



**DATE:** October 22, 2020

**TO:** Transportation Advisory Commission

**FROM:** Laura Cornejo, Director of Transportation

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**SUBJECT: PROPOSED CHANGE TO THE CITY COUNCIL ADOPTED SPEED HUMP POLICIES AND PROCEDURES**

### **RECOMMENDATION**

The Department of Transportation recommends a proposed change to the City Council adopted Speed Hump Policy. In addition to allowing speed humps on Federal Highway Administration (FHWA) Functional Classified "Local Streets", staff recommends utilizing the City Council adopted Pasadena Street Types Plan to allow streets defined as "Access Streets - Residential" to be added to the category of streets where speed humps would be permitted.

It is recommended that the Transportation Advisory Commission review and provide comment on the recommended policy change.

### **BACKGROUND**

Traffic calming measures aim primarily to reduce the speed of drivers in urban areas, but can also be used to meet traffic reduction objectives. Benefits are apparent on multiple levels: speed control not only contributes to increased road safety and more pedestrian friendly neighborhoods. Speed management is an essential tool in ensuring the improved safety of users of urban roads, particularly vulnerable users.

Speed humps are an appropriate mechanism for reducing speeds on certain streets in Pasadena when properly installed under the right circumstances. Speed humps can be considered for installation when the benefits normally derived by residents from a local residential street are significantly diminished by the speed of traffic.

In the early 1980's, the City of Pasadena considered speed humps as traffic calming devices 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 the City Council in 1984.

In 2004, the policies and procedures for the installation of speed humps were amended based on the speed hump policy criteria collected by staff from 15 jurisdictions

throughout California and reviewed thoroughly by members of the Transportation Advisory Commission. The review also included an analysis of the Institute of Transportation Engineers (ITE) 1997 Guidelines for the Installation of Speed Humps. ITE completed a three-year process to update the 1997 Guidelines and developed a 2011 version of the document. The criteria in the 2011 ITE Guidelines for the Design and Application of Speed Humps and Speed Hump Tables 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. This document has since been updated in May 2018 and the City of Pasadena Speed Hump Policies continue to be consistent with the ITE guidelines.

The City receives approximately 30 requests for speed humps annually. The requests are evaluated against the speed hump policies and less than 10% qualify for a vote of the residents living along that section of roadway. Of the 87 requests for speed humps received between July 2017 and June 2020, ten qualified for speed humps but only two received enough votes in favor of new speed humps to move forward with their installation.

Transportation Department staff initiated a review of the City's current speed hump policy to evaluate if the criteria remain consistent with the ITE Guidelines for the Design and Installation of Speed Humps. Staff also took into consideration whether updates from the Mobility Element of the General Plan, specifically street type classifications, would be appropriate.

The current City of Pasadena Speed Hump Policy (Attachment A) provides a list of 19 policies for the installation of speed humps. Within those policy statements are 13 criteria that must be met for speed humps to be installed. For the purpose of this document, we have separated the criteria into three categories, Physical Criteria, Operational Criteria and Administrative Criteria.

#### Physical Criteria

- Local Street with one lane in each direction
- 1200 ft. of continuous distance between stop signs or a traffic signals. (600 ft. if segment closes a gap to make road continuous)
- Less than 5% grade. On hilly/rolling streets, the eligible segment of the street shall meet the minimum distance requirements.
- Street must have adequate vertical and horizontal alignment and sight distances to accommodate speed humps. Speed humps should not be installed on streets with horizontal curves with less than 300 feet centerline radius, and on streets with vertical curves with less than minimum safe stopping sight distance.
- Speed humps should generally be avoided where the drainage gutter or flow of water is in the center of the roadway.

Operational Criteria

- 25 MPH speed limit
- Speeds of at least 33 MPH (85th Percentile - 8 miles over posted limit)
- At least 1000 vehicle trips per day and less than 4000 vehicle trips per day
- Street should not be an primary access route for emergency vehicles
- Street should not be a truck route or a transit route
- Should not be installed where a significant portion of traffic will be diverted to nearby residential or local streets.

Administrative Criteria

- If a neighborhood has gone thru a Neighborhood Traffic Management Plan (NTMP) process, the City shall not entertain any other NTMP measures including speed humps, until all of the recommendations from the NTMP process have been fully implemented, measured or evaluated.
- 67% approval of all households

**HISTORICAL CHANGES TO THE SPEED HUMP POLICY CRITERIA**

Since the Speed Hump Policy was first adopted, City Council has only made a few changes to the original speed hump policy over the past 35 years. In 2004, Council approved eliminating Collector roads, increased the upper volume limit to 4000 car trips per day, increased the minimum street length to 1200 feet and increased the resident approval to a true super majority to 67% of households. In 2011, Council approved the installation of speed humps on a block length of at least 600 feet if the segment closes a gap and makes the installation of speed humps continuous along the roadway. A summary of the changes, noted in red, are provided in Table 1 below.

Table 1 – Historical Changes to the Speed Hump Policy Criteria

	<b>1984</b>	<b>2004</b>	<b>2011</b>
Volumes Lower Limit	1000	1000	1000
Upper Limit	3000	4000	4000
Minimum Length	800 ft.	1200 ft.	1200 ft./600 ft. if segment closes a gap to make road continuous
Classification	Local and Collector Residential	Local Residential Only	Local Residential Only
Vote	65% of households	67% of households	67% of households

## **DETAIL OF PHYSICAL AND OPERATIONAL CRITERIA**

A description of each criteria provided in the Pasadena Speed Hump Policy and additional background for each item is presented below.

### **Street Classification**

Speed humps are currently only considered for installation on streets classified as Local Streets per the Federal Highway Administration (FHWA) Functional Classification System in the City's General Plan. The current policy prohibits installation of speed humps on collectors and arterials because these streets serve regional mobility needs and emergency access.

### **Segment Length**

The initial speed hump policies adopted in 1984 prohibited speed hump installations on cul-de-sac streets of less than 800 feet. In 2004, a street 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. This helps to prevent excessive speeding along segments of the continuous roadway that do not have speed humps. 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.

In 2011, City Council agreed that in order to close certain gaps along local street corridors that do not have speed humps, modifying the minimum segment length from 1,200 feet to 600 feet would be a feasible option.

### **Roadway Grade**

Speed humps are currently only considered for installation on streets with a grade of 5% or less. The grade of a roadway plays a role in the speed of traffic on that roadway. Vertical speed reduction strategies, such as speed humps could pose a potential hazard for vehicles travelling on a roadway with high grade. Various agencies and the ITE Guidelines for the installation of speed humps, allow for speed humps to be installed on streets with a grade of up to 8%. However, the City has been conservative in this area to reduce the potential risk associated with speed humps on streets with grades over 5% and to be consistent with the County of Los Angeles policies for speed humps.

### **Sight Distance**

The ability to see a vertical deflection in the roadway is a key component in the effectiveness of speed humps and ensures they do not inadvertently serve as a safety hazard. A street must have adequate vertical and horizontal alignment and sight distances to accommodate speed humps. Speed humps should not be installed on streets with horizontal curves with less than 300 feet centerline radius, and on streets

with vertical curves with less than minimum safe stopping sight distance. This allows for visibility of the speed hump and for visibility of vehicles slowing for a speed hump.

### Drainage

Most streets drain to the edge of the roadway or gutter. Speed humps are designed to keep that area of water flow clear for adequate drainage. Speed humps should generally be avoided where the drainage gutter or flow of water is in the center of the roadway since the hump could create an area of ponding, which creates potential safety concerns and greatly increases the deterioration of pavement within that area.

### Speed Limit

Streets eligible for the installation of speed humps shall have a speed limit of 25 MPH as determined in accordance with State Law, and shall have an 85% speed of greater than 33 MPH. The need to reduce speed substantially at speed humps would not make these devices appropriate for streets posted higher than 25 MPH because of the severe speed differential such installation would create along the street. Severe differentials between the speeds of vehicles on a street are known to contribute to traffic collisions.

### 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 vehicles or less. In 2004, at the recommendation of TAC, 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 immediate residents on a particular local residential street.

Since traffic volumes have remained relatively consistent over the last several years the current lower and upper volume thresholds of 1,000 and 4,000 vehicles per day, continue to be valid thresholds. The current thresholds are also consistent with engineering practices of surrounding communities.

### Primary Emergency Access Route

The ITE Guidelines for the Design and Application of Speed Humps and Speed Tables recommend that, "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." The Pasadena Speed Hump Policy identifies that the street should not be an important access route for emergency

vehicles. Before any speed hump installation moves forward DOT coordinates with the Fire Department to make sure the following factors are considered:

- a. Whether the street is a primary route for emergency vehicles
- b. Whether the installation of speed humps could cause a significant delay in the response to emergencies.

### Truck or Transit Routes

Speed humps pose a challenge to heavy vehicles such as trucks and transit vehicles. This type of vertical roadway deflection would result in increased noise with truck or transit vehicles passing over them and can cause damage to both trucks and transit vehicles who may use these routes on a daily basis.

## **RECOMMENDED CHANGES TO THE CITY COUNCIL'S ADOPTED SPEED HUMP POLICY**

### Street Types vs Functional Classification

Staff has determined that modifying the category of streets where speed humps are permitted is appropriate considering that the current criteria strictly follows a classification system that due to the adoption of the Pasadena Street Types Plan, does not always align with how the City of Pasadena now classifies it's roadways.

In March 2014, the City Council adopted of the Pasadena Streets Types Plan. The Street Types Plan is the organizing framework around which street and sidewalk design guidelines are built that will make Pasadena more walkable and bike friendly in support of the City's adopted sustainability goals. The Street Types Plan classifies each street by pairing roadway "function" (design criteria - maximum number of lanes and design speed) with "context" (adjacent land uses relation to the street and levels of activity) to create a coherent network that serves the diverse economic, social, and environmental needs of Pasadena. Most importantly, the use of Street Types gives the City more local control of our policies and practices than the traditional current Functional 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.

The FHWA Functional Classification System hierarchy consists of arterial, collector, and local streets. However the Street Types Plan updates this traditional functional classification of roadways to recognize both how the street functions in the roadway network as well as to how the street relates to the land uses (context) the street is adjacent to.

Street Function defines the design of the roadway for mobility and access. There are four categories of street function defined in the Mobility Element:

- City Connector streets serve “crosstown” trips connecting neighborhoods or districts and destinations in the City that are not in close proximity. Examples include Walnut Street and Orange Grove Boulevard.
- Neighborhood Connector streets connect neighborhoods and districts in Pasadena that are adjacent or in close proximity to each other. Examples include Linda Vista Avenue, Wilson Avenue, and Glenarm Street.
- Access streets are primarily local destination-serving streets (these make up the majority of streets in Pasadena). Access Streets are wide enough for two cars to pass in opposite directions without having to yield.
- Access-Alleys are streets that provide access predominantly to the rear of adjacent buildings for service purposes such as parking access, delivery, and trash collection. They typically do not provide the most desirable route for pedestrians, bicycles, private automobiles or trucks, except when directly accessing a destination on that street.

Context describes the character of each street in terms of building form and land use. Context informs the design of the space between the building and the edge of the curb. Pasadena’s existing streets and corridors can be classified into five primary Context types. The first four are defined primarily by predominant ground floor use and urban or suburban design character:

- Commercial / Urban (setbacks less than 10 feet) – This context is typified by buildings oriented directly to the street and a fine-grained mix of uses. As the name implies, this will generally have retail or commercial uses on the ground floor. Examples include Lake Avenue between California Boulevard and Walnut Street and most of Colorado Boulevard west of Hill Street.
- Commercial / Suburban (setbacks greater than 10 feet) – The forms of this context are those more typical to suburban areas and may include parking in front of or beside the commercial building. The buildings are often also a single land use. Examples include Foothill Boulevard east of Sierra Madre Villa Avenue and Colorado Boulevard east of San Gabriel Boulevard and Colorado Boulevard east of Hill Avenue.
- Residential / Urban (setbacks less than 20 feet) – The forms of buildings on these streets are similar to those described in Commercial/Urban, but in this case, the ground floor use is typically residential rather than commercial. Examples include Cordova Street between Arroyo Parkway and Hill Avenue and De Lacey Avenue between Del Mar Boulevard and Dayton Street.
- Residential / Suburban (setbacks greater than 20 feet) – In Pasadena, this context relates predominantly to the City’s single-family neighborhoods. It is typified by houses with front yards. Properties may or may not have driveways accessing off-street parking. Examples include Orange Grove Boulevard South of the 134 Freeway, and El Molino Avenue north of the 210 Freeway.
- Green Edge Drive – This context predominately describes streets adjacent to open space on one side. Examples include Arroyo Boulevard and New York Drive.

Since the street classification system was adopted by city council as part of the Mobility Element Update, Department of Transportation staff is recommending that the street classification criteria for speed humps should include not only local residential streets (as defined in the Functional Classification Maps) but also include Residential Access streets as defined in the Street Types Plan.

### **EFFECTS OF POTENTIAL POLICY CHANGE**

Inclusion of Residential Access Streets along with the Local Streets designation in the speed hump policy would allow for additional streets to be eligible for consideration. The following street segments would be eligible for speed humps if all of the other criteria is met including Fire Department approval and resident voter (67%) approval:

- Forest Ave. (Washington Blvd. - Lincoln Ave.)
- Sunset Ave. (Mountain St. - Howard St.)
- Howard St. (Arroyo Blvd. - Forest Ave. & Lincoln Ave. – Raymond Ave.)
- Hammond St. (Lincoln Ave. – Fair Oaks Ave.)
- Montana St. (Lincoln Ave. – Los Robles Ave.)
- Sunnyslope Ave. (Walnut St. - Del Mar Blvd.)
- San Pasqual St. (Hill Ave. – East City Limit)

### **NEXT STEPS**

Staff will bring this recommendation to the Municipal Services Committee in November 2020. If approved by City Council the changes would go into effect immediately.