

SECTION 19: TRAFFIC CALMING

Section 19.1: Definition

Traffic calming consists of physical changes, usually in the vertical or horizontal alignment, or cross section of the roadway, with the intent of altering drive behavior. The goal of traffic calming is typically to reduce traffic volume, vehicle speed or both.

Section 19.2: Purpose of Traffic Calming Devices

One of the most common concerns raised by residents is speeding on residential streets. The 2006 direction finder survey results performed for the City of O'Fallon indicated that the flow of traffic and congestion management was ranked as the #1 highest priority amongst residents. Corresponding to the facts noted above, this same category was the category that residents are least satisfied with in the study. Traffic calming when applied effectively can control the flow of traffic on residential streets.

Section 19.3: Common Types of Traffic Calming Devices

Section 19.3(A): Speed Reduction Devices

Traffic Circles – Traffic circles are raised island, placed in intersections, around which traffic circulates. They can be controlled by yield signs, two-way stops, or all-way stops. Circles prevent drivers from speeding through an intersection by impeding the straight through movement. Drivers must first turn to the right, then to the left as they pass the circle, and then back to the right again after clearing the circle. The traffic circles would be made of pre-cast concrete, have a mountable curb, and can house landscaping in the center circle.



Semi-Circle Chicanes – The semi-circle chicane is very similar to a traffic circle. These would typically be placed at “T” intersections. In this application, a half circle is placed on the through street opposite the terminating leg of the intersection. Additional half circles are placed on the through street on either side of the terminating leg. Drivers must first turn left, then back to the right as they pass through the chicane. The semi-circle chicanes are made of pre-cast concrete, have a mountable curb, and have some space to hold landscaping.

Chokers – Chokers are curb extensions at midblock locations that narrow a street by widening the sidewalk or planting strip. If marked as crosswalks, they are also known as safe crosses. Two-lane chokers leave the street cross section with two lanes that are narrower than the normal cross section. One-lane chokers narrow the width to allow travel in only one direction at a time, operating similarly to one-lane bridges. They are good for areas with substantial speed problems and no on-street parking shortage.



Center Island Narrowings – A center island narrowing is a raised island located along the centerline of a street that narrow the travel lanes at that location. Center island narrowings are often landscaped to provide a visual amenity. Placed at the entrance to a neighborhood, and often combined with textured pavement, they are often called “gateway islands.” Fitted with a gap to allow walks through at a crosswalk, they are often called “pedestrian refuges.”

Speed humps/Raised Crosswalks – Speed humps, speed tables, and raised crosswalks are rises in the pavement, usually constructed of asphalt. They consist of a rise, followed by a flat section, then slope back to original vertical alignment of the street. Drivers must slow down to travel over the speed hump.



Center Island Narrowings are good for entrances to residential areas and wide streets where pedestrians need to cross.



Rumble Strips – Rumble Strips, along with speed humps, raised crosswalks and speed tables, are designed to slow traffic to negotiate the device. Rumble Strips are normally placed at crosswalks.

Dynamic Message System – Driver Feedback Speed Sign alerts drivers, and helps protect children at school crossings. The Driver Feedback Speed Sign combines fluorescent yellow green static school crossing signs with a fully self-contained dynamic vehicle speed sign.

Other Devices:

Round-A-Bouts – Roundabouts require traffic to circulate counterclockwise around a center island. Unlike Traffic Circles, roundabouts are used on higher volume streets to allocate right-of-way between competing movements.

Raised Intersections – Raised intersections are flat raised areas covering an entire intersection, with ramps on all approaches and often with brick or other textured materials on the flat section. They usually raise to the level of the sidewalk, or slightly below to provide a "lip" that is detectable by the visually impaired. By modifying the level of the intersection, the crosswalks are more readily perceived by motorists to be "pedestrian territory".

Speed Dips – Are depressions in the pavement usually construction of concrete or asphalt with the intended purpose of reducing speeds on the roadway

Section 19.3(B): Volume Reduction Devices

Full Diverters – A full diverter is a barrier placed diagonally across an intersection, blocking the through movement. The barrier blocks the through movement in both directions. This method of traffic calming should not be used unless all other options are not feasible or desirable.

Partial Diverters – A partial barrier is a barrier that blocks one-half of a street. The barrier blocks the through movement in one direction.



Section 19.4: Emergency Response

The Police and Emergency Services utilizes the City's streets as their main response routes for emergency services. Traffic calming devices can lower vehicle speeds along local streets and they will have the same effect on emergency vehicles. Studies conducted by various municipalities have indicated that each traffic calming device can delay an emergency vehicle between 3 and 14 seconds, depending on the design of the device and the vehicle. In light of the impact on emergency vehicle response time, traffic calming devices other than the dynamic message speed indicator signs should not be used on collectors and shall not be used on arterial streets.

Section 19.5: Advantages/ Benefits to Installing Traffic Calming Devices

Some advantages of installing traffic control devices have been identified by numerous agencies that have installed such devices. Typical advantages listed include:

- Citizens would have an additional option to consider when they feel traffic is traveling too fast along their street as opposed to installing unwarranted stop signs, or constant police surveillance.
- City Staff would have an additional option to offer citizens who feel vehicle speeds along their street are too fast.
- Traffic calming devices are physical changes to the street and therefore are self-enforcing.
- Traffic calming devices have been proven to be effective in reducing speeds and traffic volumes.

- Lower vehicle speeds increase available reaction time potentially reducing crashes and traffic volumes.
- Traffic calming devices would increase travel time along residential streets that they are installed along, making arterial and collector streets more attractive for cross-town traffic.
- Traffic calming can promote pedestrian, cycle and transit use.
- Helps reduce the negative effects of motor vehicles on the environment (e.g., pollutions, sprawl).
- Incorporates the preferences and requirements of the people using the area (e.g., working, playing, residing) along the street(s), or at its intersection(s).
- Certain traffic calming measures can beautify the streetscape.

Section 19.6: Disadvantages to Installing Traffic Calming Devices

Some disadvantages of installing traffic control devices have been identified by numerous agencies that have installed such devices. Typical disadvantages listed include the following:

- Some residents will feel that the public's street is being altered for the benefit of a small group of citizens.
- Traffic calming devices will increase the response time of emergency vehicles such as fire engines and ambulances.
- Traffic calming devices are physical changes to the roadway and therefore are not easily installed or removed.
- Traffic may be diverted from one local street to another, merely moving the problem to another location.
- There might be an increase damage claims as a result of the traffic calming devices.

Section 19.7: Traffic Calming – New Developments

The City recognizes that traffic calming is a function of street design, street setbacks, parking, landscaping and access. The City is committed to examining street design in overall subdivision planning.

As an alternate street design, reduced pavement widths may be provided with the approval of the Director of Planning, City Engineer and the Planning and Zoning Commission. Reduced pavement widths shall be considered along with a package of landscaping, enhanced pedestrian facilities and other community improvements. A traffic study that includes a parking analysis will be required for projects requesting reduced pavement widths.

Developers are required to address traffic calming measures through alternate street designs and/or by implementing the measures outlined in this section which include, but are not limited to raised intersections, neighborhood traffic circles, chicanes, neckdowns, center island narrowings and chokers as identified in the informational report entitled “Traffic Calming State of the Practice” by the Institute of Transportation Engineers (ITE) or as directed by the Director of Planning or City Engineer. See Section 19.3 for examples of Traffic Calming Devices. In the design of new subdivision streets, Collector and Arterial streets shown in the City’s Comprehensive Plan shall be addressed as neighborhoods are developed that adjoin such streets with those streets not being required or recommended to have traffic calming measures included. Subdivisions shall be designed to minimize or eliminate residential driveways from connecting directly to a system collector or arterial roadways. Residential streets shall be designed with the following standards with the intention of reducing the traveling speed of vehicles on residential streets.

1. At selected locations, such as sharp curves or school zones, design speed for residential streets shall be 20 mph and signed accordingly.
2. If spot Traffic Calming measures are used, they shall be spaced a maximum of 600 feet apart, unless otherwise approved by the City Engineer.
3. With the exception of connections required for traffic flow, residential streets should be discontinuous and generally should be interrupted with jogs and offsets or curved. Four-way intersection shall be avoided. Adequate Collector/Arterial streets shall be incorporated into projects, and efforts shall be made to minimize the number of homes fronting Collector and Arterial streets.
4. Local streets should not exceed 600-900 feet in length without design considerations for traffic calming. They may however, extend to ¼ mile if the street is curved (100-200 feet radius) for an adequate length (minimum curve length equals the curve radius) and the cut-through traffic potential is minimal.

The Type of Traffic Calming measures including street design alternatives for new developments shall be selected by the developer and presented to the Planning & Zoning Commission for approval with the Preliminary Plat.

Section 19.8: Traffic Calming Policy – Existing Developments

To begin the process, a group of citizens representing 10 or more separate households from a given traffic neighborhood (subdivision) submits a letter to the City Engineer expressing their interest in improving traffic conditions in their neighborhood. The petitioner’s letter should describe, as completely as possible, the location and details of the types of traffic problems perceived. This letter must also be sent to the Councilperson representing the ward in which this subdivision/traffic neighborhood is located.

Section 19.8(A): Staff Evaluation, Preliminary Data Collection and Analysis

Upon receiving the request by the 10 residents, staff will verify the names and addresses on the

petitioners. After verification, staff will perform preliminary data collection and analysis (speed study) to determine the speeds and volumes of motorists on the roadway of concern.

Section 19.8(B): Eligibility

At a minimum, the speed study will need to demonstrate that the average speed is greater than 25 mph or the traffic volume must exceed 600 ADT (average daily traffic) for the roadway of concern. If one of these minimum criteria is not met, the roadway will not qualify for traffic calming.

Traffic calming devices other than the dynamic message speed indicator signs should not be used on collector streets and shall not be used on arterial streets

Section 19.8(C) Education

If roadway does qualify per section 19.8 (B) the first step will be to educate motorist for a period of time and re-evaluate to determine if further intervention measures are needed.

Examples of education techniques are: Dynamic message boards, indicators, signage, speed trailers, etc.

Section 19.8(D) Enforcement

If education step is not successful, then enforcement intervention will be requested of the Police Department along with continued education techniques.

Section 19.8(E) Ranking System

If the desired results have not been achieved by education and enforcement, the next step will be to rank the project using the below criteria that has been established:

Section 19.8(F): Eligibility Criteria for Traffic Calming

The following criteria are used to produce a numerical score for each traffic calming request.

Crashes– The last 3 full years of available crash data for the section of street for which traffic calming is being requested will be examined. 10 points will be awarded for each crash that is susceptible to correction by traffic calming devices. (30 points maximum)

Speed Violation Rate – Percentage of vehicles traveling over the speed limit on the subject street. One point is awarded for each percentage point of vehicles traveling over the speed limit. (30 points maximum) **Traffic Volume** – Average Daily Traffic (ADT) on the busiest section of the subject street divided by 300 (10 points maximum)

Increase in Traffic Volume – The current ADT will be compared to the ADT from previous ADT data. The intent is to measure increases in traffic volumes related to factors outside the neighborhood, not increases in traffic volumes due to the development of the subdivision in which the subject street is located. If the difference between the current traffic volumes and the previous traffic volumes indicate an increase in ADT, then 1 point will be assigned for every 20 ADT increase. If the current traffic volumes have decreased, a score of 0 is assigned. If there is

no previous ADT data, then a score of 5 is given. (20 points maximum)

Schools – Ten points for each private or public elementary school on the subject street or within project area.

Other Pedestrian areas – Five points for each individual pedestrian oriented facility, such as a park, on the subject street.

Driveway Density – Density is expressed in terms of the number of driveways per mile. Driveways are defined as private accesses to the public roadway, serving up to 8 lots. Public roads and private roads are not considered driveways. One point per 10 driveways per mile rate. For example, a density of 50 driveways per mile would receive a score of 5 points. (10 points maximum)

Other – Five points will be awarded for the absence of sidewalks and 5 points will be awarded for the absence of street lights. Also, five points if street is utilized by high school age kids, driving to and from school which makes for a noticeable increase in traffic during times before and after school by inexperienced drivers.

Alleys – Deduct 5 points for alleys due to low traffic volumes and low speeds.

A score of greater than fifty-five points is required for the location to be eligible for physical traffic calming. The scores will be used to prioritize traffic calming requests. Those that rank the highest will be acted upon first as funds are available.

Section 19.8(G) Neighborhood Meeting/Information Gathering

Based on the ranking and if the traffic study shows that traffic calming measures can be implemented safely, a mail-back survey of all affected residential dwelling units will then be conducted by the City. A proposal for traffic calming must be supported by 51% of the residential dwelling units responding to the questionnaire in order to be considered for implementation. A 50% minimum number of responses to the mail back survey are required. A low response rate will be considered by the City Council as a no action.

The limits of the boundaries of the subdivision to which will be allowed to vote on the proposed traffic calming proposal will be determined by City Engineer and may include adjacent subdivision on which their sole access will be impacted by the traffic calming proposals.

Section 19.8(H): Preliminary Design

For local street projects where there is generally an agreement regarding the problems and strategies, staff will prepare a preliminary design.

Preliminary design will include not only the street in question, but also the surrounding area and how it may be affected by the implementation of traffic calming measures. During this phase, potential traffic calming measures and locations will be identified as well as construction cost estimates. Input will be sought from emergency services with regards to the proposed preliminary design.

Section 19.8(I): Presentation of Preliminary Design to Neighborhood

The Department of Community Development staff will schedule and attend a neighborhood meeting to report the results of the design process and attempt to reach a consensus from the neighborhood regarding any proposed actions.

A representative from the Fire Department and the Police Department will present effects that traffic calming measures will have on emergency response time.

Section 19.8(J): Neighborhood Approval of the Design

Once the preliminary design of the traffic calming improvements is determined, the neighborhood in which the traffic calming device is to be placed is asked to vote on whether they approve of the proposed traffic calming proposal. A 65% vote in favor of preliminary design for all ballots issued to the property owners is needed to continue to next phase.

The limits of the boundaries of the subdivision to which will be allowed to vote on the proposed traffic calming proposal will be determined by City Engineer and may include adjacent subdivision on which their sole access will be impacted by the traffic calming proposals.

Section 19.8(K): City Approval of the Design

For all traffic calming proposals, the City Council, must approve the proposed traffic calming measures with input from the City Administrator, Police Chief, Fire Chief, Planning and Development Director and City Engineer.

Section 19.8(L): Project Scheduling

Project Scheduling will depend on budget and available resources. The project's cost estimate will be presented to the City Council for funding.

When funds are approved by City Council and available, final design will be completed, the project will be advertised and constructed.

Section 19.8(M): City Staff Effectiveness of the Traffic Calming Device

No earlier than 6 months and within 18 months of implementation, City staff will conduct traffic studies on the project to determine the effects that the traffic calming has on the traffic. The before and after studies should be performed at the same time of year with similar weather conditions to ascertain the effects of the traffic calming devices and should consider school days as a factor. Traffic volumes and speed data will be recorded for comparison. Staff will report the results to the City Administrator.

Section 19.8(N): Removal

Two years or greater from the date of implementation, citizens in the study area may petition to have the traffic calming devices removed. There must be 51% of the households (each having one vote) in the study area supporting the removal. The devices cannot be

considered for removal until after studies have been completed. Once the petition has been verified, the City Administrator, or his or her designee, may order the removal of the devices. Generally, traffic calming devices shall not be requested in an area where traffic calming devices were removed for a period of at least 2 years from date of removal, unless otherwise directed by the City Administrator or City Council.

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