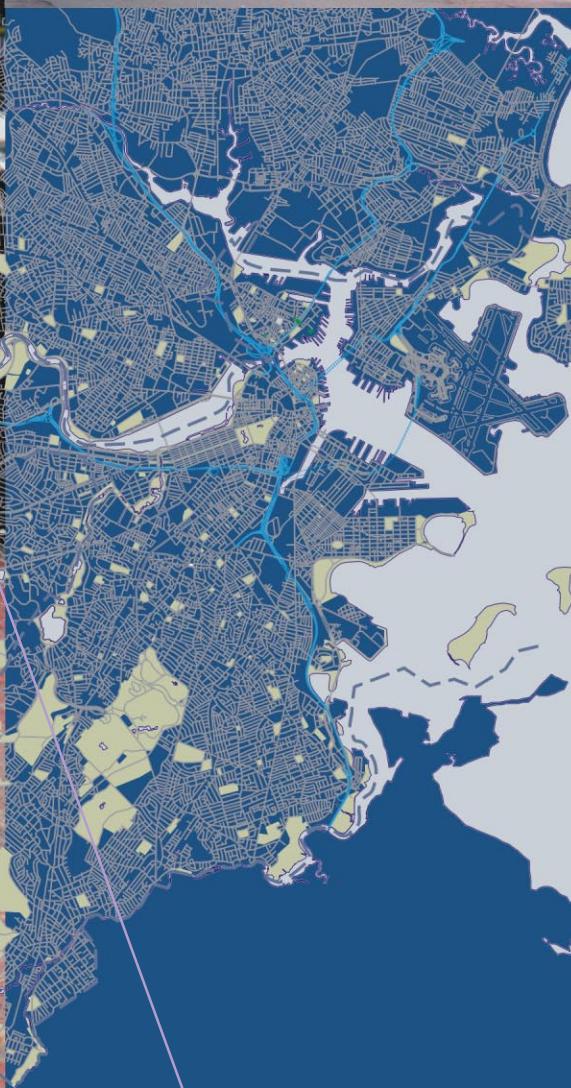
Pedestrian Safety Guidelines For Residential Streets

August 2001
First Edition



City of Boston
Mayor Thomas M. Menino

Boston Transportation Department
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The *Pedestrian Safety Guidelines for Residential Streets* has primarily been developed from the interest, expertise and contributions of an inter-agency group comprised of:

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Boston Emergency Medical Services
Boston Fire Department
Boston Police Department
Boston Public Health Commission
Boston Public Schools
Boston Public Works Department
Boston Redevelopment Authority
Boston Water and Sewer Commission
Commission on Affairs of the Elderly
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The plan received broad public participation through public meetings as part of the *Access Boston 2000-2010* process, written comments, phone calls and e-mails. The City of Boston wants to thank all participants who gave generously of their time.

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The Advisory Committee on Transportation was appointed by the Mayor of Boston and includes residents and representatives from business, environmental and advocacy groups. It serves as the Steering Committee for *Access Boston 2000 – 2010*.

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1. INTRODUCTION

The Boston Transportation Department (BTD) seeks to improve pedestrian safety on *residential* streets by implementing measures that slow vehicles down and limit cut-through traffic on those streets. The BTD has developed these guidelines to provide a policy framework for the implementation of measures to improve safety. The guidelines also provide an overview of the program for the public, community leaders, and elected officials. It is anticipated that safety improvement measures will evolve over time, therefore, this report is a “living” document and policies will be reevaluated periodically.

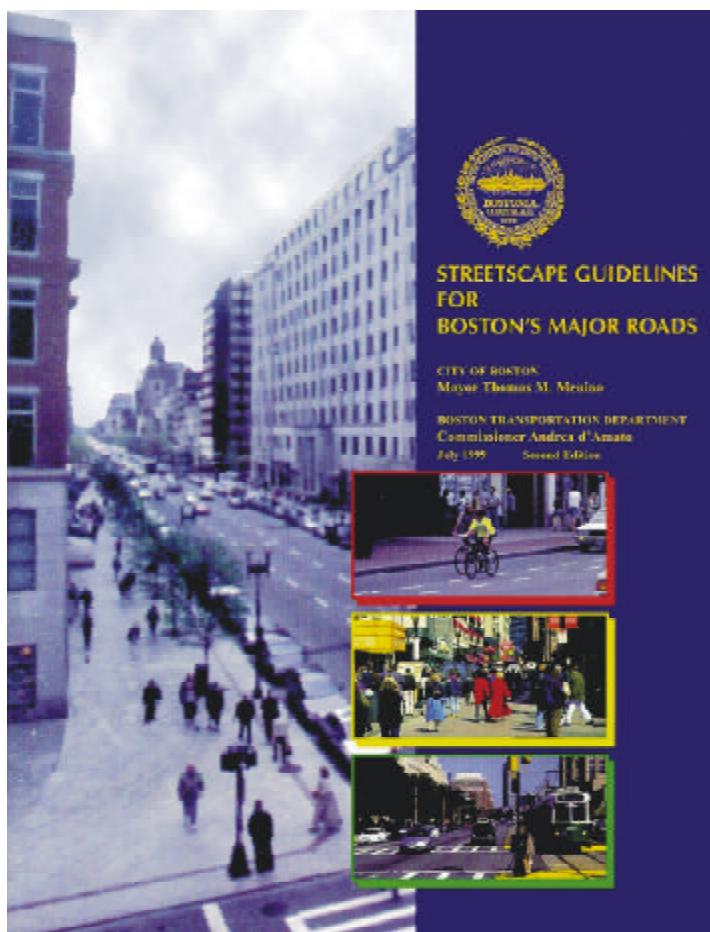
This report is a companion document to the BTD’s *Streetscape Guidelines for Boston’s Major Roads*, which was issued in 1999. That document provides guidelines for developing appropriate streetscapes when constructing or reconstructing a “major road” in Boston. They were prepared to address public safety for all users and the equitable sharing of the public right-of-way for pedestrians, automobiles, bicycles, and public transportation vehicles.

The transportation safety guidelines in this document are intended for application to Boston’s *residential* streets. The goals of this initiative are to:

- Describe the City’s approach to improve safety on *residential* streets in a manner that recognizes, addresses, and balances the needs of all users.
- Enhance public safety on Boston’s streets by fostering a clearly delineated and well-regulated public right-of-way.
- Prioritize projects related to schools, senior citizen facilities, parks and community centers, and residentially located MBTA stations.
- Provide a guide to assist communities throughout the city seeking to develop transportation safety projects.
- Implement improvements in a fiscally responsible manner.

Together, guidelines for major roads and residential streets contribute to the criteria of a safe and pedestrian friendly environment.

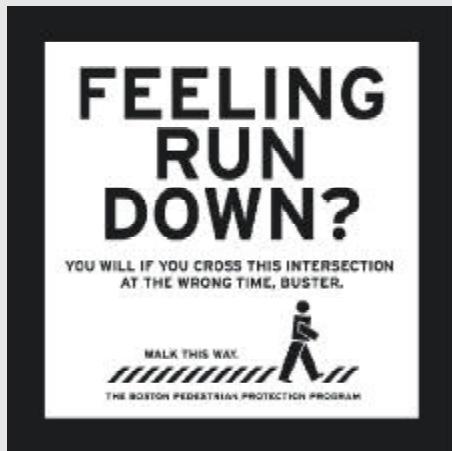
Transportation safety projects are primarily intended to influence driver, bicycle, and pedestrian behavior on behalf of neighborhood residents. It is important to note that engineering judgment and specific conditions require that each transportation safety case be evaluated individually. While education, enforcement, regulatory, and physical modifications provide many options for public officials, public consensus must be gained and maintained before any transportation safety measure is implemented. Using a comprehensive planning process and designs completed by a



The Pedestrian Safety Guidelines for Residential Streets is a companion document to BTD’s *Streetscape Guidelines for Major Roads*.

PEDESTRIAN SAFETY GUIDELINES FOR RESIDENTIAL STREETS

“WALK THIS WAY” CAMPAIGN



In 1998, EMS responded to 1,160 motor vehicle-struck pedestrian incidents with a transport to the hospital. Upon further analysis it was found that in Boston there was an average of 3.2 motor vehicle incidents every day involving pedestrians transported to area hospitals. In response to this alarming trend, the Boston Public Health Commission and Boston's Pedestrian Task Force partnered to form the “Walk this Way” campaign. The campaign was introduced as part of the Boston Pedestrian Protection Program and is aimed at raising the awareness of pedestrians about the dangers of crossing streets inappropriately. With permission from the rock group Aerosmith to use “Walk This Way” as a theme, edgy and provocative signs were posted at busy locations throughout the downtown to remind people why it is important to wait for the activation of pedestrian walk signal. The goal of the campaign is to educate pedestrians to think about and modify their behavior. A follow up study conducted in November of 2000 showed an 11 percent decrease in the city’s number of pedestrian injuries.

“OPERATION CROSSWALK”

A program that started in the spring of 2000 by the Police Department, “Operation Crosswalk” addresses the problem of drivers who fail to yield to pedestrians in crosswalks. At different times of the day and within all districts, police officers give increased numbers of citations to drivers who fail to yield to pedestrians in crosswalks.

“Operation Crosswalk” helps to enforce an existing statute (Chapter 89, Section 11) which states that drivers of vehicles need to yield to pedestrians in marked crosswalks or they may receive a maximum fine of \$100. This program is intended to raise the public’s awareness of this problem. It is anticipated that “Operation Crosswalk” will help modify the behavior of drivers towards pedestrians.

qualified engineering professional, the quality of life in a neighborhood can be improved and the use of non-motorized transportation modes encouraged.

Defining Residential Streets

Each of Boston’s many streets is unique. However, it is useful to differentiate a residential street relative to the complete network of streets in Boston. The standard AASHTO (American Association of State Highway and Transportation Officials) classification identifies four main categories of roadways: regional thoroughfare, arterial, collector, and local. The primary function of thoroughfares is the movement of through traffic. Direct access to land uses is extremely limited.

At the other end of the spectrum are local roads. They are mostly neighborhood streets intended for immediate access to residential uses and are characterized by low traffic volumes and speeds. They are usually not wider than two lanes and are not intended for through traffic. For purposes of this document, the definition of residential street refers to local streets.

Boston’s Experience

Boston has a long history of implementing strategies to improve pedestrian safety and reduce the incidence of cut-through traffic into residential neighborhoods. The BTD, in coordination with other City departments, implements three types of measures to slow vehicles down and limit traffic diversions on residential streets:

- *Educational Campaigns* – include public educational programs.
- *Enforcement and Regulatory Measures* – include enhanced enforcement of existing or new regulatory measures.
- *Physical Modifications* – include landscaping and geometric changes to streets.

Educational Campaigns

To address pedestrian safety, the BTD has administered a series of educational campaigns. Recently the City has instituted an educational campaign, the “Walk This Way” program. Provocative signs were posted at busy downtown intersections that were intended to encourage pedestrians to be more cautious when crossing streets. Since the program’s inception, initial data indicates that pedestrian safety has improved by approximately 11 percent between November 1999 and October 2000.

“Operation Crosswalk” and “Let’s Get Moving” are two other educational campaigns. “Operation Crosswalk” increased the numbers of citations given to drivers who fail to yield to pedestrians in crosswalks and “Let’s Get Moving” targeted traffic and pedestrian safety hazards at intersections. As indicated in the above campaigns, public education with enforcement plays an important role in increasing pedestrian safety.

Enforcement and Regulatory Measures

Regulatory measures are intended to reduce the impacts of traffic and increase pedestrian safety in neighborhoods. Examples of regulatory measures include signage, turn restrictions, pavement markings, traffic signal adjustments, changes in street direction, creation of one-way streets, and truck restrictions or prohibitions. Enforcement is critical to ensure compliance of regulatory measures.

For example, street directions have been changed in the South End to keep commuter cut-through traffic out of residential streets. A neighborhood-level program has also been instituted with great success in South Boston. The BTD and South Boston residents worked together to formulate a circulation plan that would discourage commuters from cutting through South Boston, but not so difficult that it would inconvenience South Boston residents excessively. In order to achieve this goal, street directional changes were instituted. In addition, turn restrictions and physical modifications were put in place at a number of intersections.

Other enforcement measures the City is in support of are:

- Xsing speed trailers throughout the city. These devices make motorists more aware of their speed in residential neighborhoods, especially streets with children and senior citizens.
- Changing state legislation that lowers the speed limit from 30 to 25 miles per hour.
- Allowing the use of photo monitoring devices to enforce traffic control signals and impose penalties for violations.

“LET’S GET MOVING”

“Let’s Get Moving” is a traffic and parking enforcement plan that started in the summer of 2000. A joint effort of the Boston Police and Transportation Departments, this plan is designed to target traffic and pedestrian safety hazards at key intersections throughout Boston, as well as to coordinate parking enforcement efforts between the two departments. This plan was designed in response to concern from both residential neighborhoods and the business community for more traffic and parking enforcement.

By realigning the resources of the Boston Police and Transportation Departments, “Let’s Get Moving” will enable the city to:

- Increase pedestrian safety.
- Ease congestion at Boston’s busiest intersections through a combination of traffic and parking enforcement.
- Provide more parking enforcement at loading zones, short-term parking spaces, and parking meters in the business districts.
- Provide more street cleaning and resident parking enforcement in the neighborhoods.

FUTURE ACTION WITH STATE LEGISLATURE

Street Speed Limits

The City of Boston supports the proposed state legislation (Chapter 90 Section 17 of Massachusetts General Laws) to lower the speed limit in thickly settled areas and business districts from 30 miles per hour to 25 miles per hour. Currently the speed limit in thickly settled areas and business districts is 30 miles per hour, unless posted otherwise. A 25 miles per hour speed limit will help reduce the overall speed of vehicles, increase public safety, and improve the quality of life for Boston’s residents.

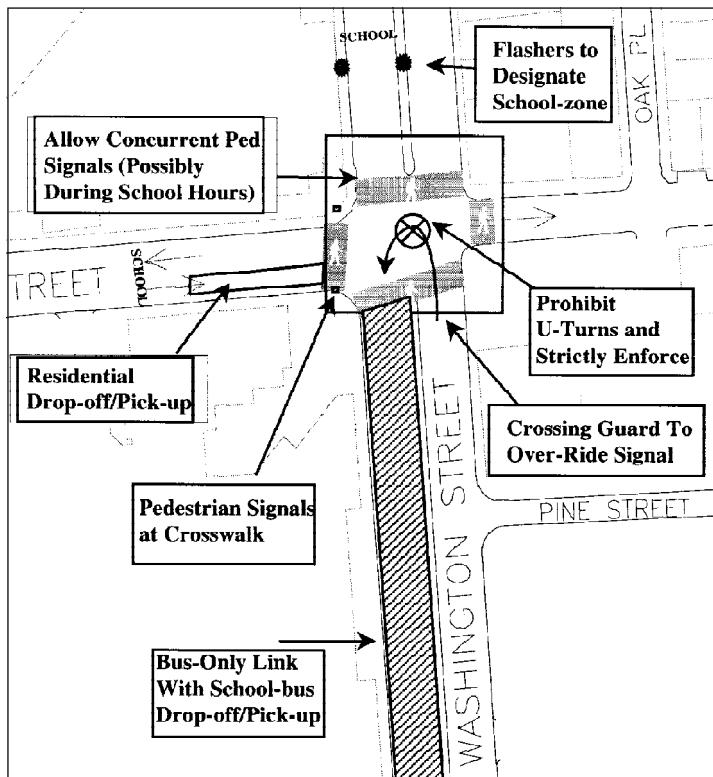
Red Light Cameras

The City of Boston is in support of passing a local option law that will allow a city or town to use photo monitoring devices to enforce traffic control signals and impose penalties for violations. This law would be part of Chapter 90 of the Massachusetts General Laws. Under this proposal, violations for running a red light will be treated like parking violations.

PEDESTRIAN SAFETY GUIDELINES FOR RESIDENTIAL STREETS



The Boston Police Department uses speed trailers and radar guns to automatically detect and display vehicular travel speeds.



Examples of proposed regulatory measures for the Quincy School Area.
Source: Chinatown Transportation Study, TAMS Consultants, Inc.

Physical Modifications

Physical modifications are considered when education, enforcement and regulatory measures are not as effective over time as originally anticipated.

Physical modifications have been used in various neighborhoods in Boston. These improvements included partial and full street closures in South Boston that replaced pavement with greenspace. In the South End, street direction changes were accompanied by intersections and roadway improvements that included curb extensions at intersections and textured pavement at crosswalks, and other right-of-way changes. Recently, some of these transportation safety measures have been labeled “traffic calming” measures.

In addition to the neighborhood-wide measures described above, the City has implemented other improvements that would fall within this category. Appleton Street was turned into a “woonerf” (a design concept that includes altering parallel and angle parking and providing landscaping to change a street’s character). Speed humps were installed on Lochstead Street in Jamaica Plain.

More recent examples include a partial street closure on Ashford Street in Allston, at the intersection with Malvern Street, to halt cut-through traffic in a residential neighborhood. The closure was implemented as part of a mitigation program for a nearby supermarket project. Also in Allston, textured pavement, raised intersections, and signage were combined to separate school buses from general traffic in front of the Horace Mann School.

Through many years of experience in implementing improvement projects to protect its neighborhoods, the City has learned that each street or neighborhood has a unique set of issues that require customized solutions tailored to an area’s specific needs. Fortunately, because of its long history of developing implementation strategies, the BTD has many educational campaigns, enforcement and regulatory measures, and physical modifications in its improvements “toolbox” to draw upon and customize for a particular situation.

National Experience

Measures that address transportation safety on residential streets are being employed throughout the United States. Educational campaigns, enforcement, regulatory measures, and physical modifications are all widely used approaches. Most recently, the implementation of these measures have been defined as “traffic calming.” Traffic calming is generally thought of as the measures employed by communities to reduce the number and speed of vehicles. The origins of traffic calming are from a grassroots movement in the Dutch city of Delft in the late 1960s. Residents constructed “woonerven” or “living yards” in their streets to reduce cut-through traffic.

In some communities, traffic calming measures have gone by other names such as “neighborhood traffic management”, “traffic abatement”, and “traffic mitigation”. Physical improvements such as measures that fit the definition of “traffic calming” in the United States can be traced back to traffic management programs in Berkeley, California and Seattle, Washington that were initiated in the early 1970s. Seattle has experience and success in implementing traffic calming measures. This is due, in large part, to Seattle’s early commitment of funds to traffic calming programs.

Other cities that were among the first to implement traffic calming initiatives include San Jose, California; Eugene, Oregon; Charlotte, North Carolina; and Montgomery County, Maryland. It is important to note that the traffic calming programs of these cities do not need to contend with the harsh components of a winter environment.

Recently Cambridge, Massachusetts has implemented traffic calming projects on Columbia Street and Granite Street. It is important to note that the City of Cambridge often incorporates traffic calming measures with roadway reconstruction projects. Time and finances are saved with this implementation approach.



The City of Cambridge has implemented raised intersections to reduce travel speed and enhance pedestrian access to a recreational facility.

Source: Fehr and Peers Assoc., Inc.



The City of Toronto, Ontario has combined a raised intersection with a neckdown on a residential street.

Source: Fehr and Peers Assoc., Inc.



The City of Boulder, Colorado has increased pedestrian safety by installing a center island with tables on a residential street.

Source: Fehr and Peers Assoc., Inc.

2. GUIDELINES FOR REGULATORY OR PHYSICAL MODIFICATIONS

Based on local and national experience, there is a clear need to establish a framework, within which potential transportation safety projects are identified, alternatives developed and evaluated, and appropriate projects selected for implementation. Guidelines are also necessary to govern the design elements of proposed regulatory or physical modifications. In general, projects will be considered in Boston when: either a street is going to be reconstructed, or a private development project needs to provide off-site mitigation.

The Community's Role

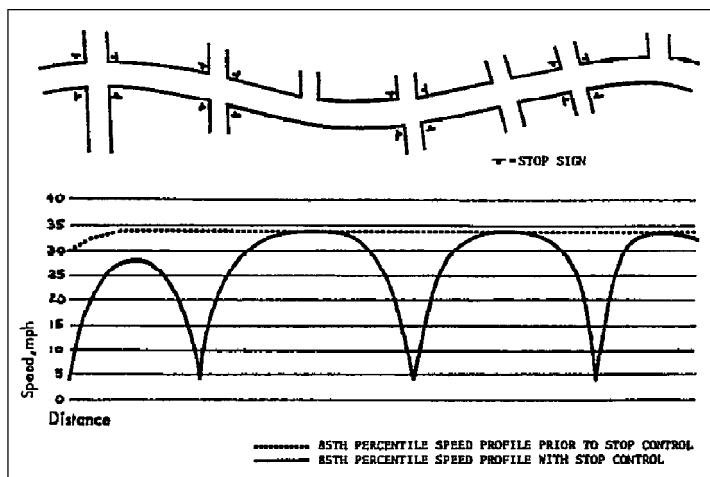
As the BTD's transportation safety programs are meant to enhance the quality of life in the City's residential neighborhoods, the project process can begin in the neighborhood. The process may be initiated when a citizen's group, or individuals representing a citizen's group, send a written request to the BTD. The request should be the result of a neighborhood meeting in which the safety and traffic issues facing the neighborhood are identified and thoroughly discussed. The letter to the BTD should summarize all the issues identified and discussed at the meeting.

Subsequent to needs assessment review, a set of alternatives may be developed to address issues identified by the community. Conceptual in nature, the alternatives may be presented to the community at a public meeting for discussion and public comment. With input received from the community, direction by adhering to the screening criteria, consideration of land uses and coordination with other projects, the BTD may determine which alternative is best suited to address the community's needs.

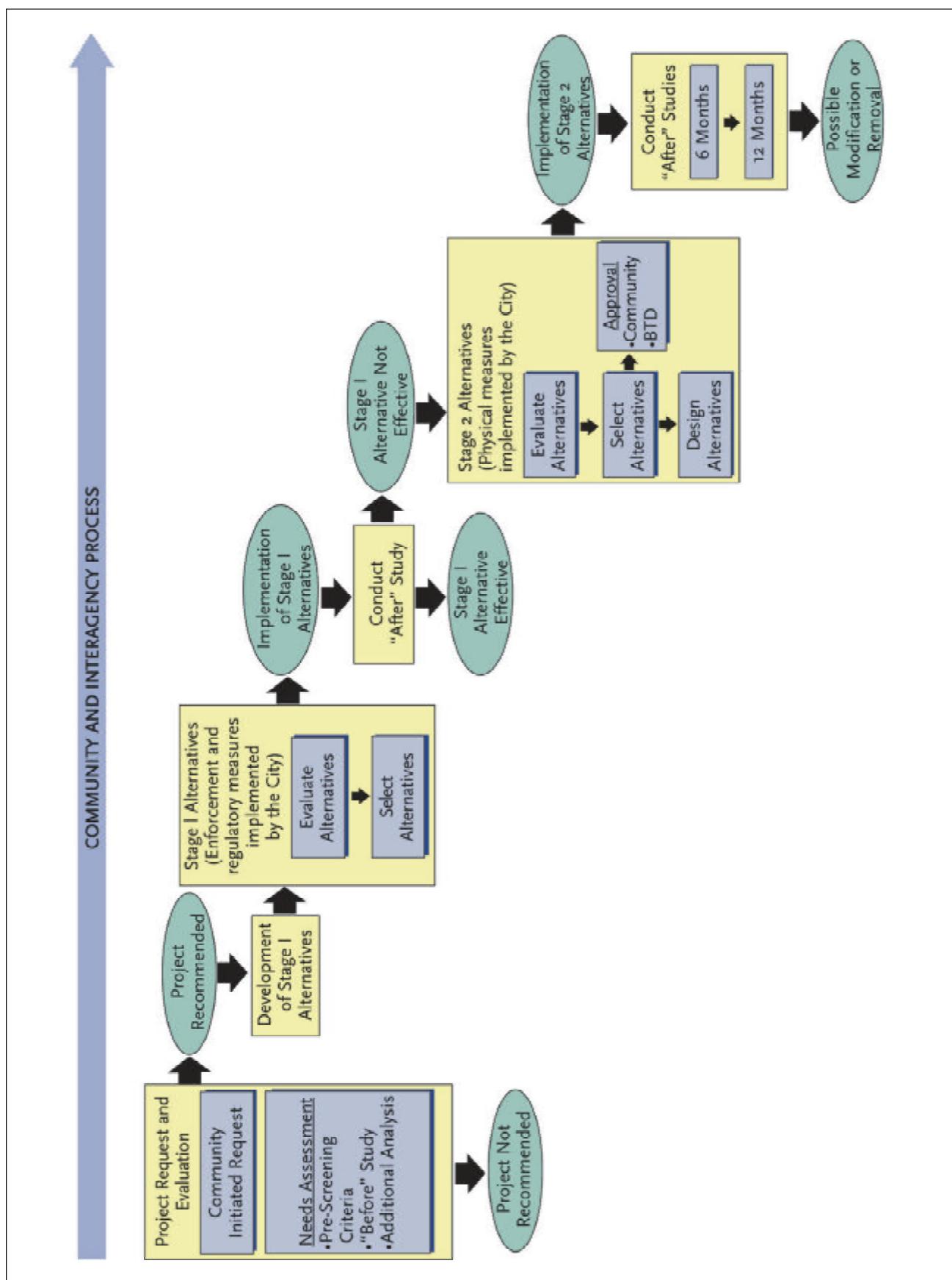
Needs Assessment

Pre-Screening

Once a potential project has been requested, the BTD will conduct a pre-screening evaluation to ensure that the street where the project is proposed meets the required pre-screening criteria. The pre-screening criteria include basic roadway characteristics that allow the BTD to determine if implementing transportation safety improvement measures are appropriate for residential streets.



Speed profile for street before and after stop sign installations.
Source: A State of the Art Report: Residential Traffic Management



The Needs Assessment and Project Evaluation Process delineates the step by step course of action required in order to implement a proposed pedestrian safety project. Section 2, Guidelines for Project Selection, describes, in detail, the established framework for this process.



All-way stops are examples of Stage One alternatives that the BTD uses to reduce traffic speed on residential streets.



State law requires vehicles to stop for pedestrians in crosswalks without traffic signals.

“Before Study”

After the pre-screening process, the BTD will conduct a “before” study for each project, the purpose of which is two-fold. First, the study will establish a traffic baseline from which the effectiveness of the project can be compared to later. The second purpose is to collect data to perform a level of screening to ensure that it is still appropriate to consider transportation safety improvement measures.

In addition to traffic volume and speed data, the “before” study will include a safety analysis and an inventory of land uses along the roadway.

Implementation Evaluation

Once all necessary data has been collected and summarized for a requested project, alternatives will be evaluated for implementation in accordance with Stage One and Stage Two requirements. These will:

- Act as a guide for the BTD to evaluate the merits of each candidate location, rather than as an absolute ranking tool.
- Assess qualitatively the potential effectiveness to improve transportation safety at the proposed location(s).
- Measure the alternatives’ potential to reduce cut through traffic, vehicle speeds, and accidents.

Project Evaluation Process

Project Evaluation is an incremental process determined on a case by case basis. Under this approach, improvement measures are first treated under Stage One Alternatives. If the desired transportation safety goals are not achieved under Stage One Alternatives, Stage Two Alternatives are then considered.

Stage One Alternatives

Stage One alternatives are the regulatory measures that can be quickly implemented by the BTD at a relatively low cost. The types of measures include signage, turn restrictions, pavement markings, traffic signal adjustments, changes in street direction, creation of one-way streets, and truck restrictions or prohibitions. It is critical that the BTD coordinate with the Boston Police Department to ensure enforcement and public compliance of the regulatory measures.

Stage Two Alternatives

Stage Two alternatives are projects that include physical changes to the street or public right-of-way and therefore must be reviewed by the Boston Public Works Department for maintainability. These projects can include curb extensions (neckdowns), traffic circles, full or partial street closures, center island narrowings, speed humps, speed tables, raised crosswalks, raised intersections, and landscaping elements such as street trees and plantings.

Stage Two alternatives will be considered if implementation of Stage One measures does not have the desired effect on transportation safety, or it is determined in the Project Evaluation Process that Stage One measures are not suitable.

The criteria include basic roadway characteristics that allow the BTD to determine if implementing Stage Two transportation safety improvement measures are appropriate for residential streets.

Priority Locations

The BTD will give high consideration to candidate projects that improve conditions around priority land uses. Schools, hospitals, community centers, parks and playgrounds, senior citizen facilities, and residentially located MBTA stations are all priority land uses. These land uses contain high concentrations of pedestrian populations. Senior citizens, children and others using these facilities could benefit most from measures that will reduce traffic volumes and lower vehicle speeds. The BTD will involve the appropriate City departments and organizations affiliated with the priority locations in the needs assessment of the candidate projects.

Project costs are another important design consideration. Although the most obvious cost is the implementation (construction) cost, there are other costs to consider as well. These costs include routine maintenance, traffic maintenance during construction, and replacement/restoration. Priority will be given to candidate projects that can be coordinated with other reconstruction or new construction projects.

CRITERIA FOR STAGE TWO ALTERNATIVES

- The maximum roadway width is 40 feet.
- The roadway is neither an emergency nor a major bus route.
- The maximum number of travel lanes is one in each direction.
- The section of roadway where measures are to be implemented cannot be on a vertical grade greater than 8 percent.
- The section of roadway where measures are to be implemented cannot be on a horizontal curve with a radius of less than 300 feet.

PRIORITY LOCATIONS

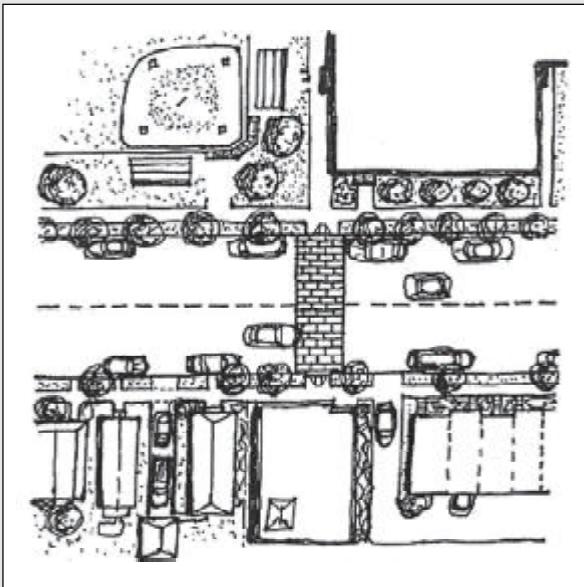


If a transportation safety project is under consideration for implementation and has any of the following land uses within the affected area, the project will be given a higher priority.

- School Zones
- Parks and Playgrounds
- Community Centers
- Senior Citizen Facilities
- Residentially Located MBTA Stations
- Hospitals

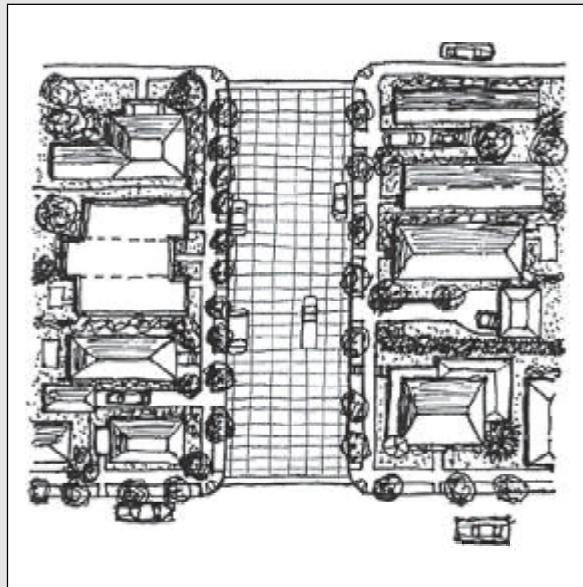
These land uses contain high concentrations of pedestrian populations. The BTD will coordinate with other City departments and social service organizations affiliated with the facility to identify and implement appropriate measures. These efforts will include outreach and education programs to augment Stage One or Stage Two improvements.

EXAMPLES OF STAGE TWO ALTERNATIVES



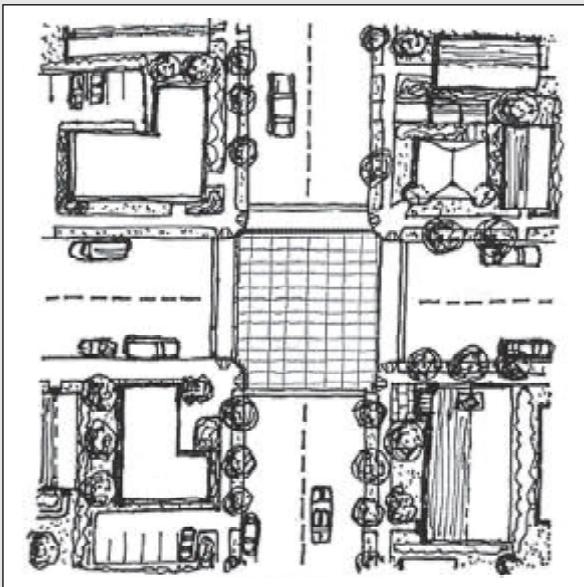
Raised Crosswalk

A flat-topped speed table or hump that is also marked for pedestrian crossing. Often constructed with textured materials to improve aesthetics and provide stronger visual clues for drivers.



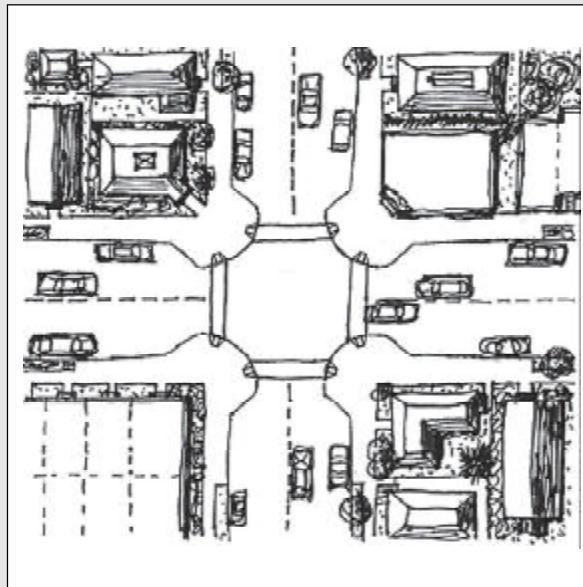
Textured Pavement

Roadway surfaces paved with concrete or asphalt pavers, or other materials to produce constant small changes in vertical alignments. The surface materials provide visual and audio clues for drivers to reduce speeds.



Raised Intersection

Flat raised area encompassing entire intersections that ramp up on each approach, and are often constructed with textured materials. Useful measure in urban settings because there is not a loss of valuable on-street parking that is often associated with other measures.



Neckdowns

Neckdowns are curb extensions located at an intersection. The narrowing of the roadway pavement is primarily to improve pedestrian safety by shortening crossing distances.

Other Design Elements

Other design elements that must be considered in developing the alternative evaluations and in developing final design for the elected alternative include:

- Safety (for all users)
- Provisions for emergency vehicles and bicycles
- Sight distance
- Street lighting
- Maintenance and snow removal
- Landscape components
- Height and length of Stage Two alternatives (if implemented)

Implementation Coordination

In developing the conceptual design alternatives, and in completing final design for the selected alternative, it is imperative that the project conform to standard engineering practices and guidelines that have been established by the City of Boston, and the traffic calming guidelines recently developed by the Massachusetts Highway Department.

Subsequent to implementation and following a post evaluation, a candidate project may be modified or removed by the BTD.

Pilot Sites for Transportation Safety Program

Pilot sites for implementation of transportation safety measures have been identified throughout Boston. Considered primarily as Stage Two alternatives, these pilot sites will be tested throughout Boston. Advanced by in-house recommendations, these pilot sites are located in various neighborhoods and represent different transportation safety concerns. The transportation safety concerns include use of secondary roads as arterials, senior citizen and pedestrian safety, speeding and cut through traffic, managing increased traffic volumes, and enhanced circulation. The map, Pilot Sites for Transportation Safety Program, delineates the locations of the pilot projects.



Neckdowns were used at City Square in Charlestown to enhance pedestrian safety by shortening pedestrian crossing distances.



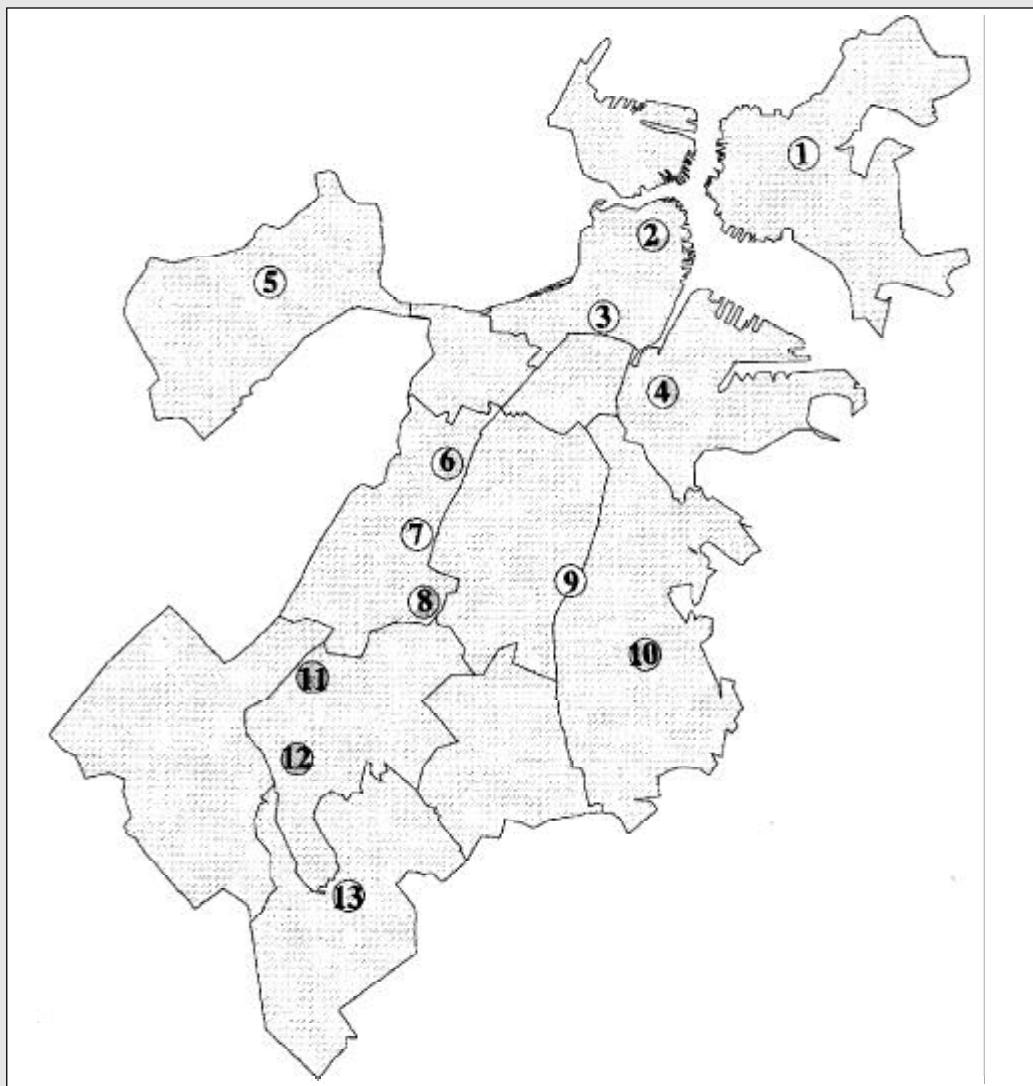
A woonerf with textured pavement was constructed on Appleton Street in the South End.



Speed humps were constructed in the 1980s on Lochstead Street in Jamaica Plain.

**PEDESTRIAN SAFETY GUIDELINES
FOR RESIDENTIAL STREETS**

PILOT SITES FOR TRANSPORTATION SAFETY PROGRAM



KEY	LOCATION	SAFETY CONCERN(S)
1	Saratoga Street/East Boston	Use of Secondary Road as Arterial
2	Commercial Street/North End	Elderly/Pedestrian Safety
3	Josiah Quincy School/Chinatown	Pedestrian Safety
4	East and West 2 nd Streets/South Boston	Speeding/Cut-Through Traffic
5	Lincoln Street/Allston	Speeding/Cut-Through Traffic
6	Calumet and St. Alphonsis Streets/Mission Hill	Speeding/Cut-Through Traffic
7	Hyde Square/Jamaica Plain	Speeding/Cut-Through Traffic/Pedestrian Safety
8	Forest Hills Street/Jamaica Plain	Speeding
9	Grove Hall – Stanwood Street Area/Dorchester – Roxbury	Managing Increased Volumes
10	Dorchester Avenue, Lincoln and Faulkner Streets/Dorchester	Pedestrian Safety and Circulation
11	South Street/Roslindale	Speeding/Cut-Through Traffic
12	Glendower Street/Roslindale	Speeding/Cut-Through Traffic/Pedestrian Safety
13	Myopia Road/Hyde Park	Speeding/Cut-Through Traffic

3. IMPLEMENTATION PROCESS

The first two sections of this report have addressed the identification and analysis of the need for transportation safety improvement measures in a neighborhood as well as the conceptual design and evaluation of alternative solutions. This section discusses a range of considerations that will affect the implementation of those projects. These considerations include demonstrated continuation of community support, cost and funding availability, and input from City departments in the final design. Following final approval and implementation of the project, an “after” study will be performed to evaluate the project’s effectiveness.

Community Support

Community support for transportation safety improvement measures in a neighborhood is a continuing component that starts with an initial request to the BTD and is subsequent to input on alternatives and consensus prior to implementation. If a project is under consideration for Stage Two alternatives, the neighborhood proponent group should be organized to facilitate distribution and discussion of information regarding transportation safety needs, alternatives, and implementation. The BTD will meet with the community in public meetings to present the alternative plans and solicit input and comment from all affected and interested parties. Community input should encompass residents and businesses, as well as emergency and maintenance service providers.

FUNDING STRATEGIES

Funding is a critical element in the successful implementation of Transportation Safety Improvement projects. The City will seek to fund projects through a variety of sources including:

- **Federal and State Funding**

Under TEA-21 (Transportation Equity Act), funding is available for pedestrian improvements, transportation enhancements, and community preservation programs.

- **Local Funding**

Include safety improvements as a component of Capital Improvement Projects programmed by the City such as roadway reconstruction/resurfacing projects or water/sewer replacement projects. Other funding can be provided through the City's operating budget. Examples of this type of funding include signs, pavement markings, and trees.

- **Private Sector Funding**

Safety improvement projects included as part of mitigation commitments specified in a developer's Transportation Access Plan Agreement with the City. Safety improvement projects include signal installations and geometric changes to roadways.

The City of Boston may require written support of proposed Stage Two alternatives before City approval. A neighborhood may be required to submit a petition with signatures, addresses, and telephone numbers in support of the project. For example, at least 75 percent of residents in an affected area, which would be determined by the City, would need to sign in support. At locations on streets where alternatives are proposed, 100 percent of the immediately abutting residents would need to sign in support. However, the City reserves the right to determine whether a proposed project should be implemented.

Costs and Funding

The principal costs of a transportation safety improvement project involve installation (i.e. construction) and ongoing maintenance. Construction encompasses physical changes in the horizontal and/or vertical elements of a street, including sidewalk, curbing, street pavement, and possible replacement/relocation of drainage and utilities. Changes in signalization, signage, and pavement markings are other elements of a construction plan. More complex projects may require management plans/detour routing for maintenance of traffic and access to abutting properties during construction.

PEDESTRIAN SAFETY GUIDELINES FOR RESIDENTIAL STREETS

CITY OF BOSTON STREET ELEMENTS MAINTENANCE AND MANAGEMENT RESPONSIBILITIES

Boston Transportation Department

Regulatory Signs
Directional Signs
Traffic Signs
Pedestrian Crossing Signals
Roadway Lane Markings
Parking Meters
Crosswalks

Boston Public Works Department

Sidewalks
Roadway Construction
Ramps for Wheelchairs
Street Lights
Banners

Boston Parks and Recreation Department

Street Trees and Plantings

Boston Water and Sewer Commission

Drainage



Physical modifications such as this partial street closure were implemented in South Boston as part of an overall community circulation plan.

Subsequent to completion of installation, there will be ongoing maintenance costs, including replacement of pavement markings and worn or damaged signs, and upkeep of the physical elements installed within the street right-of-way. For example, projects which require landscaping treatments, or changes to the roadway pavement (such as raised intersections and textured pavements) have been shown to require increased maintenance activity. Specific maintenance concerns include snow removal and storage, street sweeping, drainage, debris build-up, water ponding and ice formation, and potential damage to roadway surfaces or curbing.

Adequate funding for construction and maintenance of the project must be secured prior to its construction. Stage One projects could be funded through the City's operating budget. Private funding could be obtained through a private developer's financial mitigation as part of a Transportation Access Plan Agreement signed with the BTD. City funds provide the flexibility of implementing projects anywhere in the city, while private funds are typically restricted to areas near the proposed development.

Stage Two projects would require capital funds that could be obtained through several public and private sources. The Transportation Equity Act for the 21st Century (TEA-21) lists traffic calming projects as an eligible activity. Exploring programs offered through the American Automobile Association (AAA) may be a source of private funding. Local funding for transportation safety improvement projects may be available from various sources. Certain traffic elements can be incorporated in the reconstruction for streets programmed by the City for resurfacing, sewer work, water line replacement, etc. In areas where streets will be constructed or modified as part of private development projects, funding for transportation safety improvements may be included in the developer's financial mitigation commitments to the City set forth in a Transportation Access Plan Agreement.

Interagency Coordination

Before the City can approve a Stage Two transportation safety improvement project, it is necessary that the design receive review and input from City departments with responsibilities in construction, operation, maintenance, emergency response, and public safety. Interagency coordination is required with the Transportation, Public Works, Water and Sewer, Fire, Police, Emergency Medical Services,

Parks and Recreation, the Budget Departments, and the Commission for Persons with Disabilities. Key members of these departments should be part of the planning process for all improvement proposals. In addition, the MBTA should review Stage Two projects to determine there are no negative impacts to transit routes.

The formation of an interagency group should be considered to facilitate this review. It is important to communicate proposed Stage Two transportation safety improvement projects with all relevant parties before implementation of the plan.

Evaluation of Effectiveness

After the draft version of a proposed Phase Two project has been agreed upon, it will be submitted for formal review and final approval. The review should ensure that the design is responsive to a demonstrated safety issue that reduces vehicle speeds and volumes. The design needs to demonstrate improved safety at schools, senior citizen facilities, parks or other areas of concentrated pedestrian activity; considers impacts on emergency routes and access for hospitals and fire stations; and ensures that adverse impacts will not be shifted to adjacent neighborhood streets.

Projects will be prioritized for construction based on the goal of assigning the highest priority to those areas with the greatest need. The construction schedule will depend upon funding availability and may be programmed to coordinate with a scheduled street reconstruction project.

No sooner than six months after implementation of the project, so that motorists and other users of the street have adjusted to the changes, the BTD will conduct an “after” study to evaluate its effectiveness. The study can include measurement of traffic speeds and volumes as well as accident data. The City may keep, modify or remove a Stage One or Stage Two project based on the evaluation of effectiveness. An additional purpose of the “after” studies is to evaluate the advantages or disadvantages of various transportation safety improvement techniques for future projects in other locations.

CITY OF BOSTON COMMISSIONS REVIEWING STREET ELEMENTS

Public Improvement Commission (PIC)

Reviews and approves all changes to street elements in or affecting the public right-of-way.

Boston Landmarks Commission (BLC)

Reviews and approves street reconstruction if it is adjacent to designated landmarks. National Register review may be required. Review and approval is required in local historic districts: Beacon Hill, Back Bay, South End, Bay Village, Bay State Road/ Back Bay West, St. Botolph area, Mission Hill Triangle.

Boston Civic Design Commission (BCDC)

Reviews and recommends changes in design proposals that impact the public realm in coordination with the BRA (Boston Redevelopment Authority) staff review.

Boston Parks Commission (BPC)

Reviews and approves street reconstruction within 100 feet of a public park and proposals for street trees and plantings within all public rights-of-way.

Commission for Persons with Disabilities (CPD)

Reviews street designs to ensure that the city, state and federal policies and regulations have been adhered to.

**PEDESTRIAN SAFETY GUIDELINES
FOR RESIDENTIAL STREETS**