

**Technical Memorandum**

**TO:** Lacey Tisler P.E., NDOT **DATE:** August 4, 2021

**FROM:** Jim Ceragioli, CA Group

**SUBJECT:** Henderson Interchange Project: Crash Data Analysis Report

**COPIES:** Dave Bowers, Lori Campbell, NDOT; James Mischler, Vinay Virupaksha, CA Group

This document presents the critical crash rate analysis and analysis of crash data obtained from NDOT for the three-year study period from January 1<sup>st</sup>, 2017 through January 1<sup>st</sup>, 2019. Corridor and intersection crash analyses were performed for the freeway and arterial roadways shown in **Table 1**.

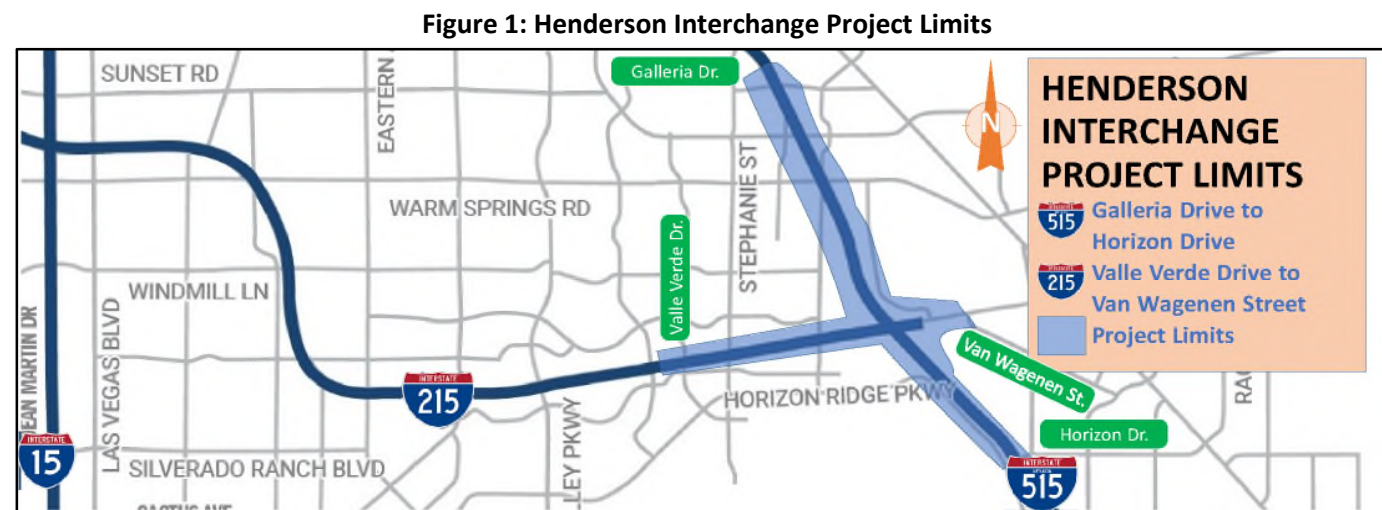
**1. INTRODUCTION**

The Henderson Interchange Project is needed to address roadway deficiencies that could contribute to crashes and travel delays, restore connectivity, and accommodate regional and local plans. Traffic safety will further degrade as higher crash rates are experienced in and around the Henderson Interchange. The Purpose of the project is to:

- Resolve existing roadway deficiencies at Henderson Interchange and surrounding roadways
- Provide transportation improvements to serve existing and future growth areas
- Enhance safety and reduce congestion
- Restore local traffic connectivity
- Accommodate regional and local plans

The Henderson Interchange Project is currently in the National Environmental Policy Act (NEPA) phase for the Project limits as shown in **Figure 1**:

- Interstate 11 (I-11), Interstate 215 (I-215), and Interstate 515 (I-515) at system-to-system Interchange Reconstruction
- Direct Access Ramps to/from I-11, I-215, and I-515
- Lake Mead Parkway (LMP) from system-to-system interchange to Van Wagenen Street



**Table 1: Corridors in the Study Limits**

Freeway	NDOT Roadway Classification	Study Limits
I-11	Principal Arterial Interstate	Horizon Drive to I-215/I-515/LMP
I-215	Principal Arterial Interstate	Valle Verde Drive to I-11/I-515/LMP
I-515	Principal Arterial Interstate	I-11/I-215/LMP to Galleria Drive
Arterial	NDOT Roadway Classification	Study Limits
LMP	Urban Principal Arterial-Other	I-11/I-215/I-515 to Van Wagenen Street

The corridor crash analyses included all crashes along each corridor while the intersection crash analysis included all crashes within the specified distance based on the posted speed limits in **Table 2**.

**Table 2: Buffer Distance for Intersection Crash Analysis**

Approaching Speed Limit (mph)	Distance (ft)
15	80
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820
80	910

The intersection crashes included crashes from both major and minor streets. The crash rates were calculated as shown below.

Intersection crash rate was calculated using;

$$R = \frac{C \times 1,000,000}{V \times 365 \times N}$$

- R = Crash rate for the intersection expressed as crashes per million entering vehicle
- C = Total number of intersection crashes during the study time period

- V = Total number of vehicles entering the intersection daily
- N = Number of years of data

Corridor	Probability Constant, k	Vehicle exposure, M	AADT	2018 Statewide Functional Classification crash rates, F <sub>a</sub>			
				Fatal	Injury	PDO	Total
LMP		61.3200	56,000	0.0203	2.3641	1.7556	3.2705

Corridor crash rate was calculated using;

$$R = \frac{C \times 1,000,000}{V \times 365 \times N \times L}$$

- R = Crash rate for the corridor expressed as crashes per million vehicle-miles
- C = Total number of crashes along the corridor during the study time period
- V = Total number of vehicles using the corridor, expressed in Average Annual Daily Traffic (AADT)
- N = Number of years of data
- L = Length of the corridor in miles

The crash rates for the corridors were compared to the NDOT 2018 Functional Classification Crash Rates (statewide) for the same roadway classification. Detailed crash data along the corridors and existing intersections are included in Appendix A. Intersection and corridor crash data analysis are discussed in the following sections.

## 2. CRITICAL CRASH RATE

A critical crash rate (CCR) analysis was conducted for corridors on I-11, I-215, I-515, and LMP within the Henderson Interchange project limits. The data used to perform the CCR analysis is shown in **Table 3**. The CCRs were calculated using the Highway Safety Manual (HSM) formula (equation 4-11) as shown below and compared with the corridor crash rates (R).

$$F_c = F_a + k(F_a/M)^{1/2} + 1/(2M)$$

- F<sub>c</sub> = the CCR, million vehicle miles (mvm)
- F<sub>a</sub> = statewide crash rate of roadway class, mvm
- k = probability constant. Some values are:
  - k = 3.291 for 99.95% confidence level, commonly used for urban areas
  - k = 1.645 for 95% confidence level, commonly used for rural areas
- M = vehicle exposure (mvm), where M = (AADT x 365 x Time period)/10<sup>6</sup>

**Table 3: Data for Statewide CCR Analysis**

Corridor	Probability Constant, k	Vehicle exposure, M	AADT	2018 Statewide Functional Classification crash rates, F <sub>a</sub>			
				Fatal	Injury	PDO	Total
I-11 NB	3.291	57.6605	52,658	0.0056	0.8264	1.2447	1.8214
I-11 SB		57.6605	52,658				
I-215 WB		76.1868	69,577				
I-215 EB		75.5397	68,986				
I-515 NB		55.4760	50,663				
I-515 SB		63.3698	57,872				

The comparison of R for various corridors to the CCR is shown in **Table 4**.

Along I-11 northbound and southbound, all the crash rates were lower compared to the CCR.

Along I-215 westbound, the crash rates for injury, property damage only (PDO), and fatal crashes were lower compared to the CCR, while the total crash rate was higher when compared to the CCR. On I-215 eastbound, all the crash rates were lower compared to the CCR.

Along I-515 northbound and southbound, all the crash rates were lower compared to the CCR.

Along Lake Mead Parkway, the crash rate for PDO was higher compared to the CCR, while the injury and fatal crash rates were lower compared to the CCR. Overall, the total corridor crash rate on Lake Mead Parkway was slightly higher compared to the CCR.

**Table 4: Comparison of CCR (F<sub>c</sub>) and Corridor Crash Rate (R)**

Corridor	Fatal		Injury		PDO		Total	
	F <sub>c</sub>	R	F <sub>c</sub>	R	F <sub>c</sub>	R	F <sub>c</sub>	R
I-11 NB	0.0466	0.0000	1.2291	0.2831	1.7368	0.4375	2.4150	0.7206
I-11 SB	0.0466	0.0000	1.2291	0.1314	1.7368	0.3242	2.4150	0.4556
I-215 WB	0.0403	0.0000	1.1757	0.3690	1.6719	0.6652	2.3368	1.0342
I-215 EB	0.0405	0.0066	1.1772	0.9199	1.6737	1.5353	2.3390	2.4618
I-515 NB	0.0476	0.0000	1.2371	0.2626	1.7466	0.5679	2.4267	0.8304
I-515 SB	0.0443	0.0000	1.2101	0.4043	1.7138	0.7553	2.3872	1.1596
LMP	0.0882	0.0000	3.0185	1.6057	2.3206	3.5376	4.0387	5.1433

**3. I-11 CORRIDOR CRASH DATA ANALYSIS**

**3.1 I-11 Northbound**

I-11 Northbound was analyzed between the Horizon Drive on-ramp and I-215 westbound/LMP eastbound off-ramp. **Table 5** summarizes the crash rates for different crash severities. The corridor crash rates were relatively lower compared to the statewide crash rates.

**Table 5: I-11 Northbound Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-11 NB	Difference
Fatal	0.0045	0.0000	-0.0045 (0%)
Injury	0.5722	0.2831	-0.2891 (49%)
PDO	1.2447	0.4375	-0.8071 (35%)
Total	1.8214	0.7206	-1.1008 (40%)
Disabling Injury (A)* - Subset of Injury Crashes	1.3941	0.0000	-1.3941 (0%)

\*100MVM

I-11 Northbound had a total of 84 crashes during the study time period. Of these crashes, there were 33 injury crashes with 51 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (42), Non-Collision crashes (19), and Sideswipe Same Direction crashes (16). **Table 6** provides the I-11 Northbound corridor crash analysis summary.

**Table 6: I-11 Northbound Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>84 total crashes                             <ul style="list-style-type: none"> <li>33 injury crashes with 51 injuries</li> </ul> </li> </ul>		
Roadway Classification	NDOT Principal Arterial Interstate (2018)	I-11 Northbound (2019)	
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate 0.7206
	Fatal Crash Rate	0.0045	Fatal Crash Rate 0.0000
	Injury Crash Rate	0.5722	Injury Crash Rate 0.2831
	PDO Crash Rate	1.2447	PDO Crash Rate 0.4375
	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate* 0.0000
Predominant Crash Types	<ul style="list-style-type: none"> <li>42 Rear-End crashes</li> <li>19 Non-Collision crashes</li> <li>16 Sideswipe Same Direction crashes</li> <li>3 Unknown crashes</li> <li>2 Rear to Rear crashes</li> <li>2 Angle crashes</li> </ul>		
Weather Conditions	<ul style="list-style-type: none"> <li>64 Clear</li> <li>12 Cloudy</li> <li>4 Unknown</li> <li>3 Rain</li> <li>1 Snow</li> </ul>		
Lighting Conditions	<ul style="list-style-type: none"> <li>58 Daylight</li> <li>12 Dark-Spot Lighting</li> <li>5 Dark-Continuous Lighting</li> <li>4 Dusk</li> <li>3 Dark-No Lighting</li> <li>1 Dawn</li> <li>1 Unknown</li> </ul>		

**3.2 I-11 Southbound**

I-11 Southbound was analyzed between the Horizon Drive on-ramp and I-215 WB/LMP eastbound off-ramp. **Table 7** summarizes the crash rates for different crash severities. The corridor crash rates were lower than the statewide crash rates while the disabling injury (A) exceeded the statewide crash rate.

**Table 7: I-11 Southbound Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-11 SB	Difference
Fatal	0.0045	0.0000	-0.0045 (0%)
Injury	0.5722	0.1314	-0.4408 (23%)
PDO	1.2447	0.3242	-0.9205 (26%)
Total	1.8214	0.4556	-1.3658 (25%)
Disabling Injury (A)* - Subset of Injury Crashes	1.3941	<b>7.8855</b>	6.4913 (566%)

\*100MVM

I-11 Southbound had a total of 52 crashes during the study time period. Of these crashes, there were 2 disabling injury crashes with 9 disabling injuries, and 13 injury crashes with 16 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (26), Non-Collision crashes (12), and Sideswipe Same Direction crashes (9). **Table 8** provides the I-11 Southbound crash analysis summary.

**Table 8: I-11 Southbound Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>52 total crashes                             <ul style="list-style-type: none"> <li>2 disabling injury crashes with 9 disabling injuries</li> <li>13 injury crashes with 16 injuries</li> </ul> </li> </ul>		
Roadway Classification	NDOT Principal Arterial Interstate (2018)	I-11 Southbound (2019)	
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate 0.4556
	Fatal Crash Rate	0.0045	Fatal Crash Rate 0.0000
	Injury Crash Rate	0.5722	Injury Crash Rate 0.1314
	PDO Crash Rate	1.2447	PDO Crash Rate 0.3658
	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate* <b>7.8855</b>
Predominant Crash Types	<ul style="list-style-type: none"> <li>26 Rear-End crashes</li> <li>12 Non-Collision crashes</li> <li>9 Sideswipe Same Direction crashes</li> <li>3 Angle crashes</li> <li>2 Unknown crashes</li> </ul>		
Motorcycle Crashes	<ul style="list-style-type: none"> <li>1 Motorcycle crashes</li> </ul>		
Weather Conditions	<ul style="list-style-type: none"> <li>44 Clear</li> <li>7 Cloudy</li> <li>1 Rain</li> </ul>		
Lighting Conditions	<ul style="list-style-type: none"> <li>36 Daylight</li> <li>11 Dark-Spot Lighting</li> <li>2 Dark-Continuous Lighting</li> <li>2 Dark-No Lighting</li> <li>1 Dusk</li> </ul>		

**4. I-215 CORRIDOR CRASH DATA ANALYSIS**

**4.1 I-215 Westbound**

I-215 Westbound was analyzed between I-11/I-515/LMP and S. Valle Verde Drive. **Table 9** summarizes the crash rates for different crash severities. The corridor crash rates were relatively lower compared to the statewide crash rates.

**Table 9: I-215 Westbound Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-215 WB	Difference
Fatal	0.0045	0.0000	-0.0045 (0%)
Injury	0.5722	0.3690	-0.2032 (64%)
PDO	1.2447	0.6652	-0.5795 (53%)
Total	1.8214	1.0342	-0.7872 (57%)
Disabling Injury (A)* - Subset of Injury Crashes	1.3941	1.3668	-0.0273 (98%)

\*100MVM

I-215 Westbound had a total of 227 crashes during the study time period. Of these crashes, there were 2 disabling injury crashes with 3 disabling injuries, and 79 injury crashes with 111 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (140), Sideswipe Same Direction crashes (46), and Non-Collision crashes (31). **Table 10** provides the I-215 Westbound corridor crash analysis summary.

**Table 10: I-215 Westbound Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>227 total crashes                             <ul style="list-style-type: none"> <li>2 disabling injury crashes with 3 disabling injuries</li> <li>79 injury crashes with 111 injuries</li> </ul> </li> </ul>		
Roadway Classification	NDOT Principal Arterial Interstate (2018)	I-215 Westbound (2019)	
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate 1.0342
	Fatal Crash Rate	0.0045	Fatal Crash Rate 0.0000
	Injury Crash Rate	0.5722	Injury Crash Rate 0.3690
	PDO Crash Rate	1.2447	PDO Crash Rate 1.0342
	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate* 1.3668
Predominant Crash Types	<ul style="list-style-type: none"> <li>140 Rear-End crashes</li> <li>46 Sideswipe Same Direction crashes</li> <li>31 Non-Collision crashes</li> <li>8 Angle crashes</li> <li>1 Rear to Rear crash</li> <li>1 Unknown crash</li> </ul>		
Pedestrian Crashes	<ul style="list-style-type: none"> <li>1 Pedestrian crash</li> </ul>		
Motorcycle Crashes	<ul style="list-style-type: none"> <li>4 Motorcycle crashes</li> </ul>		
Bus Crashes	<ul style="list-style-type: none"> <li>1 crash involving buses</li> </ul>		
Weather Conditions	<ul style="list-style-type: none"> <li>190 Clear</li> <li>20 Cloudy</li> <li>8 Rain</li> <li>6 Blowing Snow</li> <li>3 Unknown</li> </ul>		
Lighting Conditions	<ul style="list-style-type: none"> <li>192 Daylight</li> <li>22 Dark-Spot Lighting</li> <li>8 Dark-Continuous Lighting</li> <li>4 Dawn</li> <li>1 Dusk</li> </ul>		

**4.2 I-215 Eastbound**

I-215 Eastbound was analyzed between S. Stephanie Drive and I-11/I-515/LMP. **Table 11** summarizes the crash rates for different crash severities. Including the disabling injury rate, all corridor crash rates exceeded the statewide crash rates.

**Table 11: I-215 Eastbound Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-215 EB	Difference
Fatal	0.0045	<b>0.0066</b>	0.0021 (147%)
Injury	0.5722	<b>0.9199</b>	0.3476 (161%)
PDO	1.2447	<b>1.5353</b>	0.2907 (123%)
Total	1.8214	<b>2.4618</b>	0.6404 (135%)
Disabling Injury (A)* - Subset of Injury Crashes	1.3941	<b>4.6324</b>	3.2382 (332%)

\*100MVM

I-215 Eastbound had a total of 372 crashes during the study time period. Of these crashes, there was 1 fatality from 1 fatal crash, 2 disabling injury crashes with 7 disabling injuries, and 137 injury crashes with 207 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (290), Sideswipe Same Direction crashes (38), and Non-Collision crashes (34). **Table 12** provides the I-215 Eastbound crash analysis summary.

**Table 12: I-215 Eastbound Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>372 total crashes                             <ul style="list-style-type: none"> <li>1 fatal crash with 1 fatality</li> <li>2 disabling injury crashes with 7 disabling injuries</li> <li>137 injury crashes with 207 injuries</li> </ul> </li> </ul>		
Roadway Classification	NDOT Principal Arterial Interstate (2018)	I-215 Eastbound (2019)	
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate <b>2.4618</b>
	Fatal Crash Rate	0.0045	Fatal Crash Rate <b>0.0066</b>
	Injury Crash Rate	0.5722	Injury Crash Rate <b>0.9199</b>
	PDO Crash Rate	1.2447	PDO Crash Rate <b>1.5353</b>
	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate* <b>4.6324</b>
Predominant Crash Types	<ul style="list-style-type: none"> <li>290 Rear-End crashes</li> <li>38 Sideswipe Same Direction crashes</li> <li>34 Non-Collision crashes</li> <li>9 Angle crashes</li> <li>1 Rear to Rear crash</li> </ul>		
Motorcycle Crashes	<ul style="list-style-type: none"> <li>3 Motorcycle crashes                             <ul style="list-style-type: none"> <li>1 fatal crash with 1 fatality</li> </ul> </li> </ul>		
Weather Conditions	<ul style="list-style-type: none"> <li>312 Clear</li> <li>49 Cloudy</li> <li>4 Rain</li> <li>4 Blowing Snow</li> <li>3 Unknown</li> </ul>		
Lighting Conditions	<ul style="list-style-type: none"> <li>303 Daylight</li> <li>13 Dark-Continuous Lighting</li> <li>8 Dusk</li> <li>2 Dawn</li> <li>1 Dark-No Lighting 45 Dark-Spot Lighting</li> </ul>		

**5. I-515 CORRIDOR CRASH DATA ANALYSIS**

**5.1 I-515 Northbound**

I-515 Northbound was analyzed between I-11/I-215/LMP to Galleria Drive. **Table 13** summarizes the crash rates for different crash severities. The corridor crash rates were relatively lower compared to the statewide crash rates.

**Table 13: I-515 Northbound Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-515 NB	Difference
Fatal	0.0045	0.0000	-0.0045 (0%)
Injury	0.5722	0.2626	-0.3097 (46%)
PDO	1.2447	0.5679	-0.6768 (46%)
Total	1.8214	0.8304	-0.991 (46%)
Disabling Injury (A)* - Subset of Injury Crashes	1.3941	0.0000	-1.3941 (0%)

\*100MVM

I-515 Northbound had a total of 136 crashes during the study time period. Of these crashes, there were 43 injury crashes with 63 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (57), Sideswipe Same Direction crashes (37), and Non-Collision crashes (37). **Table 14** provides the I-515 Northbound corridor crash analysis summary.

**Table 14: I-515 Northbound Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>136 total crashes                             <ul style="list-style-type: none"> <li>43 injury crashes with 63 injuries</li> </ul> </li> </ul>		
Roadway Classification	NDOT Principal Arterial Interstate (2018)	I-515 Northbound (2019)	
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate 0.8304
	Fatal Crash Rate	0.0045	Fatal Crash Rate 0.0000
	Injury Crash Rate	0.5722	Injury Crash Rate 0.2626
	PDO Crash Rate	1.2447	PDO Crash Rate 0.5679
Predominant Crash Types	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate* 0.0000
	<ul style="list-style-type: none"> <li>57 Rear-End crashes</li> <li>37 Sideswipe Same Direction crashes</li> <li>37 Non-Collision crashes</li> <li>4 Angle crashes</li> <li>1 Unknown</li> </ul>		
	<ul style="list-style-type: none"> <li>1 crash involving buses</li> </ul>		
	<ul style="list-style-type: none"> <li>5 Motorcycle crashes</li> </ul>		
Weather Conditions	<ul style="list-style-type: none"> <li>113 Clear</li> <li>18 Cloudy</li> <li>3 Rain</li> <li>1 Unknown</li> <li>1 Severe Crosswind</li> </ul>		
	<ul style="list-style-type: none"> <li>94 Daylight</li> <li>26 Dark-Spot Lighting</li> <li>7 Dark-Continuous Lighting</li> <li>6 Dusk</li> <li>2 Dark-No Lighting</li> <li>1 Dawn</li> </ul>		

**5.2 I-515 Southbound**

I-515 Southbound was analyzed between Galleria Drive and I-11/I-215/LMP. **Table 15** summarizes the crash rates for different crash severities. The corridor crash rates were relatively lower compared to the statewide crash rates.

**Table 15: I-515 Southbound Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-515 SB	Difference
Fatal	0.0045	0.0000	-0.0045 (0%)
Injury	0.5722	0.4043	-0.168 (71%)
PDO	1.2447	0.7553	-0.4893 (61%)
Total	1.8214	1.1596	-0.6618 (64%)
Disabling Injury (A)* - Subset of Injury Crashes	1.3941	0.5319	-0.8622 (38%)

\*100MVM

I-515 Southbound had a total of 218 crashes during the study time period. Of these crashes, there was 1 disabling injury crash with 1 disabling injury, and 75 injury crashes with 113 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (118), Non-Collision crashes (48), and Sideswipe Same Direction crashes (36), **Table 16** provides the I-515 Southbound crash analysis summary.

**Table 16: I-515 Southbound Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>218 total crashes                             <ul style="list-style-type: none"> <li>1 disabling injury crash with 1 disabling injury</li> <li>75 injury crashes with 113 injuries</li> </ul> </li> </ul>		
Roadway Classification	NDOT Principal Arterial Interstate (2018)	I-515 Southbound (2019)	
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate 1.1596
	Fatal Crash Rate	0.0045	Fatal Crash Rate 0.0000
	Injury Crash Rate	0.5722	Injury Crash Rate 0.4043
	PDO Crash Rate	1.2447	PDO Crash Rate 0.7553
	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate* 0.5319
Predominant Crash Types	<ul style="list-style-type: none"> <li>118 Rear-End crashes</li> <li>48 Non-Collision crashes</li> <li>36 Sideswipe Same Direction crashes</li> <li>11 Unknown crashes</li> <li>5 Angle crashes</li> </ul>		
Motorcycle Crashes	<ul style="list-style-type: none"> <li>5 Motorcycle crashes</li> </ul>		
Weather Conditions	<ul style="list-style-type: none"> <li>177 Clear</li> <li>32 Cloudy</li> <li>4 Blowing Snow</li> <li>3 Rain</li> <li>1 Unknown</li> <li>1 Severe Crosswind</li> </ul>		
Lighting Conditions	<ul style="list-style-type: none"> <li>173 Daylight</li> <li>29 Dark-Spot Lighting</li> <li>8 Dark-Continuous Lighting</li> <li>5 Dawn</li> <li>3 Dusk</li> </ul>		

**6. INTERCHANGE CRASH DATA ANALYSIS**

**6.1 I-11 Interchanges**

**6.1.1 I-11/I-215/I-515/LMP System-to-System Interchange Ramps**

The I-11/I-215/I-515/LMP System-to-System Interchange ramps were analyzed. This analysis included the following ramps: NB off-ramp to WB/EB on-ramp, NB off-ramp to WB on-ramp, NB off-ramp to EB on-ramp, WB off-ramp to SB on-ramp, EB off-ramp to SB/NB on-ramp, EB off-ramp to SB on-ramp, EB off-ramp to NB on-ramp, WB off-ramp to NB on-ramp, off-ramp to WB/LMP EB on-ramp, SB off-ramp to WB on-ramp, SB off-ramp to LMP EB on-ramp. **Table 17** summarizes the crash rates for different crash severities. Except for the disabling injury (A) crash rate which exceeded the statewide crash rate, all crash rates were lower than the corresponding statewide crash rates.

**Table 17: I-11/I-215/I-515/LMP System-to-System Interchange Ramp Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-11/I-215/I-515/LMP System-to-System Interchange	Difference
Fatal	0.0045	0.0000	-0.0045 (0%)
Injury	0.5722	0.5330	-0.0392 (93%)
PDO	1.2447	0.9168	-0.3278 (74%)
Total	1.8214	1.4499	-0.3715 (80%)
Disabling Injury (A)*- Subset of Injury Crashes	1.3941	<b>6.3966</b>	5.0024 (459%)

\*100MVM

The I-11/I-215/I-515/LMP System-to-System Interchange ramps had a total of 136 crashes during the study time period. Of these crashes, there were 2 disabling injury crashes with 6 disabling injuries, 48 injury crashes with 68 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (63), Sideswipe Same Direction crashes (38), and Non-Collision crashes (34). **Table 18** provides the I-11/I-215/I-515/LMP System to System Interchange ramp crash analysis summary.

**Table 18: I-11/I-215/I-515/LMP System-to-System Interchange Ramp Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>136 total crashes                             <ul style="list-style-type: none"> <li>2 disabling injury crashes with 6 disabling injuries</li> <li>48 injury crashes with 68 injuries</li> </ul> </li> </ul>		
Roadway Classification	NDOT Principal Arterial Interstate (2018)	I-11/I-215/I-515/LMP System-to-System Interchange (2019)	
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate 1.4499
	Fatal Crash Rate	0.0045	Fatal Crash Rate 0.0000
	Injury Crash Rate	0.5722	Injury Crash Rate 0.5330
	PDO Crash Rate	1.2447	PDO Crash Rate <b>0.9168</b>
	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate* <b>6.3966</b>
Predominant Crash Types	<ul style="list-style-type: none"> <li>63 Rear-End crashes</li> <li>38 Sideswipe Same Direction crashes</li> <li>34 Non-Collision crashes</li> <li>1 Unknown crash</li> </ul>		
Motorbike Crashes	<ul style="list-style-type: none"> <li>1 Motorbike crash</li> </ul>		
Motorcycle Crashes	<ul style="list-style-type: none"> <li>5 Motorcycle crashes</li> </ul>		
Bus Crashes	<ul style="list-style-type: none"> <li>1 crash involving buses</li> </ul>		
Weather Conditions	<ul style="list-style-type: none"> <li>107 Clear</li> <li>23 Cloudy</li> <li>3 Blowing Snow</li> <li>1 Rain</li> <li>1 Severe Crosswinds</li> <li>1 Unknown</li> </ul>		
Lighting Conditions	<ul style="list-style-type: none"> <li>101 Daylight</li> <li>19 Dark-Spot Lighting</li> <li>10 Dark-Continuous Lighting</li> <li>4 Dusk</li> <li>1 Dark-No Lighting</li> <li>1 Dawn</li> </ul>		

**6.1.2 Horizon Drive Interchange Ramps**

The Horizon Drive Interchange ramps that were analyzed include SB off-ramp and NB on-ramp. **Table 19** summarizes the crash rates for different crash severities. The fatal and injury crash rates and disabling injury rate were lower than the statewide crash rates while both the total crash rate and the PDO crash rate exceeded the statewide crash rates.

**Table 19: Horizon Drive Interchange Ramp Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	Horizon Drive Interchange	Difference
Fatal	0.0045	0.0000	-0.0045 (0%)
Injury	0.5722	0.5302	-0.0421 (93%)
PDO	1.2447	<b>1.6663</b>	0.4216 (134%)
Total	1.8214	<b>2.1965</b>	0.3751 (121%)
Disabling Injury (A)* - Subset of Injury Crashes	1.3941	0.0000	-1.3941 (0%)

\*100MVM

The Horizon Drive Interchange ramps had a total of 29 crashes during the study time period. Of these crashes, there were 7 injury crashes with 9 injuries. The predominant crash types descending by the number of crashes are Non-Collision crashes (12), Sideswipe Same Direction crashes (8), and Rear-End crashes (6). **Table 20** provides the Horizon Drive Interchange ramp crash analysis summary.

**Table 20: Horizon Drive Interchange Ramp Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>29 total crashes                             <ul style="list-style-type: none"> <li>7 injury crashes with 9 injuries</li> </ul> </li> </ul>		
Roadway Classification	NDOT Principal Arterial Interstate (2018)	Horizon Drive Interchange (2019)	
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate <b>2.1965</b>
	Fatal Crash Rate	0.0045	Fatal Crash Rate 0.0000
	Injury Crash Rate	0.5722	Injury Crash Rate 0.5302
	PDO Crash Rate	1.2447	PDO Crash Rate <b>1.6663</b>
	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate* 0.0000
Predominant Crash Types	<ul style="list-style-type: none"> <li>12 Non-Collision crashes</li> <li>8 Sideswipe Same Direction crashes</li> <li>6 Rear-End crashes</li> <li>2 Angle crashes</li> <li>1 Backing crash</li> </ul>		
Weather Conditions	<ul style="list-style-type: none"> <li>15 Clear</li> <li>7 Cloudy</li> <li>4 Rain</li> <li>1 Blowing Snow</li> <li>1 Fog, Smog, Smoke</li> <li>1 Unknown</li> </ul>		
Lighting Conditions	<ul style="list-style-type: none"> <li>18 Daylight</li> <li>6 Dark-Spot Lighting</li> <li>3 Dark-Continuous Lighting</li> <li>2 Dark-No Lighting</li> </ul>		

6.2 I-215

6.2.1 Stephanie Street Interchange Ramps

The Stephanie Street Interchange ramps that were analyzed include EB on-ramp, EB off-ramp, WB on-ramp, and WB off-ramp. **Table 21** summarizes the crash rates for different crash severities. The fatal crash rate and the disabling injury rate were lower than the statewide crash rates while the injury, PDO, and total crash rates exceeded the statewide crash rates.

**Table 21: Stephanie Street Interchange Ramp Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	Stephanie Street Interchange	Difference
Fatal	0.0045	0.0000	-0.0045 (0%)
Injury	0.5722	<b>2.2171</b>	1.6448 (387%)
PDO	1.2447	<b>2.9172</b>	1.6725 (234%)
Total	1.8214	<b>5.1343</b>	3.3129 (282%)
Disabling Injury (A)* - Subset of Injury Crashes	1.3941	0.0000	-1.3941 (0%)

\*100MVM

The Stephanie Street Interchange ramps had a total of 88 crashes during the study time period. Of these crashes, there were 38 injury crashes with 50 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (80), Sideswipe Same Direction crashes (3), and Angle/Non-Collision crashes with 2 crashes each. **Table 22** provides the Stephanie Street Interchange ramp crash analysis summary.

**Table 22: Stephanie Street Interchange Ramp Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>88 total crashes                             <ul style="list-style-type: none"> <li>38 injury crashes with 50 injuries</li> </ul> </li> </ul>			
Roadway Classification	NDOT Principal Arterial Interstate (2018)	Stephanie Street Interchange (2019)		
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate	<b>5.1343</b>
	Fatal Crash Rate	0.0045	Fatal Crash Rate	0.0000
	Injury Crash Rate	0.5722	Injury Crash Rate	<b>2.2171</b>
	PDO Crash Rate	1.2447	PDO Crash Rate	<b>2.9172</b>
	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate*	0.0000
Predominant Crash Types	<ul style="list-style-type: none"> <li>80 Rear-End crashes</li> <li>3 Sideswipe Same Direction crashes</li> <li>2 Non-Collision crashes</li> <li>2 Angle crashes</li> <li>1 Backing crash</li> </ul>			
Motorcycle Crashes	<ul style="list-style-type: none"> <li>1 Motorcycle crash</li> </ul>			
Weather Conditions	<ul style="list-style-type: none"> <li>71 Clear</li> <li>7 Cloudy</li> <li>7 Unknown</li> <li>2 Rain</li> <li>1 Blowing Snow</li> </ul>			
Lighting Conditions	<ul style="list-style-type: none"> <li>69 Daylight</li> <li>12 Dark-Spot Lighting</li> <li>5 Dusk</li> <li>2 Dark-Continuous Lighting</li> </ul>			

**6.2.2 Gibson Road Interchange Ramps**

The Gibson Road Interchange ramps that were analyzed include EB on-ramp, EB off-ramp, WB on-ramp, and WB off-ramp. **Table 23** summarizes the crash rates for different crash severities. The fatal crash rate and the disabling injury rate were lower than the statewide crash rates while the injury, PDO, and total crash rates exceeded the statewide crash rates.

**Table 23: Gibson Road Interchange Ramp Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	Gibson Road Interchange	Difference
Fatal	0.0045	0.0000	-0.0045 (0%)
Injury	0.5722	<b>1.1109</b>	0.5387 (194%)
PDO	1.2447	<b>2.3329</b>	1.0882 (187%)
Total	1.8214	<b>3.4438</b>	1.6224 (189%)
Disabling Injury (A)* - Subset of Injury Crashes	1.3941	0.0000	-1.3941 (0%)

\*100MVM

The Gibson Road Interchange ramps had a total of 31 crashes during the study time period. Of these crashes, there were 10 injury crashes with 13 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (20), Sideswipe Same Direction crashes (8), and Non-Collision crashes (3). **Table 24** provides the Gibson Road Interchange ramp crash analysis summary.

**Table 24: Gibson Road Interchange Ramp Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>31 total crashes                             <ul style="list-style-type: none"> <li>10 injury crashes with 13 injuries</li> </ul> </li> </ul>		
Roadway Classification	NDOT Principal Arterial Interstate (2018)	Gibson Road Interchange (2019)	
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate <b>3.4438</b>
	Fatal Crash Rate	0.0045	Fatal Crash Rate 0.0000
	Injury Crash Rate	0.5722	Injury Crash Rate <b>1.1109</b>
	PDO Crash Rate	1.2447	PDO Crash Rate <b>2.3329</b>
	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate* 0.0000
Predominant Crash Types	<ul style="list-style-type: none"> <li>20 Rear-End crashes</li> <li>8 Sideswipe Same Direction crashes</li> <li>3 Non-Collision crashes</li> </ul>		
Motorcycle Crashes	<ul style="list-style-type: none"> <li>1 Motorcycle crash</li> </ul>		
Bus Crashes	<ul style="list-style-type: none"> <li>1 Bus crash</li> </ul>		
Weather Conditions	<ul style="list-style-type: none"> <li>26 Clear</li> <li>4 Cloudy</li> <li>1 Blowing Snow</li> </ul>		
Lighting Conditions	<ul style="list-style-type: none"> <li>24 Daylight</li> <li>5 Dark-Spot Lighting</li> <li>1 Dark-Continuous Lighting</li> <li>1 Unknown</li> </ul>		

6.3 I-515 Interchanges

6.3.1 Auto Show Drive Interchange Ramps

The Auto Show Drive Interchange ramps that were analyzed include NB on-ramp, NB off-ramp, SB on-ramp, and SB off-ramp. **Table 25** summarizes the crash rates for different crash severities. The fatal and PDO crash rates were lower than the statewide crash rates while the injury, total, and disabling injury crash rates exceeded the statewide crash rates.

**Table 25: Auto Show Drive Interchange Ramp Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	Auto Show Drive Interchange	Difference
Fatal	0.0045	0.0000	-0.0045 (0%)
Injury	0.5722	<b>1.3144</b>	0.7422 (230%)
PDO	1.2447	0.7887	-0.456 (63%)
Total	1.8214	<b>2.1031</b>	0.2817 (115%)
Disabling Injury (A)* - Subset of Injury Crashes	1.3941	<b>26.2884</b>	24.8942 (1886%)

\*100MVM

The Auto Show Drive Interchange ramps had a total of 16 crashes during the study time period. Of these crashes, there was 1 disabling injury crash with 2 disabling injuries, and 9 injury crashes with 13 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (13) and Non-Collision crashes (3). **Table 26** provides the Auto Show Drive Interchange ramp crash analysis summary.

**Table 26: Auto Show Drive Interchange Ramp Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>16 total crashes                             <ul style="list-style-type: none"> <li>1 disabling injury crash with 2 disabling injuries</li> <li>9 injury crashes with 13 injuries</li> </ul> </li> </ul>			
Roadway Classification	NDOT Principal Arterial Interstate (2018)	Auto Show Drive Interchange (2019)		
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate	<b>2.1031</b>
	Fatal Crash Rate	0.0045	Fatal Crash Rate	0.0000
	Injury Crash Rate	0.5722	Injury Crash Rate	<b>1.3144</b>
	PDO Crash Rate	1.2447	PDO Crash Rate	0.7887
	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate*	<b>26.2884</b>
Predominant Crash Types	<ul style="list-style-type: none"> <li>13 Rear-End crashes</li> <li>3 Non-Collision crashes</li> </ul>			
Pedestrian Crashes	<ul style="list-style-type: none"> <li>1 Pedestrian crash</li> </ul>			
Weather Conditions	<ul style="list-style-type: none"> <li>11 Clear</li> <li>4 Cloudy</li> <li>1 Blowing Snow</li> </ul>			
Lighting Conditions	<ul style="list-style-type: none"> <li>10 Daylight</li> <li>2 Dark-Spot Lighting</li> <li>2 Dark-Continuous Lighting</li> <li>1 Dusk</li> <li>1 Dawn</li> </ul>			

6.3.2 Sunset Road Interchange Ramps

The Sunset Road Interchange ramps that were analyzed include NB on-ramp, NB off-ramp, SB on-ramp, and SB off-ramp. **Table 27** summarizes the crash rates for different crash severities. The fatal crash rate and the disabling injury rate were lower than the statewide crash rates while the injury, PDO, and total crash rates exceeded the statewide crash rates.

**Table 27: Sunset Road Interchange Ramp Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	Sunset Road Interchange	Difference
Fatal	0.0045	0.0000	-0.0045 (0%)
Injury	0.5722	<b>1.0507</b>	0.4784 (184%)
PDO	1.2447	<b>3.5022</b>	2.2576 (281%)
Total	1.8214	<b>4.5529</b>	2.7315 (250%)
Disabling Injury (A)* - Subset of Injury Crashes	1.3941	0.0000	-1.3941 (0%)

\*100MVM

The Sunset Road Interchange ramps had a total of 65 crashes during the study time period. Of these crashes, there were 15 injury crashes with 19 injuries. The predominant crash types descending by the number of crashes are Non-Collision crashes (32), Rear-End crashes (22), and Sideswipe Same Direction crashes (11). **Table 28** provides the Sunset Road Interchange ramp crash analysis summary.

**Table 28: Sunset Road Interchange Ramp Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>65 total crashes                             <ul style="list-style-type: none"> <li>15 injury crashes with 19 injuries</li> </ul> </li> </ul>		
Roadway Classification	NDOT Principal Arterial Interstate (2018)	Sunset Road Interchange (2019)	
Overall Crash Rates	Total Crash Rate	1.8214	Total Crash Rate <b>4.5529</b>
	Fatal Crash Rate	0.0045	Fatal Crash Rate 0.0000
	Injury Crash Rate	0.5722	Injury Crash Rate <b>1.0507</b>
	PDO Crash Rate	1.2447	PDO Crash Rate <b>3.5022</b>
	Disabling Injury (A) Rate*	1.3941	Disabling Injury (A) Rate* 0.0000
Predominant Crash Types	<ul style="list-style-type: none"> <li>32 Non-Collision crashes</li> <li>22 Rear-End crashes</li> <li>11 Sideswipe Same Direction</li> </ul>		
Motorcycle crash	<ul style="list-style-type: none"> <li>2 Motorcycle crashes</li> </ul>		
Weather Conditions	<ul style="list-style-type: none"> <li>32 Clear</li> <li>17 Cloudy</li> <li>12 Rain</li> <li>3 Unknown</li> <li>1 Blowing Snow</li> </ul>		
Lighting Conditions	<ul style="list-style-type: none"> <li>45 Daylight</li> <li>15 Dark-Spot Lighting</li> <li>2 Dusk</li> <li>2 Dark-No Lighting</li> <li>1 Dark-Continuous Lighting</li> </ul>		

**7. LAKE MEAD PARKWAY CRASH DATA ANALYSIS**

**7.1 Lake Mead Parkway and Eastgate Road/Fiesta Henderson Boulevard Intersection**

Intersection crash analysis along Lake Mead Parkway was conducted for the signalized intersection of Lake Mead Parkway at Eastgate Road/Fiesta Henderson Boulevard, located between I-11/I-215/I-515 and Van Wagenen Street.

**Table 29** summarizes the crash rates for different crash severities for the intersection.

**Table 29: Lake Mead Parkway Intersection Crash Rates**

Crash Severity	Lake Mead Parkway and Eastgate Road/Fiesta Henderson Blvd
Fatal	0.0000
Injury	0.8547
PDO	1.7950
Total	2.6497
Disabling Injury (A)-Subset of Injury Crashes*	8.5475

The intersection of Lake Mead Parkway at Eastgate Road/Fiesta Henderson Boulevard had a total of 93 crashes in the 3-year time period. Of these crashes, there was 1 pedestrian crash, 3 disabling injury crashes with 3 disabling injuries, and 27 injury crashes with 45 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (69), Sideswipe Same Direction crashes (13), Angle crashes (7), and Non-Collision crashes (3). **Table 30** provides the Lake Mead Corridor at Eastgate Road/Fiesta Henderson Boulevard Intersection crash analysis summary.

**Table 30: Lake Mead Parkway Intersection Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>• 93 total crashes               <ul style="list-style-type: none"> <li>○ 3 disabling injury crashes with 3 disabling injuries</li> <li>○ 27 injury crashes with 45 injuries</li> </ul> </li> </ul>
Predominant Crash Types	<ul style="list-style-type: none"> <li>• 69 Rear-End crashes</li> <li>• 13 Sideswipe Same Direction crashes</li> <li>• 7 Angle crashes</li> <li>• 3 Non-Collision crashes</li> <li>• 1 Unknown crash</li> </ul>
Pedestrian Crashes	<ul style="list-style-type: none"> <li>• 1 Pedestrian crash</li> </ul>
Motorcycle Crashes	<ul style="list-style-type: none"> <li>• 2 Motorcycle crashes</li> </ul>
Moped Crashes	<ul style="list-style-type: none"> <li>• 1 Moped crash</li> </ul>
Weather Conditions	<ul style="list-style-type: none"> <li>• 79 Clear</li> <li>• 11 Cloudy</li> <li>• 2 Rain</li> <li>• 1 Blowing Snow</li> </ul>
Lighting Conditions	<ul style="list-style-type: none"> <li>• 67 Daylight</li> <li>• 15 Dark-Continuous Lighting</li> <li>• 8 Dark-Spot Lighting</li> <li>• 2 Dusk</li> <li>• 1 Dawn</li> </ul>

**7.2 Lake Mead Parkway Corridor**

The functional roadway classification for the Lake Mead Parkway is Urban Principal Arterial-Other. Lake Mead Parkway was analyzed between I-11/I-515/Lake Mead Parkway and Van Wagenen Street. **Table 31** summarizes the analysis of the corridor crash data. Except for fatal crashes, the crash rates for all other crash severities along the Lake Mead Parkway corridor exceeded the statewide crash rates.

**Table 31: Lake Mead Parkway Corridor Crash Rates**

Crash Severity	NDOT Urban Principal Arterial Other (2018)	Lake Mead Parkway	Difference
Fatal	0.0197	0.0000	-0.0197 (0%)
Injury	1.4953	<b>1.6057</b>	0.1104 (107%)
PDO	1.7556	<b>3.5376</b>	1.782 (202%)
Total	3.2705	<b>5.1433</b>	1.8728 (157%)
Disabling Injury (A)* - Subset of Injury Crashes	6.1673	<b>7.5267</b>	1.3594 (122%)

\*100MVM

Lake Mead Parkway had a total of 205 crashes in the three-year time period. Of these crashes, there was 1 pedestrian crash, 3 disabling injury crashes with 3 disabling injuries, and 61 injury crashes with 96 injuries. The predominant crash types descending by the number of crashes are Rear-End crashes (137), Sideswipe Same Direction crashes (42), Angle crashes (12), and Non-Collision crashes (12). **Table 32** provides the Lake Mead Parkway corridor crash analysis summary.

**Table 32: Lake Mead Parkway Corridor Crash Analysis Summary**

Overall Crashes	<ul style="list-style-type: none"> <li>205 total crashes                             <ul style="list-style-type: none"> <li>3 disabling injury crashes with 3 disabling injuries</li> <li>61 injury crashes with 96 injuries</li> </ul> </li> </ul>		
Roadway Classification	NDOT Urban Principal Arterial-Other (2018)	Lake Mead Parkway (2019)	
Overall Crash Rates	Total Crash Rate	3.2705	Total Crash Rate <b>5.1433</b>
	Fatal Crash Rate	0.0197	Fatal Crash Rate 0.0000
	Injury Crash Rate	1.4953	Injury Crash Rate <b>1.6057</b>
	PDO Crash Rate	1.7556	PDO Crash Rate <b>3.5376</b>
	Disabling Injury (A) Rate*	6.1673	Disabling Injury (A) Rate* <b>7.5267</b>
Predominant Crash Types	<ul style="list-style-type: none"> <li>137 Rear-End crashes</li> <li>42 Sideswipe Same Direction crashes</li> <li>12 Angle crashes</li> <li>12 Non-Collision crashes</li> <li>2 Head-On crashes</li> </ul>		
Pedestrian Crashes	<ul style="list-style-type: none"> <li>1 Pedestrian crash</li> </ul>		
Bus Crashes	<ul style="list-style-type: none"> <li>2 crashes involving buses</li> </ul>		
Motorcycle Crashes	<ul style="list-style-type: none"> <li>2 Motorcycle crashes</li> </ul>		
Moped Crashes	<ul style="list-style-type: none"> <li>1 Moped crash</li> </ul>		
Pedal Cycle Crashes	<ul style="list-style-type: none"> <li>1 Pedal Cycle crash</li> </ul>		
Weather Conditions	<ul style="list-style-type: none"> <li>172 Clear</li> <li>22 Cloudy</li> <li>7 Rain</li> <li>2 Unknown</li> <li>2 Blowing Sand, Dirt, Snow</li> </ul>		
Lighting Conditions	<ul style="list-style-type: none"> <li>157 Daylight</li> <li>25 Dark-Continuous Lighting</li> <li>15 Dark-Spot Lighting</li> <li>6 Dusk</li> <li>2 Dawn</li> </ul>		

# APPENDIX A

**1. I-11 Northbound Crash Data**

- 84 total crashes
  - 33 injury crashes with 51 injuries

**1.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-11 NB
Fatal	0.0045	0.0000
Injury	0.5722	0.2831
PDO	1.2447	0.4375
Total	1.8214	0.7206
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	0.0000

\*100MVM

**1.2. Predominant Crash Types**

- 42 Rear-End crashes
  - 23 injury crashes with 37 injuries
- 19 Non-Collision crashes
  - 4 injury crashes with 5 injuries
- 16 Sideswipe Same Direction crashes
  - 3 injury crashes with 3 injuries
- 3 Unknown crash type
- 2 Rear-To-Rear crashes
  - 1 injury crash with 2 injuries
- 2 Angle crashes
  - 2 injury crashes with 4 injuries

**1.3. Weather Conditions**

- 64 Clear
  - 23 injury crashes with 35 injuries
- 12 Cloudy
  - 7 injury crashes with 12 injuries
- 4 Unknown
- 3 Rain
  - 3 injury crashes with 4 injuries
- 1 Snow

**1.4. Lighting Conditions**

- 58 Daylight
  - 25 injury crashes with 36 injuries
- 12 Dark – Spot Lighting
  - 5 injury crashes with 11 injuries
- 5 Dark – Continuous Lighting
  - 2 injury crashes with 3 injuries
- 4 Dusk
  - 1 injury crash with 1 injury
- 3 Dark – No Lighting
- 1 Dawn
- 1 Unknown

**2. I-11 Southbound Crash Data**

- 52 total crashes
  - 15 injury crashes with 25 injuries

**2.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-11 SB
Fatal	0.0045	0.0000
Injury	0.5722	0.1314
PDO	1.2447	0.3242
Total	1.8214	0.4556
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	7.8855

\*100MVM

**2.2. Predominant Crash Types**

- 26 Rear-End crashes
  - 8 injury crashes with 17 injuries
- 12 Non-Collision crashes
  - 4 injury crashes with 5 injuries
- 9 Sideswipe Same Direction crashes
- 3 Angle crashes
  - 1 injury crash with 1 injury
- 2 Unknown crash type
  - 2 injury crashes with 2 injuries

**2.3. Motorcycle Crashes**

- 1 Motorcycle crash

**2.4. Weather Conditions**

- 44 Clear
  - 12 injury crashes with 21 injuries
- 7 Cloudy
  - 3 injury crashes with 4 injuries
- 1 Rain

**2.5. Lighting Conditions**

- 36 Daylight
  - 15 injury crashes with 15 injuries

- 11 Dark – Spot Lighting
  - 2 injury crashes with 9 injuries
- 2 Dark – Continuous Lighting
  - 1 injury crash with 1 injury
- 2 Dark – No Lighting
- 1 Dusk

**3. I-215 Westbound Crash Data**

- 227 total crashes
  - 81 injury crashes with 114 injuries

**3.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-215 WB
Fatal	0.0045	0.0000
Injury	0.5722	0.3690
PDO	1.2447	0.6652
Total	1.8214	1.0342
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	1.3668

\*100MVM

**3.2. Predominant Crash Types**

- 140 Rear-End crashes
  - 58 injury crashes with 87 injuries
- 46 Sideswipe Same Direction crashes
  - 11 injury crashes with 15 injuries
- 31 Non-Collision crashes
  - 9 injury crashes with 9 injuries
- 8 Angle crashes
  - 2 injury crashes with 2 injuries
- 1 Rear-To-Rear crashes
  - 1 injury crash with 1 injury
- 1 Unknown crash type

**3.3. Pedestrian Crashes**

- 1 Pedestrian crash

**3.4. Motorcycle Crashes**

- 4 Motorcycle crashes
  - 3 injury crashes with 3 injuries

**3.5. Bus Crashes**

- 1 crash involving buses

**3.6. Weather Conditions**

- 190 Clear
  - 70 injury crashes with 102 injuries

- 20 Cloudy
  - 7 injury crashes with 8 injuries
- 8 Rain
  - 4 injury crashes with 4 injuries
- 6 Blowing Snow
- 3 Unknown

**3.7. Lighting Conditions**

- 192 Daylight
  - 71 injury crashes with 96 injuries
- 22 Dark – Spot Lighting
  - 6 injury crashes with 10 injuries
- 8 Dark – Continuous Lighting
  - 3 injury crashes with 4 injuries
- 4 Dawn
- 1 Dusk
  - 1 injury crash with 4 injuries

**4. I-215 Eastbound Crash Data**

- 372 total crashes
  - 1 fatal crash with 1 fatality
  - 139 injury crashes with 214 injuries

**4.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-215 EB
Fatal	0.0045	0.0066
Injury	0.5722	0.9199
PDO	1.2447	1.5353
Total	1.8214	2.4618
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	4.6324

\*100MVM

**4.2. Predominant Crash Types**

- 290 Rear-End crashes
  - 118 injury crashes with 188 injuries
- 38 Sideswipe Same Direction crashes
  - 8 injury crashes with 11 injuries
- 34 Non-Collision crashes
  - 1 fatal crash with 1 fatality
  - 9 injury crashes with 10 injuries
- 9 Angle crashes
  - 3 injury crashes with 3 injuries
- 1 Rear-To-Rear crashes
  - 1 injury crash with 2 injuries

**4.3. Motorcycle Crashes**

- 3 Motorcycle crashes
  - 1 fatal crash with 1 fatality
  - 2 injury crashes with 2 injuries

**4.4. Weather Conditions**

- 312 Clear
  - 1 fatal crash with 1 fatality
  - 118 injury crashes with 184 injuries
- 49 Cloudy
  - 18 injury crashes with 27 injuries

- 4 Rain
  - 2 injury crashes with 2 injuries
- 4 Blowing Snow
- 3 Unknown
  - 1 injury crash with 1 injury

**4.5. Lighting Conditions**

- 303 Daylight
  - 113 injury crashes with 172 injuries
- 45 Dark Spot Lighting
  - 1 fatal crash with 1 fatality
  - 16 injury crashes with 27 injuries
- 13 Dark Continuous Lighting
  - 6 injury crashes with 8 injuries
- 8 Dusk
  - 3 injury crashes with 6 injury
- 2 Dawn
  - 1 injury crash with 1 injury
- 1 Dark – No Lighting

**5. I-515 Northbound Crash Data**

- 136 total crashes
  - 43 injury crashes with 63 injuries

**5.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-515 NB
Fatal	0.0045	0.0000
Injury	0.5722	0.2626
PDO	1.2447	0.5679
Total	1.8214	0.8304
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	0.0000

\*100MVM

**5.2. Predominant Crash Types**

- 57 Rear-End crashes
  - 23 injury crashes with 37 injuries
- 37 Non-Collision crashes
  - 10 injury crashes with 11 injuries
- 37 Sideswipe Same Direction crashes
  - 8 injury crashes with 11 injuries
- 4 Angle crashes
  - 2 injury crashes with 4 injuries
- 1 Unknown crash type

**5.3. Motorcycle Crashes**

- 5 Motorcycle crashes
  - 4 injury crashes with 4 injuries

**5.4. Bus Crashes**

- 1 crash involving buses

**5.5. Weather Conditions**

- 113 Clear
  - 35 injury crashes with 49 injuries
- 18 Cloudy
  - 7 injury crashes with 13 injuries
- 3 Rain
  - 1 injury crash with 1 injury

- 1 Unknown
- 1 Severe Crosswind

**5.6. Lighting Conditions**

- 94 Daylight
  - 28 injury crashes with 41 injuries
- 26 Dark – Spot Lighting
  - 10 injury crashes with 17 injuries
- 7 Dark – Continuous Lighting
  - 2 injury crashes with 2 injuries
- 6 Dusk
  - 2 injury crashes with 2 injuries
- 2 Dark – No Lighting
  - 1 injury crash with 1 injury
- 1 Dawn

**6. I-515 Southbound Crash Data**

- 218 total crashes
  - 76 injury crashes with 114 injuries

**6.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-515 SB
Fatal	0.0045	0.0000
Injury	0.5722	0.4043
PDO	1.2447	0.7553
Total	1.8214	1.1596
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	0.5319

\*100MVM

**6.2. Predominant Crash Types**

- 118 Rear-End crashes
  - 54 injury crashes with 84 injuries
- 48 Non-Collision crashes
  - 8 injury crashes with 9 injuries
- 36 Sideswipe Same Direction crashes
  - 9 injury crashes with 15 injuries
- 11 Unknown crash type
  - 2 injury crashes with 2 injuries
- 5 Angle crashes
  - 3 injury crashes with 4 injuries

**6.3. Motorcycle Crashes**

- 5 Motorcycle crashes
  - 5 injury crashes with 7 injuries

**6.4. Weather Conditions**

- 177 Clear
  - 62 injury crashes with 92 injuries
- 32 Cloudy
  - 12 injury crashes with 17 injuries
- 4 Blowing Snow
- 3 Rain

- 2 injury crashes with 5 injuries
- 1 Severe Crosswind
- 1 Unknown

**6.5. Lighting Conditions**

- 173 Daylight
  - 60 injury crashes with 92 injuries
- 29 Dark – Spot Lighting
  - 10 injury crashes with 12 injuries
- 8 Dark – Continuous Lighting
  - 5 injury crashes with 8 injuries
- 5 Dawn
- 3 Dusk
  - 1 injury crash with 1 injury

**7. I-11 – I-11/I-215/I-515/LMP System-to-System Interchange Ramps Crash Data**

- NB off ramp to WB on/EB on, NB off ramp to WB on, NB off ramp to EB on, WB off ramp to SB on, EB off ramp to SB on/NB on, EB off ramp to SB on, EB off ramp to NB on, WB off ramp to NB on, off ramp to WB on/LMP EB on, SB off ramp to WB on, SB off ramp to LMP EB on
- 136 total crashes
  - 50 injury crashes with 74 injuries

- 13 injury crashes with 20 injuries
- 3 Blowing Snow
- 1 Rain
  - 1 injury crash with 1 injury
- 1 Severe Crosswinds
- 1 Unknown

**7.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	I-11/I-215/I-515/LMP System-to-System Interchange Ramps
Fatal	0.0045	0.0000
Injury	0.5722	0.5330
PDO	1.2447	0.9168
Total	1.8214	1.4499
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	6.3966

\*100MVM

**7.2. Predominant Crash Types**

- 63 Rear-End crashes
  - 28 injury crashes with 44 injuries
- 38 Sideswipe Same Direction crashes
  - 7 injury crashes with 15 injuries
- 34 Non-Collision crashes
  - 14 injury crashes with 14 injuries
- 1 Unknown crash type
  - 1 injury crash with 1 injury

**7.3. Motorcycle Crashes**

- 6 Motorcycle crashes
  - 5 injury crashes with 7 injuries

**7.4. Bus Crashes**

- 1 Bus crash
  - 1 injury crash with 1 injury

**7.5. Weather Conditions**

- 107 Clear
  - 36 injury crashes with 53 injuries
- 23 Cloudy

**7.6. Lighting Conditions**

- 101 Daylight
  - 33 injury crashes with 48 injuries
- 19 Dark – Spot Lighting
  - 8 injury crashes with 12 injuries
- 10 Dark – Continuous Lighting
  - 5 injury crashes with 6 injuries
- 4 Dusk
  - 3 injury crashes with 7 injuries
- 1 Dark – No Lighting
  - 1 injury crash with 1 injury
- 1 Dawn

**8. I-11 – Horizon Interchange Ramps Crash Data**

- SB off ramp and NB on ramp
- 29 total crashes
  - 7 injury crashes with 9 injuries

**8.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	Horizon Ramps
Fatal	0.0045	0.0000
Injury	0.5722	0.5302
PDO	1.2447	1.6663
Total	1.8214	2.1965
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	0.0000

\*100MVM

**8.2. Predominant Crash Types**

- 12 Non-Collision crashes
  - 2 injury crashes with 2 injuries
- 8 Sideswipe Same Direction crashes
  - 1 injury crash with 2 injuries
- 6 Rear-End crashes
  - 3 injury crashes with 4 injuries
- 2 Angle crashes
  - 1 injury crash with 1 injury
- 1 Backing crash

**8.3. Weather Conditions**

- 15 Clear
  - 3 injury crashes with 4 injuries
- 7 Cloudy
  - 3 injury crashes with 4 injuries
- 4 Rain
  - 1 injury crash with 1 injury
- 1 Blowing Snow
- 1 Unknown

- 1 Fog, Smog, Smoke

**8.4. Lighting Conditions**

- 18 Daylight
  - 4 injury crashes with 5 injuries
- 6 Dark – Spot Lighting
  - 3 injury crashes with 4 injuries
- 3 Dark – Continuous Lighting
- 2 Dark – No Lighting

**9. I-215 – Stephanie Interchange Ramps Crash Data**

- EB on ramp, EB off Ramp, WB on ramp and WB off ramp
- 88 total crashes
  - 38 injury crashes with 50 injuries

**9.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	Stephanie Interchange Ramps
Fatal	0.0045	0.0000
Injury	0.5722	2.2171
PDO	1.2447	2.9172
Total	1.8214	5.1343
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	0.0000

\*100MVM

**9.2. Predominant Crash Types**

- 80 Rear-End crashes
  - 37 injury crashes with 49 injuries
- 3 Sideswipe Same Direction crashes
- 2 Non-Collision crashes
- 2 Angle crashes
  - 1 injury crash with 1 injury
- 1 Backing crash

**9.3. Motorcycle Crashes**

- 1 Motorcycle crash
  - 1 injury crash with 1 injury

**9.4. Weather Conditions**

- 71 Clear
  - 31 injury crashes with 41 injuries
- 7 Unknown
  - 4 injury crashes with 4 injuries
- 7 Cloudy
  - 3 injury crashes with 5 injuries
- 2 Rain

- 1 Blowing Snow

**9.5. Lighting Conditions**

- 69 Daylight
  - 27 injury crashes with 35 injuries
- 12 Dark – Spot Lighting
  - 7 injury crashes with 11 injuries
- 5 Dusk
  - 4 injury crashes with 4 injuries
- 2 Dark – Continuous Lighting

**10. I-215 – Gibson Interchange Ramps Crash Data**

- EB on ramp, EB off Ramp, WB on ramp and WB off ramp
- 31 total crashes
  - 10 injury crashes with 13 injuries

- 8 injury crashes with 11 injuries

- 5 Dark – Spot Lighting
  - 2 injury crashes with 2 injuries
- 1 Dark – Continuous Lighting
- 1 Unknown

**10.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	Gibson Interchange Ramps
Fatal	0.0045	0.0000
Injury	0.5722	1.1109
PDO	1.2447	2.3329
Total	1.8214	3.4438
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	0.0000

\*100MVM

**10.2. Predominant Crash Types**

- 20 Rear-End crashes
  - 8 injury crashes with 11 injuries
- 8 Sideswipe Same Direction crashes
  - 1 injury crash with 1 injury
- 3 Non-Collision crashes
  - 1 injury crash with 1 injury

**10.3. Motorcycle Crashes**

- 1 Motorcycle crash

**10.4. Bus Crashes**

- 1 Bus crash
  - 1 injury crash with 1 injury

**10.5. Weather Conditions**

- 26 Clear
  - 9 injury crashes with 11 injuries
- 4 Cloudy
  - 1 injury crash with 2 injuries
- 1 Blowing Snow

**10.6. Lighting Conditions**

- 24 Daylight

**11. I-515 – Auto Show Interchange Ramps Crash Data**

- NB on ramp, NB off ramp, SB on ramp, and SB off ramp
- 16 total crashes
  - 10 injury crashes with 15 injuries

- 1 Dusk
  - 1 injury crash with 1 injury
- 1 Dawn

**11.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	Auto Show Interchange Ramps
Fatal	0.0045	0.0000
Injury	0.5722	1.3144
PDO	1.2447	0.7887
Total	1.8214	2.1031
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	26.2884

\*100MVM

**11.2. Predominant Crash Types**

- 13 Rear-End crashes
  - 9 injury crashes with 14 injuries
- 3 Non-Collision crashes
  - 1 injury crash with 1 injury

**11.3. Pedestrian Crashes**

- 1 Pedestrian crash

**11.4. Weather Conditions**

- 11 Clear
  - 6 injury crashes with 11 injuries
- 4 Cloudy
  - 3 injury crashes with 3 injuries
- 1 Blowing Snow
  - 1 injury crash with 1 injury

**11.5. Lighting Conditions**

- 10 Daylight
  - 7 injury crashes with 11 injuries
- 2 Dark – Spot Lighting
- 2 Dark – Continuous Lighting
  - 2 injury crashes with 3 injuries

**12. I-515 – Sunset Interchange Ramp Crash Data**

- NB on ramp, NB off ramp, SB on ramp, and SB off ramp
- 65 total crashes
  - 15 injury crashes with 19 injuries

**12.1. Crash Rates**

Crash Severity	NDOT Principal Arterial Interstate (2018)	Sunset Interchange Ramps
Fatal	0.0045	0.0000
Injury	0.5722	1.0507
PDO	1.2447	3.5022
Total	1.8214	4.5529
Disabling Injury (A)-Subset of Injury Crashes*	1.3941	0.0000

\*100MVM

**12.2. Predominant Crash Types**

- 32 Non-Collision crashes
  - 7 injury crashes with 8 injuries
- 22 Rear-End crashes
  - 8 injury crashes with 11 injuries
- 11 Sideswipe Same Direction crashes

**12.3. Motorcycle Crashes**

- 2 Motorcycle crashes
  - 2 injury crashes with 2 injuries

**12.4. Weather Conditions**

- 32 Clear
  - 8 injury crashes with 9 injuries
- 17 Cloudy
  - 4 injury crashes with 6 injuries
- 12 Rain
  - 2 injury crashes with 3 injuries
- 3 Unknown
  - 1 injury crash with 1 injury
- 1 Blowing Snow

**12.5. Lighting Conditions**

- 45 Daylight
  - 11 injury crashes with 15 injuries
- 15 Dark – Spot Lighting
  - 3 injury crashes with 3 injuries
- 2 Dusk
- 2 Dark – No Lighting
- 1 Dark – Continuous Lighting
  - 1 injury crash with 1 injury

**13. Lake Mead Parkway (LMP) Corridor Crash Data**

- LMP from I-11/I-215/I-515 to Van Wagenen Street
- 205 total crashes
  - 64 injury crashes with 99 injuries

**13.1. Crash Rates**

Crash Severity	NDOT Urban Principal Arterial Other (2018)	Lake Mead Parkway
Fatal	0.0197	0.0000
Injury	1.4953	1.6057
PDO	1.7556	3.5376
Total	3.2705	5.1433
Disabling Injury (A)-Subset of Injury Crashes*	6.1673	7.5267

\*100MVM

**13.2. Predominant Crash Types**

- 137 Rear-End crashes
  - 45 injury crashes with 69 injuries
    - 79 crashes in the westbound direction
    - 52 crashes in the eastbound direction
    - 5 crashes in the northbound direction
    - 1 crash in the southbound direction
- 42 Sideswipe Same Direction crashes
  - 9 injury crashes with 14 injuries
    - 24 crashes in the eastbound direction
    - 16 crashes in the westbound direction
    - 2 crashes in the northbound direction
- 12 Angle crashes
  - 6 injury crashes with 9 injuries
    - 4 crashes; 2 in the eastbound direction, 1 in the eastbound direction (left-turn/U-turn), 1 in the eastbound direction (right-turn)
    - 2 crashes; 1 in the westbound direction, 1 in the westbound direction (right-turn)
    - 5 crashes; 1 in the northbound direction, 3 in the northbound direction (left-turn/U-turn), 1 in the northbound (right-turn)
    - 1 crash; 1 in the southbound direction (left-turn/U-turn)
- 12 Non-Collision crashes
  - 3 injury crashes with 3 injuries
- 2 Head-On crashes
  - 1 injury crash with 4 injuries

**13.3. Pedestrian Crashes**

- 1 Pedestrian crash
  - 1 injury crash with 1 injury

**13.4. Bus Crashes**

- 2 crashes involving buses

**13.5. Motorcycle Crashes**

- 2 Motorcycle crash
  - 1 injury crash with 1 injury

**13.6. Moped Crashes**

- 1 Moped crash
  - 1 injury crash with 1 injury

**13.7. Pedal Cycle Crashes**

- 1 Pedal Cycle crash
  - 1 injury crash with 1 injury

**13.8. Weather Conditions**

- 172 Clear
  - 59 injury crashes with 93 injuries
- 22 Cloudy
  - 4 injury crashes with 4 injuries
- 7 Rain
  - 1 injury crash with 2 injuries
- 2 Unknown
  - 2 injury crashes with 2 injuries
- 2 Blowing Sand, Dirt, Snow

**13.9. Lighting Conditions**

- 157 Daylight
  - 45 injury crashes with 64 injuries
- 25 Dark – Continuous Lighting
  - 9 injury crashes with 17 injuries
- 15 Dark – Spot Lighting
  - 5 injury crashes with 9 injuries
- 6 Dusk
  - 3 injury crashes with 6 injuries
- 2 Dawn
  - 2 injury crashes with 3 injuries

**14. Lake Mead Parkway (LMP) Intersection Crash Data**

- LMP at Eastgate / Fiesta Henderson
- 93 total crashes
  - 30 injury crashes with 48 injuries

**14.1. Crash Rates**

Crash Severity	Lake Mead Parkway Intersection Crash Rates
Fatal	0.0000
Injury	0.8547
PDO	1.7950
Total	2.6497
Disabling Injury (A)-Subset of Injury Crashes*	8.5475

\*100MVM

**14.2. Predominant Crash Types**

- 69 Rear-End crashes
  - 21 injury crashes with 35 injuries
    - 36 crashes in the westbound direction
    - 28 crashes in the eastbound direction
    - 4 crashes in the northbound direction
    - 1 crash in the southbound direction
- 13 Sideswipe Same Direction crashes
  - 3 injury crashes with 3 injuries
    - 7 crashes in the eastbound direction
    - 5 crashes in the westbound direction
    - 1 crash in the northbound direction
- 7 Angle crashes
  - 4 injury crashes with 8 injuries
    - 2 crashes; 1 in the eastbound direction, 1 in the eastbound direction (left-turn/U-turn)
    - 1 crash; 1 in the westbound direction, 1 in the westbound direction
    - 4 crashes; 4 in the northbound direction (left-turn/U-turn)
- 3 Non-Collision crashes
  - 2 injury crashes with 2 injuries
- 1 Unknown crash

**14.3. Pedestrian Crashes**

- 1 Pedestrian crash
  - 1 injury crash with 1 injury

**14.4. Motorcycle Crashes**

- 1 Motorcycle crash
  - 1 injury crash with 1 injury

**14.5. Moped Crashes**

- 1 Moped crash
  - 1 injury crash with 1 injury

**14.6. Motorbike Crashes**

- 1 Motorcycle crash

**14.7. Weather Conditions**

- 79 Clear
  - 28 injury crashes with 46 injuries
- 11 Cloudy
  - 2 injury crashes with 2 injuries
- 2 Rain
- 1 Blowing Snow

**14.8. Lighting Conditions**

- 67 Daylight
  - 24 injury crashes with 33 injuries
- 15 Dark – Continuous Lighting
  - 3 injury crashes with 7 injuries
- 8 Dark – Spot Lighting
  - 1 injury crash with 2 injuries
- 2 Dusk
  - 1 injury crash with 4 injuries
- 1 Dawn
  - 1 injury crash with 2 injuries