

DEPARTMENT OF PUBLIC WORKS

Carroll County, Maryland

POLICY ON TRAFFIC CALMING



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CARROLL COUNTY

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INTRODUCTION

As Carroll County continues to grow and our roads become more congested, anxious drivers begin to seek alternate routes by using local streets. These motorists, who are usually in a hurry, may drive at excessive speeds, jeopardizing the safety and livability of our neighborhoods. Local residents may also drive faster on their local streets because they feel familiar and comfortable. Aggressive driving and a diminished respect for other drivers, pedestrians, traffic control devices, and general “rules of the road” are also commonplace. Residents often seek measures to return their streets to safe, calm, and livable conditions. The specific measures used to address excessive speed and unnecessary through traffic are known as traffic calming. What is traffic calming? According to the Institute of Traffic Engineers (ITE), traffic calming is “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”. Traffic calming strategies consist of a variety of techniques to alter routes, driving habits, operational characteristics, and even modes of travel within residential areas.

The County has developed this Policy to give residents an opportunity to raise neighborhood traffic concerns and to participate in the selection of strategies that promote safe conditions for residents, pedestrians, bicyclists and motorists in the neighborhood, through a structured process.

GOALS AND OBJECTIVES

The goal of the County’s Policy on Traffic Calming is to provide a structured process to apply traffic calming measures, where appropriate, to improve neighborhood livability by reducing the negative impacts of motor vehicles on neighborhood streets.

The objectives are:

- Promote conditions that provide safe neighborhoods for motorists, bicyclists, pedestrians, and residents while maintaining access and services.
- Improve neighborhood livability by encouraging adherence to the speed limit.

- Foster a collaborative working relationship between neighborhood residents and County staff in the development of traffic calming measures.
- Integrate education, enforcement and engineering, the three “E’s” of traffic calming.
- Efficiently use public resources based on need.
- Periodically evaluate the policy to ensure the goals are being met.

DEFINITIONS

ADT - Average daily traffic – The number of vehicles flowing in both directions along a particular segment of roadway during an average 24-hour period.

Average Speed - The sum of all speeds divided by the sum of all vehicles recorded.

County – The Board of County Commissioners of Carroll County and the Department of Public Works.

Functional Classification – The process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide.

Local Street - Streets whose basic function is access to adjacent properties.

Minor Collector Streets - Streets whose basic function is to collect side-street local driveway volumes. They usually are entirely within subdivisions but often connect immediately adjacent subdivisions. They may or may not also have direct driveway access themselves.

MPH – Miles per hour.

MUTCD – Manual on Uniform Traffic Control Devices, 2003 edition, including any and all revisions and/or errata.

Neighborhood Traffic Committee - A committee that will provide focus to the traffic calming process and provide a link between the neighborhood and the County. The role of the committee is to identify goals, review traffic issues, and participate in preparing and promoting an acceptable traffic calming plan. The committee will be comprised of neighborhood residents identified by the Homeowners’ Association and/or the County. Typically the committee will consist of seven to nine members.

VPD - Vehicles per day.

85th Percentile Speed - The speed at which 85% of the vehicles are traveling at or below. It is recognized by the engineering and law enforcement communities to be that speed, and less, that the "reasonable majority" of motorists travel at for the given conditions. Fifteen out of 100 are

considered to be "unreasonably" speeding. It is these 15% that are usually targeted for enforcement.

CRITERIA

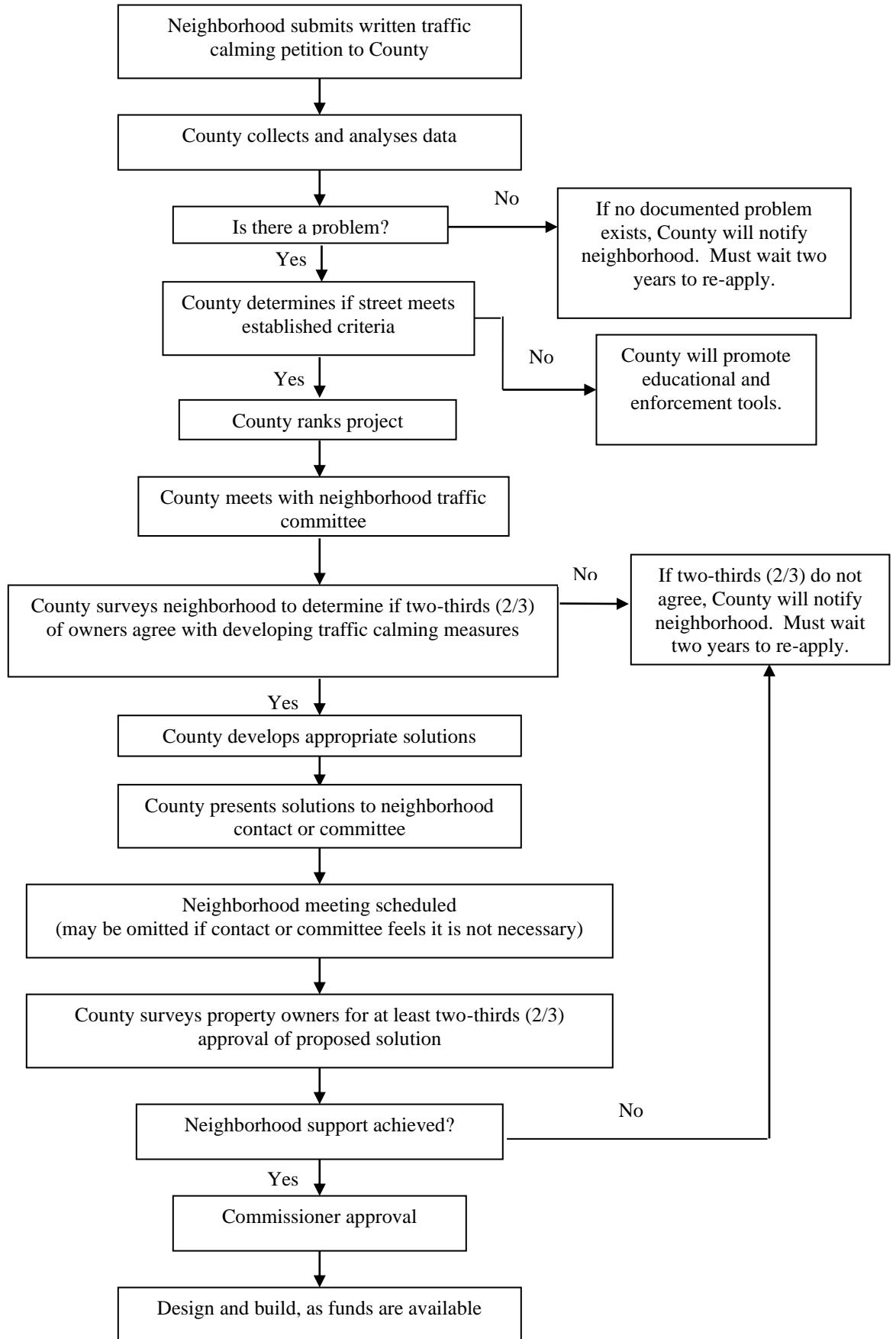
The following criteria will be used in evaluating the severity of neighborhood traffic problems.

- Street must be classified as a “neighborhood” minor collector or local street.
- When the prevailing traffic speed (85th percentile) exceeds the posted speed limit by at least 10 MPH, traffic calming measures should be considered. This applies to road segments posted between 25 MPH and 35 MPH. Physical devices will not be installed on streets with speed limits greater than 35 MPH.
- When average daily traffic volumes are greater than 400 but less than 1,000 vehicles per day, educational activities, enforcement and non-physical devices may be considered.
- When average daily traffic volumes are between 1,000 vehicles per day and 3,000 vehicles per day, traffic calming measures may be considered.
- When average daily traffic volumes are greater than 3,000 vehicles per day, educational activities, enforcement and non-physical devices may be considered.
- Streets that provide direct access to fire, rescue and police buildings will not be considered.
- Cul-de-sac streets and other streets less than 800-feet long will not be considered.
- The majority of property adjoining the street must be residential, park, and/or school.
- Streets must be part of the accepted street system for one year prior to initiation of process.
- Steep grades, road geometry, sight-distance issues, driveway entrances, traffic diversion, etc., will be evaluated carefully during the process. These features may limit what traffic calming measures are available.

PROCESS

The following flow chart and text outline the process for addressing traffic calming issues (see Figure 1).

FIGURE 1



APPLICATION PROCESS

1. The neighborhood Home Owners' Association (HOA) or a group of neighbors submits their written petition to the County using the County's Petition Form (see Appendix 1). The majority of residents within the area of concern must sign the petition (one signature per household). Signature page is not required if submitted by a legally recognized Home Owners' Association.

The County will identify the project area then collect and analyze traffic data including: vehicle speeds, volumes, vehicle classification, street alignment and grade, functional classification, pedestrian activities, existing traffic control devices, and other physical features of the road. Data collection will only occur on weekdays, weather permitting.

While data collection is underway, the County may request enforcement and/or use of a speed awareness trailer to the appropriate agencies. Citizens can make requests directly to the Maryland State Police and Carroll County Sheriff's Office for enforcement and the speed awareness trailer.

Results from the data collection effort may be forwarded to the Maryland State Police and the Carroll County Sheriff's Office for their use.

2. Once the data is collected and analyzed, the County will determine if the data supports the petition for traffic calming using the criteria established in this policy. If the data does not meet the criteria, the County will report back to the neighborhood that the problem does not warrant any specific action.

If the data confirms that a problem exists, the County will continue with the traffic calming process.

3. The County will determine the priority ranking for the project, based on documented speed and volume data, presence of schools and sidewalks, and pedestrian generators. (Additional information on project ranking is provided in the next section.)

4. The County will meet with the neighborhood traffic committee to discuss the results of the data collection, the different aspects of traffic calming and the overall process.

5. Working with the neighborhood contact or traffic committee, the County will survey the neighborhood to confirm that two-thirds (2/3) of the affected property owners want the County to proceed with developing traffic calming measures. If two-thirds (2/3) approval is not achieved, the County may use education, enforcement and non-physical measures.

If two-thirds (2/3) approval is received, the County will proceed with developing appropriate solutions.

6. Using the data that was collected and site surveys, the County will identify the appropriate traffic calming measures. Several options that focus on addressing the issues may be developed. The County will present these options to the neighborhood contact or traffic committee. The neighborhood contact or traffic committee and the County will work together to select the most appropriate traffic calming measure from the options presented. They will then determine if a public meeting with the neighborhood will be held.

7. The County will present the proposed solution and all applicable data to the neighborhood, and will conduct a second survey to confirm that two-thirds (2/3) of the affected households support the proposed solution. If the plan does not receive two-thirds (2/3) support, it will be considered withdrawn by the County and no further action will be taken. However, the County reserves the right to install traffic calming solutions to address documented, significant, safety problems directly attributable to excessive speeds, even if support is not received.

If two-thirds (2/3) approval is received, the County will present the project to the Board of County Commissioners for final approval.

8. The County will proceed with final design based on the proposed solution, and will acquire any rights-of-way, if needed. County staff or a private contractor will construct the traffic calming measures, as funds are available. The County will oversee all construction.

PROJECT RANKING

A ranking system will be used to help prioritize the order in which traffic calming projects are completed in relation to available funds and anticipated benefits. Ratings that are determined from the Traffic Calming Criteria Form (Appendix 2) will be utilized to rank specific projects.

TRAFFIC CALMING MEASURES

Various active (physical) and passive (non-physical) methods are used to address traffic calming. Before deciding on the method, internal and external education is needed to make the neighborhood residents aware of the issues regarding speeding along their streets and remind them of the importance of driving safely through their neighborhoods. While internal education targets the immediate neighborhood, external education targets the larger community.

Traffic calming solutions generally consist of three different approaches, including education, enforcement, and engineering.

1. Education

Education measures may include community awareness meetings, neighborhood newsletters, and/or brochures. Education may also include the Speed Awareness Program. The Speed Awareness Program is an educational measure designed to increase motorists' perception of the speed at which they travel on neighborhood streets and to provide residents a positive outlet to show that their concerns are being addressed regarding speeding in their neighborhood. The program consists of a speed monitoring awareness radar trailer (SMART) and the speed awareness signs. These devices include a radar unit, a speed limit sign, and a digital speed display board, which shows motorists the speed at which they are driving.

2. Enforcement

Law enforcement is the traditional means of addressing speeding problems. The Maryland State Police, the Carroll County Sheriff's Office, and municipal police departments will monitor and enforce the speed limits.

3. Engineering

Engineering solutions consist of volume control measures and speed control measures. The following is a list of commonly used traffic calming measures that may be considered. The application of any measures or combination of measures will be site specific and will consider potential impacts. The County may use any of the following measures, or other measures, at its discretion. Sketches of the specific devices are found in Appendix 3.

TABLE 1

ENGINEERING MEASURES

Speed Control Measures	
Active Measures - includes vertical deflection, horizontal deflection, and constrictions	
Speed hump	Raised pavement hump installed across the traveled lanes, typically 3 to 4 inches high and 22 feet long. Speed hump use is strictly limited to retrofit situations, not new construction.
Raised crosswalk	Raised pedestrian crossing placed in the road and extending across the road at right angles to traffic flow, typically 3 to 4 inches high. Raised crosswalks provide greater visibility for both the pedestrian and motorist.
Raised intersection	Raised intersections, including crosswalks, typically 3 to 6 inches high, with ramps on all approaches.
Roundabout	Raised circular island in the center of an intersection that directs vehicles to travel counterclockwise around the circle, reducing vehicle speeds. Roundabouts should be constructed in such a fashion as to allow large types of vehicles, such as fire and rescue apparatus along with trucks, buses, and vans to traverse around the island.
Neighborhood traffic circle	Raised circular island, placed at multi-way intersections in residential areas that force vehicles to slow down to negotiate around it.
Chicane	Series of fixed objects, usually curb extensions, staggered at mid-block locations that alter a straight roadway into a serpentine path to slow vehicles.
Realigned intersection	Changes in alignments that convert T-intersections with straight approaches into curving roadways meeting at right angles.
Center island median	Raised island between travel lanes that narrows the lane widths at that location.
Curb extension/neck down	Curb extension, usually at intersections, that narrows the roadway width and inhibits fast turns.
Choker	Curb extensions or islands, placed either at an intersection or mid-block location that narrows the lane widths.

Gateway	Special entrance treatments that may include alterations in the pavement surface, such as stamped asphalt or concrete, etc., that alerts motorists they are entering a neighborhood that requires lower speeds.
Pedestrian refuge island	Raised island, at mid-block location or intersection, between travel lanes, with openings in the landscaping or curbing for pedestrians.
Passive Measures - includes on-street parking, bicycle lanes, streetscape, SMART trailer (speed awareness trailer), signing and striping, forced perspective, and colored pavements.	
On-street parking	Parking lanes on one or both sides of the roadway, providing a visual and physical narrowing of the street.
Bicycle lanes	Lane where bicyclists can travel outside the normal travel lane. "Share the Road" design may also be implemented in areas of bicycle use.
Streetscape	Aesthetic enhancements that provide a psychological message to motorists to slow down.
SMART trailer	Speed awareness trailer used by the Carroll County Sheriff's department.
Speed awareness signs	Speed awareness radar signs placed by the County.
Signing and striping	Painting of travel lanes, parking lanes, directional markings, crosswalks and addition of signs. Stop signs are used to determine normal vehicle right-of-way rules, and will not be used as a traffic calming measure.
Volume Control Measures	
Street closure	Physical barrier placed across a street obstructing all traffic movements, usually leaving only sidewalks or bicycle paths open.
Partial closure	Physical barrier that blocks travel in one direction for a short distance on an otherwise two-way street.
Diagonal diverter	Physical barrier placed diagonally across an intersection preventing through movement.
Median barrier	Raised island between travel lanes through an intersection that prevents through movement at a cross street.
Forced turn island	Raised island used on approaches to an intersection that prevents certain movements.

The County will install all the appropriate signs and pavement markings when any traffic calming measure is placed. Signs and pavement markings will comply with the MUTCD where applicable.

The Board of Education, local law enforcement agencies, and local fire departments will be involved as part of the process to ensure that recommendations of physical traffic calming measures do not hamper the agencies' abilities to perform their respective duties.

The County will assess the probability that installing physical traffic calming measures on a street would divert traffic to another residential street. If significant diversion is probable, those streets affected by the diversion will be identified and also assessed for possible physical and non-physical devices.

EVALUATION

The County will monitor driver behavior and effectiveness of the installed traffic calming devices after installation. Remedial measures will be taken at the County's discretion if the devices are found to be causing hazardous or unsafe conditions.

REFERENCES

- Manual on Uniform Traffic Control Devices (MUTCD), Federal Highway Administration – 2003 edition, including any and all revisions and/or errata
- Traffic Calming State of the Practice, Institute of Transportation Engineers - 1999
- Maryland Supplement to the Manual on Uniform Traffic Control Devices, Maryland State Highway Administration – March 1997
- Roundabouts: An Informational Guide, Federal Highway Administration - 2000
- A Policy on Geometric Design of Highways and Streets, American Association of State Highway and Transportation Officials – 5th edition, 2004
- Guidelines for the Design and Application of Speed Humps, Institute of Transportation Engineers – 1993
- www.ite.org/traffic/index.html
- www.trafficcalming.org

DOCUMENT SOURCE REFERENCE

- City of Colorado Springs – Neighborhood Traffic Management
- www.ite.org
- www.trafficcalming.org
- City of Charlottesville

APPENDICES

1. Petition for Traffic Calming
2. Traffic Calming Criteria Form
3. Traffic Calming Device Examples

APPENDICES

APPENDIX I

CARROLL COUNTY DEPARTMENT OF PUBLIC WORKS

PETITION FOR TRAFFIC CALMING

The undersigned residents of the _____ neighborhood on today's date _____ respectfully request traffic calming measures for the named street(s) and limits.

We hereby designate the person listed below as a contact person to act on behalf of the undersigned petitioners. If the County determines that the requested street(s) meet the established criteria, a traffic committee will be developed.

We hereby release the County from and waive any claims we now or in the future may have relating to the installation of any traffic calming devices or solutions that we have requested.

Street(s) and Limit(s): _____

Contact Person: Name _____
Address _____
City _____ State _____ Zip _____
Phone # _____
Phone # _____
Email _____

Each undersigned resident agrees to the following:

1. I understand that roadway qualification will be based upon criteria outlined in Carroll County's Traffic Calming Policy.
2. I understand that it may be necessary to place the devices, measures or signs in proximity to my house pursuant to the County's guidelines, so that the overall desired mitigation is achieved.
3. I understand that the Carroll County Board of Commissioners ultimately reserves the right to maintain Carroll County roadways, as they deem necessary.

Signature of Contact Person

Date

APPENDIX 2

Carroll County Department of Public Works
Traffic Calming Criteria Form

- | | YES | NO |
|--|--------------------------|--------------------------|
| 1. Is the requested street a “neighborhood” minor collector or a local street as determined by the Carroll County Functional Classification? | <input type="checkbox"/> | _____ |
| 2. Is the requested street at least 800 feet long? | <input type="checkbox"/> | _____ |
| 3. Does the street provide direct access to fire, rescue and/or police? | _____ | <input type="checkbox"/> |
| 4. Is the majority of the property adjoining the street residential? | <input type="checkbox"/> | _____ |
| 5. Is the posted speed limit equal to or below 35 mph? | <input type="checkbox"/> | _____ |

For Questions 1 through 5, the highlighted box must be checked to proceed with point assessments. If not, education and enforcement measures will be utilized.

Traffic Speeds

Speeds based upon 85th percentile speeds above the posted speed limit.

MPH	MPH	MPH
0-7	8-10	greater than 10
Education, enforcement	10 points	15 points

Traffic Volumes

Volumes based upon Average Daily Traffic (ADT).

VPD	VPD	VPD	VPD	VPD
0-400	401-1000	1001-2000	2001-3000	greater than 3000
Education, enforcement	Education, enforcement, non-physical engineering	10 points	15 points	Education, enforcement, non-physical engineering

Other Considerations

- If a school zone or pedestrian generator is present – 10 points
- If sidewalks are missing on both sides of the street – 10 points
- If there are not continuous sidewalks on one side of the street – 5 points

TOTAL

- Education, Enforcement, Non-physical engineering - Minimum Points = 25
- Education, Enforcement, Engineering - Minimum Points = 30