TOWN OF FOUNTAIN HILLS

NEIGHBORHOOD TRAFFIC MANAGEMENT PROCESS

ADOPTED APRIL16, 1998

Burgess & Niple, Inc.
5025 East Washington Street
Suite 212
Phoenix, Arizona 85034

NEIGHBORHOOD TRAFFIC MANAGEMENT AND CALMING MEASURES

Neighborhood traffic management calming measures covered by this policy include all "official traffic control devices" authorized by the Town, State and Federal agencies. Some of the methods authorized in particular circumstances might include traffic islands, curbs, traffic barriers, or other roadway design features.

QUALIFYING CRITERIA

Requests for the implementation of neighborhood management and calming measures on public streets, will be considered by the Town for those streets meeting all of the following criteria:

a. The street should be primarily residential in nature.

b. Volumes are less than 5,000 vehicles per day.

c. Public Safety Agencies have not provided sufficient evidence of any major public safety concerns regarding possible neighborhood traffic management and calming measures.

d. The changes in traffic flow will not result in unreasonable liability exposure for the Town.

NEIGHBORHOOD TRAFFIC MANAGEMENT PROCESS

The following process will be used by the Town to address neighborhood traffic concerns:

a. A resident alerts the Town to a problem area.

b. The Town will provide information to the residents regarding the Neighborhood Traffic Management Process and Calming Program. Town Staff may immediately authorize a **Level 1 or 2 measure in an attempt to solve the problem as appropriate and the process** may therefore end at that point.

c. The Residents in cooperation with Staff may schedule a neighborhood meeting to further identify the concerns and issues. A town engineer, as well as a uniformed police officer, will attend the meeting.

d. At the neighborhood meeting the Town representative will explain and discuss the Level 1 through 4 Neighborhood Traffic Management and Calming Program.

e. The Town may prepare an existing condition traffic analysis. Level 1 or Level 2 Traffic calming options may be recommended by Town staff to the residents living on the streets at the neighborhood meeting.

f. If the Level 1 or Level 2 options are not adequate after being in-place for approximately 4 to 6 months, the Town may conduct additional studies to determine whether further Level 3 or 4 measures are appropriate. This will include consulting the Town Marshal, Maricopa County Sheriff's office and Fire District to determine if the street is critical to emergency vehicle response and, therefore, not eligible for certain options.

g. If area wide support is demonstrated through a Petition to Modify Traffic Flow, the Town will implement Level 3 or 4 measures using temporary materials at Town expense for a trial period of up to 180 days where feasible. This will also require support of residents in the immediate vicinity of the devices. At the end of the trial period, residents may select to have the Level 3 or 4 devices removed or made permanent.

h. If residents elect to have the Level 3 or 4 devices installed permanently, the Town will prepare design plans, and hire a contractor to install the measures permanently at the residents expense. This may involve the Improvement District Process.

I. If the residents elect to have the Level 3 or 4 devices installed permanently, but later decide that the devices are not desirable and 51 percent of the residents sign a petition, the Town will remove the devices at the residents expense.

j. If the residents are requesting speed humps and/or rumble strips in Level 3, the speed hump/rumble policy in Attachment 3 of the Neighborhood Traffic Management and Calming Program, will be followed.

k. Devices the Town deems to be appropriate and cost effective and meeting the following criteria will be paid for by the Town:

Local Residential:

1. **Traffic volumes in excess of 2,000 vehicles per day, or,**
2. **85th percentile speed in excess of 37 mph, or,**
3. Cut through traffic exceeds 500 vehicles per day, or,
4. Excessive or sever accident history

Minor Collector:

to be individually determined

PETITION REQUIREMENTS

The following procedures will be followed for submitting a petition to the Town for Level 3 or Level 4 measures.

a. The Town Engineer will examine and recommend the technical feasibility and anticipated impacts of the proposed neighborhood traffic management and calming measures. This review will include items such as State law, the Circulation Element of the Town's General Plan, the type of road or street involved, compliance with engineering regulations, existing

traffic conditions, projected traffic conditions, the potential for traffic diversion to adjacent streets, impacts to emergency vehicle response times, the increased liability exposure for the Town, or conflicts with future planned improvements.

b. The Town Engineer will determine the boundary of the "affected area" to be petitioned. The affected area will include but not be limited to those properties where normal travel routes to and from the "affected area" are to be altered by the neighborhood traffic management and calming measures, and/or properties which are significantly impacted by traffic that is to be diverted.

c. The petition requesting the neighborhood traffic management and calming measures must be supported by a minimum of 75 percent of the total number of Lots affected by the proposed changes in traffic flow, as determined by the Town Engineer.

d. At a minimum, petitions submitted to the Town for review must include the following:

- A statement that all persons signing the petition acknowledge it is the Town's policy that they will be responsible for all costs directly associated with the construction of permanent neighborhood traffic management and calming measures in order to facilitate the funding of the ultimate improvements needed to implement the street closure or traffic flow modifications, except as noted in Paragraph k above.

- The petition language must also clearly explain, and show on a plan, the location and the nature of the proposed traffic flow modifications.

- The petition language and attached drawing must be reviewed and approved by the Town Engineer prior to circulation to ensure its accuracy and ability to be clearly understood.

A sample petition has been provided as an attachment to this policy.

PETITION REVIEW PROCESS

The following process will be used to review all petitions associated with a Level 3 or 4 proposed neighborhood traffic management and calming measures:

a. The Town Engineer will review any petition to verify compliance with all petition requirements set forth above. Any petition not complying with these requirements will not be accepted for consideration. The Town may request verification of the signatures.

b. If the petition contains all of the required information under this policy, the proposed neighborhood traffic management calming measures will be referred to all affected public agencies in conjunction with the review process. At a minimum, these agencies will include all Town Departments, the Town Marshal, Maricopa County Sheriffs Office, Fire District, all affected local utility companies, School District, and any other agencies affected by the traffic flow modification.

PETITION TO MODIFY THE TRAFFIC FLOW ON _____ STREET

BETWEEN _____ AND _____

BY THE INSTALLATION OF _____(Nature of Changes)_____

AT _____(Location)_____

DATE:_____

BEFORE YOU SIGN THIS PETITION, KNOW WHAT YOU ARE SIGNING! IT IS RECOMMENDED THAT YOU FIRST READ THE TOWN'S NEIGHBORHOOD TRAFFIC MANAGEMENT AND CALMING POLICY.

We, the undersigned Residents or Owners of the area shown on the attached map petition the Town to _____ on _____ Street as shown on the attached drawing.

All persons signing this petition acknowledge it is the Town's policy that they will be responsible for all costs directly associated with physical changes needed to implement neighborhood traffic management and calming measures in order to facilitate the funding of the ultimate improvements needed to accomplish traffic flow modifications.

All persons signing this petition do hereby certify that they represent a Lot or Property within the area impacted by the proposed traffic flow changes as shown on the attached map.

Contact person:_____ Phone: (_____)_____

SIGNATURE	PRINT NAME	PRINT STREET ADDRESS, ZIP	PHONE #

TOWN OF FOUNTAIN HILLS

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NEIGHBORHOOD TRAFFIC MANAGEMENT AND CALMING PROGRAM

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LIST OF ATTACHMENTS

1. BACKGROUND

As population continues to grow in the Town of Fountain Hills, major roadways and intersections become more congested. As this occurs, frustrated motorists often resort to the use of local streets to bypass congested roadways or overloaded intersections. Motorists cutting-through residential neighborhoods often ignore residential speed limits, particularly when the street design accommodates higher speeds. The result is an ever increasing number of residents expressing concerns about the "safety" and "livability" of their neighborhoods.

Residents who live on these local streets perceive a danger to children playing outdoors, while others fear increased auto exhaust pollution, road noise, hazards to walkers, joggers and bicyclists. Such concerns have led neighborhoods to organize in an effort to convince elected officials to take action to alleviate these situations to solve neighborhood traffic problems during their regular meetings.

Proper street design is essential in encouraging lower speeds to maintain the integrity of residential neighborhoods. New streets are designed to minimize through traffic in a neighborhood. Subdivisions are now designed to avoid long straight stretches of streets in new residential areas. Long stretches of streets could encourage higher speeds. Existing residential streets with long stretches of more than 1,000 feet are consistently complaining of higher speeds.

This report presents a Neighborhood Traffic Management and Calming Program aimed at making existing residential streets more livable by reducing traffic speeds and volumes.

1.1 Traffic Calming for Livable Neighborhoods

Traffic calming is the combination of both policies and measures that help decrease the negative impacts to local streets and neighborhoods caused by motor vehicles. Their effectiveness has been proven and many appear to be part of the original street design rather than an afterthought.

Traffic calming techniques were developed to reduce speeding problems and heavy traffic flow on residential streets. By making the residential street more "calm" it makes the neighborhood more livable. Although "livable" in terms of a neighborhood does not have a precise definition, a livable neighborhood can be described as having the following characteristics:

- Ability to feel safe and secure,
- Opportunity to interact with neighbors,
- Ability to experience a sense of home and privacy, and
- A sense of community identification.

In essence, when citizens call to request a stop sign to slow traffic on their street, they are requesting the Town make their street more livable.

Because no single answer for the problem of speeding vehicles on residential streets exists, many different traffic calming techniques have been developed. These techniques range from the traditional, such as radar display boards and selective police enforcement to non-traditional such as street chokers and roundabouts. A discussion of these techniques is found on the following pages. A major component of introducing traffic calming techniques is a comprehensive citizen education/participation campaign. A citizen education/participation campaign encourages the neighborhood to take responsibility for the solution too. Experience has shown that a majority of speeding violations in residential areas are residents who live in the neighborhood.

1.2 Neighborhood Traffic Management Options

A summary of available neighborhood traffic management options is provided in Attachment 1. The information in Attachment 2 provides a brief description of the positive and negative effects of implementing each option. A separate Speed Hump Policy has been developed and is in Attachment 3. The options presented have been chosen for their impact on speeds and volumes on residential streets. Although some of the options could be used on non-residential streets, the focus of the traffic calming program is on local residential streets. The options have been structured into four levels. Level 1 is the least restrictive, while Level 4 is the most restrictive. The overall objectives for the Neighborhood Traffic Management program are:

1. Improving neighborhood livability by mitigating the impact of vehicular traffic on residential neighborhoods.

2. Promotion of safe and pleasant conditions for motorists, bicyclists, pedestrians and residents on neighborhood streets;

3. Encouraging citizen involvement and effort in neighborhood traffic management activities;

4. Making efficient use of Town resources by prioritizing traffic management requests; and

5. Supporting the General Plan policy that livability and safety of established residential neighborhoods be protected in transportation operations.

1.3 Current Town Practices

The Town currently undertakes most of the techniques described as Levels 1 and 2 actions. It conducts neighborhood meetings, speed studies, volume studies, other traffic observations and provides enforcement as appropriate. Additionally, all roadway signing and striping are reviewed and modifications or additions made as necessary. The Marshal's and Sheriff's Departments routinely utilize their radar speed trailer on streets where vehicle speeds have been reported as a problem. In some instances the trailer does not appear particularly effective in reducing driver's speeds. However, in other instances speed reductions are clearly noted. In almost all instances the speed trailer deployment is supported by the concerned residents because of a real or perceived decrease in speeds, or by educating the residents to the fact that speeds, are not as high as had been perceived. Overall, the Town's current Levels 1 and 2 efforts are comparable to what is found in most similar communities.

1.4 Proposed Neighborhood Traffic Management Process

Traffic calming techniques works best when incorporated into a "traffic calming" or "neighborhood traffic management program." Successful programs include the planning process, overall community participation and local authority support. Because residents are the main initiators of traffic calming requests, they need to be part of the process as much as possible. By developing a program early on that addresses neighborhood traffic safety concerns on an area wide basis, it encourages citizens to become actively involved in the improvement process. In this way, the Town and the neighborhood can work together to create more livable neighborhoods.

2. IMPACTS OF TRAFFIC CALMING DEVICES

Before the Town decides to pursue Levels 3 and 4 traffic calming options, it is important that the impacts be carefully considered. While Levels 3 and 4 options can be successful, they can also result in problems more significant than the original concern. This section of the report will describe the possible impacts of Levels 3 and 4 traffic calming tools. In most instances, the benefits are quite obvious and predictable while the disadvantages can be much more unexpected. Consequently, a greater emphasis has been placed on the potential problems so that decisions can be made in a more fully informed manner.

2.1 Effectiveness of Traffic Calming Devices

Physical actions such as the installation of speed humps, traffic circles, street closures, etc. are almost always successful in forcing traffic to behave in an intended fashion. In certain situations, they can achieve the desired result by utilizing a one-time capital expenditure and generally low ongoing maintenance costs. Levels 3 and 4 traffic calming actions are generally viewed as much more "permanent" solutions than Levels 1 and 2 actions. In most instances the alternative approach to the desired result involves repetitive and costly ongoing Levels 1 and 2 traffic calming actions. There are significant potential benefits to utilizing Levels 3 and 4 traffic calming actions.

2.2 Effect on Emergency Vehicles Response Times

Any traffic calming tool that might be effective because it physically controls traffic generally has a much more negative impact on several classes of emergency vehicles. The Town, as well as its residents and businesses, place a very high priority on minimizing emergency response times. Installation of most physical traffic calming tools can significantly worsen emergency response time. This is especially true for fire apparatus and ambulances. Because of the heavy weight of fire engines and the delicate instruments and patients within ambulances, these vehicles must almost come to a complete stop when they encounter a hump, dip or sharp curve. Creating humps, dips and sharp curves is often precisely the objective being sought by many of the traffic calming tools. While these maneuvers will cause moderate discomfort and delay for normal passenger vehicles, they cause a much greater problem for emergency response vehicles.

2.3 Traffic Diversion

Another concern is that in many instances implementing traffic calming devices would likely move the problem rather than solve the problem. In most instances the placing of impediments on a particular neighborhood street may merely divert some or all of that traffic to other neighborhood streets.

2.4 Impacts to Transit and Utility Vehicles

Some of the traffic calming options in Levels 3 and 4 could potentially have severe impacts on transit routes and utility vehicles such as trash trucks. Providers of these services will have to be consulted whenever neighborhoods are candidates for Level 3 and 4 options.

2.5 Considerations for Other Roadway Users

In addition to the safety concerns already discussed in this report, Levels 3 and 4 traffic calming actions can often have unintended negative safety impacts on certain roadway users. They can result in worsening the situation for a range of roadway users such as bicyclists, roller skaters, skate boarders, joggers, pedestrians and parked cars.

2.6 Noise Impacts

The noise impact to adjacent residents resulting from vehicles braking, going over and around traffic calming devices can have a major impact on the acceptability of these devices by residents living closest to them. The unanimous support of residents living immediately adjacent to locations where physical changes are proposed will be essential to the success of any project.

2.7 Loss of Parking

It is often necessary to prohibit on-street parking in the immediate vicinity of the option in order to accommodate the realigned vehicle path. There are also significant on-street parking impacts from several options in Levels 3 and 4.

2.8 Liability Exposure Implications

Many Level 3 and 4 traffic calming actions can also result in varying degrees of liability exposure to the Town. The most likely source of increased liability exposure would be that resulting from Town implementation of traffic calming action. This exposure would probably stem from two general categories of negative impacts. The first would be liability which might arise from the negative impact to emergency vehicle response times. Delay of emergency response could result in a civil action from an injured party with allegations that the emergency vehicle response was delayed by traffic calming devices.

It is also possible that traffic calming devices themselves might result in damage or injury. Certainly if a traffic calming device were not properly designed with all appropriate signing and pavement markings, liability exposure could result. But there is also potential liability from properly designed and installed traffic calming actions. If the device itself causes driver behavior which results in damage to property or injury, the Town could potentially be held liable. For instance, if a driver maneuvered in order to avoid a traffic calming device and as a result struck a parked car, pedestrian, cyclist, etc., there is the potential for Town liability exposure. Agencies have been held liable for not maintaining warning signs and markings in excellent condition. These are just a few examples of the potential, unintended, but known negative impacts of traffic calming devices.

2.9 Visual Impacts and Aesthetic Concerns

While some traffic calming devices can have favorable aesthetic impacts, others can be, by their nature, unsightly. Devices such as speed humps and diverters most often pose no opportunity for the incorporation of aesthetics and can have negative visual impacts. Virtually all Level 3 and 4 traffic calming actions require reflective devices, signs and striping which may negatively effect the aesthetics of a neighborhood.

2.10 Increased Maintenance Costs

Street maintenance costs will increase in two areas. Landscaping associated with such devices as traffic circles, chokers and slow points will require regular maintenance. Devices such as speed humps will have to be reinstalled whenever a residential street is overlayed which will increase costs.

ATTACHMENT 1

SUMMARY OF NEIGHBORHOOD TRAFFIC MANAGEMENT AND CALMING OPTIONS

NEIGHBORHOOD TRAFFIC MANAGEMENT AND CALMING OPTIONS [1]
LEVEL 1

LEVEL	TRAFFIC MANAGEMENT OPTION	FIGURE NO.	SPEED REDUCTION	VOLUME REDUCTION/ TRAFFIC DIVERSION	NOISE POLLUTION	LOSS OF ON STREET PARKING	ACCESS RESTRICTION	BUS ROUTE AND EMERGENCY VEHICLE RESPONSE IMPACTS	INCREASE IN STREET MAINTENANCE
1	Higher Visibility Crosswalks	2-2	Possible	No	No Change	None	None	None	Yes
1	Neighborhood Meeting	2-3	Possible	Possible	No Change	None	None	None	No
1	Police Enforcement	2-4	Yes	Possible	No Change	None	None	None	No
1	Police Presence	2-5	Possible	No	No Change	None	None	None	No
1	Posting 25 MPH Speed Limits/ Radar Warning Signs	2-6	Possible	No	No Change	None	None	None	No
1	Radar Trailer	2-7	Yes	No	No Change	None	None	None	No
1	Striping Narrower Lanes	2-8	Yes	Possible	No Change	None	None	None	Yes

[1] Attachment 2 provides more detailed descriptions as well as the advantages and disadvantages of each option
[3] Speed humps have to be reinstalled each time a street is overlayed.

NEIGHBORHOOD TRAFFIC MANAGEMENT AND CALMING OPTIONS [1]
LEVEL 2

LEVEL	TRAFFIC MANAGEMENT OPTION	FIGURE NO.	SPEED REDUCTION	VOLUME REDUCTION/ TRAFFIC DIVERSION	NOISE POLLUTION	LOSS OF ON STREET PARKING	ACCESS RESTRICTION	BUS ROUTE AND EMERGENCY VEHICLE RESPONSE IMPACTS	INCREASE IN STREET MAINTENANCE
2	Commercial Vehicle Restrictions	2-9	Possible	Yes	Yes	None	Yes	None	No
2	Neighborhood Monitoring Program	2-10	Yes	No	No Change	None	None	None	No
2	Stop Sign Reversal	2-11	Possible	No	Increase	None	None	None	No

NEIGHBORHOOD TRAFFIC MANAGEMENT AND CALMING OPTIONS [1]
LEVEL 3

LEVEL	TRAFFIC MANAGEMENT OPTION	FIGURE NO.	SPEED REDUCTION	VOLUME REDUCTION/ TRAFFIC DIVERSION	NOISE POLLUTION	LOSS OF ON STREET PARKING	ACCESS RESTRICTION	BUS ROUTE AND EMERGENCY VEHICLE RESPONSE IMPACTS	INCREASE IN STREET MAINTENANCE
3	Chokers	2-12	Yes	Possible	No Change	Yes	None	Yes	No
3	Gateways	2-13	Yes	Yes	Decrease	None	Yes	None	No
3	Intersection Channelization	2-14	Yes	Possible	No	Yes	None	No	Possible
3	Median Barrier	2-15	Possible	Yes	Decrease	None	Right Turn Only	Yes	No
3	Neckdowns	2-16	Possible	Possible	No	Yes	None	Some Constraint	Yes
3	Rumble Strips	2-17	Yes	Possible	Yes (High)	None	None	None	Yes
3	Raised Intersections	2-18	Yes	No	Yes	Yes	None	Yes	Yes
3	Roundabouts	2-19	Yes	Possible	No Change	Yes	None	Some Constraint	Yes
3	Serpentine	2-20	Yes	Possible	Increase Possible	Yes	None	Yes	Possible

NEIGHBORHOOD TRAFFIC MANAGEMENT AND CALMING OPTIONS [1]
LEVEL 3 - Continued

LEVEL	TRAFFIC MANAGEMENT OPTION	FIGURE NO.	SPEED REDUCTION	VOLUME REDUCTION/ TRAFFIC DIVERSION	NOISE POLLUTION	LOSS OF ON STREET PARKING	ACCESS RESTRICTION	BUS ROUTE AND EMERGENCY VEHICLE RESPONSE IMPACTS	INCREASE IN STREET MAINTENANCE
3	Single Lane Slow Point 2-21	2-21	Yes	Possible	Unknown	Yes	None	Yes	Yes
3	Speed Humps	2-22	Yes	Yes	Increase	Yes	None	Yes	Yes[3]
3	Turning Restrictions Using Delineators	2-23	Possible	Yes	Decrease	None	Yes	Yes	Yes
3	Two Lane Slow Point	2-24	Yes	Possible	Increase Possible	Yes	None	Some Problems	Possible

[3] Speed Humps have to be installed each time a street is overlayed.

NEIGHBORHOOD TRAFFIC MANAGEMENT AND CALMING OPTIONS [1]
LEVEL 4

LEVEL	TRAFFIC MANAGEMENT OPTION	FIGURE NO.	SPEED REDUCTION	VOLUME REDUCTION/ TRAFFIC DIVERSION	NOISE POLLUTION	LOSS OF ON STREET PARKING	ACCESS RESTRICTION	BUS ROUTE AND EMERGENCY VEHICLE RESPONSE IMPACTS	INCREASE IN STREET MAINTENANCE
4	Cul-De-Sac 2-25	2-25	Yes	Yes	Decrease	Yes	Total	Yes	No
4	Diagonal Diverter	2-26	Yes	Yes	Decrease	Possible	Left or Right Turn Only	Yes	No
4	Half Closures	2-27	Possible	Yes	No Change	Yes	Yes	Yes	No
4	Mid Block Street Closures	2-28	Yes	Yes	Decrease	Yes	Yes	Yes	Yes

ATTACHMENT 2

DETAILED DESCRIPTIONS OF NEIGHBORHOOD TRAFFIC MANAGEMENT AND CALMING OPTIONS

Level 1

Higher Visibility Crosswalks

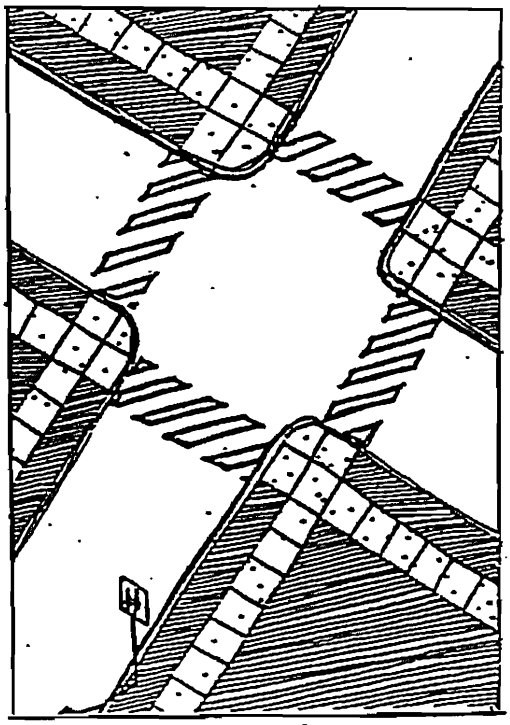
Description: The crosswalk is designed to increase driver recognition by using one of the following techniques: raising the crosswalk to a grade higher than the roadway, designing the crosswalks with paving blocks or contrasting color concrete or painting the crosswalks with "zebra" stripes between the outer boundary stripes. Higher visibility crosswalks would only be used at uncontrolled crosswalks. Some cities have tried using large "dot" markers (similar to the ones found on the internal crosswalks at the Factory Stores) or reflectorized pavement markers. At this time staff is not recommending either technique be used on residential streets.

Positive Aspects:

- Indicates to pedestrians an acceptable or preferred crossing location.
- More visible to drivers then traditional crosswalks.

Negative Aspects:

- Pedestrians may place too high a level of reliance on the ability of a crosswalk to control driver behavior.
- More maintenance required than with traditional crosswalks.



Level 1

Neighborhood Meeting

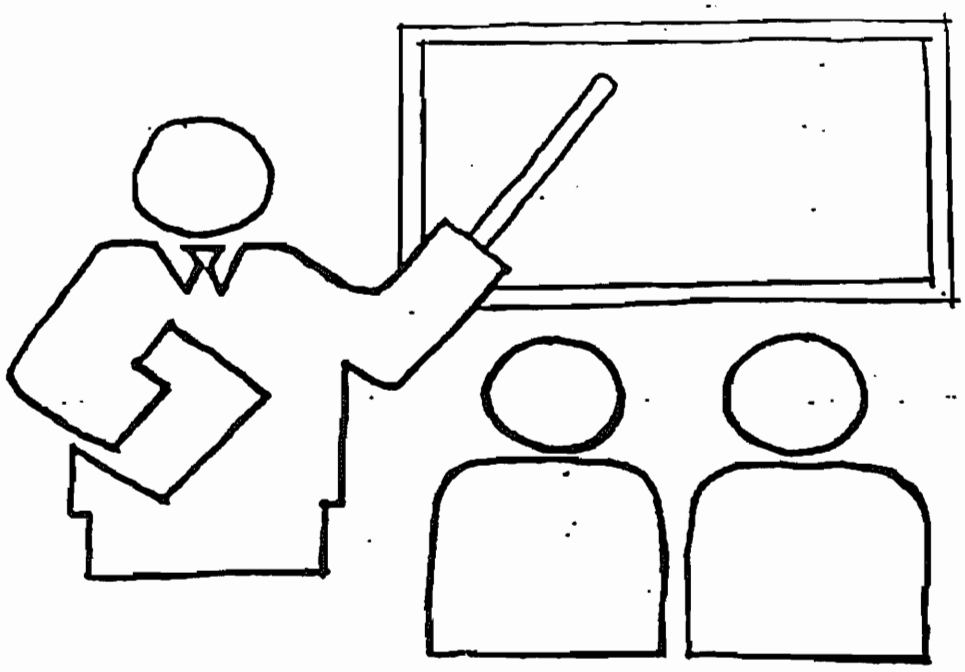
Description: Hold a neighborhood meeting at a time and location convenient for residents to attend and express their concerns. The meeting would be used to clearly identify the issues of concern.

Positive Aspects:

- Clearly identifies issues of concern
- Allow all residents to air their views
- Establishes clear lines of communication between Town staff and residents

Negative Aspects:

- Meetings have to be focused on specific issues and not allowed to become a forum to address all the Town's problems
- Potentially time consuming if meetings are repetitious



Level 1

Law Enforcement

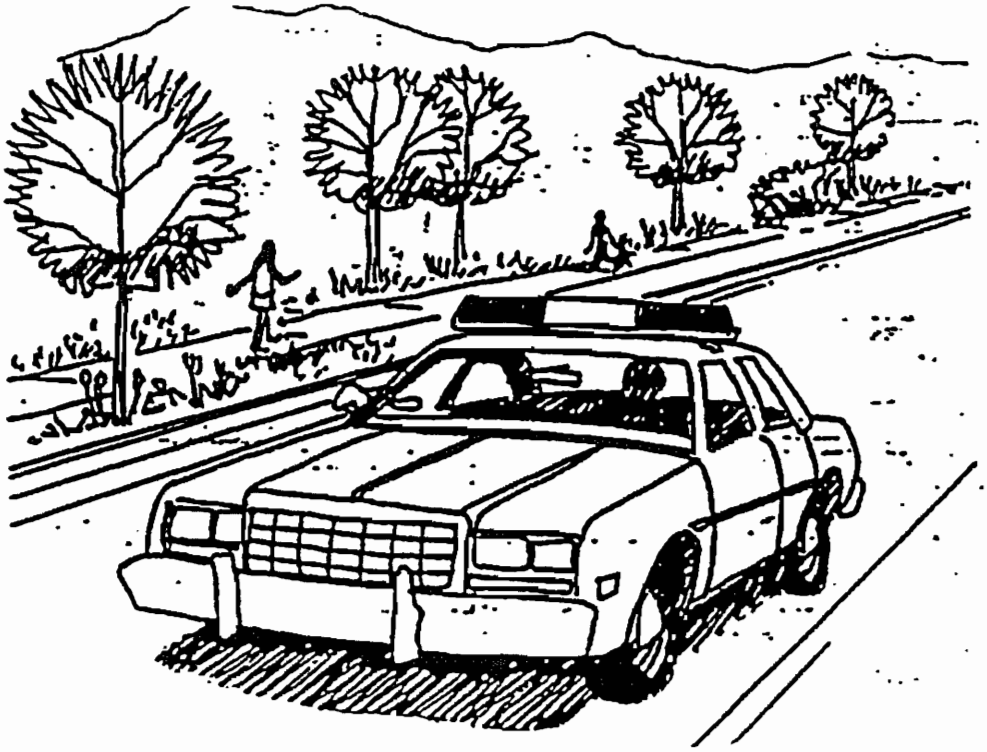
Description: The Law Enforcement Department deploys traffic officers to perform radar enforcement on residential streets for at least two hours a day. A priority list would be provided to the Law Enforcement Department each week based on citizen requests.

Positive Aspects:

- Visible enforcement would reduce speed
- Driver awareness about speeding on residential streets and safety is increased
- Program is flexible and can be tailored to suit the citizens' needs
- Response can be quick and effective

Negative Aspects:

- Long-term benefits of speed reduction are unsubstantiated without regular periodic enforcement



Level 1

Law Enforcement Presence

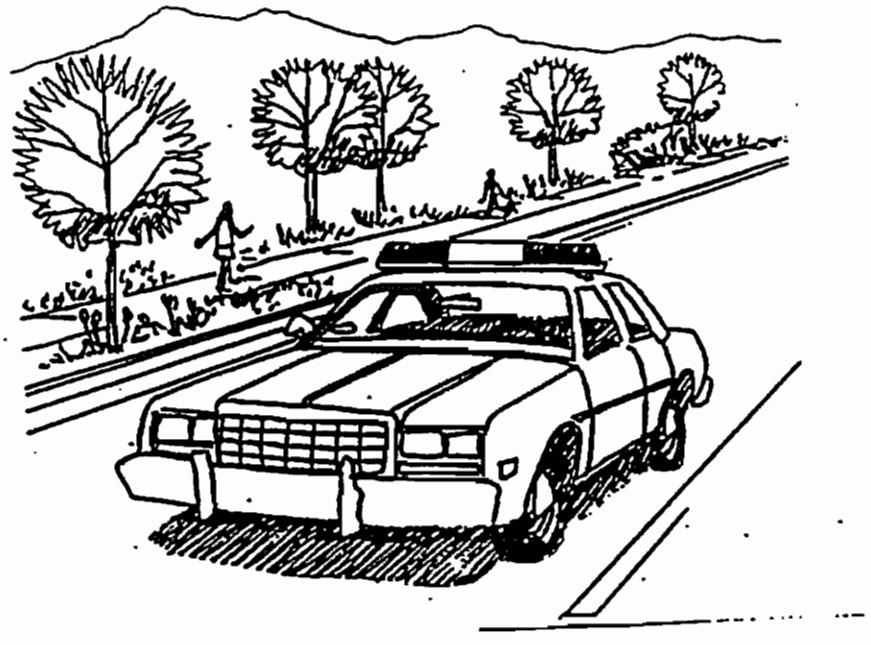
Description: Position a Law Enforcement vehicle on the street as a visible aspect of enforcement to discourage speeding.

Positive Aspects:

- Shows an enforcement presence
- May help to slow vehicle speeds

Negative Aspects:

- Residents may quickly realize that the presence of the vehicle does not result in speeding citations
- Law Enforcement Department resources will be needed to deploy vehicles



Posting 25 mph Speed Limits/Radar Warnings

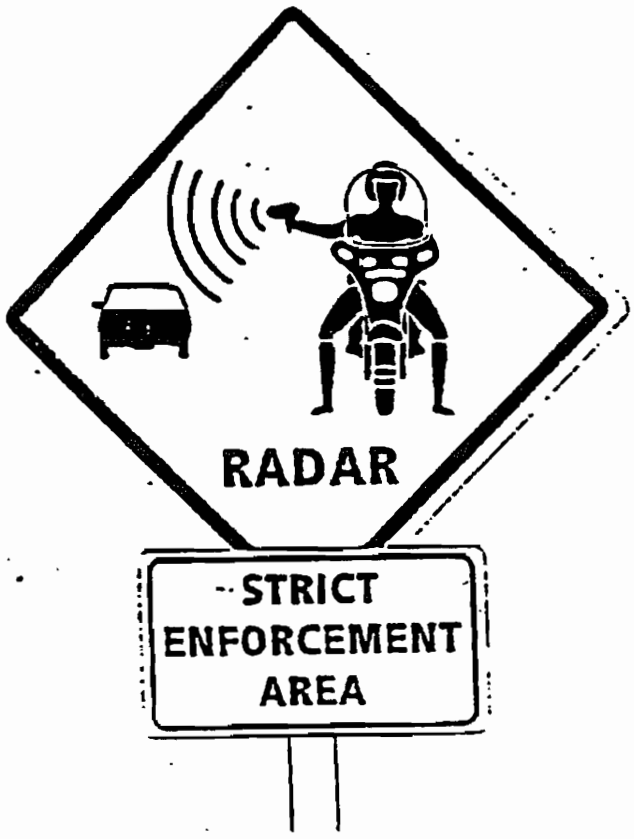
Description: This option involves posting 25 mph speed limit or radar warning signs on the street to regulate the speed of traffic.

Positive Aspects:

- Low cost installation that are popular with residents.
- Reduces traffic speeds if backed up with regular enforcement.

Negative Aspects:

- High potential for violation when not enforced.
- Increases cost of sign maintenance.



Radar Trailer

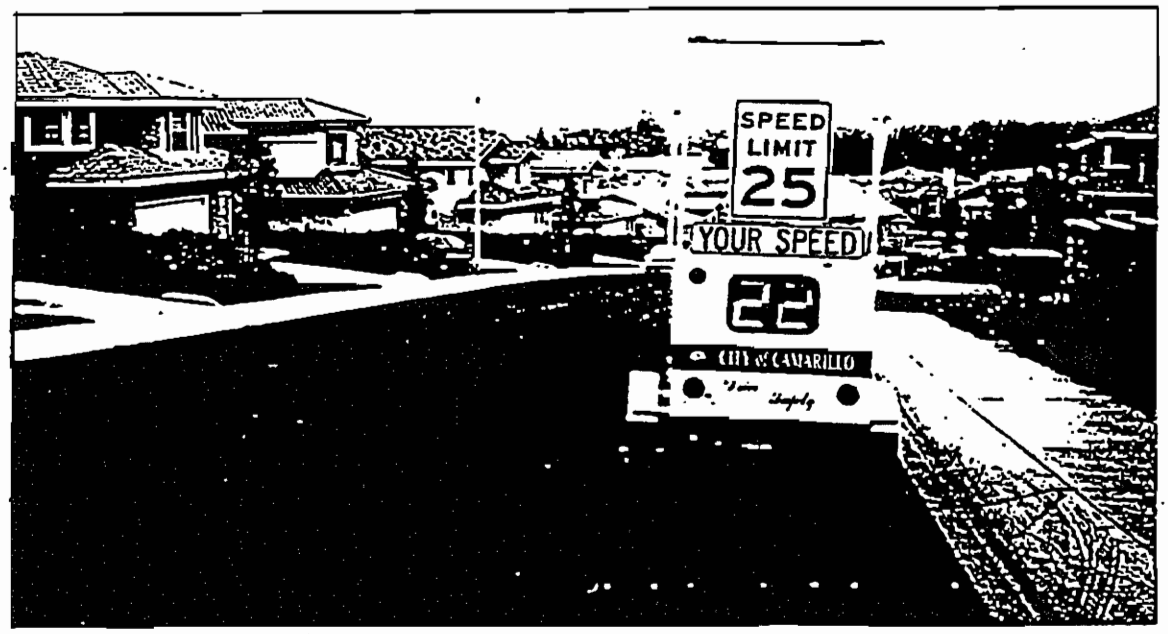
Description: A portable radar speed meter capable of measuring vehicle speed graphically and displaying the speed of the motorist.

Positive Aspects:

- Speeds may be reduced during short intervals where the radar trailer is located.
- An effective public relations and educational tool.

Negative Aspects:

- Not an enforcement tool.
- Not effective on multi-lane roadways that have significant traffic volumes. In these cases there is limited ability to differentiate between more than one approaching vehicle.



Level 1

Narrowing Lanes

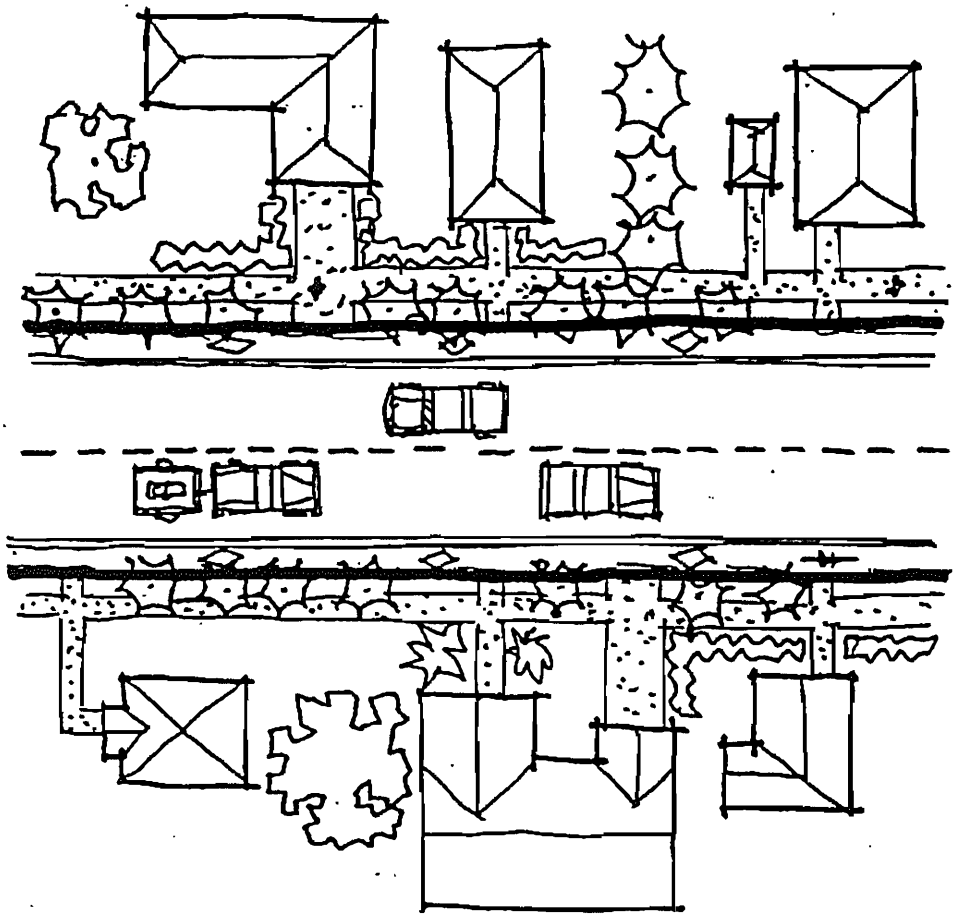
Description: Striping is used to create narrow 10 feet wide lanes. This gives drivers the feel of a narrow street that does not lend itself to high speeds.

Positive Aspects:

- Changes can be quickly implemented.
- The striping can be easily modified if paint is used.
- Speed may decrease and safety is improved through the provision of positive guidance to drivers.

Negative Aspects:

- Would increase regular maintenance.
- Residents do not always perceive striping is an effective tool for speed reduction.
- Cost of resurfacing residential streets will increase.



Level 2

Commercial Vehicle Restrictions

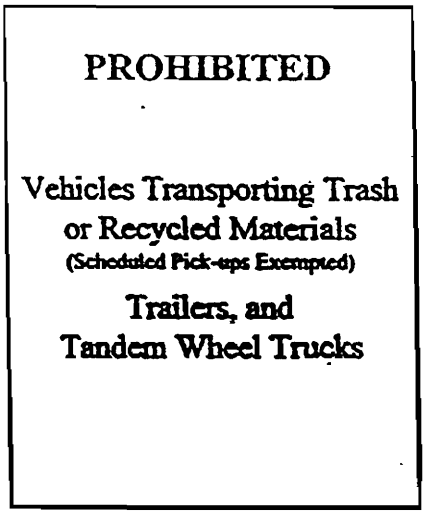
Description: After the adoption of appropriate resolution by the Town Council, post commercial vehicle restrictions on signs and enforce the restrictions.

Positive Aspects:

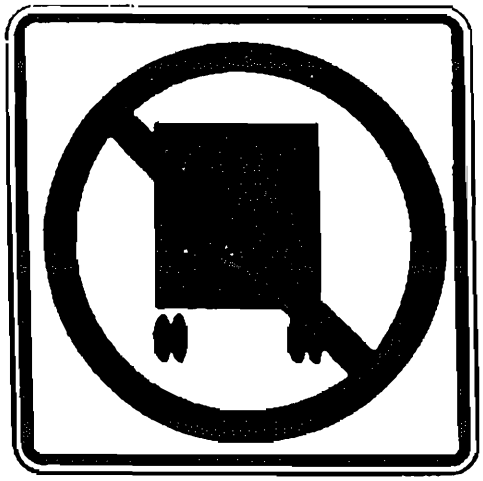
- Restricts commercial vehicles using the street
- Reduces traffic noise speed and volumes

Negative Aspects:

- Requires additional maintenance of signs
- Requires enforcement to be effective



36" X 45"



Level 2

Neighborhood Monitoring Program

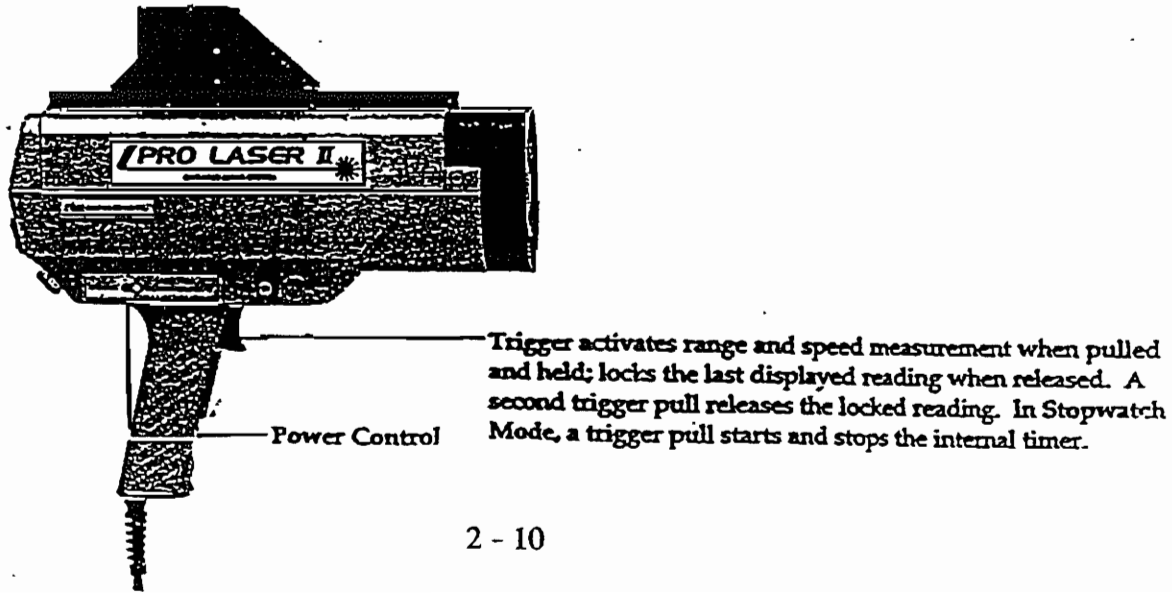
Description: A hand-held radar gun used by Town staff in neighborhoods to determine the amount of speeding and to determine who is speeding. The Town staff would then spend several hours registering the speed of cars passing on the street. The data would be presented to the residents so they have a first hand account of how fast they are going.

Positive Aspects:

- Effect on speeders is limited to within sight distance of the radar gun
- May have long-term effects as neighbors become more aware of who is speeding and interact with each other in social settings
- Speeds may be reduced during short intervals when the radar gun is in use
- An effective public relations and educational tool
- Neighbors feel they are part of the solution

Negative Aspects:

- Not an enforcement tool
- Not effective on multi-lane roadways that have significant traffic volumes. In these cases there is limited ability to differentiate between more than one approaching vehicles



Level 2

Stop Sign Reversal

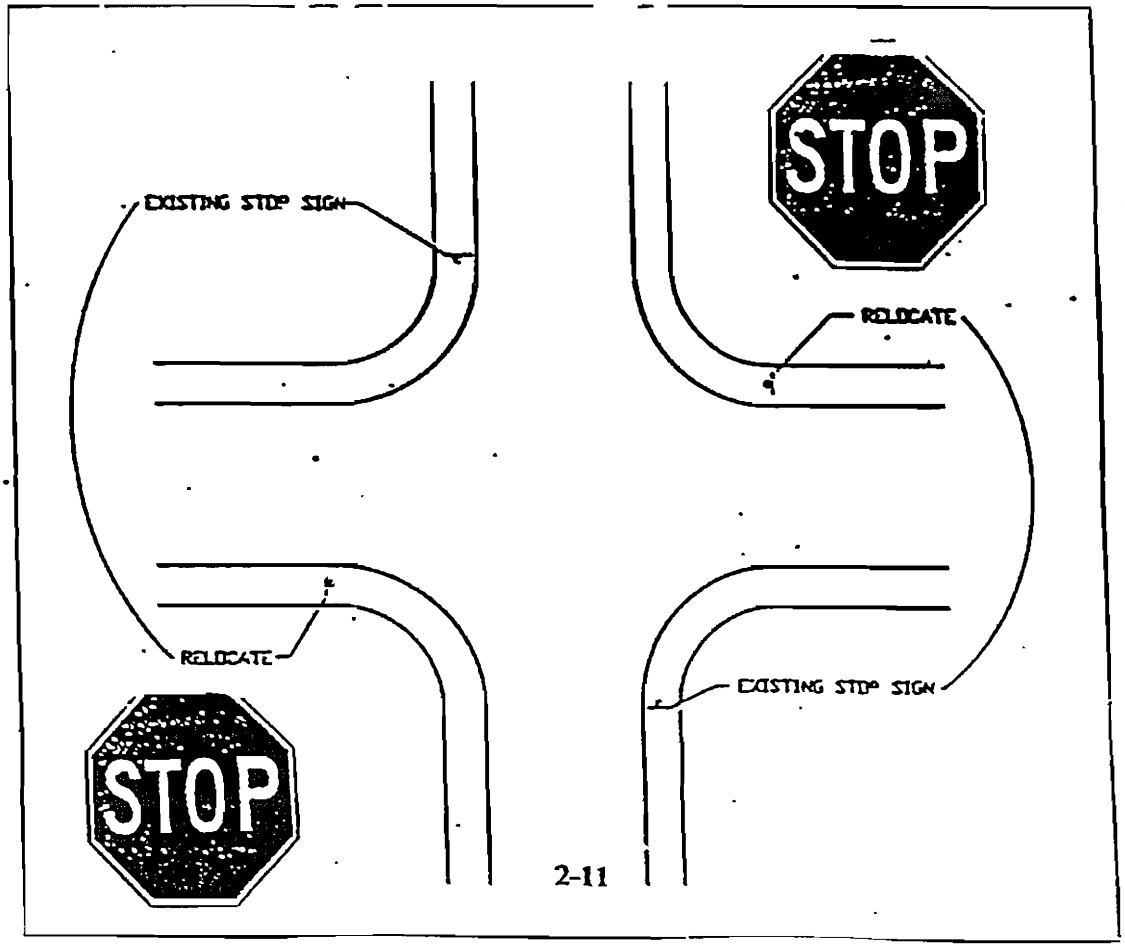
Description: Two stop signs are placed at all four legged intersections in the Town. The signs are placed on the lower volume approaches. If the volumes are balanced, the stop sign locations could be switched to stop the other street.

Positive Aspects:

- Change can be easily made
- Traffic speed may be reduced in the vicinity of the stopped approaches

Negative Aspects:

- The speeds may increase on the unstopped approaches
- There is high potential for violation of stops unless enforced periodically
- Not always favorable to residents immediately adjacent to new stop sign locations
- Potential for rear end accidents is increased in the short term



Level 3

Chokers

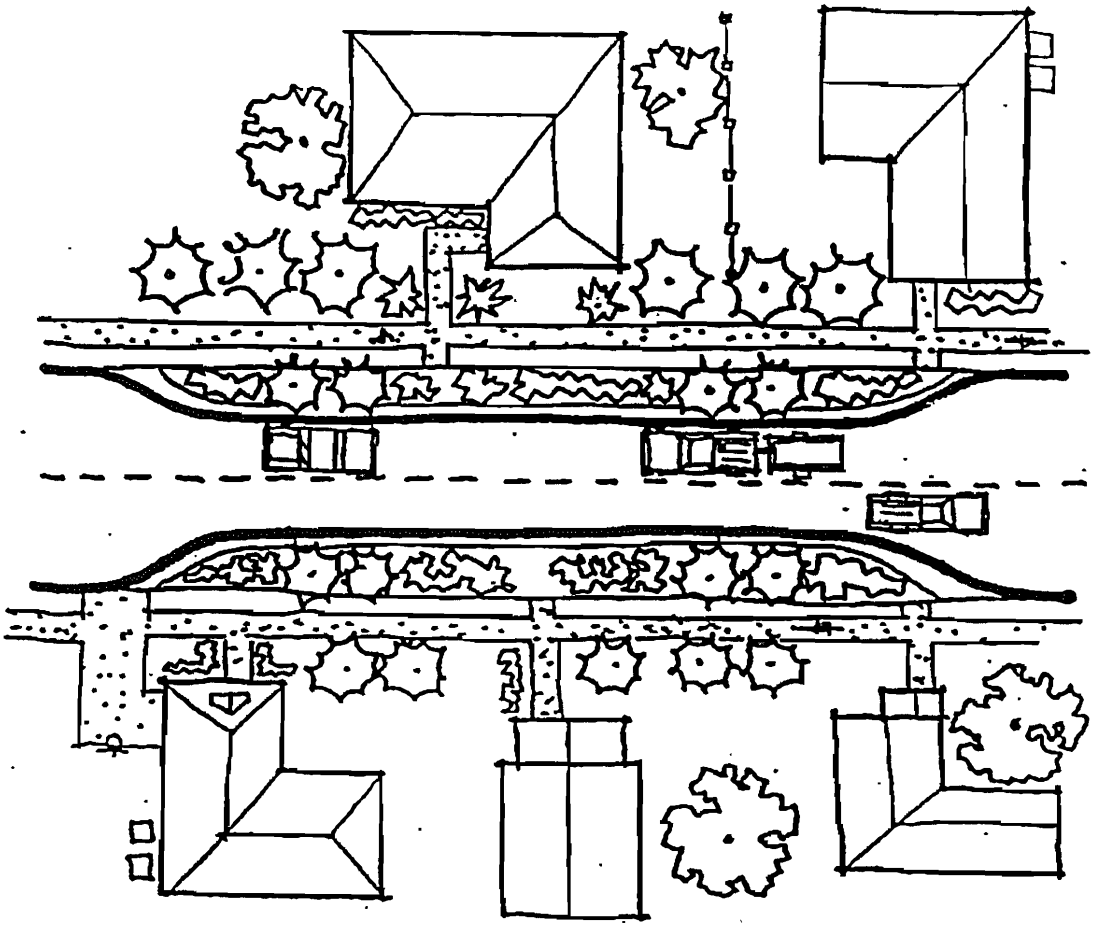
Description: Narrowing of a street at an intersection, mid-block or a segment of a street in order to reduce width of the traveled-way by construction of a wider sidewalk or landscape strip.

Positive Aspects:

- Slight slowing is normally the result.
- Shorter pedestrian crossing distances and better motorist-pedestrian visibility of each other.
- Creates added streetscape area for pedestrians and/or landscaping
- Can discourage truck entry.
- Allows signs to be placed closer to driver's cone of vision.

Negative Aspects:

- Potential obstacle for motorist to run into.
- May impede bicycle mobility and safety.
- May result in loss of curbside parking.
- Can impede legitimate truck movements.
- May require reworking of surface drainage.



Gateways

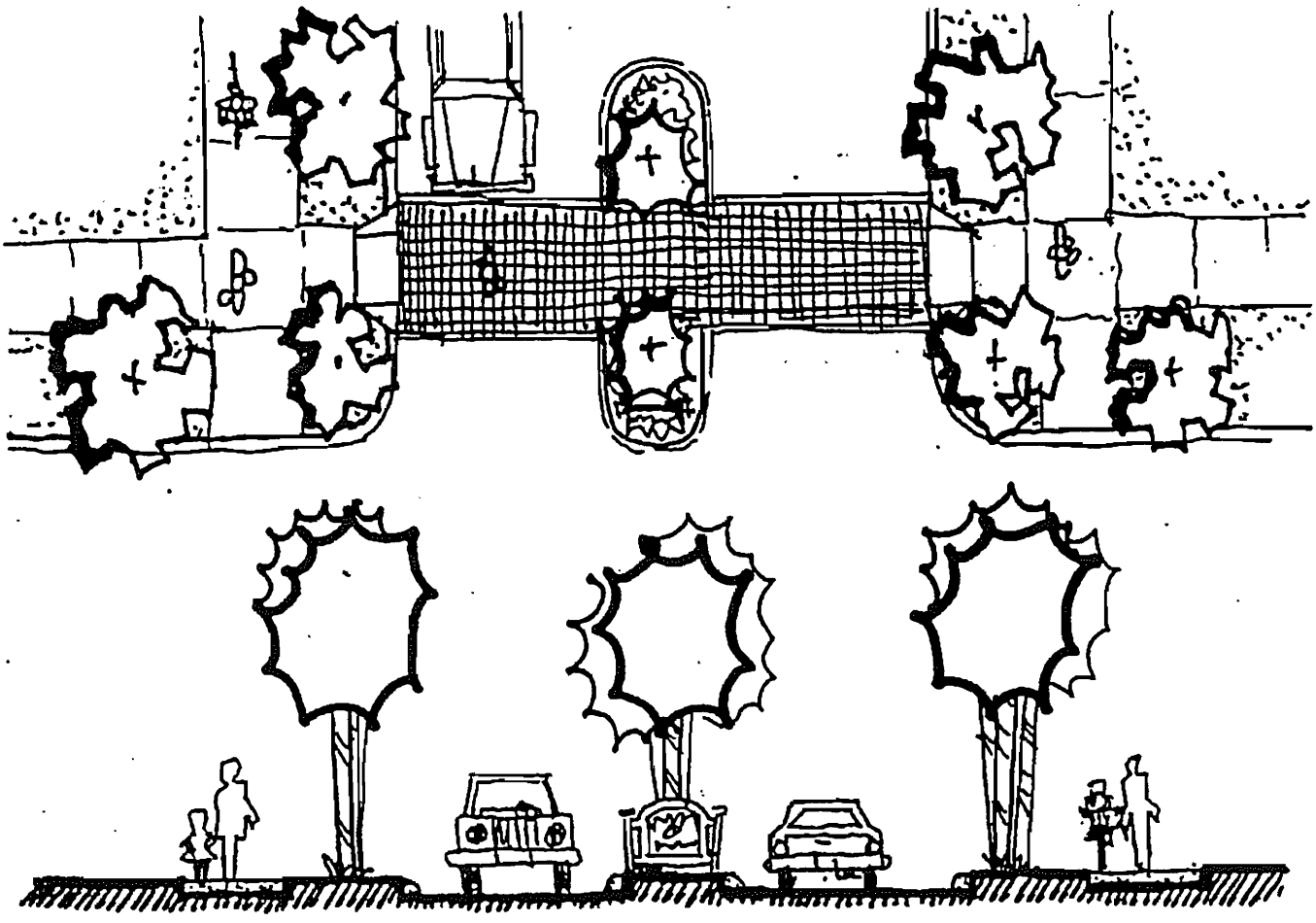
Description: A special entrance feature, similar to a choker, that narrows a street at the intersection in order to reduce width of the traveled-way. This is not a gate. Chokers are usually located within the block or at intersections. Gateways are considered more dramatic and provide identity to a neighborhood. The exact configuration of the gateway treatment will depend upon the location of the gateway, i.e., conflicts with driveways. Medians can also be added to street to slow turning movements and enhance the street.

Positive Aspects:

- Creates an identity to a neighborhood.
- Creates added streetscape area for landscaping or monuments.
- Can discourage truck entry.
- Allows signs to be placed closer to driver's cone of vision.

Negative Aspects:

- Can impede legitimate truck movements.
- Increased maintenance costs.



Level 3

Intersection Channelization

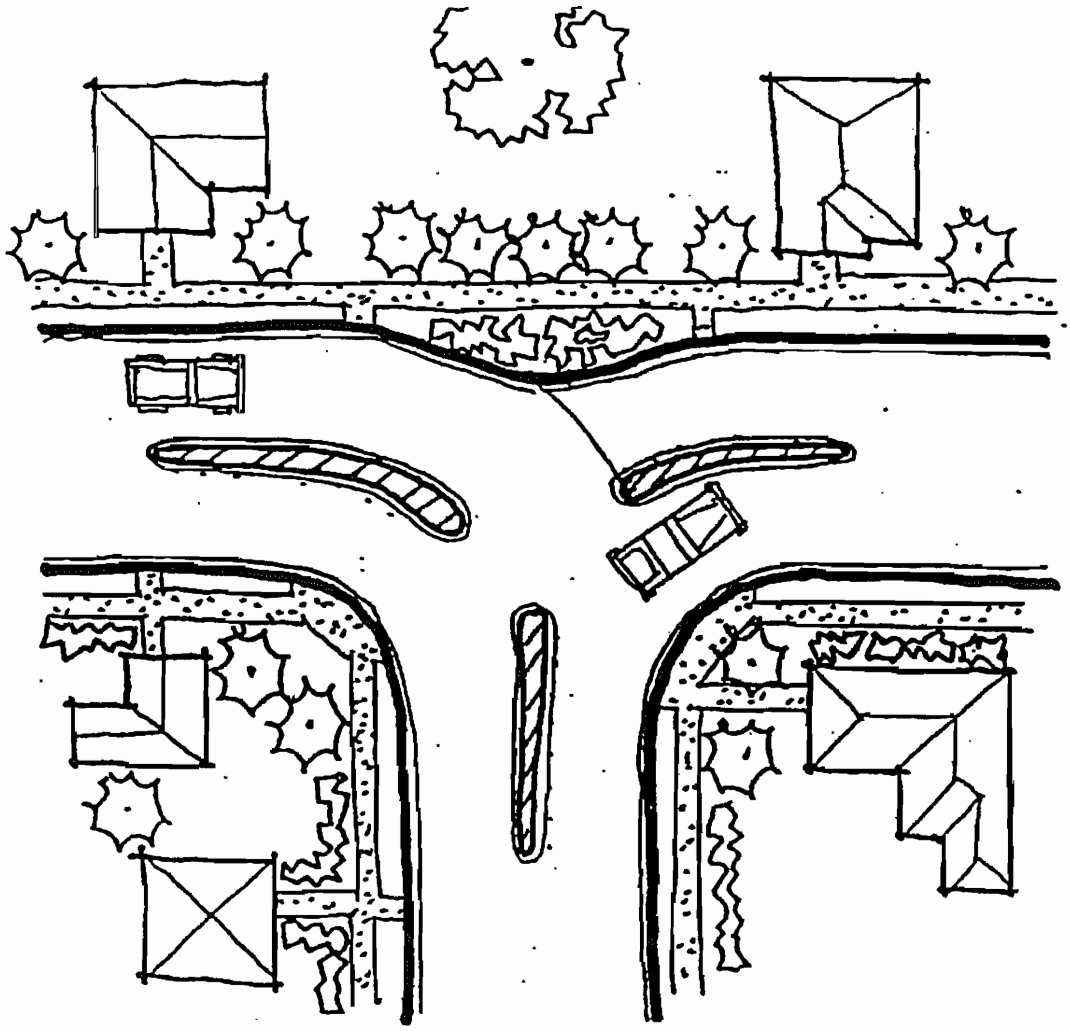
Description: T-intersections are channelized so that vehicles are not traveling in a straight path. This has the effect of slowing vehicles down.

Positive Aspects:

- Slows vehicle speeds.
- No significant impedance of fire and transit service.

Negative Aspects:

- Landscaping and signing/striping maintenance will be required.
- Loss of on-street parking will occur.



Level 3

Median Barrier

Description: A physical barrier on a non-local street which can effectively eliminate left turns from that non-local street onto a local street, and eliminate local street straight-through and left turn traffic across the non-local street. A median barrier can take many forms, ranging from a closely-spaced row of flexible delineator posts to a series of pre-cast curb sections affixed to the pavement to a temporarily-placed but immovable 3' high concrete barrier (K-Rail) to an asphalt/concrete curbed island with or without a decorative landscaping and surface treatment. Costs vary widely among those options. This device is also known as a "worm."

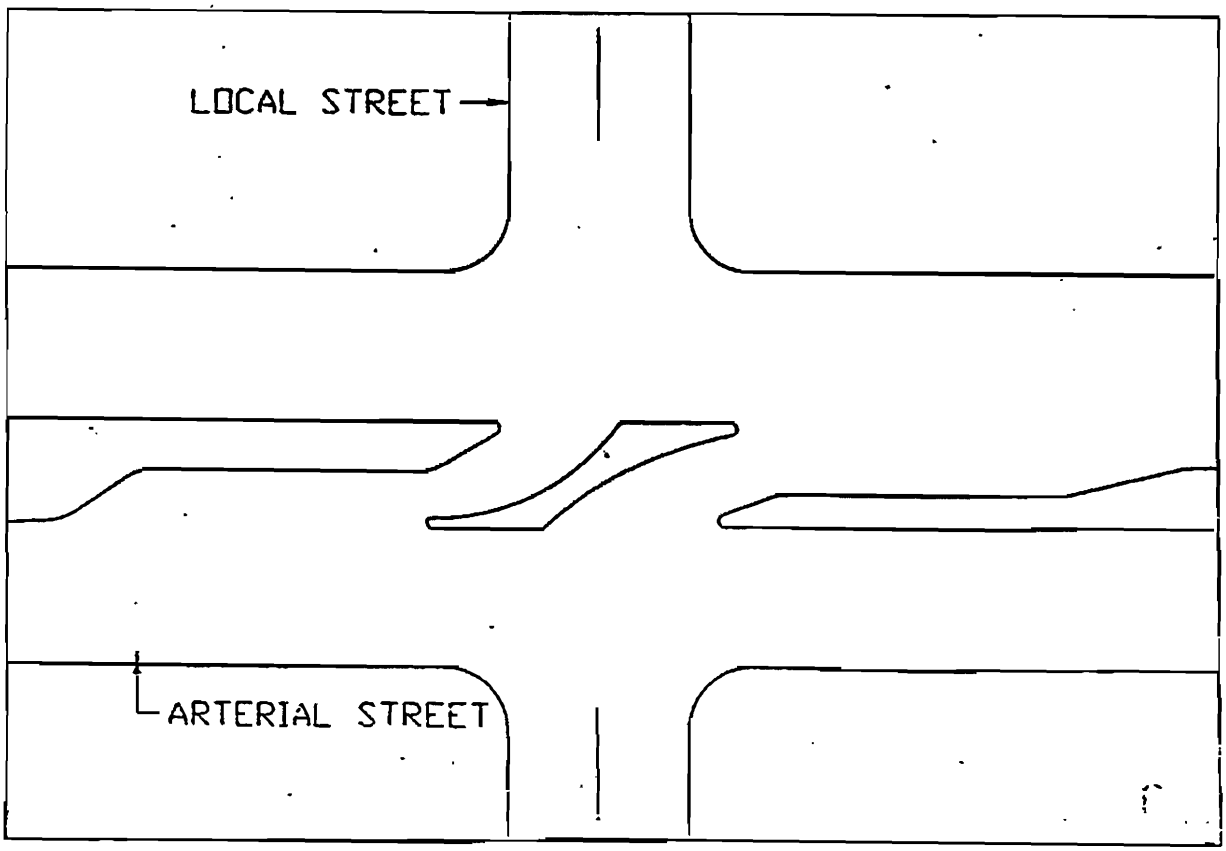
A full median with no breaks can also be used to prohibit all left turns.

Positive Aspects:

- Makes the intersection more safe by reducing the number of conflicting movements.
- Reduces local street volumes.
- Negates the possible need for future expensive traffic signal

Negative Aspects:

- The physical barrier may shift traffic to other locations where left-turn opportunities exist.
- This tool may inconvenience local residents who will be forced to drive longer more circuitous paths to reach their destination.



Level 3

Neckdowns

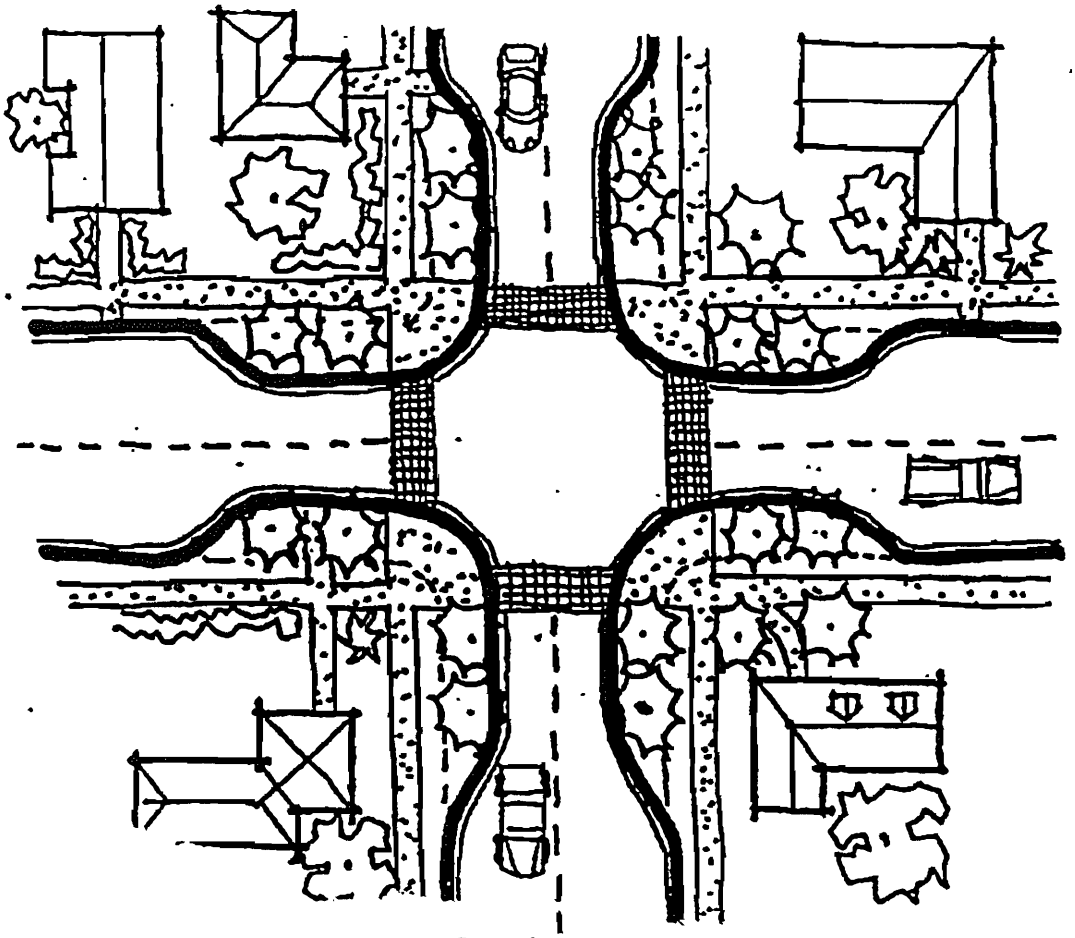
Description: Physical curb reduction of road width at intersections by widening of street corner to discourage cut through traffic and to help define neighborhoods.

Positive Aspects:

- May be aesthetically pleasing, if landscaped
- Good for pedestrians due to shorter crossing
- Can be used in multiple application

Negative Aspects:

- Increased landscaping maintenance
- Landscaping may cause sight distance problems



Level 3

Rumble Strips

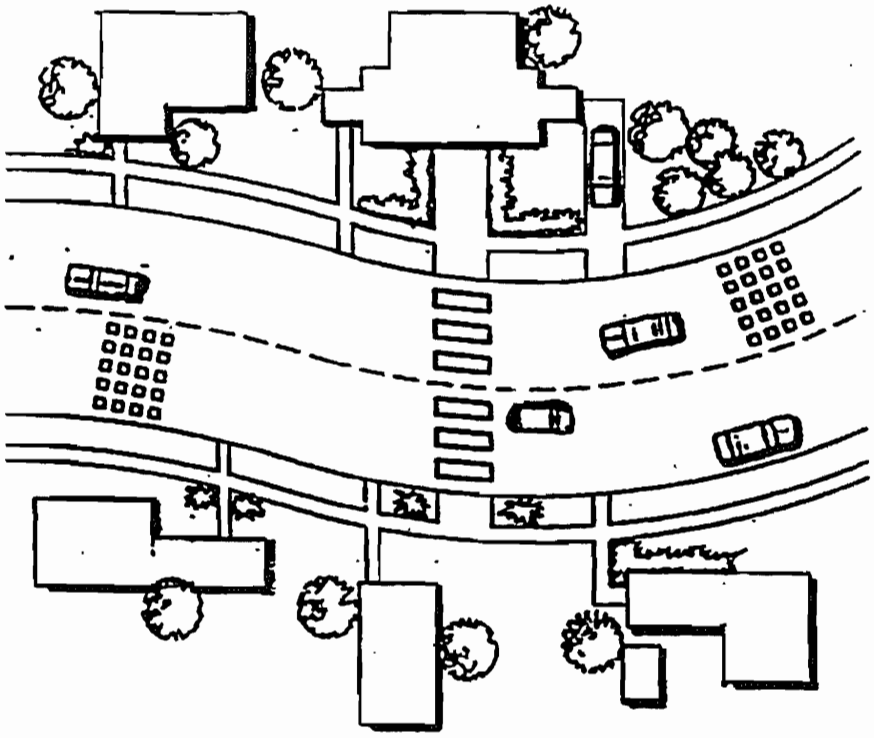
Description: Dots are glued to the pavement to create a strip that causes the vehicle to rumble as it traverses through them. This causes vehicles to slow down.

Positive Aspects:

- Vehicles are slowed down by 5 mph.
- Driver's attention is alerted to heighten safety.
- Low cost installation than can easily be removed or changed.

Negative Aspects:

- Very high level of noise pollution for adjacent residents.
- High maintenance is required to reattach dots to the pavement.



Level 3

Raised Intersections

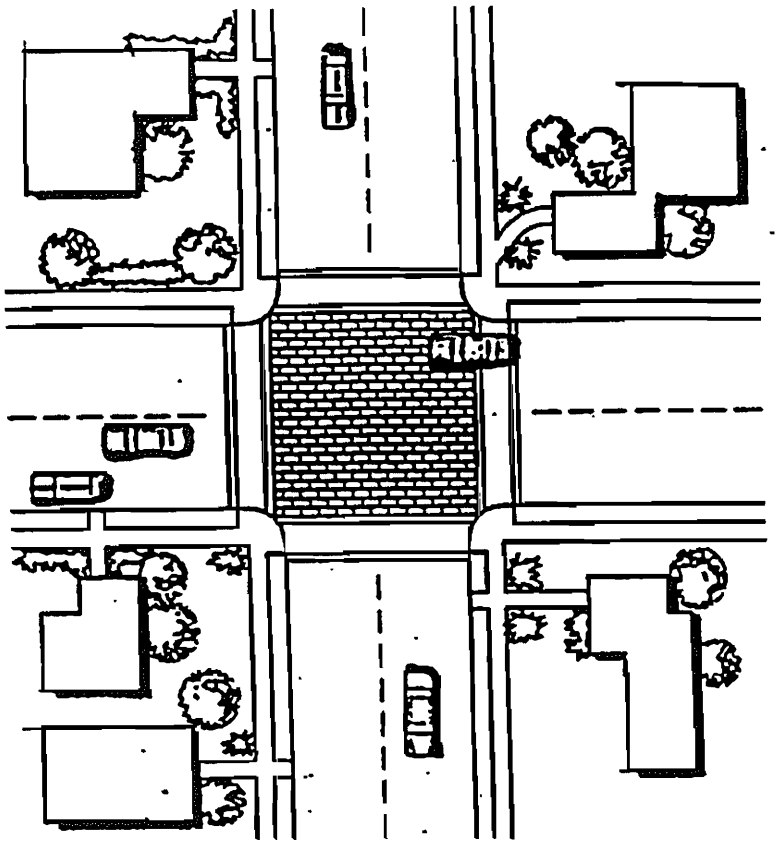
Description: A raised plateau of roadway where roads intersect. The plateau is generally about 4" higher than the surrounding streets. This application is best for locations with high pedestrian volumes with significant safety concerns related to traffic speeds.

Positive Aspects:

- Effective speed reduction.
- Aesthetically pleasing if well designed.
- Good pedestrian safety treatment.
- Can be used on higher or lower volume streets.

Negative Aspects:

- Expensive to construct and maintain.
- Affects emergency vehicle response time.



Level 3

Roundabout

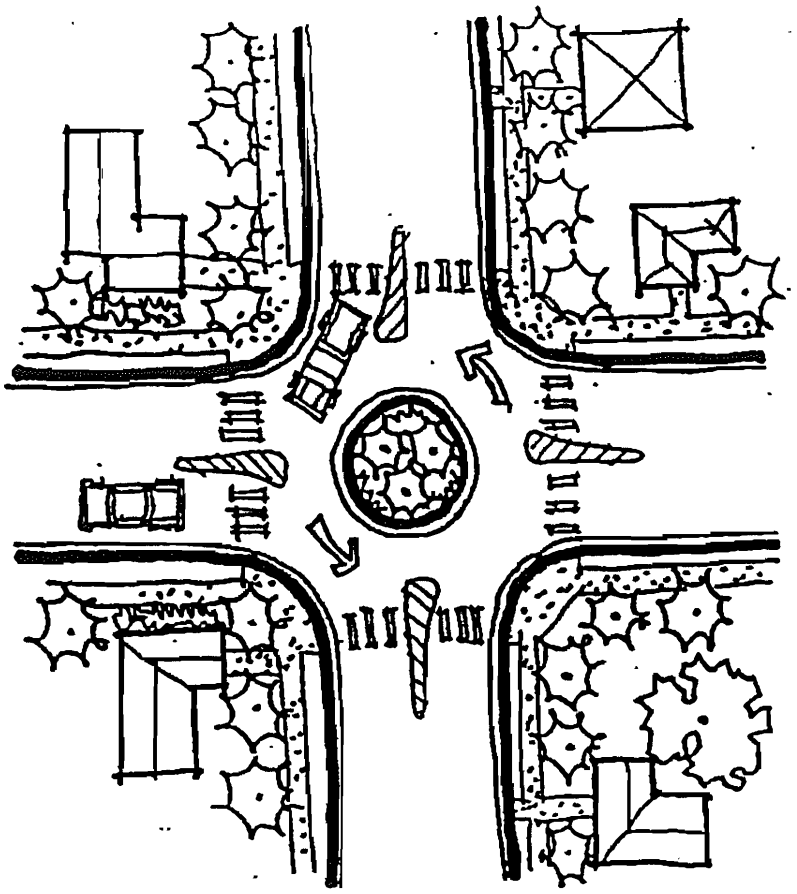
Description: A small circular island placed in the center of an existing local street intersection, thus creating a small "roundabout." Some may also refer to this device as a traffic circle.

Positive Aspects:

- A noticeable reduction in speeds.
- Reduces accident potential.
- Under certain conditions capacity can be increased.
- Can be used instead of stop signs.

Negative Aspects:

- Required safety signing may detract from its aesthetic quality.
- Pedestrians and bicyclist must adjust to less traditional crossing patterns.
- Some parking may be lost on approaches to accommodate vehicles' deflected paths.
- May increase accidents until drivers become accustomed to change.



Level 3

Serpentine

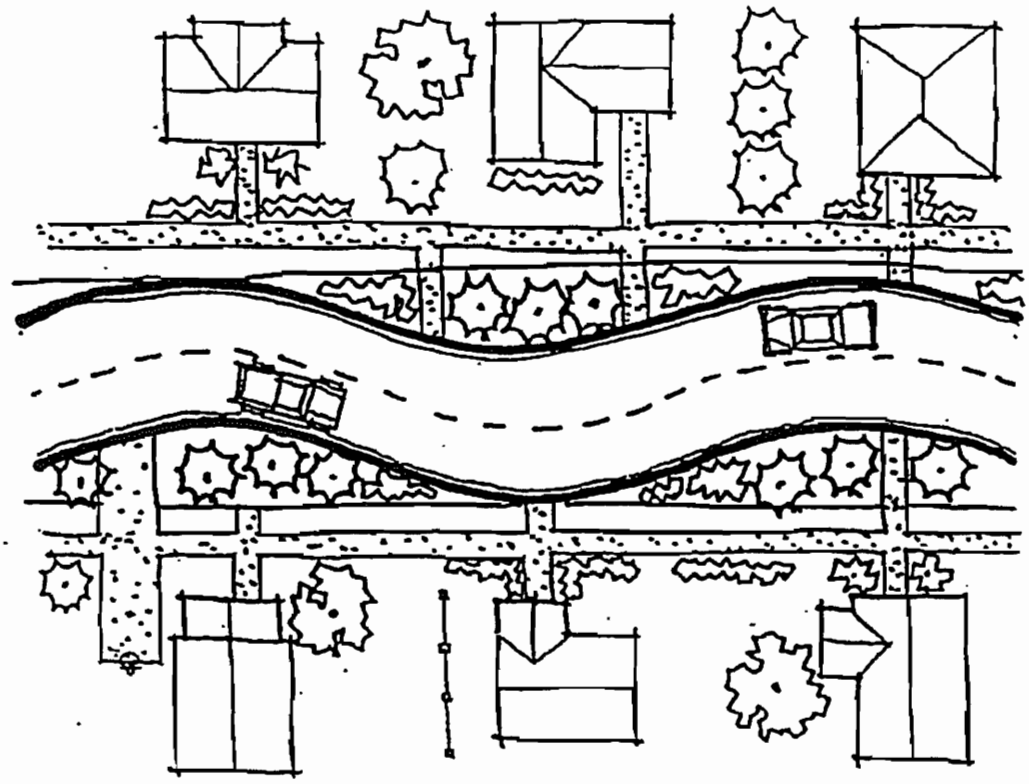
Description: A narrow serpentine road is created for several hundred feet using curbs and landscaping.

Positive Aspects:

- Reduces vehicle speeds.
- May reduce through traffic volumes.

Negative Aspects:

- Increased maintenance for landscaping and pavement
- Significant loss of on-street parking.
- Most residents would have driveway affected by the type of installation.
- Fire and transit services would be affected.



Level 3

Single Lane Slow Points

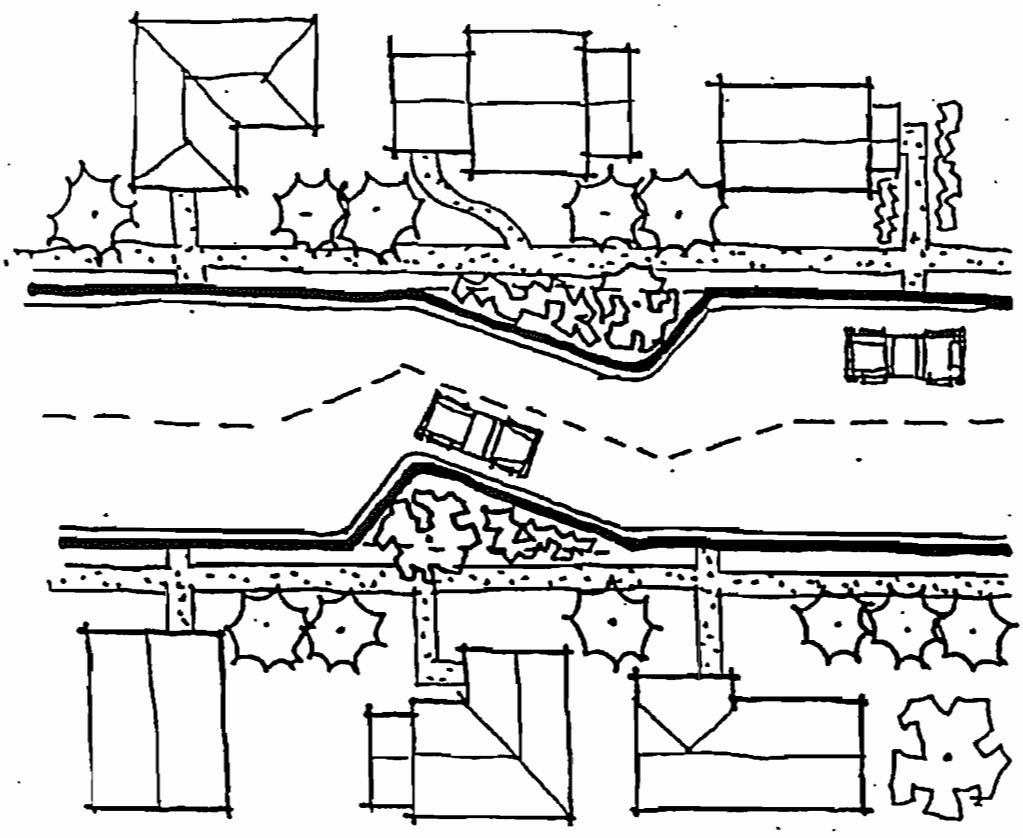
Description: A single lane slow point is created by constructing a landscaped island on side of the street. Vehicles have to slow down to go through the narrow area and to yield to oncoming traffic.

Positive Aspects:

- Reduces vehicular speeds.
- No significant impedance to fire and transit services.

Negative Aspects:

- Loss of on-street parking.
- Landscaping will have to be maintained.
- Potential for head-on collisions.



Level 3

Speed Humps

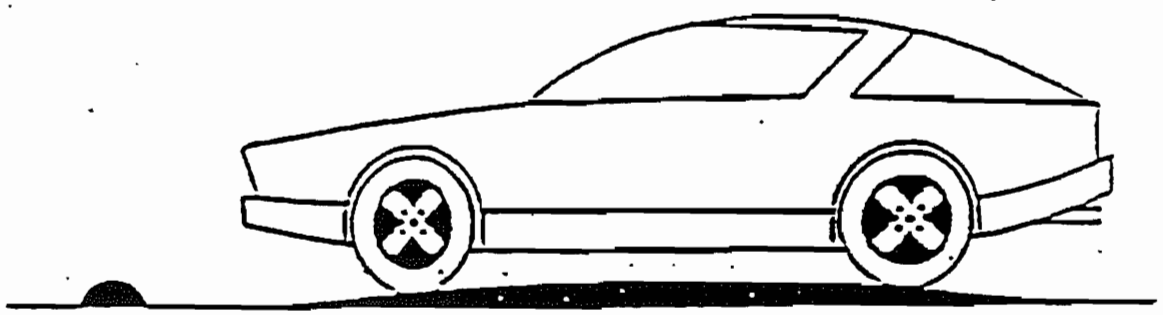
Description: Mounds of paving material placed across a roadway for the purpose of causing motorists to reduce their operating speed while driving on the roadway.

Positive Aspects:

- Reduces speed.
- Can cause traffic to shift to arterial system and no longer cut through the neighborhood.

Negative Aspects:

- Can cause traffic to shift to parallel residential streets.
- Affects emergency response times
- Contents of vehicles can be jarred.
- Increase in noise adjacent to hump.



SPEED HUMP

Level 3

Turn Restriction Using Delineators

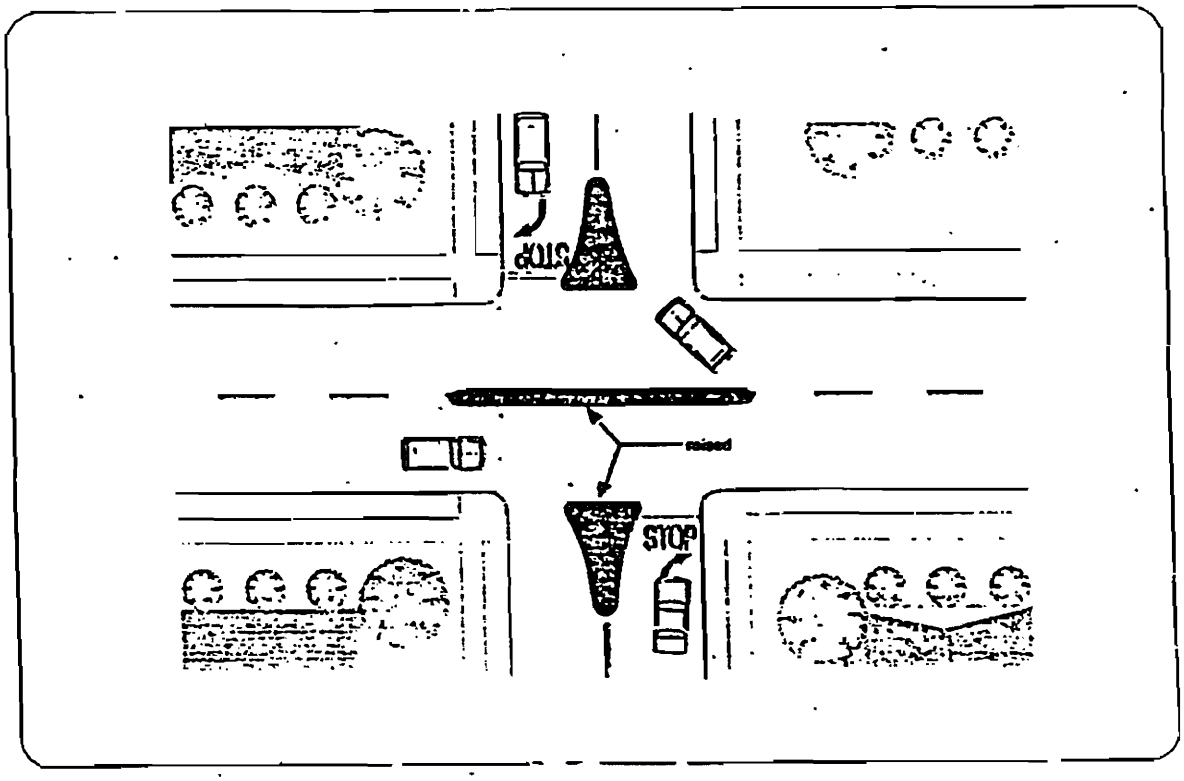
Description: Delineators glued to the pavement surface are used to create a barrier to prevent vehicles from making certain movement in and out of a local street. The delineators are typically placed along the centerline of the major collector street.

Positive Aspects:

- Reduces through volume of traffic
- Reduces rear-end and left-turn accidents at major or collector street intersection with local streets
- Low cost installation that can be easily removed or changed

Negative Aspects:

- Little reduction in traffic speeds
- Could potentially make it more circuitous for residents to reach their destinations
- May divert traffic onto adjacent streets



Level 3

Two Lane Angled Slow Point

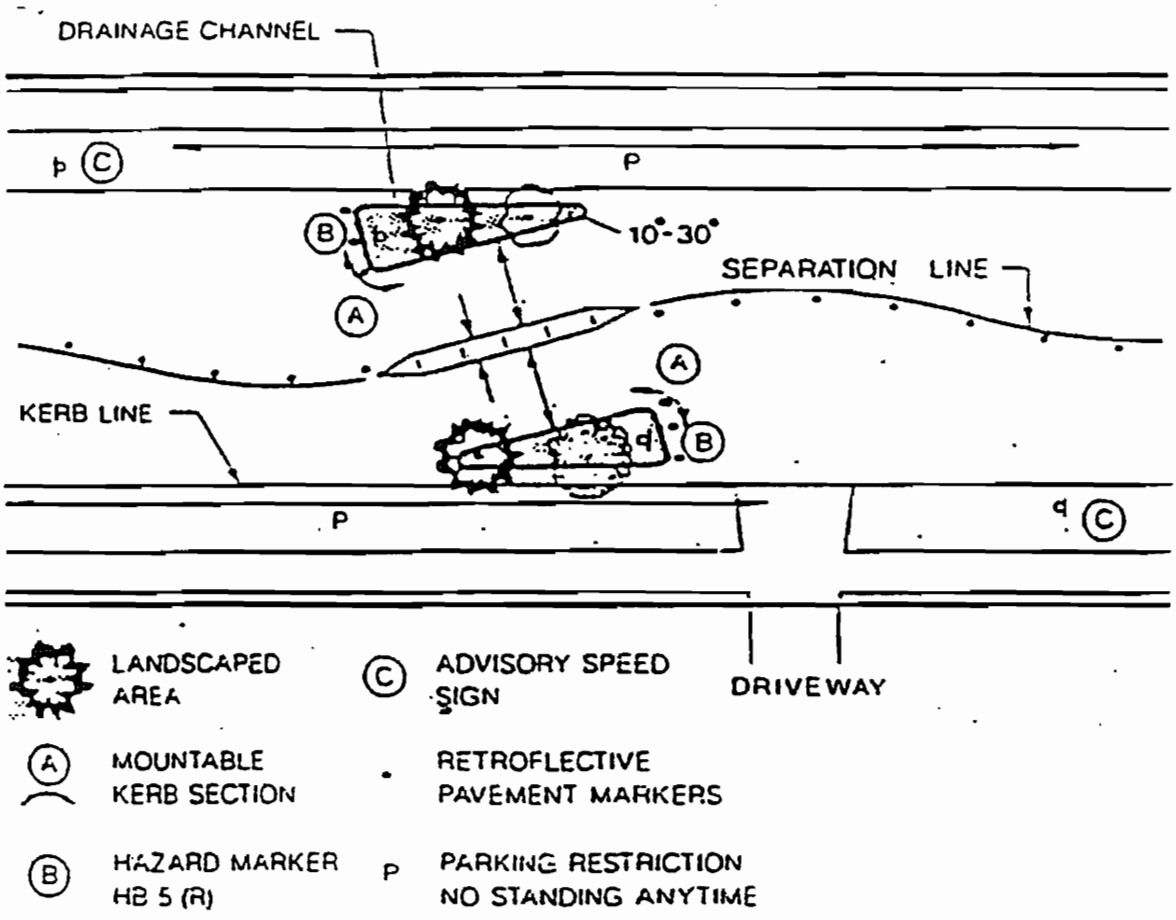
Description: Three islands are used to create an angled path of travel for vehicles. The effect of angling the travel path slows vehicles down. The volume of traffic may well be unaffected. The islands adjacent to the curb are typically landscaped.

Positive Aspects:

- Slows vehicle speeds.
- Fire and transit vehicles are not impeded significantly.

Negative Aspects:

- Loss of on-street parking
- Landscaping and signing/striping has to be regularly maintained.



Level 4

Cul-de-sac

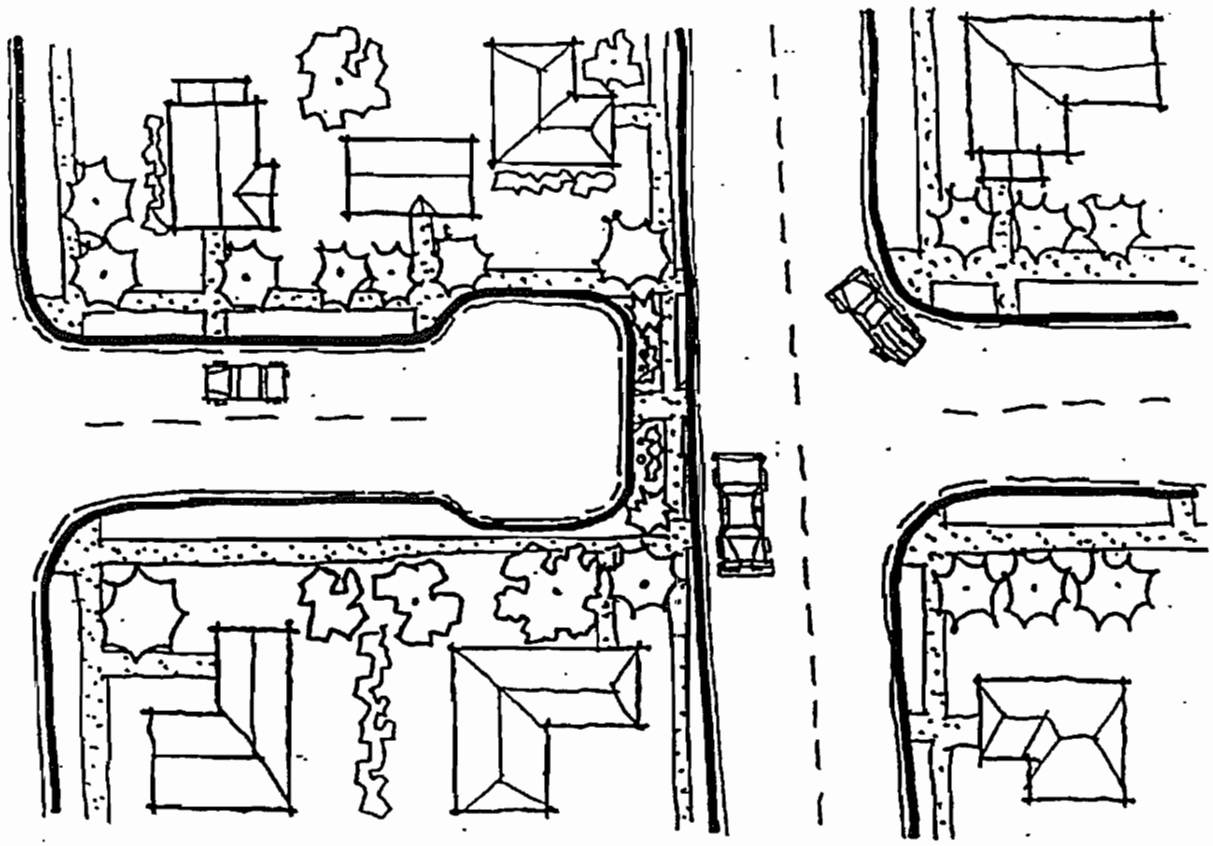
Description: Complete closure of a street either at an intersection or at a mid-block location.

Positive Aspects:

- Very effective at eliminating most of the previously speeding traffic on the block.
- Very effective at reducing volumes.
- Can be landscaped for an attractive effect to convey street discontinuity.
- Mid-block type can be effectively used where abutting land uses change.
- Improved traffic safety.

Negative Aspects:

- Can negatively affect response times for emergency service.
- In large neighborhoods, can shift a problem elsewhere unless a strategic pattern of cul-de-sacs are used.
- Can generate confusion on the part of users unless signed carefully.
- May inconvenience local residents.



Level 4

Diagonal Diverter

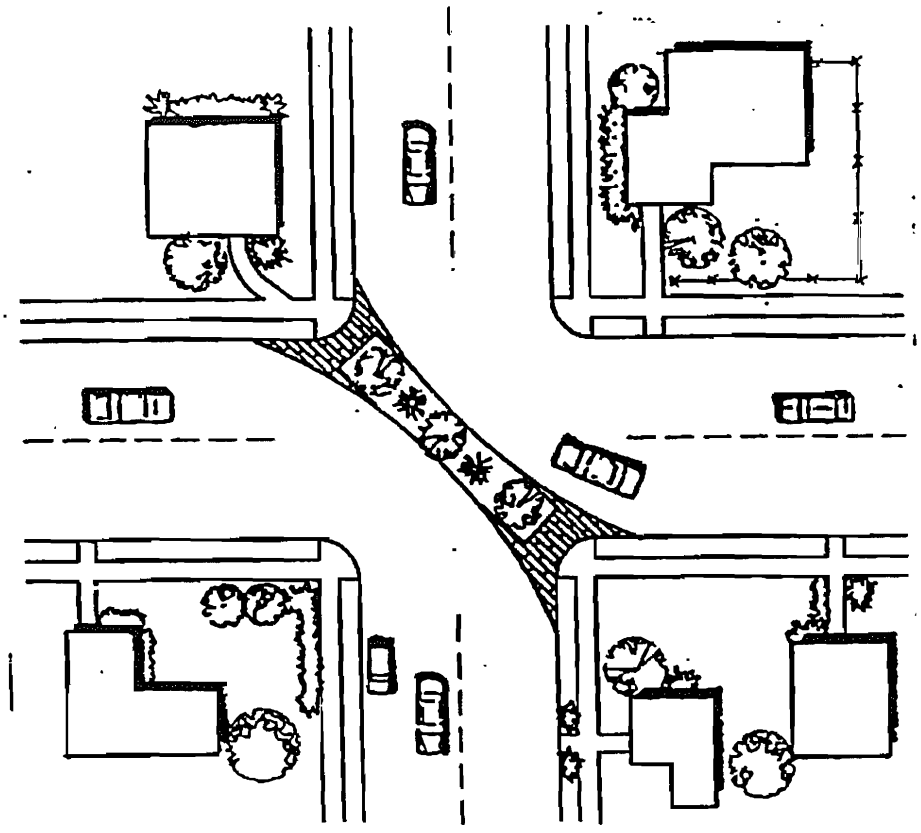
Description: Barriers between diagonally opposite corners of a 4-legged intersection, thus creating two unconnected L-shaped intersections.

Positive Aspects:

- Reduces speed.
- Can achieve a 20%-70% reduction in volumes.
- Reduces accident potential by eliminating conflicting traffic movements.
- Advantage over complete street closure (cul-de-sac) in that it has a lesser impact on circulation, as it actually creates no dead-end streets. Local residents and service vehicles may view this as a benefit in that their routes can be more direct.
- Can be attractively landscaped.

Negative Aspects:

- In a large neighborhood, can shift problems elsewhere unless a strategic pattern of diverters is used.
- May inconvenience local residents who are forced to drive longer more circuitous paths to/from their homes.



Level 4

Half Closures

Description: The street is partially closed to traffic by the construction of a physical barrier at the entrance to the neighborhood to reduce cut through traffic.

Positive Aspects:

- Reduces cut through traffic.
- May reduce traffic speeds.

Negative Aspects:

- May require additional maintenance.
- Could be violated, especially in the late evening.

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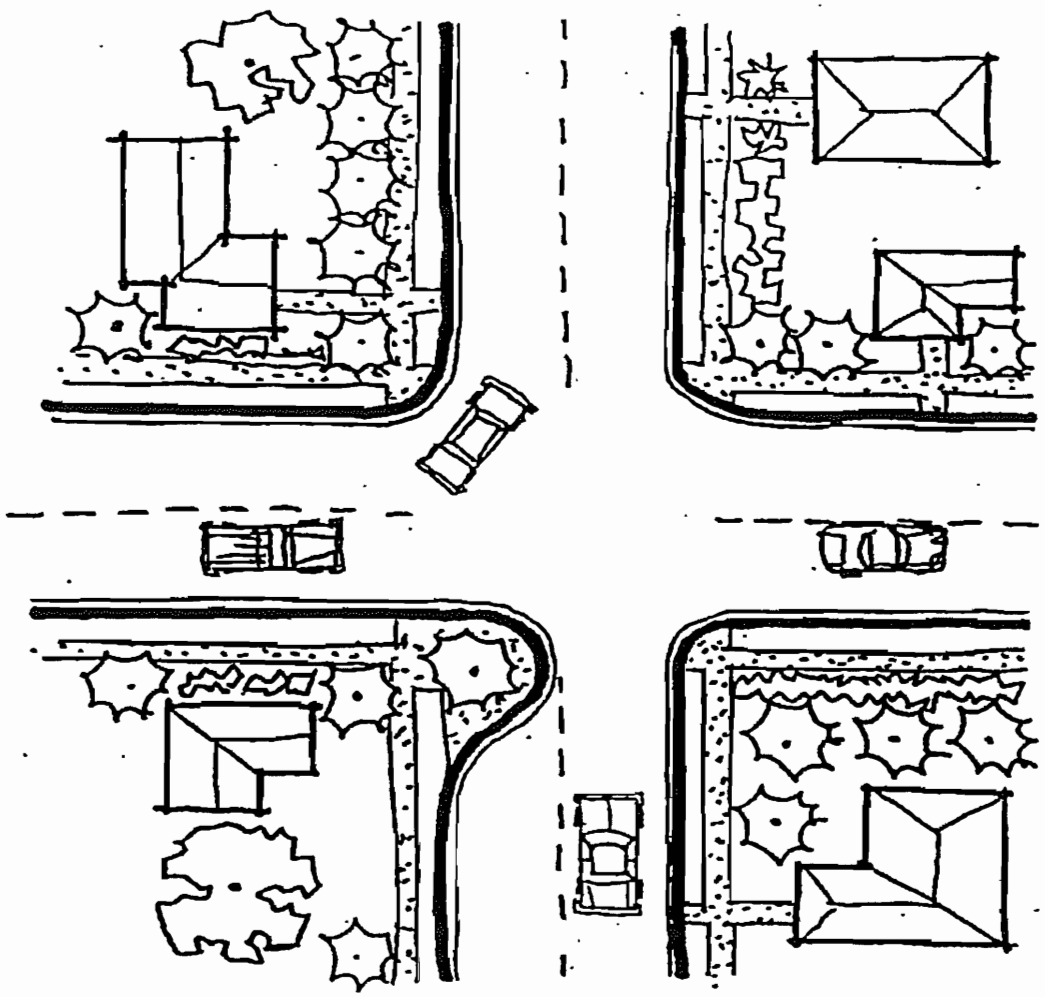


Level 4

Mid-Block Road Closure

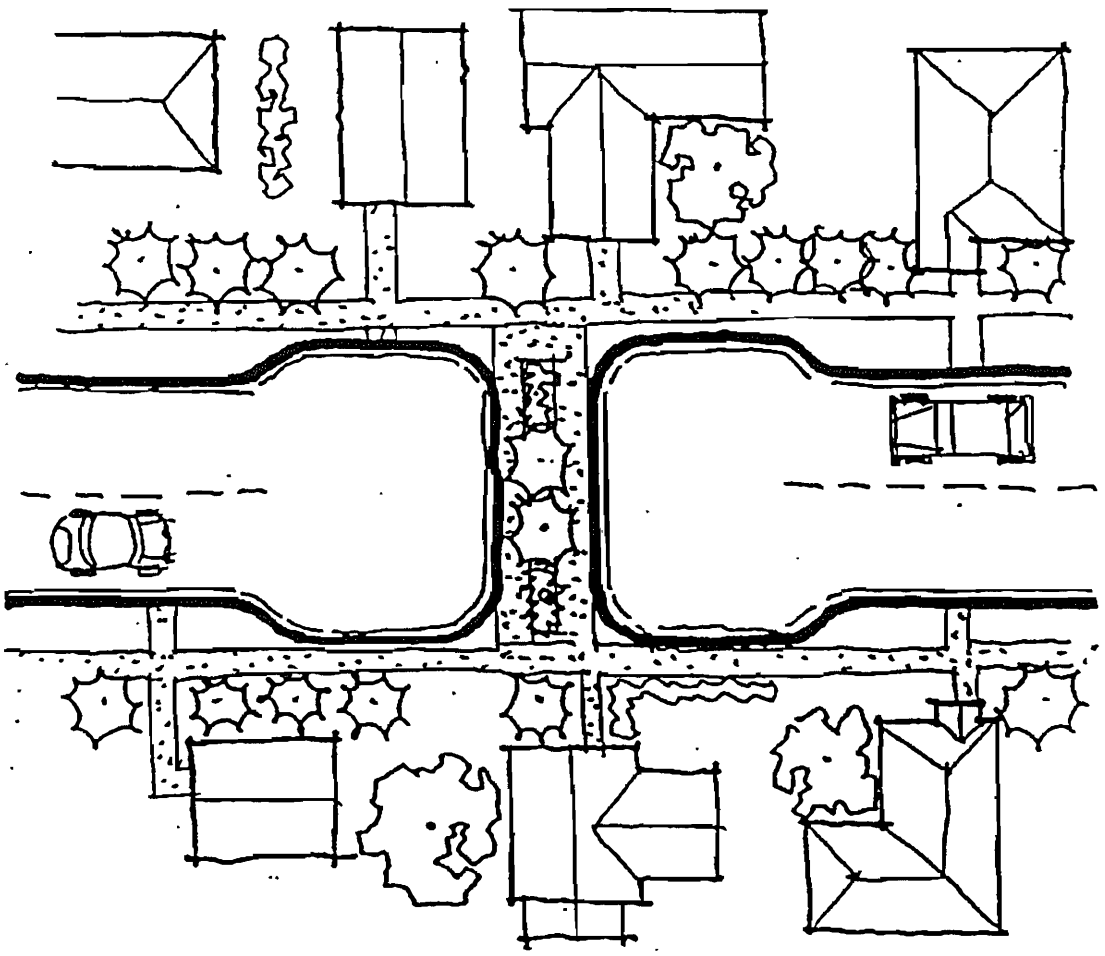
Description: Cul de sacs are created by closing the street mid-block using a landscaped island. Pedestrian access is provided across the island. The closure must be located between driveways serving adjacent residences.

Positive Aspects:

- Reduces through traffic volumes.
- Reduces speeds in the vicinity of the closure

Negative Aspects:

- Traffic may be diverted onto adjacent parallel streets.
- Maintenance of the landscaped areas will have to be provided for.
- Emergency access will be impeded.
- Local residents may be forced to drive more circuitous routes.
- There is loss of on-street parking.



ATTACHMENT 3

SPEED HUMP AND RUMBLE STRIP POLICY
NEIGHBORHOOD TRAFFIC
MANAGEMENT AND CALMING OPTIONS

TOWN OF FOUNTAIN HILLS

SPEED HUMP AND RUMBLE STRIP POLICY

The Town Engineer has the discretion to allow the installation of speed humps and rumble strips on public streets in the Town subject to the following criteria. The Engineer also has the discretion to waive or vary any of the listed criteria. The Town Manager, upon recommendation of the Town Engineer, may elect to recommend public hearings before the Town Council.

1. The street is local residential street or minor collector with driveways.

2. A petition is submitted. The petition shall be in complete compliance with the format in the Neighborhood Traffic Management Process. All information, except the signatures shall be printed. Signature of 75% of the Lots within the affective area, as defined by the Engineering Department, must sign the petition. All contiguous Lots within 50 feet, as measured along the right-of-way line, of the speed hump or rumble strip must also sign the petition.

3. The street is minimum of 600 feet in length. The speed humps may be located at spacings of approximately 250 - 600 feet.

4. The posted speed limit is 25 miles per hour.

5. A speed study reveals the 85th percentile speed exceeds 30 miles per hour.

6. The average daily traffic is less than 5,000 vehicles per day.

7. There is adequate horizontal and vertical sight distance the street grade does not exceed 10% and there is not a sharp horizontal curve.

8. Streets have a normal crown with drainage along the sides of the street, and the speed humps do not create drainage problems.

9. Speed humps are not installed over manholes, water valves, junction boxes or other irregularities in the pavement.

The Town will contract for the installation of the speed humps and/or rumble strips at the resident's expense except as noted in the Neighborhood Traffic Management Process. The Town will also install the necessary advance warning signs and pavement markings at the resident's expense. The Town will be responsible for all maintenance. The speed humps will be 3-1/2" high and 12' wide, and in compliance with the Town Engineers' details.

If 51% of the resident's petition to have the speed humps and/or rumble strips removed, the resident's will be responsible for paying the Town's removal costs.

April 16, 1998