

# Speed Limit Study

SR-347

ARIZONA DEPARTMENT OF TRANSPORTATION

Central Region Traffic Engineering

5/27/2023



Transportation Systems Management and Operations

## Introduction

A speed study has been conducted for SR-347 within the Gila River Indian Community from I-10 to the city limits of the City of Maricopa. The major factor in deterring a speed limit in compliance with federal code, the FHWA, state law, ADOT policy and standard traffic engineering practice is the 85th percentile speed, which is the speed at which 85% of the drivers are driving at or below (meaning 15% are exceeding this speed).

Other factors that are considered as part of a speed study include:

- Length of section
- Alignment
- Roadway width and shoulders
- Surface conditions
- Sight distance
- Traffic volume
- Crash experience
- Maximum comfortable speed on curves
- Side friction (roadside development)
- Parking practices and pedestrian activity
- Signal progression
- Road characteristics, shoulder condition, grade, alignment, and sight distance
- The pace speed
- Roadside development and environment
- Parking practices and pedestrian activity
- Reported crash experience for at least a 12-month period

## Traffic Volumes

Milepost	AADT	K Factor	D Factor	T Factor	Site ID
175.65 - 185.28	55,448	6%	67%	7%	101622
185.28 - 187.51	43,760	7%	64%	18%	101623
187.51 - 189.38	35,352	8%	64%	10%	101624

**K-Factor:** proportion of annual average daily traffic occurring in any given hour.

**D-Factor:** Percentage traffic volume concentrated in the higher volume direction compared to the combined volume in both directions.

**T-Factor:** Percentage of trucks in the total traffic volume.

## Crash Summary

Highlights				
<b>Total Crashes</b> 967	<b>Top 5 Crash Types</b>		<b>Injury Severity</b>	
<b>Wet Road Surface</b> 66	Rear End	655	<b>K</b>	<b>A</b>
<b>Motorcycle</b> 26	Sideswipe Same Direction	122	15	21
<b>Non-Motorist Counts</b>	Single Vehicle	113	<b>B</b>	<b>C</b>
Pedalcyclist	Other	27	144	134
Pedestrian	Angle	20	<b>O</b>	653
	<b>Dark Light Conditions</b>		<b>Impairment (Alcohol) of Traffic Unit</b>	
	Dark Lighted	47	42	
	Dark Not Lighted	210		
	<b>Traffic Unit Not Using Safety Device</b>		<b>Top 5 Violations (Unit 1)</b>	
	28		Speed Too Fast For Conditions	607
			No Improper Action	85
			Unknown	69
			Unsafe Lane Change	56
			Followed Too Closely	50

### Injury Severity Description

K = Fatal, A = Suspected Serious Injury, B = Suspected Minor Injury, C = Possible Injury, O = No Injury

## Speed Data Summary

Mile Post and Direction	Posted Speed	85th %	50%	10 MPH Pace	% in Pace
178.0 NB	55 mph	65.6	60.8	58-67	69%
178.0 SB	55 mph	72	65.8	64-73	54%
181.0 NB	65 mph	73.6	67.5	63-72	67%
181.0 SB	65 mph	78.8	70.9	67-76	58%
182.5 NB	65 mph	71	62.8	58-67	52%
182.5 SB	65 mph	72.5	65.2	61-70	54%
184.0 NB	55 mph	73.8	68.2	64-73	66%
184.0 SB	55 mph	73.9	67.4	64-74	56%
185.2 NB	55 mph	66	58	53-62	55%
185.2 SB	55 mph	67.4	60.3	58-67	46%
186.0 NB	65 mph	73.3	68	65-74	64%
186.0 SB	65 mph	74.5	65.1	59-68	49%
186.5 NB	65 mph	72.8	67.8	65-74	71%
186.5 SB	65 mph	74.8	69.3	65-74	69%
188.0 NB	55 mph	71	63.4	60-69	49%
188.0 SB	55 mph	68.8	63.3	60-69	55%

## Discussion/Conclusions

The current posted speed limits of 55 mph at the intersections (specifically Riggs, Casa Blanca, CalPortland Driveway, and Old Maricopa Rd) are substantially below the 85th percentile operating speeds.

Both the 85th percentile speeds and the pace speeds support increasing the speed limit from 55 mph to 65 mph at major intersections to increase compliance, reduce differential speeds and the need for lane changing and potentially reduce rear end crashes. Maintaining the 65 mph speed limit on the entire corridor with increased enforcement will likely provide the safest option, while encouraging speed compliance and reducing the differential speeds along the corridor, and therefore is recommended.

For a long-term countermeasure, it is recommended to consider adding grade-separated intersections at Riggs and Casa Blanca. By implementing grade separation, such as overpasses or underpasses, safety and efficiency can be improved. This will help reduce the potential for intersection-related crashes.