Texas Department of Transportation

Texas A&M Transportation Institute

Improving and Communicating Speed Management Practices

Workshop

Student's Guide

Product 5-7049-01-P2

Published: March 2025

IMPROVING AND COMMUNICATING SPEED MANAGEMENT PRACTICES

Date:
Location:
Contact:

Agenda

8:00	or	1:00	Introduction and Scope
8:35	or	1:35	Lesson 1: Speed Study Approach within Texas
9:10	or	2:10	Break
9:15	or	2:15	Lesson 2: Recent National Activities
10:00	or	3:00	Lesson 3: Operating Speed Research
10:25	or	3:25	Break
10:30	or	3:30	Lesson 3: Operating Speed Research (continued)
10:55	or	3:55	Lesson 4: Helpful Resources for Communicating Practices
11:15	or	4:15	Closure

Workshop Materials:

Student's Guide which includes:

- Agenda.
- Slides.
- Communication materials.

NCHRP 17-76 Suggested Speed Limit Setting Tool:

- Link to NCHRP 17-76 Speed Limit Setting Tool (N17-76 SLS-Tool): https://www.trb.org/Main/Blurbs/182038.aspx.
    - N17-76 SLS-Tool (with macros).
    - N17-76 SLS-Tool (without macros).
- Versions with Texas crash data.

Communication materials:

- Frequently Asked Questions about Regulatory Speed Limits.
- Common TxDOT Implementation Order for Speed Management Techniques.
- "Setting Speed Limits" 2-page informational pamphlet.
- Citizen 2-minute video, "Setting Texas Speed Limits."
    - English version: https://youtu.be/9bCaHSRDUpc.
    - Spanish version: https://youtu.be/8uD9HglDLQA.
- Engineer 8-minute video, "The Texas Speed Zone Study Process": available from TxDOT's Traffic Safety Division.

Speed Limits in Texas (research report 0-7049-R1): https://library.ctr.utexas.edu/hostedpdfs/tti/0-7049-r1.pdf.

IMPROVING AND COMMUNICATING SPEED MANAGEMENT PRACTICES: WORKSHOP FOR TXDOT PROJECT 5-7049-01

Workshop Objectives

The first objective of this workshop is to review and discuss practices for conducting speed zone studies and setting regulatory speed limits. This material focuses first on the Texas Department of Transportation's (TxDOT's) current practices as described in the *Procedures for Establishing Speed Zones* manual, and then on new directions described in national research and policy-making activities, including the National Cooperative Highway Research Program (NCHRP) Research Report 966 (*Posted Speed Limit Setting Procedure and Tool: User Guide*). Students will have an opportunity to analyze two sample roadway speed zones twice: first using the *Procedures for Establishing Speed Zones* methodology, and then using the spreadsheet-based NCHRP 17-76 Speed Limit Setting Tool that is documented in NCHRP Research Report 966. These sample problems will provide an opportunity for the students to discuss the issues and challenges with analyzing speed zones and setting regulatory speed limits.

The second objective of this workshop is to inform the students about the availability of resources that can help them communicate speed limit setting practices and treatments that can help them manage speed on roadways. The communication resources include informational videos developed for engineers and citizens, an informational pamphlet, and talking points and frequently asked questions material. These resources were developed in TxDOT Research Project 0-7049.

After attending this workshop, the students should be able to apply the two discussed methodologies for setting regulatory speed limits (*Procedures for Establishing Speed Zones* and NCHRP 17-76 Speed Limit Setting Tool) and explain the methodologies to interested practitioners or citizens.

Lesson Objectives

1. Speed Study Approach within Texas: Review the *Procedures for Establishing Speed Zones* methodology for setting regulatory speed limits and apply this methodology to sample roadway speed zones. Discuss issues and challenges with this methodology.
2. Recent National Activities: Summarize trends, activities, and policy directions regarding regulatory speed limits at the national level. Explain the speed limit setting methodology documented in NCHRP Project 17-76 and apply the methodology to sample roadway speed zones. Discuss and compare the results from applying the *Procedures for Establishing Speed Zones* and NCHRP Project 17-76 methodologies.
3. Operating Speed Trends: Discuss operating speed trends that were identified in TxDOT Research Project 0-7049, focusing on geometric and traffic control variables that influence operating speeds on rural highways, suburban arterials, and urban freeways. Discuss how these trends may affect the speed limit setting process.
4. Helpful Resources for Communicating Practices: Demonstrate videos and written materials that were developed in TxDOT Research Project 0-7049 to assist practitioners in explaining the regulatory speed zoning process. Summarize speed management practices and treatments used by TxDOT.

Practices for Setting Regulatory Speed Limits Workshop

Improving and Communicating Speed Management Practices
(5-7049)

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Welcome

- Course instructor
  - Name
  - Agency
- Participants
  - What agency do you work with?
  - What was your most recent conversation about speed (among agency staff or with the public?)

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Introduction and Scope

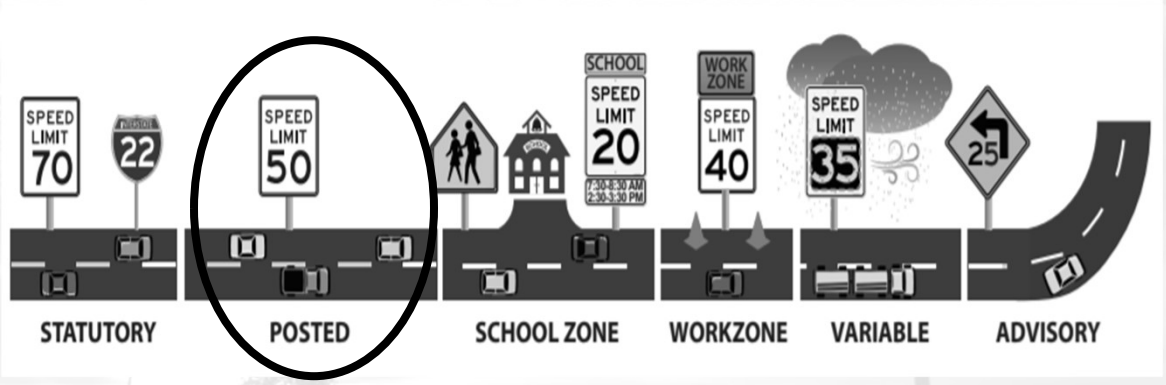
Objectives

- To present. . .
  - Current practices for setting posted regulatory speed limits (RSLs)
  - Deliverables from Project 0-7049
  - Findings from research done in 0-7049
- To demonstrate analysis tools for speed limits
- To discuss. . .
  - Current practices/possible changes
  - Findings from research project 0-7049

Agenda

1. Speed study approach within Texas
2. Recent national activities
3. Operating speed research from TxDOT Project 0-7049
4. Deliverables from TxDOT Project 0-7049
5. Closure

Regulatory Speed Limits (RSLs)



Source of graphic: FHWA "Speed Limit Basics" FHWA-SA-16-076

Speed Study Approach within Texas

Lesson One

Speed Study Approach within Texas

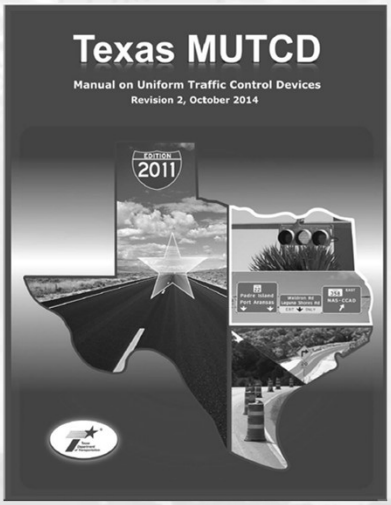
- Video
- Guidance documents
- Overview of process
- Sample problems

Engineer Video

- For engineers, technicians, and other practitioners
- Describes how to conduct a speed zone study in Texas
- Available from TxDOT's Traffic Safety Division

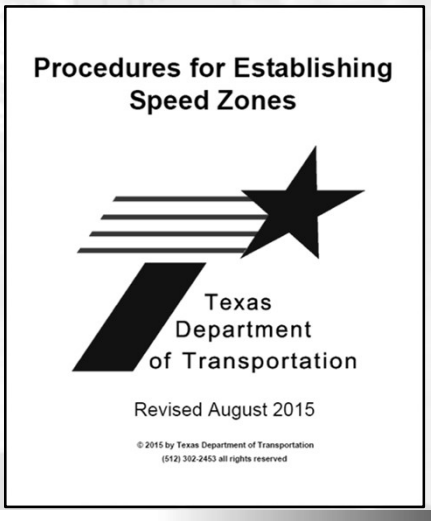
Existing Guidance

- Texas Manual on Uniform Traffic Control Devices (MUTCD)
  - Traffic study using 85th percentile speed of free-flowing traffic along with consideration of other factors



Existing Guidance

- Speed Zone Manual, Chapter 3: Speed Zone Studies
  - Determining the 85th percentile speed
  - Developing strip maps
  - Speed zone design
  - Rechecks of speed zones

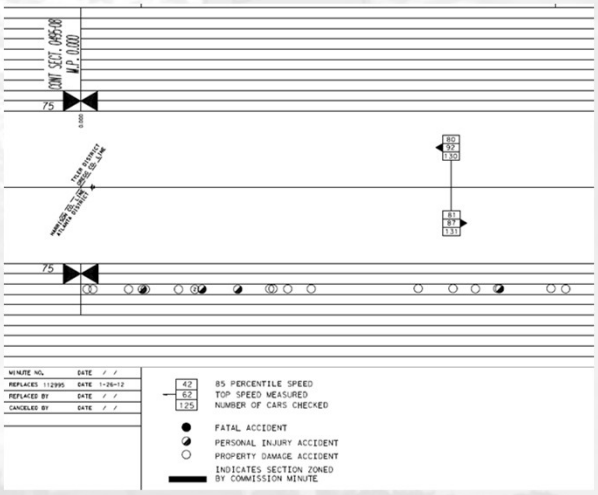


Determining the 85th Percentile Speed

- Measure at least 125 cars in each direction at each station
- Include only free-flowing cars
  - Lone vehicle or first vehicle in platoon
  - No passing or turning maneuvers
- Off-peak periods and ideal weather
- Identify speed check stations—"clean" locations not too close to signals and roadway features that may alter speeds
- Stop after 2 hours (radar) or 4 hours (classifier)

Developing Strip Maps

- Information for strip map
  - Speed zone limits
  - Cross streets
  - Town and city limits
  - School zones
  - Other features
  - Crash locations (if proposed speed limit differs from 85th percentile by ≥ 5 mph because of high crash experience)



Speed Zone Design

- Manual provides guidance for zone length, transitions, urban areas, and directional differences (rare)
- Site characteristics may justify deviating below the 85th percentile
  - Up to 10 mph based on characteristics alone
  - Up to 12 mph if crash rate > statewide average for similar sites
- Conduct trial run and identify sign locations for posting

Speed Zone Design

- Site characteristics to consider in addition to 85th percentile

Site characteristic	May post up to 10 mph below 85th percentile	May post up to 12 mph below 85th percentile (if crash rate > statewide average for similar sites)
Narrow pavement	✓	✓
Horizontal or vertical curves	✓	✓
High driveway density	✓	✓
Lack of shoulders	✓	✓
Crash history	✓	✓
Rural residential or developed areas	✓	
Hidden driveways, development	✓	
Location in Speed Zone Manual	pp. 3-19 – 3-20	p. 3-18

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Rechecks of Speed Zones

- Frequency
  - Urban: 3–5 years
  - Rural: 5–10 years
  - Also triggered by physical changes to the road, increased roadside development, or heavy increase in volumes
- Procedure
  - Conduct trial run or recheck of every third speed check station
  - Redo full study if recheck suggests need for change

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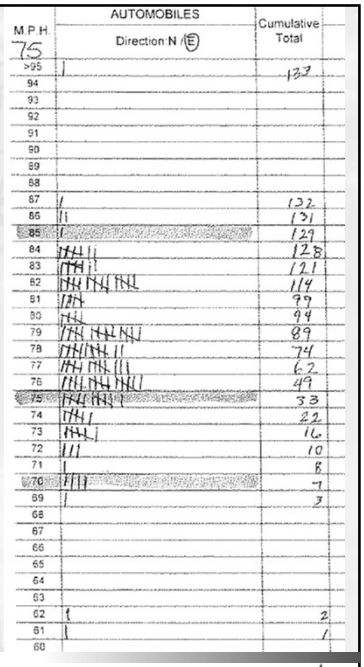
Sample Problem #1—Rural Freeway

- Speed Zone Manual procedure
  - Rural freeway segment.
  - Existing regulatory speed limit = 75 mph.
  - Previous speed zone study was 5 years ago.
  - No concerns with adverse site conditions or crash history.
  - What is the appropriate regulatory speed limit?

Sample Problem #1

- Speed Zone Manual procedure
  - Conduct new speed zone study
  - Measured 133 free-flow cars
  - 85% of 133 cars = 113th car
  - 85th percentile speed = 82 mph
  - Statutory maximum = 75 mph (this site)
  - Regulatory speed limit = <u>75 mph</u>



M.P.H. 75	AUTOMOBILES Direction N (E)	Cumulative Total
>95	1	133
94		
93		
92		
91		
90		
89		
88		
87	1	132
86	11	131
85	1	129
84	𝍸 11	128
83	𝍸 11	121
82	𝍸 𝍸 𝍸	114
81	𝍸	99
80	𝍸	94
79	𝍸 𝍸 𝍸	89
78	𝍸 𝍸 11	74
77	𝍸 𝍸 111	62
76	𝍸 𝍸 𝍸	49
75	𝍸 𝍸	33
74	𝍸 1	22
73	𝍸 1	16
72	111	10
71	1	8
70	1111	7
69	1	3
68		
67		
66		
65		
64		
63		
62	1	2
61	1	1
60		

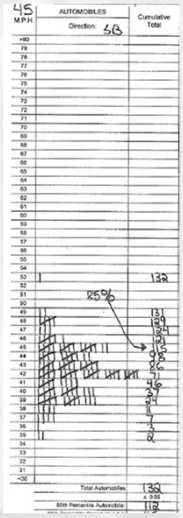
Sample Problem #2—Suburban Arterial

- Rural two-lane highway evolving to suburban minor arterial
- Relatively rapid development
- On approach into mid-size city (also growing)
- Site studied roughly every 5 years

Sample Problem #2—Changing Conditions

2004

2018



Sample Problem #2—Results

- 2004
  - 85th percentile speed: 50 mph
  - Virtually no shoulder
  - RSL: 45 mph
- 2018
  - 85th percentile speed: 45 mph
  - Two-way left turn lane (TWLTL) added, but narrow/no shoulder condition remains
  - Driveway/cross street density effectively doubled
  - Crash concerns
  - City limits now at this location
  - RSL: 35 mph

Questions?

Recent National Activities

Lesson Two

Trends and Recent Activity

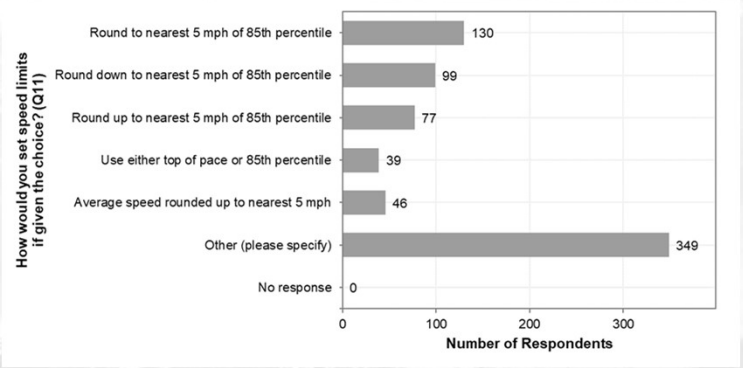
- **NACTO 2017**: "State rules or laws that set speed limits at the 85th percentile speed should be repealed"
- **National Transportation Safety Board's** publication (*Reducing Speeding-Related Crashes Involving Passenger Vehicles*) provides specific recommendations, such as removing the guidance in the MUTCD that speed limits should be within 5 mph of the 85th percentile speed
- Several state initiatives

Other Approaches to Setting Speed Limits

- Citywide or default speed limits
  - Set by government action
  - 25 mph default speed limit citywide: Boston, New York City (NYC), Seattle, Austin
  - 20 mph residential streets: Portland, Oregon
- Slow zones
  - Corridors/regions with lower speed limits than surrounding areas
  - NYC: speed limits decreased from 25 to 20 mph

National Committee on Uniform Traffic Control Devices (NCUTCD) Survey

- How would you set speed limits if given the choice?



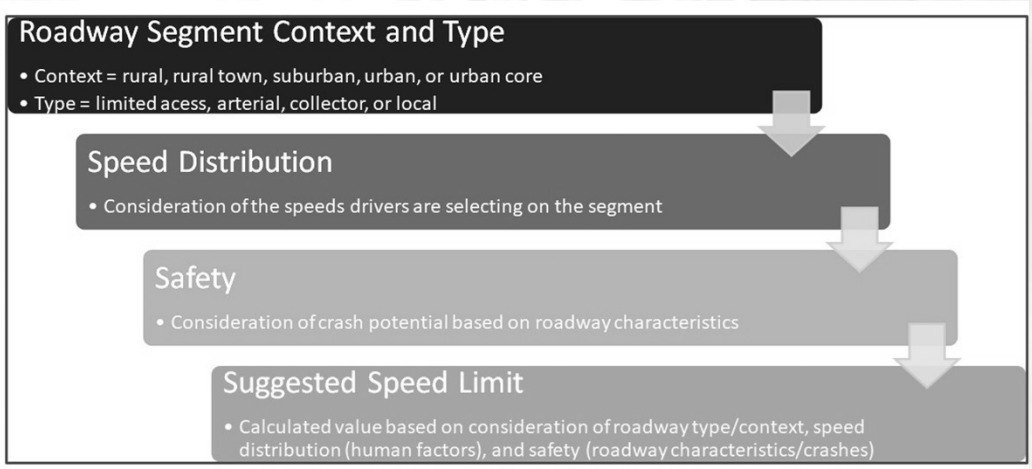
NCUTCD Task Force on Speed Limits

- NCUTCD Task Force made recommendations to revise the MUTCD
- 11th Edition of the MUTCD (see pages 84–86)
  - Revised list of factors
  - Additional guidance regarding 85th percentile speed

National Cooperative Highway Research Program (NCHRP) Project 17-76

- Objectives
  - Identify and describe factors that influence operating speed
  - Provide guidance to make informed decisions related to establishing speed limits on roadways
- Results
  - Decision rules for setting regulatory speed limits
  - Developed: spreadsheet tool and NCHRP Report 966 (User Guide)
    - Available at: https://www.trb.org/Main/Blurbs/182038.aspx

NCHRP Project 17-76



NCHRP Project 17-76

Type \ Context	Rural	Rural Town	Suburban	Urban	Urban Core
Freeway	Limited Access	Limited Access	Limited Access	Limited Access	Limited Access
Principal Arterial	Undeveloped	Developed	Developed	Developed	Full Access
Minor Arterial	Undeveloped	Developed	Developed	Developed	Full Access
Collector	Undeveloped	Full Access	Developed	Full Access	Full Access
Local	Undeveloped	Full Access	Full Access	Full Access	Full Access

NCHRP Project 17-76

Speed Limit Setting Group	Basis for Limit	Roadway Conditions
• Limited access • Undeveloped • Developed	Closest 85th	Good
	Rounded-down 85th	Some non-ideal elements
	Closest 50th	Not favorable to all users and/or crashes are a significant concern
• Full access (typically ≤ 30 mph)	Closest 50th	Good
	Rounded-down 50th	Not favorable to all users and/or crashes are a significant concern

Sample Problem #3—Freeway

- NCHRP 17-76 spreadsheet tool
  - Statutory maximum = 75 mph (this site)
  - 85th percentile speed = 82 mph
  - 50th percentile speed = 78 mph
  - 8-mile rural segment, 4 lanes, design speed = 70 mph
  - 4 interchanges
  - Volume = 32,000 veh/d, trucks = 100 trk/hr
  - Grade = 1%, shoulder width = 11 ft (outside) and 3 ft (inside)
  - No crash data available

Sample Problem #3—NCHRP 17-76 Tool

- NCHRP 17-76 spreadsheet tool—enter data

Speed Data		Advisory, Calculated, or Warning Messages
75	Maximum speed limit (mph)	
82	85th-percentile speed (mph)	
78	50th-percentile speed (mph)	

Site Characteristics		Advisory, Calculated, or Warning Messages
8	Segment length (mi)	
32,000	AADT (two-way total) (veh/d)	
4	Number of lanes (two-way total)	
100	Directional design-hour truck volume (trk/hr)	
4	Number of interchanges	2 miles between interchanges
≥ 60 mph	Design speed (mph)	
1	Grade (%)	
11	Outside shoulder width (ft)	
3	Inside shoulder width (ft)	Rounded-Down 85th
No	Adverse alignment present?	

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Sample Problem #3—NCHRP 17-76 Tool

- NCHRP 17-76 spreadsheet tool—results

Analysis Results		Advisory, Calculated, or Warning Messages
Speed limit setting group	Limited access	
Suggested speed limit (mph)	**75**	This value is determined by the maximum speed limit.

Speed Data		Advisory, Calculated, or Warning Messages
75	Maximum speed limit (mph)	
82	85th-percentile speed (mph)	
78	50th-percentile speed (mph)	

Site Characteristics		Advisory, Calculated, or Warning Messages
8	Segment length (mi)	
32,000	AADT (two-way total) (veh/d)	
4	Number of lanes (two-way total)	
100	Directional design-hour truck volume (trk/hr)	
4	Number of interchanges	2 miles between interchanges
≥ 60 mph	Design speed (mph)	
1	Grade (%)	
11	Outside shoulder width (ft)	
3	Inside shoulder width (ft)	Rounded-Down 85th
No	Adverse alignment present?	

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Sample Problem #3—Results

- NCHRP 17-76 spreadsheet tool—discussion
  - In this case, closest 50th, rounded-down 85th, and closest 85th all round to the same value (80 mph)
  - One non-ideal attribute identified
    - 3 ft inside shoulder width → rounded-down 85th
    - Need 4 ft inside shoulder for closest 85th
  - Statutory maximum = 75 mph (this site)
  - Regulatory speed limit = 75 mph

Sample Problem #4—Suburban Arterial

- NCHRP 17-76 spreadsheet tool
  - Statutory maximum = 55 mph (this site)
  - 85th percentile speed = 45 mph
  - 50th percentile speed = 42 mph
  - 2-mile suburban segment, 2 lanes + TWLTL, two-way operation
  - 3 signals, 6 access points (driveways + unsignalized intersections)
  - Not-high bicyclist activity, some pedestrian activity, narrow sidewalks, no sidewalk buffer, no on-street parking
  - 3 years of crash data, annual average daily traffic = 10,000 veh/d, 45 KABCO crashes, 23 KABC crashes

Sample Problem #4—NCHRP 17-76 Tool

- NCHRP 17-76 spreadsheet tool—enter speed and site data

Speed Data		Advisory, Calculated, or Warning Messages
55	Maximum speed limit (mph)	
45	85th-percentile speed (mph)	
42	50th-percentile speed (mph)	

Site Characteristics		Advisory, Calculated, or Warning Messages
2	Segment length (mi)	
2	Number of lanes (two-way total)	
TWLTL	Median type	
3	Number of traffic signals	1.5 signals / mi
6	Number of access points (total of both directions)	3 access points / mi
Not high / Any type	Bicyclist activity / bike lane type	
Narrow	Sidewalk presence / width	
Not present	Sidewalk buffer	
Some	Pedestrian activity	Closest 50th
Not high	On-street parking activity	
No	Parallel parking permitted?	
No	Angle parking present?	
No	Adverse alignment present?	

Sample Problem #4—NCHRP 17-76 Tool

- NCHRP 17-76 spreadsheet tool—enter crash data

Crash Data			Advisory, Calculated, or Warning Messages
3	Number of years of crash data		
10,000	Average AADT for crash data period (veh/d)		
45	All (KABCO) crashes for crash data period		Observed KABCO crash rate = 205.5 crashes / 100 MVMT
23	Fatal & injury (KABC) crashes for crash data period		Observed KABC crash rate = 105 crashes / 100 MVMT
	Average KABCO crash rate (crashes / 100 MVMT)		TxDOT 2019 average KABCO crash rate = 212.7 crashes / 100 MVMT
	Average KABC crash rate (crashes / 100 MVMT)		TxDOT 2019 average KABC crash rate = 78.3 crashes / 100 MVMT
	1.3 x average KABCO crash rate (crashes / 100 MVMT)	276.5	
	1.3 x average KABC crash rate (crashes / 100 MVMT)	101.7	Rounded-Down 85th
	Critical KABCO crash rate (crashes / 100 MVMT)	266.3	
	Critical KABC crash rate (crashes / 100 MVMT)	111.6	

Sample Problem #4—NCHRP 17-76 Tool

- NCHRP 17-76 spreadsheet tool—results

Analysis Results		Advisory, Calculated, or Warning Messages
Speed limit setting group	Developed	
Suggested speed limit (mph)	40	This value is determined by speed data, site characteristics, & crash data.

Sample Problem #4—Results

- NCHRP 17-76 spreadsheet tool—discussion
  - Two non-ideal attributes identified
    - KABC crash rate more than 1.3x average rate → rounded-down 85th
    - Pedestrian activity with narrow sidewalks and no buffers → closest 50th
  - 50th percentile = 42 mph
  - Closest 50th percentile = 40 mph
  - Regulatory speed limit = 40 mph

Key Findings from NCHRP 17-76

- Expand the factors considered to set regulatory speed limits
  - Roadway type/context
  - Speed distribution (not just 85th percentile)
  - Consider needs of vulnerable road users, especially in urban or suburban areas
- Provide a spreadsheet tool to calculate suggested speed limit
- Provide a user guide on speed limits (NCHRP Report 966)
  - Available at: https://www.trb.org/Main/Blurbs/182038.aspx

Questions?

Operating Speed Research TxDOT Project 0-7049

Lesson Three

Operating Speed Relationships

- Rural highways
  - Typical
- Urban/suburban city streets
  - Typical
- Freeways
  - Typical
  - Raising RSL
  - Lowering RSL

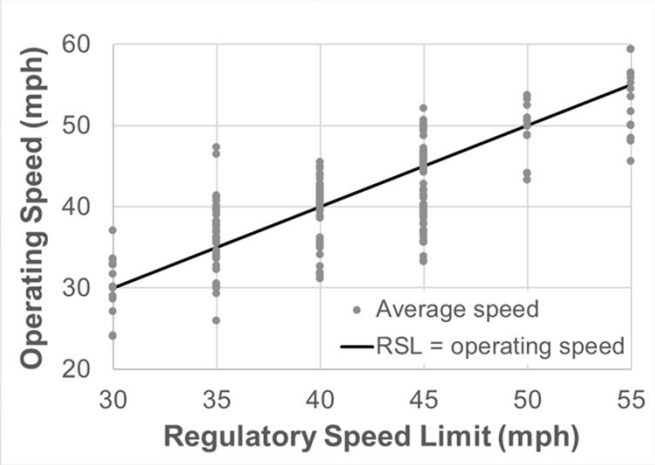
High-Speed Rural Highways Literature Review

Road Factor	Change	Operating Speed
Posted regulatory speed limit	Increase	Increase
Horizontal curve radius	Decrease	Decrease
Access density	Increase	Decrease
Number of travel lanes/roadbed width	Increase	Increase
Lane width	Increase	Increase
Median width	Increase	Increase
Shoulder width	Increase	Increase
Vehicle type (passenger car)	Trucks	Decrease
Natural light condition (daytime)	Nighttime	Lower

Urban/Suburban City Streets Literature Review

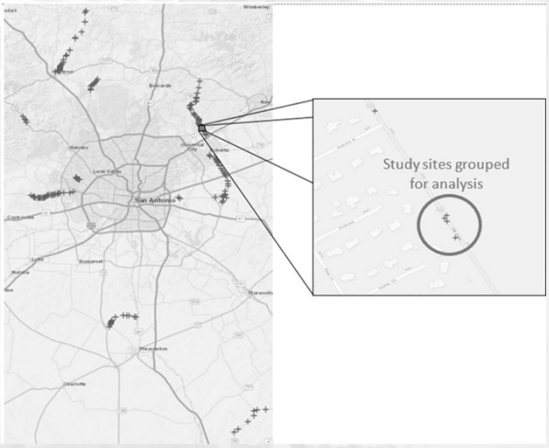
Road Factor	Change	Operating Speed
Posted regulatory speed limit	Increase	Increase
Access density	Increase	Decrease
Signal density	Increase	Decrease
Sidewalk (present)	Not present	Higher
Curb and gutter (present)	Shoulder	Higher
Shoulder width	Increase	Increase
Volume	Increase	Decrease
On-street parking (not present)	Present	Lower
Roadside more complex (more street furniture, development, etc.)	Increase	Decrease
Cross section (number of lanes, median)	Wider	Higher

Urban/Suburban City Streets Literature Review



Rural Highway/Suburban Arterial—0-7049, Relationships with Operating Speed

- San Antonio data sources
  - TxDOT speed zone survey tally sheets (1998–2020)
  - Speed data from road tubes (2021)
  - Geometry and traffic control data from online photo sources (year of study)
- Data collected multiple times at several locations
- Nearby locations grouped



Rural Highway/Suburban Arterial—0-7049, Relationships with Operating Speed

- Sites subdivided into three development levels
- Analyze trends by development levels
- Analyze trends over the years for grouped sites

RSL (year of study)	Rural	Exurban	Suburban	Grand Total
35	0	0	19	19
40	0	4	7	11
45	0	29	30	59
50	2	16	10	28
55	37	45	32	114
60	77	38	10	125
65	7	2	0	9
70	18	0	0	18
Grand Total	141	134	108	383

Rural Highway/Suburban Arterial—0-7049, Relationships with Operating Speed

- Typical
  - RSL (higher limits, higher speeds)
  - Outside shoulder width (wider shoulders, higher speeds)
  - Roadbed width (wider roadbed, higher speeds)
- Some findings limited due to database (e.g., not enough horizontal curve variability for rural dataset)

Rural	Exurban	Suburban
• Speed limit • Shoulder width • Roadbed width	• Speed limit • Horizontal curve present • Access density • Signal density • Shoulder width • Roadbed width	• Speed limit • Cross section • Access density • Sidewalk presence • Shoulder or curb and gutter • Shoulder width • % trucks • Vehicle volume

Rural Highway/Suburban Arterial—0-7049, Operating Speed Changing Over Time?

- Speed reductions observed when development increased between studies
  - Rural → exurban (24 pairs)
  - Exurban → suburban (16 pairs)
- Overall, nominal speed reductions observed at sites where development did not change between studies (99 pairs)
  - Change in RSL: 4 sites increased 5 mph; 69 sites no change; 26 sites decreased by 5, 10, or 15 mph

Freeways Literature Review

Road Factor	Change	Operating Speed
Posted speed limit	Increase	Increase
Lane width	Increase	Increase
Volume	Increase	Decrease
Shoulder width, right	Increase	Increase
Shoulder width, left	Increase	Increase
Natural light condition (daytime)	Nighttime with roadside lighting	Lower
Day of week (weekday)	Weekend	Higher
Median width (minimal influence)	Increase	Increase
Ramp density	Increase	Decrease

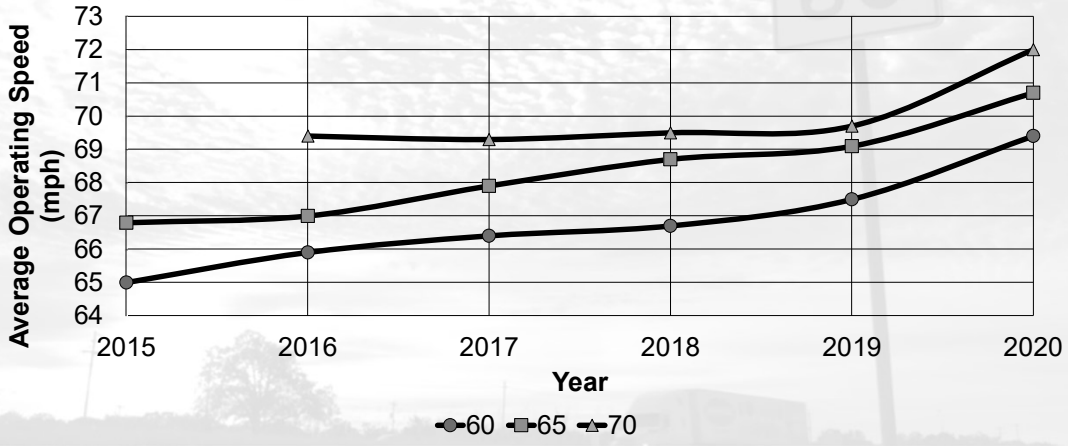
Urban Freeways—0-7049 Fort Worth Typical Speeds

- Freeway data sources
  - Fort Worth freeways
  - Speed data from radar sensors
  - Geometry from aerial photos
  - Light conditions from almanac
  - Weather data from weather.gov
  - Incident data from traffic management center

Urban Freeways—0-7049 Fort Worth Typical Speeds Database

- 268 freeway links
  - 2–4 general-purpose lanes
  - No managed lanes
  - No left-side ramps
  - RSL = 60–70 mph
- Speed data for May 2015, 2016, 2017, 2018, 2019; April 2020
  - 5-minute time slices
- Screened to exclude:
  - Precipitation
  - Incidents
  - Speeds < 53 mph or > 90 mph
  - High vehicle count/congestion
  - Dusk, night, or dawn time periods
- Binned to 15-minute time slices
  - To manage database size
  - Almost 900,000 observations

Urban Freeway—0-7049, Change in Operating Speed Over Time (2020 an Anomaly?)

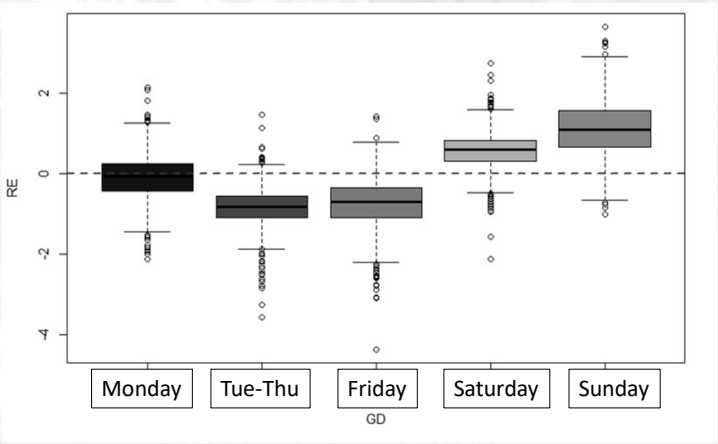


Urban Freeway—0-7049, Relationships with Operating Speed

- Fixed factors leading to higher operating speeds
  - Increasing **speed limit**
  - Increasing **shoulder widths** (left and right sides)
  - Increasing **distance** from sensor to upstream and downstream entrance and exit **ramps** (on right side)
- Fixed factors leading to lower operating speeds
  - Increasing **traffic volume**

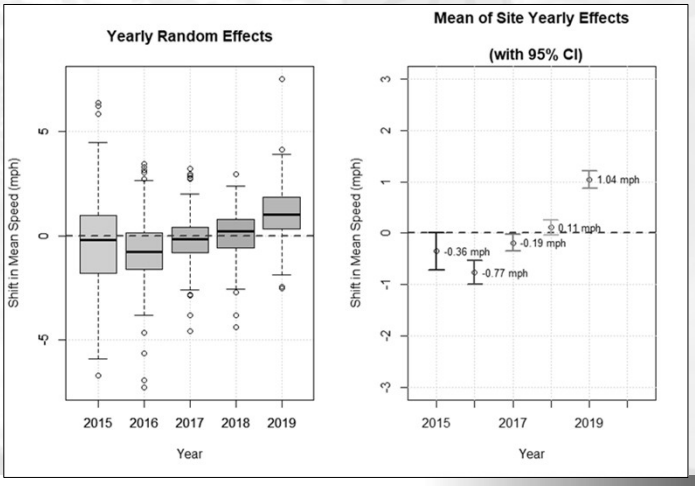
Urban Freeway—0-7049, Relationships with Operating Speed (cont'd)

- Random factor affecting speeds—day of week



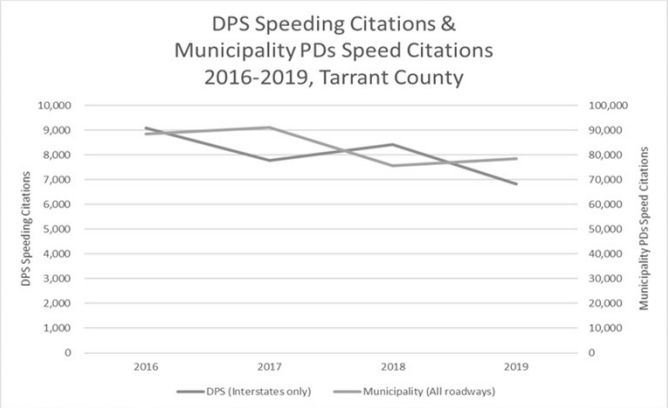
Urban Freeway—0-7049, Relationships with Operating Speed (cont'd)

- Mean operating speed increased by about 1 mph between 2015 and 2019
  - Statistically significant.
  - Practically significant?



Urban Freeway—0-7049, Why Speeds Increasing?

- Enforcement changes (decreased enforcement in same period)
- Other ideas (but no support): fuel prices, location within system, consumer price index

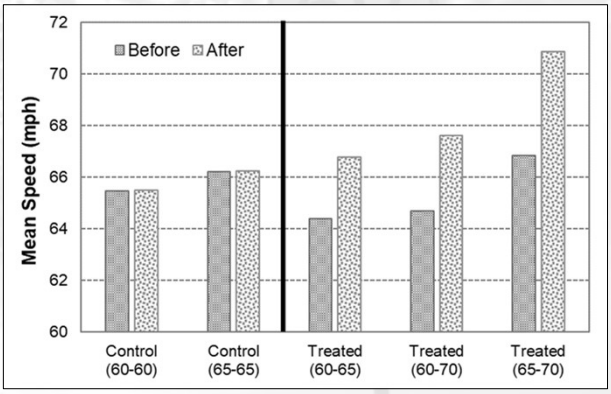


Raising RSL on Freeways Literature Review

- Utah, 2017 and 2009, 75 to 80 mph
  - Average speeds increased between 2 and 3 mph
- Iowa, 2009, 65 to 70 mph
  - Mean speed increase about 2 mph
- Texas, 2006, 75 to 80 mph
  - PC speed up 4 mph on I-10 and 9 mph on I-20
- Repeal National Maximum Speed Limit (55 to 65 mph)
  - Mean speed increase about 4 mph or less for 10 mph RSL increase

Raising RSL on Urban Freeways, 0-7049 Environmental Speed Limits, 2015 to 2016

- 155,613 15-minute time periods included in analysis
- Speed change for control groups nominal
- This study: between 2–4 mph for 5 or 10 mph increase in RSL



Lowering RSL on Freeways Literature Review

- Few studies
- 1984 study
  - Lower limits decrease operating speed, although driver speed compliance gradually erodes
- 2016 study
  - When RSL decreased, operating speed decreased a “moderate” amount

Questions?

Texas A&M Transportation Institute

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Texas Department of Transportation

Helpful Resources for Communicating Practices

Lesson Four

Texas A&M Transportation Institute

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Texas Department of Transportation

Deliverables from TxDOT Project 0-7049

- Engineer video (shown earlier)
- Citizen video
- Pamphlet
- FAQs/talking point
- Operating speed relationships
- Speed management implementation experiences

Citizen Video

- For the general public
- Describes how regulatory speed limits are set
- Available from TxDOT's Traffic Safety Division
- Viewable online:
  - English: https://youtu.be/9bCaHSRDUpc
  - Spanish: https://youtu.be/8uD9HglDLQA

Pamphlet

- See handout
- *Discussion*

FAQ/Talking Points

- See handout
- *Discussion*

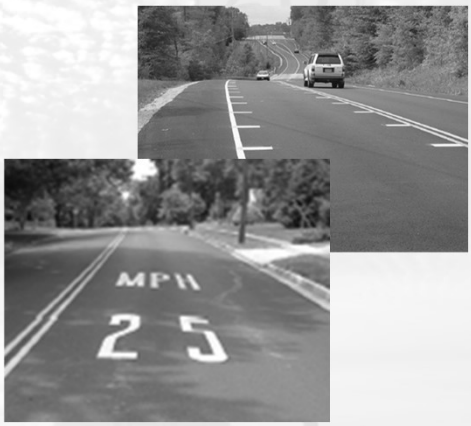
Key Questions
1. Who sets speed limits in Texas?
2. How are speed limits set in Texas?
3. What is the maximum speed limit in Texas and has it changed over the years?
4. Why do we use 85th percentile speed as part of setting speed limits?
5. How are roadway users considered when setting speed limits?
6. Why can you not post a speed limit based on an opinion of what is good for a road?
7. Is the 85th percentile speed appropriate for all conditions?
8. How effective is a lower posted speed limit in lowering operating speed?
9. How much does speed increase after raising the posted speed limit?
10. What affects operating speed?
11. What is the safety relationship between posted speed limit and crashes?
12. What reference materials are available to help with posted speed limits?

Speed Management—Feedback Signs

- Used sparingly for improved effectiveness
- Often deployed on portable trailers
- Must be maintained
- May indicate a need for enforcement
- More commonly used by cities than TxDOT
- Most effective on a rotating basis (especially coupled with enforcement)

Speed Management—Pavement Markings and Devices

- Transverse rumble strips
- Optical speed bars
- Speed markings (curve or school zones, but not used for speed management)



Speed Management—Signing Enhancements

- Speed limit signs with red borders
- Oversized speed limit signs
- Flags (to show a recent change)
- Speed reduction and speed step-down signing approaching rural towns
- Gateway monuments

Speed Management—Geometric Treatments

- Reduced lane widths (in urban areas or near schools)
- Islands or raised medians
- Curb delineators
- Cross-section conversion to 2 lanes + TWLTL (usually in urban areas)

Speed Management—Current Practices

Speed Management Devices	Change in Speed Limit	Speed Transition Zones in Rural Areas	Rural Highway Speed Management	Suburban Roadway Speed Management	Urban Roadway Speed Management	Collector Roadway Speed Management	Neighborhood Speed Management
Signing Enhancements—Oversize	1	1	1	1	1		
Signing Enhancements—Red Border[a]	1	1					
Speed Feedback Signs[b]			2	2	2	1	
Gateway Treatments[c]		2					
Transverse Rumble Strips[d]	2	3					
Raised Medians/Islands[e]				3	3	2	
Traffic Calming (e.g., speed humps/tables)							1
Reduced Lane Width[f]				3	3	2	
Road Diet (e.g., changing cross section)					4	2	
Signal Timing				4	5		
Speed Zone Pavement Markings (w/ legends)[g]							
Optical Speed Bars							

1–5 in table show most common TxDOT implementation order

[a] Usually applied to the first reduced speed sign approaching a speed limit change area or rural community
[b] Most effective deployment mode is with speed trailers for several weeks at a time, on a rotating schedule. Coordination with law enforcement substantially increases effectiveness
[c] Longer implementation timeline and requires coordination with municipality; TxDOT 2015 guidelines
[d] Presents significant noise concern in corridors with residential development
[e] Usually applied for access management and requires capital funds expenditure (longer implementation timeline)
[f] Limited applicability on roadways with bus routes
[g] Applied on curve approaches and for school zones, but not for general speed management
□ – Not a typical TxDOT speed management device or practice; usually applied by municipalities
▯ – Not a typical TxDOT speed management device; rare application of speed bars at high-speed curves

Sample Problem #5—Suburban Arterial

- If speed concerns remain at this suburban site, the following treatments can be used (numbers map to table in previous slide):
  - 1—Signing Enhancements–Oversize
  - 2—Speed Feedback Signs
  - 3—Raised Medians/Islands
  - 3—Reduced Lane Width
  - 4—Signal Timing
- What does our group recommend?

Closure

- Final questions?

Adjourn

- Please fill out the evaluation form.
- Thank you for your time!

FREQUENTLY ASKED QUESTIONS ABOUT REGULATORY SPEED LIMITS

The following are questions frequently asked regarding regulatory speed limits. The answers were developed based on information in the literature along with research team knowledge regarding speed limits. These questions reflect regulatory speed limits and may not apply to work zones, advisory speeds, school zones, and other types of speed limits.

WHO SETS SPEED LIMITS IN TEXAS?

State law—the Texas Transportation Code (the "Code")—establishes the framework for speed management in the State of Texas. The Code generally establishes maximum speed limits based on the type of road and driving environment:

- Urban district or street: 30 mph.
- Alley, beach, or roads adjacent to beaches: 15 mph.
- Numbered state or federal highway outside urban district: 70 mph.
- Non-numbered highways outside urban district: 60 mph.

Exceptions are allowed for speeds greater than 70 mph on select numbered state or federal highways where the Texas Transportation Commission (TTC) deems it reasonable and safe to do so, including speed limits of up to 85 mph on roadways designed for this speed. Within this framework, the posted speed limit is determined by the responsible agency of the road or highway. Speed limits on city streets are managed by the municipal transportation department and established by municipal ordinance. Speed limits on county roads are managed by the county transportation department and established by county commissioners court minute order.

Speed limits on state and federal highways are managed by the Texas Department of Transportation (TxDOT). Speed studies—a type of engineering study—are performed on all state and federal routes on a regular basis and when requested by the public. The process for studying—and potentially changing—a speed limit is shown in the flowchart in Figure 1. If it is determined that a speed limit change is justified, the roadway's location determines the legal steps for adopting the revised speed limit. Outside municipal boundaries, speed limits are

established by TTC minute order. For portions of state highways passing through a municipality, the speed limit is established by municipal ordinance.

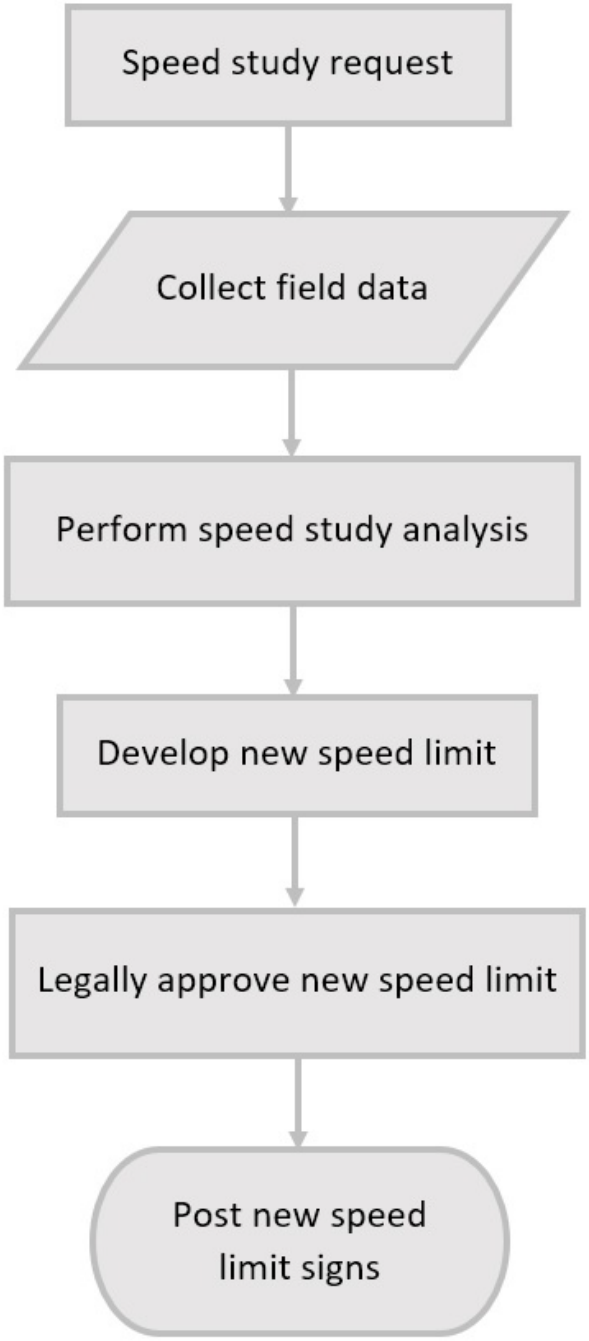


Figure 1. Setting Speed Limit Process.

HOW ARE SPEED LIMITS SET IN TEXAS?

Speed limits in Texas are based on the statutory speed limits outlined in the Code and evaluated by procedures established by TxDOT. The Texas Administrative Code (TAC) requires that speed limits be based on the 85th percentile speed, a value calculated from speed data based on typical engineering practice and that which defines a boundary for excessive speeds. As part of a speed study, the resulting suggested speed limit starts at the 85th percentile speed value and is then adjusted for the design and physical factors that can influence safe operating speeds, including:

- Horizontal and vertical curves.
- Hidden driveways and other roadside developments.
- High driveway density.
- Rural residential or developed areas.
- Lack of striped, improved shoulders.

After all such factors are considered in the speed study, an engineering recommendation is made on whether a speed limit change is necessary. If a change is recommended for a state or federal highway, the revised limit is reviewed by TxDOT staff for consistency in statewide practice and prepared for adoption by either TTC minute order (outside of municipal boundaries) or municipal ordinance (inside of municipal boundaries).

WHAT IS THE MAXIMUM SPEED LIMIT IN TEXAS AND HAS IT CHANGED OVER THE YEARS?

The statutory maximum speed limit in Texas is 75 mph on most roadways on the state highway system, 80 mph on parts of IH 10 and IH 20 in rural west Texas, and up to 85 mph on certain highways that are designed to accommodate travel at the established speed (State Highway 130 is currently the only roadway in this category).

The statutory maximum speed limit for the state highway system was 70 mph in daytime and 65 mph at night until a series of legislative changes occurred starting in 2006. Such changes were made to recognize different conditions on some types of roadways that could justify the posting of higher regulatory speed limits and included:

- 1974: National Maximum Speed Limit (NMSL) Law restricted the maximum permissible vehicle speed limit to 55 mph on all interstate roads in the United States.
- 1995: NMSL repealed.
- 2000: Environmental speed limits implemented in several Texas regions as a method to improve air quality.
- 2003: No new environmental speed limits to be implemented.
- 2006: Rural interstate highways and some other rural highways in sparsely populated counties could be signed as high as 80 mph and 75 mph, respectively.
- 2011: All highways on the state highway system could be signed as high as 75 mph. In addition, the night and truck speed limits were repealed.
- 2012: Highways that were built to exceptionally high design standards and could accommodate travel at higher speeds could be signed up to 85 mph.

WHY DO WE USE 85TH PERCENTILE SPEED AS PART OF SETTING SPEED LIMITS?

The 85th percentile speed has been used as a rule of thumb for setting regulatory speed limits since the 1930s. The concept is based on the principles that most drivers are reasonable and prudent, desire to avoid a crash, and desire to arrive at their destination in the shortest possible time. Historical speed studies have shown that cumulative speed distribution curves often bend at speeds slightly above the 85th percentile, such that there are a small number of notably fast vehicles above this value that are assumed to be driving above a reasonable speed. Using the 85th percentile results in speed limits that are credible to the public and avoids criminalizing too large a proportion of the driving population.

HOW ARE ROADWAY USERS CONSIDERED WHEN SETTING SPEED LIMITS?

The driver often plays a key role in the speed limit setting process since the speeds used toward establishing speed limits are typically measured when traffic is flowing freely. During free-flow conditions, drivers select speeds that they believe optimize the tradeoffs between travel time and risk. Basing the speed limit on the 85th percentile indicates a belief that drivers are pretty good at assessing these tradeoffs and their judgment is trustworthy in establishing a level where drivers who exceed that speed may be cited by law enforcement. While that may be so,

additional conditions could exist that do not influence the 85th percentile speed but contribute to crashes. A posted speed limit that is lower than the 85th percentile speed could help to minimize the consequences of those conditions. In addition, the desire to provide roadway corridors that encourage active transportation should be associated with appropriate posted speed limits that consider the safety and mobility needs of pedestrians and bicyclists.

WHY CAN YOU NOT POST A SPEED LIMIT BASED ON AN OPINION OF WHAT IS GOOD FOR A ROAD?

If the speed limit value decision is not based on objective data or accompanied by needed enforcement, education, or infrastructure changes, then target travel speeds may not be achieved. Drivers usually select their operating speed based on their perception of the driving environment and their own needs and preferences rather than actively considering other road users' needs and perspectives.

IS THE 85TH PERCENTILE SPEED APPROPRIATE FOR ALL CONDITIONS?

While the 85th percentile speed is an essential starting point for setting regulatory speed limits, it is not sufficient to account for all site conditions and all roadway users. The 85th percentile speed concept implicitly assumes that drivers are aware of roadway hazards that require them to reduce their speed. This assumption is questionable in some conditions, particularly on roadways with frequent curves or driveways or notable numbers of pedestrians and bicyclists (such as urban streets). Hence, it is necessary to examine and document site conditions and the frequency of vulnerable road users when conducting a speed zone study and adjust the speed limit as needed to account for these conditions. If the speed limit is adjusted notably down from the 85th percentile, it is important to provide education and enforcement to ensure credibility and compliance.

HOW EFFECTIVE IS A LOWER POSTED SPEED LIMIT IN LOWERING OPERATING SPEED?

There is evidence that in some locations a reduction in the posted speed limit will be accompanied by a reduction in average operating speed. This reduction, if present, will not be in the same magnitude as the reduction in posted speed limit. Research has shown that the reduction is 1 mph or less compared to a 5-mph speed limit drop.

HOW MUCH DOES SPEED INCREASE AFTER RAISING THE POSTED SPEED LIMIT?

In one of the most extensive studies in this area, speed limits were changed at 100 sites along non-limited-access highways where the speed limits were either raised or lowered, and speed limits were not changed at 83 control sites. The difference in operating speed at the treated sites after these changes was typically less than 1.5 mph on average. Other research projects have also found that speed limit increases tend to result in increased vehicle speeds, but average speed increases were generally less than half the amount of the actual speed limit increase. The magnitude of the change in operating speed when there is an increase (or decrease) in posted speed is typically only a fraction of the amount of the actual speed limit change. For undivided high-speed rural roadways, mean speeds are generally 3 to 5 mph higher for every 10-mph increase in speed limit above 55 mph, with smaller increases at higher speed limits. In summary, while the research findings indicate a change in the speed limit sign can affect operating speeds, it is not as influential as the magnitude of the speed limit value change.

WHAT AFFECTS OPERATING SPEED?

Numerous factors influence the speed selected by a driver, with the amount of influence varying depending on conditions present. For example, a parent may be driving faster when going to pick up a child from day care to avoid late fees compared to when that parent is returning home after a Saturday morning soccer game.

Research has provided insights, in general, into factors that are associated with higher or lower operating speeds. Factors not related to the design of the road that can influence operating speed include natural light level (day or night), weather (i.e., rain, snow), day of the week, and driver characteristics such as age and gender.

On urban and suburban city streets, operating speeds are lower with a greater number of access points (e.g., driveways or minor streets), signals, horizontal curves, and features associated with urban development such as street furniture. On rural high-speed highways, operating speeds are lower on horizontal curves with small radii and higher access density. Higher operating speeds are associated with more travel lanes, wider lane widths, wider median widths, and wider shoulders. For freeways, increases in the number of vehicles will result in lower operating speeds as expected; however, even when the freeway is considered to be in free-

flow conditions, the number of vehicles appears to affect operating speed in addition to the number of lanes and lane and shoulder width. For any roadway type and within any roadway context, higher posted speed limits are associated with higher operating speeds, as to be expected.

WHAT IS THE SAFETY RELATIONSHIP BETWEEN POSTED SPEED LIMITS AND CRASHES?

The speed-crash relationship is often confounded by many other factors (road characteristics, weather, etc.), and as a result the estimated relationship has not been consistent across different research studies. In most studies, speed variation was found to have an adverse effect on safety. The findings on the relationship between average speed (or 85th percentile speed) and crashes have had conflicting results. For example, a negative relationship between average speed and crash frequency/rates was found by some studies, while a positive relationship was found by other studies. Confounding factors have often been cited as possible reasons for such a disputable relationship. The speed-crash relationship cannot be appropriately established without considering the corresponding contexts (such as roadway type, roadway geometry, traffic, etc.), which may confound the relationship between speeds and crashes if not considered. In addition, how different factors interact must be studied.

A recent study (*1*) using city streets found crashes were lowest when the posted speed limit was within 5 mph of the average operating speed. The presence of a median or curb is associated with less crashes, while the number of signalized intersections, traffic volume, and segment length were correlated with more crashes. Another important implication from that research was the confirmation of the relation between the speed variability and crash occurrence for city streets. Increased crash occurrence was observed with larger speed variability. Larger spread/variability in operating speed is indicative of reduced smoothness in operations and higher potential for speed differentials. Another possible explanation is that the associations found could indicate that sites with more speed variability tend to be those with mixed visual cues or prone to ambiguous contextual situations (e.g., wide streets in a residential setting). These mixed visual cues may result in different drivers choosing different speeds, and perhaps by doing so a large proportion of the driving population could be more likely to exceed roadway conditions and thus increase their risk of crashing.

For high-speed highways or freeways, maximum speed limit changes have corresponded to an increase in crashes in some research studies. Speed trends appear to vary by geographic regions and may be influenced by societal factors such as driver age, population density, unemployment rate, median family income, speeding enforcement, and similar factors. Speed variability has been linked to greater crash severity at the higher speed limit thresholds.

WHAT REFERENCE MATERIALS ARE AVAILABLE TO HELP WITH POSTED SPEED LIMITS?

Within Texas, the key reference document for posted speed limits is the *Procedures for Establishing Speed Zones* (*2*) manual.

Procedures for Establishing Speed Zones

- Source: http://onlinemanuals.txdot.gov/txdotmanuals/szn/index.htm.
- Date: last modified August 2015.
- Publisher: TxDOT.
- Description: The purpose of this TxDOT manual is to provide the information and procedures necessary for establishing speed zones and advisory speeds on the state highway system.

The following sources provide additional guidance on posted speed limits.

Posted Speed Limit Setting Procedure and Tool: User Guide and NCHRP 17-76 SLS-Tool

- Source: https://www.trb.org/Main/Blurbs/182038.aspx.
- Date: last modified April 2019.
- Publisher: National Cooperative Highway Research Program (NCHRP).
- Description: NCHRP Project 17-76 investigated the factors that influence operating speed and safety. This knowledge was used to develop guidance and a speed limit setting tool (SLS-Tool) so engineers can make informed decisions about the setting of speed limits.

Speed Management Safety Website

- Source: https://safety.fhwa.dot.gov/speedmgt/.
- Date: last modified April 2019.
- Publisher: Federal Highway Administration (FHWA).
- Description: This website provides links to several publications and tools along with ongoing research.

Speed Management ePrimer for Rural Transition Zones and Town Centers

- Source: https://safety.fhwa.dot.gov/speedmgt/ref_mats/rural_transition_speed_zones.cfm.
- Date: January 2018.
- Publisher: Federal Highway Administration.
- Description: This ePrimer reviews speeding-related safety issues facing rural communities and discusses the basic elements required for data collection, information processing, and countermeasure selection by rural transportation professionals and community decision makers. The ePrimer is presented in six distinct modules developed to allow the reader to move between each to find the desired information without a cover-to-cover reading.

Traffic Calming ePrimer

- Source: https://safety.fhwa.dot.gov/speedmgt/traffic_calm.cfm.
- Date: February 15, 2017.
- Publisher**:** Federal Highway Administration.
- Description: The ePrimer presents a review of traffic calming practices in eight modules. The ePrimer presents:
    - A definition of traffic calming, its purpose, and its relationship to other transportation initiatives (i.e., complete streets and context-sensitive solutions).
    - Illustrations and photographs of 22 types of traffic calming measures.
    - Considerations for their appropriate application, including effects and design and installation specifics.

- Research on the effects of traffic calming measures on mobility and safety for passenger vehicles; emergency response, public transit, and waste collection vehicles; and pedestrians and bicyclists.
- Examples and case studies of both comprehensive traffic calming programs and neighborhood-specific traffic calming plans.
- Case studies that cover effective processes used to plan and define a local traffic calming program or project and assessments of the effects of individual and series traffic calming measures.

Speed Enforcement Program Guidelines

- Source: https://safety.fhwa.dot.gov/speedmgt/ref_mats/fhwasa09028/resources/Speed%20Enforcement%20Program%20Guidelines.pdf#page=1.
- Date: March 2008.
- Publisher: U.S. Department of Transportation, National Highway Traffic Safety Administration.
- Description: The objective of the guidelines is to provide law enforcement personnel and decision makers with tools to establish and maintain an effective speed management program. The guidelines include:

  - Identification of the problem.
  - Legislature, regulation, and policy.
  - Program management, including public outreach.
  - Enforcement countermeasures.
  - Program evaluation.

USLIMITS2

- Source: https://safety.fhwa.dot.gov/uslimits. User Guide for USLIMITS2: https://safety.fhwa.dot.gov/uslimits/documents/appendix-l-user-guide.pdf.
- Date: March 2008 for initial development, December 2017 for updated user guide.
- Publisher: U.S. Department of Transportation, FHWA.
- Description: USLIMITS2 is a web-based tool that was designed to assist practitioners in setting consistent and safe speed limits. It is used to set speed limits for specific segments of roads and can be used on all types of roads (local roads to freeways).

REFERENCES

1. Fitzpatrick, K., S. Das, T. J. Gates, E. S. Park, M. P. Pratt, K. Dixon, J. Kay, M. Chakraborty (2021) *NCHRP Web-Only document 291: Development of the Posted Speed Limit Setting Procedure and Tool.*
2. TxDOT (2015) *Procedures for Establishing Speed Zones,* TxDOT, August 2015 (revised).

COMMON TXDOT IMPLEMENTATION ORDER FOR SPEED MANAGEMENT TECHNIQUES

Speed Management Devices	Change in Speed Limit	Speed Transition Zones in Rural Areas	Rural Highway Speed Management	Suburban Roadway Speed Management	Urban Roadway Speed Management	Collector Roadway Speed Management	Neighborhood Speed Management
Signing Enhancements—Oversize	1	1	1	1	1	—	—
Signing Enhancements—Red Border[a]	1	1	—	—	—	—	—
Speed Feedback Signs[b]	—	—	2	2	2	1	—
Gateway Treatments[c]	—	2	—	—	—	—	—
Transverse Rumble Strips[d]	2	3	—	—	—	—	—
Raised Medians/Islands[e]	—	—	—	3	3	2	—
Traffic Calming (e.g., speed humps/tables)	—	—	—	—	—	—	1
Reduced Lane Width[f]	—	—	—	3	3	2	—
Road Diet (e.g., change cross section)	—	—	—	—	4	2	—
Signal Timing	—	—	—	4	5	—	—
Speed Zone Pavement Markings (w/legends)[g]	—	—	—	—	—	—	—
Optical Speed Bars	—	—	—	—	—	—	—

Note: Numbers in table (1–5) indicate suggested implementation order.
[a] – Usually applied to the first reduced speed sign approaching a speed limit change area or rural community.
[b] – Most effective deployment mode is with speed trailers for several weeks at a time, on a rotating schedule. Coordination with law enforcement substantially increases effectiveness.
[c] – Longer implementation timeline and requires coordination with municipality; TxDOT 2015 guidelines.
[d] – Presents significant noise concern in corridors with residential development.
[e] – Usually applied for access management and requires capital funds expenditure (longer implementation timeline).
[f] – Limited applicability on roadways with bus routes.
[g] – Applied on curve approaches and for school zones, but not for general speed management.
– Not a typical TxDOT speed management device or practice; usually applied by municipalities.
– Not a typical TxDOT speed management device; rare application of speed bars at high-speed curves.

SOME FACTS ABOUT DRIVERS, SPEED, AND SPEED LIMITS

Drivers and the Driving Environment

Numerous factors influence the speed selected by a driver, with the factors and amount varying based on conditions present. The number on the speed limit sign is a clear factor, along with the number of driveways, signals, curves, the widths of road features, and roadside objects. Weather, the day of the week, and natural light levels all play a role in driver speed choice. The amount of enforcement can strongly impact compliance with the posted speed limit.

Speed Limits and Driver Behavior

Changing speed limits can influence driver speed, but not as much as the change shown in the number on the sign. Research has found that a 5-mph speed limit reduction produces about a 1-mph reduction in average driver speed. For rural roads, increasing a speed limit by 10 mph increases average driver speed by only 3 to 5 mph.

Speed Limits and Safety

The speed-crash relationship is complex; research findings differ across studies, datasets, and speed measures. Several studies have identified speed variation (the range of individual driver speeds on the roadway) to have an adverse effect on safety. A recent study using data on city streets showed that crashes were lowest when the posted speed limit was within 5 mph of drivers' average speed. This same study confirmed that greater speed variation is linked to increased crashes. Recent research on high speed roads has also established a link between large speed variations and more severe crashes.

FOR MORE INFORMATION

To learn more about TxDOT and how speed limits are set, contact your local district office, or visit **www.txdot.gov.**

Abilene (325) 676-6800
4250 N. Clack
Abilene, Texas 79601

Amarillo (806) 356-3200
5715 Canyon Drive
Amarillo, Texas 79110

Atlanta (903) 796-2851
701 E Main Street
Atlanta, Texas 75551

Austin (512) 832-7000
7901 N. I-35
Austin, TX 78753

Beaumont (409) 898-5745
8350 Eastex Freeway
Beaumont, Texas 77708-1701

Brownwood (325) 646-2591
2495 Highway 183 North
Brownwood, Texas 76802

Bryan (979) 778-2165
2591 North Earl Rudder Freeway
Bryan, Texas 77803-5190

Childress (940) 937-2571
7599 US 287
Childress, Texas 79201-9705

Corpus Christi (361) 808-2275
1701 S. Padre Island Drive
Corpus Christi, TX 78416

Dallas (214) 320-6100
4777 E. Highway 80
Mesquite, TX 75150-6643

El Paso (915) 790-4204
13301 Gateway West
El Paso, TX 79928-5410

Fort Worth (817) 370-6500
2501 S W Loop 820
Fort Worth, Texas 7613

Houston (713) 802-5000
7600 Washington Avenue
Houston, Texas 77007

Laredo (956) 712-7400
1817 Bob Bullock Loop
Laredo, TX 78043

Lubbock (806) 745-4411
135 Slaton Road
Lubbock, Texas 79404-5201

Lufkin (936) 633-4321
1805 N. Timberland Drive
Lufkin, Texas 75901

Odessa (432) 498-4697
3901 E. Highway 80
Odessa, Texas 79761

Paris (903) 737-9300
1365 N. Main Street
Paris, TX 75460

Pharr (956) 702-6100
600 W. Interstate 2
Pharr, TX 78577

San Angelo (325) 944-1501
4502 Knickerbocker Road
San Angelo, TX 76904

San Antonio (210) 615-1110
4615 NW Loop 410
San Antonio, Texas 78229-0928

Tyler (903) 510-9100
2709 W. Front St.
Tyler, TX 75702

Waco (254) 867-2700
100 S. Loop Drive
Waco, TX 76704-2858

Wichita Falls (940) 720-7700
1601 Southwest Parkway
Wichita Falls, TX 76302

Yoakum (361) 293-4300
403 Huck Street
Yoakum, Texas 77995

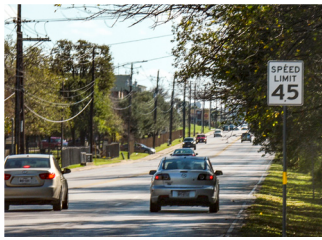
Texas Department of Transportation

TTI.TXDOT2115.8389.0122

Texas Department of Transportation

SETTING SPEED LIMITS

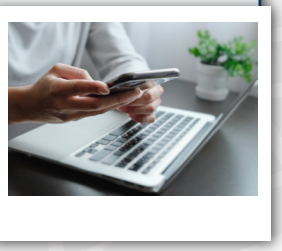
Texas Department of Transportation



EVER WONDER HOW SPEED LIMITS ARE SET?

STEP 1

Speed Limit Change Request:
Anyone can request a speed limit change. This is the first step in TxDOT conducting a speed study investigation to determine if such a change is warranted.



STEP 2

Data Collection and Study:
TxDOT collects field speed data to determine if the change is needed. The local TxDOT engineer also studies driver sightlines, road characteristics, and driveways (along with other speed-related safety concerns) to develop a recommended speed limit.

STEP 3

Recommendation Review:
TxDOT headquarters staff review the recommendation, verify the findings, and ensure consistency in how new speed limits are developed across the state. Once the review is complete, the new speed limit can be adopted.

STEP 4

Legal Framework:
The roadway's governing agency must provide a legal basis to enforce the new speed limit. A city council passes a new municipal ordinance for local streets; the Texas Transportation Commission approves a minute order for state roadways.

STEP 5

Sign Installation:
Once TxDOT staff install the new speed limit signs, the new limit is now enforceable. Though most jurisdictions allow a grace period for issuing warnings, law enforcement can cite violators for speeding any time after installation.

Who decides that this stretch of road should be 45 mph, while the stretch just over the hill is 55 mph? Why an interstate highway crossing west Texas is posted at 80 mph, while the limit on the same highway drops to 65 mph as it approaches the city?

Those speed limits aren't random. We don't pick a number arbitrarily and put it on the signs. There is research behind the process of establishing speed limits, and decades of experience guiding those decisions.

State law establishes the framework for speed management in Texas. Maximum speed limits are set by road type and driving environment; 30 mph for urban districts or streets, 60 mph on non-urban, non-state roadways, and 70 mph on non-urban state or federal roadways.

Some exceptions to these rules are allowed and managed under the authority of the Texas Transportation Commission. Speed limits can be adjusted and changed within these guidelines after being studied using the five-step process shown.

IMPROVING AND COMMUNICATING SPEED MANAGEMENT PRACTICES

Date:
Location:

Your Agency:_____

Your Position:_____

Workshop Content (circle one)

	Yes				No
1. Did the workshop meet your expectations?	1	2	3	4	5
Comments:					
_____					
_____					
2. Was the material presented at the correct level of difficulty?	1	2	3	4	5
Comments:					
_____					
_____					
3. Was the topic of the workshop covered adequately (nothing left out, no one topic overemphasized)?	1	2	3	4	5
Comments:					
_____					
_____					
4. Was the software easy to use?	1	2	3	4	5
Comments:					
_____					
_____					

General Observations

5. What did you like most about the workshop?

6. What did you like the least about the workshop?

7. What can we do to improve this workshop?

8. Other Comments:

Thank you for taking the time to complete this workshop evaluation form. Please make sure the workshop instructor receives it before you leave.