City of Manhattan Beach

Neighborhood Traffic Management Program

HANDBOOK

City of Manhattan Beach
Community Development Department
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MESSAGE FROM THE DIRECTOR

As the City of Manhattan Beach and surrounding communities continue to grow we will continue to see increases in traffic that impact our residential neighborhoods. In order to protect neighborhoods from the negative impacts of vehicular traffic the City Council has adopted this Neighborhood Traffic Management Program (NTMP). The objective of the NTMP is to improve the safety and livability of neighborhood streets by assisting residents in addressing some of their local traffic concerns.

In order to meet this objective the following publication has been developed which describes the procedures that local neighborhoods must undergo for traffic measures to be reviewed for possible implementation. A detailed list or "toolbox" of traffic control measures that serve as plausible methods of curbing neighborhood traffic problems is included in this NTMP Handbook, indicating the advantages and disadvantages of each traffic control measure.

The initial development of the NTMP came in response to the comprehensive update of the City's General Plan, initiated by the City Council in September 2001. As part of this process a Neighborhood Traffic Committee (NTC) was appointed by the City Council to help develop, review, and make recommendations on traffic related issues including the NTMP. The Council appointed resident representatives from different areas throughout the City as well as business representatives to serve on the Committee to provide a wide variety of opinions from a cross section of the community. Councilmember Jim Aldinger served as the City Council representative and Chairman for the Committee. Additionally, two Parking and Public Improvements Commission (PPIC) members, and a School Board representative served on the Committee. The NTC held 6 meetings over a 6-month period to develop the NTMP and address other General Plan traffic-related issues. In August 2002, the PPIC reviewed the recommendations from the NTC, and then the City Council reviewed the recommendation in October and adopted the NTMP in November 2002.

I would like to thank residents for their interest and active participation in improving the overall quality of life here in the City of Manhattan Beach and we look forward to addressing your neighborhood traffic concerns.

Sincerely,

Richard Thompson
Community Development Director

NEIGHBORHOOD TRAFFIC MANAGEMENT PROGRAM PROCEDURES SUMMARY

The process and procedures for residents to obtain consideration for any given traffic control measures on either one street or a larger neighborhood area requires a series of simple steps. This process and the Toolbox measures are intended to be used on streets classified as residential streets (Collector, Residential Collector, Major Local, and Local). A Draft Road Classification map is included as Appendix E and identifies the street classifications. The process will ensure that the neighborhoods with demonstrated problems and community support for traffic improvements have equal access to neighborhood traffic management measures. The Program depends upon citizen involvement and may vary from year to year based upon funding available for installation of neighborhood traffic improvements.

This is a summary of the process. A flow chart is included as Appendix A and a detailed description is included as Appendix B of this Handbook. For further questions please contact Rob Osborne, Management Analyst, at (310) 802-5540. Prior to submittal of a written request, please contact Rob Osborne to discuss your neighborhood traffic concerns and to set up a meeting time if necessary to discuss the process, toolbox measures, and options. If necessary the City's Traffic Engineer and/or Police Traffic Division staff will also aid in discussing residents' traffic concerns at the time of the scheduled meeting.

The process includes the following seven steps.

Step 1- Identify Candidate Streets/Neighborhoods
First residents must identify candidate streets or areas for traffic improvement and submit a written request(s) to the Community Development Department (CDD). Appendix C provides a sample petition and request letter.

Step 2- Preliminary Screening and Evaluation
The CDD Director and City Traffic Engineer will review requests to determine whether or not they should be handled as part of the normal traffic engineering or police enforcement functions of the City, or if they qualify for consideration under the Neighborhood Traffic Management Program (NTMP).

Step 3- Engineering Analysis/Preliminary Recommendations
If it is determined that the request falls under the NTMP the City Traffic Engineer will undertake an engineering study of the street(s) or neighborhood and hold a neighborhood meeting. Based on this study and input from other departments, the CDD will make a preliminary determination and recommendation of the need for traffic management measures, as detailed in the toolbox measures.

Step 4- Neighborhood Meetings and Survey/Petitions
A neighborhood meeting(s) will be held to present findings and preliminary recommendations. In addition a survey/petition may be circulated to affected persons to establish the level of support for the proposed toolbox measures.

NEIGHBORHOOD TRAFFIC MANAGMENT PROGRAM PROCEDURES SUMMARY (Continued)

Step 5- Develop, Install, and Evaluate Test projects
Proposed measures will then be reviewed by staff, Parking and Public Improvements Commission (PPIC), and/or City Council to determine their appropriateness. If measures are approved, and once funding becomes available for its development, temporary test projects will be installed and an evaluation of the test projects will be conducted for a period of 3 to 6 months. Installation of proposed test projects can be appealed by anyone.

Step 6- Determination of Permanent Project
Based on tests results, it will be determined whether or not a project will be made permanent.

Step 7- Monitoring
Once a project is made permanent, the City will conduct periodic monitoring of the site.

Administrative/Miscellaneous

Appeals-
Decisions of staff can be appealed to the PPIC; and similarly, PPIC decisions can be appealed to the City Council. The appeals process will follow established City procedures.

Amendments-
This program and the associated Toolbox may be amended at any time by the City Council. Amendments may first be reviewed by the PPIC who will make a recommendation on the amendment to the City Council.

Removal-
Existing projects and/or projects installed under this Program may be requested to be removed. The request for removal of a project will be processed generally using the same procedures as outlined in this program.

LEVEL ONE TOOLS
Generally Administrative/Staff Level Approval

GENERAL CHARACTERISTICS:

- Least restrictive tool
- Easiest to implement
- Less potential to shift problem
- Less effect on emergency response
- Lower cost
- Faster to implement
- Lower controversy

LIST OF LEVEL ONE TOOLS:

- Enhanced Police Enforcement
- Speed Monitoring Trailer
- Neighborhood Traffic Watch Program
- Higher Visibility Crosswalk
- Pedestrian Crossing Signs
- Electronic Speed Limit Signs/Larger Static Speed Limit Signs

LEVEL ONE TOOLS:
Enhanced Police Enforcement

Description:

- Increased police presence and enforcement in areas with traffic concerns.

Advantages:

- Effective while officer is present and monitoring speeds
- Can be implemented in almost any location on short notice
- May be used during “learning period” when new devices or restrictions first implemented

Disadvantages:

- Not self-enforcing; temporary measure, dependent on resources
- Fines may not cover cost of enforcement
- Short “memory effect” when enforcement officer no longer present

Cost:

- High cost primarily due to the staffing requirements

Problems Targeted:

- Moving vehicle violations
- Running stop signs
- Illegal parking

Street Type:

- All

Other Criteria:

- Often helpful in school zones

LEVEL ONE TOOLS:
Speed Monitoring Trailer

Description:

- Mobile trailer mounted radar display that informs drivers of their speed. Also collects speed data, and can be used to display speed limit information

Advantages:

- Effective speed control while in use
- Educates drivers on speeds
- Educates drivers on traffic issues in area

Disadvantages:

- Duration of effectiveness limited – some residual effects noted
- Not self-enforcing in long term
- Some drivers may test their speed

Cost:

- Low to moderate cost related to purchase price and to staffing requirements

Problems Targeted:

- Any local/residential street where speeding is a problem or where drivers need to be educated about traffic issues in the area

Street Type:

- All

Other Criteria:

- None

LEVEL ONE TOOLS:
Neighborhood Traffic Watch Program

Description:

- Group of residents volunteer to observe violations and are trained to use radar units to record and report habitual speeds. Courtesy letters may be sent by police

Advantages:

- Involves affected residents
- Effective educational tool
- May have longer term effects as neighbors become aware of who is speeding and the concerns of other neighbors

Disadvantages:

- Requires extensive volunteer citizen involvement
- May need to consider legal and privacy issues
- Tendency to become very controversial between neighbors

Cost:

- Low to Moderate

Problems Targeted:

- Residential streets with speeding concerns and willing, active neighbors

Street Type:

- All except arterials

Other Criteria:

- Requires willing participants/ volunteers

LEVEL ONE TOOLS:
Higher Visibility Crosswalk

Description:

- Higher visibility crosswalk design using either special signing and striping or special pavement treatment

Advantages:

- More visible to drivers than traditional crosswalks

Disadvantages:

- Pedestrians may rely too heavily on the ability of the crosswalk to control driver behavior
- Higher maintenance than standard crosswalk
- Lower visibility crosswalks may become ignored by drivers

Cost:

- Low, some additional maintenance costs

Problems Targeted:

- Existing uncontrolled crosswalks as determined appropriate by City Traffic Engineer
- High pedestrian collision rate locations

Street Type:

- All

Other Criteria:

- Use at existing crosswalk location
- Near area of high pedestrian use

LEVEL ONE TOOLS:
Pedestrian Crossing Signs

Description:

- Signs placed in the roadway median at marked crosswalks that advise motorists of the pedestrian right-of-way

Advantages:

- Brings motorists attention to crosswalk and pedestrian activity
- May result in slower speed near the crosswalks

Disadvantages:

- Proliferation of such signs would tend to diminish effectiveness
- Drivers may stop when no pedestrians are present

Cost:

- Low, some additional maintenance costs

Problems Targeted:

- Selected crosswalk locations with high levels of pedestrian activity.
- May be applied in combination with other special crosswalk treatments such as special pavement or raised crosswalk

Street Type:

- All

Other Criteria:

- Use at existing current crosswalk location
- Use near area of high pedestrian use

LEVEL ONE TOOLS:
Electronic Speed Limit Signs/ Larger Static Speed Limit Signs

Description:

- There are two sign options. The electronic or driver feedback speed sign shows the passing motorist how fast they are actually going. If the driver exceeds the posted speed by more than 5 MPH the sign will flash to further alert the driver. The larger static or variable speed limit sign gives motorists passing through a school, park, residential, or other high pedestrian activity zone the actual speed limit currently enforced in the zone. Both signs are permanently mounted and may be used in conjunction with static crosswalk signs

Advantages:

- Improves speed limit sign awareness
- Alerts drivers to excessive speeding
- Helps reduce speeds near high activity zones

Disadvantages:

- If posted speed is not close to the speed preferred by drivers, additional enforcement may be necessary
- Proliferation may reduce effectiveness

Cost:

- Between $4,500-$9,000

LEVEL ONE TOOLS:
Electronic Speed Limit Signs/ Larger Static Speed Limit Signs (Continued)

Problems Targeted:

- High Speeds
- School zones

Street Type:

- All

Other Criteria:

- Placement depends on conditions not readily apparent to driver such as topography, vegetation, etc.

LEVEL TWO TOOLS

Generally Approved By Parking and Public Improvements Commission and/or City Council

GENERAL CHARACTERISTICS:

- Moderately restrictive tools
- Greater effect on emergency response
- Greater potential to shift problems
- Higher cost
- More complex approval process

LIST OF LEVEL TWO TOOLS:

- Traffic Signal Adjustments to Discourage Cut-Through Traffic
- Turn Restrictions Via Signage
- Rumble Strips/Dots
- Crosswalk Warning System
- Raised Median Island
- Entry Island (Neighborhood Identification Island)
- Mid-Block Narrowing
- Chokers at Intersections
- Lane reduction/ Lane Narrowing (Restriping)
- Stop Sign as Traffic Control Measure
- Parking Restrictions

LEVEL TWO TOOLS:
Traffic Signal Adjustments to Discourage Cut-Through Traffic

Description:

- Adjustment of traffic signals to prohibit or restrict turning or through movements which may be accompanied by a sign indicating specific days and/or hours of applicability

Advantages:

- Significant exclusion of undesired movements may have a significant positive impact on residential area
- In case of turn prohibitions, safety may increase on origin streets (often a major or non-local.)
- Does not impede emergency vehicles, as they can readily violate the restriction

Disadvantages:

- Prohibition is subject to some deliberate violation, particularly at low volume local intersections within the neighborhood where police presence is infrequent. Safety may decrease at other locations if drivers are forced to make hazardous movements to compensate for restricted movements.

Cost:

- Low

LEVEL TWO TOOLS:
Traffic Signal Adjustments to Discourage Cut-Through Traffic (Continued)

Problems Targeted:

- Non-resident intrusion
- High local street volumes
- Reduce collision rate
- Access restrictions to residential areas
- Directional control
- High speeds

Street Type:

- All

Other Criteria:

- Must have identified cut-through traffic
- Must have traffic signal adjacent to residential neighborhood

LEVEL TWO TOOLS:
Turn Restrictions Via Signage

Description:

- Turning prohibitions or restrictions may be accompanied by a sign panel indicating specific targeted days and/or hours of applicability. A combination of these signs may appear at a location, depending on which movement(s) is (are) intended for exclusion

Advantages:

- Significant exclusion of undesired movements may have a significant positive impact on residential area
- In case of turn prohibitions, safety may increase on origin streets (often a major or non-local.)
- Does not impede emergency vehicles, as they can readily violate the restriction.

Disadvantages:

- Prohibition is subject to some deliberate violation, particularly at low volume local intersections within the neighborhood where police presence is infrequent. Safety may decrease at other locations if drivers are forced to make hazardous movements to compensate for restricted movements.

Cost:

- Low

LEVEL TWO TOOLS:
Turn Restrictions Via Signage (Continued)

Problems Targeted:

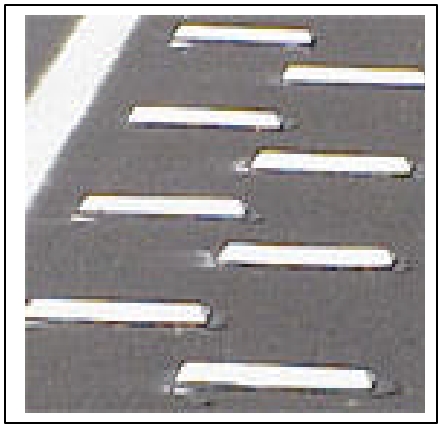
- High local street volumes
- Non resident intrusion
- High collision rates
- Access restrictions to residential areas
- Directional Control

Street Type:

- All

Other Criteria:

- Must have identified cut-through traffic



LEVEL TWO TOOLS:
Rumble Strips/Dots

Description:

- Rough or patterned section of pavement, created by asphalt strips or raised ceramic pavement markers for the purpose of alerting drivers of a specific control device (e.g. unexpected stop sign) or a particularly unique condition (e.g. sharp curve).

Advantages:

- May reduce speed in localized area
- Raises driver awareness

Disadvantages:

- Creates noise and vibration
- Bicycles/motorcycles may have difficulty crossing rumble strips

Cost:

- Low initial cost
- Moderate to high maintenance requirements

Problems Targeted:

- Speed reduction
- Driver alertness of potential hazards

Street Type:

- All

Other Criteria:

- None

September 21, 2004 the City Council removed the Crosswalk Warning System from the approved list of tools.

LEVEL TWO TOOLS: Crosswalk Warning System

Description:

- Lights embedded in the pavement at a pedestrian crossing which flash to alert the on-coming motorist when a pedestrian may be crossing

Advantages:

- Much higher visibility to drivers than standard crosswalk
- Visible at night and during haze and fog conditions
- Provides additional visibility for slower/young pedestrians

Disadvantages:

- Pedestrians may develop a false sense of security
- Less visible during daytime
- Pedestrians may not wait for vehicles to stop
- Effectiveness may wear off over time

Special Considerations:

- Still a "new" measure under development
- Higher maintenance than standard crosswalks
- Priority list of locations recommended

Cost:

- High – $15,000 to $40,000 per application

Problems Targeted:

- High pedestrian exposure locations to be determined by City Traffic Engineer
- High collision rate locations

LEVEL TWO TOOLS: Raised Median Island

Other Criteria:

- Not to be used at controlled intersections

Description:

- Raised island in the center of the roadway with one-way traffic on each side

Advantages:

- Narrowed travel lanes provide “friction” that tends to reduce speeds
- Opportunity for landscaping and visual enhancement
- Acts as entranceway into neighborhood
- Discourages non-resident traffic

Disadvantages:

- Long medians interrupt emergency access and operations
- May interrupt driveway access adjacent to median
- May require removal of parking
- Additional utility requirements (water, power)

Cost:

- Moderate to high cost to construct and landscape
- Moderate maintenance costs

Problems Targeted:

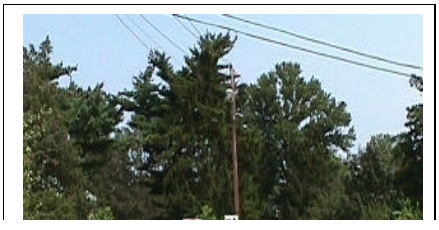
- High Speeds
- Cut-through Traffic

Street Type:

- All

Other Criteria:

- Must not significantly impede emergency vehicle access.
- Must meet drainage requirements
- > 15% of peak hour volume is cut-through traffic
- Critical Speed is >7 MPH over peak posted speed
- Grade is less than 10%



LEVEL TWO TOOLS: Entry Island (Neighborhood Identification Island)

Description:

- A raised island in the center of a two-way street that identifies the entrance to a neighborhood

Advantages:

- Notifies motorist of change in roadway character
- Helps slow traffic
- Opportunity for landscaping and/or neighborhood entry signage
- May discourage cut-through traffic

Disadvantages:

- Additional landscape maintenance (and irrigation) required
- May require removal of parking
- May interrupt emergency access and operations

Cost:

- Medium to high cost to construct and, landscape
- Moderate maintenance costs

Problems Targeted:

- Wide entry to residential areas with speeding and/or cut-through traffic

Street Type:

- All

Other Criteria:

- Must not significantly impede emergency vehicle access.
- Must meet drainage requirements

LEVEL TWO TOOLS:
Mid-Block Narrowing

Description:

- Segment(s) of roadway narrowing where curbs are extended toward the center of the roadway on one or both sides of the street

Advantages:

- Pedestrian visibility increased and crossing distance reduced when used at crosswalk
- May reduce speed by narrowing usable street width
- Opportunity for landscaping and visual enhancement

Disadvantages:

- Creates drainage issues where curb and gutter exist
- May create a diversion for bicyclists
- May require removal of parking

Cost:

- Medium to high cost depending on landscaping, pavement treatments and storm drainage considerations

Problems Targeted:

- Mid-block locations with speeding and/or cut-through traffic is a concern

Street Type:

- All

Other Criteria:

- Must not significantly impede emergency vehicle access.

LEVEL TWO TOOLS:
Chokers at Intersections

Description:

- Raised islands built to narrow the roadway at intersections.

Advantages:

- Pedestrian crossing distance reduced
- Narrowed roadway section may help reduce vehicular speed reduction
- Creates neighborhood “gateway”

Disadvantages:

- May force bicyclists to travel in same traffic lane as vehicles turning right
- Causes drainage issues
- May require removal of parking

Cost:

- Moderate to high cost depending on landscaping, pavement treatments and storm drainage considerations

Problems Targeted:

- Intersections on local residential or collector streets where speeding and/or cut-through traffic is a concern

Street Type:

- Local, Major Local, Residential Collector (All if no Residential Collector)

Other Criteria:

- There must be adequate turning radius for emergency vehicle access especially in narrow streets

LEVEL TWO TOOLS: Lane Reduction/Lane Narrowing/Restriping

Description:

- Modify roadway striping to either narrow lanes or reduce the number of lanes

Advantages:

- May reduce speeds due to perceived narrower roadway width
- Parking or bicycle lanes may be added

Disadvantages:

- Speed reduction may be less effective than other more restrictive measures
- May require some parking removal
- May result in shifting volumes to adjacent streets if number of lanes is reduced

Cost:

- Moderate initial cost and ongoing maintenance

Problems Targeted:

- Wide residential streets where speed reduction is desired
- Excessive street volume on multilane streets

Street Type:

- All

Other Criteria:

- Must not create significant parking impact due to loss of parking.

LEVEL TWO TOOLS: Stop Sign as Traffic Control Measure

Description:

- Stop signs are a traffic control device used to assign the right-of-way at intersections. Although not intended for this purpose, stop signs have been used in many communities as a measure to discourage cut-through traffic and slow down speeds near the intersection

Advantages:

- May improve pedestrian safety
- Additional stop signs may discourage some cut-through traffic
- Can improve driver visibility
- Perceived by affected residents as a positive step toward solving the problem where other measures are not feasible

Disadvantages:

- May cause non-compliance where no reason for stop sign is evident to drivers
- Not recommended by professional traffic engineers for speed reduction
- Proliferation of stop signs may result in motorists disobeying stop signs elsewhere
- Could result in **increase** in speeds between the signs as drivers try to "make up for lost time"
- May increase vehicle noise at new stop sign location
- May increase traffic congestion as vehicles stop at multiple signs

LEVEL TWO TOOLS:
Stop Sign as Traffic Control Measure (Continued)

Disadvantages (continued):

- Must be followed up with enforcement
- Pedestrians at stop sign intersections may have a false sense of security
- May increase rear-end collisions

Cost:

- Low initial cost
- Low on-going maintenance cost

Problems Targeted:

- At intersections where right-of-way is confusing
- Intersections where speeding and/or cut through traffic is an issue

Street Type:

- Local, Major Local, Residential Collector (All if no Residential Collector)

Other Criteria:

- Requires review by City Traffic Engineer and City Council approval

LEVEL TWO TOOLS:
Parking Restrictions

Description (One or more of the following):

- Preferential Parking Permits, which allows residents or business owners to purchase a permit to exempt a vehicle from posted parking restrictions on streets or in a public parking lot.
- Metered parking with a maximum time limit
- Limited parking hours on streets and public parking lots

Advantages:

- Reduces “outsider” parking in residential areas
- Can reduce inconvenience to residents and business owners associated with simple time limit parking
- Increases short term parking availability near retail districts

Disadvantages:

- Depending on the posted restrictions, may not eliminate all customer parking in residential areas abutting retail districts.
- May not eliminate long term storage of vehicles by residents with permits
- Annual permits cause inconvenience to purchase and maintain
- Visitors may have difficulty finding parking

Cost:

- Low

LEVEL TWO TOOLS:
Parking Restrictions (Continued)

Problems Targeted:

- Commercial parking encroachment into residential areas
- Inefficient use of existing parking
- Limited parking availability

Street Type:

- Local, Major Local, Residential Collector (All if no Residential Collector)

Other Criteria:

- Parking study required to determine extent of parking demand

LEVEL THREE TOOLS

Requires Parking and Public Improvements Commission and/or City Council Approval

GENERAL CHARACTERISTICS:

- Moderately restrictive tools
- Strong potential to affect emergency response
- Strong potential to shift problems
- Generally the highest cost
- Must be considered only after Level One and Two tools have been reviewed and/or tested in the field.

LIST OF LEVEL THREE TOOLS:

- Raised Crosswalk
- Raised Intersection
- Traffic Circle
- Restricted Movement Barrier
- Entrance Barrier-Half Closure
- Diagonal Diverter

LEVEL THREE TOOLS:
Raised Crosswalk

Description:

- Flat-topped speed hump built as a pedestrian crossing
- Appropriate near schools, recreation facilities, other areas with high pedestrian activity

Advantages:

- Generally slows traffic
- Increases pedestrian visibility in the crosswalk
- Clearly designates the crosswalks

Disadvantages:

- May increase emergency response times
- May increase traffic noise in vicinity of crosswalk
- May create drainage issues where raised crossing extends from curb to curb

Cost:

- Moderate

Problems Targeted:

- Local streets where speed control and pedestrian crossing designation are desired
- Local streets where cut-through traffic is evident

Street Type:

- Local, Major Local, Residential Collector (All if no Residential Collector)

LEVEL THREE TOOLS:
Raised Crosswalk (Continued)

Other Criteria:

- Must meet drainage requirements
- Must not significantly impede emergency vehicle access
- At least 25 pedestrians should cross during peak hours
- Near pedestrian generator
- Should be used in conjunction with other traffic calming devices to control speeds

LEVEL THREE TOOLS:
Raised Intersection

Description:

- A raised section of roadway at an intersection where the pavement is flush with the top of the curbing and the approaches are ramped like speed humps.

Advantages:

- Effective speed mitigation at intersection
- Opportunity for attractive pavement treatments
- May improve pedestrian safety at intersection

Disadvantages:

- Requires storm drainage modification
- May require bollards to define the corners of the intersection since curb height is reduced
- May reduce emergency response time
- May increase traffic noise in vicinity

Cost:

- High construction cost where there are storm drainage issues

Problems Targeted:

- Streets where speed reduction is desired
- Streets where cut-through traffic is evident

Street Type:

- Local, Major Local, Residential Collector (All if no Residential Collector)

LEVEL THREE TOOLS:
Raised Intersection (Continued)

Other Criteria:

- Must meet drainage requirements
- Must not significantly impede emergency vehicle access
- At least 25 pedestrians crossing during peak hour
- Near pedestrian generator

LEVEL THREE TOOLS:
Traffic Circle

Description:

- Traffic circles are raised circular medians in an intersection. Vehicles must change their travel path to maneuver around the circle and are typically controlled by “Yield on Entry” on all approaches

Advantages:

- Slows traffic as it drives around circle
- Breaks up sight-lines on straight streets
- Opportunity for landscaping in the intersection

Disadvantages:

- May impede emergency response
- May impede left turns by large vehicles
- On streets with bicycle facilities, bikes must merge with traffic around circle
- May shift traffic to parallel residential streets
- May require some parking removal

Cost:

- Moderate

Problems Targeted:

- Streets where speed reduction is desired
- Intersections with an accident history
- Locations with high vehicle conflicts

Street Type:

- All

LEVEL THREE TOOLS:
Traffic Circle (Continued)

Other Criteria:

- Intersecting roadways must be of sufficient width
- Loss of parking must be assessed
- Volume should be between 500 to 5,000 ADT
- Critical speed should be at least 7 mph over posted speed
- Must meet diversion chart criteria
- Grade should be less than 10%
- Should be used in series or in conjunction with other traffic calming devices
- May require extensive signing
- May require educational campaign and learning period
- Must not significantly impede emergency vehicle access

LEVEL THREE TOOLS:
Restricted Movement Barrier

Description:

- Barrier island that prevents certain movements at an intersection

Advantages:

- Redirects traffic to main streets
- Self enforcing, unlike signage only
- Reduces cut-through traffic
- Increases opportunity for landscaping in the roadway

Disadvantages:

- May negatively affect emergency response
- May increase trip length for some drivers
- May shift traffic to parallel residential streets
- May need to implement on several streets to prevent diversion
- May have little effect on speeds for through vehicles
- May require some parking removal

Cost:

- Moderate

Problems Targeted:

- Streets where cut-through traffic is evident

Street Type:

- Local, Major Local

Other Criteria:

- Must meet drainage requirements
- Must not significantly impede emergency vehicle access
- Must meet diversion curve criteria

LEVEL THREE TOOLS:
Entrance Barrier – Half Closure

Description:

- Physical barrier that restricts turns into a street. Creates a one-way segment at the intersection while maintaining two-way traffic for the rest of the block

Advantages:

- Effectively restricts movements into a street while maintaining full access and movement within the street for residents
- Redirects traffic to main streets
- Self enforcing, unlike signage only
- Reduces cut-through traffic
- Increases opportunity for landscaping in the roadway

Disadvantages:

- May divert traffic to other local streets
- May increase trip length for some drivers
- Overly restrictive if cut-through problem exists only at certain times of day
- May need to implement on several parallel streets to prevent diversion issue
- May have little effect on speeds for local traffic
- May negatively affect emergency response

Cost:

- Moderate to high

Problems Targeted:

- Local streets where cut-through traffic is evident

LEVEL THREE TOOLS: Entrance Barrier – Half Closure (Continued)

Street Type:

- Local, Major Local

Other Criteria:

- Must not significantly impede emergency vehicle access
- Alternate access to residential area must be considered
- Must meet drainage requirements
- Meet diversion curve criteria

LEVEL THREE TOOLS:
Diagonal Diverter

Description:

- Raised areas placed diagonally across a four-way intersection that restrict through movements in all directions
- As a variation can install a traversable diverter that allows access for emergency vehicles

Advantages:

- Reduces cut-through traffic
- Self enforcing, unlike signage only
- Increases opportunity for landscaping in the roadway

Disadvantages:

- May divert traffic to other local streets
- May increase trip length for some drivers
- Overly restrictive if cut-through problem exists only at certain times of day
- May need to implement on several streets to prevent diversion
- Need to consider how residents will gain access to street
- May have little effect on speeds for local traffic
- May negatively affect emergency response

Cost:

- Moderate to high

Problems Targeted:

- Local streets where cut-through traffic is evident

LEVEL THREE TOOLS:
Diagonal Diverter (Continued)

Street Type:

- Local, Major Local

Other Criteria:

- If full diverter, cannot be on truck or transit route
- Must not significantly impede emergency vehicle access
- Must meet diversion curve criteria

APPENDIX

A-Neighborhood Traffic Management Program Process Flow Chart

B-Neighborhood Traffic Management Program Procedures (Detailed Description)

C-Neighborhood Traffic Management Program Request and Petition Forms

D-Toolbox Application Criteria

E-Roadway Classifications Map

F-Emergency Vehicle Route Map

G-Residential Streets/Neighborhoods with Traffic Concerns

H-Diversion Criteria Chart

I-City Council Resolution No. 5791, November 19, 2002