



Criteria for Traffic Calming Devices

**Engineering Division
Public Works Department
Unified Government of Wyandotte County
and Kansas City, KS**

INTRODUCTION

Traffic calming is an integrated approach to traffic planning that seeks to create a more livable urban environment by reducing the undesirable impacts that traffic can have on neighborhoods.

Traffic calming policies have been developed to preserve an environment where people can live and work without being threatened by traffic related problems. The most common traffic problems on local streets and residential collectors are associated with the following elements:

- 1) Excessive speeds
- 2) Cut through traffic
- 3) Inadequate pedestrian facilities

Engineering tools include a variety of traffic calming devices that can reduce speed, decrease passenger car volumes, and improve safety on local streets and residential collectors.

The objectives of this policy are to:

- 1) Develop criteria for the selection of citizen initiated traffic calming projects for speeding traffic and cut through traffic on local streets and collectors.
- 2) Recommend appropriate traffic calming devices.
- 3) Establish a process for traffic calming installation.
- 4) Provide a basis for authorizing projects.

These topics are discussed in the following sections of the policy.

DEFINITION OF TERMS

Local Street or Residential Collector: Local streets are used primarily for vehicles to travel from a collector street to their residence. Residential collectors (minor) are used to get from an arterial (major) street to the local street of residence.

85th Percentile Speed: The speed at which 85 percent of the motorists are measured to be traveling at or below. Commonly accepted practice for measuring speed of traffic as a whole.

Residents Directly Affected: Residents fronting the segment of the street where the proposed traffic calming device and supplemented signs will be installed.

CRITERIA FOR CONSIDERATION OF PLACEMENT OF CITIZEN INITATED TRAFFIC CALMING DEVICES – Local Streets and Residential Collectors

In order to make efficient use of available funds, keep frustration levels of drivers to a minimum, and to minimize negative impacts of calming devices such as effects on emergency vehicles and increase in traffic volumes on other neighborhood streets, appropriate criteria for the selection of street or street segment(s) for the installation of traffic calming devices have been developed.

Separate criteria have been prepared for the eligibility of projects for reducing speeds, decreasing cut through traffic, and eliminating through traffic. Each type of traffic

calming carries its own set of criteria. In order to be considered for traffic calming all criteria in the respective category must be met.

The Unified Government, in its sole discretion, shall make the final decision whether to install a traffic calming project.

I. Eligibility criteria for calming devices to reduce speeds:

- 1) The street must be classified as a local street or collector.
- 2) The 85th percentile speed observed is at least 35 M.P.H. or 5 M.P.H. over the posted speed limit, which-ever is greater.
- 3) 24-hour volume is more than 500 vehicles for local streets and 1,500 for collectors.
- 4) Fund availability.
- 5) The neighborhood must support the project as evidence by the submission of the petition of interest in the format of Exhibit A.

II. Eligibility criteria for calming devices to reduce the volume of cut through traffic:

- 1) The street must be classified as a local street or collector.
- 2) The typical weekday traffic volume must exceed 500 vehicles per day for local streets and 1,500 vehicles per day for collectors. Alternative actions should be considered when traffic volumes on the study street exceed 3,000 vehicles per day. Many streets in the community are favored by drivers because of convenience, although the original intent may have been for only local use. Altering the path of so many vehicles would most likely bring negative affects to the community. A system analysis is recommended to thoroughly examine potential improvements on the major routes that would provide the needed capacity. A project of this type would need to be budgeted and handled as a major improvement project if feasible.
- 3) Other arterial and collector facilities are available to accommodate diverted traffic.
- 4) Fund availability.
- 5) The neighborhood must support the project as evidence by the submission of the petition of interest in the format of Exhibit A.

III. Eligibility Criteria for calming devices to restrict one or more possible movements:

- 1) The street must be classified as a local street.
- 2) The typical weekday traffic must exceed 500 vehicles per day and be less than 3,000 vehicles per day.
- 3) The segment that is closed should be no greater than one block in length.
- 4) The Police and Fire Departments must both approve the proposed closure.
- 5) The street segment proposed for closure must not be used by public transit.
- 6) A suitable alternative route must be available.
- 7) Petition must be signed by at least 75% of the residents on the street segment requesting traffic calming.
- 8) Fund availability.

TYPES OF CALMING DEVICES

Several physical controls are available to reduce vehicular speeds and cut through traffic. Below is an outline of our traffic calming toolbox.

Vertical Deflection:

Vertical deflection measures are devices placed in the roadway that use the forces of vertical acceleration to discourage speeding by motorists. Devices in the path of travel force the driver to maneuver over top of the device in place. Some common examples are listed below:

- 1) **Speed Humps:** A section of pavement rising to a maximum height of 3 inches to 4 inches at the center, usually extending the width of the roadway. The number of speed humps installed on a street depends on the length of the street. For speed humps to be effective, they must be installed in a series, approximately 250 to 600 feet apart. Speed humps must be located a minimum distance of 150 feet from the intersection. Speed humps must be installed at least 15-20 feet away from the driveways and alleys. The street segment under consideration must be at least 550 feet.
- 2) **Speed Tables:** A flat topped section of pavement between 7 and 10 feet wide that is raised between 3 and 6 inches and usually extends the width of the roadway. Speed tables are similar in function to speed humps and have the same application

standards. However, speed tables are to be used a crosswalks as well as speed reducers. One major benefit of speed tables is that people cross at the point where drivers decrease speed.

- 3) **Speed Cushions:** A section of pavement rising to a height of 3 to 4 inches and is approximately a 6 foot by 7 foot rectangle. Each cushion covers only a partial width of the roadway to allow passage for emergency vehicles, buses or other large vehicles, and bicycles. They are usually placed at varying intervals in order to channel the wheels of larger vehicles, while still providing hurdles wide enough to slow standard-sized vehicles.

Horizontal Deflection:

Horizontal deflection measures are devices placed in the roadway that requires the driver to increase his attention to the immediate path of the vehicle. Devices in the path of travel force the driver to maneuver around the devices. Some common examples are listed below:

- 1) **Bulbouts:** These devices are commonly used when the width of the street is considered excessive. With bulbouts in place, the driving lane is successfully narrowed to a proper size. Bulbouts are typically placed at the intersections of cross-streets, which also allows the device to act as a pedestrian haven. Commonly used when on-street parking is an issue. Bulbouts help protect the parked vehicles from traffic.
- 2) **Lane Narrowing:** The process of lane narrowing is similar to that of a bulbout, but the narrowing is throughout the entire length of the block. In many cases, this eliminates on-street parking.
- 3) **Roundabouts:** Circular intersections with specific design and traffic control features. These features include yield control of all entering traffic, channelized approaches, and appropriate geometric curvature to ensure that travel speeds on the circulatory roadway are typically less than 30 mph. Thus, roundabouts are a subset of a wide range of circular intersection forms.

Turning Restrictions

Any device that limits or restricts the movements of a driver is generally classified as a turning restriction. Some common examples are listed below:

- 1) **Semi Diverters:** Semi-diverter is a curb extension or barrier that restricts movement into a street. The semi-diverter is constructed at approximately the center of the street, effectively obstructing one direction of traffic. The semi diverter creates a one-way segment at the intersection while maintaining two-way traffic for the rest of the block typically used to deter traffic from cutting through a residential neighborhood from a congested

arterial street. This form of traffic calming is a physical reinforcement to the regulatory “Do Not Enter” and turn prohibition signs on the crossing street. Semi-diverters have the advantage of providing minimal impediment to emergency vehicles and allowing two-way traffic flow once past the restriction.

- 2) **Forced Turn Channelization:** Limits certain traffic movements at intersections through a combination of signal and traffic islands. Channelization is intended to make travel through a neighborhood difficult but does not restrict it entirely. Adverse safety impacts are minimal and violation rates are generally low.
- 3) **Diagonal Diverters:** A diagonal diverter converts an intersection into two unconnected streets by placing a barrier diagonally through the intersection. This prevents direct uninterrupted movement through the neighborhood by forcing a turn at the barrier. Non-local traffic must traverse a longer distance through the neighborhood, diminishing the street’s attractiveness as a through route. It has an advantage over a cul-de-sac in that traffic is not “trapped” on the street, making the installation more acceptable to local residents and the street more accessible to emergency vehicles. The violation rate is low, landscaping potential exists, and adverse safety impacts are minimized through proper design, advance signing, and pavement markings. The main drawback of a diagonal diverter is that use of the device in a simple installation simply diverts traffic onto another local street. It is important that the installation of the diagonal diverter be a part of a system of neighborhood traffic control devices that considers the needs of the neighborhood as a whole, not just one street.
- 4) **Intersection Cul-de-sacs and Mid-block Cul-de-sacs:** Changing through roads into cul-de-sacs is a commonly used technique and is an effective way of eliminating non-local traffic on a street. However, there are inherent problems in closing a street. The response time of emergency vehicles may be increased and residents will have only one-way to and from the street. If unwanted through traffic is a persistent problem and a high violation rate is noted with other traffic devices, cul-de-sac may be an alternative. Cul-de-sacs can be landscaped to add to the environment of the street.

STEPS FOR NEIGHBORHOOD REQUEST FOR TRAFFIC CALMING

To initiate the process for considering the installation of a traffic-calming device or project the citizen or neighborhood association must contact the Engineering Division of the Public Works Department. Typically, the Engineering Division will mail to the individual or the neighborhood association information on the process, along with a petition form, attached as exhibit A, for a significant portion of the neighborhood to sign.

A neighborhood contact person should be identified on the petition. Petitioner must include an explanation of the observed problem.

Upon receipt of the petition and verification by UG staff of the reported problems, the Engineering Department may collect traffic volume and speed data. Data collection and analysis typically takes 2-3 months to complete. If reported problems correlate with schools being in session, traffic data collection may be suspended until school opening.

Unified Government staff may contact the petitioning group through letter or phone communication and explain its findings and suggestions. If necessary, UG staff may attend a neighborhood meeting to present findings and explain the participation requirements. The UG staff may continue to serve as a resource person at future meetings, but developing consensus and arranging meetings is the responsibility of the neighborhood association or representative. If the traffic study shows that the area in question meets UG criteria and a traffic-calming device is justified, UG staff will prepare a preliminary design.

Following to the completion of the design, and prior to any temporary or permanent traffic calming installation, the engineering department will consult with the District and At Large Commissioners to discuss the proposed installations.

After approval from the commissioners, a 6-9 month trial installation is typical, the devices or closings are implemented on a trial basis. After the end of this period, the UG may schedule a meeting with the neighborhood group to receive additional feedback. UG staff wishes to hear both the positives and negatives of the trial installation. Prior to any temporary or permanent traffic calming installations the engineering department will consult with the District and At Large Commissioners.

Other departments, such as Police and Fire, will also comment on the traffic calming devices. The decision to permanently install traffic calming is at the discretion of the Unified Government.

If permanent installation is decided upon and the cost of this installation is estimated to be greater than the small project procurement limit set forth by the Unified Government, the Unified Government typically requires a benefit district to be formed in the neighborhood. All projects that are to be entirely or partially funded by the Unified Government shall be based on the availability of funds.

RESPONSIBLE UNIFIED GOVERNMENT OFFICIAL

The Unified Government Commission authorizes the Unified Government Administrator to administer this policy and establish procedures as necessary to effectively and fairly carry out this policy.

Unified Government Traffic Calming - Neighborhood Request Form

Please submit the completed Neighborhood Request Form to:

Unified Government

Public Works Department

Attn: Devin Tiebout

701 N 7th Street Suite 712

Kansas City, KS. 66101

Email: dtiebout@wycokck.org

FAX: (913) 573-5727

Neighborhood: _____

Contact Name: _____

Address: _____

Phone: _____ Daytime Phone: _____

Email: _____

• Do you belong to a Neighborhood or Homeowner's Association or are you aware of one in your area? Yes No

If yes, which one?

• Describe the location of your traffic concern:

• Describe your neighborhood's traffic concern in detail:

The attached petition should be circulated to only and all residents living on the street segment that is requesting traffic calming and returned to the Unified Government. Properties without signatures will be counted as “negative responses.”

Neighborhood Traffic Calming Request Petition

Location: _____

Please submit this petition signed by at least 75% of the property owners (one per household) residing on the street segment along with the Neighborhood Request Form.

PLEASE PRINT

Name _____ Please circle one: Homeowner Tenant

Address _____

Signature _____ Date _____

Name _____ Please circle one: Homeowner Tenant

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