City of Tyler

Traffic Calming Policy

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I. Introduction

The primary purpose of traffic calming is to support the livability and vitality of residential and commercial areas through improvements in non-motorist safety, mobility, and comfort. The City of Tyler's response to concerns about adverse levels of speeding has been historically addressed on a case-by-case basis. Many cities across the state have developed successful traffic calming programs that identify processes and tools for addressing safety concerns and traffic calming requests.

Successful traffic calming programs are responsive to requests and objectively address safety and quality of life issues within budget constraints. This document establishes clear processes and criteria for requesting, screening, and approving the implementation of traffic calming devices within the City of Tyler ("City"). The City has sole authority to implement all traffic calming devices and does not permit residents to implement devices outside of these processes.

II. Purpose and Scope

A. This document provides for the consideration of modifying existing roadways to mitigate adverse impacts from existing motor vehicle traffic within a defined area, through the design and implementation of geometric street features or traffic calming devices. Consideration may be based on City request or on request of a resident or other interested individual as listed below in Section III.

B. Adverse levels of speed along a defined roadway segment are considered for mitigation.

C. Levels of adversity are defined in Section III.B.1.f.

D. A list of definitions for terms pertaining to this document is provided in Appendix E.

E. A flowchart of the traffic calming process from initial request to design and implementation of traffic calming measures is summarized in Appendix F.

F. If at any time a request is determined to not meet the requirements for further consideration, the requester will be notified in writing.

G. All written correspondence, requests, and applications should be submitted via postal mail or email to:

City of Tyler
Attn: Traffic Engineering
PO Box 2039
Tyler, Texas 75710

or

engineering@tylertexas.com

H. These guidelines and procedures are issued under the authority of an Engineer working for the City. The City retains the authority to revise or modify these guidelines and procedures as necessary with the approval of the Engineer.

I. These guidelines and procedures are effective immediately and retroactively to all requests for traffic calming except those requests which have been identified for consideration and funding prior to the effective date of these guidelines and procedures.

J. The City retains the authority to install or remove geometric street features or traffic calming devices for cause independent of these guidelines and procedures.

III. Requesting Mitigation

A. Request Process

1. The initial request for the mitigation of adverse levels of speeding must originate from a resident, business, hospital, park, school, or other entity whose property is abutting the requested street segment within the City. A property representative is limited to one owner or occupant/operator of a property.
2. The requester must be willing to:

    a. Be considered the requester of record and act as the primary contact for the request;

    b. Take responsibility for assisting with the compilation of evidence of support for mitigation on the requested street segment;

    c. Serve as liaison, if requested, to any community organizations within whose boundaries the requested street segment exists;

and

d. Support the City's process to design, implement, and maintain funded geometric street features.

3. The request must include:

    a. Identification of the street and blocks where the applicant desires mitigation consideration (Submitted segments may be divided or otherwise revised at the sole determination of the Engineer);

    b. The name, address, email address, telephone numbers, and signature of the requester. If a request is made by a neighborhood association, it must include contact information for the duly authorized representative of that neighborhood association (if applicable);

    c. A general description of the traffic concern or condition to be remedied;

    d. Special conditions concerning the proposed neighborhood area, including, but not limited to, such factors as the location and nature of businesses, schools, hospitals, parks, or other non-residential traffic generators within or in close proximity to the neighborhood area; and

    e. Any other information considered relevant to the request or required by these guidelines and procedures.

4. The application process does not invite recommendations from requesters regarding types or locations of devices.

5. Each request will initially be reviewed for completeness. If determined to be complete, the request will be considered to have been filed when received and will be acted upon as further provided in these guidelines and procedures. If determined to be incomplete, the request will be returned to the requester with written notice of the deficiencies.

6. See Appendix A for a copy of the Request for Study form for requesting mitigation consideration.

B. Eligibility Requirements

1. The City will conduct the necessary traffic engineering studies (Section IV.C.1) to determine project eligibility. A determination of the street's eligibility for mitigation consideration will be made based on the following criteria:

    a. The street must be a public street under the jurisdiction of the City. Requests for streets that fall outside City jurisdiction will be sent to the proper agency for consideration.

    b. The street must be designated as a Local Residential or Collector Residential street as determined by Table 1 in Chapter 4 of the City of Tyler's Design Guidelines for Subdivision Improvements and by the City of Tyler Master Street Plan, latest edition.

    c. The street must have a posted or prima facie speed limit of 30 miles per hour (mph) or lower.

    d. Evidence of pedestrian activity generators must be present through meeting at least one of two criteria:

        (1) At least 67% of the adjacent properties on both sides of the street are front-facing residential areas. Vacant property will be considered based on its zoning designation. Front-facing vertical mixed-use developments with residential components are assumed to satisfy this criterion.

        (2) Developments generating pedestrian activity such as schools serving grades K-12, hospitals, parks, etc. are present on the street regardless of adjacent property development and/or zoning designation.

    e. The street must be paved. If the traffic calming device is located on a street with no curb and gutter, then the design must prevent vehicles from driving around a traffic calming device.

    f. Evidence of speeding, crash history, and/or substantial traffic volume must be present through meeting at least one of three criteria:

        (1) The measured 85th percentile speed exceeds the prima

facie or posted speed limit by five mph or more when measured in accordance with TxDOT's Procedures for Establishing Speed Zones;

(2) There are five or more reported speed-related crashes within the street segment during the past twelve months of recorded data.

(3) Daily weekday traffic exceeds 2,500 vehicles per day (vpd) on a Local Residential street.

g. If the request is a duplicate request or overlaps with another active request it will be combined with the active request.

h. Any previously installed devices or changes in posted speed limits must have been in place for at least two years in order to be eligible for a request for study.

2. Other factors such as, but not limited to, ongoing maintenance, temporary traffic control, grades, sight distance, planned construction projects, public services delivery, emergency services delivery, or conflicts with adopted neighborhood plans may affect consideration for eligibility.

3. If the street is determined not to be eligible for consideration, the applicant will be notified in writing of the reason for ineligibility.

4. Requests for repeating the speed and volume studies (recounts) will be considered and will be recounted if errors in data are identified by the Engineer.

C. Notification/Evidence of Support

1. Written evidence of a minimum of 60 percent of neighborhood or community support for the project from residents, businesses, schools, hospitals, parks, or other entities whose property is within the proposed study area is also required for the request to proceed and traffic data to be collected. During the eligibility review, the Engineer will determine the study area. The study area will be based on the facility being analyzed. See Appendix B for a copy of the Neighborhood Support Form.

IV. Screening

A. Data Collection

1. Data will be collected for all requests twice a year in spring and fall months during regular school days. The data will consist of vehicular speed, traffic volume, pedestrian activity, and/or any other observation to confirm the traffic problems stated in the Request for Study Form at the discretion of the Engineer. The duration of the data collection period will depend on the type of collected data.

B. Screening of Traffic Data

1. The City will screen the traffic data collected (levels of traffic volume, vehicular speed, pedestrian activity, and other observations) for all requests twice a year to determine eligibility.
2. If specific problems are mentioned as a priority in the Request for Study Form, the City will assess them. (e.g. If speeding is said to be a problem on Street A, the City will collect and/or obtain speed data to determine the speed on Street A).
3. The Engineer will notify the requester of the screening results in writing and requests determined to be eligible will proceed to concept plan development.

C. Concept Plan Development

1. If the City determines that a project is eligible for further consideration, the Engineer will develop a concept plan for the project, accounting for speed and traffic data collected. Concept plan development will occur twice a year.
2. Concept plans will be presented to the Traffic Safety Board at recurring meetings that occur once every two months.

V. Plan Approval Process

A. Concept Plan Review and Approval

1. Each concept plan will be reviewed and approved by a review committee. The review committee is comprised of representatives from the following entities: City of Tyler Staff, Traffic Safety Board,

City of Tyler Fire Department, City of Tyler Police Department, and City Council.

2. Concept plans will not be approved by the review committee if it is found that implementation of the concept design causes:

    a. Pedestrian or bicycle traffic access to a neighborhood area to be denied or materially impeded;

    b. General mobility of traffic in the neighborhood area, the surrounding community, or both to be unreasonably adversely affected to a material extent;

    c. That the proposed solution is not the least restrictive that could reasonably be expected to substantially mitigate or resolve the documented problem;

    d. The project would prevent any owner of property from having direct vehicular access to at least one abutting street in the City; or

    e. The project would be likely to significantly delay ingress to or egress from neighborhoods by emergency service vehicles.

3. If approval is obtained from the review committee, the City attorney will review the concept plan to determine that its implementation would not be contrary to local, state, or federal laws or regulations.

4. The Engineer will review and consider comments received and re-evaluate the concept plan. The Engineer may:

    a. Approve the concept plan for further consideration;

    b. Disapprove of the concept plan and its underlying request; or

    c. Require modification of the plan in response to comments or other information received. Modified plans must be reviewed and approved again by the review committee and City attorney.

5. The Engineer will notify the requester of the concept plan review results in writing and present the approved concept plan to the requester. If either the review committee and/or the City attorney disapproves the concept plan, and absent demonstrable evidence of a significant change in traffic volume or traffic patterns in the intervening period which would in the Engineer's reasonable

professional judgment prompt an earlier review, the same or a similar project will not be eligible for reconsideration for a period of two years.

B. Public Support

1. After the requester obtains approval, the City will contact residents, businesses, schools, or other entities whose property is within the study area as determined by the Engineer. The concept plan will be open for community input for a 30-day period, after which the Engineer will review and consider comments received for concept plan refinement. Addressing these comments, however, will be at the discretion of the City and may not alter the concept plan. The Engineer may:
    a. Approve the concept plan for funding prioritization;
    b. Disapprove of the concept plan and its underlying request; or
    c. Require modification of the plan in response to comments or other information received. Modified plans may be reviewed and approved again by the review committee and City attorney if deemed necessary.

C. Funding Prioritization and Cost Responsibility

1. Funding Prioritization
    a. Eligibility, concept plan development, review committee/City attorney approval, and public support does not guarantee project funding. The City will use prioritization rating criteria to determine which approved projects may be funded, and if so, in what order.
    b. The City will evaluate and prioritize street segments for funding of traffic calming devices by considering the following factors:
        (1) Traffic Volume
        (2) Speeding
        (3) Crash History
        (4) Pedestrian Activity Generators

(5) Sidewalks

(6) Bicycle Facilities

c. These factors will be used as scoring criteria to determine project priority order and are detailed further in Appendix C. The highest ranked project will be selected as the first project to be funded and developed. Additional ranked projects may also be developed within the same fiscal year in the prioritized order, depending on available funding. The City Engineer will refine and calibrate the scoring criteria to obtain a clear, quantifiable project ranking.

2. Cost Responsibility

a. Public Funding

(1) For projects identified to receive public funding, the City will determine its level of funding for all costs associated with designing and implementing the funded devices. Requesters desiring enhanced levels of landscaping and hardscaping, or who wish to include public art, street furniture, irrigation, lighting, etc. must provide funding for the design, implementation, and maintenance of those features.

(2) These procedures do not prevent the City from completing any eligible requests out of ranking order should alternative funds become available or complementing projects, maintenance and/or capital improvement projects be initiated along the requested street segment.

b. Private Funding

(1) Eligible projects which did not receive public funding may be expedited by voluntary payment of all costs.

(2) Requests for a private funding estimate of cost must be made in writing to the City.

(3) Voluntary payments must be submitted in the form and timing required by the City.

(4) Upon receipt of payment of the cost, the devices will be installed no later than the next fiscal year as scheduling of construction and purchasing requirements permit.

c. Joint Public/Private Funding

(1) Eligible projects may be considered for joint public/private funding.

(2) All funding must be available for implementation of the project to proceed.

(3) Requests for joint public/private funding must be made in writing to the City.

(4) Upon receipt of payment of the cost, the devices will be installed no later than the next fiscal year as budgeting, purchasing requirements, and scheduling permits.

D. Approval for Funding Prioritization

1. City staff will obtain approval of the project prioritization list from the review committee and relevant stakeholders as identified by City staff.

VI. Design and Implementation

A. Approval for Design and Implementation

1. Projects will be approved (in order of priority) for design and implementation by City Council at a Council meeting where the requester must be present.

B. Location and Design of Traffic Calming Devices

1. The City will determine the final location of all devices in accordance with current engineering principles and best practices. Devices will be designed to provide for the safety of roadway users. In some instances, this may require the installation or modification of sidewalks adjacent to the devices.
2. General guidelines:

a. For devices that impact drainage and/or are located near

drainage inlets, the device should be placed downstream of the inlet. If this is not feasible, treatment may be considered for drainage.

b. To improve nighttime visibility, coordinating device locations with existing or planned street lighting should be considered.

c. Preferences of requesters or property owners adjacent to proposed geometric street feature locations will not be considered unless unique or special circumstances warrant relocation. The City will consider these circumstances on a case-by-case basis.

d. Traffic control devices consisting of signs and markings to advise roadway users of the presence of any devices will be installed in accordance with the latest edition of the Texas Manual on Uniform Traffic Control Devices (TMUTCD).

e. Bicycle facilities may be included in the design which may require existing on-street parking to be revised or prohibited.

f. A partial list and description of various devices appears in Appendix D.

3. Horizontal Deflection Devices

a. Generally, horizontal deflection devices are preferred to other types of devices.

b. When feasible, these devices will be designed to reduce impervious pavement and create the opportunity for storm water mitigation.

c. Traffic circles, mini-roundabouts, roundabouts, chicanes, re-aligned intersections, and lateral shifts may be considered for horizontal deflection devices.

4. Vertical deflection devices

a. Speed tables, raised crosswalks, and raised intersections may be considered for vertical deflection devices. Speed humps will not be used.

b. Placement guidelines:

(1) Devices will generally be placed approximately 300 to

600 feet apart. Other spacing may be used based upon engineering judgment.

(2) Devices should generally not be located in front of a driveway.

(3) Devices should generally not be located within 400 to 600 feet of a traffic signal or stop sign, or within 50 feet of an uncontrolled intersection.

(4) Vertical deflection devices should not be located over, or contain manholes, water valves or other subsurface utility access features.

VII. Limitation on Action of City

A. Approval under this article will not excuse the requester or the City from obtaining any other permit or authorization required by law or ordinance to perform the work.

B. The approval, installation and maintenance of a project and associated devices will never be construed to cause an abandonment or relinquishment of any street or public property or to authorize the installation of a device upon any right-of-way not under the control of the City.

C. The installation of a project and associated permanent devices that involves the full and permanent closure of a street will require the submittal of a Thoroughfare Closure Application through Planning and Zoning Commission.

VIII. Maintenance of Devices

A. The maintenance of the devices and all related features on public right-of-way approved and accepted by the City, will be maintained by the City.

1. The community will maintain any landscaping, public art, or other associated features as previously agreed upon.

2. Should a community or requester not provide maintenance, the City may at their sole discretion remove, modify, or revise the devices and any associated features to allow ease of maintenance by City forces.

B. Removal of Devices by Maintenance or Construction Activities

1. Any device that is fully removed during the course of publicly funded construction or maintenance activities will be reinstalled upon completion of that activity at the removing agency's expense by the forces conducting those activities.
2. Devices that are partially removed or damaged during the course of publicly funded construction or maintenance activities will be repaired or reconstructed to original conditions upon completion of those activities at the City's expense by the forces conducting those activities.
3. Any device that is fully or partially removed or damaged during the course of privately funded maintenance or construction will be reinstalled upon completion of those activities at the expense of the private constructor.
4. The replacement of devices completely removed through the above actions is not automatic, but contingent upon a finding by the Engineer that the street meets the eligibility requirements of Section III.B.1.a through Section III.B.1.h above.

IX. Traffic Calming Removal or Alteration

A. Request Process

1. Citizens may request that a street segment be reviewed for the possible removal of some or all of the existing devices. The requester must agree to:

    a. Be considered the requester of record and act as the primary contact for the request;

    b. Take responsibility for community notification and the compilation of evidence of support for the requested street segment should it be deemed eligible;

    c. Serve as liaison to any community organizations within whose boundaries the requested street segment exists.

2. See Appendix A for a copy of the Request for Study form for requesting removal consideration.
3. The request to consider removal of devices must originate from a resident and/or a business, school, hospital, park, or other entity whose property is within the affected area. A property representative

is limited to one owner or occupant/operator of a property.

4. The affected area will be determined by the Engineer and will include primarily those properties facing or abutting the street segment on which devices are located. A property will be considered part of the affected area if its only ingress/egress route requires traversing existing devices which are being requested to be removed.

B. Eligibility

1. Upon written request, the Engineer will determine eligibility for removal consideration based on these factors:

    a. The request must not be a duplicate request.

    b. The removal segment or area must correspond with the installation segment or area.

    c. The devices have been in place for at least three years OR at least two years have elapsed since any previous device alteration or removal occurred.

C. Notification/Evidence of Support

1. The Notification/Evidence of Support process for Traffic Calming Removal follows that of Traffic Calming Installation outlined in Section III.C.1.

D. Removal or Alteration Determination

1. At the Engineer's discretion, depending on the length of the segment and the number of devices present, removal or alteration of devices along a segment may be considered in multiple phases.

2. For all phases, an engineering review will be performed to determine which, if any, of the devices are to be removed or altered. The engineering review will follow the procedures outlined in Sections IV.A and IV.B.

3. The removal/alteration request process does not invite nor accept recommendations from requesters regarding which devices should or should not be removed or altered. Based on engineering judgment, the results of the review process may recommend removal/alteration of none, some, or all of the devices, or the

reconstruction or modification of the devices to reflect current engineering state of the practice.

4. If speed studies conducted along the requested segment or portions of the segment in accordance with TxDOT's Procedures for Establishing Speed Zones reveal the 85th percentile speed is greater than or equal to the posted or prima facie speed limit plus five miles per hour, then no device removal will occur along the segment or portion of the segment represented by the study.
5. Following the removal/alteration of any devices, the segment may be reconsidered for additional device removal/alteration after at least two years. A new request must be submitted to have a segment receive consideration for removal/alteration of additional devices. Each phase is subject to the same requirements, policies, and procedures in effect at the time of the request, and requires separate and independent petitions.

E. Funding Prioritization and Cost Responsibility

1. The City will evaluate and prioritize removal requests for funding by considering factors that may include, but are not limited to:

    a. Existing device designs, locations and spacing.
    b. Stop/yield signs or traffic signals along the segment.
    c. All factors listed in Section V.C.1.b.

2. These factors will be used as scoring criteria to determine which projects may be funded, and if so, in what order. The Engineer will notify the requester of the review results in writing.
3. A request that does not receive funding approval during a funding cycle will automatically be considered in the following cycles for a maximum of two years, after which the request expires. Incomplete requests that later become complete within the two-year limit will not receive additional time for funding consideration.
4. If a request for removal/alteration is denied, the segment may not be reconsidered for at least one year unless there is a substantial change in conditions.
5. For a street segment with an expired or denied request to be reconsidered, a new written request may be submitted subject to the

policies and procedures in effect at the time of request. Each request requires a separate and independent evidence of support petition.

6. The City is responsible for all costs associated with removal or modification of devices under this process if approved by City Council. The City Council in consultation with the Engineer may consider proposals for the private funding of an approved removal or alteration. Further details of Public and Private Funding are specified in Sections V.C.2.a, and V.C.2.b, respectively.

Appendix A – Request for Study Form

Submittal of this form constitutes a formal request and must contain the completed information indicated in both Part A and Part B. Appendix B – Neighborhood Support Form must also be submitted to complete the application. Incomplete applications will be returned to the requester with written notice of the deficiencies. This request will be processed according to the guidelines and procedures for the Traffic Calming Policy in effect as of the date of this request. Applications should be sent to:

City of Tyler
Attn: Traffic Engineering
PO Box 2039
Tyler, Texas 75710

or

engineering@tylertexas.com

Part A – Request Information

Type of request (please check one):

- ☐ Traffic Calming Installation
- ☐ Traffic Calming Modification / Removal

Location of Request (Street): _____

From: _____ **To:** _____

Description of Traffic Concern: _____

_____

_____

Special Conditions (Section III.A.3.d): _____

_____

Other Information:

Part B – Requester Information

By my signature below, I agree to be the requester of record for this request. I have read the guidelines and procedures governing the Traffic Calming Policy and agree to carry out to the best of my abilities the duties and responsibilities associated with being the requester of record as detailed in Section III.A.2. I also understand that any documents submitted to the City of Tyler may be subject to public disclosure in accordance with the Texas Public Information Act.

Name:

Address:

City: **Zip Code:** **Ph. #:**

Email Address:

Signature of Applicant: **Date:**

Appendix B – Neighborhood Support Form

By signing below, I support the mitigation/removal request for study along_____as requested by_____.

Name (Print)	Property Type (Residence, Business, etc.)	Phone Number	Property Address	Signature

Appendix C – Project Ranking

Street:_____

From:_____ **To:**_____

Staff Name:_____ **Date:**_____

Category	Criteria		Points	Max Points
Speeding	Difference between 85th Percentile Speed and Posted Speed Limit (mph)	5 to 6.9	6	30
		7 to 8.9	12	
		9 to 10.9	18	
		11 to 12.9	24	
		Greater than 13	30	
Crash History	Number of Crashes within past 12 months	5 to 8	6	30
		8 to 10	12	
		10 to 12	18	
		12 to 14	24	
		Greater than 14	30	
Traffic Volume	Vehicles per Day (vpd)	2,500 to 5,000	12.5	25
		Greater than 5,000	25	
Multi-Modal Activity	Sidewalks	Detached Sidewalks and/or Shared Use Paths (SUPs)	0	5
		Back-of-curb Sidewalks (<8 ft width)	2.5	
		No Sidewalk	5	
	Bicycle Facilities	Protected/Buffered Bike Lanes and/or SUPs	0	5
		Unprotected Bike Lanes	2.5	
		Shared Bike Facilities or No Bike Facilities	5	
	# of Unique Pedestrian Activity Generators within Study Area	1 out 3 (Schools, Hospitals, Parks, etc.)	1.5	5
		2 out 3 (Schools, Hospitals, Parks, etc.)	3	
		3 out 3 (Schools, Hospitals, Parks, etc.)	5	
TOTAL				**100**

Appendix D – Traffic Calming Measures

Features for Speeding Mitigation

Horizontal Deflection Devices:

- Traffic Circles
- Roundabouts
- Chicanes
- Re-aligned Intersections
- Lateral Shifts

Vertical Deflection Devices:

- Speed Tables
- Raised Crosswalks
- Raised Intersections

Street Width Reduction:

- Corner Extension/Bulb-Outs
- Chokers
- Median Islands
- On-street Parking
- Road Diet

Routing Restriction:

- Diagonal Diverters
- Half Closures

Education:

- Videos
- Fliers
- Yard Signs
- Speed Feedback Trailers
- Neighborhood Speed Watch Programs
- Neighborhood Traffic Safety Campaigns
- Volunteers in Policing

Horizontal Deflection – Traffic Circles

Traffic circles are raised, circular islands at the center of an intersection that force circular movements through the intersection, reducing vehicular speeds.

Advantages

- Reduces speed
- Provides equal access
- Does not restrict access
- Landscaped traffic circles improve appearance

Disadvantages

- 30 feet of curbside parking must be prohibited
- Increases emergency response time
- Restrict access for trucks and longer school buses
- Maintenance if landscaped

Horizontal Deflection – Roundabouts

Roundabouts force circular movements at intersections, reducing speeds for navigation and yielding.

Advantages

- Reduces speed
- Reduces vehicle conflicts
- Provides equal access
- Does not restrict access
- Landscaped roundabouts improve appearance
- Minimizes queuing

Disadvantages

- 30 feet of curbside parking must be prohibited
- Increases emergency response time
- Can restrict access for trucks and longer school buses
- Maintenance if landscaped
- May require additional right-of-way

Horizontal Deflection – Chicanes

Chicanes provide alternating curb extensions, reducing the roadway width and curving the roadway path, resulting in reduced vehicular speeds.

Advantages

- Discourages high speeds
- Easily negotiable by large vehicles
- Enhanced streetscape

Disadvantages

- Must be designed carefully
- Curb realignment and landscaping can be costly
- Eliminating of some on-street parking
- Maintenance if landscaped
- Can impact drainage

Horizontal Deflection – Re-aligned Intersections

Re-aligned intersections modify existing intersections to add curvature. Previously straight through roadways become curved, slowing down vehicles. Re-alignment is ideal for T-intersections.

Advantages	Disadvantages
• Adds curvature to intersecting roads to reduce speeds • Improve safety at intersections • Ideal for T-intersections	• Must be designed carefully • Curb realignment and landscaping can be costly • May require additional right-of-way

Horizontal Deflection – Lateral Shifts

(Source: Ian Lockwood)

Lateral shifts realign straight streets and shift travel lanes in one direction to slow down vehicles. A median island is typically used to separate opposing traffic. (Note that a lateral shift is a variation of the chicane and involves only a single shift in the road alignment whereas a chicane shifts the road alignment more than once.)

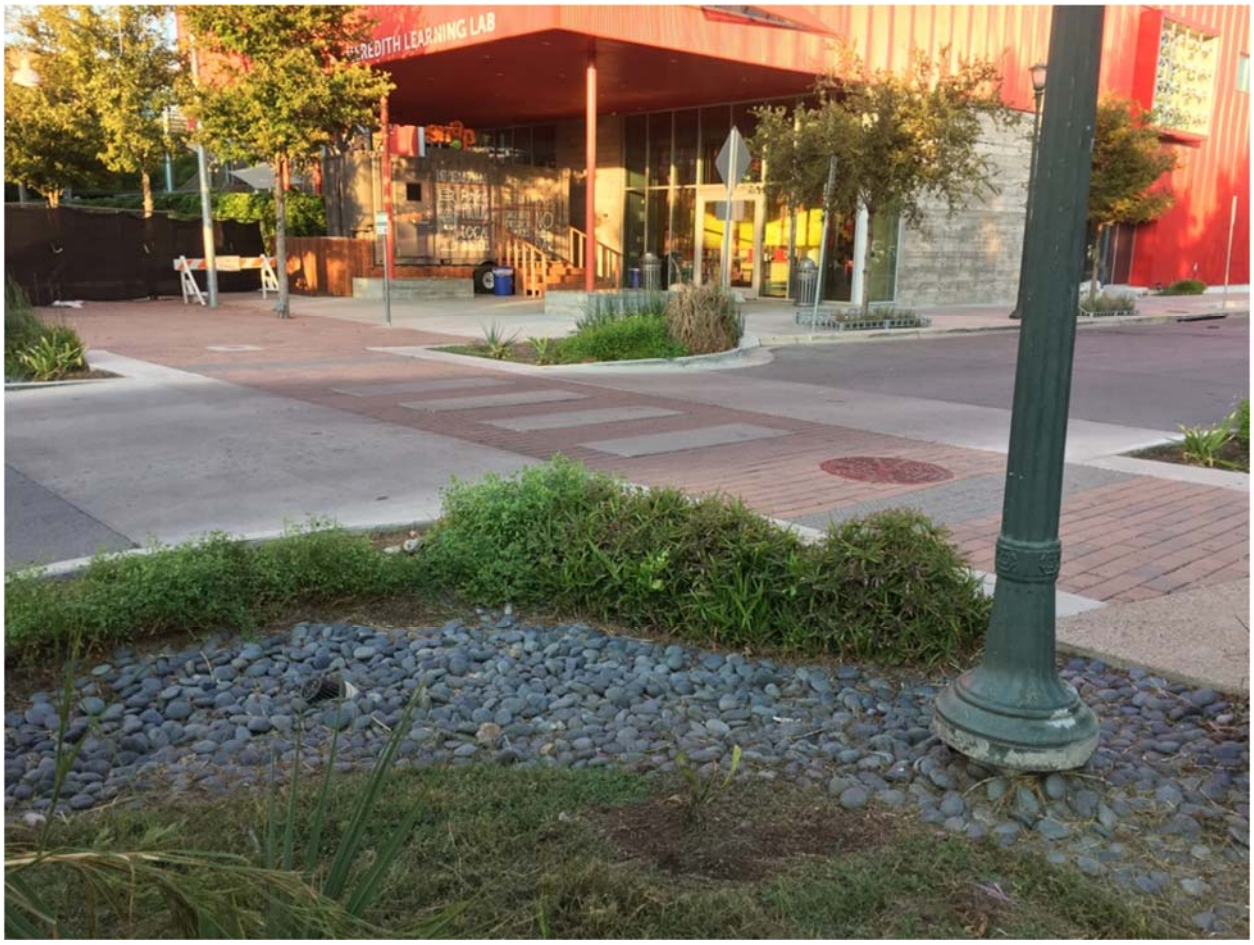
Advantages

- Reduces speed
- Appropriate for all traffic volume levels
- Potential location for a crosswalk
- Easily negotiable by large vehicles

Disadvantages

- Less effective if volume is significantly higher in one direction
- Speed reduction is usually less than that observed with use of a chicane
- On-street parking may need to be removed

Vertical Deflection – Speed Tables



Speed tables are broad, flat-topped speed humps built across the entire roadway width and are often designed as a raised crosswalk.

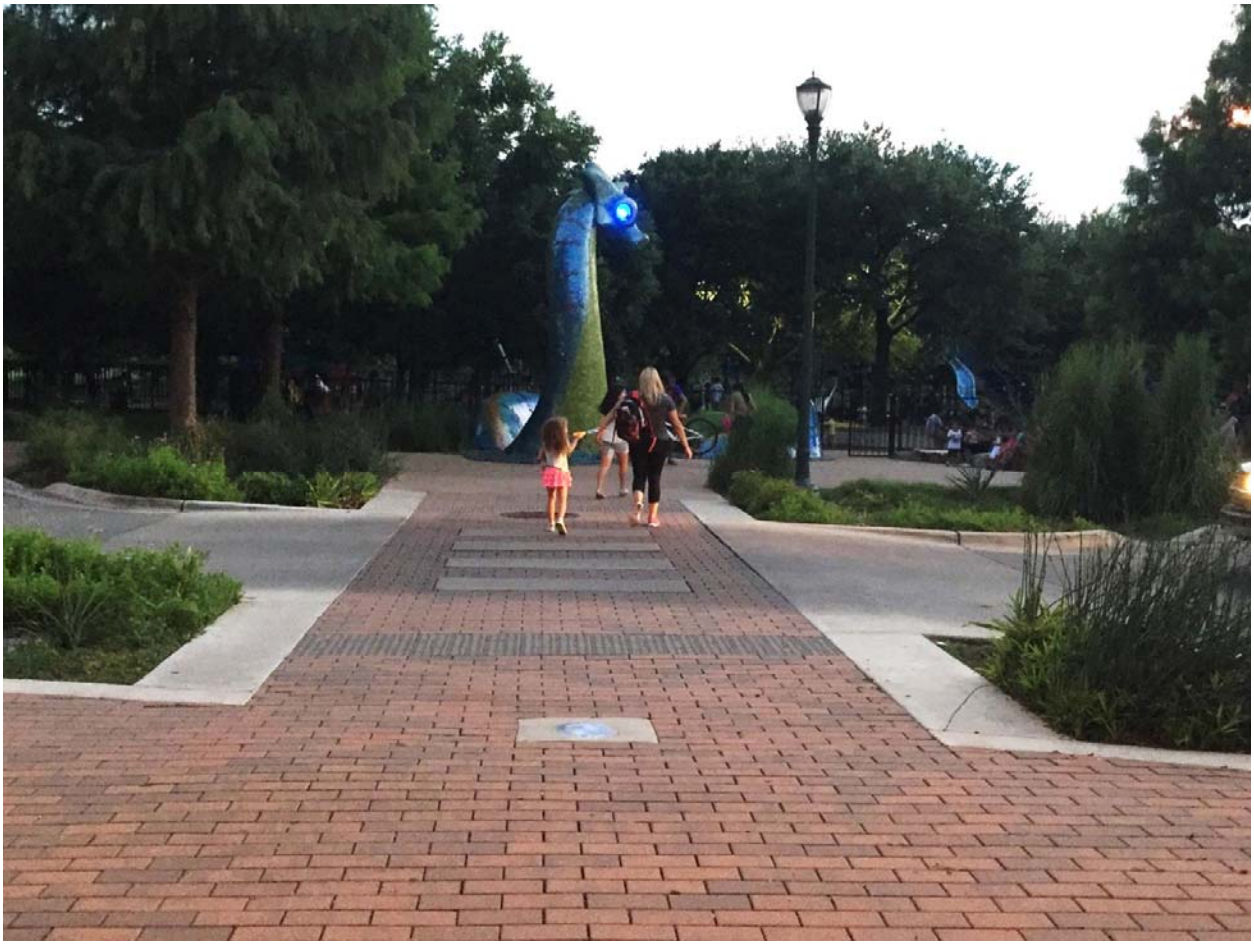
Advantages

- Reduces vehicle speed
- Can reduce vehicular volumes
- No restrictions to on-street parking
- Minimum maintenance
- Smoother on large vehicles

Disadvantages

- Rough ride
- Diverts traffic
- Increases emergency response times
- Signage considered unsightly
- Noise and air pollution
- Textured materials are expensive
- Can impact drainage

Vertical Deflection – Raised Crosswalks



Raised crosswalks are constructed across speed tables coinciding at pedestrian crosswalks. The crosswalks are raised, reducing vehicular speeds and increasing pedestrian visibility.

Advantages

- Reduces vehicle speed
- Can reduce vehicular volumes
- No restrictions to on-street parking
- Minimum maintenance
- Smoother on large vehicles
- Pedestrian crosswalk at grade with sidewalk

Disadvantages

- Rough ride
- Diverts traffic
- Increases emergency response times
- Signage considered unsightly
- Noise and air pollution
- Textured materials are expensive
- Can impact drainage

Vertical Deflection – Raised Intersections

Raised intersections form plateaus that raise intersections to sidewalk height. Ramps leading to the intersection reduce vehicular speeds.

Advantages

- Reduces vehicle speed
- Can reduce vehicular volumes
- Minimum maintenance
- Pedestrian crosswalk at grade with sidewalk

Disadvantages

- Rough ride
- Diverts traffic
- Increases emergency response times
- Noise and air pollution
- Can impact drainage
- Costly

Street Width Reduction – Corner Extensions/Bulb-Outs

(Source: Jennifer Rosales)

Corner extensions/bulb-outs are horizontal extensions of the curb into the intersection to narrow the roadway section.

Advantages

- Reduces vehicle turning speed
- Space for landscaping
- Shortens pedestrian crossing distance
- Increases pedestrian visibility

Disadvantages

- May require large turning vehicles to swing across centerline
- May require removal of on-street parking
- May require relocation of drainage features and utilities

Street Width Reduction – Chokers

Chokers are a midblock curb extension, reducing vehicular speeds as they navigate through the reduced roadway width.

Advantages

- Minor inconvenience to drivers and local traffic
- Good for pedestrians
- Space for landscaping
- Slows traffic without seriously affecting emergency response time
- Effective if used in a series
- Single lane narrowing reduces vehicle speed and through traffic

Disadvantages

- Double lane narrowing not very effective at reduced speeds or diverting through traffic
- Only partially effective as a visual obstruction
- Unfriendly to cyclists
- Conflict between opposing drivers arriving simultaneously
- Can impact drainage
- Maintenance if landscaped

Street Width Reduction – Median Islands

(Source: Dona Sauerburger)

Median islands create a small amount of deflection in the roadway alignment and reduce the roadway width, reducing vehicular speeds as they navigate through the center-island narrowing.

Advantages

- Reduces lane width and vehicular speed
- Provides aesthetic visual break up
- Visual queue of neighborhood entrance
- Can be combined with speed cushions
- Increases pedestrian safety

Disadvantages

- Curbside parking prohibited
- Maintenance if landscaped

Street Width Reduction – On-Street Parking

(Source: Robert Kahn)

On-street parking narrows roadway travel lanes and adds side friction to traffic flow to reduce vehicle speeds. On-street parking may be provided on one or both sides of a street.

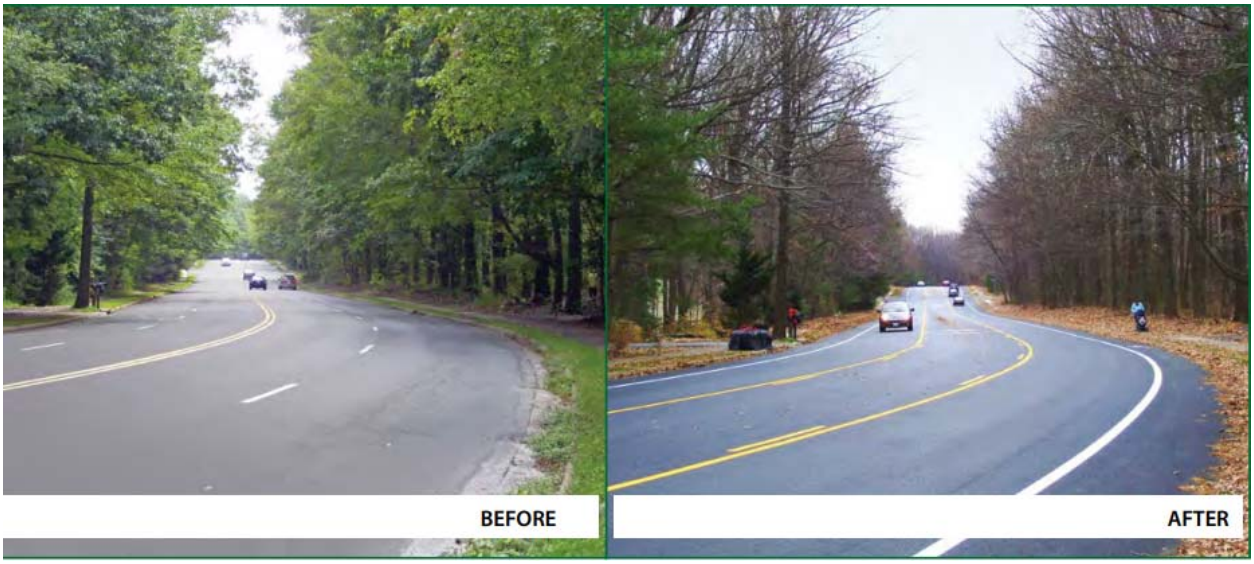
Advantages

- Reduces vehicle speed
- Provides buffer between traffic and pedestrians on sidewalk
- Improves accessibility of adjacent properties

Disadvantages

- Effectiveness depends on presence of parked vehicles
- Parking may limit motorist visibility of pedestrians between vehicles
- Combining parking and bicycle facilities may require extra width to protect cyclists from car doors

Street Width Reduction – Road Diet



(Source: Virginia Department of Transportation)

Road diet converts a roadway to a narrower cross-section with fewer or narrower through motor vehicle travel lanes. Road diets commonly involve the conversion of a four-lane undivided roadway to a three-lane roadway with two through lanes and a center two-way left turn lane.

Advantages

- Reduces speed
- Crash reduction benefits
- Cross-section can be rededicated for bicycle lanes, pedestrian refuge islands, parking, or transit stops.
- Works within existing ROW
- Reduces number of travel lanes to cross for pedestrians

Disadvantages

- Potential delays due to stopped traffic (e.g. stopped bus) in the through lane
- Slightly reduced roadway capacity
- Traffic speeds limited by speed of slowest driver

Routing Restriction – Diagonal Diverters

Diagonal diverters are barriers built diagonally across the middle of an intersection, preventing through and/or turning movements. Pedestrian and bicycle traffic are usually unrestricted.

Advantages

- Redirection of existing streets
- Maintains pedestrian and bicycle access
- Reduces traffic volumes

Disadvantages

- Cause circuitous routes
- Limits access to businesses
- Reconstruction of corner curbs

Routing Restriction – Half Closures

Half roadway closures are created with the placement of a physical barrier to block vehicle traffic in one direction. Pedestrian and bicycle traffic are usually unrestricted.

Advantages

- Able to maintain two-way bicycle access
- Maintains pedestrian access
- Effective in reducing traffic volumes

Disadvantages

- Causes circuitous routes
- Limits access to businesses
- Drivers may circumvent the barrier
- Can impact drainage
- Maintenance if landscaped

Appendix E – Definitions

As used in these guidelines, the following words and terms will have the meanings ascribed to them in this section unless the context of their usage clearly indicates a different meaning.

85th percentile speed: The measured speed at or below which 85% of vehicles are traveling.

Access: A way or means of approach (public or private) to provide vehicular or pedestrian physical entrance to a property which shall include public or private right-of-way dedicated to this use.

Applicant: One or more property owners or residents within a neighborhood area, a duly authorized representative of a neighborhood association or the director who makes a request for the construction of a project.

Capital Improvements Program (CIP): The official proposed schedule, if any, of all future public projects listed together with cost estimates and the anticipated means of financing each project, as adopted by City Council.

City: The City of Tyler, an incorporated municipality located in Smith County, Texas.

City Attorney: The lawyer or firm of attorney who has been specifically employed by the City to assist in legal matters. This term shall also apply if the City retains a person to perform the functions of City Attorney as an official City employee.

City Council: The governing body of the City of Tyler, Texas.

Engineer: The licensed professional engineer, or firm of licensed professional consulting engineers, that has been specifically employed by the City to assist in engineering-related matters. This term shall also apply if the City retains a person to perform the functions of Engineer as an official City employee.

Concept Plan: A plan illustrating the assessment and possible location of public improvements.

Enhancements: Landscaping, hardscaping, art or other aesthetic improvement installed as a part of a mitigation plan.

Geometric Street Feature: A physical feature or device in the roadway whose primary purpose is to reduce the speed of vehicles or to divert traffic traveling on that roadway.

Geometric street features are not traffic control devices; however, geometric street features and traffic control devices may be used together.

Install or Installation: The permanent placement of a device following approval by final action of the current guidelines and procedures, or as determined necessary by the Engineer. Install or installation does not include the temporary placement of a device for test or evaluation purposes.

Neighborhood Association: Any homeowners' association, property owners' group or civic association, whether incorporated or not, whose membership includes property owners and/or residents of a neighborhood area.

Pavement/Roadway Width: The portion of a street that is available for vehicular traffic. Where curbs are used, it is the portion from the back of one curb to the back of the opposite curb.

Prima Facie Speed Limit: The default speed limit that applies when no other specific speed limit is posted as established by State law. For streets in an urban district, excluding alleys, the prima facie speed limit is 30 MPH.

Project: The construction of one or more devices upon a designated street in the neighborhood area.

Property owner: The owner(s) of any tract or parcel of real property within a neighborhood area.

Review: Shall be construed to mean “to read, analyze, assess and act upon” a development application.

Requester: Any person qualified to request mitigation measures on behalf of one or more property owners, a duly authorized representative of a neighborhood association, or other qualified entity as identified in this document. By signing a mitigation request letter or application, the requester agrees to be the requester of record and agrees to uphold responsibilities assigned in these guidelines and procedures.

Resident: Any person who resides in or owns or operates a home or business upon any tract or parcel of real property within a neighborhood area.

Residential: Any single-family residence, townhouse, duplex, triplex, quadruplex, condominium, or apartment complex or any other structures used as dwelling units.

Street: An improved surface within a right-of-way or easement, public or private, other than an alley, which has been dedicated, deeded, or granted an easement for public use and which affords primary vehicular access to abutting property. Includes the term “road” and “roadway”:

(a) Major thoroughfares, also known as arterial streets or primary thoroughfares, which provide vehicular movement from one neighborhood to another or to distant points within the City, and including freeways or highways leading to other communities.

(b) Collector streets, also known as feeder streets or secondary thoroughfares, which provide vehicular circulation within neighborhoods, and from local streets to major thoroughfares.

(c) Local residential streets, also known as minor thoroughfares or streets, which primarily provide direct vehicular access to abutting residential property.

(d) Private streets are streets which are owned and maintained by a homeowners’ association or property owners’ association, and which are not dedicated to the public.

Alley: A minor right-of-way, private or public, not intended to provide the primary means of access to abutting lots or units which is used primarily for vehicular service access to the back or sides of properties that derive primary access from a street. The length of an alley segment is to be measured from the right-of-way lines of the streets from which the alley is provided access, including any alley turnouts onto a street, or from the centerpoint of an intersection with another alley which connects to a street.

Cul-De-Sac: A street having only one outlet to another street, and terminated on the opposite end by a vehicular turnaround or “bulb.” The length of a cul-de-sac is to be measured from the intersection centerpoint of the adjoining through street to the midpoint of the cul-de-sac bulb.

Dead-End Street: A street, other than a cul-de-sac, with only one outlet.

Traffic control devices: All signs, signals, markings, and other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, bikeway, public facility, or private property open to public travel by authority of a public agency or official having jurisdiction. The Texas Manual on Uniform Traffic Control Devices (TMUTCD) is incorporated by State Transportation Code §544.01 and shall be

recognized as the Texas standard for all traffic control devices installed on any street, highway, bikeway, public facility, or private property open to public travel.

Appendix F – Traffic Calming Process Flowchart