

NEIGHBORHOOD  
TRAFFIC  
MANAGEMENT  
PROGRAM

N.T.M.P.

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# INTRODUCTION

The Neighborhood Traffic Management Program (NTMP) for residential streets represents the commitment by Harford County and the Department of Public Works to promote and maintain the safety and livability of the County's residential neighborhoods. In an effort to reduce the impact of traffic on our neighborhoods, NTMP provides a process for identifying, evaluating, and addressing undesirable traffic conditions related to speeding and excessive volumes in residential subdivisions. By conducting the appropriate traffic engineering studies and by soliciting the input of a community's residents, DPW's staff can determine the type and severity of traffic problems occurring on a particular residential street. With NTMP's point assignment system (see page 9), requested streets can be evaluated and rated according to their individual point scores, which reflect the prevailing traffic conditions on the street. If a street is found eligible (according to its point score and other factors) and if the required approval of the residents has been obtained and the necessary funding is available, DPW will install traffic management devices such as speed humps, islands or diverters. NTMP will also consider traffic diversion measures, such as: one-way street patterns or turn prohibitions and will include educational measures such as the Speed Awareness Program.

## GOALS

The overall goals of the Neighborhood Traffic Management Program are as follows:

1. Improve neighborhood livability by reducing the speeds and impact of vehicular traffic on residential streets, while providing for the safe, efficient and economical movement of persons and goods throughout the County.
2. Promote safe and pleasant conditions for residents, pedestrians, bicyclists, and motorists on neighborhood streets, while preserving access for emergency-vehicles, buses and other users.
3. Encourage and promote citizen involvement in all phases of NTMP.
4. Make efficient use of County resources by ranking requested streets according to their NTMP point assignment scores and other factors.

# TRAFFIC MANAGEMENT MEASURES

All County streets qualify for traffic control devices in accordance with the Manual on Uniform Traffic Control Devices (the use of which is mandated by State Law). This manual, prepared by a national joint committee of municipal, county, and state officials, describes conditions or warrants which should be present prior to the installation of traffic control devices, including the multi-way stop control. One of the most requested traffic control devices, the multi-way stop control has many negative side effects:

1. Increased speeds, above the original speeds, due to the motorists' desire to make up for the "lost" time suffered at the stop sign.
2. Increased accidents caused by lack of respect for unwarranted stop sign and frequent violations of the stop condition - "California" (rolling) stop - As well as an increased disrespect for all stop signs.
3. Increased noise, pollution and energy use associated with stopping and starting a vehicle, at a location where they otherwise would not be required to stop, is another detriment to the multi-way stop installation.

The multi-way stop has been shown to be ineffective in providing the desired state of reasonable and consistent speeds throughout the roadway, and is, therefore, not included as an option in the Neighborhood Traffic Management Program.

The following NTMP traffic management measures have been classified in two levels, each progressively more restrictive to motorists using the street.

## LEVEL 1

Level 1 measures are passive in nature and include educational methods and special pavement markings. For these measures to be implemented, they must be approved by a civic association. Residents may also be required to participate in implementation. The NTMP Points assigned must be greater than 25 to be eligible for this level of implementation.

### SPEED AWARENESS PROGRAM

The Speed Awareness Program is an educational measure intended to increase motorists' perception of the speed at which they travel on neighborhood streets and to provide residents a positive outlet to show their concerns regarding speeding in their neighborhood. It consists of a radar activated speed notification sign board (either manned or un-manned) positioned in a problem area. The digital display board shows motorists the speed at which they are traveling. Frequently, motorists drive at speeds that they feel comfortable at and are unaware that they are traveling well in excess of the posted speed limit.

The speed board shows greatest improvement when it is used in conjunction with a "community out" day - in which the community appears along the street to re-enforce the idea

that it is a residential neighborhood, not a high speed through street. This action tends to place guilt upon the offending driver by catching him or her in the “act” and usually causes a reduction in speed for a longer period of time.

### **LINE STRIPING PROGRAMS**

This program involves the installation of pavement markings that constrict the driver’s available lane width - from 18' down to 10'. This also creates an additional lane on the road for parking or bike riding that is separate from the travel lane.

Reactions to these stripes have been mixed. While some citizens believe the speeds have been reduced and feel safer with the through traffic confined to the center of the road, others do not like the appearance of the stripes and believe they give the street an “urban” look. Installation of the stripes must be officially requested, on behalf of the Community, by a Home Owners Association or a Community Association and a petition must be signed by at least 75% of the homeowners fronting the affected street.

## **LEVEL 2**

Level II measures include traffic control devices and physical measures which control access to neighborhoods, change travel patterns, and regulate the flow of traffic through the neighborhood. The NTMP Points assigned must be greater than **50** to be eligible for this level of implementation. It is the requestor’s responsibility to obtain these signatures.

### **SPEED HUMPS**

Speed humps, often referred to as “sleeping policemen”, are gently sloping pavement protuberances, with cross sections that provide for a smooth ride at reduced speeds. Conventional speed bumps are more abrupt than speed humps. Speed bumps are typically less than three feet in length and vary in heights up to six inches. The conventional bumps pose a potential for vehicle damage or loss of control, and therefore will not be considered as a method of traffic calming. If a particular street is approved for speed humps, a petition must be signed by at least 75% of the homeowners who must cross over a hump to get access to their home (whether or not they actually front the subject street).

Two types of speed humps are available for use on Harford County roads. The Watts profile hump is three inches high with a six-foot parabolic curve approach on each side. This type of hump may only be utilized in areas where the recommended roadway speed is below 20 mph. Because they reduce speeds to approximately 15 MPH, installation of the Watts type hump must be carefully scrutinized, and in all but the most unusual circumstances, will not be installed.

The second form of speed hump is the Flat top profile. This design consists of a six-foot parabolic approach (similar to the Watts type), however a ten-foot-long plateau is centered between the two approaches: resulting in a total length of 22'. When required, this will be the

primary form of speed hump utilized in Harford County. Studies have shown that the speeds are reduced to approximately 25 MPH at the hump. The one location in Harford County in which a substantial amount of information is available is the East Ring Factory Road installation. The 85th percentile and average speeds dropped six and five mph, respectively, (and have remained there) following installation of the humps. No accidents have occurred as a direct result of their presence and the response from the community has been positive - concerning lower speeds and fewer vehicles.

In general, automobiles, motorcycles and bicycles do not experience any problems or loss of control when traversing the humps. However, long wheelbase vehicles may experience some discomfort when crossing the hump. Therefore, the humps should not be used along roads that carry a significant amount of truck traffic, on streets where the majority of the drivers travel at relatively fast speeds (45 - 50 mph), bus routes, or on routes commonly used by emergency vehicles. Additionally, speed humps will generally not be considered on roads designated as "Collector" by the Department of Planning & Zoning's Transportation Plan.

## **ROUNDABOUTS**

A roundabout is an intersection with a central island, in which traffic circulates in a counter clockwise direction. Traffic must yield to circulating vehicles. The roundabout is multi-functional in that it can reduce speeds and volumes on residential streets, and control the uniform flow of traffic and reduce accidents at higher volume intersections. Research has shown that, unless the roundabout is correctly designed with the proper deflection angles for vehicles entering the roundabout, and with splitter islands to deflect traffic to travel in a counter-clockwise direction; it will not effectively and safely reduce vehicular speeds or volumes. In most existing communities, the available right of way and paving surface limits the possibility of their installation. In particular, this device will not be installed in existing communities at "T" intersections. However, at major intersections within new developments, and in conjunction with other traffic calming devices, they can have dramatic effects on the overall safety. Additionally, because the center of the roundabouts may be landscaped, residents have viewed them as attractive enhancements to their communities.

## **CHOKERS**

Chokers are the narrowing of streets, either at an intersection or midblock, to reduce the width of the traveled way. Chokers can be designed to widen the sidewalk (bulb design), or an island may be constructed, which would force the traffic toward the curb (island choker). Either way, chokers appear to have the greatest effect in the area of pedestrian safety. By reducing the roadway width, the choker dramatically reduces the "exposure time" of a pedestrian (the amount of time that a pedestrian is susceptible to a vehicle while that pedestrian is crossing a street). Additionally, both chokers break up the appearance of the roadway and may be landscaped to increase the appearance of a residential neighborhood. Each type of choker has its own advantages and disadvantages.

The bulb design increases the width between the pavement and the normal pedestrian path, while simultaneously reducing the amount of time that a pedestrian is in the roadway. It

also better defines the pedestrian crossing locations for motorists. Disadvantages include no lateral deflection - which results in little if any speed and volume reductions. Additionally, pedestrians must cross both directions of traffic at the same time.

The island choker reduces the amount of pavement required for a pedestrian crossing, but also creates a “refuge” island in the center of the road. This eliminates the requirement that both directions be clear prior to crossing. A pedestrian may first look to the left, cross half of the street, wait on the refuge island; then look to the right and cross the rest of the street. Thereby, essentially crossing two, one-way roads. An additional advantage is that this creates a deflection in the roadway, which will result in reduced speeds. A disadvantage is that the through traffic will be relocated closer to the normal pedestrian path (sidewalk).

### **SEMI-DIVERTERS**

Semi-diverters are the narrowing of street approaches to intersections. In conjunction with Do Not Enter signs they are used to prevent access into a neighborhood. Semi-diverters are installed to address through traffic problems by modifying traffic patterns in the same manner as one-way streets while still allowing two-way traffic beyond their prohibition. Because they block only half of the street section, semi-diverters are easily violated, particularly on low volume streets. At the same time, they provide a minimal impediment to emergency vehicles. The primary purpose of a semi-diverter is to reduce traffic volume - they have little effect on vehicle speeds. However, if they divert drivers who formerly used the street as a speedy through route or shortcut, the actual change in speed experienced after installation may be substantial.

Semi-diverters are best located at the end of a block to prevent entrance and permit exit. Diverters located in a way such as to prevent exit are easily and frequently violated.

## NTMP Point Assignment System

Neighborhood traffic calming measures will be considered for residential subdivision roads only. (Collector roads, through residential areas, will not be considered for speed humps; however, other forms of traffic calming may be applicable). The subject road must be at least 2,000 feet in length and have a lot density of at least 65 housing units per mile (or 1 every 81') fronting the street. The following information is used to develop a numerical score for each requested residential street. A high score, available funding and other factors are used to determine which roads will proceed to the next NTMP phase, which shall involve direct community participation in educational measures such as the Speed Awareness Program. If warranted, the community may be required to obtain a minimum of 75% community approval for the installation of speed humps or chokers. There are three exceptions where installation of Level II measures will be installed when the road does not meet the aforementioned criteria. The exceptions are:

1. Roads adjacent to an elementary school access where the majority of the students walk to school.
2. Roads that meet all of the following criteria:
  - Non-local traffic is greater than 30%,
  - The maximum average lot frontage is 175 feet,
  - Minimum length of road of 1500 feet.
3. Roads that meet all of the following criteria:
  - Peak hour volume (PHV) exceeds 100
  - 85% speed is 7mph or greater than the posted speed limit
  - Maximum average lot frontage is 88 feet

### Point System Criteria

The following point system criteria are used to determine its point score:

1. **Traffic Volume**

Points are assigned according to the street's Peak Hourly Volume (PHV). Peak hourly volumes are normally registered between the hours of 4:00 - 6:00 PM, on an average weekday. Points are given on a graduated scale from 100 to >299. The minimum required volume for Level 2 Traffic Management is 100. Speed humps will not be installed if the PHV exceeds 500 vehicles.

25 points maximum score

2. **Speed**

Points are assigned according to how many miles per hour the measured 85th percentile speed on the requested street is over the posted speed limit. The 85th percentile speed indicates that 85 percent of vehicles on a particular street are traveling at this speed, or lower, and is a nationally recognized standard. Points are awarded on a graduated scale ranging up to values of > 15 MPH above the posted speed limit. However, if the 85% speed is less than 5 mph over the posted speed limit, the motorists are considered to be in general compliance with the posted speed limit and Level II traffic calming devices will not be warranted.

20 point maximum score.

3. **Elementary school or playground adjacent to the street**

Ten (10) points are assigned to a street on which an elementary school or community playground is located on the street.

10 point score.

4. **Major pedestrian generators**

Five (5) points are assigned to a street that has one or more major pedestrian generators within one-quarter mile of the street. Major pedestrian generators include schools, libraries, parks, playgrounds, major bus stops, and stores. (If points were awarded under item # 3, they should also be awarded under this item.)

5 point score.

5. **Sidewalk**

Points are assigned according to how much (by percentage) of the street does not have sidewalk. The points are calculated by dividing the percentage of the street without sidewalk by 10. For example, 80% (without sidewalk) x 10 = 8 points. If the majority of the street's section(s) without sidewalk has adequate walking areas, 5 points are subtracted from the tabulated points. To continue the above example, 8 points - 5 points = 3 points. An adequate walking area is defined as a gravel, paved, or grassy area at least five (5) feet wide and which is unobstructed and reasonably level.

10 point maximum score.

6. **On street parking**

On street parking can create sight distance problems for pedestrians and motorists and can create safety problems with speeding vehicles. Five points are assigned



to a street with greater than 30 vehicles parked on the roadway per mile. These counts will be taken at the conclusion of the through traffic analysis around 6:00 PM.

5 point score.

7. **Non-local traffic**

A maximum of thirty-five (35) points are assigned to a street on which a majority of the current peak hour traffic volume is comprised of motorists who do not reside within the requesting community, but use the street as an access to a higher priority roadway. It is expected that non-local motorists (typically commuters) may not be as sensitive to a neighborhood's safety needs as the neighborhood's residents. In addition, non-local motorists may be less receptive to neighborhood-sponsored educational measures such as the Speed Awareness Program.

5% - 9%	-	5 points
10% - 14%	-	10 points
15% - 20%	-	15 points
20% - 24%	-	20 points
25% - 29%	-	25 points
30% - 34%	-	30 points
> 35%	-	35 points

**NEIGHBORHOOD TRAFFIC MANAGEMENT PROGRAM  
POINT ASSIGNMENT WORKSHEET**

**STREET NAME** \_\_\_\_\_  
**FROM** \_\_\_\_\_ **TO** \_\_\_\_\_  
**EVALUATOR** \_\_\_\_\_ **DATE** \_\_\_\_\_

- 1) **DESIGNATED COLLECTOR:**      YES \_\_\_\_\_      NO \_\_\_\_\_
- 2) **NUMBER OF UNITS FRONTING ROADWAY:**      A = \_\_\_\_\_  
**LENGTH OF ROADWAY:**      B = \_\_\_\_\_
- => **FEET PER HOUSE (B/A)**      \_\_\_\_\_

**NOTE:**      If #2 is greater than 80, minimum requirements for LEVEL II are not met, recommend LEVEL I Traffic Calming, only

- 3) **VOLUME (PHV)** \_\_\_\_\_ **POINTS (MAX 25)**  
**Minimum (100 VPH)**

<u>5 points</u>	<u>10 points</u>	<u>15 points</u>	<u>20 points</u>	<u>25 points</u>
100-149	150 - 174	175 - 199	200 - 249	> 250

**NOTE:**      If #3 is less than 100, minimum requirements for LEVEL II are not met, recommend LEVEL I Traffic Calming, only

- 4) **85th PERCENTILE SPEED** \_\_\_\_\_ **POINTS (MAX 20)**  
**POSTED SPEED LIMIT** \_\_\_\_\_

**MPH OVER POSTED SPEED LIMIT**  
(>5 mph Level II requirements are not met)

<u>5 - 7 MPH</u>	<u>8 - 11 MPH</u>	<u>12 - 15 MPH</u>	<u>&gt;15 MPH</u>
5 Pts.	10 Pts.	15 Pts.	20 Pts.

- 5) **ELEMENTARY SCHOOL OR PLAYGROUND** \_\_\_\_\_ **POINTS (10)**  
**ADJACENT TO SUBJECT ROAD**

**YES** \_\_\_\_\_      **NO** \_\_\_\_\_

**STREET NAME** \_\_\_\_\_

**DATE** \_\_\_\_\_

**6) MAJOR PEDESTRIAN GENERATOR \_\_\_\_\_POINTS (5)**

(Schools, libraries, parks, playgrounds, major bus stops, stores, etc., within 1/4 mile radius of subject road). **YES** \_\_\_\_\_ **NO** \_\_\_\_\_

**7) SIDEWALK \_\_\_\_\_POINTS (MAX 10)**  
**(% OF ROAD W/OUT SIDEWALK \_\_\_\_\_ X 10)**

(% of roadway without sidewalk on at least one side multiplied by 10. Example: 80% X 10 = 8 pts.) (Subtract 5 points if majority of the road without sidewalk as adequate walking areas.) Adequate Walking Area: A gravel, paved, or grassy area at least 4' wide which is un-obstructed and level.

**8) PARKED VEHICLES \_\_\_\_\_POINTS (5)**

**(N) NUMBER OF VEHICLES PARKED ON THE STREET:** \_\_\_\_\_

**(L) LENGTH OF SEGMENT (FT):** \_\_\_\_\_

**(N \* 5280)/L = VEHICLES PER MILE:** \_\_\_\_\_

Parked vehicles on the street can limit sight distance for motorists and pedestrians. If, an average of at least 30 vehicles per mile is parking on the street during after work hours, the section will qualify for 5 points.

**9) NON-LOCAL TRAFFIC \_\_\_\_\_POINTS (MAX 35)**

**% NON-LOCAL TRAFFIC:** \_\_\_\_\_

<u>5 - 9%</u>	<u>10 - 14%</u>	<u>15 - 19%</u>	<u>20 - 24%</u>	<u>25% - 29%</u>	<u>30% - 34%</u>	<u>&gt;35%</u>
5 pts.	10 pts.	15 pts.	20 pts.	25 pts.	30 pts.	35 pts.

**SHEET 1: \_\_\_\_\_POINTS**

**+ SHEET 2: \_\_\_\_\_POINTS**

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**TOTAL: \_\_\_\_\_POINTS**

# **THE NEIGHBORHOOD TRAFFIC MANAGEMENT PROCESS**

## **TRAFFIC MANAGEMENT REQUESTS AND TRAFFIC STUDY**

Requests for neighborhood traffic management can be made by individual citizens, elected officials, or by neighborhood associations.

Upon receipt of a request, DPW (Traffic Division) staff will conduct a traffic study of the requested street in order to obtain traffic volume, speed, and physical geometry of the road section. The Traffic Division will review this information and assign points to the studied street, as described in a preceding section, NTMP's Point Assignment System.

According to the street's point score and the study's overall findings, the staff will recommend the appropriate level of NTMP measures to address the street's prevailing conditions. (A minimum point score of 25 is required for first level traffic calming and a minimum score of 50 is required for second level traffic calming). If the street is eligible for the second level traffic calming, further review will be made to determine whether the street's physical conditions (horizontal curvature, grade, drainage, etc.) will allow the safe installation of physical traffic management devices and to ensure that the road is not a primary response route for emergency-vehicle and/or MTA buses.

If a street is found not to be eligible for any level of NTMP measures, the staff will always review such a street to ensure that all of the appropriate traffic control devices are in place in accordance with the **MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES**.

## **RESPONSE TO REQUESTOR AND NEIGHBORHOOD MEETING**

The original requestor will be informed in writing of the study's results and the staff's recommendations. If the requested street is eligible for the first level of traffic management, the staff will advise the requester of this, in writing, and will program the Speed Awareness Board for the community. If the requestor would like to have the line striping installed, it will be up to them to obtain approval of such, from at least 75% of the residents directly fronting the affected roadway.

If the requested street is eligible for level two traffic management, the requestor will be informed regarding the next step in the process, which involves scheduling a meeting between the neighborhood residents and the Traffic Division's staff. At this meeting, the results from the study will be reviewed and details about the various physical traffic management devices (speed humps, chokers, etc.) will be discussed. A sub-committee will be formed from that community meeting to discuss the specific calming measures and locations. It will be the responsibility of that sub-committee, if necessary, to obtain the required 75% approval from the affected residents.