

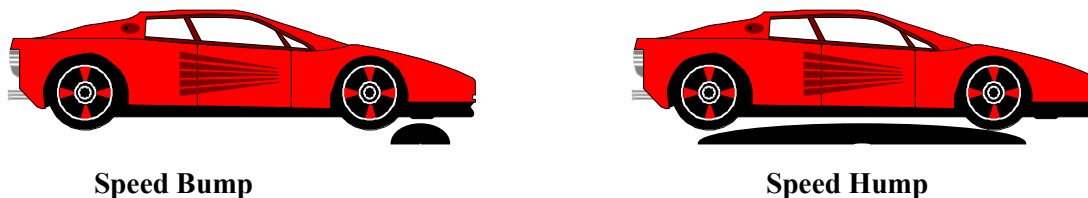
## TRAFFIC AND SAFETY INFORMATIONAL SERIES FREQUENTLY ASKED QUESTION #9

### WHY CAN'T SPEED BUMPS BE USED ON ALL STREETS TO SLOW TRAFFIC?

Speed “humps” are the most widely used traffic calming device in the United States. They are one response to citizen concerns about speeding and cut-through traffic in residential areas. The primary objective of speed humps, and other traffic calming measures in general, is to improve the environment and safety of a roadway by physically controlling vehicle speeds. Another consequence of speed humps can also be a reduction in the amount of cut-through traffic. Excessive vehicle speeds and/or traffic volumes are common neighborhood complaints. These roadway characteristics are typically viewed as a disruption to the peace, safety, and quality of life of the neighborhood.

#### SPEED “HUMP” AND SPEED “BUMP”

Speed “humps” are not the same as speed “bumps”. The primary objective of these two devices is to control the speed of vehicles, but they have different designs and allowable uses. A schematic of their differences is shown in Figure 1.



**FIGURE 1** Schematic differences between a speed bump and speed hump.

Speed humps are raised pavement areas across a roadway. They are typically parabolic, circular, or sinusoidal in shape and are a gentle version of the speed bump (see Figure 1). National guidelines have set the maximum height of speed humps at three to four inches (although 3.5 inches is now commonly accepted as the maximum height) and a maximum length at 12 feet (although 14 foot and longer are now becoming more common). Speed humps create a gentle vehicle rocking motion at low speeds but can jolt a vehicle at higher speeds. They are typically designed to reduce the speed of vehicles to about 15 miles per hour (mph).

The design of speed humps has evolved from extensive research and testing to achieve the specified speed reduction goal without imposing a high level of safety risks. When designed and installed properly, speed humps can be effective at lowering vehicle speeds and possibly reducing speed-related collisions. Speed humps can also be installed in a series to reduce speeds along an extended section of street.

Speed bumps, on the other hand, have a more abrupt design. They consist of a portion of raised pavement, but because of their abruptness their use is very restricted. In fact, most speed bumps are found in parking lots and or along private roadways. Their height is typically between three and six inches, and they are usually only one to three feet long. Speed bumps produce substantial driver discomfort, damage to the vehicle suspension, and/or loss of control if encountered at too high a speed. This is one reason speed bumps are not used on public roadways. In general,

vehicles must slow to about five miles per hour or less for a speed bump (compared to 15 mph for a speed hump).

## **SPEED HUMP APPLICATION**

Streets are classified according to the type of service they generally provide. *Arterial* streets are used for mobility purposes and are typically used by through vehicles (on longer trips) at higher speeds. On arterial streets, such as highways and major urban streets, speed humps are typically considered impractical because these roadways are meant to serve a mobility purpose. *Collector* roadways typically link arterials to the local roadway system. They normally experience moderate to low speeds. Typically, speed humps are not automatically recommended for collector streets but may be allowed in some jurisdictions. The decision to implement a speed hump on a collector street is usually made on a case by case basis after an engineering study of the roadway. *Local* streets primarily provide access to land uses and are expected to serve a small number of relatively short low-speed vehicle trips. Speed humps are used on these type of roadways when the neighborhood and the city believe that lower vehicle speeds and/or through traffic are needed, and this belief is supported by the results of an engineering investigation.

In addition to the type of roadway, there are other factors that should also be considered before the installation (and design) of a speed hump. Winter maintenance (e.g., snowplows) and emergency response vehicles need to have the ability to efficiently clear and respond to an emergency along a roadway. Studies have shown that the response time of emergency vehicles does increase (depending on the vehicle type) for each speed hump. This is one reason some cities do not all the installation of speed humps along specified emergency vehicle response routes. The installation of speed humps and other traffic calming devices can also require additional maneuvering and/or a reduction in speed during winter maintenance activities. The result can be reduced efficiency. The installation of speed humps must also be supplemented with signs and/or pavement markings to warn motorists of their presence and to indicate suitable driver behavior.

For more information on traffic calming, speed humps, and their impact consult *Traffic Calming State of the Practice*. This document is published by the Institute of Transportation Engineers.

### **For more information**

For more information, please contact \_\_\_\_\_.