

RAISED MEDIAN AND DRIVEWAY DENSITY CRASH ANALYSIS



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Why Study Crashes?



List of Case Study Corridors

- Texas Ave (Bus SH 6 – College Station)
- Loop 281 (Longview)
- Grant Ave (US 385 – Odessa)
- 42nd St (SH 191 – Odessa)
- Camp Bowie Blvd (US 377 – Fort Worth)
- University Dr (US 380 – McKinney)
- Preston Rd (SH 289 – Plano)
- Park Blvd (Plano)
- 31st St (FM 1741 – Temple)
- Broadway (US 69 – Tyler)
- 71st St (Tulsa, OK)

Studied Corridors With . . .

- Raised Medians
- No Raised Medians
- Before and After Raised Medians
- Low Access Point Densities
- High Access Point Densities
- Varying Access Point Densities

Resources

■ Crash Data

- Texas DPS
 - Crash reports (best details)
- Oklahoma DOT
 - Crash listings (some details)
- Cities (Plano and Wichita Falls)
 - Crash listings (fewer details)
- Some reporting errors
- Typically not more than 10 year available

Resources

■ Traffic Volumes

- Texas DOT
- City of Plano
- Indian Nation COG (Tulsa)
- Some interpolation for missing years

Resources

■ Aerial Photos

- Cities
- COGs
- Other state agencies
- Varying resolution and quality

Methodology

- Determine crashes per million VMT
- Compare corridors before and after raised median presence
- Compare high, medium, and low corridors and segments

Loop 281 - Longview



Loop 281 – Injuries

(Before and After Raised Median)

	'92	'93	'94	'95	'96	'97	'98	'99
None	112	125	186	155	80	114	119	85
Possible	28	54	51	50	45	45	64	52
Non-incapac	0	4	8	18	15	7	12	11
Incapac	1	1	0	3	0	0	0	1
Fatality	0	0	0	1	0	0	0	0

Loop 281 – Crash Types

	'92	'93	'94	'95	'96	'97	'98	'99
Rear-End	16	31	27	20	18	21	23	17
Side-Impact	10	22	27	44	18	15	30	25
Side-Swipe	9	8	11	4	3	1	2	0
Single	0	0	0	2	1	1	2	0
Head-On	9	1	1	1	2	0	0	0

US 377 – High Access Density



US 377 – Low Access Density



US 377 – Total Crashes

Year	Segment	Access Density (pts/mi)	Number of Crashes	Crashes / Million VMT
1993	East	110	28	9.59
	West	50	27	7.40
1994	East	110	27	9.25
	West	50	22	6.03
1995	East	110	29	9.46
	West	50	16	4.17
1996	East	110	24	7.83
	West	50	26	6.78

US 377 – Total Crashes

1997	East	110	24	8.52
	West	50	25	7.10
1998	East	110	17	6.40
	West	50	14	4.21
1999	East	110	22	8.19
	West	50	26	7.74
2000	East	110	29	10.85
	West	50	13	3.89

Corridor Summaries

SH 289	44-53K	30.0	Yes	4.21
Park Blvd (west)	28-37K	10.0	Yes	1.71
Park Blvd (central)	33-36K	38.9	Yes	6.59
Park Blvd (east)	34-35K	16.0	Yes	2.23
71 st Street (west)	20-24K	27.0	Bef	3.76
71 st Street (west)	28-33K	27.0	Aft	2.48
71 st Street (west-central)	20-21K	20.0	Bef	3.82
71 st Street (west-central)	22-37K	20.0	Aft	1.78
71 st Street (east-central)	27-47K	33.0	Yes	3.20
71 st Street (east)	25-51K	42.0	Yes	5.17

Corridor Summaries

US 380 (west)	14-29K	56.0	Yes	3.12
US 380 (east)	13-24K	98.8	Yes	7.29
US 377 (west)	18-21K	50.0	Yes	5.92
US 377 (east)	18-21K	110.0	Yes	8.76
FM 1741	26-31K	38.5	No	2.71
Loop 281	20-27K	52.5	Bef	5.21
Loop 281	20-17K	52.5	Aft	4.29
US 69 (north)	30-39K	38.1	No	8.60
US 69 (south)	27-40K	85.4	No	12.92
US 385	9-12K	50.0	Bef	19.57
US 385	9-12K	50.0	Aft	15.39
SH 191 (west)	29-36K	56.4	No	6.55
SH 191 (east)	16-24K	27.7	No	4.00

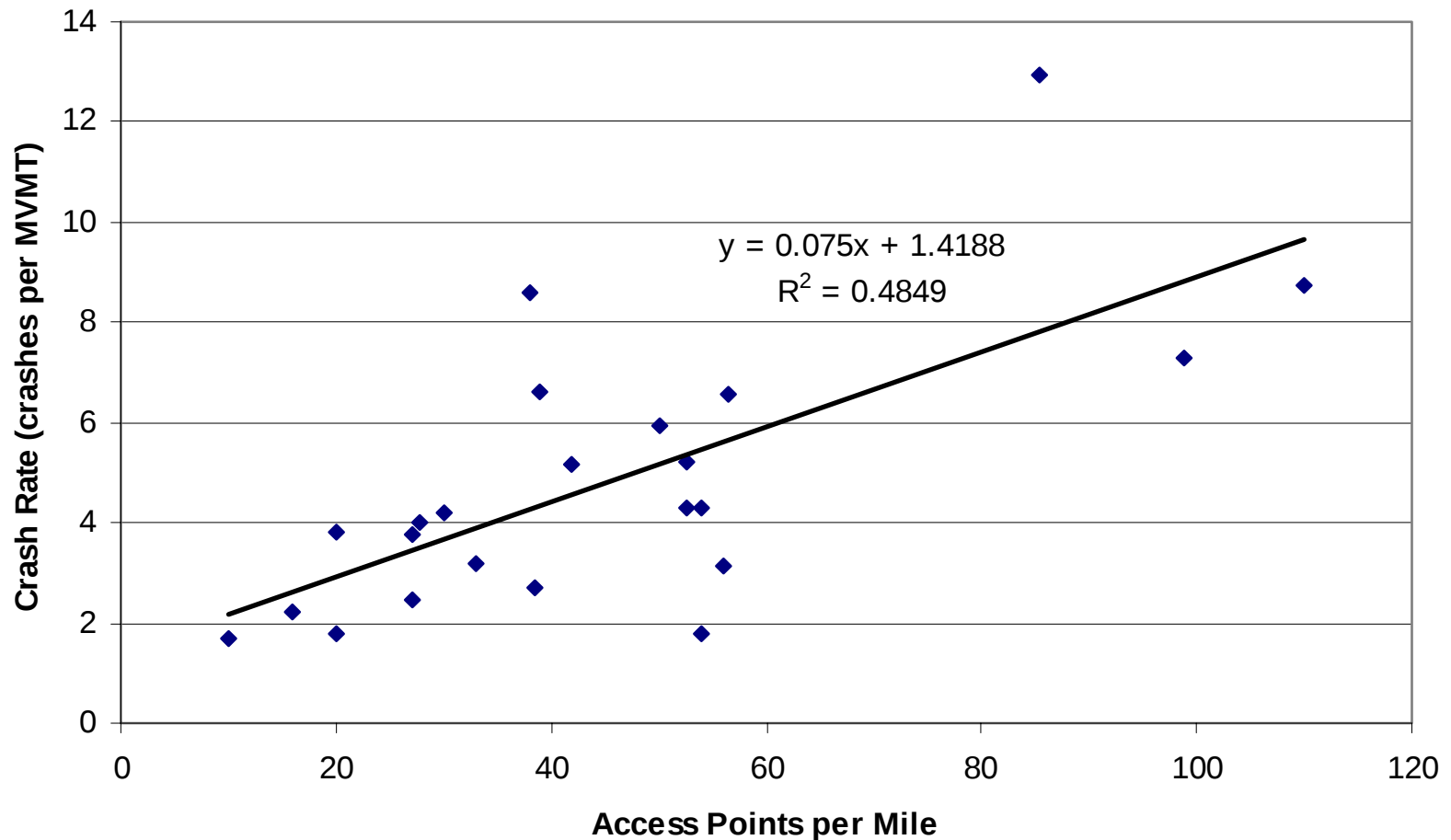
Raised Median Comparisons

Corridor	ADT ¹	Before Median Type	Crash Rate				Dens
			Pre	Post	Dif	%	
Bus SH 6	41,000	TWLT	4.3	1.8	-2.5	-58	54
Loop 281	23,500	TWLT	5.21	4.29	-0.92	-18	53
71 st West	30,500	Undiv	3.76	2.48	-1.28	-34	27
71 st WC	29,500	Undiv	3.82	1.78	-2.04	-53	20
US 385	10,600	Undiv	19.57	15.39	-4.18	-21	50
Others	30,600	Varies	7.0	4.8	-2.2	-31	49

¹ADT is the traffic volume in the “after” condition that has the raised median present.

²This is a comparison of the average crash rate for all the corridors “before” and “after” the raised median was installed. Note that the “before” condition was typically a TWLT (Refer to Table 3).

Access Density and Crash Rates



Conclusions

- Each corridor is unique
 - Varying conditions
- Lower Access Densities tend to correlate to lower crash rates
- Presence of Raised Medians tends to correlate to lower crash rates and less severe crashes

CONTACT INFORMATION

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