

CITY OF MESQUITE NEIGHBORHOOD SPEED MANAGEMENT PROGRAM

Project Objective

The purpose of this program is to provide neighborhood speed management solutions for vehicular traffic issues that adversely impact the quality of life and the safety of the residents in neighborhoods. The City will work closely with residents to properly identify the concerns, conduct appropriate studies to quantify any problems, and develop options for addressing problems.

Introduction

Neighborhood Speed Management is the application of techniques at a specific location which result a reduction in vehicular speeds, traffic volumes and/or crashes. The techniques may include educational programs, improvements in traffic signage, increased enforcement, and/or physical alterations to the roadway to change driving patterns.

The support of the residents where neighborhood speed management is being considered is critical to the success of any neighborhood traffic management program and they must therefore be an integral part of any process. It is the goal of the City of Mesquite to achieve solutions to traffic related problems in a manner least intrusive to the neighborhood. To accomplish this goal, the department has developed this procedure to assure a systematic and comprehensive approach to each situation.

The Neighborhood Speed Management Process

The speed management application process shall include the following steps:

- Project Initiation
- Project Study and Eligibility Determination
- Neighborhood Speed Management Application Determination
- Interim Physical Application Installation(optional)
- Neighborhood Petition (physical alteration alternatives only)
- Project Approval
- Project Installation
- Installation Removal (If necessary)

An application process checklist is provided as Appendix C

1. Project Initiation

A project may be initiated by any one of the following methods.

- a. A neighborhood association, citizen group, or individual citizen may request a study by letter, email, or online application to the Traffic Engineering Division.
- b. The City Manager may authorize a study of a traffic problem area, based on citizen input or speed/crash data.

2. Project Study and Eligibility Determination

A study is necessary in order to determine if there is a traffic concern which can be effectively addressed by installing traffic calming practices. The two most common concerns the program addresses are speeding and cut through traffic in residential areas.

Upon receipt of a request to conduct a study, the Traffic Engineering Division will make a preliminary site visit and review available data, including crash reports, to determine if there is a readily apparent safety problem. Speed studies and traffic volume counts will also be conducted at this time.

Speed studies will be conducted by speed radar trailer and ground mounted traffic data recorders. Each study will be conducted for a minimum of six days. The results of the two studies will be compared.

To be eligible for Neighborhood Speed Management applications the following criteria should be met.

- i. Minimum traffic volume of 500 vehicles per day. This includes both directions of travel.
- ii. The 85th percentile speed shall be 5 mph or greater than the posted speed.
- iii. The requested roadway shall not be designated an arterial or collector.
- iv. The roadway segment shall be a minimum of 750 feet in length.

Should it be determined that the location is not appropriate for a traffic calming project requiring physical alterations to the roadway or that the concerns can be addressed in some other form, the initiating party of the request will be provided with a copy of the studies and reason for ineligibility determination.

Should the project be eligible for neighborhood speed management the roadway will move on in the process.

3. Neighborhood Speed Management Application Determination

- a. The first step in providing a preferred speed management application is to establish a Citizen Project Coordinator.

The responsibilities of the Citizen Project Coordinator include:

- i. Contact point for City staff for the duration of the project
- ii. Assist in communicating update to impacted residents
- iii. Responsible for collecting any required petitions

- b. Neighborhood Workshop

The purpose of the neighborhood workshop is to determine what options are available to provide speed management in this project area and establish a preferred alternative. The preferred alternative may include targeted enforcement, educational programs, and/or physical alteration. Physical alterations may include the following:

- Speed Bumps/Humps
- Speed Cushions
- Chicanes
- Center Island
- Intersection Narrowing
- Traffic Circle
- Lane Narrowing
- Speed Table
- Raised Intersection
- Temporary Speed Feedback Signs
- Permanent Speed Feedback Signs

A summary of alternative applications with pros and cons are provided in Appendix A.

It should be noted that any vertical application may not be installed on roadway segments deemed critical to emergency response by the Mesquite Fire Department or may create a safety issue.

4. Interim Physical Application Installation (optional)

Once a preferred alternative is determined, the City may provide an interim application of the preferred alternative to provide a clear understanding of the alternative's impact, prior to petition circulation.

5. Neighborhood Petition (physical alteration alternatives only)

Once the preferred alternative is established and determined that a physical alteration to the roadway is preferred, a petition will be required for impacted residents. City staff will provide a summary report for distribution with the petition. The report will include a summary of speed/volume study for the qualifying project. The report will also include a mockup of the preferred installation including locations along roadway. The petition should meet the following guidelines for project installation.

- i. 80% of impacted residents on the street of installation shall support by petition for the proposed improvement.
- ii. 60% of impacted neighboring streets shall support the proposed improvement.

It should be noted that the need for neighboring street petition shall be determined by City of Mesquite Traffic Engineering staff based on potential of diverted traffic. Furthermore, it shall be the responsibility of the Traffic Engineering Division to provide the Citizen Project Coordinator with the required area addresses for the petition. A sample petition is provided in Appendix B.

6. Project Approval

Once the qualified petition is received, the summary report and completed petition will be routed for approval by the following individuals:

- Traffic Engineering Manager
- Director of Public Works
- Chief of Police
- Fire Chief
- Assistant City Manger
- City Manager

7. Project Installation

Once the project has been fully approved it shall be the responsibility of the Traffic Engineering Division to secure funding and construct the preferred installation.

8. Installation Removal (If necessary)

Should the Citizens of an impacted area determine that an installed speed management application is no longer desired, the impacted residents may petition for removal. The requirement for the removal of the application shall be support by 80% of impacted residents on the immediately impacted roadway. The Traffic Engineering division shall provide the required addresses of the petition.

For additional information and/or to begin the application process contact:

Eric Gallt, Traffic Engineering Manager
egallt@cityofesquite.com
(972) 329-8535

Appendix A

Speed Management Applications

Appendix B Sample Petition

Appendix C

Application Process Checklist



Speed Bumps/Humps

Speed bumps/humps are a vertical speed traffic calming measure that produce a vertical deflection resulting in reduced vehicle speeds. They are composed of raised pavement (usually asphalt, concrete, or rubber) and are placed across the width of a roadway and are accompanied by advanced warning signs and pavement markings.

Utilization *(Approximate Cost: \$1,000 - \$1,500 per bump/hump)*

Although similar in appearance and function, speed bumps and speed humps have a few differences. Speed bumps have a greater height and a shorter length. Speed bumps are often located in parking lots and alleys and are used to slow vehicle speeds to a crawl for pedestrian safety. Speed humps are most effective at residential local streets to reduce speeds while maintaining a smooth traffic flow. Typically, they are placed 300 feet apart when used in series



Opportunities:

- Reduces motorists' travel speeds
- Discourages cut through traffic
- Increases pedestrian safety

Obstacles:

- May increase motorists' travel speeds between bumps when used in series
- May increase noise levels as vehicles accelerate between humps
- Encourages cut-through traffic to nearby streets
- Restricts emergency vehicle speeds
- May result in drainage problems



Speed Cushions

Speed cushions have similarities with speed humps. They are composed of pavement or rubber and placed across a roadway. Speed cushions have open segments in between them that are “cut-out” to not impede on larger vehicles. Vehicles such as transit, sanitation, and emergency units can pass through the cushion with ease, but smaller vehicle speeds will reduce gradually.

Utilization *(Approximate Cost: \$1,000 - \$1,500 per cushion)*

Speed cushions are most effective when used in series but can act as a single unit and are typically accompanied by a sign. Speed cushions are primarily used in residential areas. They can slow down passenger vehicle speeds on the residential street they are installed on, while not minimally emergency vehicle routes or speeds.

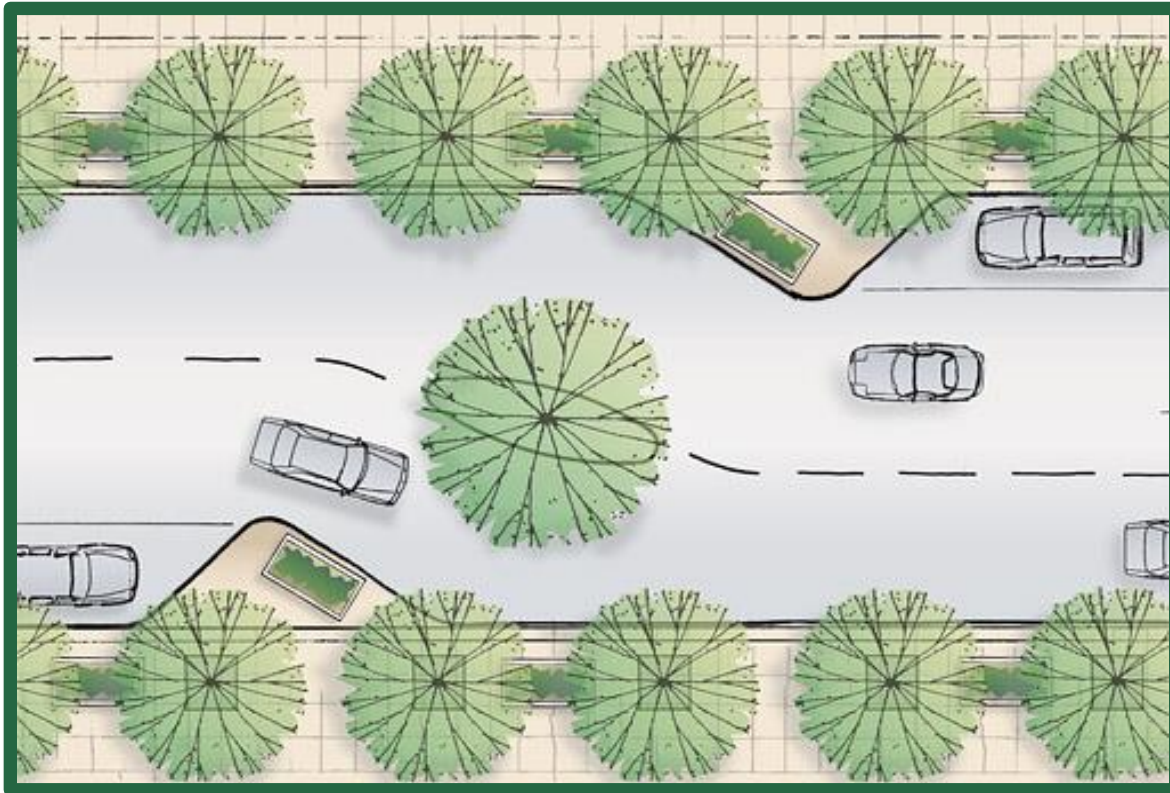


Opportunities:

- Reduces motorists’ travel speeds more gradually than speed humps
- Does not affect emergency vehicle speeds
- May reduce traffic volume
- Does not affect drainage

Obstacles:

- May increase noise levels as vehicles accelerate between cushions
- May increase speeds between cushions if used in series
- Encourages cut-through traffic to nearby streets



Chicanes

A chicane is a series of curb extensions that alternate from one side of a roadway to the other. The extensions force drivers to diverge from a forward direction of travel to an “S” shaped path. To navigate through the alternating curves, drivers must reduce speeds as they travel through the measure.

Utilization *(Approximate Cost: \$50,000 - \$75,000)*

Chicanes are appropriate for installation mid-block on residential local streets and most effective when used in series. Existing neighborhood streets that are prolonged, linear, and flat would be best suited for installation. A chicane is also effective on neighborhood streets that would be reasonably and negatively impacted by noise levels caused by other traffic calming measures.

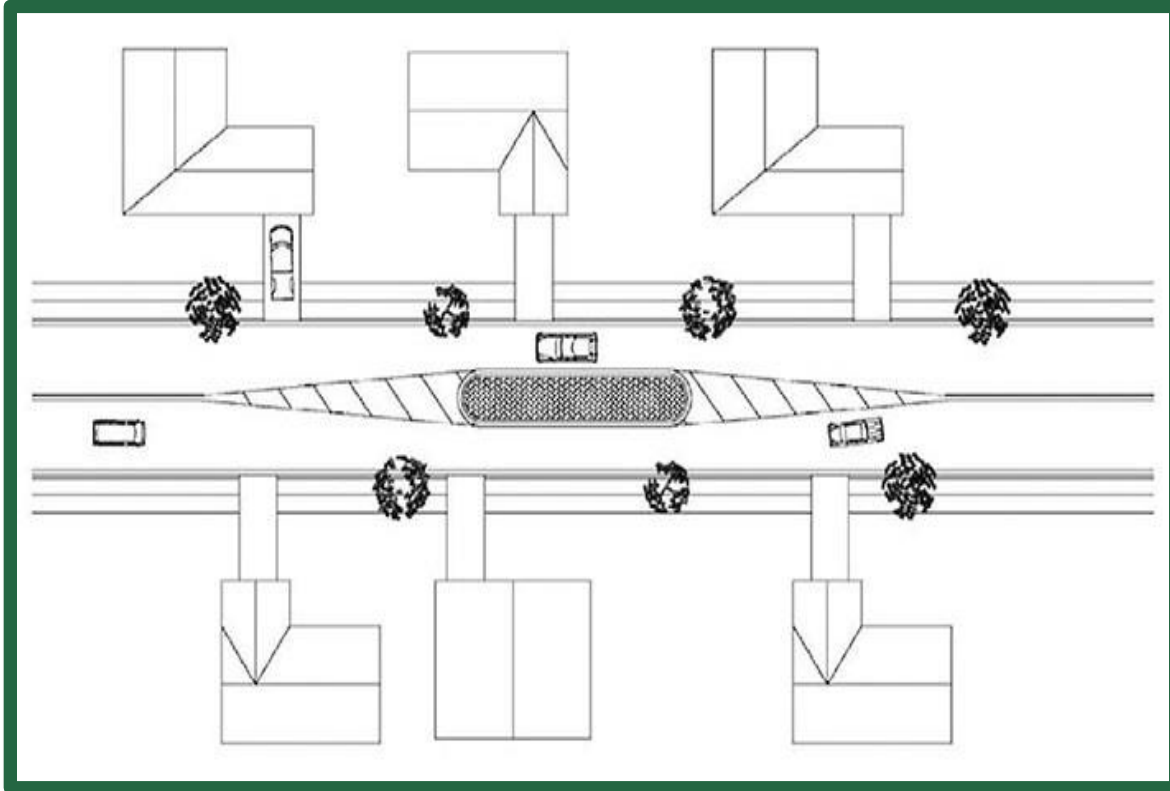


Opportunities:

- Offers drivers a visual traffic calming effect by reducing line of sight
- Reduces pedestrian crossing distance
- Reduces motorists' travel speeds
- Navigable by emergency vehicles
- Streetscaping potential

Obstacles:

- May require bicyclists to merge with vehicular traffic
- Landscaping and curb realignment can be costly
- May divert traffic to adjacent roadways
- May result in drainage problems
- May impact on-street parking



Center Island

A center island is a raised curb between a roadway that offers a concrete separation for both directions of traffic. Center islands make narrower travel lanes and may result in reduced travel speeds as motorists maneuver around the median island. They are typically made of concrete and often include landscaping for visual enhancement.

Utilization *(Approximate Cost: \$10,000 - \$50,000)*

Center islands are installed midblock on residential local streets. They can serve solely as a speed reducing measure such as when used as neighborhood signs or for landscaping. They can also serve as a pedestrian refuge allowing residents to cross half the street at a time, and when accompanied with applicable signs, drivers are encouraged to reduce their speed to allow pedestrians to cross safely.

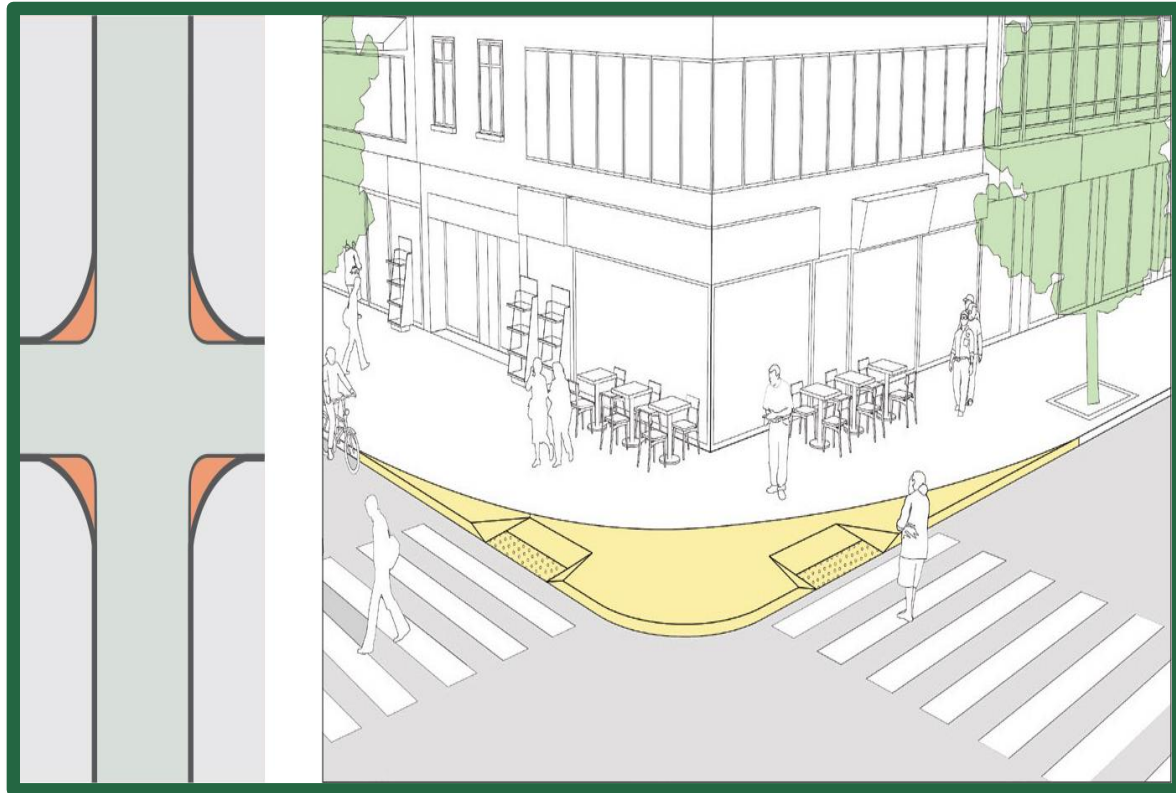


Opportunities:

- Can improve safety for motorists and pedestrians
- Eliminates turning or passing conflicts
- May reduce motorist travel speeds
- Landscaping/visual enhancement
- Navigable by emergency vehicles
- Separates traffic directions

Obstacles:

- May impact driveway access resulting in increased U-turns
- May inconvenience residents if installed near driveways
- May require maintenance cost if island is landscaped
- No reduction in traffic volume
- May impact on-street parking



Intersection Narrowing

Intersection narrowing is the method of compacting an intersection by minimizing the corner radii. Corners of an intersection are where motorists should expect most pedestrians to cross safely. Intersection narrowing has a significant impact on reducing vehicle turning speeds and pedestrian crossing distance resulting in a safer environment for all.

Utilization *(Approximate Cost: \$10,000 - \$30,000)*

Narrowing an intersection at residential local streets reduces pedestrian crossing distance by expanding the pedestrian area. Reducing pedestrian crossing distance decreases risk and increases pedestrian safety. By expanding the pedestrian area, motorists are encouraged to reduce their travel or turning speed to make a safer turn.



Opportunities:

- Reduces pedestrian crossing distance and increases pedestrian safety
- Reduces motorists' traveling and turning speeds
- Landscaping/visual enhancement

Obstacles:

- Impacts larger vehicle turning ability
- May limit existing on-street parking
- May result in drainage problems
- Possible maintenance cost



Traffic Circle

Traffic circles are raised islands that are installed at intersections. They require drivers to reduce their speeds to navigate safely and comfortably in a clockwise direction through the circular path. Traffic circles typically include traffic signs for awareness and can include landscaping for visual enhancement but must be done so in a way that does not affect a driver's visibility in all directions.

Utilization *(Approximate Cost: \$10,000 - \$50,000)*

Traffic circles are most effective at uncontrolled intersections of residential local streets. They are best implemented at the intersections where traffic volumes, safety, and speeds are a consistent problem. Some traffic circles can also be installed with pedestrian crosswalks and markings which increases pedestrian safety.

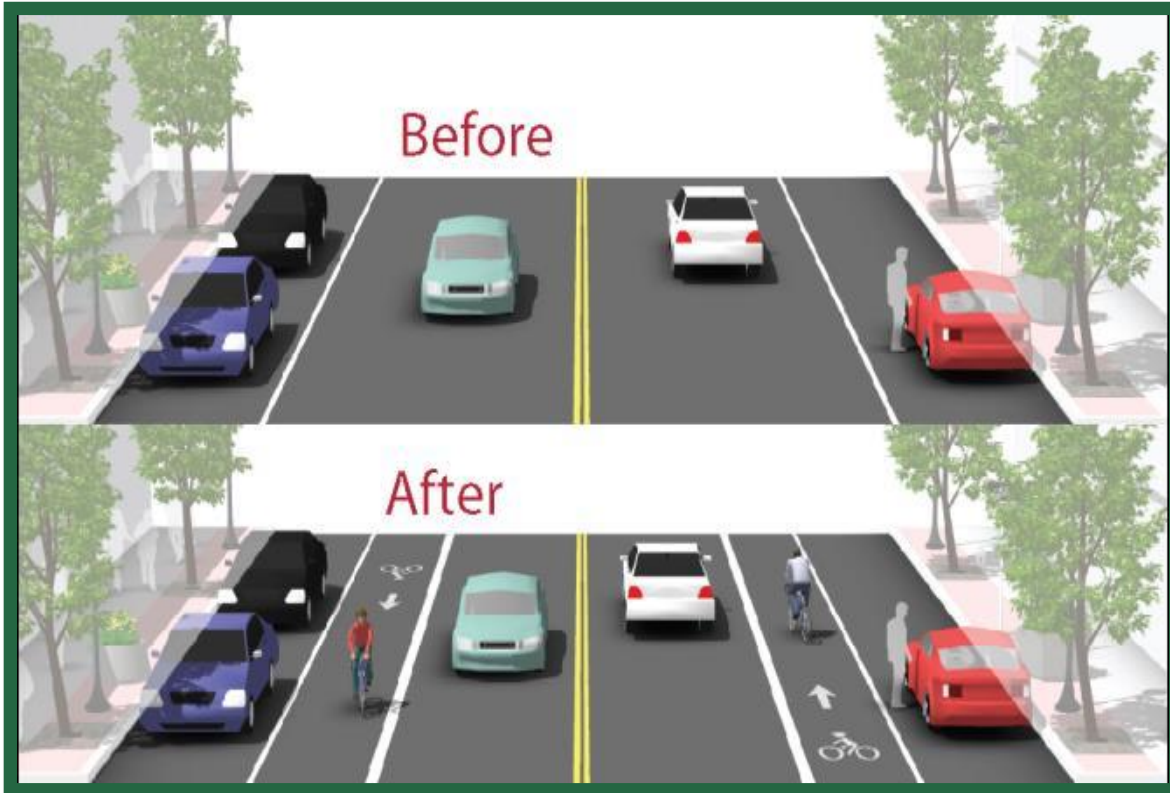


Opportunities:

- Can improve vehicle/pedestrian safety
- Reduces motorists' travel speeds
- Landscaping/visual enhancement
- Discourages cut-through traffic

Obstacles:

- May impact large vehicles' left turn ability, resulting in traffic circle front left turns
- May require modifications to existing sidewalks and curbs
- May impact emergency vehicle speeds
- May reduce existing on-street parking
- May result in drainage problems



Lane Narrowing

Narrowing travel lanes reduces the right-of-way on streets. This measure reduces speeds and motivates drivers to be further attentive to traffic and their surroundings. The additional space can be used for cycle facilities, landscaping, pedestrian space, or parking, all dependent on the considered road's conditions.

Utilization *(Approximate Cost: \$1,500 - \$3,000 per mile)*

Lane narrowing is most effective at residential local streets in which there are known speed and safety problems. Roadway classification is also an important factor when considering lane narrowing, as some roadway classifications need to meet specific guidelines. Current roadways in which the vehicle lane widths are greater than the required minimum would be the best suitable for lane narrowing



Opportunities:

- Reduces motorists' travel speeds
- Increases pedestrian safety
- Can add additional parking and/or pedestrian space

Obstacles:

- May require modifications to existing sidewalks and curbs
- May divert traffic to other local neighborhood streets
- May limit emergency vehicle travel paths
- May reduce existing on-street parking
- Possible maintenance cost



Speed Table

Speed tables are composed of pavement or rubber and placed across a roadway. Speed tables have a flat centered top with ramps on its ends. They are longer than speed humps and the extra length allows vehicles to pass through the table without having to reduce their speed by a significant amount, as opposed to speed humps.

Utilization *(Approximate Cost: \$3,000 - \$4,000 per table)*

Speed tables would be most effective on residential local streets that have high traffic speeds within a specific range of traffic-volume data. Speed tables are not usually effective on roads that are short in travel length and/or wider than 50 feet. Speed tables are effective at maintaining a smooth traffic flow with a safe pace. They can also act as a raised crosswalk when outfitted with the correct markings and signage.



Opportunities:

- Encourages drivers to yield and be cognizant of pedestrians if used as a raised crosswalk
- Less of an impact on emergency vehicles as opposed to speed humps
- Increases driver and pedestrian safety
- Reduces motorists' travel speeds
- May reduce traffic volume

Obstacles:

- May increase motorists' travel speeds between tables if used in series
- May increase noise levels as vehicles accelerate between tables
- Encourages cut-through traffic to nearby streets
- Restricts emergency vehicle speeds
- May result in drainage problems



Raised Intersection

A raised intersection functions similarly to a speed table. The area at the intersection in which the roads meet, is elevated as a flat surface to the same level (or as near) as the sidewalk and includes ramps for all vehicle approaches. Raised intersections can be designed with textured materials at the elevated sections or the approaching ramps to enhance aesthetics and are typically installed with detectable warning signs.

Utilization *(Approximate Cost: \$50,000 - \$100,000)*

Raised intersections are effective on residential local roads that have high volumes of pedestrian activity and speeding problems at both intersecting streets. They can be implemented with marked crosswalks that are elevated above the directions of travel, which encourages motorists to yield to pedestrians at the intersection.



Opportunities:

- Reduces motorists' travel speeds
- Increases pedestrian safety
- Calms both roads at once
- Visual enhancement

Obstacles:

- Certain pavement materials may not be recognizable to those that are visually impaired
- Not as effective in reducing speeds as speed humps/tables
- May result in drainage problems



Temporary Speed Feedback Signs

Temporary speed feedback signs are portable units that display a driver's travel speed along with the speed limit. The radar speed trailer is placed on the side of the road and can also display messages to drivers that are exceeding the speed limit, encouraging them to slow down. The radar speed trailer takes photos of speeding vehicles and records traffic-speed data throughout its deployment.

Utilization

Speed trailers are typically deployed for seven days on residential streets where residents have expressed a concern for speeding. They record traffic data to determine if/when enforcement may be needed. They must be placed in an area that does not block pedestrians, bicyclists, traffic, or control signs. Radar speed trailers are limited in quantity and therefore cannot be used as a permanent traffic calming treatment.



Opportunities:

- Data can determine if enforcement or permanent measure is necessary
- Alerts speeders without disturbing traffic flow
- Encourages motorists to reduce speeds
- Emergency vehicles are unaffected
- Data is recorded immediately

Obstacles:

- Can only be deployed in spaces that do not block or negatively impact the area
- Not a permanent traffic calming measure and limited to trailer quantity
- Encourages drivers to travel certain speeds to manipulate data
- Can be vandalized or damaged



Permanent Speed Feedback Signs

Permanent speed feedback signs are post-mounted on the side of the road and displays drivers' travel speeds. The radar speed sign is installed on the same post as the speed limit sign and encourages drivers to reduce their speeds when they are visually aware that they are speeding. Typically, 80% of vehicles respond to the sign and results in a 2-5% reduction in the 85th Percentile Speed.

Utilization *(Approximate Cost: \$2,500 - \$5,000)*

Permanent radar speed signs are installed on roads where speeding issues exist and is supported by collected data. To be considered effective, the street must also have enough room for the sign to be installed at a distance where it can be visible to drivers. They can be implemented with hardwired electrical power or by solar power and some permanent radar speed signs are capable of recording traffic-speed data.



Opportunities:

- Alerts speeders without disturbing traffic flow
- Encourages motorists to reduce speeds
- Does not affect emergency vehicles
- Can be solar or electric powered

Obstacles:

- Some drivers may not comply knowing the sign is not self-enforcing
- Frequent drivers may become desensitized to sign over time
- Speed sign can be vandalized, damaged, or stolen



Ongoing Neighborhood Information Programs

Ongoing Neighborhood Information Programs are campaigns with an objective of improving safety along neighborhood streets. Communities help remind drivers to be cautious of their speeds and attentiveness to pedestrians. City of Mesquite residents are encouraged to become involved with these programs and engage with their community to help maintain safety within their neighborhoods.

Utilization

Residents who are aware of these programs are encouraged to inform other citizens and neighbors to help pass on the message and get involved. Key messages can be displayed or communicated with items such as yard signs, posters, stickers, and community brochures. Neighborhoods can determine problem areas and mold a campaign best suited for their community's essentials.



Opportunities:

- Can be used for areas that do not have eligibility for other traffic calming measures
- Encourages resident engagement to target individual neighborhood safety issues
- Does not affect emergency vehicles
- Does not disturb traffic flow

Program Examples:

- Drive Like Your Family Lives Here
- Drive Like Your Kids Live Here
- Drive Like Your Pets Live Here
- Keep Kids Alive Drive 25
- Slow Down Kids at Play



Targeted Enforcement

Targeted enforcement is the process in which the Police Department assists with enforcing traffic laws and speed limits at residential local streets when deemed appropriate. Enforced targeted areas encourage motorists to reduce their speeds to lower their risk of receiving a penalty for violating traffic regulations.

Utilization

Targeted enforcement is most effective at residential local streets that have a known speeding issue and are not eligible for other traffic calming measures. Data that is collected by a temporary radar speed trailer assists in identifying problem areas and times where targeted enforcement would be most necessary and effective.



Opportunities:

- Used for target areas that do not have eligibility for other traffic calming measures
- May result in change of driver habits when enforced periodically
- Does not affect emergency vehicles
- Does not disturb traffic flow

Obstacles:

- Frequent drivers may take an alternate route
- Limited to Police Department's personnel
- Not a permanent traffic calming measure