Chapter 5

Placement of Traffic Calming Devices

The following devices shall be placed in accordance with the guidelines set here in. If all criteria are not met, then these devices are not applicable.

Speed Humps

Speed humps are composed of recycled rubber or gently raised strips of concrete or asphalt on the roadway surface that encourages a reduction in speed. These devices are not as severely raised as speed bumps. The desired reduced speed when using a speed hump lies between 15 - 20 mph. For further clarification, see Page 10-12 of the City of El Paso Design Standards for Construction.

Speed Tables

Speed tables should be considered for desired speeds greater than 20 mph. These devices feature a flat top portion located between the longitudinally sloping sides. Desired speeds range from between 20 and 35 mph. For further clarification, see Page 10-13 of the City of El Paso Design Standards for Construction.

Speed Cushions

Speed cushions are composed of recycled rubber or asphalt. Typical length for these devices is 10 ft and rise 3 to 4 inches above the existing roadway surface. This device is spaced along the width of the roadway to permit emergency vehicles to partially straddle the device. Cushions can also be substituted in areas where drainage impacts are too great for speed humps.

Warrants:

The following criteria are used in the definition of the guidelines:

85th Percentile Speed

- Statistical measurement of speed which is considered as the division point of reasonable speed. The 85th percentile represents the speed at which the lower 85% of the speeds recorded are represented and the upper 15% are not.

Stopping Sight Distance

- The length of roadway ahead that is visible to the driver and that is long enough to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path.

Placement Guidelines

The following criteria must be considered prior to the use of speed humps, tables or cushions:

Roadway Classification

- Speed humps, tables and cushions are applicable for roadways with a classification of Local or Collector Street as defined by the City of El Paso.
- Roadways with bus routes or designated as emergency vehicle routes shall only use speed cushions.

Prevailing Speed

- Speed humps and cushions shall not be installed on roadways whose desired 85th percentile speed exceeds 30 mph.
- Speed tables shall not be installed on roadways whose desired 85th percentile speed exceeds 35 mph.
- Devices may be installed in phases on roadways in which the current 85th percentile speeds are greater than 10 mph higher than the desired speed. The first phase of devices will be at twice the final spacing. Three - six months later the remaining devices may be installed to achieve final spacing. See Figure 1.1 for further clarification of installation phasing.
    - A study will be conducted before the final stage of installation begins. If desired roadway speed has been met or reduced to within tolerance, then the final phase may not be necessary.

Street Grade

- Roadway grade shall not exceed 10% longitudinally, if roadway exceeds 6% longitudinal grade, then approval of the Traffic Engineer of the City of El Paso is required.

Proximity to Curves

- Speed humps, tables and cushions shall not be placed within horizontal curves where centerline radii are less than 300 feet and within 200 feet of beginning or end of a horizontal curve unless it can be proven that sufficient sight distance is provided for a complete stop upon identification of the upcoming device.
- For crest vertical curves a device must be located to allow for sufficient stopping distance upon identification of the upcoming device.
- See Figure 1.2 for further clarification for placement of devices along curvature.

Street Condition

- The City of El Paso will inspect all streets prior to construction to ensure existing pavement material is adequate to support the installation of speed humps, tables or cushions. If repair is needed it must be completed before any permanent devices can be installed.
- Devices shall be designed to standards set forth in the City of El Paso Design Standards for Construction.
- If drainage impact is too great, the device will be removed or replaced with another applicable device.

Substandard Street

- Placement should avoid a negative impact to roadway drainage.
- Devices should be placed when possible in line with large trees, utility poles, etc. or should have delineators installed adjacent to the device to deter driver's from maneuvering around the device.

Travel Lane Restrictions

- Devices will not be installed on roadways with more than one traveling lane in each direction.
- Turn lanes, bike lanes and parking lanes shall not be counted as travel lanes.

Spacing

- Devices will not be considered for roadways with less than 1200 feet between consecutive traffic control devices (traffic signals or STOP signs).
- Minimum distance between devices is 300 feet apart. Typical spacing is 400 – 600 feet; spacing further than this has proven ineffective in considerable reduction of vehicle speeds.
- Devices must be installed in series (minimum of two). The use of different types of devices is encouraged and has shown to be more effective at reducing speeds.
- Devices will be installed according to an evaluation of traffic data and the physical street section. Ideal positioning is along property lines when possible.
- Greater speed reduction is feasible with a reduction in spacing between consecutive devices.

Proximity to Driveways

- Devices will not block access to any driveway. No device will be placed within 5 feet of a driveway throat.

Parking Removal

- Removal of on-street parking may be necessary with offset speed tables.

Diversion Potential

- Studies will be conducted before and after the construction of the speed humps, tables and cushions to determine traffic volumes along the purposed route and potential diversion routes. If parallel roadways are determined to be potential diversion routes these routes will be monitored for volume increase. If such an increase occurs, measures to mitigate the diversion route may be necessary.

Bus Stops, Routes and Zones

- Devices should avoid bus stops entirely. Speed cushions should be placed at a minimum distance of 20 feet from the end of the bus stop. Speed humps and tables are not allowed along bus routes.

Emergency Vehicle Routes

- Speed cushions are the only acceptable device along designated emergency vehicle routes.
- No device shall be installed within 20 feet of a fire hydrant.

Utilities

The following guidelines pertain specifically to permanent asphalt or concrete installations only:

- Traffic calming devices should not be placed within 20 feet of underground utility connection points.
- Devices should avoid placement directly above utilities crossing beneath the roadway or require approval from the City of El Paso to proceed.
- Once traffic calming devices are proposed, local utility companies should review the proposed project for any pending utility construction. If such construction is planned it should be undertaken prior to the construction of the traffic calming devices.
- If construction is required beneath existing devices, permanent devices will be repaired by the responsible party.

Alternative Traffic Calming Devices

The following applications are available as alternative traffic calming devices:

Pavement Modification Measures

Pavement Texturing

- Different materials such as brick, cobbles, concrete pavers, or others used as paving material can provide a roughening effect to the roadway. This effect can cause a driver to reduce speed to increase perceived roadway drivability.

Pavement Coloring

- Variations in pavement color can reinforce the identity of an area as a traffic-restricted/speed reduction zone.

Street Print

- Asphalt paving that integrates texture, color and reflectivity into the pavement surface. This technology can be used in a variety of applications and can replicate more expensive alternatives such as brick or cobblestone paving. Application for asphalt surfaces only.
- This technique can be used for optical traffic calming devices such as optical speed bumps or lane sides and narrowing.