

NEIGHBORHOOD

TRAFFIC CALMING

MANUAL

Traffic Engineering Division

Public Works Department

JULY 28, 1998 Revision 1 February 8, 2002

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INTRODUCTION

As the City of Jacksonville continues to grow and freeways and arterial routes become more congested, anxious drivers begin to seek alternate routes. Local streets are utilized which impact neighborhoods with additional traffic cutting through the neighborhood. These drivers, who are in a hurry and usually exceed the speed limit, pose a danger to children, pedestrians and bicyclists. When cut-through traffic is combined with neighborhood traffic, residents often become alarmed and begin to seek measures to return their streets to safe, calm and livable conditions.

The specific measures utilized to address the excessive speeds and increased traffic volumes are known as traffic calming techniques. The Institute of Transportation Engineers (ITE) defines traffic calming as "the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users." These techniques are carefully planned measures to redirect traffic to more efficient thoroughfares and restore a sense of livability and safety to neighborhood streets that have become commuter short-cuts. Traffic calming techniques, as outlined in this manual, include chicanes, roundabouts, speed humps, diverters, narrowing, physical street closures, radar speed monitoring or a combination of these treatments. Specific applications will depend upon the unique characteristics of each area in question.

To develop solutions to traffic related problems in identified neighborhoods, the Traffic Engineering Division will coordinate discussions with affected public and private agencies. When a problem is identified, staff will conduct a traffic study (e.g., research the area street layouts, traffic patterns, existing traffic control devices, school bus and transit stops, accident history, etc.). This information will then be reviewed by the affected agencies and solutions / alternatives will be proposed. Potential solutions, if any,

will then be presented to the neighborhood for consideration. When this has been done it is the neighborhood's responsibility to set up a public meeting with their City Council member, the Traffic Engineering Division and the Fire and Rescue Department to discuss the proposed solutions. The Council member will contact the Fire Department and Traffic Engineering. This meeting will finalize the plans that are to be included as part of the petition. After the meeting the petition is circulated requiring 75% agreement with the proposal. Once the petition is completed and the neighborhood's share of the construction cost (50%) have been submitted the plan will be implemented.

This manual contains information needed to request a traffic calming study for your neighborhood. Please complete the enclosed application and submit it to the following location:

Traffic Engineering Division

1007 Superior Street

Jacksonville, FL 32254

GOAL, OBJECTIVES AND POLICIES

GOAL

It is the City's goal to establish procedures to apply Traffic Calming techniques, where appropriate, that will result in livable neighborhoods by lessening the negative impacts of motor vehicles on local streets, altering driver behavior and improving conditions for non-motorized street users.

OBJECTIVES:

- 1. To promote a safe and livable environment for residents, pedestrians, bicyclists and motorists on local streets.
- 2. To reduce cut-through traffic on local streets.
- 3. To reduce speeding on local streets.
- 4. To preserve and enhance pedestrian and bicycle access to neighborhood destinations.
- 5. To encourage citizen involvement in neighborhood traffic calming plans (i.e., provide an opportunity for neighbors to interact and to create a positive community atmosphere).
- 6. To provide a process that will address neighborhood traffic concerns that balance the needs of the neighborhood with that of the entire community.

POLICIES

- 1. Only residential streets will be eligible for a neighborhood traffic calming plan.
- 2. Cut-through traffic should be routed back to the collector and arterial roadways.
- 3. Traffic diversion to adjacent residential streets will be minimized.
- 4. Emergency vehicle access must be preserved.
- 5. Bicyclist and pedestrian access must be preserved.
- 6. Traffic calming techniques will be planned and designed in conformance with sound engineering judgment and planning practices.
- 7. The procedures to implement traffic calming techniques will be as outlined in this document.

CALMING

ANOTHER TRAFFIC OPERATIONS APPROACH

Little known a few years ago, traffic calming techniques are now being applied in many cities throughout the country. These techniques offer ways to help restore neighborhood streets to a more livable condition. Traffic calming, while simple in concept, is a change in emphasis from conventional traffic planning of the past. In conventional traffic planning, moving the most possible traffic at the highest affordable speed on collectors and arterials is the highest priority. When this system begins to fail, neighborhoods can be negatively impacted. Traffic calming can give new balance between traffic service and important neighborhood values, such as safety, walking, cycling and aesthetics.

NEIGHBORHOOD TRAFFIC ISSUES

Traffic Volumes: With the increase in congestion on the arterial and collector streets, some neighborhoods have experienced a growth in cut-through traffic. This traffic can increase neighborhood volumes to a level that may negatively impact pedestrians, bicyclists and other motorists.

Speeding: Many motorists, including neighborhood residents, exceed the posted speed limit on local residential streets. This may negatively impact pedestrians, bicyclists and other motorists.

TRAFFIC CALMING TECHNIQUES:

Traffic calming techniques are traffic engineering measures that influence motorists to drive slower, with more care, and in some cases divert traffic to more appropriate routes. Traffic calming techniques generally fall under two categories: physical and psychological.

Physical: If motorists can see long straight stretches of roadway, their speed may increase. The interruption of sight lines through changes in the road's direction or breaking the road into smaller visual units using techniques such as chicanes and roundabouts causes traffic to slow down. It also means that when motorists widen their field of vision they become much more aware of pedestrians and bicyclists. Roadway design modifications may encourage motorists to travel at a slower, more even pace.

Psychological: Traffic calming may also be achieved by changing the psychological feel of the street. Streets using different surface types, vertical landscaping or narrowed lanes create the appropriate space for a relaxed, pedestrian-friendly atmosphere. These psychological changes give motorists clues that they are no longer on a major roadway but are in a different environment that is shared with pedestrians and bicyclists.

Many traffic calming techniques are designed to physically change the width of the street and psychologically change the character of the road. Techniques such as neckdowns, roundabouts and medians all decrease road width. The Appendix includes a detailed description of many traffic calming techniques, which may include a combination of the following actions:

Deflecting Paths: Deflecting the vehicle path causes drivers to reduce speed and be more attentive. A chicane is a common technique used to deflect the vehicle path.

Roundabouts: Roundabouts are effective in slowing traffic, minimizing accidents, and providing an attractive area for increased landscaping.

Speed Humps / Surface Changes: Changing the surface demands attention from the drivers, and reduces the speed for comfortable driving. Speed humps, textured crosswalks, raised intersections and special materials are primary examples of this technique.

Traffic Diversion: This feature encourages drivers to utilize other routes. Diagonal diverters, one-way streets, median closures and turning movement restrictions are examples of diversion.

Street Narrowing: Narrowing can be accomplished by reducing pavement widths, adding a median, and/or adding additional striping. The perception of narrowing, which can be as effective as actual narrowing, is gained with trees along the curb, an overhead canopy and other landscaping features.

Physical Street Closures: Full or partial closure of streets reroutes or discourages cut-through traffic.

Radar Speed Monitoring / Enforcement: Intensified enforcement of traffic regulations can calm traffic.

Use of trailer mounted radar can remind motorists of inadvertent speeding and can often bring about the desired reduction in speeds.

TRAFFIC CALMING PROCEDURES

Initial Contact: Traffic Engineering Division staff will discuss with residents the various traffic problems they are experiencing. Potential non-traffic calming solutions will be initially pursued.

Pre-Application Process: Citizen participation is an essential ingredient in the development and implementation of a successful neighborhood traffic plan. Neighborhood residents offer insight into the nature and extent of traffic and safety problems, they are most directly affected by the problems and potential mitigating measures, and are frequently the source of innovative solutions.

Concerned residents will meet with staff to discuss the problems and possible traffic calming strategies. The study area involved will be defined. The application process, the petition requirements, the residents financial participation, and the study process will be discussed with residents.

Traffic Calming Study: City staff receives the application form. Staff then collects data, conducts traffic analysis, and identifies potential traffic calming solutions and the associated costs.

Development of a Neighborhood Plan: Education and public awareness are important factors when dealing with traffic safety. City staff will work with that neighborhood's Councilperson to schedule a workshop meeting to identify the problems, review the results of the study, and present potential solutions. At this meeting, a neighborhood traffic plan utilizing traffic calming technique(s) will be discussed and a consensus reached as to the desired technique(s). Landscaping treatments included in this plan will be considered based upon the neighborhood's participation in the installation and maintenance of same.

The Petition: Once a plan is accepted by all parties, a petition with signatures from at least 75% of the households and/or businesses in the defined study area will be required. This petition will be the responsibility of the neighborhood group.

Project Design and Installation: With approval of the plan by the community and payment of 50% of the fees, City staff will initiate the design and implementation process for the proposed traffic calming technique(s).

TRAFFIC STUDY CRITERIA

To assist the Traffic Engineering staff in evaluating the severity of neighborhood traffic problems, the following guidelines will be used:

Minimum Vehicular Volumes: Daily traffic volumes greater than 1000 vehicles or peak hour volumes greater than 100 vehicles on a local residential roadway are required for traffic calming techniques to be considered.

Vehicular Speeds: The 85th percentile speed of the local residential roadway must be at least 10 mph higher than the posted speed limit for traffic calming techniques to be considered.

Traffic Diversion: Traffic calming techniques should not be approved that are likely to divert more than 50 trips per hour to any local residential street within the defined study area.

Cut-Through Traffic: If the cut-through traffic volumes account for at least 30% of the total vehicular volumes on a local residential roadway, corrective traffic calming techniques may be appropriate.

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APPLICATION AND PETITION FORMS

Traffic calming projects can be requested by neighborhood associations, interested groups or individual residents (in the absence of a recognized association).

The person(s) requesting a neighborhood traffic calming plan will also be responsible for the circulation of petitions to endorse the Traffic Calming Plan that is mutually developed by the neighborhood and the City. At least 75% of the households and/or businesses within the defined study area must sign the petition for the process to be considered for implementation.

PROJECT APPLICATION FORM

Contact Name	Day Phone
Address	Zip Code
	ible)
Description of problem	
How many residences / businesses are with	nin the defined study area ?
This completed application form should be	e sent to:
1007 Jackso	ngineering Division 7 Superior St. onville, Fl. 32254 e (904) 387-8861
Office Use Only	
Project Number	Date Application Received
Date Traffic Study completed	
Date Councilperson contacted	
Date of Neighborhood Workshop	Date Petition Received
Funding Source(s)	
Date Project Design complete	Date Construction complete

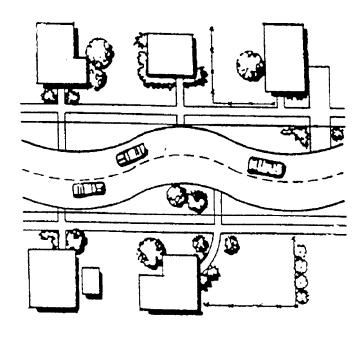
PETITION FORM

We, the undersigned residents of theneighborhood approve the installation of the proposed traffic calming techniques being identified as:		neighborhood,	
times.	NOTE: Implementation of Traffic Calming Techniques could affect Emergency Vehicle response times. Please list all addresses in the petition area. One signature per household or business.		
Name(print)	Signature	Address	Phone #

TECHNIQUES/APPENDIX

CHICANES

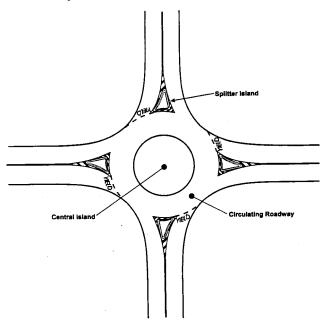
Definition: Mainline deviations to deter the path of travel so that the street is not a straight line (by the installation of offset curb extensions).



Advantages	Disadvantages
 Imposes minimal inconveniences to local traffic. Provides large area for landscaping. Provides a greater visual obstruction. Cost of device is limited by length. A very effective method of changing the initial impression of the street. If done correctly drivers will not be able to see through. Appears as a road closure yet allows through movement. Accepted by public as a speed control device. Aesthetically pleasing. Reduces speed without significantly impacting emergency response. 	 Increases the area of landscaping to be maintained by residents. Cost is greater than many other devices. May create opportunities for head-on conflicts.
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ROUNDABOUTS

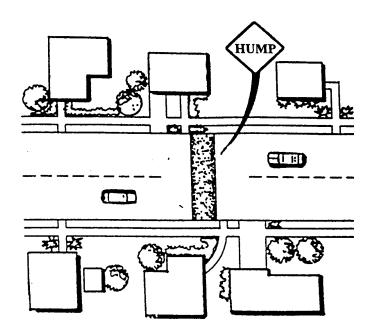
Definition: Roundabouts are raised circular areas (similar to medians) placed at intersections. Drivers travel in a counterclockwise direction around the circle. Modern roundabouts are "yield upon entry", meaning that cars in the circle have the right of way and cars entering the circle must wait to do so until the path is clear. When a roundabout is placed at an intersection, vehicles may not travel in a strait line.



Advantages	Disadvantages
 Reduces the number of conflict points at intersections Reduces speed at intersection approach Provides space for landscaping. Effective at multi-leg intersections. Provides equal access to intersections for all drivers. Provides a good environment for cyclists and pedestrians. Does not restrict movements. 	 May be restrictive for larger vehicles. Will require additional signage. Expensive to construct. Additional right-of way may be required. Initial safety issues as drivers adjust. May increase volumes on adjacent streets. Maintenance responsibility if landscaped. May impact drainage.

SPEED HUMPS

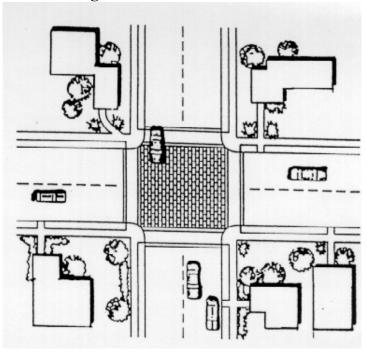
Definition: A speed hump is a raised area in the roadway pavement surface extending transversely across the travel way. Speed humps normally have a maximum height of 3 to 4 inches with a travel length of approximately 12 feet.



Advantages	Disadvantages
 Self enforcing. Relatively inexpensive Slows traffic 	 Can increase noise and pollution. Increased maintenance. Could affect drainage. Impacts emergency vehicle response time.

RAISED INTERSECTION

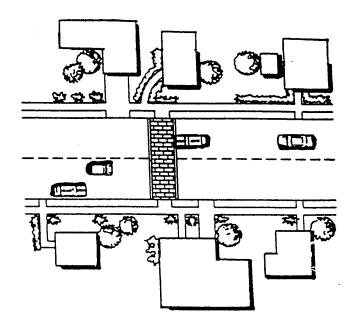
Definition: A raised plateau of roadway where roads intersect. The plateau is generally 3 to 4 inches higher than the surrounding street.



Advantages	Disadvantages
 Slows vehicles in the intersection. Highlights intersection. Effective speed reduction. Pedestrian safety treatment Aesthetically pleasing if well designed. 	 Can increase noise level. Expensive to construct and maintain. Could affect drainage. Increased difficulty of making a turn. Requires adequate signage and driver education.

TEXTURED CROSSWALK

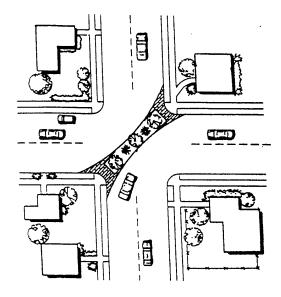
Definition: A crosswalk with textured material in the center, i.e., pavers, stamped concrete, etc.



Advantages	Disadvantages
May slow vehicles in the intersection. Pedestrian amenity. Aesthetically pleasing if well designed.	Can increase noise level. Expensive to construct and maintain.

DIAGONAL DIVERTER

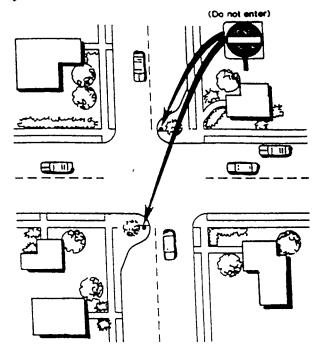
Definition: A barrier placed diagonally across a four legged intersection, interrupting traffic flow across the intersection.



Advantages	Disadvantages
 Eliminates through traffic. Provides area for landscaping Reduces traffic conflict points. Increases pedestrian safety. Aesthetically pleasing if well designed. 	 Will interfere with property access. May inhibit access by emergency vehicles. Could affect drainage. May divert through traffic to other local streets. Altered traffic patterns may increase trip length

PARTIAL STREET CLOSURE

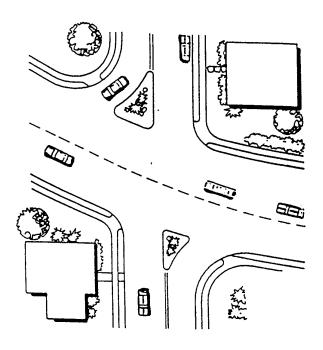
Definition: Physical blockage of one direction of traffic on a two way street. The open lane of traffic is signed "One Way" and traffic from the blocked lane is not allowed to enter.



Advantages	Disadvantages
 Reduces through traffic in one direction. Allows two way traffic in the remainder of the street. Shorter crossing distance for pedestrians. Provides space for landscaping. Can be designed to provide 2 way access for bicycles. 	 May increase trip length for some residents. Expensive to construct and maintain. Could affect drainage. Reduces access for residents. Emergency vehicles have to proceed with care. Compliance is not 100%

CHANNELIZATION

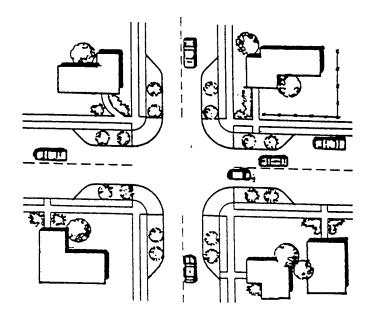
Definition: Raised traffic islands installed to prevent certain turning movements at an intersection.



Advantages	Disadvantages
 Changes driving patterns. May reduce cut through traffic. May be attractive if landscaped. 	 May increase trip length for some drivers. Aesthetically unattractive if not landscaped. Maintenance responsibility if landscaped. Expensive to construct.

NECKDOWNS

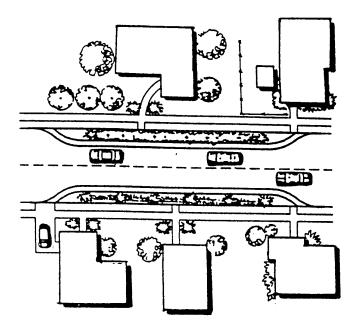
Definition: Physical reduction of road width at intersections.



Advantages	Disadvantages
 May improve sight distance. May reduce approach speeds. May be aesthetically pleasing if landscaped. Shortens pedestrian crossing distance. Can be used in multiple applications. 	 Unfriendly to cyclists unless designed for them. Landscaping may cause sight line problems. Increased maintenance if landscaped. Expensive to construct. Possible drainage problems.

LANE NARROWING

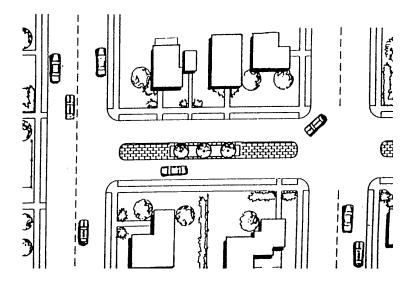
Definition: Street physically narrowed to expand sidewalks and landscaped areas..



Advantages	Disadvantages
 Provides space for landscaping. Good for pedestrians due to shorter crossing distance. Slows traffic without seriously affecting emergency time. Effective when used in series. 	 Partially effective as a visual obstruction. Unfriendly for cyclists. Possible drainage concerns. Potential driveway conflicts. Expensive to construct and maintain.

TRAFFIC MEDIAN

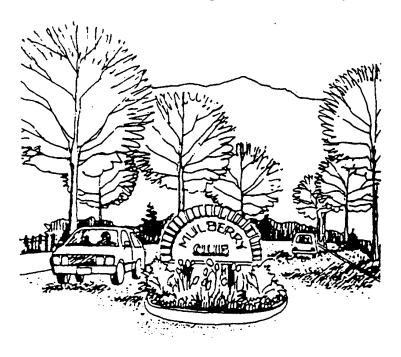
Definition: An island or barrier in the center of a street that serves to segregate traffic.



Advantages	Disadvantages
 Provides a refuge for pedestrians and cyclists. Provides a barrier between lanes of traffic. May be attractive if landscaped. Narrows pavement width. 	 May reduce sight lines if over landscaped. Possible driveway conflicts. Maintenance responsibility if landscaped. Expensive to construct. May reduce access for residents. Eliminates on street parking.

NEIGHBORHOOD IDENTIFICATION ISLAND

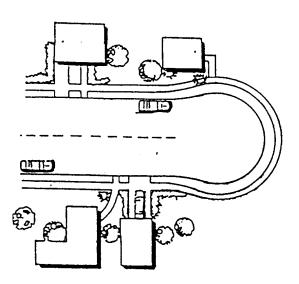
Definition: An island in the center of a street that includes a sign, landscaping or other structure that helps to communicate a sense of neighborhood identity.

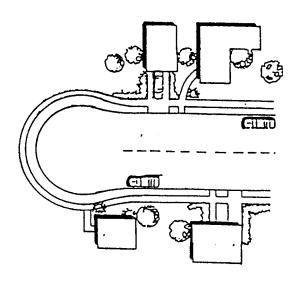


Advantages	Disadvantages
 Alerts drivers to a change to a residential roadway environment. Reduces entry speed. Provides space for landscaping the median Helps give neighborhood a sense of identity. 	 Additional right of way may be required. Expensive to construct Maintenance responsibility if landscaped.

STREET CLOSURE

Definition: Streets closed to motor vehicles to eliminate through traffic.





Advantages	Disadvantages
 Eliminates through traffic. Improves safety for all the street users. Increases landscaping potential. . 	 Reduces emergency vehicle access. Reduces property access for residents. Possible drainage concerns. May increase trip lengths May increase volumes on other streets. May require additional right of way. Expensive to construct. May be perceived as inconvenient by some neighbors and an unwarranted restriction by the general public Creates noncontinuous street.

RADAR SPEED MONITORING TRAILER

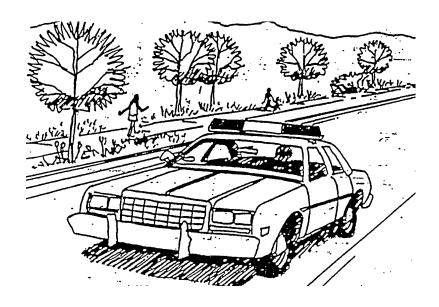
Definition: Mobile radar display to advise motorists of their speed.



Advantages	Disadvantages
 Educational tool. Very for public relations tool Useful especially in school and construction zones where spot speed reduction is important. 	1. Requires periodic enforcement. 2. Effective for limited duration. 3. Unit moves frequently which requires personnel

TRADITIONAL ENFORCEMENT

Definition: Periodic monitoring of speeding and other violations by police.



Advantages	Disadvantages
Good temporary public relations tool. Serves to inform public that speeding is undesirable behavior for which there are consequences	 Effect is not permanent. Enforcement is an expensive tool