August 17, 2012 DRAFT

Town of Christiansburg

Traffic Calming Program

Adopted: xx, 2012

Introduction

Traffic Calming is a combination of primarily physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve quality of life for residents and other non-vehicular users of a street. The Town of Christiansburg Traffic Calming Program provides administrative procedures that document and catalogue complaints from residents concerning neighborhood traffic-related problems and attempts to offer solutions to areas of concern.

Traffic calming is a proactive attempt to improve the livability of residential neighborhoods and promote pedestrian activity in service districts. It involves the application of engineering techniques to physically change the character of streets, improve pedestrian safety and encourage drivers to obey speed limits. Traffic calming utilizes a variety of physical devices to alter the geometry of the street, along with more traditional traffic engineering techniques to slow traffic. A successful traffic calming plan is generally not a single device, but rather a series of integrated improvements to slow traffic and, if desired, to direct traffic to more appropriate routes. It is important to note that the term "traffic calming" also applies to non-engineering approaches. The widely used three "E's" of traffic calming are Education, Enforcement and Engineering.

When concerns regarding traffic speeds, pedestrian safety, and cut-through traffic arise in residential areas, it is often frustrating for both residents and traffic engineers. Neighborhoods often request a quick fix solution such as enforcement, reduction in posted speed limits, or the addition of stop signs. This increases the pressure to implement haphazard solutions that may not be in the best interests of the neighborhood, the jurisdiction, or the traveling public.

The use of traffic calming devices must be carefully documented so that they are not used inappropriately or too frequently. Jurisdictions should have in place a four-phased procedure by which traffic calming devices are requested, evaluated for appropriateness, and implemented:

- Documentation of the problem and the need for traffic calming devices;
- Field reconnaissance and collection of traffic study data;
- Selection of the proper device to correct the problem; and
- Monitoring of the effectiveness of the device(s) once installed.

It is the intention of the Christiansburg Traffic Calming Program to address traffic problems and concerns on local and collector streets. While not intended to make streets play areas for children or adults, the Christiansburg Traffic Calming Program is intended to generally improve safety for pedestrians, bicyclists, and others who travel along or across these streets.

Purpose

The purpose of the Town of Christiansburg Traffic Calming Program is to provide residential neighborhoods protection from excessive speeds and volumes of motor vehicles; increase safety, access, comfort and convenience for pedestrians, bicyclists, and motorists; and promote a partnership between Town staff and neighborhood residents in the development of traffic calming measures.

The primary goal of traffic calming is to slow speeders in residential neighborhoods on streets classified as local. The focus is on subdivision streets. Certain collector streets that have many of the characteristics of local residential streets may also qualify for traffic calming measures.

Other traffic calming goals include:

- increasing the quality of life for residents and users;
- incorporating the preferences and requirements of the households on the street(s), and/or adjacent intersection(s);
- creating safe and attractive streets;
- reducing the negative effects of motor vehicles on the environment, and
- promoting pedestrian and cycle use.

Traffic calming objectives include:

- achieving slow speeds for motor vehicles,
- reducing frequency and severity of accidents,
- increasing the safety and the perception of safety for residents and non-vehicular users,
- reducing the need for police enforcement,
- enhancing the street environment (i.e., streetscape features), and
- reducing cut-through motor vehicle traffic.

It is important to note that traffic calming efforts generally slow traffic without restricting access. Although this program is intended for existing streets only, there is concern about preventing traffic problems from developing on new subdivision streets. In its process for reviewing subdivision development plans, the Town should identify and address potential traffic calming as well as other traffic management concerns that may result from a new development. The review process should ensure that the developer of a new subdivision place emphasis on and address the need to design street geometric concepts that make streets less desirable for speeding and cut-through traffic. In the subdivision design review process, the Town should also exert its discretionary authority in applying geometric standards to discourage speeding and cut-through traffic. The Town should consider planning, enforcement, and transportation together in a comprehensive approach to managing residential traffic.

Ideally, potential traffic calming concerns in new developments should be addressed with roadway design geometry changes, especially roadway width (narrowing) and road curvature. In lieu of or in addition to these geometric changes, traffic calming measures that generally serve to narrow the travel way include pavement markings which delineate parking, shoulder, or bike lanes, or mini-roundabouts, chokers, crosswalk refuges, and short medians. Subdivision developers should consult with the Town prior to submitting a plan specifying traffic calming measures on newly developed streets.

Definitions

85th percentile speed - The speed at or below which 85% of the vehicles are moving.

Accident Record Investigation - A search of accident records to establish the frequency of occurrence at intersections within and on the fringe of the study area. It will also identify accident occurrence at mid-block locations within the study area. These studies will cover a period of at least one year (typically two years).

Arterial, Principal - Principal arterials permit traffic flow through the urban area and between major destinations. They are of great importance in the transportation system since they connect major traffic generators, such as the central business district, to other major activity centers.

Arterial, Minor - Minor arterials collect and distribute traffic from principal arterials and expressways to streets of lower classification and, in some areas, allow traffic to directly access destinations. They serve secondary traffic generators such as community business centers, neighborhood shopping centers, multifamily residential areas, and traffic between neighborhoods.

Average Daily Traffic (ADT) Counts - ADT counts will be conducted in accord with agency-accepted procedures. They should be taken for a period of not less than one weekday (24 hours). ADT counts should be taken on all identified problem streets, on neighborhood streets at gateways to the area, and on adjacent or nearby major arterials or collectors (as appropriate).

Collector - Collectors provide for land access and traffic circulations within and between residential neighborhoods and commercial and industrial areas. Streets serve the purpose of moving traffic over short distances and provide accessibility to various land uses. They distribute traffic movements from these areas to the arterial streets.

Impact Area - Properties within one block of an intersection project and all properties fronting the study blocks of the road in the case of projects at the mid-block of streets. In addition, roads that have their sole access through the study blocks will be included in the impact area (examples; dead end road which intersects affected block, neighborhood streets which must use road to exit neighborhood).

Local street - Local streets provide direct access to properties abutting the roadway and within the immediate vicinity. Service to through-traffic is deliberately discouraged on these roadways. A local street offers the lowest level of mobility.

Origin-Destination (O-D) Studies - O-D studies will be conducted when the basic traffic problem relates to excessive cut-through traffic on a particular residential street, or when the problem relates to truck movements through the area. The recommended procedure involves stationing two observers at each gateway to the neighborhood. One observer will record inbound activity and the other will record outbound activity. Information to be recorded includes the time of day (at one minute intervals) and the vehicle license number of all vehicles that enter or exit the neighborhood; license numbers and the time of day must be correlated. These studies will normally be made for a continuous two-hour period in morning and afternoon peak travel hours. For neighborhoods that have certain types of problems, O-D surveys may be needed at other times of the day. It is necessary to use a sufficient number of surveyors

to observe all gateways to the neighborhood simultaneously if a full understanding and documentation of the through traffic problem is to be gained.

Speed study - A study using equipment to measure, collect and statistically analyze the speeds of vehicles.

Spot Speed Survey - This survey is intended to measure the prevailing speed of traffic, and to determine the percentage of total motorists who exceed the speed limit. It will be conducted in accord with standard Traffic and Transportation procedures.

Traffic calming - methods used to reduce vehicular speed and volume and increase the sharing of streets by pedestrians and other users. Generally refers to physical measures and roadway design changes but enforcement and education can be components.

Traffic control - signs, signals and markings designed to regulate and warn. Examples include: stop signs, speed limit signs and traffic signals. Traffic control is not a part of traffic calming.

Turning Movement Counts - These manual counts are required when the principal neighborhood traffic problems result from through traffic. They will be conducted at intersections that serve as gateways to the neighborhood. In most circumstances, they can be restricted to the peak travel hours (typically 7:00 – 9:00 a.m. and 4:00 – 6:00 p.m.). Should the field reconnaissance or neighborhood meeting reveal through traffic problems during other time periods, consideration will be given to extending the count period.

Required Criteria

The Virginia Department of Transportation has a "Traffic Calming Guide for Local Residential Streets" available on their homepage, http://www.virginiadot.org/programs/faq-traffic-calming.asp, which provides the basis of this document's criteria and methods for traffic calming. The following are required criteria for consideration of physical traffic calming measures:

- Residential, two-lane roads only serving as through streets with traffic consisting of at least 30 percent cut-through traffic not necessarily associated with the neighborhood street under consideration. Residential roads shall be considered as public streets with adjoining properties being zoned Residential on at least one side of the street. Origin-destination studies may be conducted by the Town or designated Town's consultant to determine the percentage of cut-through traffic.
- Streets which are functionally classified as a local or collector street by the Virginia Department of Transportation (http://www.virginiadot.org/projects/resources/fxn_class/Salem/Town_of_Christiansburg.pdf).
- A posted speed limit of 25 MPH or less.
- Dwellings at a density equal to or greater than 12 dwelling units per 1,000 feet of public street frontage considering all dwelling units on both sides of the street.

- Traffic volumes of between 600 and 4,000 AADT or if the peak hour volume is greater than 150 vehicles. Counts prepared by the Virginia Department of Transportation, Blacksburg-Christiansburg-Montgomery Area Metropolitan Planning Organization, the Town of Christiansburg or any of their duly authorized consultants shall be the recognized authority of documentation of traffic volumes.
- A petition signed by at least 50% of all property owners for the impact area under consideration. The Town may authenticate any signatures presented.
- A documented speeding problem as defined by having an average speed approaching or exceeding 5 miles per hour (mph) over the posted speed limit and/or when the 85th percentile speed on study segment(s) approaches or exceeds the posted speed limit by at least 10 mph. The Town Police Department shall be the recognized authority as to the documentation of a speeding problem.

Administrative Methods

The Town Manager and Town Engineer shall retain the authority to install all-way stops, crosswalks, lane striping, medians (when no additional right-of-way is required), and other traditional traffic regulatory measures in situations which they deem appropriate without the requirement of going through the Traffic Calming Program. Administrative methods may be included in Traffic Calming Study Committee or Street Committee recommendations but do not require neighborhood vote or approval.

- All-Way Stops – Use of stop signs for all directions at intersections.

- Crosswalks – A designated pedestrian crossing point delineated by striping, signage, or other measures intended to serve as a safety feature and slow approaching vehicles.

- Lane striping – The use of lane delineation to provide a visual impact of a narrower street. Typical lane striping may include a stripe within a few feet of the edge of pavement or centerline striping.

- Medians (when no additional right-of-way is required) – Narrow islands constructed between travel lanes through an intersection. They are intended to prevent left turns from the major street and through movements along the minor street.

- Any other traditional traffic regulatory measures such as signage and striping as may be expected in order to provide normal day-to-day operational performance and safety enhancement.

Traffic Calming Methods

The following are deemed traffic calming measures that would require the majority of households in the affected impact area to agree to the measures and be subject to final approval of Town Council.

- Bulbouts – An extension of a curb in the form of a bulb, usually at an intersection or mid-block, that narrows the vehicular pathway and inhibits fast turns.

• Chicanes – A series of fixed objects, usually extensions of the curb, which alter a straight roadway into a zig-zag or serpentine path to slow vehicles.

• Chokers – A narrowing of the fixed street, often in mid-block and sometimes near an intersection. May be done with curb extensions, landscaping or islands in the street.

• Circles – A small circular island, usually less than 26 feet in diameter, used in the middle of intersections and intended to force vehicular traffic to slow and negotiate around it.

• Diagonal diverters – A partition that connects two diagonally opposite curbs, bisecting the intersection, to force motor vehicles to slow down and turn.

• Forced turns – Islands used on approaches to an intersection that force drivers to turn in only one direction (usually right).

• Full street closures – Barriers placed across an entire width of street to completely close the street to through-traffic, usually leaving only sidewalks open.

• Gateways – Also known as entry treatments; may involve alterations in the pavement surface, with bricks, stamped concrete, or other colored materials intended to signal to drivers that they are entering a neighborhood or community that requires lower speeds.

• Half closures – Barriers that block travel in one direction for a short distance on an otherwise two-way street.

• Increased fines – The use of signage and police enforcement to provide for an increased penalty for speeding violations in designated areas. The increased fine shall be the maximum allowed per Code of Virginia § 46.2-878.2 as amended.

• Lowered crosswalks – A traditional pedestrian crossing area purposely lowered below the normal pavement surface level in order to slow motorists and differentiate pedestrian paths from sections that are primarily vehicular traffic. Lowered crosswalks may be particularly useful for situations where raised crosswalks may create drainage issues.

• Medians (when additional right-of-way is required) – Narrow islands constructed between travel lanes through an intersection. They are intended to prevent left turns from the major street and through movements along the minor street.

• Raised crosswalks – A traditional pedestrian crossing area purposely raised above the normal pavement surface level in order to give motorists and pedestrians a better view of the crossing area.

• Roundabouts – An area in the middle of an intersection that provides circular, counterclockwise traffic flow to navigate the intersection.

• Speed humps - Mountable obstructions installed on the pavement surface, across the traveled lanes, and intended to cause vehicles to slow. Speed humps utilize larger vertical radii than speed bumps that result in wider widths and a gentler crossing by vehicles.

• Speed lumps - Mountable obstructions installed on the pavement surface, across the traveled lanes for a portion of the width, and intended to cause normal width vehicles to slow. Speed lumps are a shorter width than speed bumps which results in larger width vehicles (such as fire trucks) being able to cross without slowing due to their wider width being able to clear the speed lump.

• Any other methods recognized by the Virginia Department of Transportation "Traffic Calming Guide for Local Residential Streets" or other state or federally recognized and accepted method.

Policies

The following policies are established as part of the Town of Christiansburg Traffic Calming Program:

• A transportation study shall be the basis for deciding the appropriate solution(s) for a traffic safety or mobility situation or need.
• The Town shall be responsible for conducting traffic calming studies and/or any transportation studies and making recommendations for implementation.
• Traffic calming measures shall conform to engineering and procedural standards established by the Manual of Uniform Traffic Control Devices, Institute of Transportation Engineers and Neighborhood Development Services Traffic Engineer or designee.
• Through traffic should be encouraged to use higher classification streets (i.e. arterial and collector streets)
• In areas where speeding is determined to be a problem, traffic calming measures may be implemented to reduce speeds.
• Ingress and egress of police and emergency vehicles must be maintained or not substantially hindered.
• The final location of traffic calming installations shall be determined by Town Manager, Town Engineer or designee.
• Installation of traffic calming measures shall conform to engineering and procedural standards and shall be determined by the Town Manager, Town Engineer or designee.
• Transportation study recommendations should not result in a significant reduction of the capacity of intersections and roadways where they are placed.
• Transportation study recommendations should not inadvertently divert significant volumes of vehicular traffic onto adjacent residential streets.
• Recommendations for identified problems should be cost-effective.
• The Town may consider the installation of traffic calming measures on a trial basis. All such installations should be evaluated for effectiveness for six months although in some cases, a twelve month evaluation period may be required.
• Physical traffic calming measures such as speed humps will not be considered on roadways with a grade of 8% or more, arterial and collector streets, and through truck routes.
• Traffic calming measures shall have no significant adverse impact or fire, police and emergency services.

• Crash data for the most recent years shall be analyzed for by type, severity, location, roadway condition, and time of crash. Accident rates shall be considered problematic when there are three or more reported cases involving pedestrian, bicycle and automobiles along a local residential street within one year.
• Transportation studies shall not be conducted during holidays or at times of the day that do not reflect "typical" traffic conditions within the neighborhood. To the greatest extent possible, traffic calming studies or any transportation studies should examine traffic during times when potential conflicts or problems are most likely to occur.

Process and Selection of Methods

The Christiansburg Traffic Calming Study Committee shall be created with membership to include staff representatives from the Planning Department, Engineering Department, Police Department, Fire Department and Rescue and Lifesaving Department, and the Town Engineer.

Items considered during evaluation prior to recommendation may include:

Vehicular volume
Speeds
Cut through traffic (Origin-Destination study)
Crash rates
Road alignment and grade
Street or segment classification
Parking
Pedestrian activities
Bicyclist activities
Existing traffic calming measures/traffic control devices
Other physical conditions on roadway or street segments
Cost effectiveness of potential traffic calming measures

As each request for traffic calming is unique, the Town has developed a basic framework policy for implementing any traffic calming initiatives, including enhanced fines for speeding:

1. An individual, neighborhood, or neighborhood association may identify areas of concern and provide suggestions for traffic calming measures to address those concerns. At least fifty-percent (50%) of the households in the impact area must indicate a problem exists to ensure that the problem is perceived by a number of people in the neighborhood. Specific locations and problems should be identified at this stage.

2. The Traffic Calming Study Committee will review the request and study feasibility. This typically involves collection of speed, accident, volume and cut-through data in the affected area. Data will be collected with manual counts or with speed and volume counters set out at locations most reflective of the problem.

3. After the data is analyzed and a neighborhood is determined to have a serious problem, the Traffic Calming Study Committee will work with the individual or representative of the neighborhood familiar with the issues experienced on the street to develop a preliminary traffic calming design for review by the neighborhood. The design will be presented to the group that petitioned for the traffic calming study. Input of any schools, churches or businesses that may be affected may be solicited at this stage.

4. The Traffic Calming Study Committee shall make recommendation to the Town Street Committee as to whether traffic calming is warranted and if so, what measures would be appropriate. The Street Committee shall consider the recommendation of the Traffic Calming Study Committee and any other items of relevance prior to making a recommendation to Town Council. The applicant shall be notified of the Street Committee meeting dates regarding requests. Any deliberations of the Street Committee shall be public meetings and residents from the affected neighborhood are encouraged to attend.

5. A public/neighborhood meeting will be held to present proposed traffic calming measures. Residents in the affected impact area will be notified of the meeting. Each household in the affected impact area will also receive one ballot each so that they may vote on proposed traffic calming measures. All ballots must be returned to the Town and signed by the residents of the respective household in order for them to be counted. Of the ballots that have been returned, at least 51% of the respondents must indicate that they support the specific traffic calming measures and the proposed project, including measures such as an enhanced fine zone as authorized by Code of Virginia § 46.2-878.2. If not, the traffic calming measures will not proceed and additional alternatives may be considered. Nothing shall limit the authority of the Town Manager or Town Engineer to install administrative methods such as all-way stops, crosswalks, lane striping, medians (when no additional right-of-way is required), and other traditional traffic regulatory measures in situations which they deem appropriate without the requirement of going through the Traffic Calming Program.

6. Residents will be advised if the proposed traffic calming measures can be accommodated within existing budget resources or if additional funding is required. Residents will also be advised of an approximate time frame for implementation of traffic calming measures.

7. Any measure that involves an increased fine zone shall be implemented with a zone that begins and ends at logical points along a through street, generally beginning and ending at major intersections or at the limits of Residential Zoning Districts. Signage shall be in accordance generally with the criteria of the Town Public Works Department and shall be appropriately placed and display the maximum speed limit and penalty for violations.

8. The Town will determine who is responsible for a particular task where the responsible agency is not specified. The installation of all physical traffic calming measures shall be by Resolution approved by Town Council with the exception of administrative measures such as all-way stops, crosswalks, and lane striping which may be installed at the discretion of the Town Manager or Town Engineer as they deem appropriate.

Streets Considered for the Initial Program

The streets considered for the initial traffic calming program are as follows:

- Alleghany Street (from S. Franklin Street to Miller Street) and Miller Street (from Alleghany Street to 500 feet south of Roanoke Street)

- Sleepy Hollow Road (from Independence Boulevard to Cambria Street, N.W.)

- Majestic Drive (from Peppers Ferry Road to Windsor Drive) – Windsor Drive (from Majestic Drive to Berkshire Drive) – Berkshire Drive (from Windsor Drive to Gibson Drive)

While there were other streets that may be eligible, such as Ellett Drive, Park Street, Ellett Road, Clearview Drive – Wades Lane, and College Street, the process is established whereby the residents of those and other streets may seek traffic calming measures.

Conclusions/Recommendations for Considered Streets

The Traffic Calming Committee recommendation to the Street Committee shall be considered non-binding as should the Street Committee recommendation to the Town Council. Town Council action by adoption of a Resolution shall be deemed as final action on the matter, though monitoring and evaluation shall be an on-going process. If the Traffic Calming Study Committee or Street Committee believes an approved traffic calming measure is not performing adequately, the Traffic Calming Study Committee or Street Committee may recommend reevaluation and appropriate alternatives to Town Council. Streets requested for study which are denied may be reconsidered one year from denial.

Process to Request that a Street be Considered for Future Inclusion

Any individual, neighborhood, or neighborhood association residing on a qualifying street may submit a Traffic Calming request to the Town. The applicant shall notify the Town of their intentions and pick up a "Request for Traffic Calming Measures" application. The Town Manager or designee shall screen applications for eligibility under this document and any request clearly not meeting the criteria for eligibility shall be denied. Applications that meet the Required Criteria or any applications where there may be questions whether a request meets the Required Criteria shall be forwarded to the Street Calming Committee for consideration and recommendation as set forth herein.

All requests shall be by formal petition submitted on the "Request for Traffic Calming Measures" form provided by the Town. The Town shall provide the applicant with the names of residents in the impact area requested for consideration to assist with the applicant's collection of signatures. The applicant shall return the petition to the Town with the signatures of only one adult occupant per household for each occupied dwelling unit that wishes to support the consideration of traffic calming in the impact area.

Studies will be conducted by Town Engineering Department or consultants hired by the Town in the order in which they are received and the potential severity of the transportation concern. The Town reserves the right to expand the study area due to potential adverse impacts to areas adjacent to the original request.

The Town maintains the right to conduct traffic calming studies or any transportation study without a request from the community based upon safety and mobility consideration. Completed applications and signatures should be sent to: Town of Christiansburg, attn.: Town Manager, 100 E. Main Street, Christiansburg, VA 24073.