ATTACHMENT "C"

CITY OF RANCHO PALOS VERDES

NEIGHBORHOOD TRAFFIC CALMING PROGRAM

A community leadership guide

Public Works Department
December 2008

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INTRODUCTION

The mission of a Traffic Calming Program is to provide a mechanism to improve community livability, preserve community character and enhance the local neighborhoods by working with the residents to implement solutions to concerns created by automobile traffic on neighborhood streets. Neighborhood traffic management programs are becoming standard practice for many cities around the world that are taking an active role in managing growth and making sure their roadways are safe and attractive. Citizens play an integral role in developing successful traffic management programs for their streets by working with City Staff and utilizing education, engineering, and enforcement to determine ways to attempt to manage and calm traffic.

This guide is designed to provide community leaders with a model to guide residents towards a better understanding of the available tools, the steps to seek traffic calming and improve the livability of residential neighborhoods. This guide does not address safety issues such as installing stop signs, traffic signals or other traffic control device issues. Such issues are topics for the Traffic Safety Commission (TSC) and City Staff to address utilizing their professional expertise and understanding of the City.

The Neighborhood Traffic Calming Program has been designed to ensure that each neighborhood with a demonstrated traffic problem has access to neighborhood traffic calming measures. The program requires significant citizen involvement. The program has been designed to address neighborhood concerns in a timely manner by relying on Staff to take the initial steps to address a perceived problem. City Staff will design final traffic calming measures, the Traffic Safety Commission will review plans and, if acceptable, make a recommendation to the City Council for approval.

GOALS

Goals of the Program are:

- Reduce the speed of vehicles on residential streets with demonstrated speeding problems to levels consistent with speeds on more typical Rancho Palos Verdes residential streets.

- Develop and emphasize focused neighborhood educational programs which address residential traffic problems.

- Implement selective enforcement actions in neighborhoods with demonstrated, or perceived, traffic-related problems.

- Eliminate, or discourage, non-local, cut-through traffic on residential streets.

- In implementing the Program Goals, care will be taken to:

    - Encourage citizen participation throughout the program by seeking the input of affected residents and non-resident property owners through neighborhood meetings, written communication and open forum opportunities with the Traffic

Safety Commission.

- Minimize impacts on emergency vehicle response times caused by implementation of neighborhood traffic calming measures.

- Limit the potential for shifting traffic problems from one residential neighborhood to another when implementing traffic calming measures.

- Respond to complaints in a timely manner.

TRAFFIC CALMING TOOLS – OVERVIEW

PRELIMINARY

Preliminary traffic calming measures are those traffic control devices and programs implemented to inform and educate motorists, bicyclists and pedestrians as well as enforce violations of traffic regulations. These measures are used as initial traffic calming efforts and do not require community support through the petition process. They can also be used for situations where traffic impacts have been found not to be excessive or serious, but where modifications to driver behavior and/or education have been determined to be appropriate. Some common basic elements include:

- Traffic Education Package
- Lawn Signs
- Targeted Sheriff Enforcement
- Radar Trailer Placement

Preliminary traffic calming measures may be implemented immediately upon receiving a citizen request, as well as upon completion of the Engineering Study (if performed). Detailed information on each of these measures is provided on the following pages.

LEVEL 1

Level 1 traffic calming measures may be implemented as a result of the Engineering Study. They are primarily used to reinforce existing traffic regulations and remind drivers of their surroundings. They include standard signing and pavement marking elements as found in the California Manual of Uniform Traffic Control Devices. These measures do not require a second petition in order to be installed. These mitigations include the following:

- Truck Restrictions
- Speed Limit Signs
- Speed Limit Pavement Markings
- No Outlet Signs

LEVEL 2

Level 2 traffic calming mitigations are traffic control devices and roadway design features primarily designed to slow traffic and discourage bypass traffic within residential areas. They are employed when the use of preliminary and Level 1 traffic calming elements cannot effectively address traffic concerns and have the support of a substantial number of affected residents. Level 2 traffic calming measures available in Rancho Palos Verdes include:

- Entrance Treatments
- Curb Extensions/Chokers
- Bulb-Outs
- Medians/Center Islands
- Traffic Circles
- Radar Feedback Signs
- Visual Roadway Narrowing
- Speed Humps/Tables

Level 2 traffic calming measures must be initiated through a petition process. The petition, which is shown on page 33, must have the support of 60% of the property owners on the section of street (or neighborhood) within the limits of the requested traffic calming measures as recommended in the Engineering Study. The limits generally consist of all properties between the first and last device in a series, as well as any property within 200 feet of any device.

Construction plans for the Level 2 measures are designed by City Staff in consultation with the petition's sponsors. When possible, trial installations utilizing delineators, portable curb sections, barricades or other devices will be installed to determine effectiveness and community opinion. The duration of the trial period will normally be less than three months.

During this period City Staff will evaluate the plan. The community's input will be solicited and a final plan will be developed by staff. If the trial installation is successful, the Level 2 traffic calming measure will be installed on a permanent basis pending resident funding.

Installation of Level 2 measures that affect the roadway surface may be delayed or accelerated based on the City's scheduled road rehabilitation projects. Level 2 measures that affect the roadway surface will be installed after or during a road rehabilitation project which is scheduled in the near future. This will avoid installing and paying for the Level 2 measures twice.

For a summary of traffic calming tools see page 31.

PROCESS

The process by which a perceived problem is identified, reviewed, and possibly mitigated consists of a series of education, enforcement, engineering and evaluation steps. The process is summarized in the following steps and on the flow chart on page 9.

1. Initial Complaint from a Resident or Group of Residents

The initiation of City involvement in mitigating a neighborhood or street traffic problem begins with a complaint by an individual resident or a group of residents and/or an observation by City Staff. The complaint generally involves a perception that a significant number of motorists traveling through a neighborhood are violating the law in some way, such as speeding.

2. Preliminary Traffic Calming

Upon receipt of a complaint, City Staff will discuss the issue with the requestor, log the complaint into a database for tracking purposes and take several actions as appropriate. City Staff will conduct a field review of the neighborhood or street of concern. The Sheriff may be contacted to provide additional targeted enforcement in the area. When identified, enforcement will be emphasized during specific times and days when the traffic problems are prevalent. Staff will also schedule placement of the City's radar trailers to help educate motorists regarding their speed. To further assist residents in understanding traffic calming issues, Staff will send the requestor a Traffic Education Package. This package contains several pamphlets and other materials designed to explain how and why various traffic controls are utilized. Staff will also make available to the community lawn signs for their use. The use of these devices is strongly suggested to illustrate the community's involvement in the traffic calming process.

3. Neighborhood Petition for a Traffic Calming Engineering Study

If preliminary traffic calming actions do not mitigate the perceived traffic problem to the satisfaction of the neighborhood, the residents of a street or neighborhood can request a formal Traffic Calming Engineering Study by City Staff to identify the actual traffic conditions and determine if additional traffic calming measures are needed. This request cannot be submitted prior to 90 days after the initial request (from Step 1) is received. The request for a Traffic Calming Engineering Study must be in the form of a petition as illustrated on page 32.

The petition must clearly identify the study limits, either as a street with specific limits or a neighborhood with the boundary streets shown. A map may be attached to the petition to better identify the limits of the study. The petition must be signed by at least 60% of the fronting property owners within the requested study limits.

The Study will be broken into two portions: (1) data collection and analysis, and (2) development of traffic calming measures. This is done to ensure that funds are not

spent on both portions of the study if the initial segment does not support implementation of traffic calming measures. If the results provide for development of further traffic calming measures, funds will be spent on further Study. Upon receipt of a petition, Staff will validate the signatures and determine if all requirements have been met.

4. Traffic Calming Engineering Study

City Staff will conduct the first portion of the Traffic Calming Engineering Study, which will consist of traffic volume counts, speed measurements, a review of the reported accident history, documentation of the existing traffic controls, review of roadway characteristics and any other pertinent information. Generally the study will be completed within eight weeks from validation of the petition, although the size of the study area may affect this schedule. Upon completion of this portion of the study, Staff will determine if the minimum traffic calming thresholds are satisfied.

If the minimum traffic calming thresholds are met, Staff will identify the following:

- Appropriate Level 1 traffic calming measures; and,
- 2-3 acceptable Level 2 traffic calming measures per the approved traffic calming tools.

Staff will prepare a report documenting this information, including specific design, location and cost parameters. As part of the Engineering Study process, adequate notification will be provided to the community as a whole. This notification will include:

- Information signs shall be placed within the limits of the Study, stating:

- The City will place door hangers at every residence within the limits of the Study, as well as within 500 feet of any potential traffic calming device location.

5. Traffic Safety Commission Review of Traffic Calming Engineering Study

Staff will present the Traffic Calming Engineering Study to the Traffic Safety Commission (TSC) for their review, and/or modification as appropriate. The

presentation will be scheduled as soon as possible after completion of the Study, pending availability of the TSC and previously scheduled items. To ensure a full and comprehensive consideration of each traffic calming request, only one Traffic Calming Engineering Study will be presented at any TSC meeting. The TSC meeting is the formal opportunity for residents requesting traffic calming to present their concerns to the TSC, and it is strongly encouraged that the community attends their scheduled meeting.

A Traffic Calming Engineering Study will be presented before the TSC whether or not the minimum thresholds are met. If the thresholds are not satisfied, the Study will document the findings and explain why additional traffic calming measures are not appropriate. If the minimum thresholds are satisfied, the Study will include appropriate Level 1 traffic calming measures as well as two or three traffic calming measures of Level 2 that will be available for consideration by the neighborhood. The recommendations from the TSC will then be forwarded to the City Council for consideration and further action.

6. Traffic Calming Cost

Based on the results of the Traffic Safety Commission's review of the Engineering Study, recommendations will be forwarded to the City Council for consideration. Upon City Council approval, traffic calming devices would be installed by the City at no cost to the residents.

7. Engineering Plan Preparation for Level 2 Mitigations

Upon authorization from City Council, Staff will prepare engineering plans, specifications and cost estimates for use in construction of Level 2 traffic calming measures. Generally, plan preparation will be completed within six weeks from Council authorization. Staff will notify the TSC regarding status of this step and will present the construction plans to the TSC for their review and recommendation to the City Council. Staff will then present these plans to the City Council for final approval.

8. "Before" Counts Taken

Prior to construction, comprehensive "before" traffic counts will be taken to document existing or "pre-" condition speed and volume data. This data will be used as a baseline condition from which post construction can be compared.

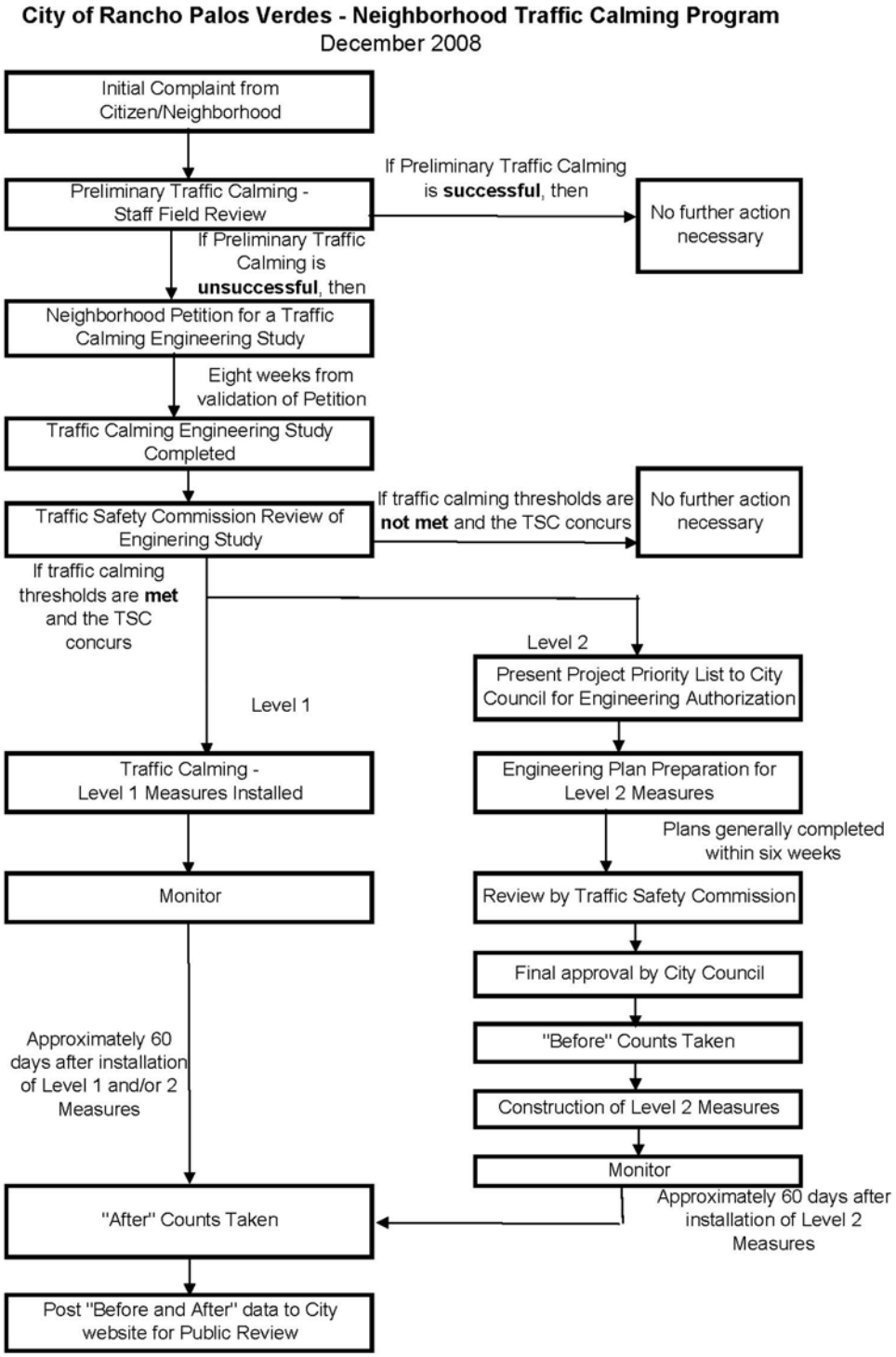
9. Traffic Calming Measures Implemented

City Staff will advertise the project for construction and will proceed with award and implementation of a contract to install the approved traffic calming measures.

10. Monitor Effectiveness

The TSC will be regularly notified of the progress on Level 2 traffic calming installation. Approximately 60 days after implementation, “after” traffic counts will be taken to document speed and volume data. This information will be compared to the existing or "pre"-condition count information and made available to the public for review and comment.

NEIGHBORHOOD TRAFFIC CALMING PROGRAM FLOWCHART



DETERMINE ELIGIBILITY FOR TRAFFIC CALMING

1. Minimum Thresholds for Level 2 Measures

Traffic calming tools are not appropriate for all roadways. Arterial and collector roadways are vital components of the City's traffic circulation system and are intended to provide conduits that allow vehicles to move efficiently between destinations. Reducing their ability to accomplish this purpose would increase congestion throughout the City and may result in traffic diverting to local residential streets. Therefore, Level 2 traffic calming actions are reserved for streets with the following characteristics:

- Streets designated in the City's circulation element as local roadways;
- Streets located in Residence Districts as defined by Section 515 of the California Vehicle Code:

> ***A "residence district" is that portion of a highway and the property contiguous thereto, other than a business district, (a) upon one side of which highway, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 13 or more separate dwelling houses or business structures, or (b) upon both sides of which highway, collectively, within a distance of a quarter of a mile, the contiguous property fronting thereon is occupied by 16 or more separate dwelling houses or business structures. A residence district may be longer than one-quarter of a mile if the above ratio of separate dwelling houses or business structures to the length of the highway exists.***

- Streets with a prevailing (85th percentile) speed of 7 mph or more over the posted or designated speed limit.
- Streets with no more than one through travel lane in each direction.
- Streets with an average daily traffic of at least 1,500 vehicles per day or peak hour traffic of at least 150 vehicles per hour.

- Streets that receive a minimum total score of 51 points based on the table below, which identify values assigned to each data element identified in the Traffic Calming Engineering Study:

Data	Points	Basis for Points
Travel Speed	0 to 40	Extent that the 85th percentile* speed exceeds speed limit: 2 points assigned for every 1 mph over speed limit.
ADT Volume	0 to 30	Streets with average daily traffic over 1,500 vehicles per day or peak hour traffic over 150 vehicles per hour will be assigned 5 points with every additional 200 vehicles per day or 50 vehicles per hour.
Crashes	0 to 10	1 point for every correctable collision reported based on the past 5 years of data.
School Proximity	0 to 5	School ground on segment 5 points. Within 500 feet 3 points. Within 1,000 feet 1 point.
Sidewalks or Pathways	0 to 5	No sidewalks or pathways exist along at least one side of the street 5 points.
Pedestrian Crossings	0 to 10	Yellow crosswalk on the street 5 points. Major crosswalk located on the street 10 points.
Total Points	**100**	

**The 85th percentile speed is the speed at or below which 85 percent of the vehicles travel.*

When data such as speed and volume is gathered at more than one location within a neighborhood, points will be assigned for each location and then averaged to ensure equitable comparisons.

2. Prioritization of Level 2 Traffic Calming Requests

Due to limited funding for traffic calming measures, all requests for Level 2 traffic calming will be evaluated and ranked against other streets and neighborhoods based on the table presented above. City Staff will complete the Neighborhood Traffic Calming Program point worksheet (see page 34). If the minimum thresholds above are met, the City will rank the request against other requests that have already been submitted.

USE OF FUTURE TECHNOLOGIES FOR TRAFFIC CALMING

Technologies regarding traffic calming measures are continually evolving and not be excluded from the RPV traffic calming process. Where feasible, Staff will consider traffic calming pilot programs and grant opportunities to assist with traffic calming measures. Although many progressive traffic technologies are in their infant stages of acceptance, they will be added to this document as a Traffic Calming Tool as they become legal and readily available.

PRELIMINARY TRAFFIC CALMING TOOLS

EDUCATION PROGRAMS

Education programs are an important element of a comprehensive traffic calming program. This tool includes efforts to make the public more aware of their own driving behavior and their impact on others. Pedestrian and bicycle programs alert and educate pedestrians and bicyclists on roadway safety. Driver information and education on existing laws can help improve driver behavior. Traffic calming education allows residents to express views and obtain answers with regards to traffic conditions within their neighborhoods. As part of the process, solutions are discussed and appropriate actions can then be pursued. Driving behavior by residents may be improved by making them more aware of how their actions affect others in their neighborhood.

Cost

- Free to public

Positive Aspects

- Educational tool
- Good public relations for neighborhoods
- Effective for temporary speed reduction needs

Negative Aspects

- Not self-enforcing
- Duration of effectiveness is limited
- May require temporary lane closures

Further information about these programs can be obtained by contacting Public Works at 310-544-5252.

POLICE ENFORCEMENT

The Sheriff Department deploys motorcycle or automobile Deputies to perform targeted enforcement on local residential streets. Targeted enforcement is used to make drivers aware of speed limits and other traffic regulations. This is intended to reduce speeding as well as other illegal and undesirable driving behaviors through the issuance of traffic citations. The presence of Sheriff Deputies is also used as an educational device to help motorists understand how their actions affect livability within a neighborhood, which encourages better driving practices. Enforcement is a highly effective tool when present. Driver awareness is immediately increased and it can be implemented on relatively short notice. For long-term effectiveness, enforcement should be utilized on a recurring basis at varying periods. Effectiveness is also enhanced when it is used in conjunction with educational devices, such as radar trailers and feedback signs. The ability to use enforcement on a widespread basis is limited by the availability of Sheriff resources.

Cost

- Traffic enforcement is part of the City's regular activities and is budgeted accordingly.

Positive Aspects

- Effective while officer is actually present at the location
- Can be targeted to specific time periods that are deemed to be most problematic
- Can be implemented on short notice
- Targets violators without affecting normal traffic

Negative Aspects

- It is a temporary measure
- Enforcement may be limited by police availability
- Expensive tool

For police enforcement, contact the Lomita Sherriff at 310-539-1661.

RADAR TRAILER

This is a mobile trailer-mounted radar display that informs drivers of their speed. This element is applicable on roadways where speeding is a problem. Radar trailers are mobile devices that can be parked on the side of the roadway, then detect and display the speed of approaching vehicles. They are typically moved on a daily basis, and perform basically the same function as a radar feedback signs, but are placed for much shorter periods of time. Radar trailers help discourage speeding by alerting motorists of their speed. Radar trailers are an effective educational tool that clearly illustrates the speed of motorists. They are well received by the public and encourage voluntary speed compliance. Radar trailers are especially effective in reducing speeds of motorists who are generally observant of traffic laws but inadvertently exceed the speed limit. Their use in conjunction with enforcement can increase their effectiveness as well as enhance the long-term effectiveness of enforcement activities. They are less effective on higher volume roadways and are not a method of issuing traffic citations. Their effectiveness decreases after they have been relocated to other locations.

Cost

- Radar trailers are part of the City's regular activities and are budgeted accordingly.

Positive Aspects

- Educational tool
- Good public relations for neighborhoods
- Effective for temporary speed reduction needs
- Portable
- Quick implementation

Negative Aspects

- Not self-enforcing
- Duration of effectiveness is limited
- Subject to vandalism

LAWN SIGNS

Traffic calming lawn signs are placed on private property by the owners to provide a friendly reminder to motorists that they are traveling through a residential neighborhood and should utilize appropriate driving behavior. The City has designed signs with a Rancho Palos Verdes theme, and maintains a supply for use by residents. In addition, the act of placing signs on their property may encourage residents to become more involved in promoting traffic calming within their neighborhood as well as other neighborhoods. Traffic calming lawn signs may have some degree of positive influence on the behavior of drivers. They are generally well received by residents and allow a proactive approach to a neighborhood concern by residents. Lawn signs are not typically a permanent feature and should not be left up for more than 6 months or until Level 1 or 2 mitigations are installed.

There is no specific data on the long-term effectiveness of these devices.

Cost

- Lawn signs are free to the public

Positive Aspects

- Provides a reminder to motorist

Negative Aspects

- Not self-enforcing

LEVEL 1 TRAFFIC CALMING TOOLS

TRUCK RESTRICTION SIGNS

Restricting the entry of trucks into residential neighborhoods can be achieved through the posting of truck restriction signs if approved by City Council. The restrictions typically apply to all commercial vehicles over three (3) tons. This method is most applicable on residential streets to reduce cut-through traffic of commercial vehicles.

Cost

- Truck restriction signs are provided by the City if deemed appropriate.

Positive Aspects

- Redirects commercial traffic through main streets
- Reduces noise and air pollution due to trucks in residential streets

Negative Aspects

- Not self-enforcing
- Causes an inconvenience for residents in the event of truck services needed for moving, deliveries and other heavy services.

SPEED LIMIT SIGNS

This element is a basic method aimed at slowing traffic through visual reminders of the legal speed limits. It can be applied to most streets that have speeding. 25 mph speed limit signs may be installed on local residential streets that meet the legal 25 mph residential speed limit per the California Vehicle Code. However the signs are not required for enforcement. Installing speed limit signage encourages motorists to reduce their speed in residential neighborhoods by reminding them of the legal speed limit. Speed limit signs can promote appropriate driving behavior by clearly indicating the legal speed limit. They are generally well received by residents, but may add to sign clutter. Effectiveness is usually dependant upon recurring enforcement.

Cost

- Speed limit signs are provided by the City if deemed appropriate

Positive Aspects

- Provides a clear definition of legal speed limit
- Provides context for enforcement efforts

Negative Aspects

- Not self-enforcing
- Negative impact on the aesthetics of the street

SPEED LIMIT PAVEMENT MARKINGS

25 mph speed limit pavement markings may be installed on local residential streets that meet the legal 25 mph residential speed limit per the California Vehicle Code. The markings are not required for enforcement and are typically installed adjacent to 25 mph speed limit signs. They can also be used independently of signs when there is a desire to reduce sign clutter. Installing speed limit pavement markings encourages motorists to reduce their speed in residential neighborhoods by reminding them of the legal speed limit. Since they appear directly in front of vehicles on the roadway, they increase the number of locations where the information is provided to motorists, potentially increasing the ability to notify motorists of the speed limit. Speed limit pavement markings can promote appropriate driving behavior by clearly indicating the legal speed limit. They are generally well received by residents and do not add to sign clutter. Effectiveness is usually dependant upon recurring enforcement.

Cost

- Pavement markings are provided and maintained by the City if deemed appropriate.

Positive Aspects

- Provides a clear definition of legal speed limit
- Provides context for enforcement efforts

Negative Aspects

- Not self-enforcing
- Negative impact on the aesthetics of the street

LEVEL 2 TRAFFIC CALMING TOOLS

ENTRANCE TREATMENTS

Entrance treatments consist of physical and/or textural changes to streets and are located at key entryways into a neighborhood. There are numerous types of entrance treatments including textured pavement, center islands, signs, chokers and over head structures.

Entrance treatments create visual, and in some cases audible, cues that tell drivers they are entering a local residential area or that the surrounding land uses are changing. The intent is a reduction in speed.

Entrance treatments have minimal influence on a familiar drivers' routine behavior. Overall speeds and total volumes may be nominally influenced, but it is believed that drivers are made more aware of the environment in which they are driving and are more considerate of pedestrians. Unfamiliar drivers may be influenced to avoid the use of a neighborhood street with an entrance treatment when searching for a through route.

Cost

- Entrance treatments cost varies depending on the treatment. Custom signs start at $500 each; center islands start at $10,000 each; chokers start at $10,000 each. There may be beautification grants available to landscape these mitigations through the City's recycle program.

Positive Aspects

- Deters unfamiliar drivers
- Creates a sense of community
- Aesthetically pleasing

Negative Aspect

- Speed and volume may not be effected
- Landscape must be maintained by the residence/HOA

RADAR FEEDBACK SIGNS

Radar feedback signs are devices mounted either permanently or semi permanently (long-term) that detect and display the speed of approaching vehicles. They are typically installed in conjunction with speed limit signs and are placed on street lights or posts. They perform basically the same function as a radar trailer, but are placed for much longer periods of time. Radar feedback signs help discourage speeding by alerting motorists of their speed. Radar feedback signs are an effective educational tool that clearly illustrates the speed of motorists. They are well received by the public and encourage voluntary speed compliance. Radar feedback signs are especially effective in reducing speeds of motorists who are generally observant of traffic laws but inadvertently exceed the speed limit. Their use in conjunction with enforcement can increase their effectiveness as well as enhance the long-term effectiveness of enforcement activities. They are less effective on higher volume roadways and are not a method of issuing traffic citations. Speed feedback signs are typically mounted on or near speed limit signs and can be mobile units

Cost:

- Radar feedback signs cost approximately $8,000 each.

Advantages:

- Real-time speed feedback
- Does not physically slow emergency vehicles or buses
- Permanent or on a rotational installation
- Can record speed and volume data for use in education and enforcement efforts

Disadvantages:

- May require a power source
- Only effective for one direction of travel
- Long-term effectiveness uncertain

TRAFFIC CIRCLES

Traffic circles require drivers to slow to a speed that allows them to comfortably maneuver around them. Traffic circles are used when three or more roads intersect. They are created by constructing a raised island placed at the center of the intersection. They may be landscaped with ground cover and/or street trees. The primary purpose of traffic circles is to slow traffic while providing right-of-way control at intersections. An additional benefit is that they reduce the number of angle and turning-type collisions. Traffic circles are very effective at lowering speeds in their immediate vicinity. Traffic circles are most effective when constructed in a series on a local service street. However they can be difficult for large vehicles to negotiate and must be carefully designed to ensure that pedestrian and emergency vehicles mobility is not compromised.

Cost

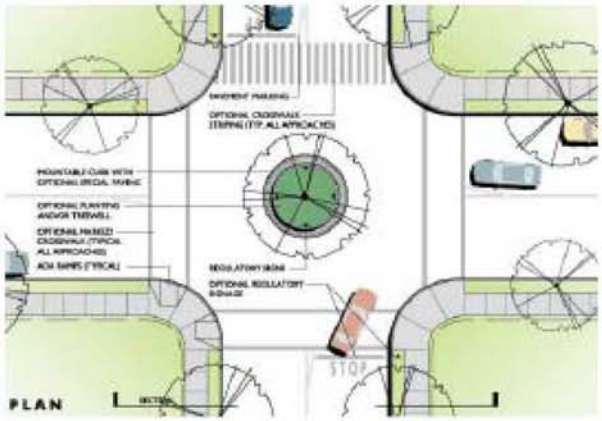
- Traffic circles cost approximately $10,000 to $30,000 each, depending upon size, the presence of irrigation and electrical connections. There may be beautification grants available to landscape these mitigations through the City's recycle program.

Positive Aspects

- Traffic Circles are effective in moderating speeds
- If designed well, they can have positive aesthetic value
- Placed at an intersection, they can calm two streets at once

Negative Aspects

- They may be difficult for large vehicles (such as fire trucks) to circumnavigate
- They must be designed so that the circulating lane does not encroach on the crosswalks
- They may require the elimination of some on-street parking
- Landscaping must be maintained by the residents/HOA



CURB EXTENSIONS OR CHOKERS

Curb extensions or chokers narrow the street by widening the sidewalk or the landscaped parking strip. These devices are employed to make pedestrian crossings easier, to narrow the roadway, and/or to slow traffic. Curb extensions effectively improve pedestrian access by reducing the street crossing distance and improving sight distance. They also influence driver behavior by changing the appearance of the street.

Cost

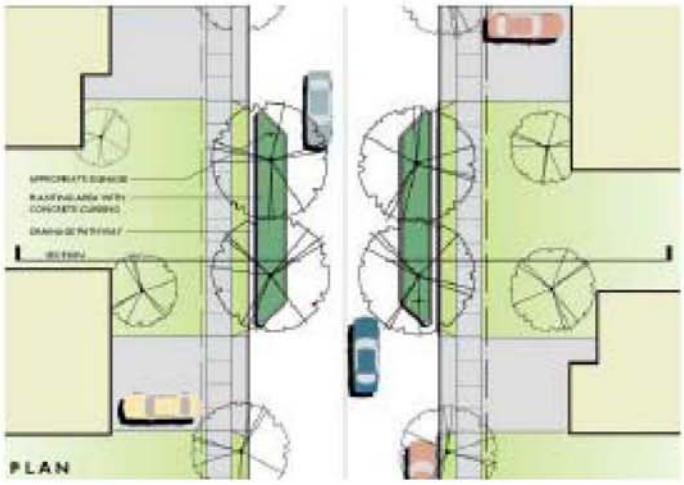
- Curb extensions costs $15,000 to $30,000 per location, depending upon size and irrigation. There may be beautification grants available to landscape these mitigations through the City's recycling program.

Positive Aspects

- Visually narrow street
- Can enhance the aesthetics of a street
- Narrowed roadway section may contribute to reduction of speeds

Negative Aspects

- May not be self-enforcing
- Landscape must be maintained by residents/HOA
- Removes parking



City of Rancho Palos Verdes
Neighborhood Traffic Calming Program

BULBOUTS

Bulbouts narrow the street width at intersections, creating a shorter and safer pedestrian crossing and encouraging drivers to slow down. Bulbouts may be striped or may be curbed islands containing special paving or landscaping which maintain current drainage patterns. Corner bulb-outs are typically used adjacent to intersections where parking is restricted. They can also enhance the livability of a neighborhood by increasing the separation between the street and residences/sidewalk. Bulbouts effectively reduce speeds in their immediate vicinity by physically narrowing the roadway, which has the effect of reducing motorist's willingness to travel at high speeds. They can influence driver behavior by changing the appearance of the street, especially through landscaping. Bulbouts can provide physical separation between turning vehicles and parked vehicles, thus enhancing access for exiting or entering the traffic flow. They also can reduce the speed of turning vehicles. Bulbouts designed without a curb-side opening may adversely affect bicyclists by reducing their separation from vehicles.

Cost

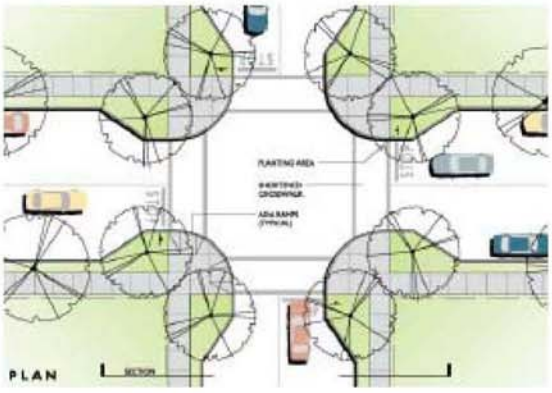
- Bulbouts start at $5,000 per corner depending upon size. There may be beautification grants available to landscape these mitigations through the City's recycle program.

Positive Aspects

- Pedestrian crossing distance is reduced
- Narrowed roadway section may contribute to reduction of speeds
- Breaks up driver's view path

Negative Aspects

- May create a hazard for bicyclists who are less visible to turning vehicles and cross traffic
- May require partial or total removal of parking
- Landscape must be maintained by the residents/HOA



CHICANES

A curved street alignment that can be designed into new developments or retrofitted in existing right-of-ways is called a chicane. The curvilinear alignment requires additional maneuvering and shortens drivers' sight-lines, resulting in lower speeds. This device can be applied to any street where speed control is desired, provided the street is wide enough to accommodate the curvilinear design.

Cost

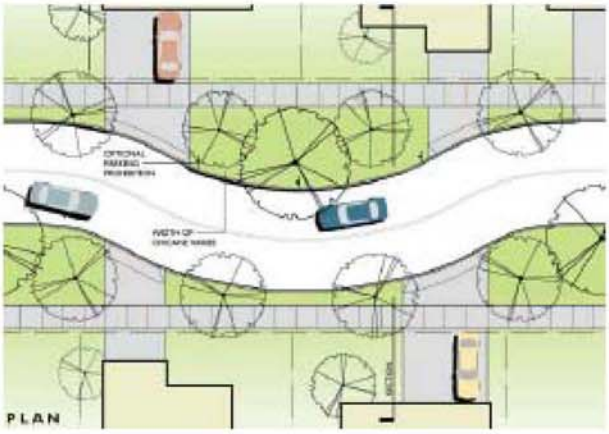
- Chicanes start at $10,000 each. There may be beautification grants available to landscape these mitigations through the City's recycle program.

Positive Aspects

- Provides a speed reducing effect
- Changes the look of the street, making it more aesthetically pleasing
- Has minimal impact on emergency response

Negative Aspects

- Can involve extensive design and expensive implementation
- May require partial or total removal of on-street parking
- May require modification of drainage features and other utilities



MEDIANS/CENTER ISLAND

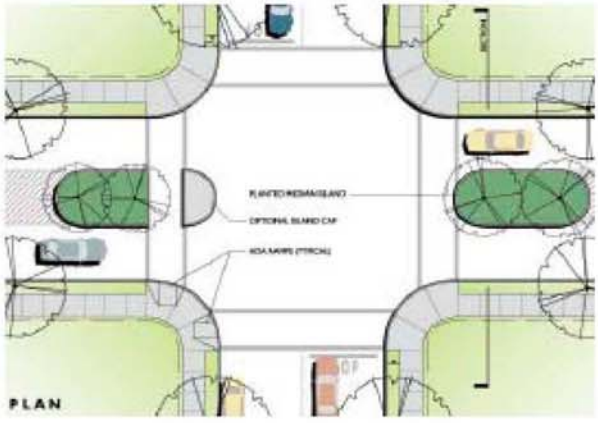
Medians, also called center islands, are raised islands in the center of the roadway that separate traffic directions. Medians are used on wide streets to narrow the travel lanes, interrupt sight distances down the center of the roadway, and ease pedestrian crossing. They are in the center of the roadway that separate opposing directions of traffic. They may be striped or may be curbed islands containing special paving or landscaping. These devices are employed to narrow the roadway, thus reducing the speed of traffic, as well as provide pedestrian refuge areas. They can also reduce speeds by eliminating long, straight, unobstructed segments of roadway that encourage motorists to exhibit poor driving behaviors. Medians and center islands effectively reduce speeds in their immediate vicinity by physically narrowing the roadway, which has the effect of reducing motorists' willingness to travel at high speeds. They also improve pedestrian mobility by providing refuge areas. They can influence driver behavior by changing the appearance of the street, especially through landscaping. These devices can enhance the aesthetics of a neighborhood through well-maintained landscaping, which can emphasize the residential nature of a street.

Cost

- Medians start at $5,000, depending upon size and the presence of irrigation and electrical connections. There may be beautification grants available to landscape these mitigations through the City's recycle program.

Positive Aspects

- Narrowed roadway section may contribute to reduction of speeds
- Provides pedestrian refuge areas when crossing
- Opportunity for landscaping and visual enhancements to the neighborhood



Negative Aspects

- Long medians may interrupt emergency access and operations
- May interrupt driveway access and result in U-turns at the end of medians
- May require removal of parking
- Landscape must be maintained by the residents/HOA

VISUAL ROADWAY NARROWING

Visual roadway narrowing is accomplished by installing striping to separate the through travel lane from the shoulder/parking lane. It can also be used to create bike lanes where appropriate. The extra pavement can be further delineated by installing diagonal striping between the curb and the edge striping. Visually narrowing the roadway is intended to reduce speeds by creating a confined feeling for motorists, known as side friction. Because it does not include any construction activities, it is a more cost effective and less intrusive traffic calming technique than the other engineering devices contained in this Program. Visual roadway narrowing can typically be installed quickly with little impact to residents. It has speed reduction effects and can be easily modified if necessary. However some residents may oppose the striping for aesthetic reasons. Since striping can only affect motorist perception and not physically require modified driving behavior, it is not as effective as construction measures.

A second way to visually narrow a street is to plant street trees. As the trees mature the street will feel visually smaller. There is grant funding available thru the City's recycling program to pay for these trees. City permits will be required to plant within the City's right-of-way. Furthermore careful selection of trees must be chosen so as to not obstruct views.

Cost

- Striping costs vary depending upon the width of the roadway and presence of diagonal hatching. Maintenance after installation will be included in the City's regular pavement striping budget.

Positive Aspects

- Does not affect on-street parking
- Has a speed reducing effect
- Low initial cost

Negative Aspects

- Not self-enforcing
- Negative impact on the aesthetics of the street

SPEED HUMPS/TABLES

Speed humps and tables are areas of pavement raised 2-3 inches in height over a length of 12-22 feet. The combination of different heights, lengths and spacing will affect the speed a vehicle can comfortably go over the hump/table as well as the speed between humps/tables. Speed humps and tables are marked with signs and pavement markings. They can be used on local streets where speed control is desired or where cut-through traffic is to be discouraged. Speed humps and tables are not used on streets designated as primary response routes for emergency vehicles**,** located on transit routes and on streets whose grade exceeds 8%. Speed humps and tables will be limited to streets not greater than 40 feet wide with a maximum of 3,000 vehicles per day. The speed humps/tables shall not be installed within horizontal curves of less than 300 feet centerline radius and vertical curves with less than the minimum safe stopping sight distance. They shall not be installed where the minimum safe stopping sight distance is not achieved. Speed humps/tables will not be installed on any streets where it is determined that an increase in accidents will occur with the installation. Speed humps/tables should not be installed on streets with more than 5 percent of long wheel base vehicles travel unless there is a reasonable alternative route. Special consideration should be made with regards to motorcycles, bicycles and other types of special vehicles that use the street.

Cost

- $5,000 -$10,000 each depending on the total number of humps or tables.

Positive Aspects

- Speed humps and tables are very effective at reducing speeds
- Used in conjunction with landscaped islands or chokers, they can enhance the aesthetics of a street

Negative Aspects

- They cause a "rough ride" for all drivers
- They force large vehicles, such as emergency vehicles and those with rigid suspensions, to travel at slower speeds
- They may increase noise and air pollution

REMOVAL OF TRAFFIC CALMING DEVICES

If residents of a neighborhood request to have their traffic calming measures removed, a new petition must be submitted with 60% support of from the original traffic calming petition limits. This petition cannot be submitted less than one year after installation of the traffic calming measures. City Staff will validate the petition and present the petition to the Traffic Safety Commission. After the Traffic Safety Commission reviews the request, its recommendation will be presented to the City Council for final action.

The City Council may require residents participation in covering the cost of the removal including:

- Inspection fees
- Changing of signing, stripping, pavement markers
- Redesign
- Disposal of asphalt, concrete etc.
- Design changes or engineering

The process to have the traffic calming devices removed is as follows:

- Residents contact City Staff
- Residents submit a petition for the removal of the traffic calming devices
- City Staff verifies the petition and presents it to the TSC for a recommendation to the City Council
- If required by the City Council, a Trust Deposit will be established for residents' financial participation
- If approved by the City Council, the devices will be removed
- A follow up report is sent to the Traffic Safety Commission and the City Council

APPENDIX

SUMMARY of NEIGHBORHOOD TRAFFIC CALMING TOOLS

Measure	Speed Reduction	Volume Reduction	Noise Increase	Loss of Parking	Emergency Impacts	Increased Maintenance
Preliminary						
Education Programs	minor	none	no	no	no	no
Police Enforcement	moderate-major	none	no	no	no	no
Radar Trailer	moderate-major	minor	no	no	no	no
Lawn Signs	minor	none	no	no	no	no
Level 1						
Truck Restriction Signs	no	minor	no	no	no	minor
Speed Limit Signs	minor	none	no	no	no	minor
Speed Limit Pavement Markings	minor	none	no	no	no	minor
No Outlet Signs	minor	none	no	no	no	minor
Level 2						
Entrance Treatments	minor	minor	no	moderate-minor	minor	moderate-minor
Radar Feedback Signs	moderate-minor	minor	no	no	no	moderate-minor
Traffic Circles	moderate-minor	moderate-minor	minor	moderate-minor	moderate	moderate-minor
Curb Extensions or Chokers	moderate-minor	minor	no	moderate-minor	minor	moderate-minor
Bulbouts	minor	minor	no	minor	minor	minor
Chicanes	moderate-minor	minor	no	moderate-minor	minor	moderate-minor
Medians/center island	moderate-minor	minor	no	moderate-minor	minor	moderate-minor
Visual Narrowing	minor	minor	no	no	no	minor
Speed Humps/Tables	moderate-minor	moderate	minor	no	moderate	moderate-minor

ENGINEERING STUDY

We, the undersigned, request the City of Rancho Palos Verdes Public Works Department to undertake traffic engineering studies for the purpose of developing preliminary recommendations to mitigate existing traffic problems occurring on ***(Subject Street)*** *between* ***(first cross-street)*** *and* **(*second cross-street*).**

_____

_____

_____

Existing traffic problems include the following:

_____ Excessive travel speeds

_____ Vehicle noise

_____ High volumes of non-local traffic

_____ Pedestrian mobility

_____ Bicycle mobility

_____ Truck traffic

_____ Other (_____)

Name (please print)	Address (please print)	Telephone No.	Date	Signature

Petition Spokesperson: _____ Telephone No.: _____

LEVEL 2 TRAFFIC CALMING PETITION

We, the undersigned, desire, agree with, and request implementation of the following traffic calming tools(s):
Install **(*specified traffic calming tool*)** *on* **(*subject street*)** *between* **(*first cross-street*)** *and* **(*second cross-street*)** *or at* **(*specified location*)** *per the attached conceptual plans dated* (*month/day/year*).

I understand that the proposed traffic calming tools may have a direct impact on my property. By signing this petition, I acknowledge that I have read the detailed description of the traffic calming tools being proposed.

Name (please print)	Address	Telephone No.	Date	Signature

Petition Spokesperson:_____ ___Telephone No:_____

NEIGHBORHOOD TRAFFIC CALMING PROGRAM POINT WORKSHEET

This worksheet will be completed by City staff. It will be used to assign points to a street for prioritization of potential neighborhood traffic calming. (Note: Neighborhood Traffic Calming Area of Impact = "AOI").

Name of Neighborhood (street location): _____

Points

1. **Travel Speed (40 pts. max.)** _____
   Extent that the 85th percentile speed exceeds speed limit; 2 points assigned for every 1 mph over speed limit.

   85th Percentile Speed: _____ Date Measured: _____

2. **ADT Volumes (30 pts. max.)** _____
   Streets with average daily traffic over 1,500 vehicles per day or peak hour traffic over 150 vehicles per hour will be assigned 5 points with every additional 200 vehicles per day or 50 vehicles per hour.

   Volume: _____ (vpd or vph) Date Counted: _____

3. **Crashes (10 pts. max.)** _____
   1 point for every correctable collision reported based on the past 5 years of data.

   Number of Collisions: _____ Period: _____

4. **School Proximity (5 pts. max.)** _____
   School grounds abut candidate street = 5 points.
   AOI is located within 500 feet of school grounds = 3 points.
   AOI is located within 1,000 feet of school grounds = 1 point.

5. **Sidewalks or Pathways (5 pts. max.)** _____
   No sidewalk or pedestrian pathway exists along at least one side of the street = 5 points.
   A sidewalk or pedestrian pathway exists on at least one side of the street = 0 points.

6. **Pedestrian Crossings (10 pts. max.)** _____
   School crosswalk (yellow crosswalk) is located on a street in the AOI = 5 points.
   Major crosswalk is located on a street in the AOI = 10 points.

Total Score: _____

Comments:

_____

Evaluator: _____ Date: _____

ATTACHMENT "D"

CITY OF RANCHO PALOS VERDES

NEIGHBORHOOD TRAFFIC CALMING PROGRAM

Public Works Department
June 1998
Revised: May 1999
Revised: January 2002
Reaffirmed March 30, 2004

TABLE OF CONTENTS

OBJECTIVE

The objective of the Rancho Palos Verdes Neighborhood Traffic Calming Program is to improve the livability of our neighborhoods and to minimize adverse impacts of vehicular traffic on residential streets through a system of education, enforcement, and engineering.

GOALS

Goals of the Program are:

- Reduce the speed of vehicles on residential streets, with demonstrated speeding problems, to levels consistent with speeds on more typical Rancho Palos Verdes residential streets.

- Increase safety by reducing demonstrated accident patterns on impacted residential streets to levels consistent with those of typical Rancho Palos Verdes residential streets.

- Develop and emphasize focused neighborhood educational programs which address residential traffic problems.

- Implement selective enforcement actions in neighborhoods with demonstrated, or perceived, traffic-related problems.

- Eliminate, or discourage, non-local, cut-through traffic on residential streets.
  In implementing the Program Goals, care will be taken to:

- Encourage citizen participation throughout the Program by seeking the input of affected residents and non-resident property owners through neighborhood meetings, written communication, open forum opportunities with Traffic Committee and with City Council.

- Minimize impacts on emergency vehicle response times caused by implementation of neighborhood traffic calming measures.

- Limit the potential for shifting traffic problems from one residential neighborhood to another when implementing traffic calming measures.

- Respond to complaints in a timely manner.

PROGRAM OVERVIEW

The Neighborhood Traffic Calming Program has been designed to ensure that each neighborhood with a demonstrated traffic problem has access to neighborhood traffic calming measures. The program requires significant citizen involvement. The program has been designed to address neighborhood concerns in a timely manner by relying on staff to take the initial steps to address a perceived problem. Final traffic calming measures must be reviewed by the Traffic Committee and approved by the City Council, and the level of traffic control measures which may be implemented is subject to available funding.

PROCESS

The process by which a perceived problem is identified, reviewed, and possibly mitigated is a series of education, enforcement, and engineering steps. The process from notification to solution is illustrated using a flow diagram, see Figure One.

The process is summarized in the following steps.

1 - Initial Complaint and Site Review
The initiation of City involvement in mitigating a neighborhood traffic problem begins with a complaint by an individual resident or a group of residents. The complaint generally involves a perception that a significant number of motorists traveling through a neighborhood are violating the law in some way.

2- Site Review by Staff
Staff conducts a field review of the complaint.

3- Increased Enforcement / Education
In the case of speeding, staff will request additional traffic enforcement by the sheriff and/or schedule the placement of the radar speed trailer.

4 - Traffic Committee Meeting with the Neighborhood (Optional)
The neighborhood will meet with the Traffic Committee. This meeting may be scheduled on a quarterly basis (as required) and will provide an opportunity for the neighborhood to express concerns, and for staff and the committee to compare neighborhood conditions to the reasonable expectations of traffic volumes, traffic speeds, accident rates, etc.

The Traffic Committee would provide information about traffic safety to the neighborhood and encourage neighborhood action to distribute this information to the neighborhood.

5 - Neighborhood Action

Utilizing information provided by the Traffic Committee, the neighborhood will begin an

educational campaign. Information about traffic safety will be distributed by door-to-door communication, or the homeowners' association newsletter.

If after an educational campaign, there is still a perception in the neighborhood that only physical changes can solve their problem, the residents can petition the City to request further engineering studies to address neighborhood concerns.

6 - Engineering Analysis
If a petition signed by 60 percent of the residents on the impacted block is submitted to the Public Works Department requesting additional traffic analysis, a neighborhood traffic study will be prepared which reviews accident history, and conducts appropriate studies. A report would be prepared which summarizes findings and outlines various options.

7 - Review by the Traffic Committee
The report outlining the various options and recommendations is reviewed by the Traffic Committee and the Public at a regular meeting of the Traffic Committee. If the Traffic Committee determines that construction of a traffic-calming device is appropriate, Staff will prepare a petition, for neighborhood consideration which describes the appropriate traffic calming device(s), listing potential benefits and problems associated with the device.

8 - Consideration by the Neighborhood
If a petition requesting traffic calming device(s) is signed by 60 percent of the property owners on the impacted block, is submitted to the Public Works Department. Preliminary engineering plans and cost estimates for the traffic calming devices will be prepared by the Public Works Department.

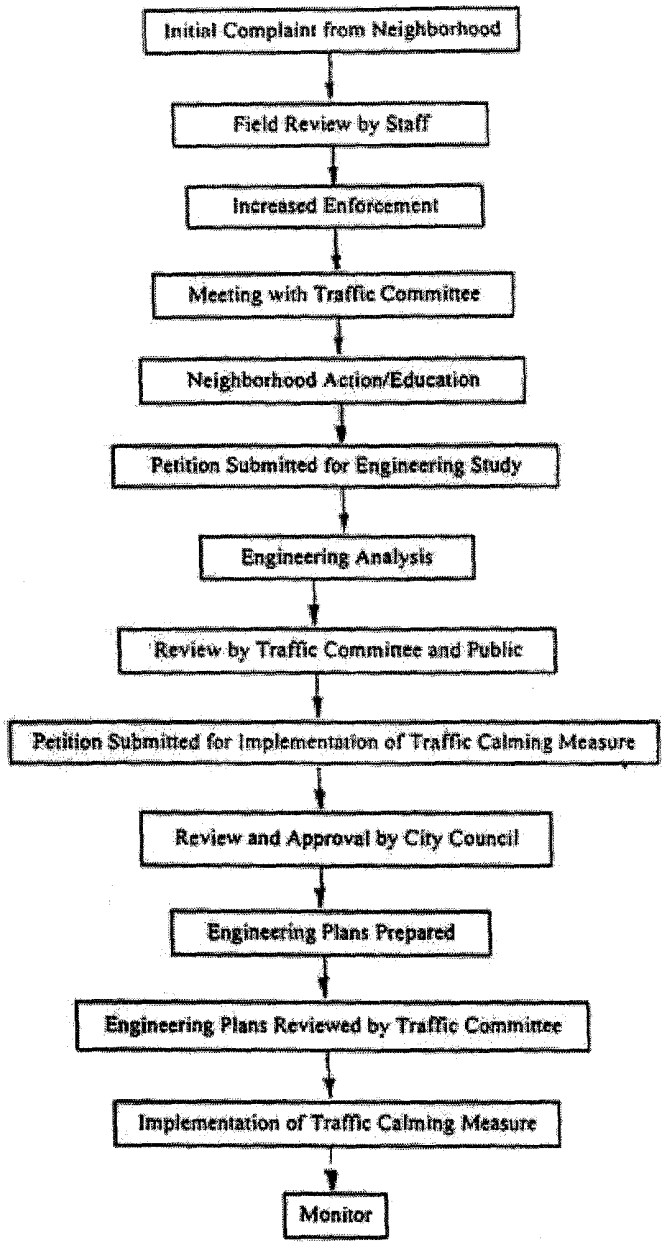
9 - Consideration by City Council
The City Council will review the matter and determine if the recommended traffic calming measure is to be implemented.

10 - Plans prepared and Publicly Reviewed
Upon completion, the plans would be reviewed by the Public at a regular traffic committee meeting.

11- Traffic Calming Measure Implemented

12- Follow up
The implemented traffic calming measures are monitored for effectiveness.

FLOW CHART



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Petition for Engineering Study

SURVEY/PETITION
TO ASSESS NEIGHBORHOOD VEHICULAR TRAFFIC PROBLEMS

We, the undersigned, request the City of Rancho Palos Verdes Public Works Department to undertake traffic engineering studies for the purpose of developing preliminary recommendations to mitigate existing traffic problems occurring on *(Subject Street) between (first cross-street) and (second cross-street).*

Existing traffic problems include the following:

x Excessive travel speeds

x High volumes of non-local traffic

_____ Demonstrated accident history

_____ Other
(_____)

_____ Vehicle noise

_____ Pedestrian safety

_____ Bicycle safety

Name (please Print)	Address (please print)	Telephone No.	Date	Signature

Petition Spokesperson: *John Smith* Telephone No. *(310) 555-1234*

Petition for Implementation Of Traffic Calming Tools

SURVEY/PETITION
FOR
IMPLEMENTATION OF NEIGHBORHOOD TRAFFIC CALMING TOOLS

We, the undersigned, desire, agree with, and request implementation of the following traffic calming tools(s):
Install (specified traffic calming tool) on (subject street) between (first cross-street) and (second cross-street) or at (specified location) per the attached conceptual plans dated (month/day/year).

I understand that the proposed traffic calming tools may have a direct impact on my property. By signing this petition, I acknowledge that I have read the detailed description of the traffic calming tools being proposed.

Name (please print)	Address	Telephone No.	Date	Signature

Petition Spokesperson: *John Smith* Telephone No: *(310) 555-1234*

Examples of

Traffic Calming Tools

HIGHER VISIBILITY CROSSWALKS

DESCRIPTION:
Higher visibility crosswalks are used to increase driver recognition of a crosswalk by using one of the following techniques: 1) designing the crosswalk with paving blocks or contrasting colored concrete, or 2) painting the crosswalk with "zebra" stripes between the outer boundary stripes. Higher visibility crosswalks should only be used at uncontrolled crosswalks.

PURPOSE:
The primary purpose of a higher visibility crosswalk is to increase driver recognition of the crosswalk.

EFFECTIVENESS:
Higher visibility crosswalks provide more visibility to drivers than traditional crosswalks. They are also a stronger indicator of the accepted or preferred crossing location for pedestrians. As with any crosswalk, pedestrians may, however, place too high a level of reliance on the ability of the crosswalk to control driver behavior.

COST:
Higher visibility crosswalks cost $1,000 to $5,000, depending on the design technique.

PARKING IMPACTS:
There are no direct parking impacts associated with installing a higher visibility crosswalk within an existing crosswalk. However, a minimum of 20-30 feet of curbside parking may need to be prohibited on each side of the crosswalk to provide increased visibility of the crosswalk.

TRANSIT SERVICE IMPACTS:
None.

EMERGENCY SERVICE IMPACTS:
None.

NOISE IMPACTS:
Noise impacts are minimal for “zebra” striped crosswalks. Crosswalks designed with paving blocks or contrasting colored concrete can produce significant amounts of noise, depending on the design.

OTHER CONSIDERATIONS:

Installation of higher visibility crosswalks would increase maintenance costs. There are also traffic control signs and pavement markings associated with crosswalks that are typically not attractive.

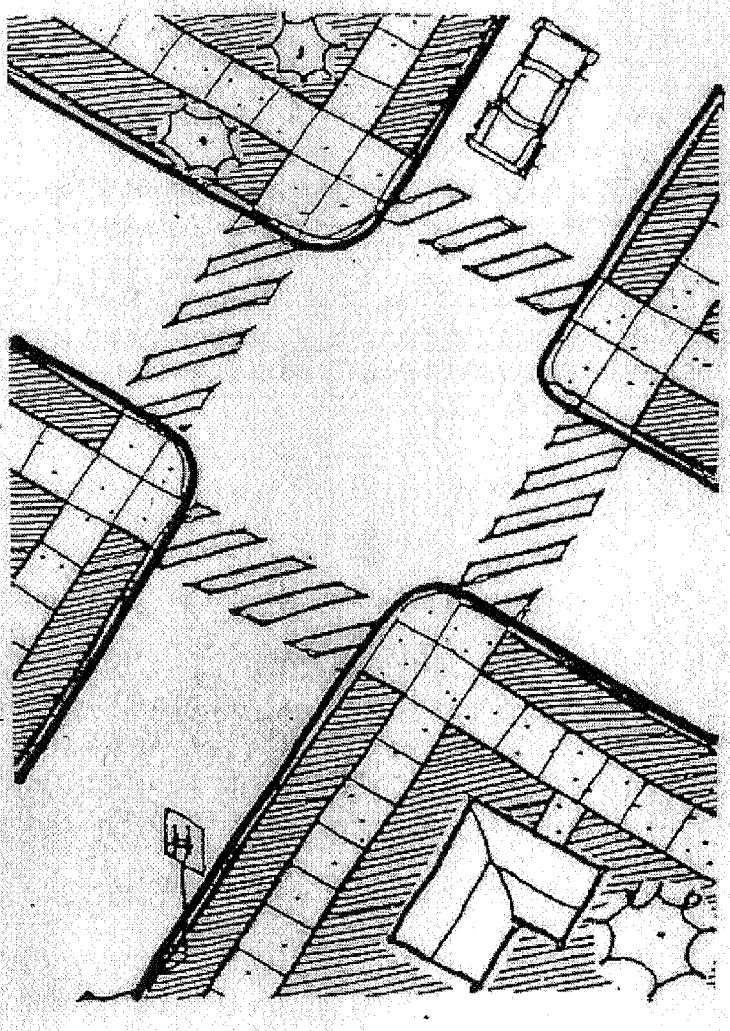
GUIDELINES:

The City Council may consider the installation of higher visibility crosswalks if the criteria listed below are satisfied.

1. A speed survey must demonstrate that at least 67 percent of the motorists exceed the 25-mile per hour speed limit.

2. The street must have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.

3. The average traffic volume must be greater than 1,500 vehicles per 24-hour period or 150 vehicles per hour, total in both directions on an average weekday.



HIGHER VISIBILITY CROSSWALKS DIAGRAM

ENTRANCE TREATMENTS

DESCRIPTION:
Entrance treatments consist of physical and textural changes to streets and are located at key entryways into a neighborhood.

PURPOSE:
Entrance treatments create visual, and in some cases audible, cues that tell drivers they are entering a local residential area or that the surrounding land uses are changing. The intent is a reduction in speed.

EFFECTIVENESS:
Entrance treatments have minimal influence on a familiar drivers' routine behavior. Overall speeds and total volumes are not influenced, but it is believed that drivers are made more aware of the environment in which they are driving and are more considerate of pedestrians. Unfamiliar drivers may be influenced to avoid the use of a neighborhood street with an entrance treatment when searching for a through route.

COST:
Entrance treatments cost approximately $5,000 to $10,000.

PARKING IMPACTS:
None.

TRANSIT SERVICE IMPACTS:
None.

EMERGENCY SERVICE IMPACTS:
None.

NOISE IMPACTS:
Textured pavements will introduce some new noise.

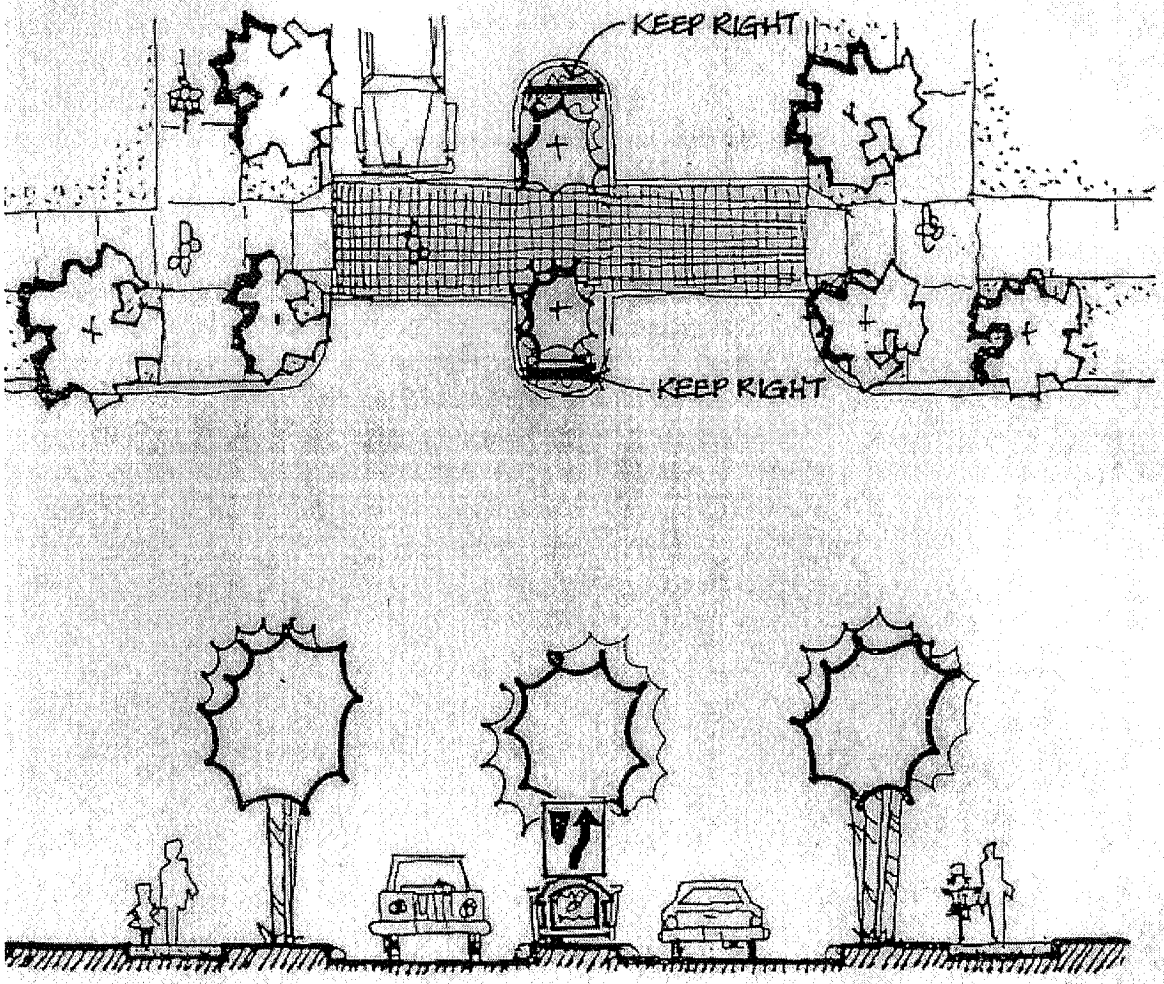
OTHER CONSIDERATIONS:
None.

GUIDELINES:
The City Council may consider the installation of entrance treatments if the criteria listed below are satisfied.

1. A speed survey must demonstrate that at least 67 percent of the motorists exceed the 25-mile per hour speed limit.

2. The street must have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.

3. The average traffic volume must be greater than 1,500 vehicles per 24-hour period or 150 vehicles per hour, total in both directions on an average weekday.



ENTRANCE TREATMENTS DIAGRAM

SPEED HUMPS

DESCRIPTION:
Speed humps are pavement undulations installed along a roadway for the purpose of regulating traffic speed. There is a significant difference between speed humps and speed bumps, which are devices commonly used in shopping center parking lots. A speed bump is an abrupt pavement feature, three or four inches high and only one to three feet in length at the base (measured in the direction of vehicle travel). A speed hump, on the other hand, is generally 3 inches in height, but much gentler in configuration, with a length of at least 12 feet at the base. Speed humps properly designed and placed in appropriate locations control speed without the "jarring" effect of speed bumps. Each installation should consist of a minimum of three humps, spaced at 300-400 feet apart. Because visibility of the speed humps is very important, they will be identified with appropriate signs and markings.

PURPOSE:
Speed humps are intended to reduce vehicle speeds and/or divert traffic.

EFFECTIVENESS:
Twelve-foot speed humps may be effective at encouraging 25 mph vehicle speeds

COST:
Speed humps cost approximately $2,000 to $2,500 each. (Minimum $6,000 for a series)

PARKING IMPACTS:
None

TRANSIT SERVICE IMPACTS:
Like other vehicles, buses must cross a speed hump at reduced speeds. Transit service representatives have an opportunity to review all speed humps that are proposed.

EMERGENCY SERVICE IMPACTS:
Like other vehicles, emergency response vehicles must cross a speed hump at reduced speeds. The speed hump design selected for a street takes into consideration whether it is used as a primary response route. The Fire Department has an opportunity to review all speed humps that are proposed. An opportunity to comment on proposed speed humps must be provided to appropriate emergency service agencies and transportation service agencies. These comments will be considered by the Traffic Committee and the City Council in their review.

NOISE IMPACTS:

Speed humps generate some noise. The only mitigation is to consider a hump's proximity to homes when determining where humps might be located.

OTHER CONSIDERATIONS:
Traffic volumes typically decrease slightly after speed humps are constructed. Additional signage may be objectionable to residents.

GUIDELINES:
The City Council may consider the installation of speed humps if the criteria listed below are satisfied.

1. Speed humps will be considered for a particular street section only after persistent attempts to resolve speeding by all appropriate conventional methods (posting of a speed trailer, increased enforcement, etc.) have been exhausted.

2. The street segment on which speed humps are proposed must be at least 1/4 mile long and must be a residential street as defined by the California Vehicle Code. The street must include a logical segment for installation of speed humps (isolated or very short segments along a continuous street, relatively short cul-de-sacs that are less than 800 feet, and L-intersection corner areas are generally not appropriate for speed hump installations).

3. The speed limit on the proposed street must be the posted or prima facie 25 miles per hour or less.

4. A speed survey must demonstrate that at least 67 percent of the motorists exceed the 25-mile per hour speed limit.

5. The street must have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.

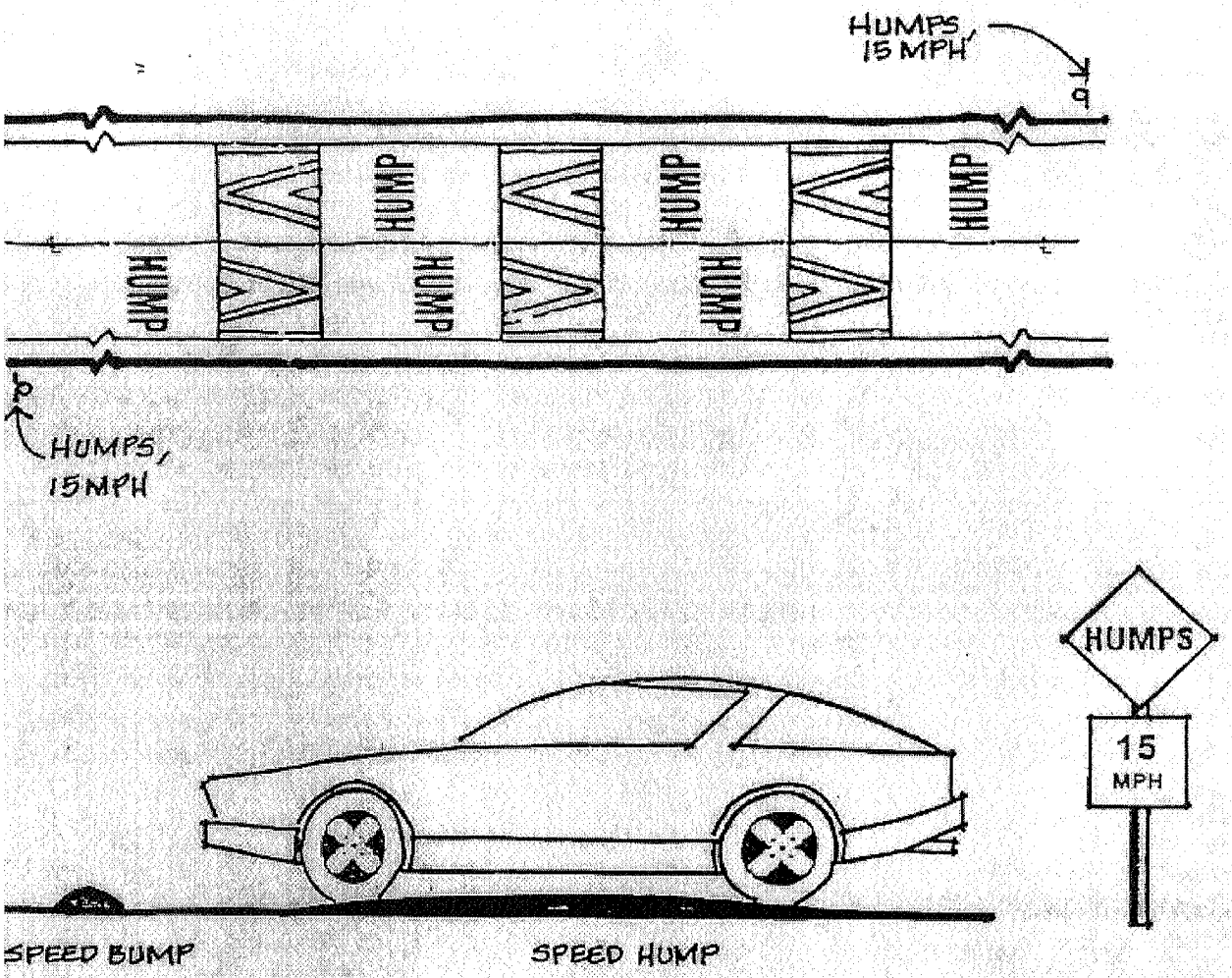
6. The average traffic volume must be greater than 1,500 vehicles per 24-hour period or 150 vehicles per hour, total in both directions on an average weekday.

7. The street must have a sustained longitudinal grade of 6% or less. Exceptions may be allowed for steeper street grades where the steeper grades prevail over relatively short distances. For instance, grades up to 8% may be acceptable for up to 400 feet and grades up to 10% may be acceptable for up to 200 feet.

8. The street must have a horizontal and vertical alignment such that there is adequate sight distance, as determined by the Director of Public

Works. Example: A proposed speed hump must be visible from a three and one-half foot height at 150 feet.

9. An opportunity to comment on proposed speed humps must be provided to appropriate emergency service agencies and transportation service agencies. These comments will be considered by the Traffic Committee and the City Council in their review.



SPEED HUMP DIAGRAM

CURB EXTENSIONS OR CHOKERS

DESCRIPTION:
Curb extensions or chokers narrow the street by widening the sidewalk or the landscaped parking strip.

PURPOSE:
These devices are employed to make pedestrian crossings easier, to narrow the roadway, and/or to slow traffic.

EFFECTIVENESS:
Curb extensions effectively improve pedestrian safety by reducing the street crossing distance and improving sight distance. They also influence driver behavior by changing the appearance of the street.

COST:
Curb extensions costs $7,000 to $10,000.

PARKING IMPACTS:
Parking impacts are minimal. However, each curb extension occupies street area that might otherwise be available for curbside parking.

TRANSIT SERVICE IMPACTS:
Curb extension do not adversely impact transit service. Curb extensions at transit stops enhance service by moving the curb so riders step directly between the sidewalk and bus door.

EMERGENCY SERVICE IMPACTS:
None.

NOISE IMPACTS:
None.

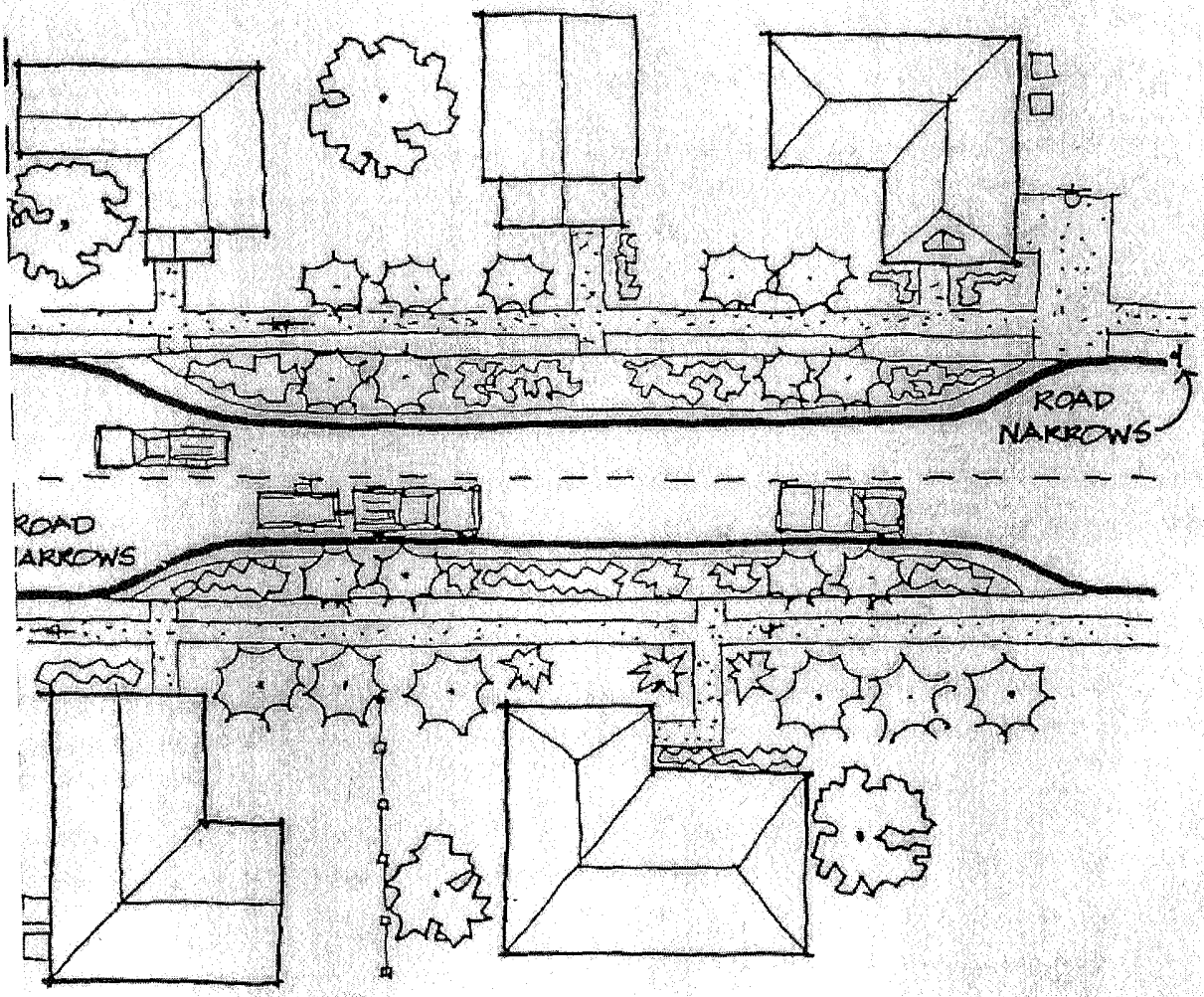
OTHER CONSIDERATIONS:
Where the crowns of the street are steep, curb extensions may actually go "uphill" because the new curb is higher than the original curb. If poorly designed, this can result in puddles on the sidewalk.

GUIDELINES:
The City Council may consider the installation of curb extensions or chokers if the criteria listed below are satisfied.

1. A speed survey must demonstrate that at least 67 percent of the motorists exceed the 25-mile per hour speed limit.

2. The street must have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.

3. The average traffic volume must be greater than 1,500 vehicles per 24-hour period or 150 vehicles per hour, total in both directions on an average weekday.



CURB EXTENSION (OR CHOKER) DIAGRAM

TRAFFIC CIRCLES

DESCRIPTION:
Traffic circles require drivers to slow to a speed that allows them to comfortably maneuver around them. Traffic circles are three or more road intersections with raised islands placed at the center of the intersection. They may be landscaped with ground cover and street trees.

PURPOSE:
The primary purpose of traffic circles is to slow high-speed traffic. An additional benefit is that they reduce the number of angle and turning-type collisions.

EFFECTIVENESS:
Traffic circles are very effective at lowering speeds in their immediate vicinity. Traffic circles are most effective when constructed in a series on a local service street.

COST:
Traffic circles cost approximately $5,000 to $10,000 each.

PARKING IMPACTS:
A minimum of 30 feet of curbside parking must be prohibited along the through street at all four corners of the intersection.

TRANSIT SERVICE IMPACTS:
Buses can maneuver around traffic circles at slow speeds provided vehicles are not illegally parked near the circles.

EMERGENCY SERVICE IMPACTS:
Fire trucks can maneuver around traffic circles at slow speeds provided vehicles are not illegally parked near the circles. An opportunity to comment on proposed traffic circles must be provided to appropriate emergency service agencies and transportation service agencies. These comments will be considered by the Traffic Committee and the City Council in their review.

NOISE IMPACTS:
Noise impacts are minimal. There may be some noise related to vehicles decelerating and accelerating near the circles.

OTHER CONSIDERATIONS:
If well maintained, traffic circles can be very attractive. However, there are also a lot of traffic control signs and pavement markings associated with circles that are not as attractive.

Traffic circles are less effective at T-intersections and very difficult to design for offset intersections.

GUIDELINES:

The purpose of these design criteria is to provide, at the lowest cost possible, a traffic circle that will reduce traffic speeds and accidents while allowing for the movement of large vehicles through the intersection. These design criteria will also provide the largest possible traffic circle, and thereby allow maximum landscaping for beautification (as funding allows), and to visually warn drivers of the obstruction.

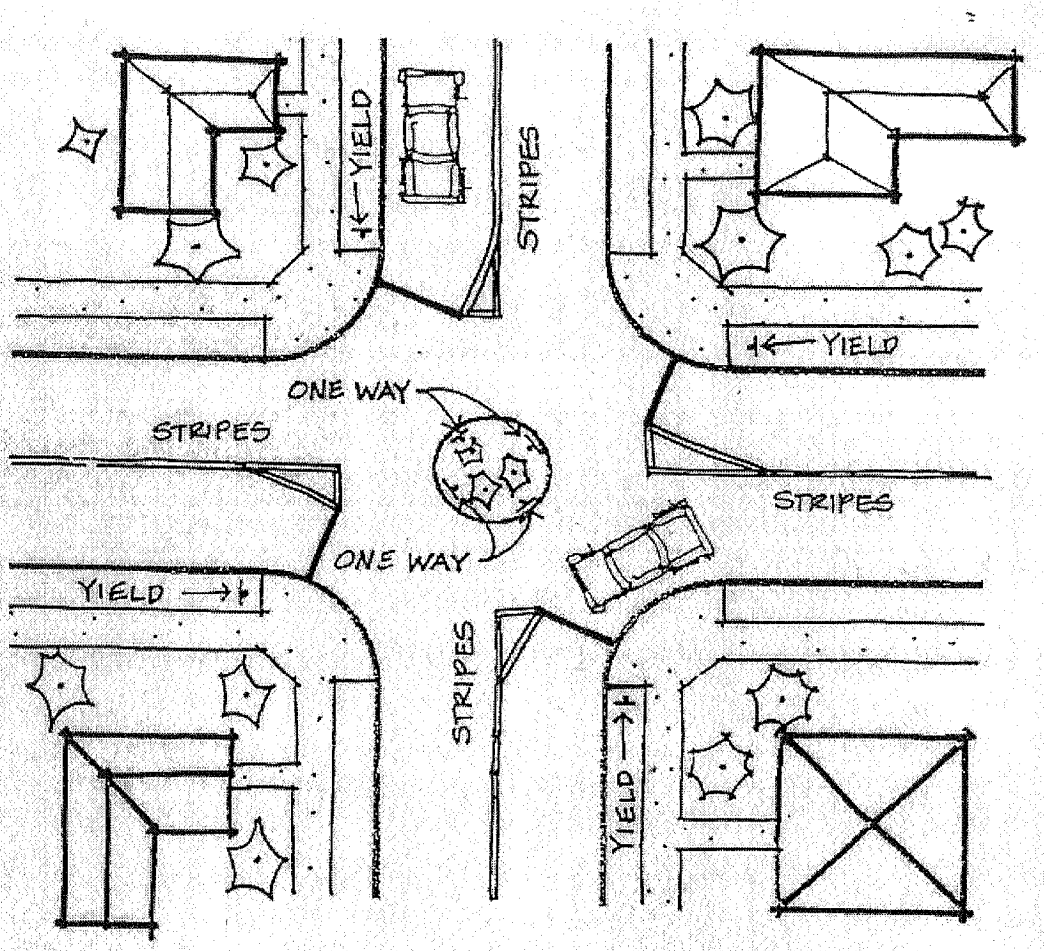
There will be cases where these design criteria cannot be totally followed and/or where one or more curb returns have to be reconstructed. Some of these cases occur where intersecting streets are of different widths, and/or where one or more of the intersecting streets are offset or angled. There will also be situations requiring that special attention be given to landscape and aesthetic considerations. In these cases, engineering judgment will be used in following the design criteria as closely as possible, with traffic safety and operation of prime concern.

Design Criteria (refer to the Traffic Circle Diagram for an explanation of terminology):

1. The distance between a traffic circle and the street curb projection (offset distance) will be determined based upon intersection geometry.
2. The width between a traffic circle and a curb return (opening width) will be determined based upon intersection geometry.
3. As the offset distance decreases, the opening width shall increase based upon intersection geometry.
4. The outside 2 feet of the traffic circle will be constructed with a mountable monolithic cement concrete curb and pavement surface doweled to the existing pavement.
5. Where landscaping is installed, traffic circles less than 15 feet in diameter will have one tree centered along with other plantings.
6. Where landscaping is installed, traffic circles greater than or equal to 15 feet in diameter will have three trees equally spaced and set back 4 feet from the curb face along with other plantings.

The City Council may consider the installation of traffic circles if the criteria listed below are satisfied.

1. A speed survey must demonstrate that at least 67 percent of the motorists exceed the 25-mile per hour speed limit.
2. The street must have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.
3. The average traffic volume must be greater than 1,500 vehicles per 24-hour period or 150 vehicles per hour, total in both directions on an average weekday.



TRAFFIC CIRCLE DIAGRAM

ROUNDABOUT

DESCRIPTION:
A roundabout is a modern version of a traffic circle with approach diverter islands. A circular island is placed in the center of an existing local street intersection. Traffic approaching the intersection is guided around the circular island. Roundabouts are generally designed to require approaching traffic to slow down when entering the intersection, while allowing a relatively easy exit movement for traffic exiting the intersection.

PURPOSE:
The purpose of a roundabout is to reduce intersection approach speeds and reduce the potential for angle and turning-type accidents, while maintaining or possibly increasing the capacity of an intersection.

EFFECTIVENESS:
Roundabouts are very effective at lowering speeds in their immediate vicinity. They are also very effective at reducing turning-type collisions; however, the potential for accidents could increase initially until drivers become accustomed to the change.

COST:
Roundabouts cost approximately $30,000 to $70,000 each.

PARKING IMPACTS:
Due to the approach diverter islands associated with a roundabout, 30-50 feet of curbside parking prohibitions may be required at all four corners of an intersection.

TRANSIT SERVICE IMPACTS:
Buses can maneuver around roundabouts at slow speeds, provided that vehicles are not illegally parked near the roundabout.

EMERGENCY SERVICE IMPACTS:
Emergency service response times can be reduced by the installation of a roundabout at an intersection.

NOISE IMPACTS:
Noise impacts are minimal. There may be some noise related to vehicles decelerating near a roundabout.

OTHER CONSIDERATIONS:
If well maintained, roundabouts can be very attractive. However, there are also a lot of traffic control signs and pavement markings associated with roundabouts that would likely be unattractive.

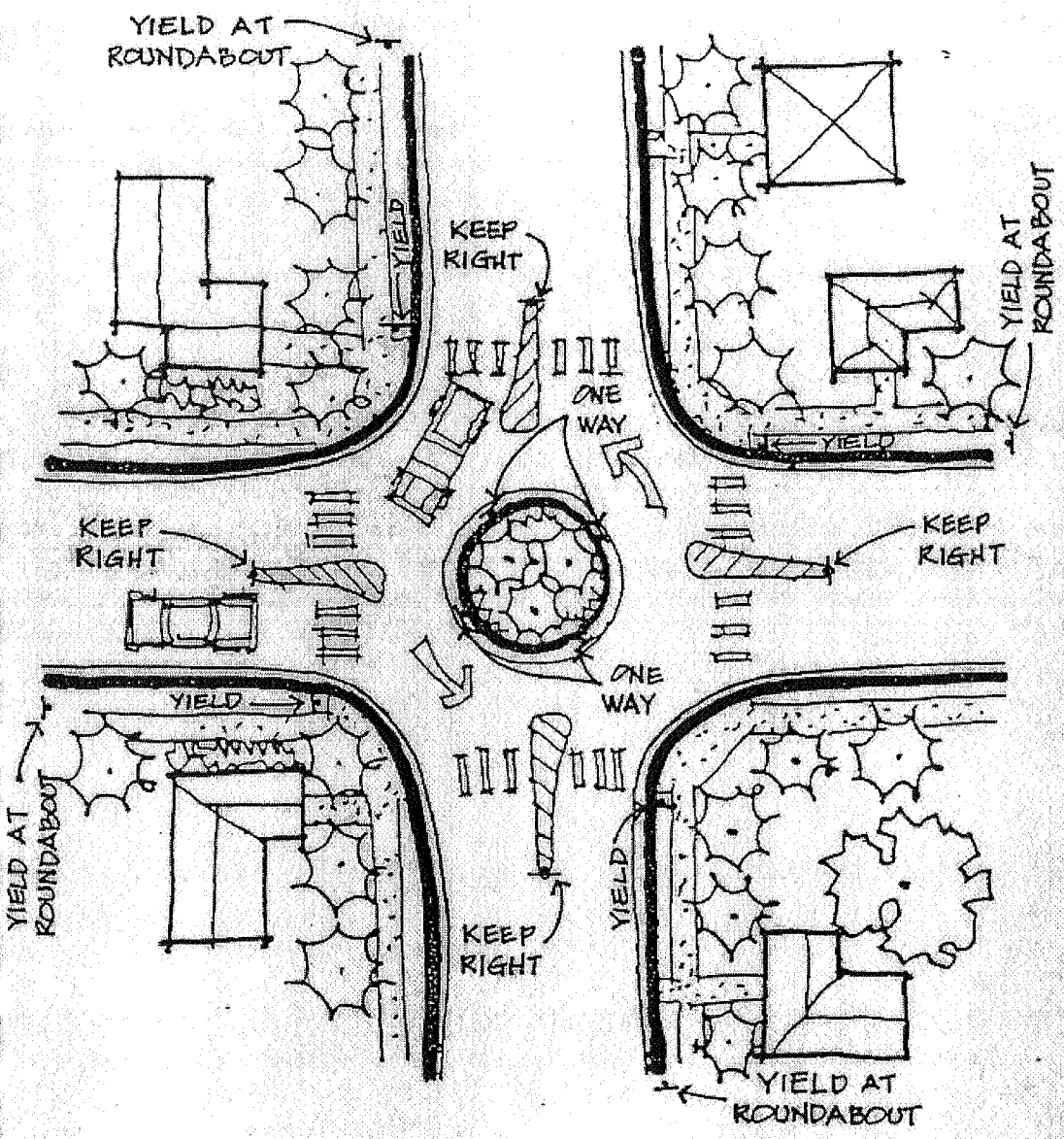
Roundabouts are very difficult to design at T-intersections, skewed intersections, and offset intersections.

GUIDELINES:
The City Council may consider the installation of a roundabout if the criteria listed below are satisfied.

1. A speed survey must demonstrate that at least 67 percent of the motorists exceed the 25-mile per hour speed limit.

2. The street must have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.

3. The average traffic volume must be greater than 1,500 vehicles per 24-hour period or 150 vehicles per hour, total in both directions on an average weekday.



ROUNDABOUT DIAGRAM

ONE-WAY STREET(S)

DESCRIPTION:
One or more streets within a neighborhood can be designated as "one-way", thereby redefining traffic patterns within the neighborhood.

PURPOSE:
The primary purpose of one-way street(s), as a traffic-calming tool, is to prohibit certain neighborhood cut-through movement.

EFFECTIVENESS:
One-way streets can be very effective at eliminating cut-through traffic in the prohibited direction of travel. However, a series of one-way streets can actually increase travel distances to certain residences thereby increasing overall traffic volumes on individual roadway segments.

COST:
The cost associated with designating certain roadways within a neighborhood as one-way streets would be in the $15,000 to $25,000 range per street.

PARKING IMPACTS:
None.

TRANSIT SERVICE IMPACTS:
Buses would be required to follow the one-way direction of travel. The length of a bus route could consequently increase due to the installation of one-way streets.

EMERGENCY SERVICE IMPACTS:
Fire trucks and other emergency vehicles could proceed along a one-way street in the wrong direction of travel required for an emergency. An opportunity to comment on proposed one-way streets must be provided to appropriate emergency service agencies and transportation service agencies. These comments will be considered by the Traffic Committee and the City Council in their review.

NOISE IMPACTS:
None.

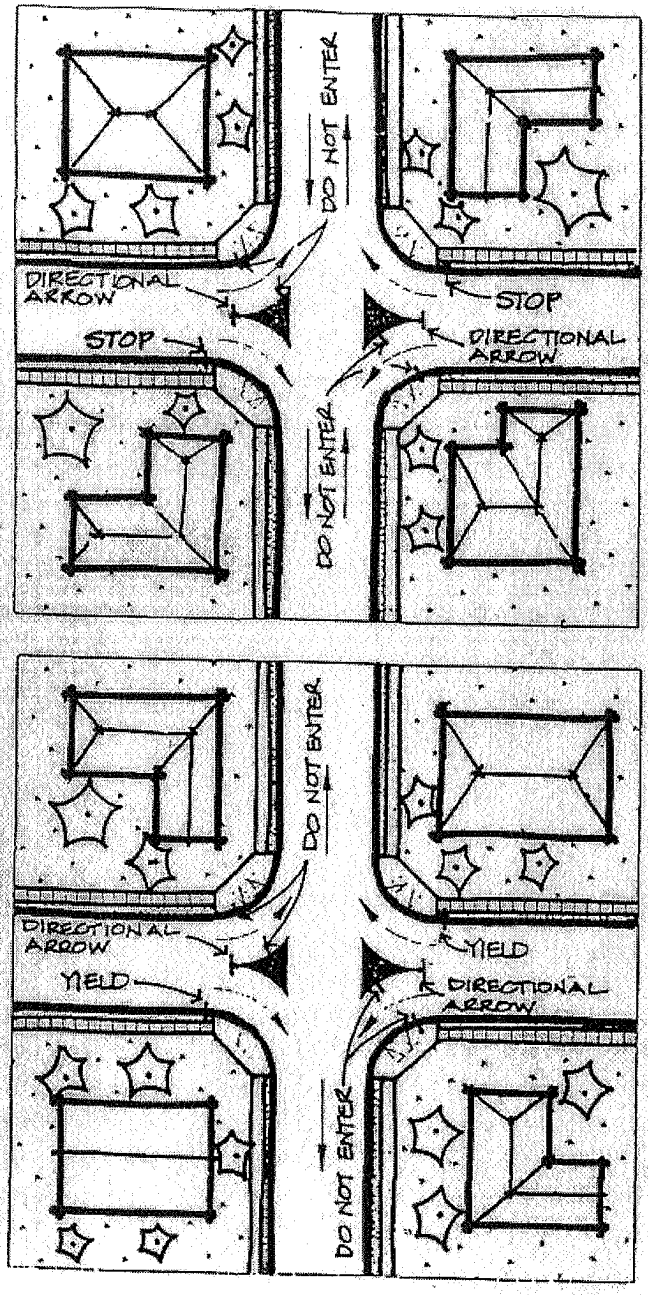
OTHER CONSIDERATIONS:
If a wide residential street is converted to a one-way street, the direction of one-way travel may not be easily understood by an unfamiliar motorist exiting a residential driveway along the street. A substantial number of "one-way" signs, corresponding to the number of driveways along the street, would be required to indicate the proper direction of travel to unfamiliar motorists. These signs would likely be perceived as very unattractive. "Wrong-Way" and "Do Not Enter" signs, located at the end of a one-way street, would also be aesthetically unpleasing.

GUIDELINES:
The City Council may consider the installation of one-way streets if the criteria listed below are satisfied.

1. A speed survey must demonstrate that at least 67 percent of the motorists exceed the 25-mile per hour speed limit.

2. The street must have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.

3. The average traffic volume must be greater than 1,500 vehicles per 24-hour period or 150 vehicles per hour, total in both directions on an average weekday.



ONE-WAY STREETS DIAGRAM

MEDIAN BARRIERS

DESCRIPTION:
A median barrier is a concrete curb or island that is located along the centerline of a street and continues through the street's intersection with a given cross street.

PURPOSE:
Strategically located median barriers reduce traffic volumes on a street. Median barriers can be designed to prevent left turns from the through street and left turns and through moves from the cross street. They can also be designed to permit left turns into the cross street, while prohibiting left and through movements from the cross street.

EFFECTIVENESS:
Median barriers are very effective in reducing volumes.

COST:
Median barriers cost approximately $15,000 to $25,000.

PARKING IMPACTS:
Medians may not significantly impact curbside parking opportunities, but in some cases parking would be prohibited to accommodate the remaining turning movements or to make room for a wider median barrier.

TRANSIT SERVICE IMPACTS:
Median barriers would prevent transit service on the cross street that is blocked.

EMERGENCY SERVICE IMPACTS:
The turn restrictions imposed by a median barrier would apply to emergency vehicles as well and are not typically used when the street being blocked is a primary fire response route. An opportunity to comment on proposed median barriers must be provided to appropriate emergency service agencies and transportation service agencies. These comments will be considered by the Traffic Committee and the City Council in their review.

NOISE IMPACTS:
None.

OTHER CONSIDERATIONS:
Median barriers apply to all drivers, including local residents. Very special care must be taken to consider the availability, capacity, and appropriateness of the alternative routes drivers might use if a semi-diverter is constructed.

Provision should be made to make median barriers passable for pedestrians and bicyclists.

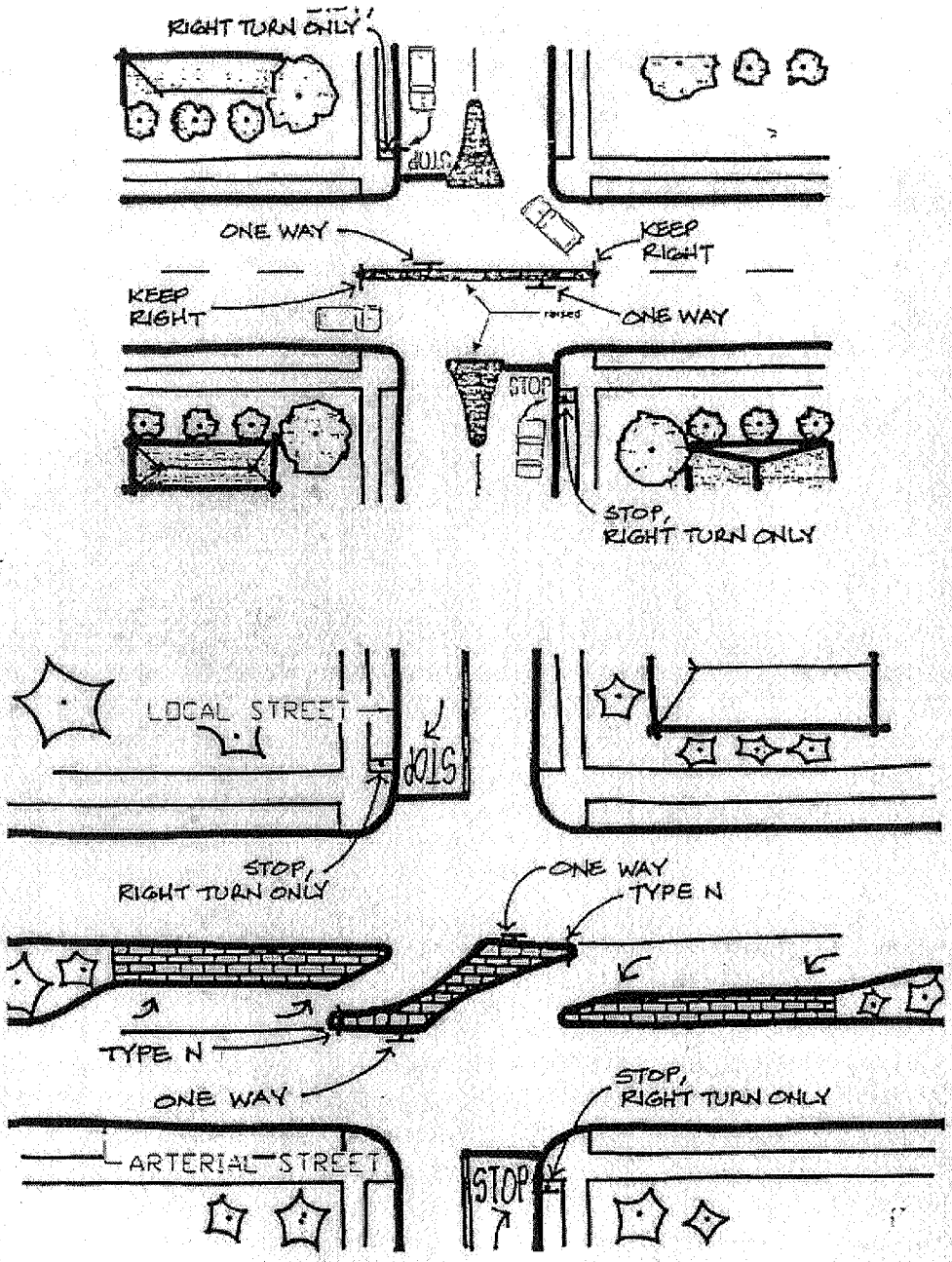
GUIDELINES:

The City Council may consider the installation of median barriers if the criteria listed below are satisfied.

1. A speed survey must demonstrate that at least 67 percent of the motorists exceed the 25-mile per hour speed limit.

2. The street must have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.

3. The average traffic volume must be greater than 1,500 vehicles per 24-hour period or 150 vehicles per hour, total in both directions on an average weekday.



MEDIAN BARRIERS DIAGRAM

SEMI-DIVERTERS OR HALF CLOSURES

DESCRIPTION:
Semi-diverters or half closures are located at intersections and limit access to a street by blocking the "receiving" lane of the street. They prevent drivers from entering certain legs of an intersection.

PURPOSE:
Strategically located semi-diverters can effectively reduce traffic volumes on a street.

EFFECTIVENESS:
Semi-diverters are very effective in reducing volumes.

COST:
Semi-diverters cost approximately $7,000 to 15,000.

PARKING IMPACTS:
Semi-diverters do not significantly impact curbside parking opportunities.

TRANSIT SERVICE IMPACTS:
Semi-diverters are typically only considered on non-transit streets.

EMERGENCY SERVICE IMPACTS:
Semi-diverters allow a higher degree of emergency vehicle access than cul-de-sacs or diagonal diverters. Semi-diverters can be designed to allow emergency vehicle access, but careful consideration needs to be given to their use on primary fire response routes. An opportunity to comment on proposed semi-diverters or half closures must be provided to appropriate emergency service agencies and transportation service agencies. These comments will be considered by the Traffic Committee and the City Council in their review.

NOISE IMPACTS:
None.

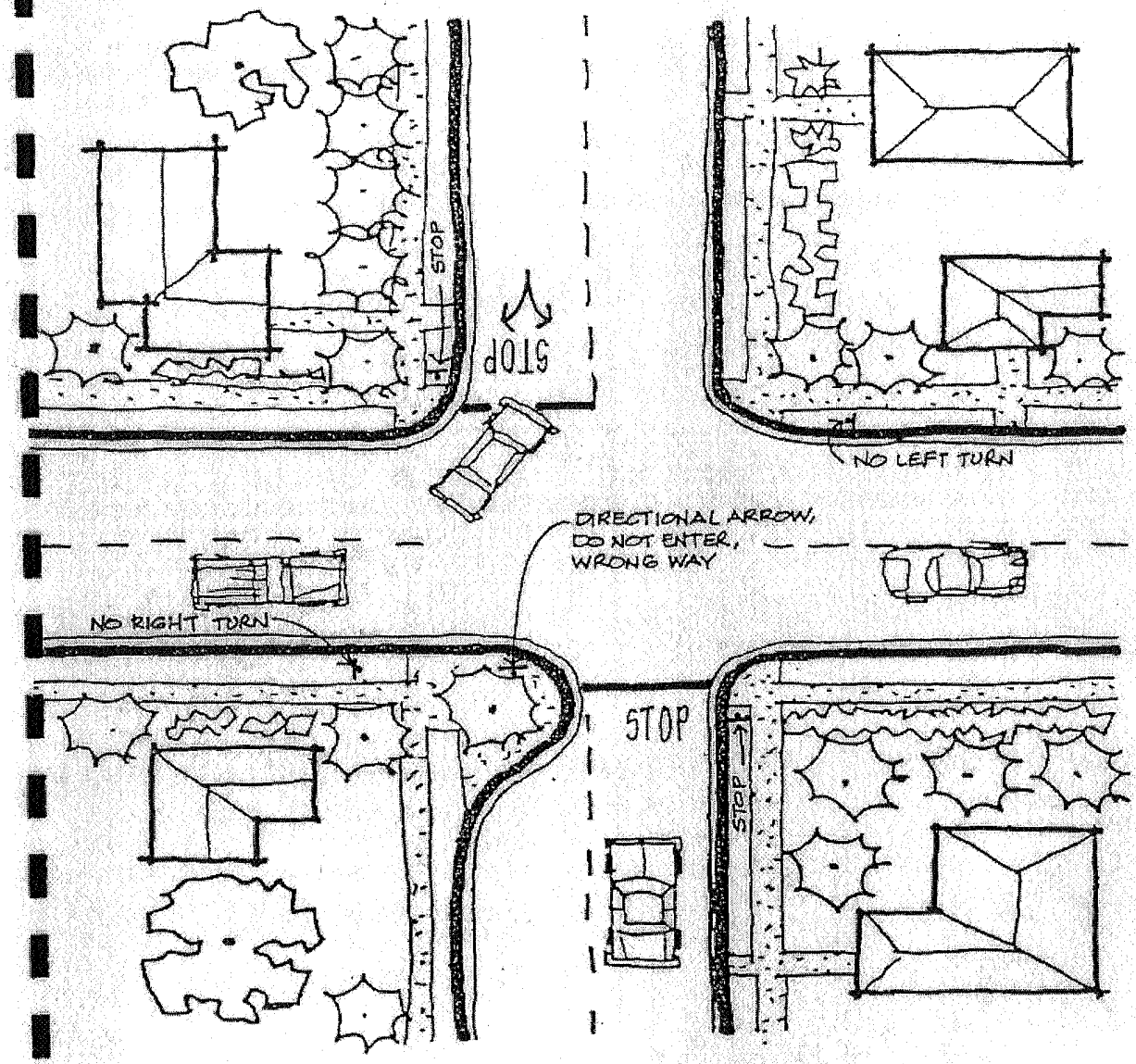
OTHER CONSIDERATIONS:
Semi-diverters apply to all drivers, including local residents. Very special care must be taken to consider the availability, capacity, and appropriateness of the alternative routes drivers might use if a semi-diverter is constructed.

GUIDELINES:
The City Council may consider the installation of semi-diverters or half closures if the criteria listed below are satisfied.

1. A speed survey must demonstrate that at least 67 percent of the motorists exceed the 25-mile per hour speed limit.

2. The street must have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.

3. The average traffic volume must be greater than 1,500 vehicles per 24-hour period or 150 vehicles per hour, total in both directions on an average weekday.



SEMI-DIVERTERS OR HALF CLOSURES DIAGRAM

DIAGONAL DIVERTERS

DESCRIPTION:
Diagonal diverters place a barrier diagonally across an intersection, disconnecting the legs of the intersection.

PURPOSE:
Strategically located diagonal diverters reduce traffic volumes on a street. Diagonal diverters prevent all through moves at an intersection.

EFFECTIVENESS:
Diagonal diverters are very effective in reducing volumes.

COST:
Diagonal diverters cost approximately $10,000 to 30,000.

PARKING IMPACTS:
None.

TRANSIT SERVICE IMPACTS:
Diagonal diverters should not be considered on transit streets.

EMERGENCY SERVICE IMPACTS:
Generally, the turn restrictions imposed by a diagonal diverter would apply to emergency vehicles as well and are typically not used on primary fire response routes. However, diagonal diverters can be designed and installed to provide for emergency vehicle access.

NOISE IMPACTS:
None.

OTHER CONSIDERATIONS:
Diagonal diverters apply to all drivers, including local residents. Very special care must be taken to consider the availability, capacity, and appropriateness of the alternative routes drivers might use if a diagonal diverter is constructed.

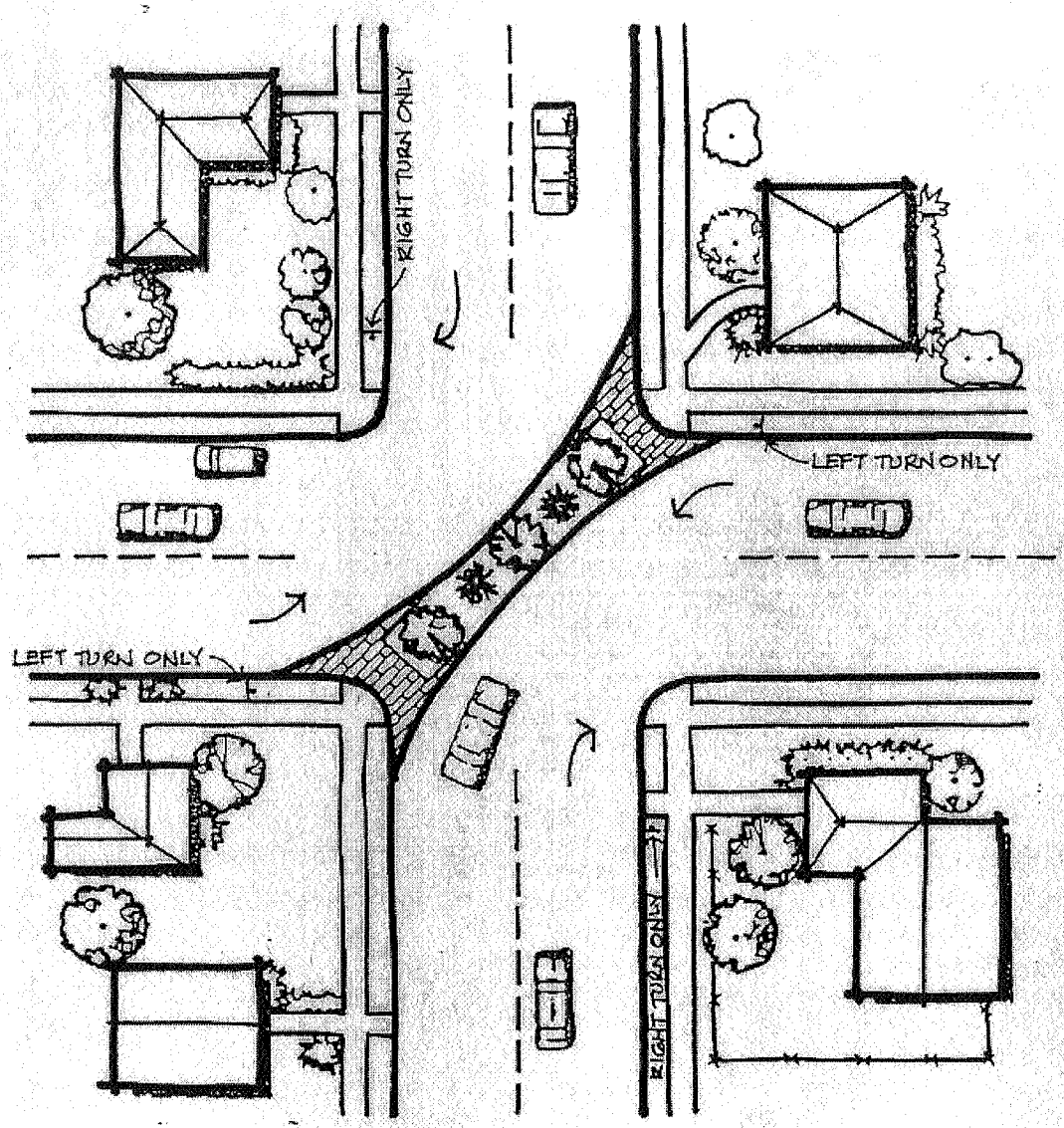
Provision should be made to make diagonal diverters passable for pedestrians and bicyclists.

GUIDELINES:
The City Council may consider the installation of diagonal diverters if the criteria listed below are satisfied.

1. A speed survey must demonstrate that at least 67 percent of the motorists exceed the 25-mile per hour speed limit.

2. The street must have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.

3. The average traffic volume must be greater than 1,500 vehicles per 24-hour period or 150 vehicles per hour, total in both directions on an average weekday.



DIAGONAL DIVERTERS DIAGRAM

CUL-DE-SAC OR STREET CLOSURE

DESCRIPTION:
Cul-de-sacs are created by either closing a street at an intersection or at a mid-block location. Pedestrian access is provided across a landscaped island. The closure must be located away from driveways.

PURPOSE:
The purpose of a cul-de-sac is to eliminate through traffic and/or reduce speeding on long uninterrupted sections of roadway.

EFFECTIVENESS:
Cul-de-sacs are very effective at reducing traffic volumes on the cul-de-sac roadway; however, diverted traffic can increase traffic volumes on adjacent roadways.

COST:
Installing cul-de-sacs on a roadway could cost approximately $10,000 to $30,000.

PARKING IMPACTS:
Up to 150 feet of curbside parking must be prohibited at the location where cul-de-sac(s) are being installed.

TRANSIT SERVICE IMPACTS:
Cul-de-sacs can block transit service routes, necessitating the rerouting of transit services.

EMERGENCY SERVICE IMPACTS:
Cul-de-sacs can negatively affect response times for emergency services, particularly if they are installed on primary emergency service access routes. The landscaped island that forms the cul-de-sac can be designed as a traversable island for emergency purposes. An opportunity to comment on a proposed cul-de-sac or street closure must be provided to appropriate emergency service agencies and transportation service agencies. These comments will be considered by the Traffic Committee and the City Council in their review.

NOISE IMPACTS:
Noise impacts are minimal. In fact, there may be a reduction in noise levels due to decreased traffic volume at the cul-de-sac location.

OTHER CONSIDERATIONS:
In large neighborhoods, installing a cul-de-sac on a roadway could shift a problem elsewhere, unless a strategic pattern of neighborhood traffic-calming tools are used.

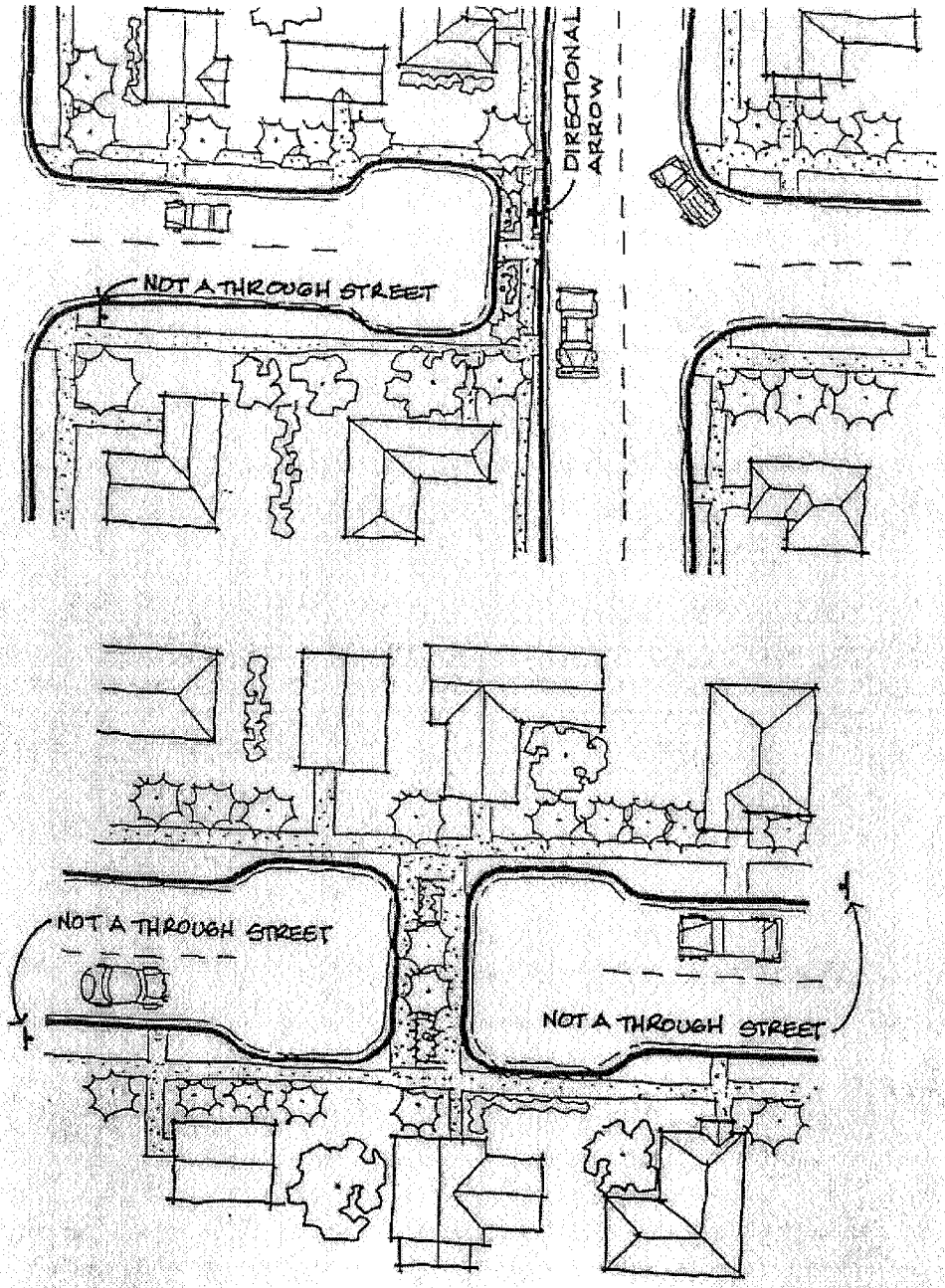
Cul-de-sacs can also generate confusion on the part of users searching for an address along a street. This can be resolved by renaming a portion of the street on one side of the cul-de-sac. Provisions should be made to make the cul-de-sac(s) passable for pedestrians and bicycles.

GUIDELINES:
The City Council may consider the installation of a cul-de-sac or street closure if the criteria listed below are satisfied.

1. A speed survey must demonstrate that at least 67 percent of the motorists exceed the 25-mile per hour speed limit.

2. The street must have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.

3. The average traffic volume must be greater than 1,500 vehicles per 24-hour period or 150 vehicles per hour, total in both directions on an average weekday.



CUL-DE-SAC OR STREET CLOSURE DIAGRAM

TRAFFIC CALMING SIGNS

DESCRIPTION:

Traffic Calming Signs are generally signs with friendly messages to motorist reminding them they are entering a residential neighborhood. The signs are posted at entrances to neighborhoods and designed in such a way as to attract motorist attention while not appearing to be a regulatory or warning sign. Signs are rotated periodically to help keep the message fresh and continue to attract the attention of drivers familiar with the neighborhood.

PURPOSE:

Traffic Calming Signs are intended to increase public awareness and support other neighborhood efforts to reduce traffic speeds and encourage safe driving practices.

EFFECTIVENESS:

Traffic Calming Signs are likely to have minimal influence on the majority of drivers. No specific tests or studies have been conducted to determine the effectiveness of the program to date. Elements of the program are intended to help maintain the long-term effect of the signs.

COST:

Each sign installation is expected to cost approximately $200-$300 in materials and labor for the initial installation. Long-term costs of the program are dependent on the total number of signs in the City, period of rotation and staff time to coordinate the rotation of the signs.

PARKING IMPACTS:

None.

TRANSIT SERVICE IMPACTS:

None.

EMERGENCY SERVICE IMPACTS:

None.

NOISE IMPACTS:

None.

OTHER CONSIDERATIONS:

None.

GUIDELINES:

The Traffic Committee may consider the installation of Traffic Calming Signs if the criteria listed below are satisfied.

1. A petition submitted requesting the installation of Traffic Calming Signs representing a majority of households in the neighborhood.
   or
   A request submitted by a duly authorized representative of a Homeowners Association representing the majority of homeowners in the neighborhood.

2. The street on which the sign is to be installed shall be an entrance to the neighborhood and shall have no more than two traffic lanes; one traffic lane in each direction for two-way streets or one traffic lane for one-way streets.

3. The average traffic volume must be greater than 500 vehicles per 24-hour period or 50 vehicles per hour, total in both directions, on an average weekday.

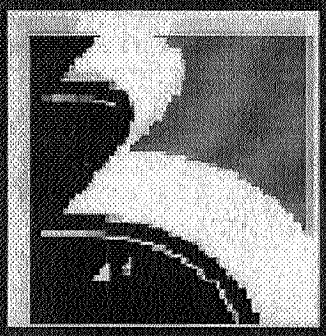
The process for obtaining traffic calming signs will be an exception to the standard process for other traffic calming measures. Elements of the standard process, which will be excluded from the process for considering traffic calming signs, are:

Step 4 - Traffic Committee Meeting with the Neighborhood
Step 8 – Consideration by the Neighborhood
Step 9 – Consideration by City Council
Step 10 – Plans Prepared and Publicly Reviewed
Step 12 – Follow–up

In addition, step 6 – Engineering Analysis, will be limited to the review of potential installation locations and preparing schematic installation plans.

CITY OF RANCHO PALOS VERDES SIGNS

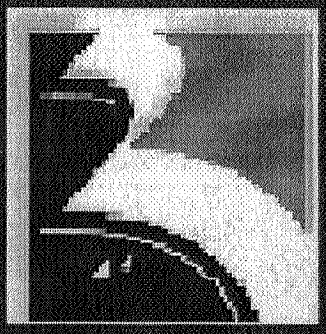
WELCOME HOME



City of Rancho Palos Verdes

DRIVE SAFELY

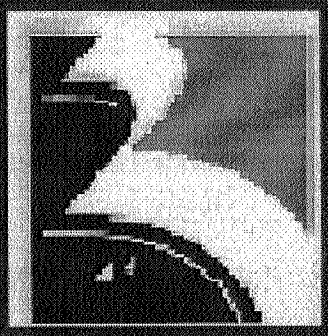
THIS IS YOUR COMMUNITY



City of Rancho Palos Verdes

WATCH YOUR SPEED & DRIVE SAFELY

THIS IS YOUR COMMUNITY



City of Rancho Palos Verdes

BE COURTEOUS & DRIVE SAFELY

Appendix

1204 x 1502

MORANDUM

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: DIRECTOR OF PUBLIC WORKS

DATE: MAY 19, 1998

BJECT: CITYWIDE TRAFFIC CALMING PROGRAM

Approved staff recommendation

5/19/98 Sara Fuldner
Date City Clerk

Staff Coordinator: Dean E. Allison, Senior Engineer

RECOMMENDATION

Adopt the Citywide Traffic Calming Program with revised language regarding the petition process.

BACKGROUND

At the April 21, 1998 Council Meeting a proposed Citywide Traffic Calming program was presented. Based on Council comments staff has revised the program regarding the two petition process.

ANALYSIS

The two primary items of discussion at the Council meeting were 1) The traffic volume required for a street to be considered for traffic calming, and 2) The details of the two petition process, specifically the circulation area for the two petitions.

Traffic Volumes for Candidate Streets

Traffic calming techniques will be considered on those streets that meet a minimum traffic volume. Council expressed a concern that a street should be able to qualify for traffic calming if it met a threshold volume for either a peak hour, or over a 24 hour period. The thought was that some roadways in the vicinity of a school may be good candidates for traffic calming.

The program includes a requirement that to qualify for traffic calming a roadway must have a minimum average daily traffic volume of 1500, or 150 vehicles during the peek hour.

Petition Process

The installation of any traffic calming measure is proposed to be a two-petition process, one submitted prior to the preparation of an engineering study, and the second submitted prior to construction. At the April 21, 1998 meeting discussion of Council, as well as public testimony focussed on the circulation area of the second petition. Specifically, should just property owners on the street where the traffic control device is proposed be included in the area of circulation of the petition or should property owners in any area that could be impacted be included in the circulation area.

(1)

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Based on comments from the Council, the revised program includes the following two-step petition process:

Step One
Before an engineering study is prepared, a petition, signed by sixty percent of the *residents* on the *roadway segment on which the traffic calming measure is proposed,* must be submitted by the neighborhood making the request.

Step Two
Once the study is complete a second petition, signed by sixty percent of the *property owners* on the *roadway segment on which the traffic calming measure is proposed,* must be submitted by the neighborhood making the request.

Impacted residents in the surrounding area will be notified prior to any Traffic Committee or Council Meeting at which the installation of any traffic calming measure is discussed. The area of notification will be determined by staff, and will include all those property owners and residents on roadways which may receive additional traffic as a result of the proposed traffic calming measure.

Staff is working with the residents in the Upper Basswood Homeowners' Association on a traffic calming pilot project. Presently the Association is circulating the first petition requested an engineering study.

CONCLUSION
The recommended action will approve a Citywide Traffic Calming program. The program establishes a procedure by which traffic related requests from neighborhoods are reviewed.

FISCAL IMPACT
The recommended action will likely result in an increase in expenditures for Traffic Engineering Services as well as for the construction of any recommended traffic calming measure. The increase in Traffic Engineering expenses will be slight. The increase in expenses to implement any traffic calming measure varies, and would be approved by the City Council prior to initiating the design.

Respectfully submitted,

Les Evans
Director of Public Works

Reviewed,

Paul D. Bussey
City Manager

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