EXHIBIT A

MEMORANDUM

To: Traffic Study Files

From: Alison Mills, P.E., South Area Transportation Engineer
Transportation Engineering Division
Austin Transportation Department

Date: December 27, 2021

Subject: SPEED ZONE INVESTIGATION

Location: Nuckols Crossing Road: E. St. Elmo Road to S. Pleasant Valley Road
E. St. Elmo Road: Nuckols Crossing Road to Todd Lane/S. Pleasant Valley Road

Date(s) of Previous Investigation: None

A traffic engineering investigation has been conducted by the Transportation Engineering Division (TED) to determine the appropriate speed limit on Nuckols Crossing Road from E. St. Elmo Road to S. Pleasant Valley Road and on E. St. Elmo Road from Nuckols Crossing to Todd Lane/S. Pleasant Valley Road. E. St. Elmo Road becomes Nuckols Crossing Road east of S. Pleasant Valley Road at a curve in the roadway. Currently, the speed limit on Nuckols Crossing Road and E. St. Elmo Road in these sections of roadway are 40 MPH. Figure 1 represents a map of the study area.

Location Conditions

Nuckols Crossing Road from E. St. Elmo Road to S. Pleasant Valley Road is an undivided, two-way, two-lane, collector signed at 40 MPH. The roadway is approximately 1.4 miles and treated as a single segment due to similar land use and functional classification along the 1.4 miles. The roadway has two schools, a library, and fire and EMS station in this segment. While the roadway does not have many front-facing homes, it provides access to nearby residences via streets intersecting Nuckols Crossing Road

E. St. Elmo Road from Nuckols Crossing Road to Todd Lane is an undivided, two-way, two-lane, collector signed at 40 MPH. The roadway is approximately 0.5 miles and treated as a single segment due to similar land use and functional classification.

Table 1 presents more information of each street segment studied, while Figures 2 and 3 present maps of the street segments studied.

Table 1: Location Information

Street Segment	Segment Length (Miles)	Number of Unsignalized Access Points	Number of Signalized Intersections	Width (ft)
Nuckols Crossing Road – E. St. Elmo Road to S. Pleasant Valley Road	1.4	40	2	22-32
E. St. Elmo Road – Nuckols Crossing Road to Todd Lane	0.5	12	0	22

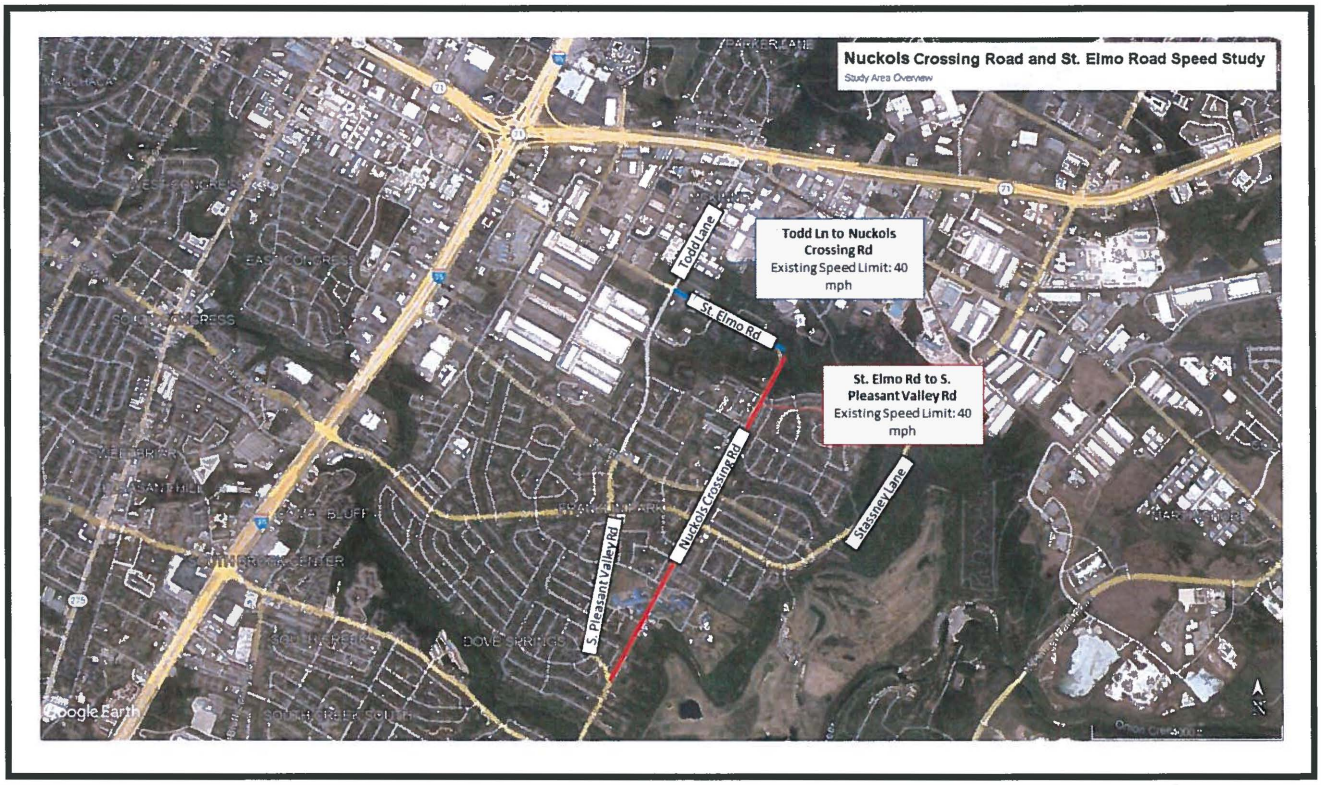


Figure 1: Study Area Aerial View

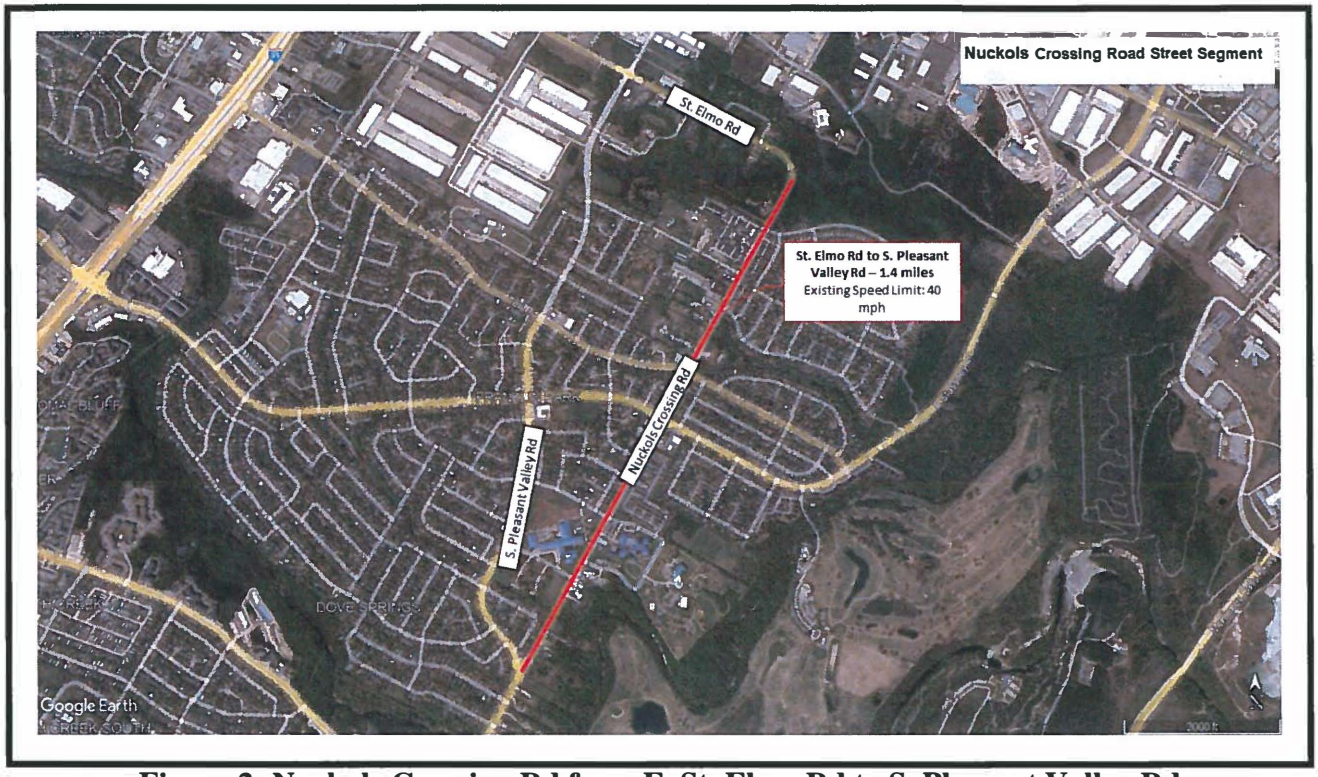


Figure 2: Nuckols Crossing Rd from E. St. Elmo Rd to S. Pleasant Valley Rd

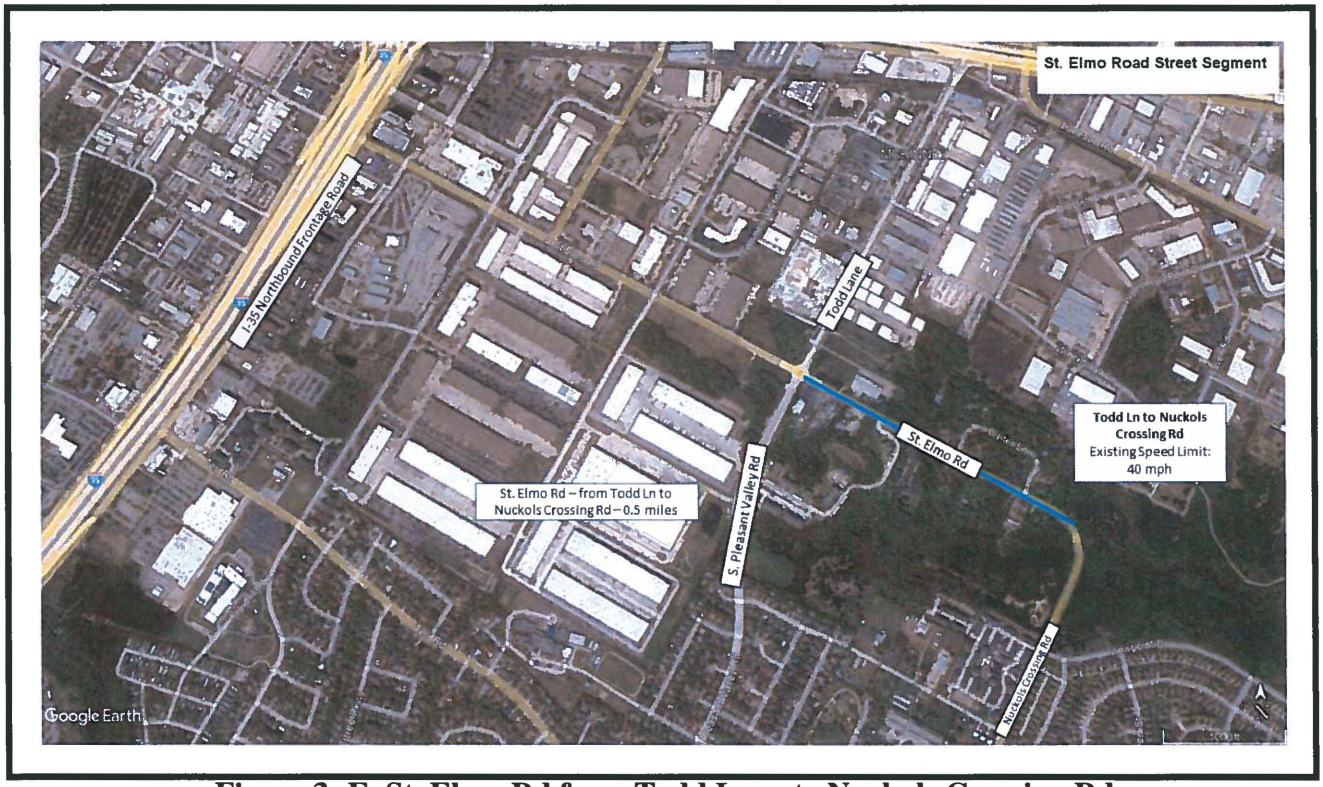


Figure 3: E. St. Elmo Rd from Todd Lane to Nuckols Crossing Rd

Investigation Data

TED's investigation was conducted in accordance with the TxDOT's "Procedures for Establishing Speed Zones," which focuses on a traditional methodology of 85th percentile speeds.

This investigation also utilized FHWA's USLIMITS2 tool to evaluate speed limits from a safe systems approach, which includes the following inputs to consider in setting reasonable, safe, and consistent speed limits based on the context and operating characteristics on the study segment:

- 85th percentile speed
- 50th percentile speed
- Statutory speed limit
- Section length
- Road alignment
- Median treatment
- Number of through lanes
- Adjacent land use
- Driveway density
- Traffic control devices
- Bicycle, pedestrian, and parking activity
- Daily vehicular volume
- Crash rate

Speed and volume data were collected in December 2021 to determine the appropriate posted speed limit for Nuckols Crossing Road and E. St. Elmo Road.

Table 2 summarizes the 85th percentile speed, 50th percentile speed, and daily traffic volumes collected on Nuckols Crossing Road at various points.

Table 2: Nuckols Crossing Road Speed and Volume Data

Street Segment	Existing Speed Limit (mph)	85% Speed (mph)		50% Speed (mph)		Traffic Volumes (ADT)
		EB	WB	EB	WB	
Pleasant Valley Rd to Parell Path	40	41	39	34	33	4550
Parell Path to Stassney Ln	40	38	40	32	34	4550
Stassney Ln to Maufrais Ln	40	32	32	29	26	4550
Maufrais Ln to St Elmo Rd	40	39	42	33	36	4550

Table 3 summarizes the 85th percentile speed, 50th percentile speed, and daily traffic volumes collected on E. St. Elmo Road.

Table 3: E. St. Elmo Road Speed and Volume Data

Street Segment	Existing Speed Limit (mph)	85% Speed (mph)		50% Speed (mph)		Traffic Volumes (ADT)
		EB	WB	EB	WB	
East of Todd Ln	40	31.8	37.6	28.7	33.1	8024

Crash data was obtained from the City of Austin's Vision Zero database. This database obtains crash data from the Texas Department of Transportation (TxDOT) Crash Record Information System (CRIS) database. Total number of crashes and total number of fatal or injury crashes from November 30, 2016 to November 30, 2021 were obtained for the extents of this project limits and summarized in Table 4. A crash was determined to be within the study area if the primary address was along the Nuckols Crossing Road or E. St. Elmo Road street segments.

Table 4: Crash Data

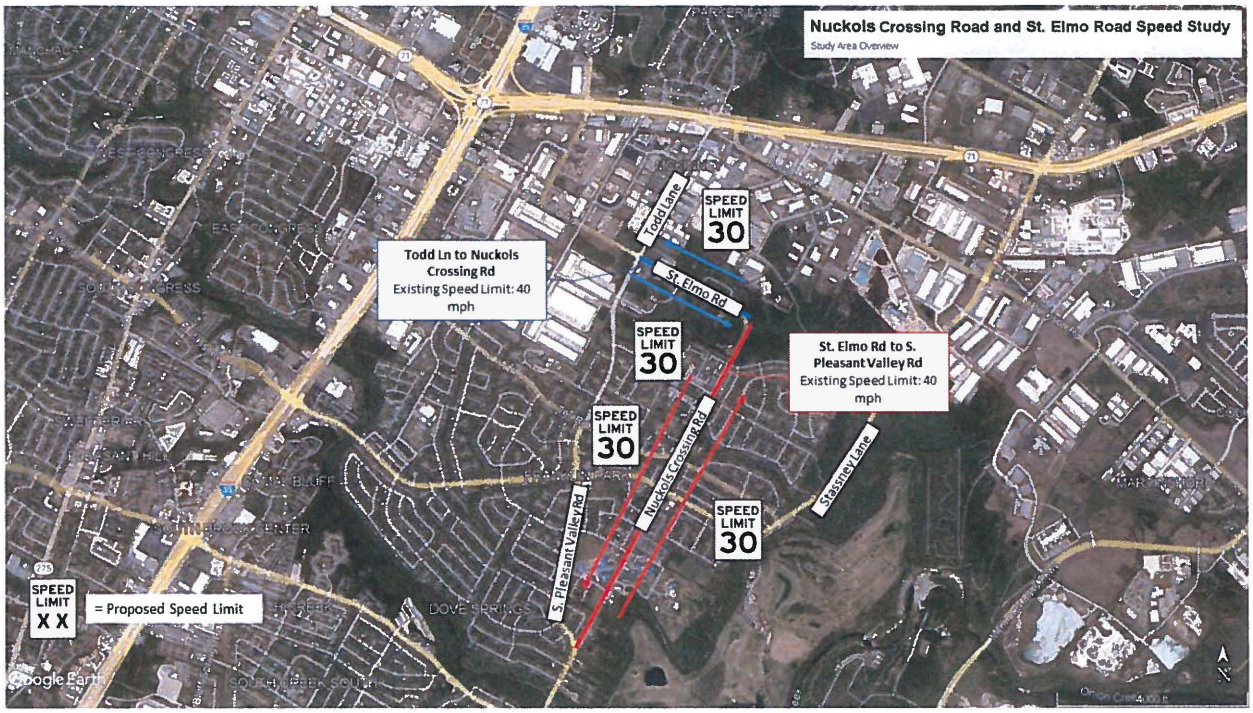
Street	Limits	Crashes	
		Total	Injury/ Fatal
Nuckols Crossing Rd	St. Elmo Rd to S. Pleasant Valley Rd	93	26
St. Elmo Rd	Todd Ln to Nuckols Crossing Rd	44	14

A USLIMITS2 study was run in both directions for all identified data points on Nuckols Crossing Road and E. St. Elmo Road. In accordance with the "Texas Procedures for Establishing Speed Zones," the same speed limit shall be maintained in both directions of travel on undivided roadways. Therefore, the recommended speed limit is to be 30 MPH along all identified street segments. In addition, on Nuckols Crossing Road, the land use and functional classification is maintained for the length of the segment. Speed recommendations at each point were considered to select one consistent speed limit for the length of the segment. The results of the USLIMITS2 Speed Zoning Report are summarized in Table 5 below.

Table 5: USLIMITS2 Speed Zoning Report Results

Street	Data Location	Existing Speed Limit (mph)	USLIMITS2 Recommended Speed Limit (mph)		**Recommended Speed Limit – Both Directions (mph)**
			NB/WB	SB/EB	
Nuckols Crossing Rd	Pleasant Valley Rd to Parell Path	40	35	35	**30**
	Parell Path to Stassney Ln	40	30	35	
	Stassney Ln to Maufrais Ln	40	30	25	
	Maufrais Ln to St Elmo Rd	40	35	35	
St. Elmo Rd	Pleasant Valley Rd to Parell Path	40	30	35	**30**

Figure 5 presents a map of the study area and the proposed speed limit based on the collected data and analysis.



Austin Transportation Department

Speed Zone Map

Nuckols Crossing Road and E. St. Elmo Road

Figure 5: Proposed Speed Limits Along Nuckols Crossing Road and St. Elmo Road

Recommendation

TED has determined a speed limit of 30 mph is appropriate for the study segments, based on the two methodologies used for setting speed limits and taking into account that the crash rate and injury crash rates for the study segments both exceed average crash rates for similar roads.

Appendix

USLIMITS2 Speed Zoning Report

Project Overview

Project Name: Nuckols Crossing Road Speed Study

Analyst: Cody Stone

Date: 2021-12-17

Basic Project Information
Route Name: Nuckols Crossing Road
From: St. Elmo Rd
To: S. Pleasant Valley Rd
State: Texas
County: Travis County
City: Austin city
Route Type: Road Section in Developed Area
Route Status: Existing

Crash Data Information
Crash Data Years: 5.00
Crash AADT: 4550 veh/day
Total Number of Crashes: 93
Total Number of Injury Crashes: 26
Section Crash Rate: 800 per 100 MVM
Section Injury Crash Rate: 224 per 100 MVM
Crash Rate Average for Similar Roads: 232
Injury Rate Average for Similar Roads: 66

Roadway Information
Section Length: 1.4 mile(s)
Statutory Speed Limit: None
Existing Speed Limit: 40 mph
Adverse Alignment: No
One-Way Street: No
Divided/Undivided: Undivided
Number of Through Lanes: 2
Area Type: Residential-Collector/Arterial
Number of Driveways: 40
Number of Signals: 2

Traffic Information
85th Percentile Speed: 38 mph
50th Percentile Speed: 32 mph
AADT: 4550 veh/day
On Street Parking and Usage: Not High
Pedestrian / Bicyclist Activity: Not High

Recommended Speed Limit:

Note: The section crash rate of 800 per 100 MVM is above the critical rate (310). The injury crash rate for the section of 224 per 100 MVM is above the critical rate (110). A comprehensive crash study should be undertaken to identify engineering and traffic control deficiencies and appropriate corrective actions. The speed limit should only be reduced as a last measure after all other treatments have either been tried or ruled out.

Equations Used in the Crash Data Calculations

Exposure (M)
M = (Section AADT * 365 * Section Length * Duration of Crash Data) / (100000000)
M = (4550 * 365 * 1.4 * 5.00) / (100000000)
M = 0.1163

Crash Rate (Rc)
Rc = (Section Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Rc = (18.60 * 100000000) / (4550 * 365 * 1.4)
Rc = 799.98 crashes per 100 MVM

Injury Rate (Ri)
Ri = (Section Injury Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Ri = (5.20 * 100000000) / (4550 * 365 * 1.4)
Ri = 223.65 injuries per 100 MVM

Critical Crash Rate (Cc)
Cc = Crash Average of Similar Sections + 1.645 * (Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Cc = 231.80 + 1.645 * (231.80 / 0.1163) ^ (1/2) + (1 / (2 * 0.1163))
Cc = 309.56 crashes per 100 MVM

Critical Injury Rate (Ic)
Ic = Injury Crash Average of Similar Sections + 1.645 * (Injury Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Ic = 66.27 + 1.645 * (66.27 / 0.1163) ^ (1/2) + (1 / (2 * 0.1163))
Ic = 109.85 injuries per 100 MVM

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Section Injury Crash Rate: 224 per 100 MVM
Crash Rate Average for Similar Roads: 232
Injury Rate Average for Similar Roads: 66

Roadway Information
Section Length: 1.4 mile(s)
Statutory Speed Limit: None
Existing Speed Limit: 40 mph
Adverse Alignment: No
One-Way Street: No
Divided/Undivided: Undivided
Number of Through Lanes: 2
Area Type: Residential-Collector/Arterial
Number of Driveways: 40
Number of Signals: 2

Traffic Information
85th Percentile Speed: 40 mph
50th Percentile Speed: 34 mph
AADT: 4550 veh/day
On Street Parking and Usage: Not High
Pedestrian / Bicyclist Activity: Not High

Recommended Speed Limit:

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Existing Speed Limit: 40 mph
Adverse Alignment: Yes
One-Way Street: No
Divided/Undivided: Undivided
Number of Through Lanes: 2
Area Type: Residential-Collector/Arterial
Number of Driveways: 40
Number of Signals: 2

Traffic Information
85th Percentile Speed: 39 mph
50th Percentile Speed: 33 mph
AADT: 4550 veh/day
On Street Parking and Usage: Not High
Pedestrian / Bicyclist Activity: Not High

Recommended Speed Limit:

Note: Sections with adverse alignments may need specific 'advisory speed warnings' which may be different from the general speed limit for the section. See Procedures for Setting Advisory Speeds on Curves, Publication No. FHWA-SA-11-22, June 2011, for more guidance.

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USLIMITS2 Speed Zoning Report

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Roadway Information
Section Length: 1.4 mile(s)
Statutory Speed Limit: None
Existing Speed Limit: 40 mph
Adverse Alignment: Yes
One-Way Street: No
Divided/Undivided: Undivided
Number of Through Lanes: 2
Area Type: Residential-Collector/Arterial
Number of Driveways: 40
Number of Signals: 2

Traffic Information
85th Percentile Speed: 42 mph
50th Percentile Speed: 36 mph
AADT: 4550 veh/day
On Street Parking and Usage: Not High
Pedestrian / Bicyclist Activity: Not High

Recommended Speed Limit:

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USLIMITS2 Speed Zoning Report

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Basic Project Information
Route Name: Nuckols Crossing Road
From: St. Elmo Rd
To: S. Pleasant Valley Rd
State: Texas
County: Travis County
City: Austin city
Route Type: Road Section in Developed Area
Route Status: Existing

Crash Data Information
Crash Data Years: 5.00
Crash AADT: 4550 veh/day
Total Number of Crashes: 93
Total Number of Injury Crashes: 26
Section Crash Rate: 800 per 100 MVM
Section Injury Crash Rate: 224 per 100 MVM
Crash Rate Average for Similar Roads: 232
Injury Rate Average for Similar Roads: 66

Roadway Information
Section Length: 1.4 mile(s)
Statutory Speed Limit: None
Existing Speed Limit: 40 mph
Adverse Alignment: No
One-Way Street: No
Divided/Undivided: Undivided
Number of Through Lanes: 2
Area Type: Residential-Collector/Arterial
Number of Driveways: 40
Number of Signals: 2

Traffic Information
85th Percentile Speed: 41 mph
50th Percentile Speed: 35 mph
AADT: 4550 veh/day
On Street Parking and Usage: Not High
Pedestrian / Bicyclist Activity: Not High

Recommended Speed Limit:

Note: The section crash rate of 800 per 100 MVM is above the critical rate (310). The injury crash rate for the section of 224 per 100 MVM is above the critical rate (110). A comprehensive crash study should be undertaken to identify engineering and traffic control deficiencies and appropriate corrective actions. The speed limit should only be reduced as a last measure after all other treatments have either been tried or ruled out.

Equations Used in the Crash Data Calculations

Exposure (M)
M = (Section AADT * 365 * Section Length * Duration of Crash Data) / (100000000)
M = (4550 * 365 * 1.4 * 5.00) / (100000000)
M = 0.1163

Crash Rate (Rc)
Rc = (Section Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Rc = (18.60 * 100000000) / (4550 * 365 * 1.4)
Rc = 799.98 crashes per 100 MVM

Injury Rate (Ri)
Ri = (Section Injury Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Ri = (5.20 * 100000000) / (4550 * 365 * 1.4)
Ri = 223.65 injuries per 100 MVM

Critical Crash Rate (Cc)
Cc = Crash Average of Similar Sections + 1.645 * (Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Cc = 231.80 + 1.645 * (231.80 / 0.1163) ^ (1/2) + (1 / (2 * 0.1163))
Cc = 309.56 crashes per 100 MVM

Critical Injury Rate (Ic)
Ic = Injury Crash Average of Similar Sections + 1.645 * (Injury Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Ic = 66.27 + 1.645 * (66.27 / 0.1163) ^ (1/2) + (1 / (2 * 0.1163))
Ic = 109.85 injuries per 100 MVM

USLIMITS2 Speed Zoning Report

Project Overview

Project Name: Nuckols Crossing Road Speed Study

Analyst: Cody Stone

Date: 2021-12-17

Basic Project Information
Route Name: Nuckols Crossing Road
From: St. Elmo Rd
To: S. Pleasant Valley Rd
State: Texas
County: Travis County
City: Austin city
Route Type: Road Section in Developed Area
Route Status: Existing

Crash Data Information
Crash Data Years: 5.00
Crash AADT: 4550 veh/day
Total Number of Crashes: 93
Total Number of Injury Crashes: 26
Section Crash Rate: 800 per 100 MVM
Section Injury Crash Rate: 224 per 100 MVM
Crash Rate Average for Similar Roads: 232
Injury Rate Average for Similar Roads: 66

Roadway Information
Section Length: 1.4 mile(s)
Statutory Speed Limit: None
Existing Speed Limit: 40 mph
Adverse Alignment: No
One-Way Street: No
Divided/Undivided: Undivided
Number of Through Lanes: 2
Area Type: Residential-Collector/Arterial
Number of Driveways: 40
Number of Signals: 2

Traffic Information
85th Percentile Speed: 39 mph
50th Percentile Speed: 33 mph
AADT: 4550 veh/day
On Street Parking and Usage: Not High
Pedestrian / Bicyclist Activity: Not High

Recommended Speed Limit:

Note: The section crash rate of 800 per 100 MVM is above the critical rate (310). The injury crash rate for the section of 224 per 100 MVM is above the critical rate (110). A comprehensive crash study should be undertaken to identify engineering and traffic control deficiencies and appropriate corrective actions. The speed limit should only be reduced as a last measure after all other treatments have either been tried or ruled out.

Equations Used in the Crash Data Calculations

Exposure (M)
M = (Section AADT * 365 * Section Length * Duration of Crash Data) / (100000000)
M = (4550 * 365 * 1.4 * 5.00) / (100000000)
M = 0.1163

Crash Rate (Rc)
Rc = (Section Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Rc = (18.60 * 100000000) / (4550 * 365 * 1.4)
Rc = 799.98 crashes per 100 MVM

Injury Rate (Ri)
Ri = (Section Injury Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Ri = (5.20 * 100000000) / (4550 * 365 * 1.4)
Ri = 223.65 injuries per 100 MVM

Critical Crash Rate (Cc)
Cc = Crash Average of Similar Sections + 1.645 * (Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Cc = 231.80 + 1.645 * (231.80 / 0.1163) ^ (1/2) + (1 / (2 * 0.1163))
Cc = 309.56 crashes per 100 MVM

Critical Injury Rate (Ic)
Ic = Injury Crash Average of Similar Sections + 1.645 * (Injury Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Ic = 66.27 + 1.645 * (66.27 / 0.1163) ^ (1/2) + (1 / (2 * 0.1163))
Ic = 109.85 injuries per 100 MVM

USLIMITS2 Speed Zoning Report

Project Overview

Project Name: St. Elmo Road Speed Study

Analyst: Cody Stone

Date: 2021-12-17

Basic Project Information
Route Name: St. Elmo Road
From: Nuckels Crossing Road
To: Todd Lane
State: Texas
County: Travis County
City: Austin city
Route Type: Road Section in Developed Area
Route Status: Existing

Crash Data Information
Crash Data Years: 5.00
Crash AADT: 8024 veh/day
Total Number of Crashes: 44
Total Number of Injury Crashes: 14
Section Crash Rate: 601 per 100 MVM
Section Injury Crash Rate: 191 per 100 MVM
Crash Rate Average for Similar Roads: 263
Injury Rate Average for Similar Roads: 76

Roadway Information
Section Length: 0.5 mile(s)
Statutory Speed Limit: None
Existing Speed Limit: 40 mph
Adverse Alignment: Yes
One-Way Street: No
Divided/Undivided: Undivided
Number of Through Lanes: 2
Area Type: Residential-Collector/Arterial
Number of Driveways: 12
Number of Signals: 0

Traffic Information
85th Percentile Speed: 32 mph
50th Percentile Speed: 29 mph
AADT: 8024 veh/day
On Street Parking and Usage: Not High
Pedestrian / Bicyclist Activity: Not High

Recommended Speed Limit:

Note: Sections with adverse alignments may need specific 'advisory speed warnings' which may be different from the general speed limit for the section. See Procedures for Setting Advisory Speeds on Curves, Publication No. FHWA-SA-11-22, June 2011, for more guidance.

Note: The section crash rate of 601 per 100 MVM is above the critical rate (369). The injury crash rate for the section of 191 per 100 MVM is above the critical rate (136). A comprehensive crash study should be undertaken to identify engineering and traffic control deficiencies and appropriate corrective actions. The speed limit should only be reduced as a last measure after all other treatments have either been tried or ruled out.

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Equations Used in the Crash Data Calculations

Exposure (M)
M = (Section AADT * 365 * Section Length * Duration of Crash Data) / (100000000)
M = (8024 * 365 * 0.5 * 5.00) / (100000000)
M = 0.0732

Crash Rate (Rc)
Rc = (Section Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Rc = (8.80 * 100000000) / (8024 * 365 * 0.5)
Rc = 600.94 crashes per 100 MVM

Injury Rate (Ri)
Ri = (Section Injury Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Ri = (2.80 * 100000000) / (8024 * 365 * 0.5)
Ri = 191.21 injuries per 100 MVM

Critical Crash Rate (Cc)
Cc = Crash Average of Similar Sections + 1.645 * (Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Cc = 263.24 + 1.645 * (263.24 / 0.0732) ^ (1/2) + (1 / (2 * 0.0732))
Cc = 368.70 crashes per 100 MVM

Critical Injury Rate (Ic)
Ic = Injury Crash Average of Similar Sections + 1.645 * (Injury Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Ic = 76.11 + 1.645 * (76.11 / 0.0732) ^ (1/2) + (1 / (2 * 0.0732))
Ic = 135.98 injuries per 100 MVM

USLIMITS2 Speed Zoning Report

Project Overview

Project Name: St. Elmo Road Speed Study

Analyst: Cody Stone

Date: 2021-12-17

Basic Project Information
Route Name: St. Elmo Road
From: Nuckels Crossing Road
To: Todd Lane
State: Texas
County: Travis County
City: Austin city
Route Type: Road Section in Developed Area
Route Status: Existing

Crash Data Information
Crash Data Years: 5.00
Crash AADT: 8024 veh/day
Total Number of Crashes: 44
Total Number of Injury Crashes: 14
Section Crash Rate: 601 per 100 MVM
Section Injury Crash Rate: 191 per 100 MVM
Crash Rate Average for Similar Roads: 263
Injury Rate Average for Similar Roads: 76

Roadway Information
Section Length: 0.5 mile(s)
Statutory Speed Limit: None
Existing Speed Limit: 40 mph
Adverse Alignment: Yes
One-Way Street: No
Divided/Undivided: Undivided
Number of Through Lanes: 2
Area Type: Residential-Collector/Arterial
Number of Driveways: 12
Number of Signals: 0

Traffic Information
85th Percentile Speed: 38 mph
50th Percentile Speed: 33 mph
AADT: 8024 veh/day
On Street Parking and Usage: Not High
Pedestrian / Bicyclist Activity: Not High

Recommended Speed Limit:

Note: Sections with adverse alignments may need specific 'advisory speed warnings' which may be different from the general speed limit for the section. See Procedures for Setting Advisory Speeds on Curves, Publication No. FHWA-SA-11-22, June 2011, for more guidance.

Note: The section crash rate of 601 per 100 MVM is above the critical rate (369). The injury crash rate for the section of 191 per 100 MVM is above the critical rate (136). A comprehensive crash study should be undertaken to identify engineering and traffic control deficiencies and appropriate corrective actions. The speed limit should only be reduced as a last measure after all other treatments have either been tried or ruled out.

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Equations Used in the Crash Data Calculations

Exposure (M)
M = (Section AADT * 365 * Section Length * Duration of Crash Data) / (100000000)
M = (8024 * 365 * 0.5 * 5.00) / (100000000)
M = 0.0732

Crash Rate (Rc)
Rc = (Section Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Rc = (8.80 * 100000000) / (8024 * 365 * 0.5)
Rc = 600.94 crashes per 100 MVM

Injury Rate (Ri)
Ri = (Section Injury Crash Average * 100000000) / (Section AADT * 365 * Section Length)
Ri = (2.80 * 100000000) / (8024 * 365 * 0.5)
Ri = 191.21 injuries per 100 MVM

Critical Crash Rate (Cc)
Cc = Crash Average of Similar Sections + 1.645 * (Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Cc = 263.24 + 1.645 * (263.24 / 0.0732) ^ (1/2) + (1 / (2 * 0.0732))
Cc = 368.70 crashes per 100 MVM

Critical Injury Rate (Ic)
Ic = Injury Crash Average of Similar Sections + 1.645 * (Injury Crash Average of Similar Sections / Exposure) ^ (1/2) + (1 / (2 * Exposure))
Ic = 76.11 + 1.645 * (76.11 / 0.0732) ^ (1/2) + (1 / (2 * 0.0732))
Ic = 135.98 injuries per 100 MVM