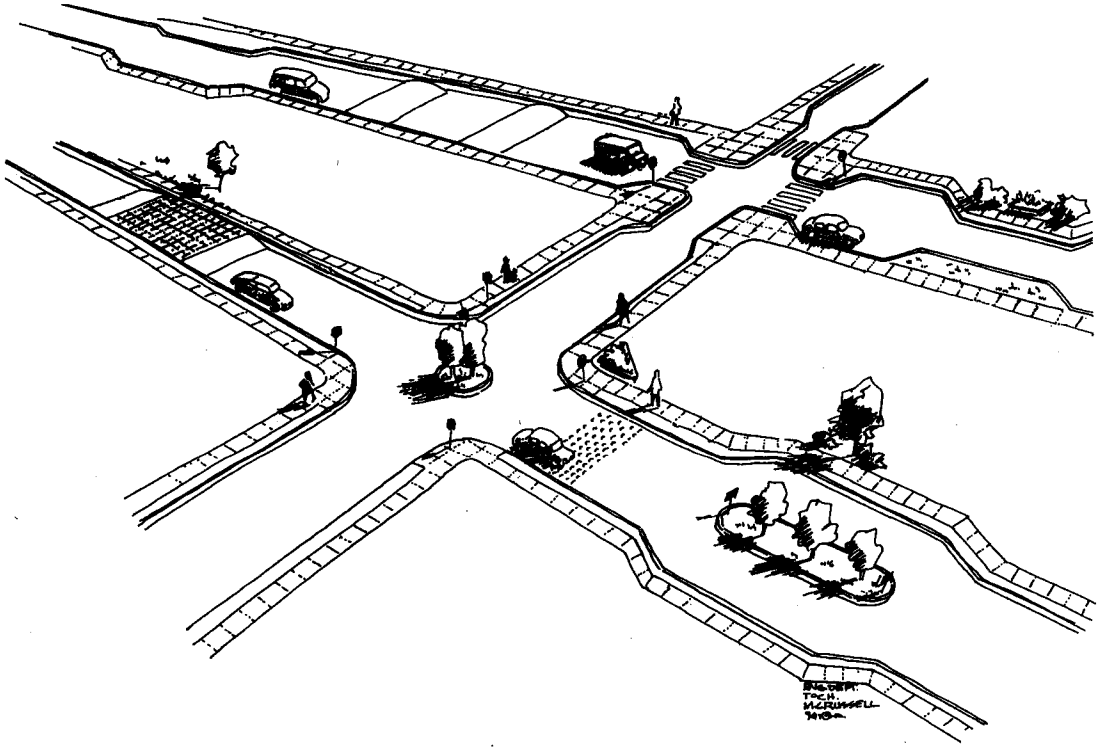
TOWN OF CHAPEL HILL

POLICY AND IMPLEMENTATION PROCESS FOR NEIGHBORHOOD TRAFFIC MANAGEMENT



(DRAFT - JUNE 22, 1998)

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POLICY AND IMPLEMENTATION PROCESS FOR NEIGHBORHOOD TRAFFIC MANAGEMENT

SUMMARY

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The Council of the Town of Chapel Hill is committed to the preservation of safety and livability in and around residential neighborhoods. A necessary element in the fulfillment of this commitment is the management of vehicular traffic operating within and passing through neighborhoods. To that end, the Council has adopted a "Policy and Implementation Process for Neighborhood Traffic Management" including the following basic procedure:

Step 1

The Town receives a request for neighborhood traffic management. The request is reviewed and an "area of influence" is determined.

A petition form is prepared by the Town based on the "area of influence" involved. The requester circulates the petition, which must be signed by at least 2/3 of the property owners which represent at least 2/3 of the affected properties located within the area of influence, and returns the signed petition to the Town.

Step 2

Upon receipt of a valid petition, the Town conducts a traffic study, evaluates and assigns points to the data, and creates a prioritized list of petitions for Town Council consideration.

Step 3

Upon Town Council receipt and approval of a petition, a resident traffic committee from the study area may be formed to work with the Town Transportation Board and the Town staff to develop a project design.

Step 4

Upon completion of project plans for a particular petition, the Town Manager would prepare a report and recommendation for Town Council consideration. Depending upon Council action, a project could be funded and proceed to construction; or be placed on a waiting list for future funding.

Step 5

Once a project is constructed, it would be monitored and a follow-up report would be submitted to the Town Council within 18 months regarding the operation and effectiveness of the project.

The following flow chart outlines the procedure discussed above.

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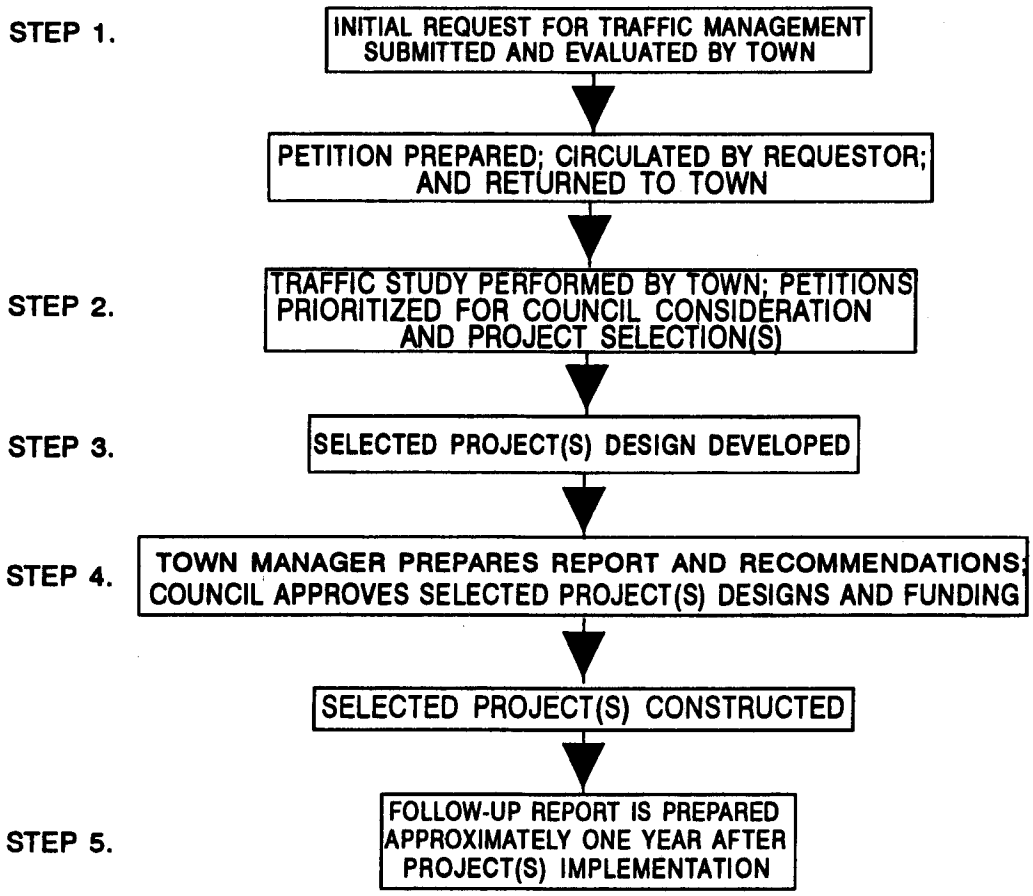
BASIC STEPS FOR
TRAFFIC MANAGEMENT REVIEW AND IMPLEMENTATION PROCESS



***(Refer to Traffic Management Review and Implementation Process of document for more detail.)**

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INTRODUCTION

The following Policy for Neighborhood Traffic Management represents the Town's commitment to preserve the safety and livability of Chapel Hill's residential neighborhoods. The policy provides a process for the Town Council and staff to identify and address problems related to speeding, excessive volumes, and safety on streets within or near residential areas. Using the policy guidelines, the Town staff would work with neighborhoods to evaluate the type and severity of traffic problems and possible remedies, such as traffic circles, speed humps, diverters, and/or other appropriate alternatives to manage neighborhood traffic.

The Town places a high value on neighborhood livability. Although livability has no precise definition, it may include the following characteristics:

- The opportunity to interact socially with neighbors without distractions or threats.
- The ability to experience a sense of home and privacy.
- A sense of community and neighborhood identity.
- A balanced relationship between the multiple uses and needs of the neighborhood.

Traffic management plays a vital role in promoting these characteristics. The Town recognizes that vehicular traffic is only one element of a neighborhood, and that other residential needs must be given careful consideration. Through the Town of Chapel Hill Policy for Neighborhood Traffic Management, residents can evaluate the various benefits, requirements, and trade-offs of traffic calming measures within their neighborhood and can actively be involved in the decision making process. This policy provides information and guidelines to help residents participate in the process.

GENERAL POLICY OBJECTIVES

The objectives of the Town of Chapel Hill Policy for Neighborhood Traffic Management are the following:

1. Improve neighborhood livability by mitigating the impact of vehicular traffic on residential neighborhoods.
2. Promote safe and pleasant conditions for motorists, bicyclists, pedestrians, and residents on neighborhood streets.
3. Encourage citizen involvement in all phases of neighborhood traffic management activities.
4. Make efficient use of the Town's resources by prioritizing traffic management requests.

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KEY POLICY STATEMENTS

The following are established as part of the Town of Chapel Hill Policy for Neighborhood Traffic Management:

I. Traffic is typically routed in the following manner: local residential streets to/from collector streets to/from arterial streets to/from highways. (Arterial streets typically consist of 4 or more marked travel lanes.) Under certain circumstances, local residential street traffic may include direct routing to/from arterial streets or to/from highways.

II. Traffic may be rerouted from one local street to another as a result of a traffic management project. The amount of rerouted traffic will be evaluated on a project-to-project basis.

III. Adequate access for emergency and service vehicles must be preserved.

IV. Reasonable automobile access should be maintained while encouraging pedestrian, bicycle, and transit access to neighborhood destinations.

V. Application of this policy will typically be limited to those local, public, residential streets that are controlled and maintained by the Town. This would include those streets with 60 feet or less of right-of-way, an average daily traffic volume of 3000 vehicles or less, a posted speed limit of 25 mph, and 85th percentile speeds [1] greater than 35 mph. (These are "typical" guidelines recommended for maintaining capacity and traffic flow on residential collector streets that are controlled and maintained by the Town. The Town Council may consider these streets for traffic management projects.)

VI. Traffic management devices (including traffic circles, speed humps, diverters, medians, curb extensions and others) are public roadway features and shall be planned and designed in keeping with sound engineering and planning practices. The Town Traffic Engineer shall direct the installation of Council approved traffic control devices (signs, signals, and markings) as needed and in compliance with the municipal code and pertinent state and federal regulations.

VII. Procedures for processing traffic management requests shall include: submittal of project proposals; evaluation and prioritization of proposals by the Town staff; citizen participation in plan development and evaluation; Town Council approval of projects and funding; and provision of test results and specific findings to area residents and affected neighborhood organizations.

(Note 1: The 85th percentile speed is the speed at or below which 85%of vehicles are traveling on a given street segment.)

NEIGHBORHOOD TRAFFIC CONTROL

The purpose of traffic control is to regulate the movements of vehicles and pedestrians; to advise and/or warn them of roadway conditions; and to guide them to their destinations in a manner that promotes safety, efficiency, and environmental compatibility. Traffic control includes the following key elements:

General laws, statutes, and ordinances

These cover an entire jurisdiction (national, state, and local) and apply in the absence of more specific regulations which are created by a municipal government for an area within its corporate limits, such as speed limits, right-of-way designation at an intersection, and on-street parking regulations.

Traffic control devices

These communicate specific regulatory, warning, or guiding messages to motorists, bicyclists, and pedestrians. The most common control devices affect or restrict the direction or speed of traffic movement and regulate parking.

Geometric design features

These are designed into a roadway to guide and/or restrict the physical movements of vehicles or pedestrians, and identify areas of public right-of-way for use by vehicles, bicyclists, pedestrians, or non-traffic uses including landscaping.

To be effective, traffic control must be implemented with consistent, clear, unambiguous messages. Traffic control features and messages should be consistent with the Manual on Uniform Traffic Control Devices (M.U.T.C.D.) prepared by the Federal Highway Administration and "A Policy on Geometric Design of Highways and Streets" prepared by the American Association of State Highway and Transportation Officials (AASHTO), which standards are used by various levels of government throughout the United States and other countries.

TRAFFIC CONTROL DEVICES

Devices such as signs, pavement markings, and traffic signals convey specific information to control vehicles and pedestrians. Traffic signals convey control information in a dynamic manner while the others are passive. The most common traffic control devices used within a municipality are stop signs and speed limit signs.

Stop Signs

The primary purpose of stop signs is to assign right-of-way at an intersection. Stop signs are typically utilized under the following conditions:

Two-way Stop – Used to assign right-of-way to one of two intersecting streets by requiring traffic on one street to come to a complete stop before proceeding through the intersection. Typically, stop signs are placed when:

-- the through street is clearly of a higher classification than the stop street
-- the sight distances are substandard, resulting in the general traffic rules regarding uncontrolled intersections being inadequate without traffic control devices
-- the accident history warrants designation of right-of-way control

Four-way or All Stop -- Used to control traffic movements at the intersection of two streets where neither street can be safely assigned right-of-way through the intersection.

Speed Limit Signs

A speed limit sign is a regulatory device that informs motorists of an absolute or prima facie speed limit imposed by the governing agency. The setting of a speed limit is generally determined by the design geometrics of the roadway, adjacent land usage that includes sidewalk and driveways, pedestrian use, and the existence of hazards that may not easily be detected by drivers.

Attachment "A" is the Town Council's adopted Policy for Placement of Stop Signs and Assignment of Speed Limits, which presents guidelines that will be given due consideration when evaluating the placement of stop signs and the assignment of speed limits in Chapel Hill.

Attachment "B" is a summary of some general impacts and effects of stop signs and speed limit signs used as traffic control devices.

GEOMETRIC DESIGN FEATURES

Geometric features used for control of neighborhood traffic control include three categories:

- Features which physically restrict vehicle movement, such as closure of streets, semi-diverters, intersection channelization, chicanes, chokers, and traffic circles.

- Features which physically reduce speed, such as speed humps.

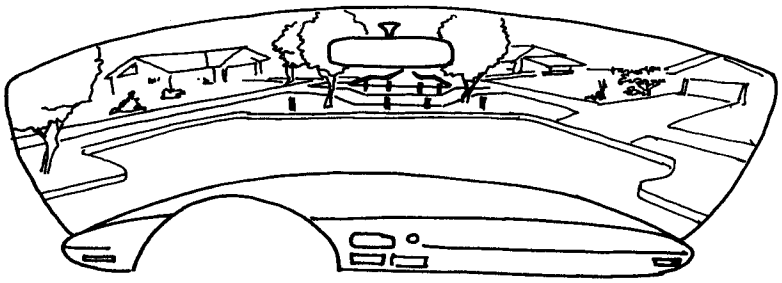
- Features which attract the attention of drivers, such as rumble strips or other types of pavement treatments.

Geometric features typically require or prohibit a specific action by drivers. Geometric features have the advantage of being self-enforcing and creating a visual impression of street function. The disadvantages include high costs, negative impacts on emergency and service vehicles, and inconvenient access to or through some parts of neighborhoods.

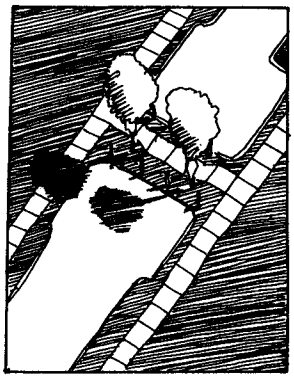
All such features are deployed in conjunction with traffic control devices such as signs, pavement markings, and reflectors to warn motorists of their presence and to indicate appropriate driver response(s).

TRAFFIC CALMING MEASURES

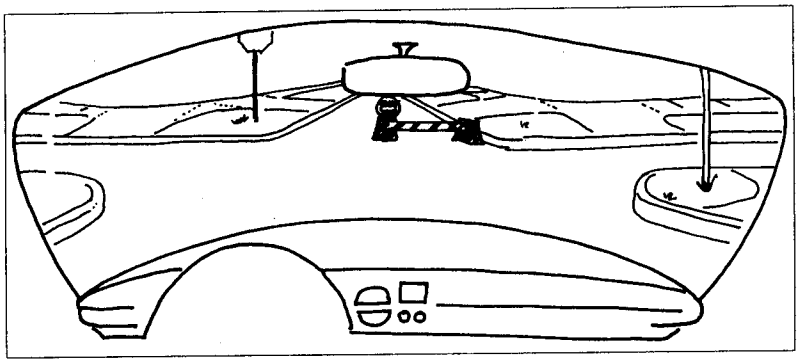
As an alternative to conventional geometric design features, a variety of different traffic calming measures is available for use on neighborhood streets depending on specific situations. The following includes those measures most commonly found in the United States, although variations of these could apply depending on site conditions and other variables.

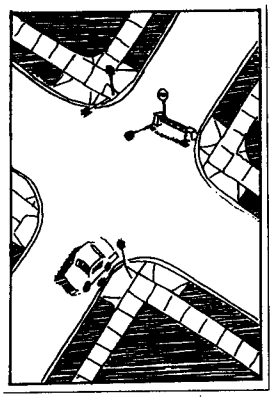


Street Closure



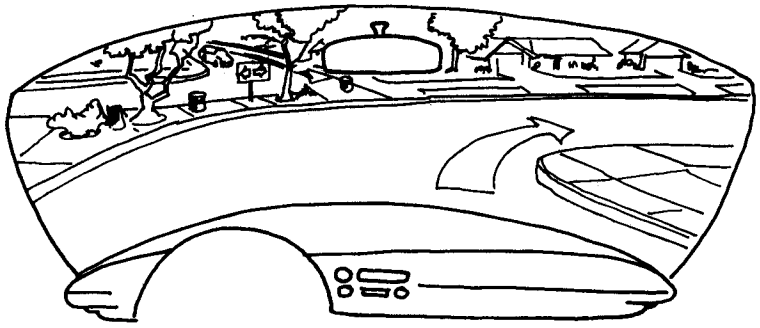
The closure of a street at an intersection or at mid-block prevents through traffic by constructing a cul-de-sac or installing a physical barrier on a street. Street closures are designed to maintain access to the street for local and delivery traffic only. In locations near major traffic generators, these barriers may be an effective method of preventing "cut through" traffic.

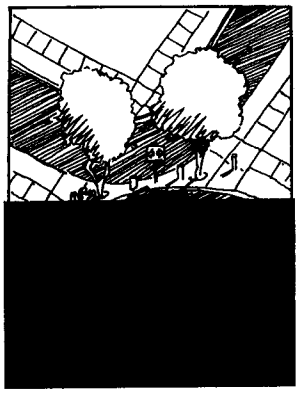




Semi-diverters (Half-closures)

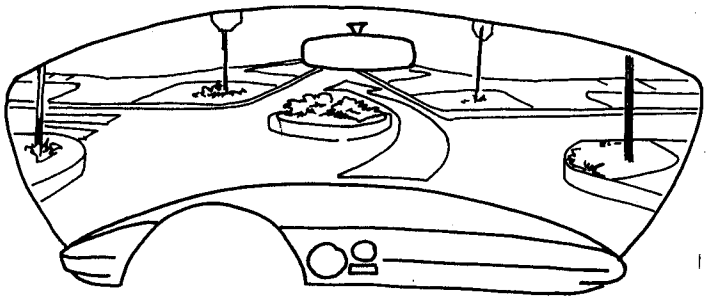
Semi-diverters partially close a street at an intersection permitting traffic to enter or exit the street. Semi-diverters provide an alternative to one-way streets in some situations while allowing limited two-way travel.





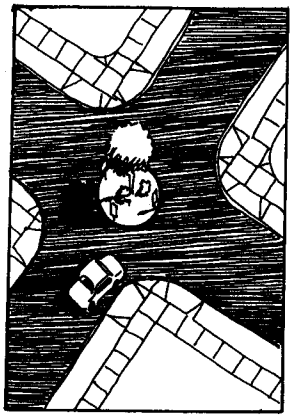
Intersection Channelization (Forced-Turn)

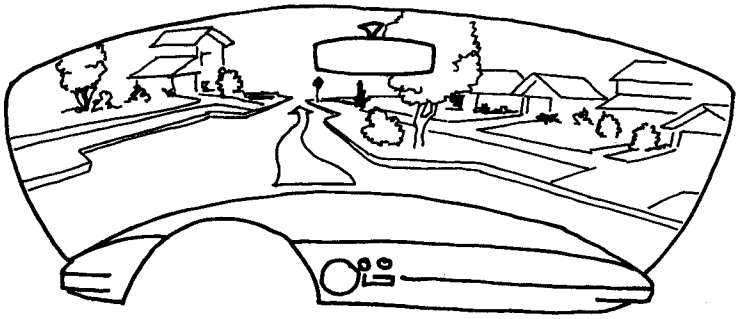
Intersection channelization physically prohibits through movements at an intersection of two streets and requires drivers to turn from one street to another. This technique is best utilized at an intersection of a major and a minor street, and can be effective in reducing cut-through traffic between one neighborhood and another.



Traffic Circle

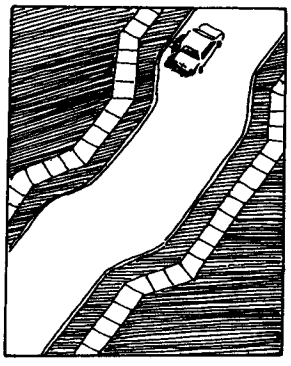
A traffic circle (also known as a rotary or roundabout) is a raised, circular traffic island in the intersection of two streets. It requires traffic traveling in different directions to merge while passing through the intersection. This requires vehicles to slow down and "share the road" while traversing the circle.

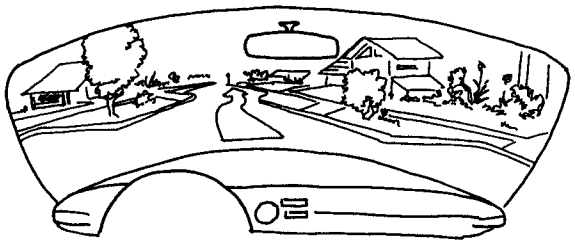


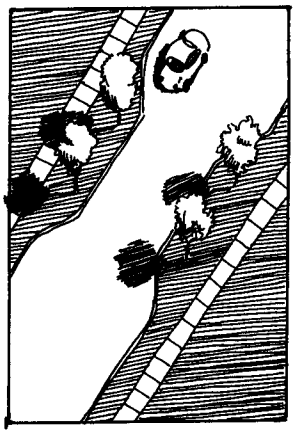


Chicanes

Chicanes are typically created by alternating curb extensions on a street, thus creating a series of small curved segments on an otherwise straight street section. The combination of both visual and physical effects of the chicanes may cause drivers to reduce their speeds.

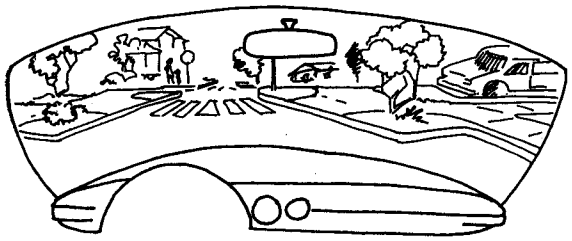


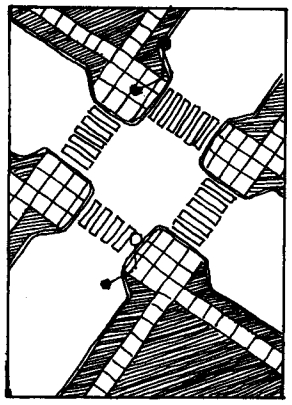


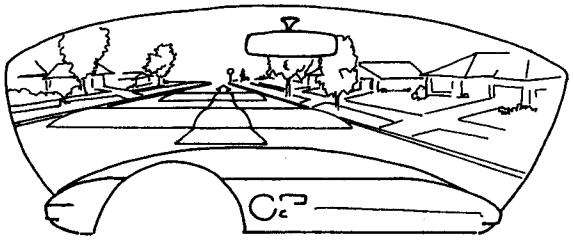


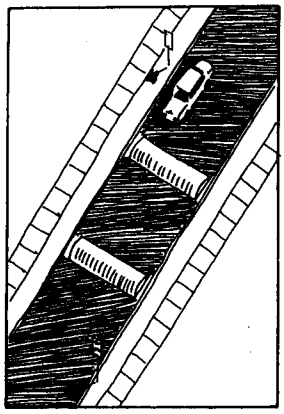
Choker

A choker is a reduction in the street width either at mid-block or at an intersection. Chokers can include anything from simple pavement markings to fully landscaped streetside extensions. The reduction in the street travelway width can benefit pedestrian crossings and may cause drivers to reduce their speeds.



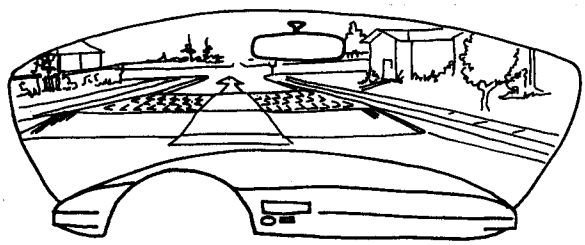


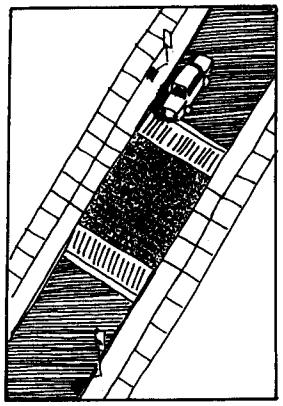


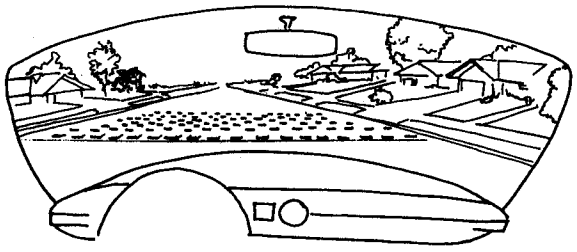


Pavement Undulations (Speed Humps)

Pavement undulations, also know as speed humps, consist of raised areas of the pavement surface extending transversely across the travel lanes. These humps are designed to be uncomfortable for vehicles traveling at unacceptable speeds.

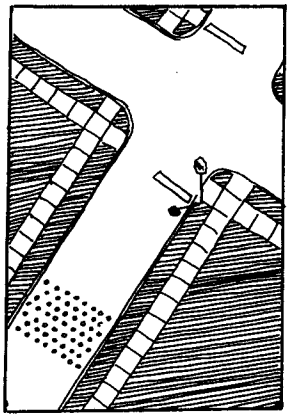






Pavement Surface Treatments (Reflective Pavement Markers)

Changes in the surface texture of pavement at selected locations, or the installation of "reflective pavement markers," can raise drivers' attention and make them aware of their speed and/or location on a street due to the change in feel and sound when passing over the pavement treatment.



The following Table One shows expected characteristics of these traffic calming measures.

Attachment "C" is a summary of some general impacts and effects of the traffic calming measures described above.

TABLE ONE
CHARACTERISTICS OF TRAFFIC CALMING MEASURES

	CUL-DE-SAC	MID-BLOCK CLOSURE	SEMI-DIVERTER	CHANNELIZATION	TRAFFIC CIRCLE	CHICANES	CHOKERS	PAVEMENT UNDULATIONS	PAVEMENT TREATMENT
VOLUME REDUCTION	Yes	Yes	Yes	Yes	Rare	Minimal	Minimal	Minimal	No
SPEED REDUCTION	Possible	Possible	Possible	Possible	Possible	Minimal	Minimal	Inconsistent	Minimal
DIRECTIONAL CONTROL	Yes	Yes	Yes	Yes	Yes	None	None	No	No
NOISE	Decrease	Decrease	Decrease	Decrease	Minimal	Minimal	Minimal	Increase	Increase
SAFETY	Shifts Accidents	Shifts Accidents	Shifts Accidents	Improved	Unaffected	Unaffected	Unaffected	Unaffected (At Design Speed)	Unaffected
EMERGENCY AND SERVICE ACCESS	Major Constraint	Major Constraint	Major Constraint	Major Constraint	None	None	None	Minimal	Unaffected
COMMUNITY REACTION	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed	Mixed
CONSTRUCTION EFFORT AND COST	Moderate to High	Moderate to High	Moderate to High	Moderate to High	High	High	High	Moderate	Low
LANDSCAPING OPPORTUNITY	Probable	Probable	Probable	Probable	Yes	Yes	Yes	No	No
MAINTENANCE AND OPERATIONAL EFFECTS	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Street Cleaning and Snow Plow Problems	Street Cleaning and Snow Plow Problems

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TRAFFIC MANAGEMENT PROJECTS AND STUDIES

This policy considers two areas of concern regarding neighborhood traffic management:

1.) Local Street Projects
2.) Neighborhood Area Studies

Local Street Projects would respond to traffic issues related to speeding and/or excessive cut-through traffic on one local street in a residential neighborhood. These projects may include revisions to the local street to slow traffic and/or to divert traffic off the street in question.

Neighborhood Area Studies would respond to excessive cut-through traffic and speeding on multiple streets in one or more neighborhoods. These studies would investigate traffic conditions that are symptomatic of larger problems, such as congestion or lack of capacity on the arterial street system. These traffic conditions may be similar to those addressed by local street projects, but are more pervasive, with high volumes of cut-through traffic and/or excessive speeds on more than one adjacent street. Such studies would include evaluation of:

* Previous requests for assistance and mitigation efforts in the area.

* Intensity and extent of the initial problems.

* Relationship between the area street system and the land uses served by it.

* Arterial improvement projects, scheduled or planned, which could mitigate traffic problems in the study area.

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TRAFFIC MANAGEMENT REVIEW AND IMPLEMENTATION PROCESS

1.) Project Request

Traffic management requests may be submitted by individual citizens, ad hoc petition groups, neighborhood associations, or submitted by individual Council members. Typically, such requests received by the Town Council will be referred to the Town Manager.

The Engineering Department would determine an "area of influence" surrounding the requested traffic management project and would provide the requester with petition forms to be signed by interested residents within the designated area. The size and extent of an area of influence would be based upon the type of traffic management project being proposed and the specific characteristics of the street network surrounding the proposed project site(s).

To move forward to Step 2, the requester would need to provide a petition signed by at least 2/3 of the property owners which represent at least 2/3 of the affected properties located within the area of influence and indicating their interest in further pursuing the proposed traffic management request. The requester must return the signed petition within 90 days after it is provided by the Town. Unless or until at least 2/3 of the above referenced sign the petition, Town staff would not act further on the request under this policy and process.

Once a valid petition is received, signs would be posted in the vicinity of the proposed project site(s) identifying the area as a possible future neighborhood traffic management project.

Requests would also be reviewed concurrently by the Town Traffic Engineer to determine if an immediate hazard to the public exists, such as the need for sight distance improvements or the placement of additional stop signs, in which case the Town may choose to address the problem separately from this policy and process.

2.) Priority Ranking of Requests

Upon receipt of a valid petition as described in Step 1, the Engineering Department would gather preliminary data about the request, including traffic volumes, speeds, and accident information. The Town Traffic Engineer would review the information and assign points to the request, as detailed in the following section, "Point Assignment for Traffic Management Requests."

All requests completing Step 1 would be ranked Town wide, based on their respective point scores. With this ranking, a draft priority list of petitions would be presented to the Town Transportation Board for consideration. The Town Transportation Board would review this list and the preliminary data gathered for each request. Based upon this information, the Transportation Board would prepare their recommendation that would be included with the Town Manager's annual report to the Town Council regarding neighborhood traffic management requests.

(3A)

The Town Manager's annual report to the Town Council would consist of the following:

* A prioritized list of neighborhood traffic management petitions.

* A copy of each petition.

* A summary of the data collected pertaining to each petition.

* The Town Manager's recommendation.

* The Town Transportation Board's recommendation.

The Town Council would have the final decision regarding any actions to be taken on a petition presented on the prioritized list. Town Council may choose to call a public forum to receive comments from residents to assist with their consideration of petitions.

Once in the process, a petition would be considered for annual priority ranking for up to three years. If, after three years, a petition has not received a high enough priority to proceed, it would no longer be eligible for consideration. This time limitation would ensure that the petition has not become obsolete because of changing traffic conditions and/or new residents in the area.

The Town would notify requester(s) of the status of their petition following the Council's consideration each year, and annually publish notice of the status of the ten highest ranked petitions.

A petition's requester(s) would be notified when the three year limit expired, and a new request could be submitted to re-enter the project in the program via a written request to the Town Council. Step 1 would then need to be repeated to obtain current information and confirm continued interest in the project.

However, at any time, a neighborhood may request the Town Council's approval to proceed with the development and implementation of a traffic management project provided: Town funding and resources are not involved; the request does not conflict with current Town design guidelines and standards for streets; the request does not conflict with the guidelines presented within this policy; and final project plans are reviewed and approved by the Town Council.

3.) Project Plan Development

Once a petition receives Council approval, the Town Transportation Board would hold public "workshops" to inform neighborhood residents of pending projects, to describe the Town's Policy and Process for Neighborhood Traffic Management, and to gather additional information about the traffic problems and related neighborhood needs.

For a particular project, a resident traffic committee of no more than six neighborhood residents from the study area could be formed at this stage. At the public "workshop," any resident from a project's study area may submit a letter of interest for consideration to be a member of a resident traffic committee for a given project. The neighborhood traffic committee, selected by the Town Transportation Board from applicants as noted above, would work with the Town staff and Town Transportation Board throughout the remainder of the project.

Plan development would consist of the following steps:

- Assessment of problems and needs
- Identification of project goals and objectives
- Identification of evaluation criteria
- Development of alternative plans/solutions
- Selection of a proposed plan

The development of a traffic calming plan would include staff work in conjunction with public meetings, neighborhood meetings, and Town Transportation Board meetings. Proposed plans would be based on citizen input and sound engineering principles.

4.) Project Implementation

Upon receipt of proposed plans from the Transportation Board, the Town Manager would prepare a report and recommendation for Town Council consideration. The report would include background and process information; a cost estimate, funding sources, and an implementation recommendation for the Council's consideration.

Depending upon Council action, the project could be funded and proceed to construction; or be placed on a waiting list for future funding, as it becomes available.

5.) Project Monitoring and Evaluation

After implementation, Town staff would monitor all traffic calming measures and would report back to the Council and Town Transportation Board within 12-18 months regarding the operation and effectiveness of the measures.

This follow-up report could result in Council action to revise or remove a traffic calming measure, if so warranted in the opinion of the Council.

TABLE TWO
TRAFFIC CALMING DESIGN CRITERIA

	Street Classification (Intersection)	Average Daily Traffic Volume (ADT) Minimum & Maximum	Street Width (Edge to Edge)	Street Grade or Intersecting Street Grades	Line of Sight (Minimum)	Adjacent On-Street Parking	Posted Speed Limit	Minimum 85th Percentile Speed
Speed Humps	Local or Local Collector	800 - 3000 vpd	25 ft.	4%	360 ft.	Removed	25 mph	35 mph
Pavement Treatments	Local or Local Collector	800 - 3000 vpd	20 ft.	4%	360 ft.	Removed	25 - 35 mph	35 to 45 mph
Semi-Diverters	Local	800 - 1500 vpd	25 ft.	1%	360 ft.	Removed	25 mph	35 mph
Cul-de-sac	Local	800 - 1500 vpd	(Note 1)	(Note 2)	360 ft.	Removed	25 mph	35 mph
Mid-block Closure	Local	800 - 1500 vpd	25 ft.	(Note 2)	360 ft.	Removed	25 mph	35 mph
Forced Turn Channelization	Major Street - Local or Local Collector Minor Street - Local	800 - 1000 vpd	25 ft.	(Note 1)	360 ft.	Removed	25 - 35 mph	35 to 45 mph
Traffic Circle	Major Street - Local or Local Collector Minor Street - Local	800 - 3000 vpd	(Note 1)	1%	360 ft.	Removed	25 - 35 mph	35 to 45 mph
Chicanes	Local Collector	800 - 3000 vpd	(Note 1)	4%	360 ft.	Removed	25 - 35 mph	35 to 45 mph
Chokers	Local or Local Collector	800 - 3000 vpd	(Note 1)	4%	360 ft.	Removed	25 - 35 mph	35 to 45 mph

Note 1: Existing Street conditions must be able to accommodate Emergency vehicle requirements.
Note 2: Existing Street conditions must be able to maintain drainage requirements.
Note 3: The criteria in this table were developed by the Chapel Hill Engineering Department. They are based on accepted traffic engineering practices and similar traffic calming applications in other parts of the country.

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POINT ASSIGNMENT FOR TRAFFIC MANAGEMENT REQUESTS

The following information would be used to develop a numerical "score" for each traffic management request. Scores would be used to rank requests on a Town-wide basis. The higher numerical score would result in the higher ranking of a project.

1.) Traffic Volume

Average daily traffic (adt) volume on the proposed project street divided by 100. [20 points maximum score]

2.) Traffic Speed

Percentage of vehicles traveling at or more than 10 mph over the posted speed limit on the proposed project street divided by 2. [40 points maximum score]

3.) Traffic Accidents

Two points per accident that likely could have been resolved by the recommended traffic management device, based on accident records for the past three consecutive years. [20 points maximum score]

4.) Schools

Five points for each private or public elementary, middle, or high school within the area of influence of the proposed calming measure.

5.) Other

Five points if a street proposed for a traffic management project has sidewalk on only one side.

Twenty points if a street proposed for a traffic management project does not have sidewalk on either side.

Ten points if a street proposed for a traffic management project has travel lane widths wider than 10 feet.

Three points for each pedestrian generator or attractor (such as a park, swimming pool, greenway, etc.) within the area of influence of the proposed calming measure.

One point for each bus stop within the area of influence of the proposed calming measure.

Five points for each designated school crossing within the area of influence of the proposed calming measure.

ATTACHMENT "A"

Adopted by the Chapel Hill Town Council: 04/24/89

TOWN OF CHAPEL HILL
POLICY FOR PLACEMENT OF STOP SIGNS AND ASSIGNMENT OF SPEED LIMITS

OBJECTIVE: It is the policy of the Town of Chapel Hill to install stop signs and assign speed limits that will promote the safe, efficient, and orderly movement of vehicles throughout the Town while preserving existing residential neighborhoods and providing safe and accessible means for pedestrian movement adjacent to and across Town streets.

GUIDELINES: The following guidelines shall be considered when evaluating placement of stop signs and assignment of speed limits on Town streets. In general, the Town of Chapel Hill places signs of all types in accordance with the recommendations of the Manual on Uniform Traffic Control Devices for Streets and Highways (M.U.T.C.D.), published by the U.S. Department of Transportation. This policy includes the general M.U.T.C.D. recommendations and supplements them with more specific guidelines directed to situations expected to arise in Chapel Hill.

STOP SIGNS

Stop sign(s) may be warranted at an intersection where one or more of the following conditions exist:

1. Intersection of less important road with a main road where application of the normal right-of-way rule is unduly hazardous.

2. Intersection of a minor street entering a through highway or street.

3. Unsignalized intersection in a signalized area.

4. Intersection where a combination of high speed, restricted sight distance, and serious accident record indicates a need for control by stop sign(s).

5. Intersection which intercepts identified pedestrian route(s) carrying significant pedestrian volume.

6. Intersection on a street without curbs or sidewalks when such streets are carrying traffic volume significantly above that for which the street was designed.

7. Intersection with existing irregular stop sign placement, where additional sign(s) would improve safety.

8. Unsigned intersection within an existing series of intersections with stop signs.

9. Where the interest of public safety dictates.

10. Intersection of two collector streets that provide primary service to an area and carry nearly equal traffic volumes, which makes clear assignment of right-of-way difficult.

11. Intersection adjacent to facilities such as parks, pools, schools, or other facilities which significantly increase and concentrate pedestrian and vehicular traffic in a localized area.

12. Intersection within a specific street network that carries through traffic on a route which is less desirable than on an alternative route or designated thoroughfare.

Stop sign installation will normally <u>not</u> be recommended in the following situations:

1. At mid-block locations.

2. Solely for the purpose of controlling vehicular speeds.

3. At locations where a stop would create a high likelihood of rear-end collisions.

4. On major arterials or thoroughfares.

5. At locations where yield signs will provide adequate control without requiring full stops.

6. At railroad crossings.

Stop sign installations will be evaluated by Town engineering staff and judged in accordance with these guidelines to avoid potentially detrimental use of this highly restrictive traffic control measure. Evaluations will consider alternatives to stop sign installations which may include construction of sidewalks, improvement of sight distance, construction or improvement of alternative traffic routes, or other site-specific improvements in lieu of stop sign placement.

SPEED LIMITS

In general, speed limits will be assigned on the basis of street classification as follows:

Local	25 mph
Collector	25-35 mph
Arterial (Major and Minor)	45 mph

Changes in existing speed limits and/or posting of speed limits other than those generally recommended by street classification will be considered in situations where:

1. Changes in use of property adjacent to a street creates changed speed limit conditions.

2. Changes in vehicular or pedestrian traffic patterns on a given street creates changed speed limit conditions.

3. The proximity or locations of parks, pools, schools, driveways or other facilities increases and concentrates vehicular and pedestrian traffic on a given street or streets.

4. Street design will not accommodate the speed limit normally recommended, or the posted speed limit.

5. Changes will create a more uniform, continuous speed limit throughout a defined travel corridor.

Speed limits below 25 mph will not be considered on public streets with the exception of special zones such as schools or hospitals.

Speed limits will be evaluated by Town engineering staff to create conditions where the Town street system can be utilized efficiently and safely at speeds that can be adequately enforced. Evaluations will include review of alternatives to speed limit changes which may include street improvements, construction of alternative routes, control of access, or other site-specific improvements in lieu of speed limit changes.

ATTACHMENT "B"

IMPACTS AND EFFECTS OF STOP SIGNS AND SPEED LIMIT SIGNS

	STOP SIGNS	SPEED LIMIT SIGNS
TRAFFIC VOLUME	Stop signs will do little to reduce traffic volumes on local streets where motorists are seeking alternative routes to bypass congested areas. Although local roads with stop signs may require more travel time than direct routes, the absence of traffic congestion often makes them preferable to drivers.	Speed limit signs have no impact on traffic volumes. Drivers will typically select and travel routes that they perceive to provide the least amount of travel time to and/or from their points of origin and destination, regardless of the posted speed limits.
TRAFFIC SPEED	Stop signs have little overall effect on speed. Between stop sign locations, vehicles quickly return to approximately the previous 85th percentile speed.	Typically, drivers travel at speeds which they consider reasonable, comfortable, convenient, and safe under existing conditions. Municipalities sometimes assign a uniform speed limit to all local roads regardless of road designs and adjacent uses. This may result in an inappropriate posted speed limit for the characteristics of a given road.
TRAFFIC NOISE, AIR QUALITY, AND ENERGY CONSUMPTION	Stop signs increase noise within the vicinity if the intersection due to accelerating and decelerating vehicles. Deceleration, idling, and acceleration increases air pollutant emissions and fuel consumption.	As presented above, speed limit signs typically have little effect on traffic speeds or volumes, and thus have little effect on noise, air quality, and energy consumption.
TRAFFIC SAFETY	Evidence to date on the safety effects of individual stop signs placed for volume and speed reduction is mixed. Certain types of accidents may be reduced as a result of stop sign installations, while other types of accidents (particularly rear-enders) are often increased.	Speed limit zones will usually result in a reduction in accidents where the speed limit is set appropriately and enforced. (42)
UNIFORM STANDARDS AND WARRANTS	Stop sign design details and warrants for installation are presented in the M.U.C.T.D., which specifically advises that stop signs should not be used to control speeds.	Speed limit signs are a recognized control device in the M.U.T.C.D, and guidelines for establishing limits are presented in various basic traffic engineering references and in the laws of various states.
COMMUNITY REACTION	Stop signs are often viewed as a solution to "near miss" situations as well as actual accident problems. Negative response comes from those residents at the intersection who are subjected to the additional noise from stopping and accelerating vehicles, and from motorists who think that they are being stopped needlessly.	Some residents feel that speeds of 25 to 35 mph are too fast in residential areas, and petition for speed limits significantly lower than prevailing traffic speeds. Residents also request rigorous enforcement of the lower speed limit. However, the resources of most local police department are limited with regard to the ability to continuously monitor speed limits on local streets.
GENERAL COMMENTS	"Numerous studies have been prepared regarding the degree to which stop signs are obeyed. Generally, when not required to stop by cross traffic, only 5 to 20 percent of all drivers will come to a complete stop, 40 to 60 percent come to a "rolling" stop below 5 mph, and 20 to 40 percent pass through stop signs at higher speeds. Signs placed on major and collector street for the purpose of speed reduction are the most flagrantly violated. Thus, stop signs which do not meet the standard warrants tend to be ignored by drivers, whereas signs placed for right-of-way purposes are more likely to be obeyed." [Institute of Transportation Engineers: *Residential Street Design and Traffic Calming*. Institute of Transportation Engineers, Washington, DC, 1989] Our observations of some intersections controlled by stop signs installed in recent years support this statement.	

ATTACHMENT "C"

IMPACTS AND EFFECTS OF TRAFFIC CALMING MEASURES

	STREET CLOSURE	SEMI-DIVERTER	INTERSECTION CHANNELIZATION	CHICANES	CHOKER	TRAFFIC CIRCLE	PAVEMENT UNDULATIONS	PAVEMENT SURFACE TREATMENT
TRAFFIC VOLUME	Street closures reduce through traffic on the street and limit traffic to local users and delivery vehicles. Overall traffic volume is typically reduced.	Semi-diverters reduce cut-through traffic significantly, yet create minimal impediment to emergency vehicles. However, depending upon the type of barrier, drivers may deliberately disregard the barrier to access the adjacent areas.	Channelization at an intersection may reduce "cut-through" traffic in certain situations.	Chicanes do not typically reduce traffic volumes.	Chokers may reduce traffic volumes if the number of travel lanes is reduced.	Traffic circles typically do not reduce traffic volumes.	Pavement undulations do not typically reduce traffic volumes significantly.	Surface treatments do not typically effect traffic volumes.
TRAFFIC SPEED	Speeding as a result of "cut-through" traffic is typically reduced. Local traffic speeds may not be affected.	Speeding as a result of "cut-through" traffic is typically reduced. Local traffic speeds may not be affected.	Channelization typically has a minimal effect on speeds except in its immediate vicinity.	Chicanes do typically reduce traffic speeds.	Chokers do not typically reduce traffic speeds.	Traffic circles typically do reduce traffic speeds, but often the reduced speed is only at the intersection area.	Pavement undulations are typically effective at reducing speeds within a limited zone of influence around the device. Howver, speeds typically increase again once drivers are beyond the immediate vicinity of the undulation(s).	Surface treatments may result in speed reductions by alerting drivers to their speed as they pass over the treatment area.
TRAFFIC NOISE, AIR QUALITY, AND ENERGY CONSUMPTION	Noise levels typically are reduced due to the reduction in traffic volumes and speeds. Limited improvement in air quality and energy consumption may occur.	Noise levels typically are reduced due to the reduction in traffic volumes and speeds. Limited improvement in air quality and energy consumption may occur.	Limited reduction of noise levels may occur with reduced traffic volumes. The effects on air quality and energy consumption are negligible.	Negligible effects.	Negligible effects.	The effects are limited and related to speed reductions for the most part.	When used on low volume local streets, undulations typically produce small reductions in sound levels. On streets with significant truck and bus traffic, noise levels may increae due to heavy vehicles decelerating and accelerating.	Surface treatments typically generate noise when traversed by motor vehicles. Effects on air quality and energy consumption are negligible.
TRAFFIC SAFETY	A reduction in accidents is typically experienced as a result of the closure. However, the accident rate may increase on alternative routes vehicles are shifted to.	A reduction in accidents is typically experienced as a result of the diversion. However, the accident rate is typically increased on alternative routes vehicles may be shifted to.	A reduction in accidents is typically experienced as a result of channelization.	Chicanes may improve safety as related to a reduction in speeds.	Negligible effects.	Traffic circles may increase intersection accident rates due to vehicles traveling the wrong way around the circle or striking the curb. Circles may also present an increased hazard to pedestrians by bringing vehicles nearer to the curb.	Properly designed undulations can be traversed without difficulty at the design speed. However, loss of vehicle control is possible if the design speed is signficantly exceeded.	Surface treatments may improve safety by alerting drivers to their speed and/or as advance warnings for control devices such as stop signs.
UNIFORM STANDARDS AND WARRANTS	Permanent cul-de-sacs are standard in new residential developments. Mid-block street closures require significant signing to avoid confusion.	Semi-diverters per se are not included in the M.U.T.C.D. or similar traffic control and design guidelines.	Channelization is covered in the M.U.T.C.D. as a control device for turning movements.	Chicanes are not included in the M.U.T.C.D. or similar traffic control and design guidelines.	Chokers are considered to be typical extensions of an existing curb, or channelization islands, as defined in the M.U.T.C.D.	Traffic circles are not specified in the M.U.T.C.D. or similar traffic control and design guidelines.	Pavement undulations are not specified in the M.U.T.C.D. or similar traffic control and design guidelines.	While not identified in the M.U.T.C.D., surface treatments are recognized in may traffic engineering reference texts. However, there are no specific warrants or design specifications for these devices.
EMERGENCY AND SERVICE VEHICLE OPERATIONS	Closure of streets may limit access for emergency and service vehicles. These vehicles must seek alternative routes.	Semi-diverters may require these vehicles to seek alternative routes to routinely access some areas.	Channelization prohibits access for emergency and service vehicles through an intersection and requires these vehicles to seek alternative routes.	Chicanes do not prohibit access for emergency and service vehicles, but may require vehicles to reduce speeds.	Chokers do not typically prohibit access for emergency and service vehicles.	Negligible for properly designed traffic circle.	Emergency and service vehicles must slow to the design advisory speed limit to negotiate the undulations to avoid experiencing discomfort to riders or damage to vehicles. Route times will be increased marginally.	Negligible.
COMMUNITY REACTION	In new developments, cul-de-sacs are allowed where street connections are impractical. Street closures, either at an intersection or mid-block, may not be well received if traffic is merely shifted to another local street or a long detour is created.	Typically positive. However, complaints may be generated from residents of streets onto which traffic is being diverted.	Typically positive.	Typically positive.	Typically positive.	Community reaction to traffic circles is mixed. Local drivers typically have a positive response, while through traffic may find the circle to be an impediment and a nuisance.	Community reaction to undulations is typically mixed. Local traffic typically has a positive reaction, while through traffic often considers the undulations to be a nuisance.	The noise generated from surface treatments often results in negative reactions from nearby residents.
GENERAL COMMENTS	Closure of a street should only be utilized as a means to address cut-though traffic and only when alternative routes are available. Appropriate advisory signing must be incorporated. Accommodations for emergency vehicle access may be necessary as well as provisions for pedestrians and bicyclists.	A partial closure of a street should only be utilized as a means to address cut through traffic and only when alternative routes are available. Appropriate regulatory and advisory signing must be incorporated.	Appropriate designs, visibility, and advisory signing must be incorporated with the device.	Chicanes are most effective as a means of controlling vehicular speeds on a relatively straight and flat roadway. Appropriate designs, visibility, and advisory signing must be incorporated with the devices.	Chokers are most effective on a relatively straight and flat roadway. Appropriate designs, visibility, and advisory signing must be incorporated with the devices.	Traffic circles are applicable at intersections of four approaches with good visibility and relatively flat grades. Appropriate right-of-way, design, visibility, and advisory signing must be incorporated with the devices.	Fairly specific criteria have been developed for the design and location of typical undulation installations.	None.