CITY OF AUSTIN

Transportation Division

Public Works Department

NEIGHBORHOOD TRAFFIC CALMING PROGRAM GUIDELINES

October 2007

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I. Introduction

The vision of the City of Austin is to be the most livable community in the country. Traffic is a major factor that affects the livability of a community. As speeding and vehicular volume increases, walking to the neighborhood store or even across the street to a neighbor's house can be an uncomfortable event. Where a person lives is a very important part of how a person feels about their community. The noise, safety hazards, vehicular speeds, vehicular volumes, existence of sidewalks and bike lanes all contribute to a neighborhood's integrity.

The City recognizes the usefulness of physical measures to effectively solve neighborhood traffic problems. Statistics from cities that have installed traffic calming devices in residential areas and the City of Austin pilot areas show that these devices are successful in reducing vehicular speeds and increasing the safety on residential streets. The traffic calming guidelines outlined in this report provides a basis for establishing the selection and installation criteria.

Through the Neighborhood Traffic Calming Program and other programs, the City of Austin strives to accommodate growth in a way that can protect neighborhoods from the negative impact of traffic.

II. Background

Citizens frequently express their concerns regarding high traffic speeds, increasing traffic volume, and pedestrian safety in residential neighborhoods. In the mid-1980's City staff developed the Neighborhood Traffic Management Program (NTMP). This program established a process for comprehensive studies to address speeding and cut-through traffic problems in neighborhoods. Due to the economic and budget constraints of the time, the program did not receive funding. The requests continued from concerned citizens about various neighborhood traffic problems. These requests were answered through increased enforcement from the Austin Police Department and/or the installation of speed limit signs. Both of these measures produced short term, if any, reduction in speeds.

In 1994, several neighborhood associations and the Department of Public Works and Transportation encouraged the City Council to fund a Speed Hump Program. The City Council responded by allocating funding in Fiscal Year 1994-95 for the construction of speed humps. This level of funding, which continued the next four years, was not sufficient to conduct comprehensive traffic studies. In the spring of 1997, the Speed

Hump Program was temporarily suspended due to concerns about the impact to the emergency services departments and the possibility of shifting traffic from one neighborhood street to another neighborhood street. A focus group consisting of approximately 45 persons (Neighborhood Association leaders, interested citizens, City Council appointees, Capital Metro Transportation Association staff, Urban Transportation Commission members and City staff) was established to discuss the issues surrounding the Speed Hump Program. The recommendations from this focus group were evaluated and compiled into the Neighborhood Traffic Calming Program. This program includes a more comprehensive study where residents and City staff work together to develop effective solutions to address traffic problems area-wide. The solutions may include traffic circles, speed humps/cushions, diverters, curb extensions, textured crosswalks, chicanes, and slow points. These alternative traffic management measures have been effectively used to address residential area traffic problems in many cities around the world.

III. Guiding Principles

The following guiding principles are established as part of the Neighborhood Traffic Calming Program for neighborhood streets:

- Through traffic should use the arterial streets as defined in the Austin Metropolitan Area Transportation Plan (AMATP).
- Reasonable emergency vehicle access should be preserved.
- Neighborhood Traffic Calming Program projects should encourage and enhance pedestrian and bicycle access to neighborhood destinations.
- Reasonable transit vehicle access should be preserved.
- Application of the NTCP should be limited to neighborhood streets. This includes residential local and collector streets.

IV. Selection of Project Areas

Project areas are selected in each of the three sections of the City during each fiscal year. The exception to this rule occurs when the size of a project area is so big that its selection means foregoing the selection of neighborhoods in another section of the City. Areas that have been studied in previous years will not be eligible for re-evaluation for five years.

Since 1994, when the Speed Hump Program began, citizens of Austin have made requests for speed humps or other measures to address speeding and cut-through traffic problems on residential streets. These requests have been maintained in a

database. The City has been divided into three (3) sections – north, central & south. In each of the three sections of the City, project areas have been identified. Typically, project area boundaries are selected based upon arterial roadways, natural boundaries, and/or railroad tracks. Using the number of requests in each project area, the City identifies the highest request per acre ratio to select three neighborhoods in each of the three (3) sections of the City.

In each of these neighborhoods, City staff selects three residential streets that appear to exhibit the highest speeding and/or cut-through traffic problem. Vehicular speed and volume data are collected on these streets to determine the 85th percentile speed (the speed at which or below 85 percent of the motorists is traveling). The data collected on these streets are ranked to determine the project area in that section with the highest priority. The Project Prioritization Criteria can be seen in Appendix A.

In order to ensure that a particular street or area is considered for neighborhood traffic calming, a citizen or neighborhood association must call or write to the City of Austin to request the problem street(s). Requested streets will be included in the City's traffic calming request list. All requests received by August 1 are considered for the following fiscal year, beginning October 1. This August deadline provides adequate time for the City to collect speed and volume data and rank each of the project areas in time to begin the study process shortly after the start of the new fiscal year.

V. Community Contact

After the project areas have been selected, City staff sends a letter to each business, property owner, and resident in the project area. In addition, letters are also sent to the president of the neighborhood association(s) within the project area, with an invitation to attend a general meeting introducing the program. Also included in the letter is a survey for residents, property owners and businesses to fill in describing various traffic-related problems in the project area. This survey can be mailed to the City or brought to the general meeting.

At this initial meeting a working group of volunteers is established. These persons agree to develop the traffic calming plan with the assistance of City Staff. See Section VI for guidelines of the working group.

Transportation Division staff notifies the Austin Independent School District or other school district, Capital Metropolitan Transportation Authority, and Solid Waste Services. A request for their routes in these project areas is made. They are invited to attend the meeting where the working group identifies possible devices for problem street sections

in order to express their concerns. A notification letter is also sent to the Austin Police Department, Austin Fire Department, and Emergency Medical Services of the project area selection.

V. Working Group

The working group is comprised of residents living within the project area and an officer of the neighborhood association(s). Non-resident property owners and representatives of area businesses are also encouraged to participate in the working group. Working group members should represent various streets in the neighborhood. Not more than two members should reside on any one street.

The maximum number of participants in the working group is 15 persons. It is expected that some of the members may not be able to attend every meeting. Minimum attendance in order to continue with the meeting is 50 percent of the working group, or 5 persons (whichever is greater). If the minimum attendance does not exist, the meeting is rescheduled. Every attempt is made to ensure that the meetings are scheduled for dates and times which work the best for as many members as possible.

At the first meeting, a chairperson is elected to serve as the leader of the working group. This person's role is to ensure that the members stay focused on the task, to be the spokesperson of the group, and to provide assistance to City staff in identifying meeting locations or other tasks.

Also occurring at this first meeting, ground rules are established for all of the meetings. The list of ground rules may include items such as methods for communicating with each other and the project area residents, meeting start and end times, and any other rule that the group wishes to establish. Although future meetings could include the addition of new rules, this list will make up the basis for the future meetings. As such, it should be posted at every working group meeting.

Each of the responsibilities for members of the working group is intended to encourage input and involvement from the participants. By providing feedback on the development of the traffic calming plan, the working group members take more ownership of the finished product.

It should be understood that the development of the traffic calming plan typically requires six meetings each lasting no more than two hours in length.

VI. Problem Identification

After the initial general meeting and before the first working group meeting, City staff summarizes the results of the survey and prepares a list of the possible traffic problem locations in the project area. Following the business items at the first meeting of the working group, the members review these traffic problems and brainstorm any additional locations needing attention. If necessary, the group prioritizes the street sections and intersections having the worst traffic problems.

City staff takes the list from this meeting and collects necessary traffic data to confirm problems mentioned.

VII. Data Collection

Data is collected in spring and fall months during regular school days. They consist of vehicular speed, traffic volume, pedestrian activity, and/or any other observation to confirm the traffic problems stated in the survey or at the first meeting. The length of the data collection depends on the type of data that is collected.

VIII. Evaluation of the Traffic Data

City staff evaluates the traffic data to determine levels of traffic volume, vehicular speed, pedestrian activity, and other observations. If specific problems are mentioned as a priority in the survey or at the first meeting, staff assesses the problem. For example, if speeding is said to be a problem on Street A, then City staff collects the speed data to determine the speed on Street A.

The results found in these data collection efforts are summarized and presented by the City staff at the second working group meeting. Members have the opportunity to take the information with them to review.

IX. Menu of Traffic Calming Devices

There are many devices currently being used to address neighborhood traffic problems. Some are used to address vehicular speeding and others to address cut-through traffic problems. Some devices may have an impact on both the vehicular speed and volume. Still others are intended to improve the safety of or give priority to non-motorized modes of transportation. See Appendix B for diagrams, advantages, and disadvantages of some of the traffic calming devices.

The City recognizes the desire to have devices that are aesthetically pleasing to the residents who live there. Traffic calming devices that include a raised curb allow for vegetation within the device. In fact, the use of greenery to provide vertical sight restrictions is encouraged. City staff determines whether a proposed device will provide any traffic enhancement and inform the working group of their findings. Although devices that involve the construction of a raised curb and landscaping are seen as more attractive than the vertical undulations like the speed humps, they are also more expensive and have greater impact to the adjacent properties such as the removal of on-street parking. Limited funds may restrict the number of devices including raised curb and gutter.

Every attempt is made to ensure that only the necessary signs and markings are installed. Excessive clutter is not the intent, rather it is to adequately warn, guide and protect the users of the roadway.

X. Traffic Calming Plan Development

After reviewing the traffic data and the menu of devices available, the working group is responsible for brainstorming possible solutions to address the given traffic problems. City staff is present to guide this session. In addition to the Transportation Division staff, representatives from the Austin Fire Department, Emergency Medical Services, Capital Metro and any other relevant agencies are encouraged to attend. If routes in the project area are critical for their services, then the working group is advised of these streets at this meeting. Regular users of the roadway are considered when developing the type and design of the devices.

After some consensus is achieved on which devices the working group desires and the specific locations of the devices, City staff then analyzes the proposal. Each device is evaluated for its likelihood of addressing the given problem. In addition, roadway alignment, driveway spacing, street width, and other factors are considered in order to determine whether the device is possible.

The evaluation may result in changing the proposed device. The technical expertise of the Transportation Division staff governs the selection and location of the proposed devices. For example, steep grades may preclude the installation of a device. Staff identifies these barriers and informs the working group. After the evaluation is complete, the City develops a map showing the proposed devices and presents it to the working group. This plan is discussed, modified, if necessary, and voted on by the working group. If modifications are requested, an additional meeting may be required to allow time for the staff evaluation of the proposed devices and/or location of devices.

XI. Plan Approval Process

After the traffic calming plan is approved by the working group, the next step involves a vote of all residents, businesses and property owners in the project area. An open house meeting is held to present the plan to all interested persons. The invitation to attend this open house meeting is included in a letter mailed by the City. This letter also contains details of the traffic calming plan, maps showing where the devices are proposed, verbal descriptions of each device, and a stamped, self-addressed ballot. These letters are mailed to every resident, property owner, and business in the project area.

Each household or business is allowed one vote. Some properties may have two votes if both the resident (or tenant) and property owner send in a ballot. Of the ballots received at least 60 percent have to be in favor of implementing the plan. There is no minimum number of ballots that have to be returned.

The letter is mailed at least 10 days prior to the open house meeting and the deadline for receiving the ballots is about one week following the open house meeting. This allows voters the opportunity to read through the material, return the ballot or attend the open house meeting and still have time to fill out the ballot before the deadline.

The traffic calming plan is voted on as a whole. Because the plan is a system of integrated calming devices, individual streets or devices can not be taken out of the proposal as part of the vote. If one device or one street were removed from the plan, the comprehensive nature of the plan would be lost, and residents on that street may experience higher traffic speeds and/or increased traffic volumes. The vote is either yes or no. Comments are welcomed, but do not change the complete package. This is the only opportunity to vote on the traffic calming plan so every effort must be made in the planning stages to ensure that it is correct and complete.

If the 60% approval is obtained, then City staff completes the design of the devices for the construction. If the 60% approval is not obtained, then the City does not implement the plan and the project area is not be eligible for evaluation until all areas of the city have been studied.

XII. Device Location

There are advantages and disadvantages of each traffic calming device. The advantages could include reduce traffic speed or volume, increased safety, and beautification of the streets. The disadvantages include possible inconvenience to residents driving in the neighborhood, parking restrictions, unattractive devices, and increased noise for residents adjacent to the device. Because many residents may object to having a device immediately adjacent to their property, it is necessary to establish the requirements for the consideration of shifting a proposed device. In some communities, no consideration is given to the resident when objections about the placement of the device arise. Others give some leeway to residents if nearby locations are acceptable and adjacent residents approve. This decision is controversial and can lead to the downfall of the entire project.

If the residents have veto power on where devices are placed, then the plan can dissolve as everyone wants something to address the problems, but no one is willing to allow the placement adjacent to their property. A piecemeal plan soon develops and the comprehensive nature is then moot.

Therefore, the responsibility to make this decision on whether or not to give residents the ability to veto a device location adjacent to their property will rest with the working group. This decision should be made prior to the development of the plan.

If deemed necessary, the City will modify the traffic calming plan to address problems discovered during the temporary or permanent installation period. In addition, if safety problems surface following the permanent installation, the City will take the appropriate action to address the problem.

XIII. Landscaping

The City provides two (2) years of maintenance for landscaping the traffic calming devices. Vegetation is chosen which requires minimal attention, such as xeriscape. Devices which include raised curb could contain 1-3 trees, low lying shrubs, and ground cover, depending on the size of the device. The intent is to allow the vegetation to establish itself in its new location. After the two-year period, it is desired that the neighborhood association take the responsibility to maintain the landscaping. Adjacent residents could in their routine lawn maintenance, water or trim the vegetation when the need arises.

XIV. Impact to Adjacent Streets

In order to ensure that the traffic calming plan does not merely shift traffic to other neighborhood streets within the project area, traffic volume data is collected on possible diversion routes before and after implementing the approved plan. If residential local or collector streets experience an increase greater than 300 vehicles per day, the City will attempt to address the volume increase. Example actions to mitigate the volume increase include the modification of the device(s) which created the shift or the installation of additional devices on the impacted street.

XV. Isolated Streets

During the 1997 Speed Hump Program we found that installing devices on a single isolated street is not recommended as it can result in shifting the problem to another street. However, in very rare instances there may be locations where installation of devices on an isolated street would not divert traffic to another street due to the unique layout of the street network. In such cases, the department will consider such installations if funding is available.

The Department will develop the plan and 60% of received ballots must be in favor of the plan. The boundaries of the ballot area will be determined by the Neighborhood Association.

XVI. Matching Funds

If a neighborhood is willing to match 50% of the installation costs they are eligible for participation in those years when City matching funds are available.

During such years when funds are available letters will be sent to all neighborhood associations. Those neighborhoods expressing interest in participating in the matching program will be ranked as described in Section IV. The number of neighborhoods selected will be dependant on the amount of city matching funds available.

XVII. Conclusion

This Neighborhood Traffic Calming Program offers effective solutions to address residential traffic problems. The comprehensive nature of the program allows for mitigation of potential impacts to all streets within the entire project area. It is a program in which all residents, businesses and property owners are allowed and encouraged to participate in the process. With the technical assistance from the City of Austin, traffic calming plans can be developed and approved by those most affected.

As the population, employment and vehicle registration in the Austin Metropolitan Area continue to grow, city streets are experiencing increased traffic pressure. Residents, parents, school administrators, and neighborhood associations have avenues to consider when trying to address traffic problems. Evaluating streets in an entire project area can be a worthwhile activity to foster a sense of community and develop solutions that not only address traffic problems, but also offer attractive areas of landscaping and textured pavement. These modifications can, in turn, result in increased safety, property values, and improve the overall quality of life.

Appendix A

Project Prioritization Criteria

PROJECT PRIORITIZATION CRITERIA

After the top three project areas are selected from each geographical area, staff ranks each project area according to the volume and speed criteria established below. These criteria are applied to three streets selected by staff from each project area. The project areas accumulating the greatest number of points are selected for a comprehensive traffic calming study.

Traffic Volume Criteria:

Points are assigned to each selected street within a given project area using the following table:

Daily Volumes	Points
= or < 300	0
301-500	1
501-1000	2
1001-1500	3
1501-2000	4
2001-2500	5
2501-3000	6
3001-4000	7
4001-5000	8
>5000	9

Speed Criteria:

The speed criteria considers the difference between the 85th percentile speed during the entire 24-hour period and the regulatory speed limit (85th percentile speed is the speed at or below which 85 percent are traveling). One point is given for every mile per hour over the posted speed limit.

Appendix B

Neighborhood Traffic Calming Toolbox

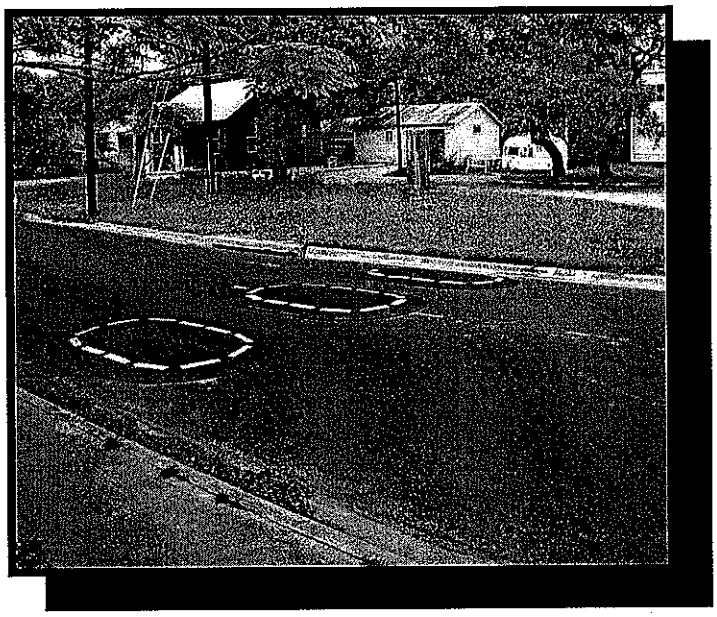
One-way street

blocked entrances at times

Better if police enforcement not required

SPEED CUSHIONS

cheapest
@ 300-400 ft



Description: Speed cushions consist of asphalt, raised about 3 inches in height. The length of the cushion is about 10 feet. The spaces between the cushions allow emergency vehicles to partially straddle the device.

Advantages

- Reduces vehicle speed.
- May reduce vehicular volumes.
- No restrictions to on-street parking.
- Does not restrict access to residents.
- Requires minimum maintenance.
- Minimal impact to emergency response times.

Disadvantages

- May divert traffic to parallel streets.
- Not aesthetically pleasing.

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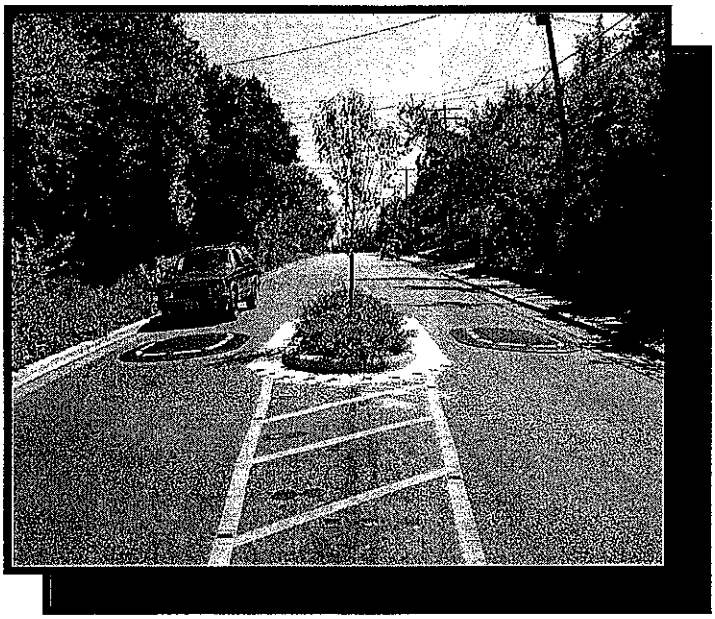
CUSHIONS & MEDIAN



Description: This combination of devices consists of speed cushions and a center median. The median provides some area for landscaping and narrows the travel lane while speed cushions reduce vehicle speed.

Advantages

- Reduces vehicle speed.
- Can reduce vehicular volumes.
- Does not restrict access to residents.
- Minimal impact to emergency response times.
- Aesthetically pleasing.

Disadvantages

- May divert traffic to parallel streets.
- Curbside parking must be prohibited to adjacent residents. 100 ft either side
- Maintenance responsibility.

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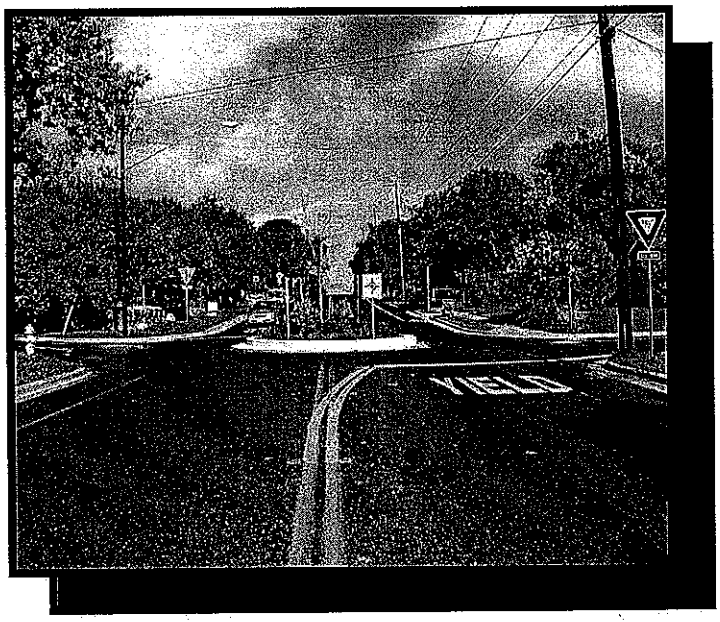
Department of Public Works, City of Austin, Texas

TRAFFIC CIRCLE



Description: Traffic circles are raised landscaped islands constructed at the center of intersections. Motorists travel in a counter-clockwise direction around the circle. Traffic circles are "yield upon entry" meaning that vehicles in the circle have the right of way and vehicles entering the circle must wait until the path is clear.

Advantages

- Reduces vehicle speed.
- Reduces vehicle conflicts at intersection.
- Provides equal access to intersection for all drivers.
- Does not restrict access to residents.
- Aesthetically pleasing.

Disadvantages

- A minimum of 40 feet of curbside parking must be prohibited at each corner of the intersection.
- May increase emergency response time.
- Can restrict access for large trucks and longer buses, and may require that these vehicles turn left in front of the circle.
- Maintenance responsibility.
- Requires additional traffic control signs (8-16 signs) and pavement markings.
- May increase conflicts with cyclists and pedestrians.
- May divert traffic to parallel streets.

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CHICANE

Description: A chicane is a series of two or more staggered curb extensions on alternating sides of the roadway. Horizontal deflection influences motorists to reduce speed through the chicane. A raised island is added to the center of the road to prevent motorist from crossing the center line.

Advantages

- Reduces vehicle speed.
- Does not restrict access to residents.
- Minimal impact to emergency vehicles.
- Aesthetically pleasing.

Disadvantages

- Curbside parking must be prohibited to adjacent residents.
- Maintenance responsibility.
- May divert traffic to parallel streets.
- May increase conflicts with cyclists and pedestrians.

Neighborhood Traffic Calming Program

Department of Public Works, City of Austin, Texas

CURB EXTENSIONS

Description: The intersection is narrowed by extending the curbs toward the center of the roadway or by building detached raised islands to allow for drainage and cyclist passage.

Advantages

- Reduces crossing distance for pedestrians.
- May reduce cut-through traffic.
- Does not restrict access to residents.
- Minimal impact to emergency response times.
- Aesthetically pleasing.

Disadvantages

- Curbside parking must be prohibited to adjacent residents.
- Maintenance responsibility.
- Low impact to mid-block speeding.

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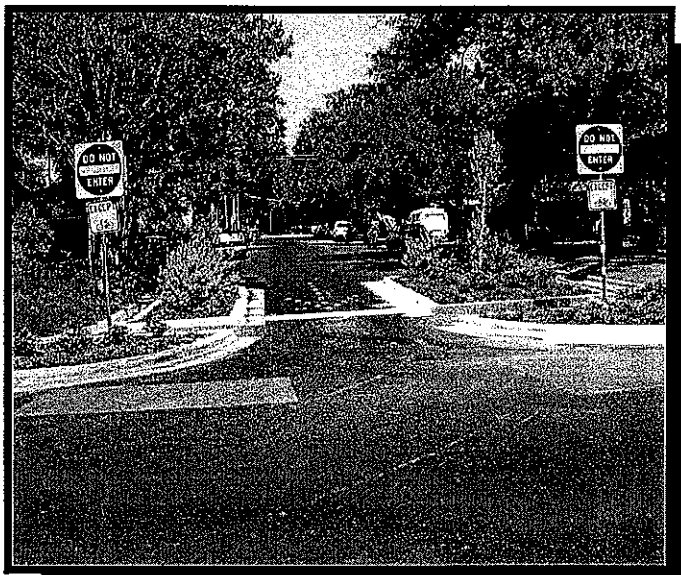
SEMI-DIVERTER



Description: Semi-diverter is a curb extension or barrier that restricts movement into a street. The semi-diverter is constructed to approximately the center of the street, effectively obstructing one direction of traffic. Creates a one-way segment at the intersection while maintaining two-way traffic for the rest of the block.

Advantages

- Restricts movements into a street while maintaining access and movement within the street block for residents.
- Reduces cut-through traffic.
- More self-enforcing and aesthetically pleasing than turn restriction signing.
- Reduces crossing distances for pedestrians.
- Aesthetically pleasing.
- In emergency situations, emergency vehicles can travel in the restricted direction.

Disadvantages

- May divert traffic to parallel streets without traffic calming measures.
- May increase trip length for some residents.
- Curbside parking must be prohibited adjacent to the device.
- May increase emergency response time as they maneuver around the device.
- Maintenance responsibility.

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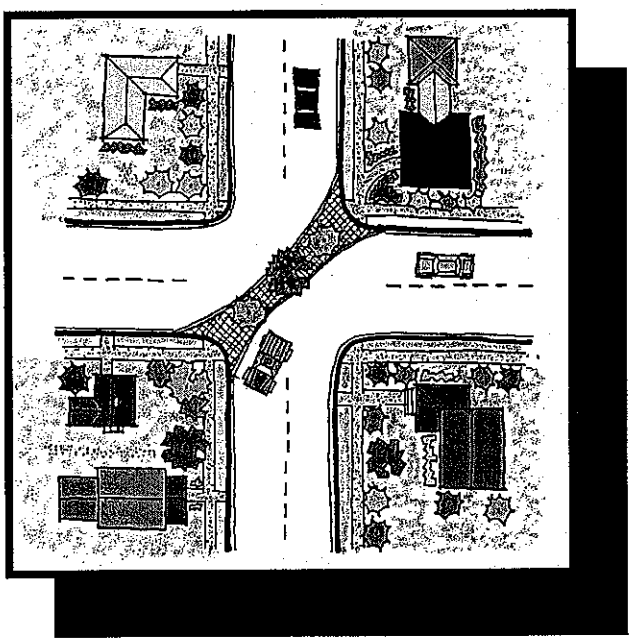
DIAGONAL DIVERTER



Description: A curb extension constructed diagonally across an intersection, disconnecting the legs of the intersection. All traffic must turn at the intersection.

Advantages

- Reduces vehicular volumes.
- Can reduce vehicle speed.
- Does not restrict access to residents.
- Aesthetically pleasing.

Disadvantages

- May increase trip length for some residents.
- May increase emergency response times.
- May divert traffic to parallel streets.
- Maintenance responsibility.

Neighborhood Traffic Calming Program

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