

NUMBERS YOU SHOULD KNOW

TRANSPORTATION DIVISION:
(925) 973-2650

PLANNING DIVISION:
(925) 973-2560

BUILDING SERVICES DIVISION:
(925) 973-2580

ENGINEERING SERVICES
(925) 973-2670

POLICE DEPARTMENT:
(925) 973-2700

PARK SERVICES & COMMUNITY SERVICES:
(925) 973-3200

PUBLIC SERVICES:
(925) 973-2800

CITY WEBSITE:
WWW.SANRAMON.CA.GOV

RESIDENTIAL TRAFFIC CALMING PROGRAM

POLICIES · PROCEDURES · RESOURCES



RTC HANDBOOK

RTC HANDBOOK

A program funded by the City of San Ramon Community Development Department and administered by the Transportation Services Division.

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CITY OF SAN RAMON

San Ramon City Council

H. Abram Wilson, Mayor
Carol Rowley, Vice Mayor
Dave Hudson
Scott Perkins
Jim Livingstone
Herb Moniz, City Manager

2006 Transportation Advisory Committee (TAC) Members

Gordon Kimber, Chair
Richard Rubottom, Vice Chair
Kathy Stewart
Tom McClean
Steve Simmons
Harvey Riggs

Transportation Services Division

Phil Wong, Community Development Director
Lisa Bobadilla, Transportation Division Manager
PJ Sekhon, Transportation Specialist

Meeting Times: 3rd Thursday of the month - 6:30 PM – Planning Conference Room

special meetings; coordinate agenda preparation with staff; encourage active participation of members.

b. Vice-Chair: Shall preside at all meetings in the absence of the Chair.

F. Staff:

Shall record all activities of the Committee and keep written summary minutes of all Committee meetings; record attendance; arrange for filling vacancies; prepare agenda in consultation with Chair; provide information necessary for Committee work; assure compliance with applicable laws; lend professional expertise; track time spent on Committee work.

ARTICLE VII: POWERS OF COMMITTEE:

A. Committee members may recommend and the Committee establish sub-committees as deemed necessary. Appointment of sub-committee members will be made by the Chair. Sub-committees may consist of persons not on the Advisory Committee, and may be of any size. Sub-committee Chair will be elected by the sub-committee membership. Sub-committees will be appointed either for single task force assignments or as an ongoing standing sub-committee. Sub-committees are for the sole purpose of researching, reviewing, or providing overall policy direction on programs, facilities, or services prior to being presented to the full Committee.

B. Committee will submit recommendations to the City Council in writing, as approved by a majority of the Committee.

C. Committee shall establish annual goals and action plan consistent with City Council policies and direction. .

ARTICLE VIII: AMENDMENTS

A. Any proposed amendment to these bylaws must be approved by a majority vote of the Committee, and ratified by the City Council.

CITY OF SAN RAMON

RESIDENTIAL TRAFFIC CALMING PROGRAM

ARTICLE VI: COMMITTEE ORGANIZATION

- A.** Meetings are to be held every month. Additional meetings may be scheduled as deemed necessary by the Chair of the TAC Committee or by Department staff.
- B.** Quorum: A majority of voting members in good standing shall constitute a quorum for the purpose of action on any issue or agenda item.
- C.** Members shall notify the Chair or staff in the event of an anticipated absence from a regularly scheduled meeting. Three absences in any twelve-month period shall constitute voluntary resignation from the Committee. The resigned position will be announced publicly and filled under the appointment process. Former members may re-apply. Attendance records will be maintained by staff.
- D.** Meetings shall follow the Brown Act Laws for Open Public Meetings, Government Code Section 54950.5, and public input during a public forum shall be established and supported. Standard rules of parliamentary procedure will govern meetings.
- 1. Agendas:** A written agenda shall be developed by the Chair and the staff, and shall be delivered to all Committee members at least 72 hours in advance of the Committee meeting.
- 2. Minutes:** Written summary minutes shall be recorded by the staff, typed and issued to all Committee members for their approval.
- 3. Written Correspondence/Verbal Communication:** All written official correspondence and verbal communication on behalf of the Committee or any Committee member that is directed to any outside agency, organization or person shall have the consent of the Committee.
- E. Officers:**
The Committee shall elect a Chair and a Vice Chair from among its members following the annual appointment. Term of office is one year. The Chair shall not serve consecutive full year terms as Chair. Elections also shall be held to fill vacancies in these positions as they occur, or as soon thereafter as practical.
- a. Chair:** Shall preside at all meetings of the Committee; decide on all points of order; appoint sub-committee membership; follow up on work of sub-committees; represent Committee to City Council and Commission; call

TABLE OF CONTENTS

INTRODUCTION	1
BACKGROUND	3
RESIDENTIAL TRAFFIC CALMING	6
HOW IT WORKS	8
OVERVIEW OF TRANSPORTATION NETWORK	12
CITY OF SAN RAMON RTC TOOL KIT	22
APPLICABILITY MATRIX	23
EVALUATION LEGEND	24
TOOLS	25-46
APPENDIX	47-52

INTRODUCTION

MISSION STATEMENT

The Residential Traffic Calming Program is designed to coordinate the collaboration of City staff and citizens, in an effort to produce effective traffic calming throughout San Ramon's neighborhoods.

The Residential Traffic Calming (RTC) Program focuses on local transportation issues such as cut-through traffic and speeding vehicles on local neighborhood streets. The information and tools presented in this document will be applicable on most local roadways in an effort to reduce traffic speeds and volume while

balancing multiple uses. Local roadways are defined as a street that provides direct access into residential neighborhoods to connect individual homes to collector and arterial streets. The RTC program outlines a variety of traffic calming measures to improve the quality of life in local residential neighborhoods. The program provides opportunities for residents to work closely with the Transportation Advisory Committee (TAC) and City staff to identify traffic issues and concerns, and determine appropriate solutions.

The objectives for the RTC Program are:

1. Establish a single point of contact for residents concerned about traffic calming issues.
2. Increase awareness on the part of residents and drivers about their obligation to be good neighbors when driving through residential neighborhoods.
3. Enhance pedestrian, bicycle, and vehicle traffic safety on neighborhood streets.
4. Increase the quality of life for residents, including reduced traffic noise, decreased air pollution, etc.



ARTICLE V: MEMBERSHIPS

A. The Committee shall consist of six (6) community representatives. Members shall meet any one or more of the following criteria and must meet all qualifications:

- Are interested or knowledgeable in the provision and delivery of transportation issues ;
- Have prior experience in community projects or activities;
- Have prior experience in a community-based organization.
- Are 18 years of age or older

Applicants must meet all of the following qualifications:

- Applicants should have the ability to take an active role in Committee meetings and projects and participate a minimum of six hours per quarter in Transportation programs and activities.
- Be a resident of the City of San Ramon.
- Not currently serving on another City Advisory Committee

B. The Committee will have voting capacity. The Committee will include one liaison from the Planning Commission, City Council, and Teen Council who will be non-voting members. Two non-voting City staff members (Director, Division Manager, and/or Program Manager) will serve to provide professional expertise, program and budget advice, and assistance with applicable open meeting regulations.

C. Persons meeting the qualifications and interested in serving on the Committee shall complete the appropriate application form. An application filing period will be announced publicly in order to solicit applications when vacancies exist on the Committee.

D. All six seats shall be appointed by the City Council.

E. Members will serve a two-year term on the Committee or until a successor is appointed and able to serve. Incumbents wishing to reapply will be re-appointed by the City Council. Terms will commence in January of each year.

F. Members wishing to resign from the Committee must provide a written resignation addressed to the City Clerk. Once the resignation is received by the City Clerk, the City Clerk then follows the application process for filling the vacancy

SAN RAMON TRANSPORTATION ADVISORY COMMITTEE GUIDELINES AND BY-LAWS

Approved by the San Ramon City Council April 25, 2006

ARTICLE I: NAME

A. The name of this group shall be the San Ramon Transportation Advisory Committee (hereinafter referred to as "Committee").

ARTICLE II: HISTORY

A. The Committee was established by the City Council in January 1986. The Committee evolved from the previous City Transit Committee.

ARTICLE III: PURPOSE

A. The purpose of the Committee is to provide ongoing input to the City of San Ramon on the provision and delivery of transportation issues affecting the City of San Ramon.

ARTICLE IV: CHARGE

A. The Committee's main objectives are to:

1. Review and provide recommendation(s) on all transportation related complaints, comments, or suggestions.
2. Review County Connection bus ridership, bus routes every six months, and make appropriate recommendations to Council.
3. Review and provide comments on transportation issues regarding the Metropolitan Transportation Commission (MTC), Caltrans, County Connection, LAVTA, and BART.
4. Review and provide comments and recommendations on the City's General Plan circulation elements and specific plans.
5. Review and provide recommendations for Council on local, state, and federal transportation legislation affecting San Ramon.
6. Review and provide recommendations on transportation policies, issues, and programs which involve the Contra Costa Transportation Authority (CCTA) and Tri-Valley Transportation Council (TVTC).
7. Review and provide recommendations on the Contra Costa County wide bicycle plan.
8. Establish an annual project study list to address specific issues.
9. Other matters as referred to Committee from Council.



As a community develops, its traffic characteristics change. Initially, traffic through San Ramon primarily consisted of commuting trips, but as the population increases, trips for shopping, taking children to and from schools add to the traffic flow. Also, the number of vehicles increases as students reach driving age. Further, wide, straight, non-impeded streets and apparent "short-cuts" through a residential area tend to attract motorists in increasing numbers and soon the streets exceed acceptable traffic levels for a desirable community.

The volume of traffic on residential streets in San Ramon has increased significantly over the last several years. An increased frequency of accidents, higher noise levels, added air pollution and difficult driving and parking circumstances for residents are all possible undesirable consequences of this additional traffic.

San Ramon is hardly unique in this situation. In Walnut Creek, city traffic engineers have implemented peak commute period turning restrictions to prevent short cutting through residential areas. In Berkeley, traffic barriers and diverters have been used since the 1970's to discourage through traffic in residential streets. In Palo Alto, a model ordinance has been adopted for the installation of "speed humps" in an attempt to reduce traffic speeds on selected residential streets. Clearly, traffic intrusion is a problem which impacts diverse groups of citizens, and has prompted a variety of responses at the local government level.

In San Ramon, concerns from traffic intrusion to residential areas have been documented. To date, these concerns have been addressed on a case by case basis with response tailored to address the specific concerns noted in a residents' complaint. Typical responses have included traffic engineering measures, e.g. additional stop signs, speed limit signage, turn channelization and roadway striping. Additionally, the San Ramon Police Department has responded with focused enforcement activities on residential streets as requested.



BACKGROUND

DEVELOPMENT OF SAN RAMON'S PROGRAM

In 1998, the City implemented a Residential Traffic Calming (RTC) Program to address community concerns over traffic intrusion into residential areas.

This program includes a preliminary set of guidelines and procedures which were developed based upon review of the experiences of other cities and discussions by the City's Transportation Advisory Committee.

The Residential Traffic Calming concept can be considered an extension of long standing General Plan policies aimed at reducing traffic on residential streets, and segregating through and local traffic via functional roadways.

The Residential Traffic Calming Program includes a combination of some or all of the following elements:

1. Special signage to indicate to motorists that they are leaving arterial roadways and entering residential streets.
2. Additional speed limit signage on residential streets.
3. Traffic control devices utilized to discourage through traffic from using residential streets.
4. Increased code enforcement, with emphasis placed on residential streets.
5. Information programs to educate motorists of proper etiquette for driving in residential areas.



CITY OF SAN RAMON RESIDENTIAL TRAFFIC CALMING PROGRAM Petition for the Installation of Turn Restrictions

Dear Resident,

The City of San Ramon has received a request to consider the installation of turn restrictions on Imaginary Drive. Turn restrictions would be implemented in the following way:

- 1) Between the hours of 6am to 10am, Monday through Friday, no vehicles will be allowed to turn onto Imaginary Drive.
- 2) Between the hours of 3pm to 7pm, Monday through Friday, no vehicles will be allowed to turn onto Imaginary Drive.
- 3) The turn restrictions will apply to all motorists including Imaginary Drive residents, visitors, and delivery trucks.
- 4) Turn restriction will not apply to emergency vehicles.

In order for the City of San Ramon to consider the proposal for turn restriction on Imaginary Drive the Transportation Services Division will conduct a turn restrictions analysis. The data collected will be presented to the Transportation Advisory Committee for further consideration and recommendation(s).

By signing the petition, you the resident of Imaginary Drive, are stating that you understand the proposal presented and support the City's efforts to begin the process for determining the feasibility and applicability of turn restrictions on Imaginary Drive.

If you have any further questions regarding the petition process for turn restrictions please contact PJ Sekhon, Residential Traffic Calming Program specialist at 973-2656.

Resident Print Name: _____
3372 Imaginary Drive Phone Number: _____
San Ramon, CA 94583 Signature: _____
Date: _____

Petition must submitted by MM-DD-YYYY



Perhaps the first step in mitigating the problems associated with increased traffic is to realize that streets are not only for vehicular traffic but are also used for running, bicycling, walking, City services (ambulances and fire engines, for example) and parking.

The Program presented in this document has a primary goal; to identify traffic control solutions applicable to both existing and new streets in the City. These solutions can be implemented with many different techniques or "tools" that achieve a cost effective benefit to the public in any particular situation. A City process is available for the public and Transportation Advisory Committee to participate in evaluating and implementing traffic calming solutions.

The primary principle guiding the program is to alleviate problems in such a way that street usage will be modified so that all of the activities that take place within a residential area can do so with increased safety and convenience.

It may be possible to maximize mobility while decreasing costs. By maximizing mobility there will be savings in time, operating costs, and energy while minimizing negative social and environmental impacts.



Efficiency can be enhanced by diverting traffic from residential streets to collector streets and arterials. The use and support of public transportation can be fostered where it is possible, appropriate and cost effective.

Definitions of traffic calming may vary but they all share the goal of reducing vehicle speeds, improving safety, and enhancing quality of life. Traffic Calming involves changes in street alignment, installation of barriers, and other physical measures to reduce traffic speeds and/or cut-through volumes, in the interest of street safety, livability and other public purposes.

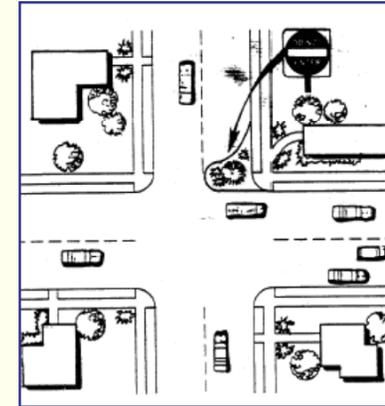


Traffic calming measures can be separated into two groups based on the main impact intended. Volume control measures are primarily used to address cut-through traffic problems by blocking certain movements, thereby diverting traffic to streets better able to handle it.



Speed control measures are primarily used to address speeding problems by changing vertical or horizontal alignment, or narrowing the roadway. The distinction between the two types of measures is not as clear as their names suggest, since speed control measures frequently divert traffic to alternate routes, and volume control measures usually slow traffic.

TURN RESTRICTION



Definition: Physical barriers or signs that prohibit a particular turning movement.

Advantages:

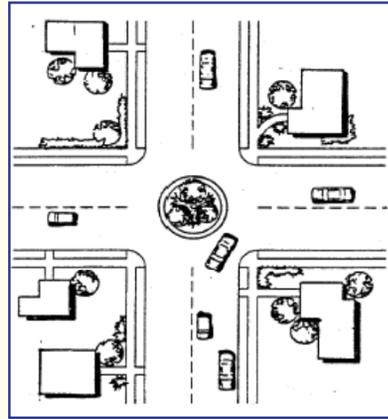
1. Eliminates cut-through traffic.

Disadvantages:

1. Increases response time for emergency vehicles.
2. Can increase trip length.



TRAFFIC CIRCLES



Definition: Traffic circles are raised circular areas placed in an existing intersection. Drivers travel in a counter-clockwise direction around the circles. Traditional circles are “yield upon entry”, meaning that cars in the circle have the right-of-way and cars entering the circle must wait to do so until the path is clear. When a traffic circle is placed in an intersection, no automobile can travel in a straight path.

Advantages:

1. Reprioritizes traffic to increase accessibility for local residents.

Disadvantages:

1. May make pedestrian/bicycle crossing confusing.
2. May create short cuts.



RESIDENTIAL TRAFFIC CALMING

Included in the RTC Program is a Traffic Calming Tool Kit. The tool kit provides residents with an overview of mitigation measures. Issues such as cost, effectiveness, anticipated effect, and a description of each measure are outlined in the tool kit. San Ramon’s Residential Traffic Calming Toolkit is designed to enhance communication and understanding between the City and its residents.

Citizen Involvement

The RTC Toolkit provides both the City and its residents with several methods of addressing individual residential traffic concerns. Citizen involvement plays an important role in identifying problems and is greatly encouraged. Residents who have traffic concerns are invited to provide input to the Transportation Advisory Committee.

San Ramon City Staff

1. Review and respond to residential traffic calming requests.
2. Conduct appropriate traffic and warrant studies.
3. Recommend appropriate traffic calming options to the Transportation Advisory Committee, City Council and Citizens.
4. Maintain RTC log sheet.
5. Initiate implementation of approved traffic calming measures.
6. Provide monthly program status reports to the Transportation Advisory Committee.
7. Provide a process for citizen feedback.

Transportation Advisory Committee

1. Review, revise and/or update the RTC Program policies and procedures.
2. Review all traffic calming requests and options.
3. Provide recommendations to the City Council regarding traffic calming measures.
4. Review and recommend traffic calming standards and policies for future residential development.
5. Forward traffic calming recommendations to the City Council for final review and/or approval.



San Ramon City Council

1. Review and approve the Policies and Procedures for the RTC Program.
2. Review and approve complex or controversial traffic calming options.
3. Provide an appeal process for denied traffic calming requests.
4. Allocate resources and funding guidance.
5. Approve annual RTC Program budget.

THE THREE E'S

Neighborhoods can rely on the Three E's, Education, Engineering and Enforcement, as their prime resource for traffic calming.

Education

By providing San Ramon's residents with information in various ways, City staff can assist residents to make informed preliminary decisions about their neighborhoods. Informed individuals can better assess the degree of traffic calming required to combat traffic concerns, influence driver behavior and promote community building through respect for one's neighborhood. Informed residents can then collaborate their efforts with engineers and planners to ensure that the proposed traffic mitigation tool is an effective and feasible improvement.

Engineering

Traffic calming can include the development and implementation of a variety of new physical features and traffic calming strategies. There is an assortment of engineering options that can improve the traffic situations around residential neighborhoods. These types of improvements require collaboration between residents, elected officials, and City staff. Engineering applications are often constrained by standard engineering policies, budgetary resources and community acceptance.



TRADITIONAL ENFORCEMENT



Definition: Sporadic monitoring of speeding and other violations by the police.

Advantages:

1. Serves to inform public that speeding is an undesirable behavior for which there are consequences.

Disadvantages:

1. Effect is not permanent.
2. Enforcement is an expensive tool.



STRIPINGS AND MARKINGS



Definition: A low cost, low maintenance traffic flow and traffic speed modifier.

Advantages:

- 1. Passive control.
- 2. Low cost.
- 3. No impact on emergency response time.

Disadvantages:

- 1. Paint and striping can be hazardous to bicyclist during rainy conditions.
- 2. Passive control may not be effective.



Enforcement

Communities can rely on the Police Department to enforce traffic control measures and target identified areas. Additional enforcement can significantly increase the awareness of traffic related problems, particularly speeding.

HOW IT WORKS

The RTC Program is a two-phase program. Phase I focuses on informing and educating residents regarding traffic calming features and providing the neighborhood with tools for resolution and documentation of traffic problems. Phase I measures should be thoroughly explored and implemented before implementing Phase II.

If the traffic issue still exists after the first phase, then more restrictive physical devices can be considered for recommendation and implementation. Phase II addresses problems that require permanent and more costly traffic control solutions.

All recommendations included in Phase I and/or Phase II must be consistent with the City's overall transportation network and with nationally recognized standard traffic engineering safety practices and procedures, specifically the Institute of Transportation Engineers (ITE) and the Federal Manual on Uniform Traffic Control Devices (MUTCD).

STEPS FOR IMPLEMENTATION OF PHASE I

Phase I

Phase I involves the collaboration of City staff and neighbors to identify specific concerns, establish goals and objectives, define criteria for "success", and develop a Neighborhood Mitigation Plan with measures for implementation.

Phase I measures take advantage of relatively low cost and proven traffic control measures to address the needs of the Residential Traffic Calming Plan.

Examples of Phase I measures include, but are not limited, to the following:

- Neighborhood Information Plan – targeted distribution of educational materials regarding traffic safety issues.
- Radar Trailer – deployment of a portable, unmanned, trailer equipped with a radar and a speed limit sign to alert drivers of their speed.
- Passive Traffic Controls – installation of warning or guide signs.
- Traditional Police Enforcement of existing speed limits and other vehicle code violations
- Pavement Markings – improve the condition of existing roadway markings or modification or installation of new markings to assist vehicle drivers.

Each neighborhood participating in the program must begin with Phase I. The public education provided in Phase I may enable residents to distinguish between real and perceived speeding problems, and begin the discovery process necessary for change.



The following is a step by step approach to implementing Phase I of the RTC program.

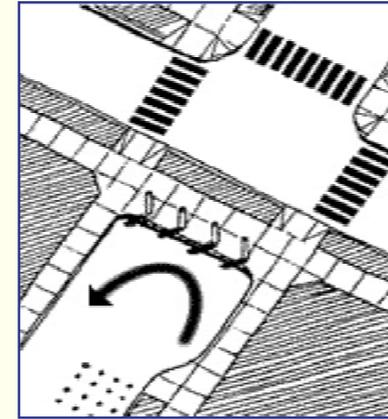
Step 1: Identification Process

- Identify specific traffic concerns
- Distribute and discuss program materials
- Create neighborhood boundary
- Review previously implemented traffic control measures
- Establish goals and objectives of the neighborhood
- Define criteria for success
- Establish a neighborhood committee to work closely with TAC members and staff throughout the entire process.

Step 2: Roadside Survey

- Prepare existing conditions diagram, noting appropriate signage and pavement markings, etc.
- Validation of posted speed limit
- Deployment of radar speed trailer
- Review accident history
- Observe pedestrian and bicycle activity and surrounding environmental factors (i.e. schools, parks, etc.)

STREET CLOSURE



Definition: Street closed to motor vehicles using planters, bollards or barriers. Pedestrian and bicycle access is maintained.

Advantages:

1. Eliminates cut-through traffic.

Disadvantages:

1. Significantly increases response time for first responders.
2. Increases trip length for local residents.
3. May increase traffic volumes on neighboring streets.



STOP SIGNS



Definition: Red octagonal sign displaying the word “Stop”. Stop signs are used to designate the right-of-way at intersections. They are never used for speed control.

Advantages:

1. May reduce cut-through traffic.
2. Low maintenance.

Disadvantages:

1. Drivers speed up between stops.
2. Increases noise and pollution in neighborhood.
3. Stop signs do not decrease average speeds.
4. Excessive use of stop signs renders them ineffective.
5. Can cause accidents when not expected or needed.

Step 3: Evaluation Process

- City staff, with assistance from the Residential Traffic Calming Committee, will present the results of the data gathering, analyses, and effectiveness of Phase I measures to the neighborhood.

Phase II

Phase II measures are considered when it is concluded that Phase I measures were not effective, or practical. In Phase II, the Residential Traffic Calming Plan may be modified to include more restrictive physical devices on local streets.

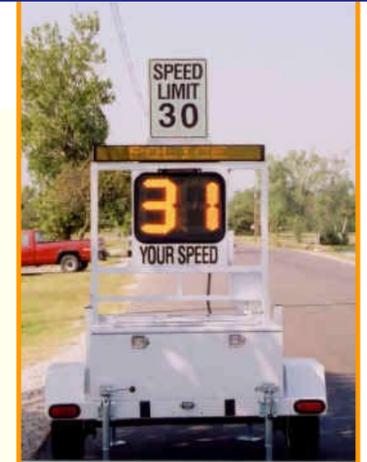
Phase II measures are typically more costly and permanent. Consequently, each project will have a budget, and maybe subject to the review and approval of other committees, and the City Council.

Examples of Phase II measures include, but are not limited to the following:

- Speed Humps
- Traffic Circles
- Chokers
- Median Barriers

According to the California Vehicle Code, most of the restrictive measures proposed under Phase II can only be implemented by ordinance or resolution by the City Council. Phase II measures may also generate potentially significant physical impacts on the surrounding environments, and may involve environmental review, as required by the California Environmental Quality Act.

On rare occasions, Phase II measures will be installed on a temporary basis for a trial period of six to twelve months. Based on their effectiveness, recommendations can be made to proceed further with the traffic calming measures in progress.



SPEED LIMIT SIGNS

Steps for Implementation of Phase II Measures

Step 1: Neighborhood Consensus

Staff will present the revised Residential Traffic Calming Plan with recommended Phase II measures to the neighborhood. A staff prepared petition package would need to be circulated throughout the Project Street by the Residential Traffic Calming Committee. At a minimum, 75% of the households along the Project Street must sign the petition in support of the Phase II measures. Once the petition package has been completed, the process moves forward.



Step 2: Data Collection

A thorough analysis is initiated by staff. Among other tasks, the analysis involves collecting and analyzing traffic volumes, vehicle speeds, traffic accident history, neighborhood citation history, pedestrian volume, and other key data. Information and input will also be solicited from the San Ramon Valley Fire Protection District and the San Ramon Police Department.

Step 3: Warrant Analysis

Many Phase II measures will require justification prior to implementation. The justification process usually requires satisfaction of a 'warrant', i.e. the warrant will outline the conditions which indicate an effective traffic control measure. The warrant may require minimum traffic volumes, minimum vehicle speeds, qualifying accident history, and moderate pedestrian activity. The warrant analysis will use the data collected to determine whether or not the minimum warrant criteria is met for the proposed Phase II measure. If the warrant is met, then the process will move forward to step 4.

Step 4: Multiple Consensus Process

Once the Phase II mitigation measure completes the preceding steps, the final proposal is presented to the neighborhood and any other affected groups to gain approval. At a minimum, the proposal must be reviewed and/or approved by the following groups:

- Residents of the Project Street
- City Staff
- City Council
- Neighborhood Boundary (minimum 1000 ft.)
- Transportation Advisory Committee



Definition: Signs that inform drivers of the maximum safe driving speed under normal conditions.

Advantages:

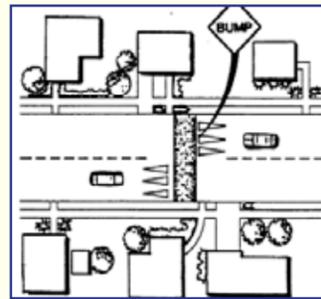
1. Inexpensive and quick to install.
2. Clear presentation of information.
3. Can test its effectiveness.

Disadvantages:

1. Neighborhoods may not want visual pollution.
2. Requires behavioral change.
3. May lose its effectiveness overtime.



SPEED HUMPS



Definition: Speed humps are wave-shaped paved humps in the street. The height of the speed hump determines how fast it can be navigated without causing discomfort to the driver. Discomfort increases as the speed over the hump increases.

Advantages:

1. Slows traffic immediately.
2. Self-enforcing.

Disadvantages:

1. Greatly increases response time for emergency vehicles.
2. Motorists tend to speed up between humps.
3. Increases noise and pollution in neighborhood.



OVERVIEW OF TRANSPORTATION NETWORK

San Ramon's streets are components of a greater transportation network designed to facilitate pedestrians, vehicles, transit, and a mix of other uses. The design of a street is usually determined by the different demands that each transportation mode requires. Within San Ramon, each street is specifically classified to accommodate certain traffic volumes and speeds in conjunction with the principle uses.

Street classifications define the function of each street and the standard to which it should be designed and used.

Many factors determine a street's classification, including: travel demand, right-of-way, required street width, maintenance costs, access needs, safety, preservation or property, adjacent land uses, and connections to the greater transportation network.

Basically, there are three functional classifications for the streets and roadways of San Ramon:



Local Streets

The function of local streets in the City's transportation network is to provide direct access into residential neighborhoods and to provide travel within neighborhoods. The usual speed limit for local streets is 25 mph, as set by California State Law. Much of the emphasis of the Residential Traffic Calming Program will apply to the local streets. However, all recommended mitigation measures will be evaluated for their consistency with standard traffic engineering, safety standards and practices on a case-by-case basis, and some recommendations may not be acceptable.



Collector Streets

The function of collector streets is to carry traffic between local streets and arterial streets. Collector streets are designed to carry higher volumes of traffic, serve greater uses, and accommodate higher vehicle speeds.

San Ramon's collector streets can carry up to 15,000 ADT (Average Daily Traffic). Speeds on collector streets can vary from 25 mph to 40 mph.

Because of their vital role as traffic connectors in the City's transportation network, many of the measures in the Residential Traffic Calming Program Toolkit will not be applicable to collector streets. Currently there are ten designated collector streets within San Ramon: Broadmoor Drive, Camino Ramon, Davona Drive, Deerwood Drive, Fostoria Parkway, Norris Canyon Road, Montevideo Drive, Pine Valley Road, Twin Creeks Drive and Westside Drive.



Arterial Streets

The function of arterial streets and roadways is to carry larger volumes of traffic at relatively higher speeds, with minimal delay. Most collector streets connect with arterial roadways, as they direct traffic through the network. Arterial streets in San Ramon carry up to 60,000 ADT, and are crucial to circulation throughout the City. Speed limits on arterial roadways in San Ramon are typically set between 35 mph and 45 mph. Arterial streets are generally not suitable for Residential Traffic Calming applications. Currently there are seven designated arterial roadways within the City: Alcosta Boulevard, Bollinger Canyon Road, Crow Canyon Road, Dougherty Road, Old Ranch Road, San Ramon Valley Boulevard, and Village Parkway.

Freeways and Interchanges

The function of freeways and interchanges is to connect San Ramon's transportation network to the greater regional transportation system. Interstate 680 and the interchanges at Alcosta Boulevard, Crow Canyon Road, and Bollinger Canyon Road provide for travel to and from the rest of the Bay Area and beyond. Freeways and interchanges are maintained by Caltrans and are unavailable for Residential Traffic Calming measures.

RUMBLE STRIPS



Definition: Rumble strips are patterned sections of rough pavement which alert motorists of changes in their environment.

Advantages:

1. Alerts drivers of their speed and their travel environment.
2. Can be used in conjunction with many other mitigation measures, such as speed humps.

Disadvantages:

1. May not be successful alone.
2. Increases noise in neighborhoods.



RAISED INTERSECTIONS



Definition: Raised intersections are raised plateaus at intersections. The plateau is generally 4 inches higher than the surrounding road surface.

Advantages:

1. Traffic is slowed at intersections.
2. Visibility is increased for Pedestrians/Bicyclist at intersections.
3. Less impact on emergency response time as compared to speed humps.

Disadvantages:

1. Expensive to install.
2. Increases response time for emergency vehicles.



Speed Limits

Speed limits for collector and arterial roadways are established based upon recognized engineering criteria related to roadway design. Some of the criteria includes:

- street width
- lane width
- sight distance
- the 85th percentile speed (critical speed)
- amount, location and type of driveways
- parking supply and demand
- accident history
- vertical/horizontal alignment

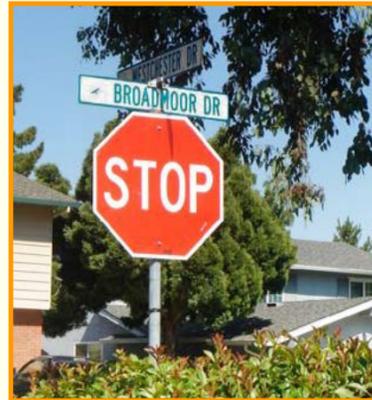
Changing conditions may require a review of posted speed limits. By State statute, local streets, as defined by the vehicle code, have a Prima Facie speed limit. Prima Facie means that unless otherwise posted, the prevailing speed limit within residential neighborhoods is 25 mph. When evaluating speed limits for local streets the following criteria are considered:

- sight distance
- street width and usage
- availability of sidewalks or walkways
- existence of horizontal and vertical grades
- residential frontages
- existence of on-street parking
- close proximity to sources of pedestrian usage such as schools and parks



Stop Signs

The City of San Ramon does not install Stop Signs as part of the RTC Program. The Federal Manual on Uniform Traffic Control Devices (MUTCD) which is the recognized authority, states that 'Stop Signs shall not be used for speed control.' It has been the City's experience that unwarranted stop signs do not make effective traffic calming devices for the following reasons:



- Drivers generally tend to make up the time lost at an unwarranted stop sign by speeding up between signs.
- Stop signs also increase the noise and pollution level in a neighborhood from cars decelerating to stop, then accelerating.
- Drivers tend to run unwarranted stop signs once they notice no traffic in the opposing directions.

Stop signs are installed at locations where right-of-way assignment is required due to a large number of vehicles entering the intersection from all directions. The following is a procedural list for stop sign traffic control:

1. Residents request for right-of-way management.
2. Analysis is performed, which includes traffic volume counts, pedestrian volume, accident history, sight distance and on-site observations.
3. If the intersection meets necessary requirements (warrants), then stop sign traffic control is usually recommended.
4. Recommendations for the installation of stop signs at unwarranted locations would need to be forwarded to the Transportation Advisory Committee and, ultimately to City Council for final approval.

Parking Restrictions

The City of San Ramon oversees the installation of Parking Restrictions based on the following criteria:

1. Safety issues regarding traffic congestion or emergency vehicle access.
2. Visibility at intersections or driveways.
3. Parking management on public streets.

RAISED CROSSWALKS



Definition: A raised crosswalk is a speed hump designed as a pedestrian crossing.

Advantages:

1. Channelizes pedestrian crossings.
2. Makes pedestrians more visible.
3. Effective in reducing speeds though not to the extent of a speed hump.

Disadvantages:

1. Materials can be expensive.
2. May cause motorists to speed-up after crosswalk.
3. Increases response time for emergency vehicles.



POP UP CROSSWALK



Definition: Pop-ups are reflective bollards that serve as barriers for crosswalks. When a pedestrian/bicyclist initiates the crosswalk signal, the pop-ups are activated; they rise to a height of 3 feet, and remain there until the crosswalk is clear.

Advantages:

1. Traffic is restricted from turning/through movements until barriers subside.
2. Pedestrians/Bicyclist safety is greatly improved.
3. There is no negative impact on emergency vehicles.

Disadvantages:

1. Most effective in areas with combination of high pedestrian activity and high traffic volumes.

Parking restrictions are installed either in the form of:

1. Red Curb or No Parking Signage– 24 hours per day, 7 days a week.
2. Time Limitations – Generally signs display time periods when parking is restricted along roadways.

It is important to ensure parking problems are not transferred onto other streets. Prior to installing parking restrictions on any street, an analysis is conducted for safety considerations. There is an assessment of overall parking demand for the surrounding area, and all parking restriction recommendations are forwarded to the City Council for approval.

Speed Display Signs

Speed Display Signs are proven to be effective in alerting drivers of their traveling speeds. Such devices can be used:

1. On roadways near school zones where speed limits drop from 45 mph to 25 mph.
2. Neighborhoods where speed enforcement is the best alternative in managing traffic problems.
3. On any street where benefits of this device could be reaped by all users.

The advantage of Speed Display Signs is that unlike the tools found within the RTC Toolkit, which are generally not feasible for collector and arterial roadways, Speed Display Signs are a tool for arterial and collector roadways.

In-pavement Lighted Crosswalks

This device consists of lights which are embedded in the pavement and are very bright. They can be activated either by the pedestrian, or passively through detection. When coupled with correct signage and markings, this can be effective at increasing pedestrian visibility. Ideal locations include areas that attract a high number of pedestrian traffic, such as in front of a movie theater or downtown commercial district. Key considerations in determining the effectiveness of In-Pavement Lighting include:

1. Location analysis.
2. Street geometrics.
3. Traffic conditions
(volume, speed and visibility).



Speed Humps



Speed humps are not practical mitigation measures on all streets and roadways. Generally, speed humps are designed for local neighborhood roadways with specific traffic volumes, vehicle speeds and residential frontages. Prior to the installation of speed humps, City staff must work with residents, the Transportation Advisory Committee and the San Ramon Valley Fire Protection District. Recommendations must meet the City's traffic engineering standards which are regulated by State and Federal regulations, and the Institute of Transportation Engineers (ITE).

The following outlines the process for speed hump installation:

1. Resident(s) requests a Speed Hump Petition Package.
2. Residents circulate a petition to homeowners on Project Street.
3. Petition must be submitted to City within 60 days.
4. City staff reviews petition to verify that 75% of households on affected street have signed.
5. Staff meets with Residential Traffic Calming Committee to explain process and create sound understanding of the process.
6. A traffic study and analysis is conducted to determine if the speed humps are warranted.
7. A public meeting is held and the request is considered by the Transportation Advisory Committee. All residents within a minimum 1000 ft. radius of the affected street are invited.
8. If the speed hump warrants are met, the design phase proceeds, including the number and location of speed humps.
9. Based on the proposed site location(s), 75% of the homeowners with property adjacent to the proposed speed hump must approve the location(s).

RADAR SPEED MONITORING TRAILER

Definition: This is a mobile radar display sign that informs drivers of their traveling speed.

Advantages:

1. Passive informational tool.
2. No impact on emergency services.

Disadvantages:

1. Cannot be used on narrow streets due to fire department minimums.
2. May reduce number of on-street parking stalls.



ONE WAY STREETS



Definition: One-way streets change the operations of a roadway, by restricting its flow.

Advantages:

1. Street tends to be safer because there is no friction from opposing traffic.
2. Creates more on-street parking.
3. Increases pedestrian safety.

Disadvantages:

1. Increases response time for emergency vehicles.
2. Can lead to increased vehicle speeds.
3. Requires collaboration of other traffic measures.
4. Needs to be paired with other one-way streets.

10. A second public meeting is held to discuss the recommendations.
11. The Transportation Advisory Committee recommendations are forwarded to the City Council for review and/or approval.
12. Upon council approval the speed humps are installed along with appropriate warning signs and pavement markings.
13. A post speed hump installation study is conducted to measure the effectiveness of the speed humps.

Traffic Diversion

Traffic calming tools implemented in one area of the City, may have consequences that extend to other areas of the City, through traffic diversion or transference of the problem. For example, implementing turn restrictions onto one local street may divert additional traffic onto other local streets. In order to effectively manage traffic patterns throughout the City, and to ensure that there is not a transferring of a problem from one location to another, it is important to initiate a petition and public hearing process.

The Transportation Advisory Committee adheres to a guiding policy that any traffic calming improvement shall not be considered if more than 10 percent of the traffic on a street will be diverted onto another neighborhood street.



Petitions ensure that affected residents understand the impacts of the traffic calming measure being advocated for implementation. Public notices and public meetings ensure that all residents that use the City's circulation system have equal access to information and, the users are given a chance to express their interests and concerns regarding proposed traffic calming measures.



Petition Process

The RTC Program petition process for gaining consensus on Phase II mitigation measures require that all residents in the affected area understand the benefits and consequences of installing proposed traffic calming features. As such, the petition package consists of a full page petition letter which must be signed by each resident on the Project Street. This petition letter, once signed by the resident, states that they understand the process, proposed traffic calming feature and agree to move forward with the request. The petition is distributed by the original requester to all residences defined within the project street. Residents along the project street will be able to review the proposed traffic calming feature(s) and decide whether to sign the petition or not. The petition must be returned to the City via mail or in person by each resident within 60 days.

Once all the petitions are received by the City, or the 60 day time period has passed, City staff will begin to review the petition for 75% acceptance, and will proceed to the next step.

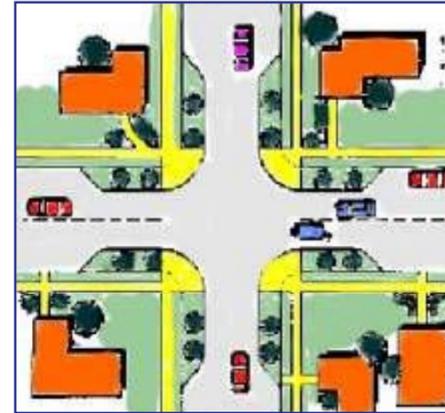
Neighborhood Boundary

A neighborhood boundary will be determined by City staff for each traffic calming request based on the specific characteristics of each neighborhood. This neighborhood boundary will be used to work with the property owners within this area to determine appropriate traffic calming solutions. Since the traffic pattern of each neighborhood is unique, each neighborhood will be evaluated on a case-by-case basis to determine the boundary of the traffic calming study area. It is important to make the study area small enough so that consensus can be achieved.

However, it must be large enough to address and identify the source of the traffic problem. At minimum the neighborhood boundary will be a 1,000 feet boundary around the Project Street.



NECK DOWNS



Definition: Neckdowns are the physical reduction of road width at intersections. They are similar to bulb-outs at intersections.

Advantages:

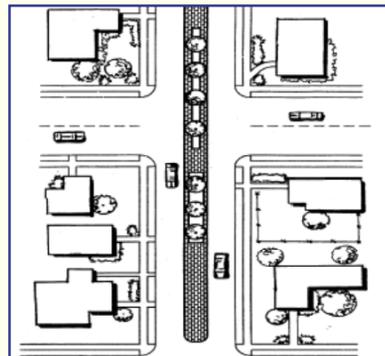
1. Reduces vehicle speeds as motorists approach intersections.
2. Reduces crossing distance for pedestrians and bicyclists.

Disadvantages:

1. Cannot be used on streets with established bike lanes. Neckdowns do not accommodate bicycle crossing at intersections.
2. Can eliminate some on-street parking.



MEDIANS



Definition: Medians are traffic islands, installed to prevent or ensure certain turning movements at intersections. They also provide for separation between opposing lanes of traffic.

Advantages:

- 1. Can eliminate cut-through traffic.
- 2. Changes driving patterns.
- 3. Increases pedestrian safety for crossing streets.

Disadvantages:

- 1. Increases response time for emergency vehicles.
- 2. Transfers traffic to other local streets.
- 3. Increases trip length for local residents.



First Neighborhood Meeting

All residents and property owners within a neighborhood boundary will be invited to attend the initial neighborhood meeting. The purpose of the first meeting is to listen to the concerns of the neighborhood, discuss the RTC Program and process and the advantages and disadvantages of various traffic calming measures. It will be an educational meeting, both for the public to learn about the traffic calming process and its implications, and for staff to learn about the concerns of the public.

Depending upon the size of the neighborhood, the City may request that the residents identify a Neighborhood Traffic Calming Committee or a contact person in order to coordinate the future outreach efforts within the neighborhood.

Moratorium Period

City policy requires a 24 month moratorium period between the date an original application for traffic calming was denied and re-application for traffic calming on a particular street. This policy is a reflection of recognized traffic engineering practices which state that generally, traffic patterns do not change in less than two years. Exceptions to this moratorium period include changes in roadway conditions, new neighborhood development, and/or other changes that may alter traffic patterns in that location. For example, if City staff conducts an analysis and evaluation of a local street for speed hump installation, with a conclusion that the speed humps are not warranted, then residents cannot bring another petition in for speed humps within the 24 month time period.





LANE NARROWING

Definition: Lane narrowing physically restricts the final width of a lane between nine to eleven feet, while expanding sidewalks and landscaped areas.

Advantages:

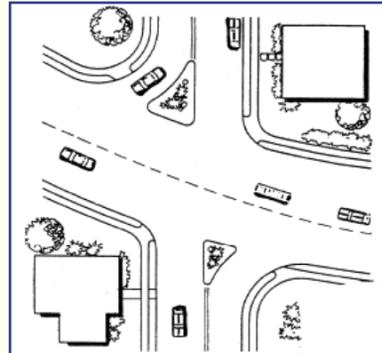
1. Good for pedestrians and bicyclists due to shorter crossing distance.
2. Slows traffic without significant impact on first responders.
3. Most effective on streets where excessive speed is primarily due to street width.

Disadvantages:

1. Eliminates on-street parking stalls.
2. Eliminates bicycle lane.
3. May increase accidents, as opposing traffic is brought closer.



FORCED TURN BARRIERS



Definition: Forced turn barriers are traffic islands installed to prevent or ensure certain turning movements at intersections.

Advantages:

1. Reduces cut-through traffic.
2. Changes driving patterns.

Disadvantages:

1. Increases response time for emergency vehicles.
2. May increase trip length for residents.



CITY OF SAN RAMON RTC TOOL KIT



This section highlights various techniques and measures designed to support traffic calming in neighborhoods. It is critical that the resources provided in this tool kit be used in an effort to understand the entire traffic calming process, including its positive and negative effects. Each page describes the traffic calming tool and provides guidance on how to use it properly to improve safety, access, mobility, and the quality of life for the whole neighborhood.

Keeping in mind that streets accommodate a variety of activities, the City strives to implement tools that will benefit all users. Improvements are not successful if they simply transfer the problem to another street. Therefore it is important to work with City staff to perform appropriate traffic studies and test possible solutions.

APPLICABILITY MATRIX

TOOL	Decrease Speed	Reduce Accidents	Reduce Volume	Increase Pedestrian/ Bicyclist Safety
Choker	Primary	Secondary		Primary
Deviations	Primary			
Diagonal Diverters	Secondary		Primary	Secondary
Education	Primary	Primary	Primary	Primary
Forced Turn Barriers			Primary	Secondary
Lane Narrowing	Primary			
Medians	Secondary	Primary		
Neckdowns	Secondary			
Neighborhood ID Islands	Primary	Secondary		
One Way Streets	Primary	Primary	Primary	Primary
Radar Trailer	Primary	Secondary	Secondary	Secondary
Raised Crosswalks	Primary	Secondary	Secondary	Primary
Raised Intersections	Primary	Primary	Secondary	Primary
Realigned Intersections	Primary	Secondary	Secondary	Secondary
Rumble Strips	Primary	Secondary		
Semi-Diverters				
Speed-Humps	Primary	Secondary		Secondary
Speed-Limit Signs	Primary	Secondary		Secondary
Stop Signs		Secondary		
Street Closures	Secondary	Secondary	Primary	Secondary
Stripings/ Markings	Primary	Secondary		
Traditional Enforcement	Primary		Secondary	Secondary
Traffic Circles	Primary			
Traversable Barriers			Primary	Secondary
Turn Prohibitions			Primary	

PRIMARY ANTICIPATED EFFECT

POSSIBLE SECONDARY EFFECT

EDUCATION



Definition: Activities that change people’s perceptions and help alter driver behavior are most preferred. Meetings and workshops with neighbors and City staff can help implement and direct RTC applications.

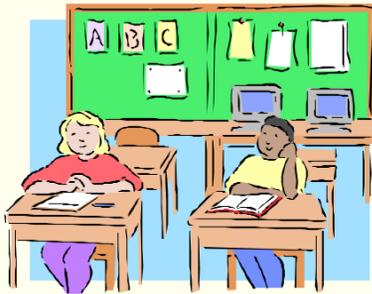
Most traffic problems are a result of human behavior. Through outreach programs and neighborhood watch programs, all residents can play a big part in spreading the information.

Advantages:

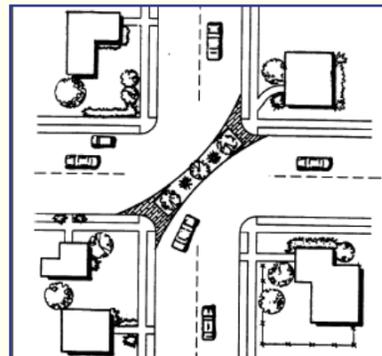
- 1. Education can be flexible in duration.
- 2. Everyone can afford it.

Disadvantages:

- 1. May be difficult to measure its effectiveness.
- 2. May take time to be effective.



DIVERTERS



Definition: Diverters are barriers placed across four-legged intersections, interrupting through traffic flow. These barriers can be used to create a maze-like effect in a neighborhood.

Advantages:

1. Can eliminate cut-through traffic.

Disadvantages:

1. Increases response time for emergency vehicles.
2. Transfers traffic onto other local streets.
3. Vehicles can turn at higher speeds because there is no opposing traffic.
4. May increase trip length for local residents.



EVALUATION LEGEND



COST Tools are marked with 1 to 4 dollar signs to indicate their cost. A single  indicates the tool is below \$100. While  indicates that the tool is greater than \$40,000.

TIME Tools will be marked by these three symbols indicate the time involved in installing the proposed measure.  indicates minimal time, usually under 6 months. While  would designate anywhere from 6 months to 24 months. A  would signify longer lengths of time, potentially 24 to 60 months.

IMPACT Its important to evaluate overall feasibility, in addition to the specific criterion when considering traffic calming measures. These symbols will help guide you in determining the overall impact of a measure on the immediate environment.

EMERGENCY RESPONSE First responders, such as Fire and Police, may have problems with tools marked by this symbol. Many physical tools can increase the emergency vehicle response time. A fire department representative will work with neighborhoods through the development process to avoid such problems.

BICYCLE SAFETY Consideration should be given to whether the proposed application of this tool will increase danger to bicyclists. Bicycle symbol with a red circle indicates increased safety risk.

PEDESTRIAN SAFETY Consideration should be given to whether the proposed mitigation measure will increase pedestrian safety . Pedestrian symbols with red circles  indicate increased safety risk.

TEMPORARY TOOL This symbol indicates that the proposed tool can be installed on a temporary basis. Upon its proven effectiveness, consecutive steps can be taken.

CHOKERS



Definition: Chokers are curb extensions at mid-block that narrow a street by widening the sidewalk or planting strip. Two lanes of travel are maintained, and bike lanes are placed on the outside of the choker.

Advantages:

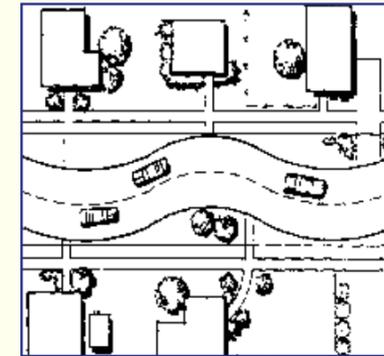
1. Traffic is slowed at intersections.
2. Crossing distance is reduced for Pedestrian/Bicyclists at intersections.
3. No impact on emergency services.
4. Neck Downs.

Disadvantages:

1. Cannot be used on narrow streets due to fire department minimums.
2. May reduce number of on-street parking stalls.
3. Landscape maintenance.



DEVIATIONS



Definition: Deviations redraw the path of travel so that the street is not straight. This is done through the installation of offset curb extensions, forming S-shaped curves.

Advantages:

1. Accepted by public as speed control devices.
2. Aesthetically pleasing.
3. Reduce vehicle speed without impacting emergency response time.

Disadvantages:

1. Expensive to install.
2. Creates significant changes to property frontage.
3. Requires maintenance of landscaping.
4. Eliminates on-street parking.

