



EXHIBIT "A"

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Matthew Baker
Frank Ortega
Kristin Stevens
Hilda Montgomery

City Manager
Laurie Hadley

Mayor Pro-Tem
Rene Flores

City Attorney
Stephan L. Sheets

To: Brian Kuhn, PE, Assistant Director of Transportation

From: Matt Bushak, PE, Senior Transportation Engineer

Date: September 24, 2021

RE: SPEED STUDY FOR CREEK BEND BLVD – WYOMING SPRINGS DR TO BRUSHY CREEK BRIDGE

The City of Round Rock Transportation Department has completed a speed study along Creek Bend Blvd between Wyoming Springs Blvd and the southwest approach to the bridge over Brushy Creek. The purpose of the study was to document and evaluate the existing posted speed limits within the study area. Curve advisory speeds and school zone speed evaluation was not in the scope of the study. The following summarizes the study methodology, results, and recommendations.

EXISTING CONDITIONS

Creek Bend Blvd is classified as an arterial and consists of two lanes in each direction with a raised center median. The posted speed limit within the study area is 45 mph. The study area and existing speed limit signs are shown in Figure 1.

DATA COLLECTION

TXDOT's "Procedures for Establishing Speed Zones" (Manual) provides guidance on collecting data for speed studies. The Manual recommends that speed checks should:

- Be made on average weekdays at off-peak hours
- Be made under favorable weather conditions
- Include only free flowing vehicles
- Include a minimum of 125 cars in each direction at each location
- Be discontinued after two hours if radar is used, even if 125 cars have not been recorded

Speed spot data were collected by Quality Counts using radar technology at three locations within the study area. The data were taken in both the northeast bound and southwest bound directions. The locations are shown on Figure 1 and the Field Tally Sheets are in Appendix A. Speed distributions were graphed to confirm that there were no anomalies in the data and are included in Appendix A. Table 1 provides a summary of the data collected.

Location	Direction of Travel	
	NE	SW
Creek Bend Blvd and Soprano Way	49 mph	46 mph
Creek Bend Blvd just southwest of Brushy Creek Bridge	49 mph	47 mph
Creek Bend Blvd just northeast of Brushy Creek Bridge	47 mph	44 mph

Table 1: 85th percentile speeds recorded

SPEED STUDY METHODOLOGY

TXDOT's Manual provides guidance on the methodology for setting speed zones. The Manual suggests using the 85th percentile speed of free flowing traffic as a basis for determining the appropriate speed limit. The 85th percentile speed is used by many cities, counties, and states and is based on the theory that a large majority of drivers:

- Are reasonable and prudent
- Do not want to have a crash
- Desire to reach their destination in the shortest possible time

Therefore, a speed at or below the recorded 85th percentile speed may be considered the maximum safe speed under favorable weather and visibility conditions. The posted speed selected is the nearest value ending in 5 or 0. The final speed limit may be lowered or raised by as much as 5 miles per hour from the 85th percentile determined by the study, based on the professional judgment of the supervising engineer.

RESULTS AND RECOMMENDATIONS

Based on the results of the study, the 85th percentile speeds within the study area are between 44 mph and 49 mph, which is within 5 mph of the posted speed. Therefore, the recommendation of the Transportation Department is for the existing speed limit remain at 45 mph. Furthermore, the current speed limit sign placement is appropriate, and it is recommended that the signs remain at their current locations. No additional speed limit signs are necessary.



APPENDIX A

CREEK BEND BLVD SPEED STUDY WYOMING SPRINGS DR TO BRUSHY CREEK BRIDGE

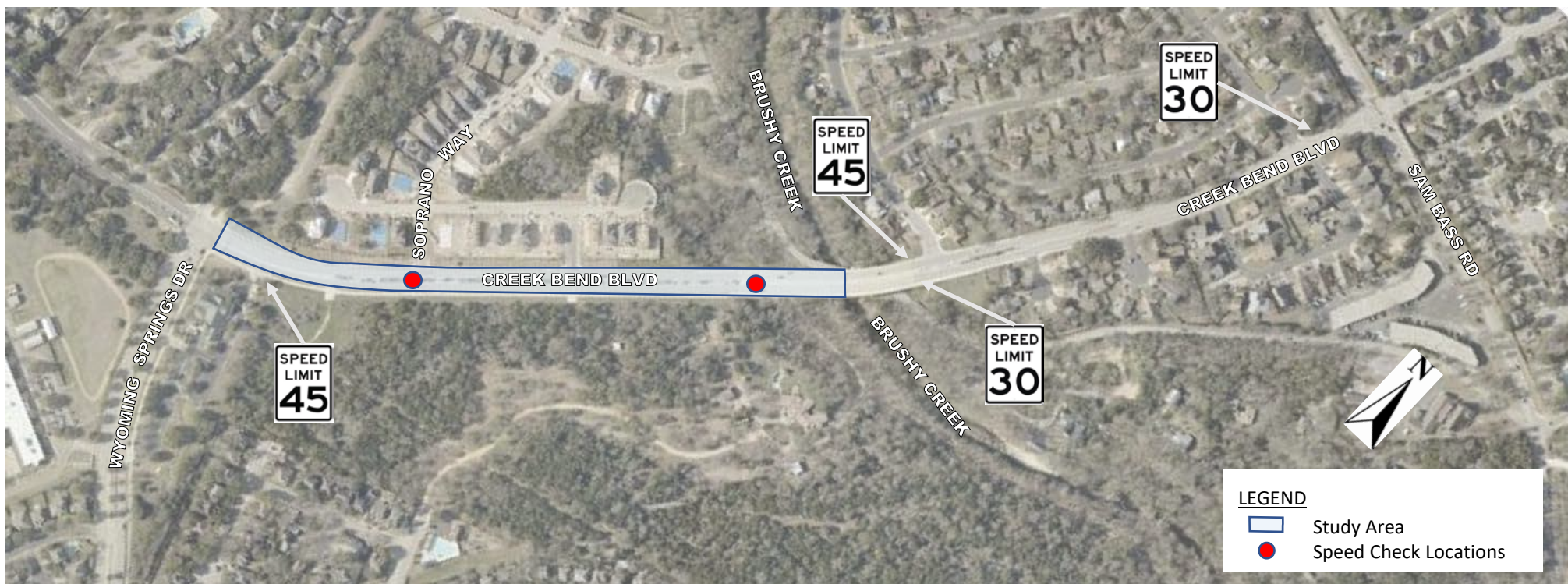


FIGURE 1: SPEED STUDY AREA

RADAR MOTOR VEHICLE SPEED Field Tally Sheet

Date: 4/21/2021 County: Williamson Hwy: Creek Bend Blvd Just East of Soprano Way Location: 15410501

Time (from): 12:30 PM (to): 1:20 PM Weather: Clear / Sunny

Surface Type: Asphalt Surface condition: Dry / Smooth

M.P.H.	AUTOMOBILES		Cumulative Total	AUTOMOBILES		Cumulative Total	M.P.H.
	NB Direction: v			SB Direction: ^			
>80							>80
79							79
78							78
77							77
76							76
75							75
74							74
73							73
72							72
71							71
70							70
69							69
68							68
67							67
66							66
65							65
64							64
63				1	134		63
62					133		62
61					133		61
60				1	133		60
59				0	132		59
58				0	132		58
57				0	132		57
56				0	132		56
55	1	134		0	132		55
54	2	133		0	132		54
53	2	131		0	132		53
52	4	129		0	132		52
51	4	125		1	132		51
50	6	121		1	131		50
49	4	115		3	130		49
48	8	111		5	127		48
47	14	103		7	122		47
46	11	89		5	115		46
45	22	78		11	110		45
44	16	56		13	99		44
43	13	40		17	86		43
42	12	27		22	69		42
41	3	15		14	47		41
40	6	12		14	33		40
39	3	6		10	19		39
38	0	3		4	9		38
37	1	3		2	5		37
36	1	2		3	3		36
35	1	1					35
34							34
33							33
32							32
31							31
<30							<30
	Total Automobiles		134	Total Automobiles		134	
			X 0.85			X 0.85	
	85th Percentile Automobile:		114	85th Percentile Automobile:		114	
	85th Percentile Speed (m.p.h.):		49	85th Percentile Speed (m.p.h.):		46	

Reorder: Randel G. Lenz

RADAR MOTOR VEHICLE SPEED Field Tally Sheet

Date: 4/21/2021 County: Williamson Hwy: Creek Bend Blvd Just South of Brushy Creek Bridge Location: 15410502

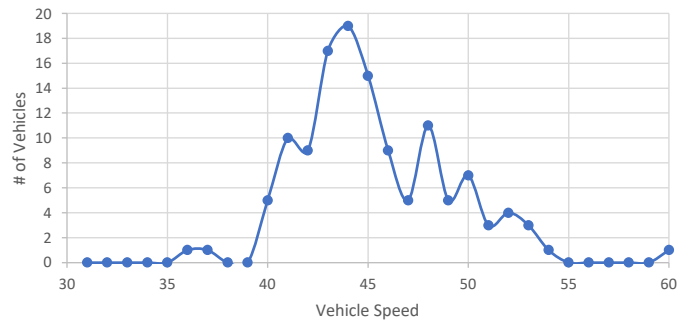
Time (from): 11:45 AM (to): 12:25 PM Weather: Clear / Sunny

Surface Type: Asphalt Surface condition: Dry / Smooth

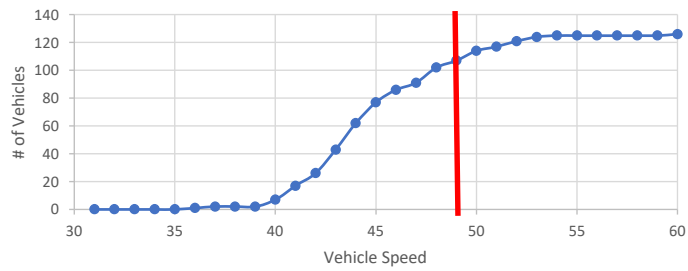
M.P.H.	AUTOMOBILES	Cumulative Total	AUTOMOBILES	Cumulative Total	M.P.H.
	NB Direction: v		SB Direction: ^		
>80					>80
79					79
78					78
77					77
76					76
75					75
74					74
73					73
72					72
71					71
70			1	129	70
69				128	69
68				128	68
67				128	67
66				128	66
65				128	65
64				128	64
63				128	63
62	1	126		128	62
61		125		128	61
60		125		128	60
59		125		128	59
58		125		128	58
57		125		128	57
56		125		128	56
55		125		128	55
54	1	125	1	128	54
53	3	124		127	53
52	4	121	1	127	52
51	3	117	1	126	51
50	7	114	5	125	50
49	5	107	5	120	49
48	11	102	1	115	48
47	5	91	5	114	47
46	9	86	9	109	46
45	15	77	11	100	45
44	19	62	16	89	44
43	17	43	14	73	43
42	9	26	14	59	42
41	10	17	11	45	41
40	5	7	12	34	40
39	0	2	10	22	39
38	0	2	7	12	38
37	1	2	2	5	37
36	1	1	1	3	36
35		0	0	2	35
34		0	1	2	34
33		0		1	33
32		0		1	32
31		0	1	1	31
<30					<30
	Total Automobiles	126	Total Automobiles	129	
	X 0.85		X 0.85		
	85th Percentile Automobile:	107	85th Percentile Automobile:	110	
	85th Percentile Speed (m.p.h.):	49	85th Percentile Speed (m.p.h.):	47	

Reorder: Randel G. Lenz

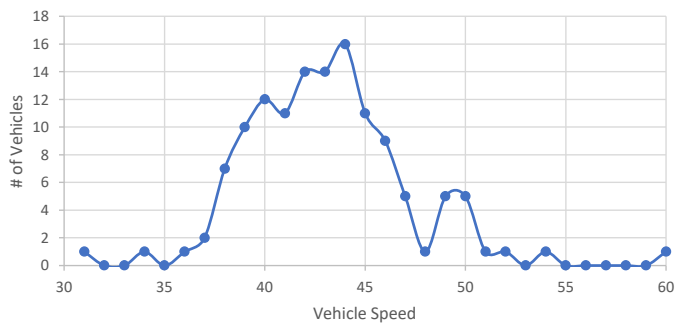
NB at Creek Bend Blvd and Brushy Creek Bridge
Speed Distribution



NB at Creek Bend Blvd and Brushy Creek Bridge
Cumulative Speed Distribution



SB at Creek Bend Blvd and Brushy Creek Bridge
Speed Distribution



SB at Creek Bend Blvd and Brushy Creek Bridge
Speed Distribution

