

# Neighborhood Traffic Management Program

**Harford County, MD**

**Department of Public Works**



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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 (DPW) to promote and maintain the safety and livability of the County's residential neighborhoods. To reduce the impact of traffic on our neighborhoods, the NTMP was created in the late 1990's to provide a specific process for identifying, evaluating, and addressing undesirable traffic conditions related to speeding and excessive volumes in residential subdivisions. By conducting applicable traffic engineering studies, DPW's staff can evaluate the type and severity of traffic problems occurring on a particular residential street. With NTMP's point assignment system (see pages 10-13), requested streets can be evaluated, rated, and compared to other streets according to their individual scores, which reflect the prevailing conditions on the street. Speeding in neighborhoods can be a very intense topic for families. The point system creates a way to accurately evaluate a specific street in a purely analytical way – set apart from the emotion that is typically involved with neighborhood speeding.

The NTMP is programmed directly for residential streets in small lot subdivisions. Small lot subdivisions have more on-street parking, smaller front yards, and more interaction between adjacent homes – thereby increasing the overall impact of nearby traffic. While DPW understands that concerns raised by families in rural areas and larger lot subdivisions are just as important as those raised by families in small lot subdivisions, the potential safety impacts are higher for those families in areas with small lots and, thereby, the target of this program. Furthermore, the program must consider both emergency vehicular access and impacts on residents not directly “benefited” by raised traffic calming devices (i.e., speed humps, raised intersections, etc.). As such, raised devices are not permitted on collector roadways (or any roads with average daily traffic volumes exceeding 4,000 vehicles per day) even if the required points are met. Under those circumstances, horizontal devices (i.e., chokers, islands, etc.) may be considered. Finally, the community must provide support for the program (especially when vertical displacements are proposed) by having 75% of the individual homeowners directly affected by the proposed devices approve of them through a signed petition.

If a street is found eligible (according to its point score and other necessary factors) and if the required approval from the neighborhood residents has been obtained, DPW will then install physical traffic calming measures – based upon the availability of funding.



# 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 the NTMP.
4. Make efficient use of County resources by ranking requested streets according to their NTMP point assignment scores and other factors.

## BACKGROUND / SUPPORT

When the original Harford County NTMP was first developed, neighborhood traffic calming was a new concept in the United States and there were very few programs available from which to gather data and review experiences. Because of this, the Harford County program was mirrored on only two programs that were available at that time - Anne Arundel County, Maryland and a local program that was researched from Pennsylvania. Since traffic calming has now been in use for over 25 years and is used in many Maryland jurisdictions, this section of the document is providing background on other programs to judge consistency, successfulness, and general applicability to Harford County in what is the first major revision of the program since it was originally developed. Within the State of Maryland, traffic calming programs were identified and reviewed in Anne Arundel, Baltimore, Carroll, Frederick, Montgomery, Prince Georges, and Washington Counties. Additionally, the states of Delaware, Pennsylvania, and Virginia were also reviewed. While each jurisdiction went about their programs in their own manner, some consistencies included: 1) the minimum length of the roadway section, 2) the minimum volume of traffic and 3) the minimum 85<sup>th</sup>% speed.

The Harford County NTMP has been used as a template by many other jurisdictions around the Country as a basis for their programs. The program has been deemed a success due to the consistency and impartiality with which decisions are made based upon the County's point system which quantitatively determines a road's acceptance based solely on measurable elements. However, since the program has been in use for nearly 25 years and nearly every road in the County, with consistent traffic problems has been analyzed (with traffic calming devices installed as required), there are very few (if any) roads remaining that will be found to be eligible based upon the original guidelines. As such, this document will seek to reduce some of those requirements to allow more roads to be eligible, while also incorporating some of the pertinent guidelines found in the other aforementioned jurisdictions.

# **MULTI-WAY STOPS**

Prior to moving into the program, it should first be noted that one of the most requested devices to slow vehicles, multi-way stop signs, is not permitted in accordance with Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD), a document that Harford County is required by State Law to confirm to. Many studies have shown that when used to slow traffic, the multi-way stop does not work as desired and has many potentially detrimental side-effects, including:

1. Increased speeds, higher than the original speeds, along the roadway segment due to the motorists' desire to make up for the "lost" time they experienced at the stop sign.
2. Increased motor vehicle crashes caused by a lack of respect for the unwarranted stop sign and frequent violations of the stop condition ("rolling stop"), as well as an increased disrespect for all stop signs.
3. The "rolling stop" and lack of respect for unwarranted stop signs also leads to decreased safety for both pedestrians and bicyclists due to their expectation that traffic will stop for all stop signs.
4. Increased noise, pollution and energy use associated with stopping and accelerating a vehicle, at a location where they otherwise would not be required to stop.

It is for these reasons that the multi-way stop will not be considered as a speed reduction device on Harford County roadways.



# TRAFFIC CALMING DEVICES

Traffic calming can be separated into several specific categories, ranging from passive and educational to physical and very impactful and restrictive. This section will review many of the possible traffic calming measures to provide information as to their use and effectiveness:

1. **Passive Traffic Calming Devices** are primarily focused on changing the “behavior” of drivers by encouraging them to drive slower through visual guidance and alerts. When a road segment is investigated for traffic calming in conformance with this NTMP and the minimal levels of criteria are not met, the road may then alternatively be eligible for these passive measures to help reduce the overall vehicular speeds. These include:
  - a. **Traffic Calming Speed Board** - The Speed Notification Sign Board is posted in the community for a week and provides a visual display of the speed of approaching vehicles. Many times, drivers are on “auto-pilot” when traversing roads, they are familiar with and don’t pay direct attention to the speeds they are traveling. The sign board provides a visual reminder of how fast they are traveling and frequently results in an overall reduction of vehicular speeds.
  - b. **Community Newsletters** - With assistance from the Harford County DPW to determine the speed of vehicles along the identified road segment, a letter / newsletter can be written from the HOA to the community identifying the concerns of the affected residents and requesting that other residents drive as if they were driving in front of their own homes. As with the speed board, this helps remind drivers of their speed through these residential areas.
2. **Active Traffic Calming Measures** includes Police Enforcement which is focused on being more aggressive by physically changing the behavior of drivers through the ticketing of offending drivers. In all instances, the resident(s) and/or the community’s Homeowners Association (HOA) may request assistance from the Harford County Sheriff’s Office to control speeding. The requestor can dramatically help the Sheriff by identifying specific times of day and / or days of the week that experience the most problems. For instance...explaining to them that drivers seem to be driving recklessly fast when they are on their way to work in the morning between the hours of \_\_\_\_ and \_\_\_\_\_. Or, even better, identifying specific vehicles and times of day that they are driving fast. This might be explained as follows: “A blue minivan drives by my home every day around 7:30 AM and seems to be driving much faster than any of the other vehicles”. In areas with not many speeders or not much traffic, this request can help the Sheriff’s Office better use their resources, by specifically “targeting” the habitual speeding offenders that make up most of the speeding complaints in neighborhoods.

3. **Physical Traffic Calming Measures – Vertical Displacements** are focused on changing the behavior of drivers by altering the design of the road's profile with devices that raise the road's surface and force drivers to go up and over them. Note that these devices reduce the speeds of all vehicles but are especially disruptive to fire engines and ambulances due to their heavier weight and less forgiving suspension systems. It is for this reason that vertical displacements are not permitted on collector roadways, emergency vehicle routes and/or any roads with volumes exceeding 4,000 vehicles.

**Vertical Displacements include:**

- a. **Speed Humps (speed bumps)** are parabolic humps approximately 12' in length, 3 ½" high and with an estimated design speed of approximately 15 – 20 mph. Since public roads in Harford County may not be posted with a regulatory speed lower than 25 mph (per Maryland State Law), these types of humps are only permitted in parking areas and/or entrance roads to public parks.
  - b. **Speed Tables (speed humps)** have similar parabolic approaches and heights as the speed hump but include a 10' flat top section in between the two approaches resulting in a 22' long hump. The estimated design speed is approximately 25 – 30 mph and fits in well with the minimum permissible regulatory speed limit of 25 mph. Since the shorter speed humps are not permitted on County roadways, speed tables are more commonly referred to as speed humps in Harford County and will be identified as such for this NTMP.
  - c. **Raised Intersections** are, essentially, speed tables that encompass an entire intersection. This not only slows vehicles through the vertical deflection of the pavement, but also provides improved pedestrian crossing safety by bringing the drivers up to the pedestrian's level (i.e., their "environment") instead of forcing the pedestrian down into the road (i.e., the driver's environment). It also allows better integration into the road system but typically roadway drainage concerns are an issue with this design and would need to be addressed with the overall design.
  - d. **Speed Tables (Humps) with Pedestrian Crossing** - In areas with heavy pedestrian traffic and/or a defined walking path (as in a trail crossing), speed tables may be used with a pedestrian crossing. These are beneficial in that they also bring the driver up to the pedestrian's level and the vertical deflection helps to slow traffic at the crossing location. As with a raised intersection, roadway drainage is a concern with this device and may need to be addressed (or render this device inappropriate) dependent upon the site conditions.
4. **Physical Traffic Calming Measures – Horizontal Displacements** are focused on changing the behavior of drivers by altering the geometric design of the roadway with devices that improve pedestrian safety and/or reduce the overall speed of vehicles by altering the path of the vehicle or revising the adjacent curb line. These include:



- a. **Chokers** – The narrowing of a roadway by moving the existing curb out closer to the centerline of the roadway. This may reduce the width of the road from 30–36 feet down to 20–24 feet. The visual “constriction” of the roadway width sends a caution to the driver and encourages them to slow down. This method may be used in areas with extensive on street parking since it will only eliminate approximately one parking space on each side of the roadway.
- b. **Islands** – The narrowing of a roadway by constructing an island in the center of the roadway. Like the Choker, this will visually reduce the width of the roadway and encourage reduced speeds as a result. Furthermore, this option provides a horizontal deflection of the roadway which likewise causes a driver to reduce speeds. This method is more impactful to adjacent residents due to the loss of a significant amount of on-street parking spaces. In areas with on-street parking, 75% of the affected residents will need to agree to the loss of the on-street parking before DPW proceeds with any construction.
- c. **Chokers with Pedestrian Crossings** – In areas with heavy pedestrian traffic and/or a defined walking path (as in a trail crossing or near an intersection), chokers may be used with a pedestrian crossing. The narrower road width makes crossing the road easier by reducing the crossing distance and by moving the pedestrian’s line of sight out to the edge of the travel lane and, thereby, less (or not at all) obstructed by on-street parking. An alternative to this design may be the additional installation of a speed table in conjunction with the choker and pedestrian crossing to further reduce speeds and improve safety. This would only be permissible in high pedestrian volume, mid-block locations that otherwise meet the criteria established in this manual for physical traffic calming measures.
- d. **Islands with Pedestrian Crossings** – As defined in the preceding item, in areas with heavy pedestrian traffic and/or a defined walking path islands may be used with a pedestrian crossing incorporated into it. This is perhaps one of the safest pedestrian crossing methods in that a pedestrian only must cross a road width of 10–12 feet (looking in only one direction) to get to the center island (pedestrian “refuge” island) and then look only in the opposite direction to cross the remaining 10–12 feet. This median allows a pedestrian to concentrate in one direction at a time and is very visible to approaching traffic. As with a “normal” island, this item is very impactful to adjacent residents due to the significant loss of on-street parking and must be approved by 75% of the homeowners directly affected by them.
- e. **Urban / Mini Roundabouts** – These are small roundabouts placed in a subdivision at intersections. They help in reducing overall vehicle speeds by providing a horizontal deflection of the through movement of vehicles, while also forcing drivers to slow and yield to other motorists already in the roundabout and who have the assigned right of way. NOTE that any installation of a roundabout or an island must include an agreement with the community to keep the grass (and/or any low-growing plants including shrubs or flowers that the community would like to install) properly maintained.

# PROCESS

## (HOW TO REQUEST A TRAFFIC CALMING STUDY)

**STEP 1** - The process to conduct a study of a particular road shall be initiated by the community's Homeowners Association (HOA) and/or their property managers. (Individuals in communities lacking an active HOA may submit their own requests.) The requests shall be submitted to the Harford County DPW's Division of Highways Bureau of Engineering (address and contact information is listed on the County website at the following link: [Traffic Calming | Harford County, MD \(harfordcountymd.gov\)](http://harfordcountymd.gov)) by way of a formal letter, with specific explanations of the community's / individual's concerns.

These concerns shall identify:

- 1) the road(s) that are prompting their concern
- 2) their actual concerns (i.e. children playing in or near the street, animals, reckless drivers, speeding drivers, cut-through traffic, etc.)
- 3) the times of day that appear to include the most speeders
- 4) an estimated percentage of the number of speeders (i.e. a few per day, a few every hour, over half of the cars, all the cars, etc.)
- 5) a point of contact for the HOA including an address, phone number and e-mail address.

NOTE that if the request is submitted by an individual in areas with an inactive HOA, then the County will need point of contact information for at least five (5) separate families with homes fronting the identified road that concur with this request. The submittal of multiple families will ensure support among the community for the concerns that are being raised as well as provide a committee of individuals to review the proposed speed reduction plans and obtain the necessary signatures if the roadway is found to be eligible for physical traffic calming measures.

**STEP 2** - The County will let the applicant(s) know that their letter has been received and will initiate the 2nd step in the analysis process, which is the installation of the County's Speed Notification Sign Board (see the preceding section). The sign board not only notifies drivers of their speeds and contributes to an overall reduction in the speed on the road, but it also records the speeds and volumes of the vehicles in the direction approaching the sign. (The speed captured is the first speed flashed on the sign, so it does not record the anticipated reduced speed effect of the sign.) The sign board will remain in place for one week, at which time, it will be removed, and the recorded information analyzed. (Estimated time 4–8 weeks). If both the volume and speed do not meet the minimum number for traffic calming as described below in the Point System Criteria, the study will end at Step 2.



**STEP 3** - If the volumes and/or speeds meet the minimum number required for traffic calming as described below in the Point System Criteria, then the study will proceed to the next step which is to place a tube counter on the roadway. This counter will give a more accurate analysis of the speeds and volumes and allow DPW to perform an initial review of the roadway as it relates to the point system. (Estimated time 4–6 weeks). If neither the minimum speed nor volume levels are met, the study will end at Step 3.

**STEP 4** - If the total points including speed, volume, pedestrian generator, and sidewalks equals at least 25, then the County will initiate an Origin and Destination Study to determine the percentage of cut-through traffic using the roadway. (Estimated time 12 weeks)

**STEP 5** - If the final point tally is 50 or above, then the road is determined to be eligible for physical traffic calming measures and will move forward to the design, approval, funding, and construction stages. The County will analyze the roadway and propose a design best suited for the community to address their concerns as identified in their initial letter to the County. The community may then review and suggest other ideas, but the final design shall be as determined by the County. (County original design – Estimated time 12-16 weeks, subsequent revisions to the plan and time frames are up to the community).

**STEP 6** - Once finalized, any plan that includes vertical traffic calming measures (speed humps) will be required to obtain 75% approval from ALL homeowners that must cross over a **new speed hump** to get to their homes, including residents from other communities if applicable. Harford County will create a petition explaining the traffic calming plan and identifying the affected residents, but the HOA and/or community itself shall be responsible for obtaining the actual signatures on the petition. For horizontal traffic calming measures (islands and chokers), 75% approvals are still required, but are only necessary from the HOA and from those individuals who are losing parking in front of their homes. (No estimated time – dependent upon the community)

**STEPS 7 & 8** - Once the petitions are completed, the County will program the work into their annual budget. (Estimated time may range from 3 months to a year or more dependent upon funding). Once funding is allocated, DPW will program the work for construction.

If, at any point, the road is determined to not be eligible for physical traffic calming measures, passive and active traffic calming methods will continue to be used including the speed board and police enforcement. DPW would not consider another traffic calming study for a period of five (5) years unless there has been significant nearby development. At each of the steps, the County will keep the original applicant informed of the process by way of a formal response by mail or e-mail.

# POINT ASSIGNMENT SYSTEM

Physical Traffic Calming measures will be considered for residential subdivision roads only (any roads that have been laid out based upon a recorded subdivision plat). These devices are not intended (nor are they permitted) on rural roads.

Collector Roads as identified by the Harford County Department of Planning and Zoning that pass through residential areas, roads on designated emergency response routes, and/or roads with Average Weekday Daily Traffic Volumes (AWDT) over 4,000 are not eligible for vertical traffic calming measures. However, if those roads do meet minimum eligibility requirements, other forms of traffic calming may be acceptable.

## Initial Criteria

The road segment in which adjacent homes front the roadway must be at least 1,000' in length.

The road segment must have an average of at least 10 homes immediately fronting the roadway per 1,000' of roadway and the average lot frontage for those homes must not be greater than 100'. Houses "FRONTING" a roadway include those with the front of home facing the street or the driveway of the home directly connecting to the street. They do not include "panhandle style lots with driveways longer than 100'.

The 85<sup>th</sup>% speed recorded for the road segment under evaluation must be no lower than the posted speed limit. (See the section on "Speed" in the Point System Criteria section for a definition of the 85<sup>th</sup>% speed).

Roads must have a minimum AWDT of at least 750. Note that the AWDT may be reduced by 25 vehicles for each mph the 85<sup>th</sup>% speed is over the identified minimum. For instance, a road posted at 25 mph has an 85<sup>th</sup>% speed of 33 mph, then the minimum AWDT would be:  $750 - \{(33-25) * 25\} = 550$ . Regardless of the 85<sup>th</sup>% speed, the volume may not be reduced under 500 AWDT for physical traffic calming measures.

## Point System Criteria

The following information is used to develop a numerical score for each requested street. A high score and available funding are used to determine which roads will proceed to the next phase of the NTMP plan.

- 1. Traffic Volume:** Points (0 – 30) are assigned based upon the average weekday daily (24 hr) traffic volumes on the subject street. The evaluation shall take place at a point approximately 500 feet from the end of the traffic calming road segment (the section of road that is "eligible" for traffic calming based upon the initial criteria found at the beginning of this section) with the estimated higher volume of traffic. However, the location may be altered based upon the design of the subdivision and the location of intersecting streets and/or pedestrian generators. Note that if there is no infrastructure within the immediate vicinity of this 500-foot distance to attach the traffic counter, the counter will be placed in the nearest location possible, and the numbers adjusted accordingly (up or down) based upon standardized trip generation criteria. Points are given on a graduated scale based upon the AWDT.

NOTE: Roads with AWDT's below 500 will not be eligible for any permanent traffic calming devices and roads with AWDT's higher than 4,000 will not be eligible for any vertical displacement traffic calming measures (i.e. speed humps).



2. **Speed:** Points (0 – 25) are assigned according to how many miles per hour the measured 85<sup>th</sup>% speed on the requested street is over the posted speed limit. The 85<sup>th</sup>% speed is that calculated speed at which 85% of the drivers are driving at or slower. It is a nationally recognized standard for determining how a “reasonable” driver typically drives, also indicating that the other 15% of drivers are unreasonable and are the specific motorists that should be targeted for enforcement by Police Departments. Points in this category are awarded on a graduated scale ranging from 1 mph over the posted speed limit, up to (and over) 15 mph over the posted speed limit. For any 85<sup>th</sup>% speed less than the posted speed limit, motorists are in general compliance with the posted speed limit and physical traffic calming measures would not be necessary or warranted.
3. **Major Pedestrian Generator:** Points (10) are assigned when a major pedestrian generator – such as any school, commercial daycare center, playground, park, library, or shopping center are located on the subject road segment or within 1,000’ of the subject road segment. This is only included if there is an accessible, defined walking route (like a sidewalk, path, or shoulder) between the road and the generator.
4. **Sidewalk:** Points are assigned (5) if there is sidewalk on only one side of the road (unless the opposite side of the road has no homes). Ten (10) points are assigned if there are no sidewalks. A “sidewalk” would include a paved or otherwise “defined” walking path outside of the road’s surface.
5. **Non-Local Traffic:** Points are assigned on a graduated scale (0-25) based upon the percentage of “cut-through” traffic from another community during the Monday through Friday AM or PM peak rush hours (7 AM – 9 AM and 4 PM – 6 PM). Non-local motorists are known to use other neighborhoods looking for shorter drives or less traffic delays on their typical daily commutes. These drivers are expected to be less sensitive to a neighborhood’s safety needs and less receptive to neighborhood-sponsored educational measures. Note that parts of a larger subdivision with different category homes (condominiums or townhomes that have to drive past single family homes to enter / exit a subdivision) are to be considered “cut-through” traffic.

# NEIGHBORHOOD TRAFFIC MANAGEMENT PROGRAM

## POINT ASSIGNMENT WORKSHEET

STREET NAME: \_\_\_\_\_

FROM: \_\_\_\_\_ TO: \_\_\_\_\_

EVALUATOR: \_\_\_\_\_ DATE: \_\_\_\_\_

1. **DESIGNATED COLLECTOR ROADWAY:** YES \_\_\_\_ NO \_\_\_\_
2. **LENGTH OF ROAD SEGMENT:** \_\_\_\_\_ LF
3. **NUMBER OF HOMES FRONTING THE ROAD SEGMENT:** \_\_\_\_\_  
(Must be at least 10 homes)
4. **AVERAGE LOT FRONTAGE** (Line 2 divided by Line 3): \_\_\_\_\_  
(Must be no greater than 100')
5. **VOLUME** (Average Weekday Daily Traffic – AWDT): \_\_\_\_\_ Points  
(30 Max)

500 – 749	-	5 points
750 – 999	-	10 points
1,000 - 1,249	-	15 points
1,250 - 1,499	-	20 points
1,500 – 1,749	-	25 points
> 1,750	-	30 points

6. **SPEED:** 85<sup>th</sup>% Speed: \_\_\_\_\_ Points (25 Max)

Posted Speed Limit: \_\_\_\_\_

### MPH Over Posted Speed Limit

1 – 3 MPH	-	5 pts
4 - 6 MPH	-	10 pts
7 - 9 MPH	-	15 pts
10 - 12 MPH	-	20 pts
➤ 12 MPH	-	25 pts



7. **MAJOR PEDESTRIAN GENERATOR:** \_\_\_\_ YES \_\_\_\_ NO \_\_\_\_Points (10)

School, Commercial Daycare Center, Playground, Park, Library or Shopping Center within 1,000' of, and readily accessible to, the subject road segment

8. **SIDEWALK:** \_\_\_\_ None \_\_\_\_ One Side \_\_\_\_ Both Sides \_\_\_\_ Points (10 Max)

Sidewalk on both sides of the road - 0 pts

Sidewalk on only one side of the road (houses on sidewalk side only) - 0 pts

Sidewalk on only one side of the road (houses on opposite side) - 5 pts

No sidewalk on either side of the road - 10 pts

9. **NON-LOCAL TRAFFIC** \_\_\_\_\_Points (25 Max)

Non-Local Traffic: Points are assigned on a graduated scale (0-25) based upon the percentage of "cut-through" traffic from another community during the Monday through Friday AM or PM peak rush hours (7 AM – 9 AM and 4 PM – 6 PM).

0% - 5%	-	0 points
5% - 9%	-	5 points
10% - 14%	-	10 points
15% - 19%	-	15 points
20% - 25%	-	20 points
➤ 25%	-	25 points

\_\_\_\_\_ **TOTAL POINTS**