City of Smyrna, Georgia

Neighborhood Traffic Calming Program

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Introduction

The encroachment of external traffic through neighborhood areas is an issue of concern to citizens in Smyrna. This program addresses a procedure through which neighborhoods can be considered for reducing, filtering, or slowing external traffic through traffic calming measures.

What is Traffic Calming?

Smyrna residents have expressed concern about speeding and cut-through traffic in residential neighborhoods. In response to public interest, the City of Smyrna has developed a Neighborhood Traffic Calming Program. The Institute of Transportation Engineers defines "traffic calming" as "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." The City of Smyrna also expands this definition to include non-physical measures such as educational programs and enhanced enforcement.

What are Traffic Calming Measures?

Neighborhood traffic calming measures are an attempt to enhance traffic and pedestrian safety and preserve neighborhood character and livability. There are a number of traffic calming devices that are available to achieve this effect. The specific measures are described in more detail below, but can generally be used to address problems with speeding, cut-through traffic, increased volume, and safety. When a traffic calming measure is implemented successfully, it is effective and self-enforcing.

Traffic calming solutions may be warranted where there is a demonstrated need for traffic calming, and where solutions can be identified that will address the need. The needs to manage traffic through traffic calming devices might include the following:

- Reduce neighborhood cut through traffic
- Reduce traffic speeds through neighborhoods
- Accentuate pedestrian or bicycle use
- Control intersection traffic flow

Not only must the needs be perceived by the neighborhood, but they must also be documented to be substantive. In order for traffic calming strategies to be effective, traffic data collection and analysis must validate that calming needs are legitimate. These traffic studies may include:

- Speed studies
- Vehicle and pedestrian counts
- Through-traffic surveys
- Accident records
- Intersection capacity analysis

Effective solutions for valid needs also require that the selected traffic calming strategy be appropriate for the need, e.g., a strategy meant to reduce traffic speed (and not to divert traffic) should be used if the documented problem is excessive speed. Once an effective strategy for

traffic calming has been selected, it should be properly designed in accordance with the relevant design parameters. These should include consideration of:

- Traffic volume
- Design speed
- Americans with Disabilities Act (ADA) compliance
- Design vehicle characteristics

Although warranted and properly designed traffic calming strategies can have the desired benefits of managing traffic, they can also create disadvantages to adjacent streets and neighborhoods and to the traveling public at large.

Traffic calming measures could have the potential of shifting an existing traffic problem to another street or neighborhood. Traffic calming measures may also increase delay for emergency response vehicles, and can increase long term maintenance costs for the City. Because of the controversy and potential disadvantages, traffic calming measures should be implemented only with the majority consent of those directly impacted.

This program policy therefore provides guidelines for the following traffic calming activities:

- Requests for traffic calming consideration
- Documentation of traffic calming need
- Identification and approval of traffic calming strategies
- Programming of traffic calming improvements
- Design of traffic calming projects
- Evaluation of traffic calming projects

The Neighborhood Traffic Calming Process

Request for Traffic Calming Measures

A request can be initiated by either a citizen of Smyrna or the City Engineer. If you feel you have a speeding or traffic problem on your street, report the problem either to the City Engineer at 678-631-5381 or through the City's "E-Gov" reporting system, accessible through the website.

City staff will evaluate the complaint to determine the nature of the problem and to confirm that the location meets the guidelines for installation. Traffic calming measures will be considered for streets classified as local or collector residential streets with a posted speed of 35 MPH or less. Note that some measures, such as speed humps, will only be considered for streets with a posted speed limit of 25 MPH or less. Staff will typically complete traffic calming studies on a “first come, first served” basis. However, determinations made by elected officials, the City Engineer, or the Public Works Director may affect the order in which traffic studies are completed.

Data Collection

City staff will collect traffic volume and speed data for the street and observe traffic patterns.

Speeding Problem Thresholds:

If 85% of the vehicles driving on the roadway were traveling at speeds above 11 MPH above the speed limit, then the street would be eligible for traffic calming.

Additionally, in some situations the residents’ concern is for a few drivers considerably exceeding the speed limit. In the event of a recurring number of speeders, a different threshold would be used.

If 5% of the vehicles driving on the roadway were traveling at speeds above 15 MPH above the speed limit, then the street would be eligible for traffic calming.

Cut-through Problem Threshold:

In some cases, the reported problem is related to the volume of traffic on the residential street instead of the speed. If the street carries more than 1000 vehicles per day, then the street would be eligible for Traffic Calming.

Unique Circumstances:

Should the area of concern not fit neatly into either of the above categories, City staff will evaluate on a case-by-case basis if the situation warrants traffic calming.

Stage 1 Traffic Calming

If the indicated location/area exceeds the thresholds identified in the previous section, City staff will first suggest possible solutions that do not involve the use of physical controls or impediments on the roadway system.

Stage 1 Methods

These are primarily education and enforcement based measures called Stage 1 traffic calming (see Appendix A for visual examples of stage 1 traffic calming methods). These include:

- **Radar Speed Sign Deployment** — This is a temporary device that is primarily used to educate motorists regarding the fact that they may be significantly exceeding the posted speed limit.
- **Traffic Enforcement Actions** — This is traditional enforcement activity on the part of Public Safety's traffic enforcement officers. The intent is to modify behavior to result in a safer situation for all drivers and neighbors.
- **Traffic Signing and Pavement Markers** — Traffic Engineering staff will review all of the traffic signing and pavement markings in the area. If necessary, staff will install additional signing or striping. When appropriate, changes and additions will be reviewed with interested neighbors.

Follow-up Data Collection

If one or more of the Stage 1 Traffic Calming measures is implemented, City staff will conduct other speed and/or volume data collection over the following 3 to 6 months. The data will then be analyzed to determine if the Traffic Calming measure was successful. If the measure was successful, and the thresholds identified above are not exceeded, then the traffic calming process will end at this point. If the location continues to exceed the thresholds for speed and/or volume on a residential street, City staff will move on to analyze possible Stage 2 Traffic Calming methods.

Stage 2 Traffic Calming

City staff may conduct a Traffic Calming Study to suggest possible solutions to the problem. The solutions could involve physical modifications of the street intended to control traffic speeds and/or volumes. These are called Stage 2 traffic calming methods.

Neighborhood Consensus

Neighborhood involvement will be a large part of the Traffic Calming Study process. City staff will request a petition from a representative number of residents in the neighborhood to verify that there is a widespread concern for the speeding or traffic issue. After the petition is received, it will be reviewed by City staff. This petition will be used to determine if the Stage 2 criteria thresholds are satisfied (listed under “Criteria”).

Sometimes residents of the neighborhood contribute significantly to a speeding problem. In this case, a grassroots citizen-driven awareness campaign can be very effective.

Stage 2 Methods

Stage 2 methods involve infrastructure for both speed and volume calming (see Appendix B for visual examples of stage 2 traffic calming methods). Possible Stage 2 methods include:

Speed Calming Measures

Horizontal Measures

- **Roundabouts** - Engineered roundabouts manage intersecting traffic on higher volume streets around a circular center island. Vehicle approaches operate on a yield control to balance right-of-way, intersection delay and congestion.
- **Mini roundabouts/neighborhood traffic circles** - Similar to regular roundabouts, but smaller in scale and appropriate for lower volume roadways. Vehicle approaches are yield controlled and vehicles pass around the center island in a counter-clockwise direction.
- **Chicanes** - Also called serpentines, chicanes are curb extension constructed away from intersections that shift traffic from side to side to create an S-shaped path of travel.
- **Chokers and curb extensions** - Constructed mid-block or at intersections, chokers and curb extensions narrow a street from both sides creating an “hourglass” curb alignment.
- **Center island narrowings** - Raised islands in the centerline of a street. They separate each travel lane but provide a narrowing effect in each direction.

Vertical Measures

- **Textured pavement** - Application of various textures or materials to roadway surface, often paired with a change in road surface color.

- **Raised Intersections** - Raised flat areas covering an entire intersection, often with a textured surface on the center flat area. Approaches transition to the raised section with a ramp similar to a speed hump.
- **Speed humps, raised crosswalks and speed tables** - Raised vertical deflections that vary in total length. Typically placed mid-block, away from intersections.

Volume Calming Measures

- **Full Roadway Closures** - Through traffic is completely prohibited beyond closure, however there is often pedestrian and bicycle access provided.
- **Half Roadway Closures** - Half closures block travel in one direction for a short distance on otherwise two-way streets. Pedestrian and bicycle access is usually provided
- **Median Barriers** - Raised islands in the centerline of a street through an intersection that block left hand turn movements on all approaches and through movements on the cross street approach.
- **Diagonal Diversions** - A barrier constructed diagonally across an intersection, blocking through movements on all approaches.
- **Woonerf** - This is a design that makes residential streets an extension of the front yards. Essentially there is no identified street with curbs and gutters. Parked cars, landscaping, etc. intrude upon portions of the streetway while still allowing for vehicular travel. They are typically narrow streets without curbs and sidewalks, and vehicles are slowed by placing trees, planters, parking areas, and other obstacles in the street. Motorists become the intruders and must travel at very low speeds below MPH. This makes a street available for public use that is essentially only intended for local residents.

Stage 2 Criteria

The following general criteria must be met to consider the installation of any Stage 2 traffic calming measure:

- Installation must not result in traffic diversion to other neighborhood streets.
- At least 60% of the impacted residents and 100% of the residents within 100 feet of the proposed device shall support the installation.
- Devices shall be located a minimum of 25 feet from driveways, manholes, drain inlets, water valves, street monuments, and other appurtenance.
- Devices shall be located a minimum of 25 feet from fire hydrants.
- Devices shall be installed only where a minimum safe stopping distance can be provided.
- City of Smyrna Department of Public Safety must approve the plan to ensure that emergency response times or access are not adversely affected.
- Costs for Stage 2 traffic calming measures shall be borne by both the City and local neighborhood for the design and construction of any permanent improvements.
- Maintenance of anything planted within Stage 2 traffic calming measures shall be the responsibility of the neighborhood.

Petition Process

Before the City of Smyrna considers the installation of a traffic calming device, a petition must be submitted to the office of the City Engineer. This petition must originate with a property owner of the affected street. All property owners on the affected, or that must access the affected street, should be contacted and given an opportunity to sign the petition, indicating their “yes” or “no” response concerning the installation of traffic calming devices.

At least 60% of the property owners included on the petition must vote in favor of the traffic calming device before installation will be considered. In the case of joint legal ownership, both signatures are required. All owners must sign individually, including owners of undeveloped lots. The petition must be signed by property owners. Renters are not eligible to represent a property.

Once the petition has been submitted and validated by the City Engineer, the street will be reviewed in the context of the above criteria. If the street meets those criteria, then the petition will be presented to Mayor and Council at their regularly scheduled Council Meeting. At this public hearing, the petition will be approved or disapproved by the Mayor and Council.

Funding

Costs for Stage 1 traffic calming measures shall be borne by the City through a specific allocation by the City Council for permanent signs and pavement markings.

The neighborhood and/or affected owners shall pay up to 50% of the design and construction costs of the Stage 2 improvements; the City shall pay the remainder. The amount required by the neighborhood is decided at the sole discretion of the City.

City funding shall be allocated within the annual budget.

City Council Approval

Once City staff and the neighborhood agree on an appropriate traffic calming solution, the proposal will be brought to the Mayor and City Council for final approval and funding allocation. This process will include a formal Public Hearing. Any proposal must be approved by Mayor and Council. It is important to remember that Mayor and Council make the final determination.

The City considers the balance of the traffic calming pros and cons and recognizes that there are situations where the benefits of traffic calming outweigh the disadvantages. With each individual Neighborhood Traffic Calming Study that is conducted, City staff and residents must carefully weigh these advantages and disadvantages of each traffic calming action.

Removal Process

If the neighborhood decides that they no longer want previously installed traffic calming devices, they must follow the same procedure to obtain 60% support by petition as listed above for installation. Active traffic calming devices should remain in place at least 12 months before removal. If devices are removed, the road must also be brought back to City standards. The City of Smyrna reserves the right to remove traffic calming measures for any reason.

Legal Disclaimer:

Without exception, the City maintains the full authority to install traffic calming measures onto any street, road, or alley, into any neighborhood, or on city right of way, as allowed by law.

The Pros and Cons of Stage 2 Traffic Calming

Before the City decides to consider pursuing Stage 2 traffic calming actions, it is important that the benefits and disadvantages be carefully considered. While Stage 2 actions can be successful, they can also result in problems more significant than the original concern. This section will describe the pros and cons of the Stage 2 traffic calming tools described previously. In most cases, the benefits are predictable, while the disadvantages can be much more unexpected. Consequently, a greater emphasis has been placed on the potential problems so that decisions can be made in a fully informed manner.

Pros

Traffic Calming Measures Often Achieve the Desired Result

Physical actions such as the installation of speed humps, traffic circles, street closures, etc. are almost always successful in forcing traffic to behave in an intended fashion. In certain situations, they can achieve the desired result by utilizing a one-time capital expenditure and generally low ongoing maintenance costs.

Permanence

Stage 2 traffic calming actions are generally viewed as much more permanent solutions than Stage 1 actions. In most instances the alternative approach to the desired result involves repetitive and costly ongoing Stage 1 traffic calming actions. There are significant potential benefits to utilizing State 2 traffic calming actions which is why some communities have implemented Stage 2 actions and many other communities are exploring their possible use.

Accident and Crash Reduction

One of the most important impacts of traffic calming is the potential reduction in the severity and number of crashes on traffic-calmed streets. Safety is enhanced through increased driver awareness of other street users and reductions in volumes, speeds and conflicts. In the United States, reduction of crashes due to traffic calming measures has been reported to be an overall average of 50 percent. Traffic circles appear to offer the greatest reduction in collisions. Speed reduction is especially important for pedestrian safety, as the severity of injury to a pedestrian when hit by an automobile is dramatically reduced by lowering vehicle speeds from 35 mph (usually fatal) to fewer than 20 mph (usually just minor injuries).

Increased Neighborhood Property Values

Many measures provide for landscaping opportunities in formerly paved areas, thus contributing positively to neighborhood aesthetics. There is some evidence that a well-designed traffic calming project can increase neighborhood property values.

Cons

Delays in Emergency Response Vehicles

This is especially true for fire apparatus and ambulance. Because of the heavy weight of fire engines, and delicate instruments and patients within ambulances, these vehicles must almost come to a complete stop when they encounter a bump, dip or sharp curve. Creating bumps, dips, and sharp curves is often precisely the result of many of the traffic calming tools. While these maneuvers will cause moderate discomfort and delay for normal passenger vehicles, they cause a much greater problem for emergency vehicles.

The time required to respond to medical emergencies or building fires by emergency personnel and apparatus has a significant influence on the outcome of the event. In cardiac arrest cases, literally seconds count in the patient's chance of survival. From the moment of collapse, the likelihood for recovery diminished by 10% for each minute which passes. Likewise, in their early stages, fires grow at a geometric rate. Minutes could mean the difference between a small fire easily contained and a fire causing major property loss and possible injury or death. For these reasons, the City's Public Safety Department is concerned with any physical action which would force delay upon responding emergency vehicles.

Diverting the "Problem" Traffic to Another Neighborhood Street

Another concern has been the realization that in many instances implementing traffic calming tools would be likely to move the problem rather than solve the problem. In virtually all instances, the traffic being controlled by physical traffic calming tools will not disappear or make major changes in its travel patterns. In most instances the placing of impediments on a particular neighborhood street will merely divert some or all of that traffic to other neighborhood streets.

Everyone is Inconvenienced

Enforcement and education efforts aimed at controlling speeds or influence driver behavior impact primarily the irresponsible drivers - usually a relatively small percentage of the driving population. On the other hand, physical traffic calming measures create delay and inconvenience for all drivers using the particular street.

Benefits Sometimes Very Localized

While speed humps are generally very effective in reducing speed in the immediate vicinity of the humps, they often result in higher speeds between the humps as drivers try to "make up" for the delay at the humps. Consequently, while using the speed humps to lower the average speed, it is likely that the top speeds on the street will increase. This result has been clearly documented in many studies regarding the use of speed humps or non-warranted stop signs for speed control.

Other Stage 2 traffic calming actions can also result in benefits near the installation but disadvantages elsewhere within a neighborhood. In the case of neighborhood intersection traffic circles, the results are often similar to speed humps with drivers traveling at higher velocity between the circles to "make up" the lost time. Actions such as diverters, barriers, and medians can often improve the situation where the traffic movement has been prohibited but can significantly worsen the problems to the streets where the traffic has been diverted.

Actions can be Significant for Certain Types of Vehicles

Speed humps can significantly increase the cost of maintaining heavy vehicles. While not readily quantifiable, this is an important consideration related to the maintenance cost for fire engines, refuse trucks, etc. This is an especially serious concern for vehicles which will confront the traffic calming actions on a continual or repeated basis.

Impacts on Parking and Other Road Users

Bicyclists, pedestrians and any other road user can encounter problems with physical traffic calming measures. All measures are designed to be acceptably safe for all users, assuming that these users are attentive as they proceed down the street. Speed humps and traffic circles, for example, are two of the most popular traffic calming measures. Bicyclists can traverse speed humps at typical cycling speeds without slowing down. However, if the bicyclists is careless (e.g., riding with no hands, not watching the road, no lights at night, etc.), the bicyclist might unexpectedly encounter a hump and be caught off balance. Where lanes are narrowed, bicyclists and drivers usually must share the lane, possibly becoming a problem if traffic volumes are moderate to high. Traffic circles force drivers to the right at intersections, toward (but not into) the crosswalks, and pedestrians sometimes feel that their safety is being compromised. Residents who are used to parking in front of their homes on the street may also be impacted, as some measures require the prohibition of on-street parking. These disadvantages for various user groups need to be considered along with the recognized benefits of overall traffic speed and volume reduction that result from a traffic calming project.

Visual Impacts, Noise Impacts and Aesthetic Concerns

While some traffic calming devices can have favorable aesthetic impacts, others can be, by their nature, unsightly. Actions such as speed humps and diverters most often pose no opportunity for the incorporation of aesthetics and can certainly have negative visual impacts. Additionally, virtually all Stage 2 traffic calming devices require reflective devices, signs and striping which negatively affect the aesthetics of a neighborhood. Since these devices are intended to pose obstacles to cars, they must be very well signed, marked and lit in order to minimize potential safety problems and potential liability exposure. While the signing, marking and lighting are clearly justified for those reasons, they certainly negatively impact neighborhood aesthetics.

Noise in the area of traffic calming devices, such as speed humps, can increase due to the deceleration and acceleration of vehicles. There is also usually noise created by the vehicle traversing a speed hump.

The City considers the balance of the Traffic Calming pros and cons and recognizes that there are situations where the benefits of traffic calming outweigh the disadvantages. With each individual Neighborhood Traffic Calming Study that is conducted, City staff and residents must carefully weigh these advantages and disadvantages of each traffic calming action.

Appendix A: Stage 1 Traffic Calming Methods

Radar Speed Sign Deployment

Pavement Markers

Appendix B: Stage 2 Traffic Calming Methods

Speed Calming Measures

Roundabout

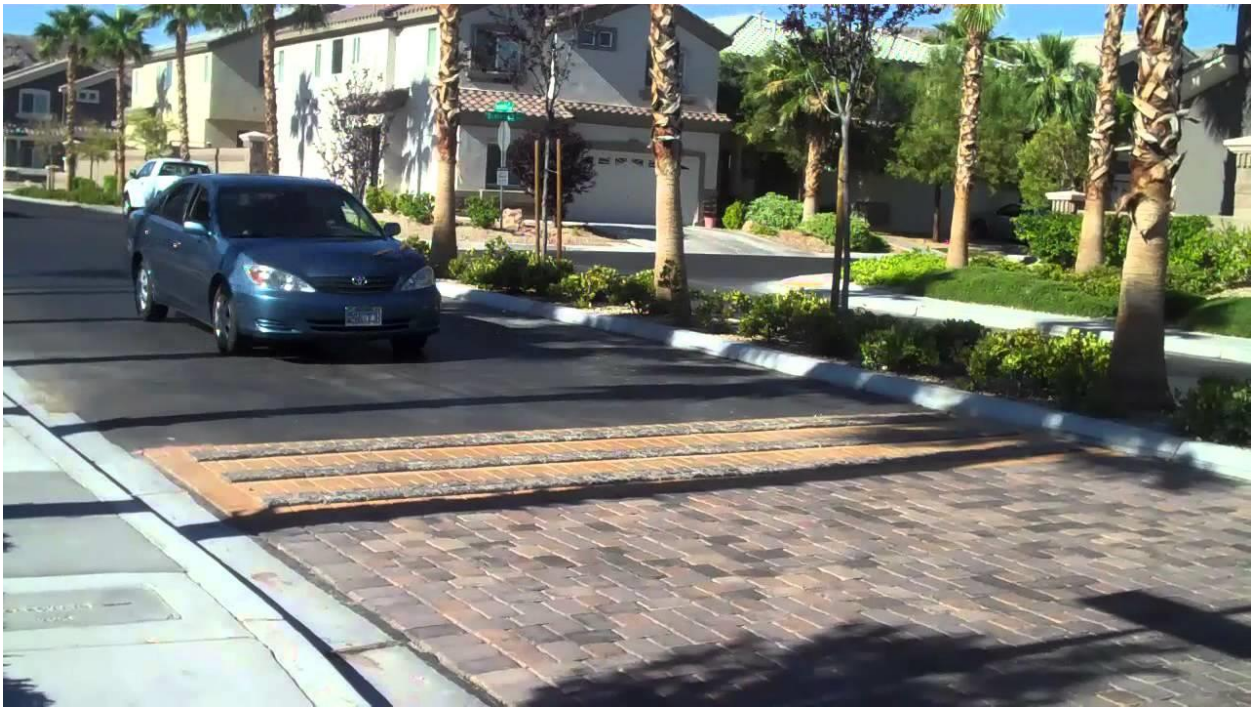
Mini roundabout/neighborhood traffic circle

Chicane

Chokers and Curb Extensions

Center Island Narrowing

Textured Pavement



Raised Intersection

Speed Hump

Raised Crosswalk

Speed Table

Volume Calming Measures

Full Roadway Closure

Half Roadway Closure

Median Barrier

Diagonal Diversion

Woonerfs