

**POLICY FOR MULTI-WAY STOP SIGN INSTALLATIONS AND TRAFFIC CALMING  
WITHIN THE CITY OF BRENTWOOD, TENNESSEE**

The purpose of this policy is to outline the procedures for determining when multi-way stop signs and traffic calming features may be installed within the City of Brentwood. The objective of this policy is to provide for safe and efficient traffic control at the City's intersections, to encourage traffic to travel on the City's major streets, to discourage through traffic from using residential subdivision streets, to avoid the excessive and arbitrary use of multi-way stop signs within residential areas, and to provide a structured approach to the treatment of residential collector streets which are perceived to have excessive negative impacts due to traffic speeds and/or volumes.

**PART I**

**WARRANTS FOR MULTI-WAY STOP SIGN INSTALLATION ON  
ARTERIAL AND OTHER DESIGNATED STREETS**

The Manual on Uniform Traffic Control Devices (MUTCD) sets forth guidelines for the installation of traffic control devices on streets and at intersections. In regard to multi-way stop signs, the MUTCD states that "any of the following conditions may warrant a multi-way stop sign installation":

1. Where traffic signals are warranted and urgently needed, the multi-way stop is an interim measure that can be installed quickly to control traffic while arrangements are being made for the signal installation.
2. An accident problem, as indicated by five or more reported accidents of a type susceptible of correction by multi-way stop installation in a 12-month period. Such accidents include right-and left- turn collisions as well as right angle collisions.
3. Minimum traffic volumes:
  - a) The total vehicular volume entering the intersection from all approaches must average at least 500 vehicles per hour for any 8 hours of an average day, and,
  - b) The combined vehicular and pedestrian volume from the minor street or highway must average at least 200 units per hour for the same 8 hours, with an average delay of at least 30 seconds per vehicle during the maximum hour, but,
  - c) When the 85-percentile approach speed of the major street traffic exceeds 40 miles per hour, the minimum vehicular volume warrant is 70 percent of the above requirements.

The above warrants for multi-way stop signs shall be applied to the following locations within the City of Brentwood:

- On State or Federal highways.

- At intersections that include at least one street classified as an arterial by the City of Brentwood (see attachment A for a list of classified arterials within Brentwood).
- Any intersections within a commercial zoning district.
- On any section of arterial, collector, or local street that has been or is expected to be improved by State or Federal funds (excluding State street aid funds).

## **PART II**

### **WARRANTS FOR MULTI-WAY STOP SIGN INSTALLATION ON RESIDENTIAL STREETS**

Multi-way stop sign installation may be allowed if one of the following conditions is met:

1. The sight distance for a vehicle in a stopped position on a minor street approach (or approaches) of an intersection is less than 180 feet. The sight distance measurements shall be done in accordance with the procedures outlined in the latest edition of A Policy on Geometric Design of Highways and Streets.
2. A crash problem, as indicated by 3 or more reported accidents in a 12-month period that are susceptible to correction by a multi-way stop installation. Such accidents include right- and left-turn collisions as well as right-angle collisions. Rear-end, side-swipe, and run-off-the-road type accidents are not considered to be the type susceptible to correction by a multi-way stop installation.
3. Four-way stop sign installation may be considered at intersections of residential streets within the City of Brentwood if six (6) of the following conditions are met:
  - a) The total vehicular volume entering the intersection from all approaches averages 100 veh/hr (minimum) for at least any four hours during a typical weekday.
  - b) The vehicular volume entering the intersection from the minor street or streets for the same four hours averages at least 25 vehicles per hour.
  - c) Both streets have residential frontage and speed limits of 30 mph or less.
  - d) Neither street is listed as an arterial per policy.
  - e) Neither street exceeds 38 feet in width, excluding median width.
  - f) No existing stop sign or traffic signal is located on the more heavily traveled street within a distance of 1,200 feet. In cases where stop signs are currently located on the more heavily traveled street at the subject intersection, this distance restriction shall not apply and Condition 3(f) shall be considered satisfied.
  - g) The intersection has four legs with streets extending for a minimum of 800 feet, including connecting streets, from the intersection on at least three of the four sides.



4. The standard multi-way stop warrants as specified by the MUTCD and described in Part I may be applied to intersections of residential streets within the City of Brentwood. Thus, multi-way stop sign installation may be considered at intersections of residential streets within the City of Brentwood if the standard warrants are met.

### **PART III**

#### **CONSIDERATION OF EXISTING MULTI-WAY STOP SIGNS WITHIN THE CITY OF BRENTWOOD**

Unless otherwise specifically removed by action of the City Board of Commissioners, the multi-way stop installations that are currently in operation within the City of Brentwood as of the date this revised policy is adopted shall remain in operation.

### **PART IV**

#### **WARRANTS FOR STOP SIGN INSTALLATION FOR NEW SUBDIVISIONS WITHIN THE CITY OF BRENTWOOD**

The City staff shall be responsible for determining the locations for all stop sign installations within a new subdivision prior to approval of the final plat of a subdivision. The developer shall be responsible for purchasing and installing the appropriate signs at the locations determined by the City staff.

### **PART V**

#### **TRAFFIC CALMING POLICY FOR RESIDENTIAL COLLECTOR STREETS**

The Policy is only applicable to identified residential collector streets inside the City Limits of Brentwood. The currently identified residential collector streets are as follow:

Arrowhead Drive  
Belle Rive Drive  
Bluff Road  
Carriage Hills Drive  
Charity Drive  
Concord Pass  
General George Patton Drive  
Gordon Petty Road  
Johnson Chapel Road West  
Jones Parkway

Knox Valley Drive  
Lipscomb Drive  
Manley Lane  
McGavock Road  
Pinkerton Road  
Stanfield Road  
Steeplechase Drive  
Sunset Rd. (North of Concord Rd.)  
Walnut Hills Drive

Residential collector roads are those streets which connect a significant number of local streets or neighborhoods to another collector road or, more commonly, to an arterial road. These streets are also characterized predominately by residential land uses and usually have multiple residential driveways along their lengths. Additional residential collector streets may be identified by the City through the land development approval process under the City subdivision regulations.

The Policy is not applicable to arterial streets (either residential or commercial), to non-residential collector streets, nor is it applicable to any local street. Undesirable traffic conditions on arterials or non-residential collectors, when reported, shall be investigated by engineering study to determine causes and appropriate solutions. Traffic conditions on local streets shall be addressed through the existing speed hump policy effective since 1997 within the City of Brentwood. Also, the Policy is not applicable to any route identified as a primary emergency route. Where unusual circumstances exist, this policy can be made applicable to arterial or commercial collectors if deemed appropriate by the City Commission, based on results of an engineering study.

### **Procedures for Traffic Calming Retrofits on Existing Streets**

The consideration for traffic calming on a residential collector street shall be initiated by a written request to study a traffic speeding or safety problem from the homeowner's association (the petitioner) representing the affected neighborhood to the City of Brentwood's Public Works Department. If no homeowner's association exists for the neighborhood the request may come from a representative number of affected residents. The request shall outline the perceived problem(s) and the requested action. Upon receipt of a request the City will contact the petitioner, and if necessary meet with the petitioner, to ensure that the details of the request are understood.

#### **a) Traffic Calming Study Roadway Criteria**

Upon receipt of a valid request, the City will conduct a study of the street to determine the needs and potential traffic calming treatments. This study will first determine whether the street meets the established criteria for traffic calming implementation. These criteria are listed below:

**Speed** – Consideration of traffic calming activity will be given to residential collector streets which have an 85th percentile speed over at least 24 hours of typical weekday data collection that is 8 mph or more over the posted speed limit.

**Volume** – Only residential collectors having an average daily traffic (ADT) count of at least 500 vehicles per day will be considered for traffic calming.

**Other Criteria** – The street segment under study must be at least 800 feet in length. Logical termini for beginning and ending the calming treatment must be identifiable. The street must have no more than two traffic lanes (one in each direction).

#### **b) Tiered Implementation Approach**

The Policy requires that, upon finding that all of the roadway criteria are met, and that the issue of concern is found by data collection to be a traffic speeding or safety problem, an

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incremental approach and remedial methods as outlined in this section will be recommended, based on the results of the traffic calming study.

The incremental approach consists of two tiers of traffic calming strategies. Tier 1 consists of non-construction strategies. Tier 2 strategies are those which typically require construction and which change the roadway physically in some way. Details of Tier 2 strategies are included as an appendix to the Policy. Tier 1 and 2 strategies are as follows:

**Tier 1:**

- Signage (regulatory or warning)
- Centerline or edge line/shoulder striping (with or without bike facility)
- Police enforcement of speed limit (in addition to routine enforcement regularly performed by police department)
- Speed trailer
- Other strategies proposed by the petitioner or staff which present no physical changes to the roadway

**Tier 2:**

- Medians or median islands (typically must fit within right-of-way)
- Traffic circles or roundabouts (subject to sufficient right-of-way)
- Curb Extensions/bulb-outs
- Chicanes
- Speed tables/raised crosswalk
- Textured pavements
- Other strategies proposed by the petitioner or otherwise approved by staff (subject to approval by City Commission)

**(1) *Tier 1 Implementation***

The engineering study conducted by the City shall include a recommendation of one or more of the Tier 1 strategies. The study will also outline Tier 2 strategies that are appropriate for the location in case the Tier 1 strategies do not prove to be successful. The study will include analysis of traffic volumes, traffic speeds, accident history for the subject street segment, and other transportation related features such as the presence of sidewalks, and whether or not the subject street is used by children to walk to school. Once the study is complete, staff will meet with the petitioner to outline the recommendations of the study.

Implementation of Tier 1 strategies will be required first unless it is determined by the City that Tier 1 strategies are either not viable, would not be effective, or have already been implemented. Tier 1 strategies may be implemented by staff based on the recommendations of the traffic calming study and concurrence of the recommendations by the petitioner. If the Tier 1 strategies prove to be effective then no additional action is needed. After six months, if the Tier 1 strategy is perceived to be ineffective at mitigating the issue of concern, the petitioner may request consideration of a Tier 2 traffic calming strategy.

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## **(2) Tier 2 Implementation**

Upon receipt of a request for consideration of a Tier 2 traffic calming strategy, the City will conduct a second study to validate that the Tier 1 strategy has not been effective. If this study shows that the Tier 1 strategy has been ineffective at addressing the problems, then a Tier 2 strategy, if appropriate, will be recommended. Tier 2 strategies must be reviewed by the City's Traffic Engineer prior to being recommended to the petitioner.

If a Tier 2 strategy is recommended, the staff will meet with the petitioner to outline the recommendations of the traffic calming study. To initiate further action, the petitioner will be required to submit to the City a petition signed by at least 2/3 of the households within the affected area supporting the Tier 2 recommendations. The affected area is typically defined as all residences located within 1,000 feet of the street segment that is proposed for traffic calming, measured along the affected street. However, based upon the type of Tier 2 traffic calming device proposed, staff may designate a larger affected area.

Once the petition signed by at least 2/3 of the households within the affected area is received by the City, a public meeting will be scheduled by staff. Based upon the public support as evidenced by the petition together with the input from the public meeting, staff will make a recommendation to the Board of Commissioners regarding implementation of a Tier 2 strategy.

## **(3) Prioritization of Tier 2 Strategies**

Because Tier 2 strategies will typically involve actual construction and City funds for implementation may be limited, a prioritization process for ranking projects is needed. In establishing priorities for neighborhood collector traffic calming projects, the following scoring system will be used.

<b>Criteria</b>	<b>Points</b>	<b>Basis</b>
Speed	0 – 40	5 pts. for every mph the 85 <sup>th</sup> percentile speed is more than 8 mph above the speed limit, up to a maximum of 40 pts.
Volume	0 – 20	ADT/250, up to a maximum of 20 pts.
Accident History	0 – 20	5 pts. for each accident per year up to a maximum of 20 pts.
School Route	0 or 10	0 pts. if not on a route used by children to walk to school, 10 pts. if on a school walking route
Sidewalks	0 or 10	0 pts. if continuous sidewalks exist, 10 pts. if no continuous sidewalk is in place
<b>Total Points Possible</b>	<b>100</b>	

**c) Funding**

It will be the responsibility of the City to fund the Tier 1 and Tier 2 strategies, subject to available funds as provided through the City's normal budgeting process. Use of private funding by residents or homeowner's association to leverage city funding to expedite implementation is permissible subject to approval by the City Commission.

**PART VI**

**TRAFFIC CALMING FOR NEW SUBDIVISIONS WITHIN THE CITY OF BRENTWOOD**

The City staff shall be responsible for determining appropriate traffic calming measures within a new subdivision in accordance with the adopted subdivision regulations, subject to approval by the Planning Commission through the normal planning approval process for new subdivisions. The developer shall be responsible for constructing or installing the appropriate traffic calming measures.