

**MEMORANDUM - CITY OF PASADENA**  
**DEPARTMENT OF TRANSPORTATION**

**DATE:** April 28, 2011

**TO:** Transportation Advisory Commission

**FROM:** Frederick C. Dock, Director of Transportation *F.C. Dock*

**RE:** Recommended Revisions to the Current Speed Hump Policies and Procedures

**Background**

In the early 1980's, the City of Pasadena considered speed humps as a traffic calming device for residential streets. A comprehensive study of speed humps determined that they were appropriate devices for reducing traffic speed on certain streets when properly installed. The city developed policies and procedures for the installation of speed humps based on accepted engineering designs, standard guidelines, and practice of communities in California. The policies and procedures were adopted by City Council in 1984.

In 2004, the policies and procedures for the installation of speed humps were amended based on a review of the speed hump policy criteria conducted by staff and members of the Transportation Advisory Commission. The review included an analysis of the Institute of Transportation Engineers (ITE) 1997 Guidelines for the installation of speed humps and several other cities' speed hump policies.

**Assessment of Issue**

On March 21, 2011, the City Council requested that the following three elements of the current speed hump policy be reviewed for potential revision in light of current trends: the minimum segment length of 1,200 feet, the lower and upper volume thresholds of 1,000 and 4,000 vehicles per day, respectively and the street classification requirement that restricts speed humps to only local streets.

ITE has recently completed a three-year process to update the 1997 Guidelines and now has a 2011 version of the document in production. The criteria in the 2011 version incorporate a broad set of measured responses to speed humps and, as a result, offer more refined guidance for speed hump placement than did the 1997 document.

## Segment Length

The initial speed hump policies adopted in 1984 only prohibited speed hump installations on cul-de-sac streets of less than 800 feet. In 2004, a segment minimum length criterion of 1,200 feet was adopted. The reason behind requiring this minimum distance was because it was recommended that speed humps not be installed on isolated blocks along a continuous street. Hence, the limit adopted in 2004 incorporates a distance equivalent to at least two blocks (in the residential parts of the City of Pasadena, block length varies widely but averages 600 feet.) The 1,200 feet distance is also consistent with the criteria in the City's Residential Street Stop Sign Policy.

From the 2011 ITE Guidelines for the Design and Application of Speed Humps and Speed Hump Tables, the first speed hump in a series is normally located where it cannot be approached at a high speed from either direction. It is typically installed within approximately 200 feet of a stop sign. The spacing between successive speed humps depends on the desired (85<sup>th</sup>-percentile) operating speed (which is the speed that is used to set speed limits in California). For local streets where the desired posted speed is 25 mph, studies of in-place speed humps have shown that spacing the speed humps approximately 260 feet apart generally will result in an 85<sup>th</sup>-percentile operating speed of 25 mph on a street segment. Under these criteria, it would be possible to install two speed humps in a block that is nominally 600 feet long. The 2011 ITE Guidelines recommend that street segments 600 to 1000 feet in length should have a two-hump configuration.

## Traffic Volume

The lower and upper volume threshold in the initial 1984 speed hump policy were 1,000 and 3,000 vehicles per day; respectively. This was consistent with the previous ITE Guidelines that recommended speed humps should only be installed on streets with an average daily traffic volume of 3,000 or less. In 2004, the upper volume threshold was increased to 4,000 vehicles per day to account for the nominal growth in traffic volumes on residential streets as a result of regional growth trends.

The lower volume threshold of 1,000 vehicles per day has been unchanged since the original speed hump policy was adopted in 1984. The threshold was not lowered because staff wanted to maintain the application of speed humps to streets that are impacted by traffic volumes beyond what might be expected to be generated by the residents on a local residential street.

## Street Classification

Speed humps are only considered for installation on streets classified as local residential in the City's General Plan. Collectors and arterials are not deemed appropriate for the installation of speed humps because these streets serve regional mobility needs and emergency access.

The ITE Guidelines for the Design and Application of Speed Humps and Speed Hump Tables recommends, "Speed humps/tables should not be installed on streets that are defined or used as primary or routine emergency vehicles access routes unless it is considered acceptable to the emergency services."

### **Recommended Revisions to Current Speed Hump Policies**

It is recommended that the Transportation Advisory Commission review the current speed hump policies and examine the following proposals to revise the current speed hump policies:

#### **Modify minimum street segment length from 1,200 feet to 600 feet**

In order to close certain gaps along local street corridors that do not have speed humps, this would be a feasible option because most residential blocks within the city are approximately 600 feet or longer. Under the most recent ITE Guidelines, the recommended spacing of speed humps would allow for a 600 feet long street segment to accommodate two speed humps. This revision in the current policies and procedures would incorporate street segments that have speeding issues and could benefit from the installation of speed humps.

#### **Maintain current lower and upper volume thresholds**

At this time, staff recommends maintaining the current lower and upper volume thresholds of 1,000 and 4,000 vehicles per day, respectively. The current thresholds are consistent with engineering practices of surrounding communities and there are no recommended thresholds in the current ITE Guidelines.

#### **Maintain current criterion for the street classification**

Staff recognizes that certain streets in the city mirror the design of local residential streets but are classified as and function as collectors or arterials. These streets do not qualify for speed humps based on the street classification. These same streets are also subject to more stringent criteria for setting speed limits than are local residential streets. Absent a change in the street classification policy, staff recommends retaining the restrictions of speed humps on arterial and collector streets.

Staff is proposing, as part of the current update of the General Plan Mobility Element, an alternate system of street classification that is based on both context and function that would reorder arterials and collectors into a larger number of street types, some of which could be appropriate for speed humps. Under the proposed Context-Based Street Classification System, streets classified as Connector-Neighborhood and below would likely satisfy the conditions with regard to not being primary emergency routes or regional roadways and could be considered for the installation of speed humps if other criteria in the speed hump policy are met.

Should the proposed street classification system be adopted as part of the Mobility Element Update, staff would recommend revisiting the street classification criteria for speed humps.

### **Fiscal Impact of Recommended Revisions**

Every year, the city has installed approximately 10 speed humps. Staff anticipates an increase in the amount of speed hump installation per year if the minimum segment length criterion is lowered to 600 feet because it would enable more street segments in the city to be qualified. Each speed hump costs approximately \$2,000 to install. Speed humps are generally restriped every two years. The cost for striping is approximately \$200 per hump.

Currently, all speed hump installations are funded through the Neighborhood Traffic Management Program budget. Any increase in the number of speed hump installations would have a negative fiscal impact on funds available to implement the Neighborhood Traffic Management Program. Should there be circumstances where the requests of speed humps exceeds the funds available, then the Department of Transportation would rank the requests based on factors previously adopted by Council, that include speeding, collisions, presence of schools or parks, etc. in order of priority and submit these recommendations to the City Council for approval.