## ORDINANCE NO. 20220616-085

## AN ORDINANCE MAKING CERTAIN FINDINGS RELATING TO SPEED AND SPEEDING IN AUSTIN; AMENDING THE TABLE OF SPEED LIMITS ON CERTAIN ENUMERATED STREETS; AND MODIFYING SPEED LIMITS ACCORDINGLY.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF AUSTIN:

## PART 1. FINDINGS.

A. In November 2014, City Council created a Vision Zero Task Force to develop an Action Plan to achieve zero traffic-related fatalities and serious injuries.
B. In May 2016, City Council adopted the 2016-2018 Action Plan (Action Plan) and incorporated it into the "Imagine Austin Comprehensive Plan." The Action Plan mentions "speed" or "speeding" over 100 times throughout the document, and states that since risk of injury and fatalities increase as speeds increase, it is imperative to regulate traffic speeds in a way to lower that risk.
C. The City Council adopted the Austin Strategic Mobility Plan (ASMP) in April 2019, reaffirming its commitment to the Vision Zero policy to "prioritize the protection of human life over all else in the planning, design, and operation of Austin's transportation network." The ASMP also includes an implementation plan to "develop a comprehensive data-driven approach to speed management to evaluate systemwide speeds and make recommendations for reforming speed setting methodology," among other actions.
D. In May 2019, the State of Texas Transportation Commission (TTC), whose members are appointed by the governor with the advice and consent of the Texas Senate, adopted a goal of zero traffic deaths by 2050 and a goal to reduce the number of deaths in half by 2035. To this end, the TTC ordered the Texas Department of Transportation (TxDOT) to develop and implement strategies required to reduce the number of deaths on Texas roadways.
E. TxDOT's Strategic Highway Safety Plan includes "Speeding" and "Pedestrian Safety" as two emphasis areas with a number of specific strategies, and includes one strategy that overlaps both: "[e]ncourage use of
target speeds for arterial, collector, and local roadways; encourage use of target speeds with pedestrian, land use and roadway context, including options for target speeds of 35 mph or less on arterials and the evaluation of existing speed limits to appropriate target speeds" with increased safety for all road users and reduction of injury and fatalities as the ultimate goal.
F. Engineering studies conducted by the City Traffic Engineer support the conclusion that the current posted speeds throughout the City are unreasonable and unsafe given the number of incidents of traffic-related injuries and deaths the community experiences, and the speed limits contained herein reflect the safe and prudent speeds as demonstrated by engineering studies.
G. Council's current action, related to speed limit modifications, represents the implementation of strategies specifically endorsed by the State's plans that encourage local jurisdictions to take action toward our collective transportation safety goals in Texas, and also reflect the direct alignment of State and City goals towards zero deaths on Texas roadways.

PART 2. City Code Section 12-4-64(D) (Table of Speed Limits) is amended to delete the following street sections from the list of streets with the corresponding maximum speeds:
[35th Street (West) from Baleones Drive to 38th Street (West). (35 MPH)]
[Bluff Springs Read from William Cannon Drive (East) to 200 feet south of Blue Meadow Drive. ( 45 MPH )]
[Brodie Lane from 300 feet south of Alexandria Drive to Slaughter Lane (West). ( 45 MPH )
[Gameron Road from Park Center Drive to Rundberg Lane (East). (45 MPH)]
[Ganyon Ridge Drive from IH-35 (North) East Frontage Read to Teeh Ridge Bonlevard. (40 MPH)]
[Center Line Pass from Center Ridge Drive to Howard Lane. (40 MPH)]
[Dessau Read from Rumdberg Lane (East) to 580 feet north of Brighton Lane. (45 MPH)]
[Escarpment Boulevard from William Cammon Drive (West) to Isaac Pryor Drive. (40 MPH)]
[Far West Boulevard from Loop 1(MoPac Expressway) (North) West Frontage Road to Chimmey Comers. (35 MPH)]
[Four Points Drive from R.M. 620 to River Place Boulevard. (45 MPH)]
[Gracy Farms Lane from Metric Boulevard to Loop 1 (MoPac Expressway) (North) East Frontage Road. (40 MPH)]
[Great Hills Trail from U.S. 183 to Loop 360 (Capital of Texas Highway) (North). ( 35 MPH )]
[Great Hills Trail from U.S. 183 to Stonelake Boulevard. (35 MPH)]
[Harris Branch Parkway frem 700 feet north of Farmhaven Road to Parmer Lane. ( 50 MPH )]
[Howard Lane from I.H. 35 (North) West Frontage Road to Dessau Read. (50 МРН)]
[Jollyville Road from Great Hills Trail to U.S. 183. (45 MPH)]
[Jollyville Road, from Loop 360/U.S. 183 access road (Adelph Alley) to Business Park Drive. ( 35 MPH )]
[Kramer Lane from Lamar Boulevard (North) ( 800 block) to Burnet Road (2400 bleck). ( 40 MPH )]
[Lake Creek Parkway from U.S. 183 to R.M. 620. (40 MPH)]
[MeCallen Pass from Parmer Lane to Howard Lane. ( 50 MPH )]
[McKinney Falls Parkway from Burlesen Read to U.S. 183. ( 55 MPH )]
[MeNeil Drive from U.S. 183 to Parmer Lane. ( 45 MPH )]
[Metric Boulevard from Scofield Lane to Staton Drive. (45 MPH)]
[Metric Boulevard from Staton Drive to Howard Lane. ( 50 MPH )]
[Metro Center Drive from Riverside Drive (East) to the end of Metro Center Drive( 40 MPH )]
[Old Bee Caves from U.S. 290/S.H. 71(West) to the Austin City Limits Line (2,075 feet from S.H. 71). ( 40 MPH)]
[Payton Gin Road from U.S. 183 East Frontage Road to Lamar Boulevard (North). ( 35 MPH )
[Pond Springs Read from Hunters Chase Drive to U.S. 183 (Frontage Read) (Northbound) (north intersection). (40 MPH)]
[Pond Springs Read from U.S. 183 (Frentage Read) (Nerthbound) to Henters Chase Drive. ( 40 MPH )]
[Rutherford Lane from U.S. 183 (Anderson Lane) (East) to I.H. 35 (North) East Frontage Read. ( 40 MPH )]
[Rutland Drive from 200 feet east Golden Meadow Drive to Burnet Road. (40 MPH)]
[Slaughter Lane (East) from 1,500 feet east of I.H. 35 East Frontage Road to Brandt Read/City Limit. (45 MPH)]
[Slaughter Lane (West) from 1,500 fee east I.H. 35 (South) East Frontage Road to Brandt Road. ( 55 MPH )]
[Slaughter Lane (West) from Brasher Drive to Esearpment Boulevard. (45 MPH)] [Slaughter Lane (West) from Manehaea Road to Brasher Drive. (40 MPH)] [Slaughter Lane (West) from Manchaca Road to 1,500 feet east of I.H. 35 (South) East Frontage Road. ( 45 MPH )]
[Southwest Parkway from Boston Lane to 0.2 miles east of Travis Cook Road (Austin City Limits). ( 55 MPH )]
[Southwest Parkway from Loop 1 (MoPac Expressway) (South) West Frontage
Read to Boston Lane. ( 50 MPH )]
[Stassney Lane (East) from Congress Aventre (South) to I.H. 35 (South) West Frontage Read. ( 45 MPH )]
[Stassney Lane (East) from Teri Road to 1,200 feet south of Burleson Road. (50 MPH)]
[Stonelake Boulevard from Loop 360 (Capital of Texas Highway) (North) to Braker Lane (West). (45 MPH)]
[Feen Ridge Boule from Can Ridge Pamer Lane. (45 MPH)]
[Feri Road from I.H. 35 (South) East Frontage Road to Nuekels Crossing Read. ( 35 MPH )
[Tuseany Way from U.S. 290 to 2,500 feet north of U.S. 290. (40 MPH)]
[Vega Avenue from Southwest Parkway to William Cannon Drive (West). (45 MPH)]
[Hega Avenue from Southwest Parkway to William Gannon Drive (West). (45 MPH)]
[West Gate Boulevard from U.S. 290 to Slaughter Lane. (35 MPH)]
[Wilson Parke Aventue from R.M. 620 to Woodbay Parke Drive. (50 MPH)]

PART 4. City Code Section 12-4-64(D) (Table of Speed Limits) is amended to add the following street sections to the list of streets with the corresponding maximum speeds:

35th Street (West) from Loop 1 (MoPac Expressway) (North) West Frontage Road to 38th Street (West). ( 35 MPH )

Ben Garza Lane from Brodie Lane to Loop 1 (MoPac Expressway) (South). (35 MPH)

Bluff Springs Road from William Cannon Drive (East) to 200 feet south of Blue Meadow Drive. ( 35 MPH )

Bradshaw Road from River Plantation Drive to Austin City Limits Line north of Kleberg Trail. (40 MPH)

Brodie Lane from 300 feet south of Alexandria Drive to Slaughter Lane (West). (40 MPH)

Brodie Lane from F.M. 1626 to Austin City Limits Line 185 feet north of Sunland Drive. (40 MPH)

Burleson Road from U.S. 183 to F.M. 973. (45 MPH)
Cameron Road from Park Center Drive to Rundberg Lane (East). (40 MPH)
Canyon Ridge Drive (West) from IH-35 (North) East Frontage Road to Tech Ridge Boulevard. ( 35 MPH )

Center Lake Drive from Howard Lane (East) to Parmer Lane (East). (40 MPH)
Center Line Pass from Center Ridge Drive to Howard Lane (West). ( 35 MPH )
City Park Road from F.M. 2222 to Austin City Limits Line west of Bridge Point Parkway. (35 MPH)

Dessau Road from Meadowmear Drive to Bradbury Lane. (50 MPH)

Dessau Road from Rundberg Lane (East) to Meadowmear Drive. (40 MPH)
Escarpment Boulevard from Davis Lane to William Cannon Drive (West). (35 MPH)

Escarpment Boulevard from Slaughter Lane (West) to Davis Lane. (40 MPH)
Four Points Drive from R.M. 620 to River Place Boulevard. ( 40 MPH )
Gracy Farms Lane from Metric Boulevard to Loop 1 (MoPac Expressway) (North) East Frontage Road. ( 35 MPH )

Harris Branch Parkway from 700 feet north of Farmhaven Road to Parmer Lane (East). ( 40 MPH )
Harris Branch Parkway from Parmer Lane (East) to Gregg Lane. (40 MPH)
Howard Lane (East) from I.H. 35 (North) West Frontage Road to Immanuel Road. ( 45 MPH )

Howard Lane from I.H. 35 (North) West Frontage Road to Dessau Road. (45 MPH)
Jollyville Road from Balcones Woods Drive to Great Hills Trail. (40 MPH)
Jollyville Road from Barrington Way to Balcones Woods Drive. (45 MPH)
Kramer Lane from Lamar Boulevard (North) to Burnet Road. (35 MPH)
Lake Creek Parkway from U.S. 183 to R.M. 620. ( 35 MPH )
Lakeline Mall Drive from U.S. 183 (North) (Research Boulevard) to terminus east of Lyndhurst Street. ( 35 MPH )

McCallen Pass from Parmer Lane (East) to Howard Lane. (45 MPH)
McKinney Falls Parkway from Burleson Road to U.S. 183. (40 MPH)
McNeil Drive from U.S. 183 to Parmer Lane (West). ( 40 MPH )
Metric Boulevard from Scofield Lane to Staton Drive. (40 MPH)
Metric Boulevard from Staton Drive to Howard Lane. (40 MPH)
Metro Center Drive from Riverside Drive (East) to the end of Metro Center Drive. ( 35 MPH )

Old Bee Caves Road from U.S. 290/S.H. 71 (West) to Austin City Limits Line. (35 MPH)

Pearce Lane from Ross Road to Welsh Way. (40 MPH)

Pond Springs Road from U.S. 183 (Frontage Road) (Northbound) (south intersection) to U.S. 183 (Frontage Road) (Northbound) (north intersection). (35 MPH)

Ross Road from Pearce Lane to Austin City Limits Line north of Gilwell Drive. (35 MPH)

Rutherford Lane from U.S. 183 (Anderson Lane) (East) to I.H. 35 (North) East Frontage Road. ( 35 MPH )

Rutland Drive from 200 feet east of Golden Meadow Drive to Burnet Road. (35 MPH)

Slaughter Lane (East) from 1,500 feet east of I.H. 35 East Frontage Road to Brandt Road/City Limit. (40 MPH)

Slaughter Lane (West) from Brodie Lane to 1,500 feet east of I.H. 35 (South) East Frontage Road. (40 MPH)
Slaughter Lane (West) from Escarpment Boulevard to Brodie Lane. (45 MPH)
Southwest Parkway from Loop 1 (MoPac Expressway) (South) West Frontage Road to 0.2 miles east of Travis Cook Road (Austin City Limits). ( 50 MPH )
Stassney Lane (East) from Congress Avenue (South) to I.H. 35 (South) West Frontage Road. ( 35 MPH )
Stassney Lane (East) from Teri Road to 1,200 feet south of Burleson Road. (40 MPH)

Stonehollow Drive from Metric Boulevard (north intersection) to Metric Boulevard (south Intersection). ( 35 MPH )

Stonelake Boulevard from Loop 360 (Capital of Texas Highway) (North) to Braker Lane (West). ( 40 MPH )

Tuscany Way from U.S. 290 to 2,500 feet north of U.S. 290. ( 35 MPH )
Vega Avenue from Southwest Parkway to William Cannon Drive (West). (40 MPH)
West Gate Boulevard from U.S. 290 to William Cannon Drive (West). (35 MPH)
West Gate Boulevard from Manassas Drive to Slaughter Lane. ( 35 MPH )
Wilson Parke Avenue from R.M. 620 to Woodbay Parke Drive. ( 40 MPH )
PART 5. The amendments made in this ordinance are based on the results of traffic engineering investigations, or speed studies, attached as Exhibit "A" to this ordinance.

PART 6. The amendments made in this ordinance shall be incorporated in alphabetical order in the City Code Section 12-4-64(D) (Table of Speed Limits) and the existing entries reordered accordingly.

PART 7. The City Traffic Engineer shall have the obligation and authority to design, place, and prioritize appropriate signage to implement the changes contained in this ordinance.

PART 8. Further amendments to City Code Section 12-4-64(D) (Table of Speed Limits) necessary to conform to the requirements of City Code Chapter 12-4 (Speed Limits) will be established by separate ordinance.

PART 9. This ordinance takes effect on June 27, 2022. PASSED AND APPROVED


AUSTIN TRANSPORTATION DEPARTMENT
MEMORANDUM

| TO: | Robert Spillar, P.E., Director, <br>  <br> Austin Transportation Department |
| :--- | :--- |
| FROM: | Eric Bollich, P.E., PTOE, Managing Engineer, <br>  <br>  <br> Austin Transportation Department |
| CC: | Anna Martin, P.E., Assistant Director, <br>  <br>  |
|  | Lustin Transportation Department |
|  | Austin Transportation Department |

The Austin Transportation Department (ATD) completed this engineering study to recommend speed modifications for Level 3 and 4 streets as classified in the Austin Strategic Mobility Plan (ASMP) outside of the Urban Core of the City of Austin (City), defined as outside of the area bounded by US 183, SH 71/US 290, and Loop 1 (MoPac).

This study summarizes the background, methodology, and recommendations to set speed limits based on the context and operating characteristics of streets meeting the criteria set herein.

## Summary of Recommendations

Based on this engineering evaluation, the Office of the City Traffic Engineer has determined the following speed limit modifications should be entered into the City's Code of Ordinances based on ATD's evaluation of safe and prudent speeds. ATD, under the authority of the Office of the City Traffic Engineer, intends to bring an item for Council action to set new speed limits on the identified streets based on the following recommendations:

- Recommendation 1: Modify speed limits on 48 Level 3 and 4 street segments, resulting in lowered speed limits between 5 miles per hour (mph) and 15 mph . Street segments impacted by Recommendation 1 are detailed in Table 1.

Additionally, some Level 3 and 4 streets do not have speed limits included in the City's Code of Ordinances but have posted speed limits. These streets should be added to the Code of Ordinances for enforceability as they are not covered by prima facie speed limits of 30 mph .

- Recommendation 2: Formally set speed limits in the City's Code of Ordinances on four Level 3 and 4 street segments. Street segments impacted by Recommendation 2 are detailed in Table 2.

Per Texas Transportation Code, Section 545.356 , speed limit modifications set by municipalities are effective when signs are posted messaging new speed limits.

- Recommendation 3: ATD will develop a plan to install signage needed for streets impacted by speed limit modifications recommended in this engineering study. The signage installation plan will include the design and placement of signage; prioritization of implementation based on documented safety concerns and geographic dispersion; and time and material cost estimations to complete sign installation. Given the quantity of signage requiring change, ATD will request Council authorize the speed changes, pending appropriate signage placement under the administrative authority of the Office of the City Traffic Engineer.

ATD's review of best practices revealed that comprehensive speed limit modifications are most effective when coupled with public awareness efforts. The intent of the effort is to reach a broad audience with a focused, consistent message to bring attention to the purpose and desired outcomes of speed limit modifications.

- Recommendation 4: ATD will conduct a citywide public awareness effort to increase awareness of the pending speed limit modifications. ATD will ensure that educational awareness materials are culturally relevant and that they explain the need for the change and their intended safety goal. ATD will partner with law enforcement agencies as possible to achieve the intended speed outcome through targeted education and enforcement activities, particularly on streets with documented speeding concerns.


## Background

Level 3 and 4 streets are broadly defined as arterial (major) streets designed to carry high volumes of traffic, normally at higher speeds than streets in residential settings. They provide access to a variety of land uses and generally accommodate longer intracity trips. Austin has experienced decades of double-digit population growth and metropolitan area expansion, changing the operating characteristics of the City's roadway network during this time. Most of the speed limits on Level 3 and 4 streets that were established before this rapid growth and have not been evaluated for appropriateness under current developed conditions.

ATD completed a separate engineering report in 2020 with recommendations to lower speed limits on 15 Level 3 and 4 streets within the Urban Core. City Council approved these recommendations in June 2020, leading to lowered speed limits entered into the City's Code of Ordinances and posted on the corresponding streets by the end of that year. This study follows up that report addressing the previously unstudied arterials outside of the Urban Core.

## Methodology

Texas Transportation Code, Section 545.356, and City of Austin Code, Chapter 12, give authority to municipalities to alter speed limits based an engineering and traffic investigation by a professional engineer. This speed modification report fulfills this engineering study requirement under authority of the Office of the City Traffic Engineer.

The traditional transportation engineering methodology of investigating and recommending speed limits relies on the $85^{\text {th }}$ percentile of vehicular speeds. This is based on the premise that drivers under unimpeded, free-flowing traffic conditions choose to travel at safe and prudent speeds for themselves and others. This methodology has limitations in urban settings where other considerations, such as turning conflicts, driveway density, and traffic signals, impede the natural flow of traffic and require more attention for drivers to operate safely.

ATD researched emerging national practice for setting speed limits that are more applicable to this network and decided to use an expert systems methodology for this engineering study. Expert systems are credited with starting in Australia and were based on numerous data collection studies and observations by engineering experts. These findings were used to develop computer programs replicating the thought processes and judgments of these experts based on a variety of street operating characteristics. Completed in 2006, NCHRP 03-67: Expert System for Recommending Speed Limits in Speed Zones was one of the first studies in the United States "to develop a new knowledgebased expert system for recommending enforceable, credible speed limits in speed zones," resulting in the original USLIMITS methodology.

The Federal Highway Administration (FHWA) subsequently released USLIMITS2 as a web-based tool to develop credible and consistent speed limits. Rather than relying foremost on the $85^{\text {th }}$ percentile of vehicular speeds, USLIMITS2 uses these additional inputs in its methodology:

- $50^{\text {th }}$ percentile speed
- Section length of streets
- Annual average daily traffic
- Adverse alignment
- One- or two-way operation
- Divided or undivided streets
- Number of through lanes
- Area type (adjacent development)
- Number of driveways/uncontrolled access points
- Number of traffic signals
- On-street parking and usage
- Pedestrian and bicycle activity
- Crash data

After working with FHWA representatives for firsthand instruction on this tool, ATD used USLIMITS2, combined with engineering judgment, to develop speed limit modifications in this engineering study. Appendix A includes a detailed summary of USLIMITS2 input values and output recommendations used for each engineering study. Appendix B includes maps of existing speed limits, speed limits recommended by ATD, and changes between the two values. National research and guidance materials on setting appropriate speed limits are included in Appendix C.

## Findings and Recommendations

ATD analyzed 121 Level 3 and 4 streets located outside of the Urban Core using street characteristic inputs and USLIMITS2 methodology. The Office of the City Traffic Engineer applied engineering judgment to further reduce the speed limits on some streets resulting from the USLIMITS2 methodology based on continuity of speed limits on a street or consistency of speed limits with comparable streets. This engineering judgment was applied to harmonize speeds along arterials and to also maintain driver expectation for the purposes of safety.

Some roadways within the City of Austin have posted speed limits but are not formally documented in the City's Code of Ordinances. These roadway segments with undocumented speed limits were also studied and are included in Table 1 if the recommended speed is lower or equal to the posted speed.

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Overall, speed limit reductions on 48 of these street segments were found to be appropriate, resulting in recommended reductions of 5 mph on 38 street segments, reductions of 10 mph on nine street segments, and a reduction of 15 mph on one street segment. One street segment with an existing posted speed limit but not in the Code of Ordinances is recommended to remain at the posted speed limit.

Recommendation 1: Speed limits should be modified in or added to the City's Code of Ordinances per Table 1.

Table 1: Recommended Speed Limit Modifications

| Council District | Street | Extents |  | Exist. Speed Limit | Prop. Speed Limit |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | From | To |  |  |
| 1 | Canyon Ridge Drive (West) | IH-35 (North) East Frontage Road | Tech Ridge Boulevard | 40 | 35 |
| 1 | Dessau Road/ <br> Cameron Road | Park Center Drive | 580 feet north of Brighton Lane | 45 | 40 |
| 1 | Dessau Road | 580 feet north of Brighton Lane | Meadowmear Drive | 50 | 40 |
| 1 | Harris Branch Parkway | Parmer Lane | Gregg Lane | 50* | 45 |
| 1 | Harris Branch Parkway | 700 feet north of Farmhaven Road | Parmer Lane | 50 | 40 |
| 1 | Howard Lane (East) | Dessau Road | Immanuel Road | 50 | 45 |
| 1 \& 4 | Rutherford Lane | U.S. 183 (Anderson Lane) (East) | I.H. 35 (North) East Frontage Road | 40 | 35 |
| 1 | Tuscany Way | U.S. 290 | 2,500 feet north of U.S. 290 | 40 | 35 |
| 2 | Bluff Springs <br> Road | William Cannon Drive (East) | Austin City Limits Line | 45 | 35 |
| 2 \& 5 | Bradshaw Road | River Plantation Drive | Austin City Limits Line north of Kleberg Trail | 45* | 40 |
| 2 | Burleson Road | U.S. 183 | F.M. 973 | 55* | 45 |
| 2 | McKinney Falls Parkway | Burleson Road | U.S. 183 | 55 | 40 |
| 2 | Metro Center Drive | Riverside Drive (East) | End of Metro Center Drive | 40 | 35 |
| 2 | Pearce Lane | Ross Road | Welsh Way | 50* | 40 |
| 2 | Ross Road | Pearce Lane | Austin City Limits Line north of Gilwell Drive | 40* | 35 |
| 2 | $\begin{aligned} & \begin{array}{l} \text { Stassney Lane } \\ \text { (East) } \end{array} \\ & \hline \end{aligned}$ | Teri Road | 1,200 feet South from Burleson Road | 50 | 40 |
| 2 | Teri Road | I.H. 35 (South) East <br> Frontage Road | Nuckols Crossing Road | 35 | 30 |

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| 3 | Stassney Lane (East) | Congress Avenue (South) | I.H. 35 (South) West Frontage Road | 45 | 35 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 4 \& 7 | Kramer Lane | Burnet Road | Lamar Boulevard (North) | 40 | 35 |
| 4 | Payton Gin Road | U.S. 183 East Frontage Road | Lamar Boulevard (North) | 35 | 30 |
| 4 \& 7 | Rutland Drive | Burnet Road | 200 feet east of Golden Meadow Drive | 40 | 35 |
| 5 \& 8 | Brodie Lane | 300 feet south of Alexandria Drive | Slaughter Lane (West) | 45 | 40 |
| 5 \& 2 | Slaughter Lane (East) | I.H. 35 (South) East Frontage Road | Brandt Road | 45 | 40 |
| 5 \& 2 | Slaughter Lane (West) | Menchaca Road | IH 35 (South) East Frontage Road | 45 | 40 |
| 5 | Slaughter Lane (West) | Brodie Lane | Brasher Drive | 45 | 40 |
| 5 | West Gate Boulevard | Manassas Drive | William Cannon Drive (West) | 35 | 30 |
| 6 | Four Points Drive | R.M. 620 | River Place Boulevard | 45 | 40 |
| 6 | Lake Creek Parkway | R.M. 620 | U.S. 183 | 40 | 35 |
| 6 | McNeil Drive | U.S. 183 | Parmer Lane | 45 | 40 |
| 6 | Pond Springs Road | U.S. 183 (Frontage <br> Road) <br> (Northbound)(north intersection) | Hunters Chase Drive | 40 | 35 |
| 6 | Wilson Parke Avenue | R.M. 620 | Woodbay Parke Drive | 50 | 40 |
| 7 | Center Line Pass | Center Ridge Drive | W Howard Lane | 40 | 35 |
| 7 | Gracy Farms Lane | Metric Boulevard | Loop 1 (MoPac <br> Expressway) (North) <br> East Frontage Road | 40 | 35 |
| 7 | Howard Lane (East) | Dessau Road | I.H. 35 (North) West Frontage Road | 50 | 45 |
| 7 | McCallen Pass | Parmer Lane | Howard Lane | 50 | 45 |
| 7 | Metric Boulevard | Staton Drive | Howard Lane | 50 | 40 |
| 7 | Metric Boulevard | Scofield Lane | Staton Drive | 45 | 40 |
| 7 | Stonelake Boulevard | Loop 360 (Capital of Texas Highway) (North) | Braker Lane (West) | 45 | 40 |
| 8 | Brodie Lane | F.M. 1626 | Austin City Limits Line north of Sunland Drive | 40* | 40 |
| 8 | Old Bee Caves Road | U.S. 290/S.H. 71(West) | Austin City Limits Line | 40 | 35 |
| 8 | Southwest <br> Parkway | Boston Lane | Austin City Limits Line west of Amara Trail | 55 | 50 |
| 8 | Vega Avenue | William Cannon Drive (West) | Southwest Parkway | 45 | 40 |

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| 8 | Escarpment <br> Boulevard | Davis Lane | William Cannon Drive <br> (West) | 40 | 35 |
| :---: | :--- | :--- | :--- | :---: | :---: |
| 10 | 35 th Street <br> (West) | Balcones Drive | Loop 1 (MoPac <br> Expressway) (North) <br> West Frontage Road | 35 | 30 |
| 10 | City Park Road | F.M. 2222 | Austin City Limit Line <br> west of Bridge Point <br> Parkway | $40^{*}$ | 35 |
| 10 | Far West <br> Boulevard | Chimney Corners | Loop 1(MoPac <br> Expressway) (North) <br> West Frontage Road | 35 | 30 |
| 10 | Great Hills Trail | Stonelake Boulevard | Loop 360 (Capital of <br> Texas Highway) <br> (North) | 35 | 30 |
| 10 | Jollyville Road | Balcones Woods Drive | Great Hills Trail | 45 | 40 |
| 10 | Jollyville Road | N Capital of Texas <br> Highway | Business Park Drive | 35 | 30 |

* Existing speed limit is not documented in the City's Code of Ordinances. Listed existing speed limit is posted speed.

Four roadways in Table 2 within the City of Austin full purpose jurisdiction have no posted speed limits and are not included in the City's Code of Ordinances. The Office of the City Traffic Engineer applied engineering judgment to recommend speed limits on these streets to be added to the Code of Ordinances.

Recommendation 2: Speed limits should be formally set in the City's Code of Ordinances per Table 2.
Table 2: Recommended Streets for Code of Ordinances Speed Limit Establishment

| Council District | Street | Extents |  | Posted <br> Speed | Prop. Speed Limit |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | From | To |  |  |
| 8 | Ben Garza Lane | Brodie Lane | Loop 1 (MoPac Expressway) (South) | None | 35 |
| 7 | Center Lake Drive | Howard Lane (East) | Parmer Lane (East) | None | 40 |
| 7 | Lakeline Mall Drive | U.S. 183 (North) (Research Boulevard) | Terminus east of Lyndhurst Street | None | 35 |
| 6 | Stonehollow Drive | Metric Boulevard | Metric Boulevard | None | 35 |

## Signage Plan

Per Texas Transportation Code, Section 545.356, speed limit modifications set by municipalities are effective when signs are posted messaging new speed limits. For operational purposes, ATD recommends Council approve the new speed limits pending placement of the signs as per our normal
process, giving the Office of the City Traffic Engineer the administrative authority to place the signs as quickly as is feasible.

Recommendation 3: ATD will develop a signage installation plan to evaluate signage needed for streets impacted by Recommendations 1 and 2 of this engineering study. This plan will include the following:

- Design and place signage to set speed limits on streets. This includes methods to increase sign conspicuity, which could include increased sign size, non-typical colors, and supplemental safety messages. A standard sign spacing will be developed, which could include a maximum distance between speed limit signs and consistent placement before and after intersections with major streets.
- Prioritize sign placement for streets with school zones and if within the City's designated HighInjury Network. Signs will be prioritized first if a school zone is located within the modified speed zone. Signs will be prioritized second if the modified speed zone is located within the City's designated High-Injury Network. Subsequent sign installation will be prioritized based on documented safety concerns and geographic dispersion.
- Estimate the time needed to install all needed sign changes citywide based on staff availability and material costs to make set speed limits effective.

Education and Enforcement
ATD's review of best practices revealed that comprehensive speed limit modifications are most effective when coupled with public awareness efforts as they help reach a broad audience with a focused, consistent message to bring attention to the purpose and desired outcomes of speed limit modifications.

Recommendation 4: ATD will conduct a citywide public awareness effort to increase awareness of the pending speed limit modifications. ATD will ensure that educational awareness materials are culturally relevant and that they explain the need for the change and their intended safety goal. ATD will partner with law enforcement agencies to achieve the intended speed outcome through targeted education and enforcement activities, particularly on streets with documented speeding concerns.

## Conclusion

The speed limit modifications recommended in this engineering study are the result of a comprehensive, years-long traffic investigation of Level 3 and 4 streets outside the Urban Core in the City of Austin. It is a progressive and bold approach based on national best practice to modernize the speed limits on Level 3 and 4 streets which represent the highest propensity of serious injuries and fatalities in the City. These recommendations will help increase the safety of all users of the street network by setting speed limits to safe and prudent levels.

## APPENDIX A

## Contents:

USLIMITS2 Speed Zoning Reports

| USLIMITS2 Analysis and Recomendaitons |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Roadway Name | Section Limit 1 Report | Section Limit 2 Report | Area Type |  |  |  | $\frac{\stackrel{\rightharpoonup}{4}}{4}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Ben Gara Lane | Brodie Lane | Loop 1 (MoPac Expressway) (South) | Complex | 39.7 | 34.7 | 0.5 | 1000 | No | Twith | 2 | 6 | 1 | Low | Low | 7 | 4 | 799 | 457 | N/A | 35 | 35 |
| Bluff Springs Road | William Cannon Drive (East) | Austin City Limits Line | Res-Collector | 48.2 | 42.5 | 1.3 | 9189 | NO | Undivided | 4 | 20 | 3 | Low | Low | 147 | 68 | 701 | 324 | 45 | 40 | 35 |
| Bradshaw Road | River Plantation Drive | Austin City Limits Line north of Kleberg Trail | Res-Collector | 42.8 | 37.0 | 0.9 | 1817 | No | Undivided | 2 | 11 | 0 | Low | Low | 9 | 4 | 289 | 128 | 45 | 40 | 40 |
| Brodie Lane | 300 feet south of Alexandria Drive | Slaughter Lane (West) | Commercial | 41.7 | 37.4 | 1.8 | 19496 | No | Divided | 4 | 50 | 5 | Low | High | 136 | 39 | 216 | 62 | 45 | 35 | 40 |
| Brodie Lane | F.M. 1626 | Austin City Limits Line north of Sunland Drive | Res-Collector | 43.7 | 39.5 | 1.5 | 7328 | No | Undivided | 2 | 18 | 3 | Low | Low | 47 | 17 | 230 | 83 | 40 | 40 | 40 |
| Burleson Road | U.S. 183 | F.M. 973 | Complex | 61.8 | 55.7 | 2.0 | 10070 | Yes | Undivided | 4 | 17 | 2 | Low | Low | 113 | 67 | 307 | 182 | 55 | 50 | 45 |
| Center Lake Drive | Howard lane (East) | Parmer Lane | Complex | 39.3 | 30.3 | 1.2 | 5000 | No | TWLTL | 4 | 18 | 0 | Low | Low | 12 | 2 | 106 | 18 | N/A | 40 | 40 |
| Center Line Pass | Center Ridge Drive | Howard Lane (West) | Complex | 39.3 | 34.2 | 0.5 | 1079 | No | Undivided | 4 | , | 1 | Low | Low | 44 | 12 | 4754 | 1297 | 40 | 35 | 35 |
| City Park Road | F.M. 2222 | 860 ft west of Bridge Point Pkwy | Res-Collector | 43.5 | 38.9 | 1.1 | 4071 | VES | Undivided | 2 | 16 | 1 | Low | Low | 37 | 17 | 453 | 208 | 40 | 40 | 35 |
| Dessau Road | Meadowmear Drive | 580 feet north of Brighton Lane | Commercial | 52.7 | 46.8 | 0.4 | 2747 | No | Divided | 6 | 10 | 1 | Low | Low | 76 | 27 | 357 | 127 | 50 | 40 | 40 |
| Dessau Road/ Cameron Road | Parker Center Drive | 580 feet north of Brighton Lane $\qquad$ | Commercial | 52.7 | 46.8 | 1.1 | 2747 | No | Divided | 6 | 15 | 2 | Low | Low | 220 | 40 | 357 | 127 | 45 | 40 | 40 |
| Stassney Lane (East) | Congress Avenue (South) | $\begin{aligned} & \text { 1.H. } 35 \text { (South) West } \\ & \text { Frontage Road } \\ & \hline \end{aligned}$ | Complex | 46.3 | 41.7 | 0.8 | 12443 | No | Divided | 6 | 13 | 2 | Low | High | 211 | 73 | 1239 | 429 | 45 | 40 | 35 |
| Stassney Lane (East) | Teri Road | 1200ft South from Burleson Road | Commercial | 48.8 | 42.4 | 1.0 | 15987 | No | Divided | 4 | 4 | 1 | Low | High | 30 | 2 | 93 | 7 | 50 | 40 | 40 |
| Escarpment Boulevard | Davis Lane | William Cannon Drive (West) | Residential Subdivisions | 46.1 | 40.9 | 1.5 | 7937 | No | Divided | 4 | 16 | 3 | Low | High | 56 | 22 | 254 | 100 | 40 | 40 | 35 |
| Far West Boulevard | Chimney Corners | Loop 1(MoPac Expressway) (North) West Frontage Road | Commercial | 40.8 | 34.1 | 1.1 | 9244 | No | Divided | 4 | 30 | 4 | Low | High | 85 | 30 | 442 | 156 | 35 | 30 | 30 |
| Four Points Drive | R.M. 620 | River Place Boulevard | Complex | 46.8 | 41.7 | 0.8 | 3996 | YES | Divided | 4 | 12 | 1 | Low | Low | 26 | 6 | 463 | 107 | 45 | 40 | 40 |
| Gracy Farms Lane | Metric Boulevard | Loop 1 (MoPac Expressway) (North) East Frontage Road | Commercial | 42.5 | 37.7 | 0.9 | 4768 | No | rwith | 2 | 18 | 3 | Low | High | 44 | 13 | 581 | 172 | 40 | 35 | 35 |
| Great Hills Trail | Stonelake Boulevard | Loop 360 (Capital of Texas Highway) (North) | Commercial | 41.3 | 36.3 | 1.5 | 6145 | YES | Divided | 4 | 26 | 5 | Low | High | 101 | 21 | 593 | 123 | 35 | 30 | 30 |
| Harris Branch Parkway | Parmer Lane | Gregg lane | Res-Collector | 50.5 | 44.8 | 1.0 | 9919 | No | Divided | 4 | 10 | 2 | Low | Low | 70 | 25 | 304 | 115 | 50 | 45 | 45 |
| Harris Branch Parkway | 700 feet north of Farmhaven Road | Parmer Lane | Res-Collector | 50.5 | 44.8 | 2.5 | 9919 | No | Divided | 4 | 20 | 2 | Low | Low | 120 | 50 | 304 | 115 | 50 | 40 | 40 |
| Howard Lane (East) | Dessau Road | $\begin{array}{\|l\|} \text { 1.H. } 35 \text { (North) West } \\ \text { Frontage Road } \\ \hline \end{array}$ | Complex | 53.2 | 46.9 | 2.4 | 20695 | No | Divided | 4 | 30 | 5 | Low | Low | 386 | 169 | 419 | 183 | 50 | 45 | 45 |
| Howard Lane (East) | Dessau Road | Immanuel Road | Complex | 50.5 | 44.3 | 0.5 | 11428 | No | Divided | 4 | 5 | 1 | Low | Low | 31 | , | 323 | 94 | 50 | 45 | 45 |
| Jollwille Road | Balcones Woods Drive | Great Hills Tril | Complex | 47.6 | 41.4 | 0.9 | 11021 | No | TWLTL | 4 | 31 | 3 | Low | Low | 134 | 33 | 716 | 176 | 45 | 40 | 40 |
| Jollyville Road | N Capital of Texashlighway | Business Park Drive | Commercial | 37.0 | 31.7 | 0.8 | 797 | No | Undivided | 2 | 26 | 0 | Low | Low | 10 | 5 | 893 | 446 | 35 | 30 | 30 |
| Kramer Lane | Burnet Road | Lamar Boulevard (North) | Res-Collector | 41.9 | 36.7 | 2.3 | 6625 | No | rwith | 2 | 90 | 5 | Low | High | 204 | 61 | 740 | 221 | 40 | 35 | 35 |
| Lake Creek Parkway | R.M. 620 | U.S. 183 | Res-Collector | 36.4 | 32.1 | 1.6 | 6642 | No | Divided | 4 | 40 | 2 | Low | High | 64 | 15 | 330 | 77 | 40 | 30 | 35 |
| Lakeline Mall Drive | U.S. 183 (North) (Research Boulevard) | Terminus east of Lyndhurst street | Commercial | 41.7 | 35.3 | 1.0 | 2986 | No | Divided | 2 | 10 | 2 | High | High | 95 | 20 | 1743 | 367 | N/A | 35 | 35 |
| McCallen Pass | Parmer Lane | Howard Lane | Commercial | 51.8 | 45.4 | 1.0 | 9505 | No | Divided | 4 | 6 | 3 | Low | Low | 224 | 99 | 1304 | 576 | 50 | 45 | 45 |
| McKinney Falls Parkway | Burleson Ro | U.S. 183 | Res-Collector | 47.7 | 42.9 | 1.0 | 5457 | No | Undivided | 2 | 9 | 1 | Low | High | 59 | 21 | 592 | 211 | 55 | 40 | 40 |
| McNeil Drive | U.S. 183 | Parmer Lane | Complex | 48.7 | 43.6 | 1.7 | 19553 | NO | TWLTL | 4 | 53 | 8 | Low | Low | 277 | 66 | 457 | 109 | 45 | 40 | 40 |
| Metric Boulevard* | Staton Drive | Howard lane | Res-Collector | 47.7 | 42.4 | 3.2 | 16826 | VES | Divided | 4 | 44 | 10 | Low | High | 378 | 107 | 388 | 110 | 50 | 40 | 40 |
| Metric Boulevard* | Scofield Lane | Staton Drive | Res-Collector | 47.7 | 42.4 | 3.2 | 16826 | YES | Divided | 4 | 44 | 10 | Low | High | 378 | 107 | 388 | 110 | 45 | 40 | 40 |
| Metro Center Drive | Riverside Drive (East) | end of Metro Center Drive. | Commercial | 44.1 | 38.2 | 0.6 | 1759 | No | rwith | 4 | 17 | - | Low | Low | 14 | 12 | 681 | 584 | 40 | 35 | 35 |
| Old Bee Caves Road | U.S. 290/S.H. 71 (West) | Austin City Limits Line | Res-Collector | 44.6 | 39.7 | 3.1 | 2677 | NO | Undivided | 2 | 96 | 1 | Low | Low | 54 | 11 | 357 | 73 | 40 | 35 | 35 |
| Payton Gin Road | U.S. 183 East Frontage Roa | Lamar Boulevard (North) | Res-Collector | 32.0 | 26.4 | 1.2 | 9349 | No | TWLTL | 2 | 51 | 3 | Low | High | 141 | 47 | 700 | 233 | 35 | 25 | 30 |
| Pearce Lane | Ross Road | Welsh Way | $\begin{gathered} \text { Residential } \\ \text { Subdivisions } \end{gathered}$ | 46.1 | 39.3 | 0.9 | 10840 | No | Undivided | 2 | 10 | 1 | Low | Low | 77 | 29 | 428 | 161 | 50 | 40 | 40 |
| Pond Springs Road | $\begin{array}{\|l} \hline \text { U.S. } 183 \text { (Frontage Road) } \\ \text { (Northbound)(north } \\ \text { intersection) } \end{array}$ | Hunters Chase Drive | Commercial | 43.8 | 38.4 | 1.9 | 6429 | No | Twit | 2 | 90 | 4 | Low | High | 107 | 24 | 483 | 108 | 40 | 35 | 35 |
| Ross Road | Pearce Lane | Austin City Limits Line north of Gilwell Drive | Res-Collector | 41.9 | 36.2 | 0.7 | 7232 | No | Undivided | 2 | 10 | 2 | Low | Low | 42 | 17 | 482 | 195 | 40 | 35 | 35 |
| Rutherford Lane | $\begin{aligned} & \text { U.S. } 183 \text { (Anderson Lane) } \\ & \text { (East) } \end{aligned}$ | I.H. 35 (North) East Frontage Road | Commercial | 41.2 | 35.9 | 1.5 | 9114 | No | rwith | 2 | 46 | 4 | Low | High | 108 | 27 | 439 | 110 | 40 | 30 | 35 |
| Rutland Drive | Burnet Road | 200 feet east of Golden Meadow Drive | Res-Collector | 40.7 | 35.2 | 2.4 | 10468 | ves | rwith | 4 | 112 | 7 | Low | High | 333 | 128 | 723 | 278 | 40 | 30 | 35 |
| Southwest Parkway | Boston Lane | Austin City Limits Line west of Amara Trail | Commercial | 57.3 | 51.5 | 4.2 | 19190 | ves | Divided | 6 | 50 | 5 | Low | Low | 177 | 59 | 120 | 40 | 55 | 50 | 50 |
| Stonehollow Drive | Metric Boulevard | Metric Boulevard | Complex | 42.7 | 37.3 | 0.9 | 1222 | VES | twLTL | 4 | 19 | 2 | Low | Low | 38 | 11 | 1893 | 548 | N/A | 35 | 35 |
| Stonelake Boulevard | Loop 360 (Capital of Texas Highway) (North) Highway) (North) | Braker Lane (West) | Complex | 51.0 | 44.4 | 0.6 | 3822 | No | Divided | 6 | 6 | 2 | Low | Low | 83 | 26 | 2164 | 678 | 45 | 40 | 40 |
| Teri Road | I.H. 35 (South) East Frontage Road | Nuckols Crossing Road | Res-Collector | 38.1 | 32.1 | 1.4 | 4220 | no | Undivided | 2 | 120 | 1 | High | High | 127 | 35 | 1170 | 322 | 35 | 30 | 30 |
| Tuscany Way | U.S. 290 | 2,500 feet north of U.S. 290 | Complex | 39.8 | 34.5 | 0.9 | 9037 | VES | fuLTM | 2 | 40 | 1 | Low | Low | 45 | 14 | 317 | 99 | 40 | 30 | 35 |
| Vega Avenue | William Cannon Drive (West) | Southwest Parkway | Res-Collector | 43.4 | 38.5 | 0.8 | 1772 | ves | Undivided | 2 | 8 | 0 | Low | Low | 25 | 4 | 991 | 159 | 45 | 40 | 40 |
| 35th Street (West) | Balcones Drive | $\begin{array}{\|l\|} \hline \text { Loop 1(MoPac Expressway) } \\ \text { (North) West Frontage Road } \\ \hline \end{array}$ | Res-Collector | 40.5 | 35.8 | 0.7 | 9895 | No | Undivided | 4 | 8 | 3 | Low | Low | 29 | 8 | 236 | 65 | 35 | 40 | 30 |
| Canyon Ridge Drive (West) | IH-35 (North) East Frontage Road | Tech Ridge Boulevard | Res-Collector | 40.5 | 35.6 | 1.9 | 7864 | Yes | Undivided | 2 | 32 | 2 | Low | High | 108 | 46 | 407 | 173 | 40 | 35 | 35 |
| Slaughter Lane (West) | Brodie Lane | Brasher Drive | Res-Collector | 50.5 | 44.3 | 5.1 | 28915 | VES | Divided | 6 | 155 | 19 | Low | High | 942 | 384 | 350 | 143 | 45 | 40 | 40 |
| Slaughter Lane (West) | Menchaca Road | IH 35 (South) East Frontage Road | Res-Collector | 50.5 | 44.3 | 5.1 | 28915 | ves | Divided | 6 | 155 | 19 | Low | High | 942 | 384 | 350 | 143 | 45 | 40 | 40 |
| Slaughter Lane (East) | I.H. 35 (South) East Frontage Road | Brandt Road | Res-Collector | 50.5 | 44.3 | 5.1 | 28915 | VES | Divided | 6 | 155 | 19 | Low | High | 942 | 384 | 350 | 143 | 45 | 40 | 40 |
| West Gate Boulevard | Manassas Drive | William Cannon Drive (West) | Res-Collector | 41.0 | 35.0 | 0.6 | 9453 | no | Divided | 4 | 45 | 1 | Low | Low | 52 | 9 | 511 | 88 | 35 | 35 | 30 |
| Wilson Parke Avenue | R.M. 620 | Woodbay Parke Drive | Res-Collector | 44.4 | 37.9 | 1.1 | 1391 | No | Divided | 2 | 12 | 1 | Low | High | 5 | 6 | 179 | 215 | 50 | 35 | 40 |

## APPENDIX B

## Contents:

Existing Speed Limits (MPH), Non-Urban Core Arterials North Austin

Proposed Speed Limits (MPH), Non-Urban Core Arterials - North Austin

Difference in Speed Limits (MPH), Non-Urban Core Arterials - North Austin

Existing Speed Limits (MPH), Non-Urban Core Arterials South Austin

Proposed Speed Limits (MPH), Non-Urban Core Arterials - South Austin

Difference in Speed Limits (MPH), Non-Urban Core Arterials - South Austin







## APPENDIX C

## Contents:

National Research and Guidance on Setting Appropriate Speed Limits

## National Research and Guidance on Setting Appropriate Speed Limits

Numerous national studies and reports mention the critical role that speed plays in severe traffic crashes. The National Transportation Safety Board, the Governors Highway Safety Association, the Insurance Institute for Highway Safety, National Highway Traffic Safety Administration, and the Federal Highway Administration are just a few of the organizations whose work we have reviewed in order to better understand the need for a comprehensive speed management approach.


National Transportation Safety Board Safety Study

- found that speed was a documented factor in $31 \%$ of all traffic fatality crashes nationally.
"Speed-and therefore speeding-increases crash risk in two ways: (1) it increases the likelihood of being involved in a crash, and (2) it increases the severity of injuries sustained by all road users in a crash." The study demonstrates how speeding presents different risks for different road users. People walking, biking, and riding scooters are all much more vulnerable to serious injury or fatality when a speeding car is involved. The risk for vulnerable users more than doubles from 20 MPH to 30 MPH and is increasingly worse at higher speeds. Speed influences the risk of crashes and crash injuries in three ways:
- The distance a vehicle travels from the time a driver detects an emergency to the time the driver reacts is increased.
- The distance needed to stop a vehicle once the driver starts to brake is increased.
- The exponential increase in crash energy. For example, when impact speed increases from 40 to 60 mph (a $50 \%$ increase), the energy increases by $125 \%$ (IIHS, 2018b)."

NCHRP 03-67 - This digest presents the results of the study titled "Expert System for Recommending Speed Limits in Speed Zones," describing "research conducted to develop a knowledge-based expert system decision-support tool for recommending speed limits in speed zones on highways and local roads that are considered credible and enforceable." It contains three sections: Research Scope and Motivation; Expert System Decision Rules and their Derivation; and Software Application and its Use.

## Research Results Digest 318



AN EXPERT SYSTEM FOR RECOMMENDING SPEED LIMITS IN SPEED ZONES
This digest presents the results of NCHRP Project 3-67, "Expert System for Recommending Speed Limits in Speed Zones." The study was conducted by a team led by the University of North Carolina Highway Safety Research Center with Wade Trim Associates, Inc. and PB Farradyne, Inc. Raghavan Srinivasan, Senior Transportation Research Engineer at the Highway Safety Research Center, was the Principal Investigator.

## SUMMARY

This digest describes research conducted o develop a knowledge-based expert system decision-support tool for recommending speed limits in speed zones on highways and local roads that are considered credible and enforceable. The tool is intended to assist responsible authorities in setting speedzone limits to enhance traffic safety and opzone limits to enhance traffic safety and op-
erating efficiency. The system has been designed to be useful for all types of primary roadways, from rural two-lane segments to urban freeway segments. The system does not address statutory limits such as maximum limits set by legislatures for Interstates and other major classes of roadways, temporary or part-time speed limits such as those posted in work zones and school zones, or variable speed limits that change as a function of traffic, weather, and other conditions. The expert system is designed to be implemented as a web-based software application.

The digest is based primarily on the final report for NCHRP Project 3-67, "Expert System for Recommending Speed Limits in Speed Zones" (available from
the project description page of the TRB website: http://www.trb.org/TRBNe//Proj ectDisplay.asp?ProjectID=821). The project reviewed current literature on guidelines, criteria, and procedures used for setting speed limits in speed zones in the United speed lamits in speed zones experience with use of XLIMITS, States and experience with use of XLiMIIS,
USLIMITS, and other existing speed-limit expert systems. A group of subject-matter experts engaged in setting and enforcing speed limits was convened to provide underlying decision rules for the expert system. The software application was developed with consideration of user needs and requirements for long-term management and maintenance of the expert system. (The application can be accessed through the Internet at http://www2.uslimits.org and is available for download and installation on an Internet server from the TRB website at http://www.trb.org/news/blurb_detail.asp? id $=7568$.)

This digest is organized into three sections and an appendix. The first section describes the motivation for the research and the scope of NCHRP Project 3-67. The second section describes the decision rules embedded in the expert system and how

USLIMITS2 - The FHWA developed this web-based tool to "help practitioners set reasonable, safe, and consistent speed limits for specific segments of roads." Its methodology was based on NCHRP 03-67 and uses several factors of street operating characteristics as inputs to develop recommended speed limits. The User Guide and Decision Rules documentation provide further details and guidance on how to use the USLIMITS2 tool.



FHWA "Achieving Multimodal Networks" Safety as a Guiding Principal: "Where modes come together, the design should eliminate conflicts to the greatest extent possible. If it is not feasible to eliminate the conflict entirely, designers should minimize the speed differential between modes to ensure that if a crash occurs, the severity of the injury is likely to be lower...Designers have the flexibility to set design speeds lower than the posted speed limit."

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As motor vehicle speeds increase, the risk of serious injury or fatality for a pedestrian also increases (AARP Impact Speed and a Pedestrian's Risk of Severe Injury or Death 2011, p. 1). Also, motorist visual field and peripheral vision is reduced at higher speeds.


Governors Highway Safety Association - "Speeding remains a publicly-accepted driving behavior that is reinforced among motorists, policymakers and transportation stakeholders. National surveys of U.S. drivers have found that although drivers identify speeding as risky, drivers nonetheless continue to speed. Drivers have a minimal perception of risk of either getting a ticket, causing a crash, or violating social norms."
"Research has shown raising speed limits to match the 85th percentile speed increases the average operating speed of the roadway, consequently increasing the 85th percentile speed."
"In 2013, the Washington legislature enacted a law allowing municipalities to establish a maximum speed limit of 20 mph in a residential or business district. This new law mandates that a reduced speed need not be based on any traffic or engineering studies, which were acknowledged as procedural roadblocks to making speed limit changes. The law also allows a municipality to reinstate a former speed limit if deemed necessary within a year of its change without a traffic or engineering study. New York City, which has a highprofile Vision Zero initiative, reduced its citywide speed limit to 25 mph as authorized by a 2014 New York State law. As of January 9, 2017, Boston reduced its default speed limit from 30 mph to 25 mph . IIHS evaluated the effects of this speed limit reduction and found that the reduction was associated with a $0.3 \%$ reduction in mean speeds. However, when looking at the odds of vehicles exceeding $25 \mathrm{mph}, 30$ mph , and 35 mph , reductions were increased to $2.9 \%, 8.5 \%$, and $29.3 \%$ respectively. This study concluded that lowering the speed limit in urban areas is an effective countermeasure to reduce speeds and improve road safety (Hu and Cicchino, 2018b)."

## Report Recommendation: Improve State and Local Policy

"Support Speed Limits According to Vision Zero Principles: States and localities should set reasonable speed limits in accordance with Vision Zero principles in built-up areas where there is a mix of vulnerable road users and motor vehicle traffic, at intersections and locations with a high risk of side collisions, and on rural roads without a median barrier to reduce the risk of head-on collisions.

States should also provide local communities with discretion to set speed limits and deploy speed management countermeasures in order to meet local needs."


## Texas Strategic Highway Safety Plan -

 Pedestrian Safety, Strategy 6A Encourage use of target speeds that consider pedestrians, land use, and the roadway context (e.g., a target speed of 35 mph or less on arterials). Other examples are to provide design flexibility guidance for techniques to reduce operating speeds on surface streets; encourage use of tree-lined medians, bicycle lanes, and safe and attractive pedestrian crossings and walkways; and support use of traffic calming for local streets.All Users Safety, 6B - Design new roadways for a target speed appropriate for the adjacent environment and safety of all users rather than for a design speed intended to maximize motor vehicle speeds.
Speeding Strategy 1: Encourage use of target speeds for arterial, collector, and local roadways; encourage use of target speeds with pedestrian, land use, and roadway context, including options for target speeds of 35 mph or less on arterials and the evaluation of existing speed limits to appropriate target speeds.


## NACTO Urban Street Design Guide -

 "There is a direct correlation between higher speeds, crash risk, and the severity of injuries... Design streets using target speed, the speed you intend for drivers to go, rather than operating speed. The 85th percentile of observed target speeds should fall between $10-30 \mathrm{mph}$ on most urban streets."