October, 2019

Systemic Safety Analysis Report

CITY OF LAKE ELSINORE

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October 14, 2019

Mr. Remon Habib, PE
City Engineer
City of Lake Elsinore
130 South Main Street
Lake Elsinore, CA 92530

RE: Systemic Safety Analysis Report Program (SSARP)

Dear Remon,

We are pleased to submit herewith our Systemic Safety Analysis Report for the City of Lake Elsinore which includes analysis for roadway segments and intersections that may be used in upcoming grant opportunities and for reference.

By signing and stamping this Systemic Safety Analysis Report, the engineer is attesting to this report's technical information and engineering data upon which local agency's recommendations, conclusions, and decisions are made.

If you have any questions regarding this report, please call the undersigned for clarification.

Sincerely yours,

ALBERT A. WEBB ASSOCIATES

Nicholas Lowe, MS, PE
Associate Engineer

INTRODUCTION

The Systemic Safety Analysis Report (SSAR) focuses on analyzing and evaluating the entire roadway network in the City of Lake Elsinore based on the various criteria provided by Caltrans SSAR Program guidelines.

The key goal of the report is to identify the collision-prone corridors and intersections and provide recommendations based on the collision patterns in the City of Lake Elsinore. Collision data from May 1, 2013 to May 30, 2018 was analyzed for the purpose of this analysis. Various collision criteria such as collision severity (Fatal collisions, Severe collisions, Complain of Pain Injuries, Visible Injuries and Property Damage Only (PDO), collision type, pedestrian collisions, bicycle collisions, nearby land uses, etc. are considered for preparing the report.

Intersections are prioritized based on the collision cost and the severity of the collisions. The roadway network with most number of pedestrian, bicyclist, and motorcycle collisions is considered for micro-level analysis.

REPORTS DISCOVERY AND ADMISSION INTO EVIDENCE OF CERTAIN REPORTS, SURVYES, AND INFORMATION – Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for any purpose relating to this section, shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location identified or addressed in the reports, surveys, schedules, lists, or other data.

City of Lake Elsinore

The City of Lake Elsinore (City) is located in Riverside County. The City has total population of 66,411. Interstate 15 and State Route 74 pass through the city providing major throughput for east-west and north-south traffic.

The majority of the City is served by Lake Elsinore Unified School District, which served a student population of about 21,500. The school district has 15 elementary, five middle schools, three high schools, and three alternative schools.

METHODOLOGY

Key Steps for Collision Analysis

The following methodological steps are used for the study to increase the precision of the collision-prone area identification. These steps help in identifying missing data to determine the best mitigations to reduce future collisions.

1. Collect and Clean The Data
2. Analyze Collision Data
3. Injury Network Analysis
4. Propose Potential Projects

1. Collect and Clean The Data

Collision data was collected using California's Statewide Integrated Traffic Records System (SWITRS), which provides collision data reports for all California cities and countries, and the Transportation Injury Mapping System (TIMS), which provides injury collision data for all California cities.

SWITRS outputs raw, unfiltered data. In order to accurately understand the patterns of collisions, the data needs to be cleaned. Cleaning the data is a process of filtering the raw data to reveal only the information within the City of Lake Elsinore's roadway network and removing Interstate and Freeway collisions. Cleaning the data also removes collision information that is outside of the City boundaries or at locations where upcoming safety projects are planned or underway. Cleaning the raw data is a critical step as it helps in defining the various results. Using the raw, unfiltered SWITRS data can result in excessive collision locations that are not within the scope of the City's SSAR.

TIMS data only includes injury and fatal collisions. Locations with a high number of property damage collisions will not be revealed by only using TIMS data. TIMS is useful in verifying SWITRS data locations and information.

The SWITRS and TIMS collision data obtained for the City of Lake Elsinore SSAR was collected from 1 May 2013 to 30 May 2018.

2. Analyze Collision Data

After cleaning the data, each collision is mapped. The geocoded data can be mapped by using various parameters that can include:

- Fatal and Severe Collisions
- Pedestrian and Bicycle Collisions
- Cause of Collisions
- Collisions near Schools in the City

The analysis of the mapped data is conducted using two methods;

1. *Cluster of Data* – The cluster of total collisions provides a preliminary analysis. Based on the number of total collisions at a location, a location can be concluded as a collision-prone area in comparison to other areas.
2. *Fatal and Severe Data* – This method is used after identifying the collision-prone intersections and corridors. The collision cost for fatal and severe collisions is very high, so this methodology helps to achieve best results for cost/benefit analysis. Locations with "one-off", randomly occurring fatal or severe injury collisions may show up under this methodology, but are generally removed due to relatively low cost/benefit results and lower systemic viability.

3. Injury Network Analysis

After all the preliminary data is reviewed and analyzed, the roadways and corridors with the highest number and severity of collisions can be identified.
The selection of the City's injury network is based and critical criteria which includes:

- Total Collisions
- Injury Collisions
- Fatal & Severe Collisions
- Ratio of the Street Mileage by the Number of Collisions on the Street
- Ratio of the Street Volume by the Number of Collisions on the Street

4. Propose Potential Countermeasure Projects

Completion of the collision data analysis leads to the development of a list of systemic countermeasures that can be used to prepare future HSIP and other safety program applications. These countermeasures can be applied to multiple intersections or corridors with similar operating characteristics and collision histories. The Caltrans Local Roadway Safety Manual (LRSM) was used to determine potential countermeasures to ensure compatibility with upcoming HSIP opportunities and proof of countermeasure effectiveness.
Countermeasures for safety improvements include, but are not limited to:

- Advance dilemma zone detection system
- Add curb extensions
- Leading pedestrian phase
- Pedestrian detection system
- Enhanced crosswalk
- Rapid rectangular flashing beacon at crosswalks
- Pedestrian countdown heads
- Accessible Pedestrian Push (APS) buttons

ANALYSIS & SELECTION OF INJURY NETWORK

According to the records the City of Lake Elsinore had a total of 1,597 collisions over the analyzed period of five year four months (May 2013 to May 2018). Out of those collisions 736 resulted in injury (18 Fatal, 59 Severe, 179 Other Visible and 480 Complain of Pain) collisions. Additionally, there were 862 property damage collisions. The selection criteria of the Injury network in the City of Lake Elsinore was based on the factors shown below;

1. Total Number of Collisions
2. Cost of Collisions
3. Fatal & Severe Collisions
4. Ratio of Street Length & Collisions
5. Ratio of Street Volume & Collisions

The following streets were identified as City of Lake Elsinore's injury network.

- Riverside Drive
- Lakeshore Drive
- Lake Street
- Railroad Canyon Road
- Grand Avenue
- Mission Trail
- Central Avenue
- Collier Avenue
- Lang-staff Street
- Summerhill Drive
- Canyon Hills Drive
- Corydon Road
- Machado Street

Ranking the Injury Network

The City of Lake Elsinore injury network in the City was ranked by the highest percentage of collisions that resulted in injury in comparison to the City's entire roadway network. Additional factors were analyzed in ranking the City's injury network which includes (shown on exhibits on the following pages);

- Pedestrian/Bicycle Collisions
- Types of Collisions
- Cause of Collisions

The Injury Network - Accounts of Over 48% of Total Collisions

Primary Street	Total Collisions	% of Total Collisions City-Wide
CENTRAL AVE	119	7%
COLLIER AVE	38	2%
LAKE ST	40	3%
LAKESHORE DR	132	8%
MACHADO ST	41	3%
MISSION TRL	44	3%
RAILROAD CANYON RD	146	9%
RIVERSIDE DR	180	11%
SUMMERHILL DR	35	2%
Grand Total	**775**	**49%**

Injury Network – Accounts of Over 52% of Total Injury Collisions

Primary Street	Count of Injury Collisions	% of Total Collisions City-Wide
CENTRAL AVE	53	7%
COLLIER AVE	17	2%
LAKE ST	25	3%
LAKESHORE DR	83	11%
MACHADO ST	18	2%
MISSION TRL	29	4%
RAILROAD CANYON RD	57	8%
RIVERSIDE DR	86	12%
SUMMERHILL DR	15	2%
Grand Total	**383**	**52%**

Injury Network - Pedestrian, Bicycle, & Other Collisions

The pedestrian and bicycle collisions are considered as important factors to evaluate the injury corridors. Lakeshore Drive accounts for most of the pedestrian and bicycle collisions in the City. Pedestrian right of way violation, such as illegal street crossing are the major factors which cause collisions in the City.

Primary Street	Unknown	Bicycle	Fixed Object	Motor Vehicle on Other Roadway	Non - Collision	Not Stated	Other	Other Motor Vehicle	Other Object	Parked Motor Vehicle	Pedestrian	Grand Total
CENTRAL AVE	6	5	5	3				98		1	1	119
COLLIER AVE	4		1					32			1	38
LAKE ST	4		4					29	2		1	40
LAKESHORE DR	11	5	26			1		75	3	2	9	132
MACHADO ST		2	8	1				24	2	2	2	41
MISSION TRL	1	2	12	2				23			3	44
RAILROAD CANYON RD	12	2	16	3	1			107	1	1	3	146
RIVERSIDE DR	18		19	2	2		1	127	2		9	180
SUMMERHILL DR	2		9	1				20	1		2	35
Grand Total	**58**	**16**	**100**	**12**	**3**	**1**	**1**	**535**	**11**	**6**	**31**	**775**

Injury Network –Type of Collisions

The type of collisions determines the pattern of the collisions on the selected corridor. The pattern of the collisions helps in determining the mitigations to reduce the number of collisions on corridor.

It is found from the analysis that due to maximum number of collisions on Riverside Dr. It is ranked #1 in the type of collisions rankings for most of the types. The majority of the fatal and severe collisions in the City have occurred due to broadside/bicycle collisions, head on collisions, or pedestrian/bicycle collisions. Overturning type of collisions may occur at the curve or due to unsafe speed.

Primary Street	Not Stated	Broadside	Head-On	Hit Object	Other	Overturned	Rear-End	Sideswipe	Vehicle - Pedestrian	Grand Total
CENTRAL AVE	1	33	6	4	3		48	20	4	119
COLLIER AVE	2	6	2	1			25	1	1	38
LAKE ST	3	10	4	5	2		10	5	1	40
LAKESHORE DR		39	16	24	3	5	18	17	10	132
MACHADO ST	1	18	4	8			4	4	2	41
MISSION TRL	1	5	4	11		1	13	5	4	44
RAILROAD CANYON RD	2	49	6	17	2	2	40	24	4	146
RIVERSIDE DR	3	26	16	14	1	4	88	20	8	180
SUMMERHILL DR	3	14		9		1	1	7		35
Grand Total	**16**	**200**	**58**	**93**	**11**	**13**	**247**	**103**	**34**	**775**

Injury Network – Cause of Collisions

The cause of collision determines the collision factor by driver's point of view. The collision factor helps in determining the signage placement for regulations on the streets.

Unsafe speed, traffic signal and signage, and pedestrian right of way violations are major causes of collisions in the City for fatal and severe collisions. The collisions due to unsafe speed determines that the people does not follow the posted speed limit.

Based on the cause of collisions and type of collisions on the corridor the mitigations are recommended to reduce the number of collisions on the streets.

Primary Street	Not Stated		Auto R/W Violation	Driving Under Influence	Following Too Closely	Impeding Traffic	Improper Passing	Improper Turning	Lights	Other	Other Equipment	Other Hazardous Movement	Other Improper Driving	Other Than Driver	Ped R/W Violation	Pedestrian Violation	Traffic Signals and Signs	Unknown	Unsafe Lane Change	Unsafe Speed	Unsafe Starting or Backing	Wrong Side of Road	Grand Total
CENTRAL AVE	3	1	13	6	5			14				1	2			2	15	13	2	38	3	1	119
COLLIER AVE	6		1	2	1			3	1			1	2			1				19		1	38
LAKE ST	3		3	2	1			11				1		1			7	3		6	2		40
LAKESHORE DR	11	1	19	13		1	2	29		1		1	1	2		7	7	5		24	1	7	132
MACHADO ST	2		4	5				11		2					1		5	4		7			41
MISSION TRL	1		3	10	1			8	1	1			1			3	1	1		12	1		44
RAILROAD CANYON RD	12	2	12	8	4			31				5	2	1	2	1	18	17	1	28	2		146
RIVERSIDE DR	17		7	23	5		4	17			1	2	1		1	6	5	15		72	1	3	180
SUMMERHILL DR	5		5	3				10		1					1		1	3	2	4			35
Grand Total	**60**	**4**	**67**	**72**	**17**	**1**	**6**	**134**	**2**	**5**	**1**	**11**	**9**	**4**	**5**	**20**	**59**	**61**	**5**	**210**	**10**	**12**	**775**

Top 21 Injury Corridor Segments Details

The analysis identified the top 21 roadway segments that have the majority of the collisions in the City of Lake Elsinore. The collisions and roadway features like maximum pedestrian collisions, total number of collisions, bicycle collisions, cause of collisions, roadway geometry, land use as well as details of type of collisions are explained in detail in the following pages.

List of Injury Segments

1. Riverside Drive from Lincoln St to Joy Street
2. Riverside Drive from Joy Street to Lakeshore Drive
3. Riverside Drive from Lakeshore Drive to Robertson Street
4. Riverside Drive from Gunnerson Street to Collier Avenue
5. Riverside Drive from Collier Avenue to Central Avenue
6. Riverside Drive from Collier Avenue to Cambern Avenue
7. Lake Street from Alberhill Street to Lakeshore Drive
8. Lakeshore Drive from Lake Street to Terra Cotta Road
9. Lakeshore Drive from Terra Cotta Road to Machado Street
10. Lakeshore Drive from Machado Street to Riverside Drive
11. Lakeshore Drive from Riverside Drive to Graham Street
12. Mission Trail from Malaga Road to Corydon Road
13. Railroad Canyon Rd from Lakshore Drive to Church Road
14. Machado Rd from Lincoln St to Grand Ave
15. Canyon Hill from Lost Road to Cottonwood Canyon Road
16. Summerhill Road from Railroad Canyon Road to Via De Valle
17. Auto Center Drive from Mill Street to Railroad Canyon Road
18. Corydon Street from Grand Avenue to Mission Trail
19. Lake Street from Temescal Canyon Road to North City Boundary
20. Lang-staff Road from Limited Stop Pottery Street
21. Grand Avenue from Ortega Highway to Riverside Drive

Top 29 Injury Intersections Details

The analysis identified the top 30 intersections that have the majority of the collisions in the City of Lake Elsinore. The collisions and roadway features like maximum pedestrian collisions, total number of collisions, bicycle collisions, cause of collisions, ADT, roadway geometry, land use as well as details of type of collisions are explained in details in the following pages.

List of Intersections

1. Grape Street and Railroad Canyon Road
2. Central Avenue and Dexter Avenue
3. Collier Street and Central Avenue
4. Riverside Drive and Lincoln Street
5. Diamond Drive and Auto Center Drive
6. Canyon Hills Road and Railroad Canyon Road
7. Collier Street and Riverside Drive
8. Grand Avenue and Ortega Highway
9. Cambern Avenue and Central Avenue
10. Railroad Canyon Road and Lakeshore Drive
11. Riverside Drive and Strickland Avenue
12. Grand Avenue and Riverside Drive
13. Machado Street and Lincoln Street
14. Railroad Canyon Road and Church Street
15. Grand Avenue and Lincoln Street
16. Riverside Drive and Joy Street
17. Riverside Drive and Lash Street
18. Aberhill Ranch Road and Lake Street
19. Collier Avenue and Nichols Road
20. Lakeshore Drive and Machado Street
21. Mission Trail and Olive Street
22. Corydon Street and Mission Trail
23. Lake Street and Temescal Canyon Road
24. Machado Street and Joy Street
25. Lakeshore Drive and Graham Street
26. Lakeshore Drive and Gunnerson Street
27. Corte Seriui and Summerhill Drive
28. Cottonwood Street and Canyon Hills Drive
29. Lakeshore Drive and Ohio Street

TOP 21 ROADWAY SEGMENTS

1. RIVERSIDE DR FROM LINCOLN ST TO JOY ST

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Riverside Drive from Lincoln Street to Joy Street is a two lane roadway.
- The roadway segment is surrounded by vacant land, retail and houses.
- Riverside Drive is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.30 Miles.
- The rate of collision of the segment is 187.09.
- This segment of Riverside Drive provides connectivity to I-215.
- Unsafe Speed (33) and Pedestrian Violation (4) are the major causes of collisions on this segment of Riverside Drive.
- Most of the collision types on this segments were Rear End (39) or Broadside (9) collisions.

Cost of Collisions: $8,244,200*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 58

Fatal: 1

Severe: 2

Other Visible: 5

Complain of Pain: 17

Property Damage: 33

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	9
Hit Object	3
Rear-End	39
Sideswipe	2
Vehicle - Pedestrian	5
Grand Total	58

Lighting Conditions

Lighting	Count of Lighting
Unknown	1
Dark - No Street Lights	2
Dark - Street Lights	12
Daylight	42
Dusk - Dawn	1
Grand Total	58

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	2
Driving Under Influence	3
Following Too Closely	3
Improper Passing	4
Improper Turning	2
Not Stated	1
Other Hazardous Movement	1
Ped R/W Violation	1
Pedestrian Violation	3
Unknown	4
Unsafe Speed	33
Wrong Side of Road	1
Grand Total	58

Party 1 Movement

Party 1 Movement	Count of Movement 1
Unknown	1
Making Left Turn	3
Making Right Turn	6
Passing Other Vehicle	2
Proceeding Straight	29
Slowing / Stopping	2
Slowing/Stopping	1
Stopped In Road	14
Grand Total	58

Potential Countermeasures

1. Install acceleration/deceleration lanes (R11).
2. Install pedestrian crossing (with enhances safety features) (R38).
3. Install sidewalk/pathway (to avoid walking along roadway) (R37).

2. RIVERSIDE DR FROM JOY STREET TO LAKESHORE DRIVE

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Riverside Drive from Joy Street to Lakeshore Drive is a two lane roadway.
- The roadway segment is surrounded by vacant land, retail and houses.
- Riverside Drive is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.40 Miles.
- The rate of collision of the segment is 70.
- Unsafe Speed (9) and Driving Under influence (4) are the major causes of collisions on this segment of Riverside Drive.
- Most of the collision types on this segments were Rear End (11) or Broadside (8) collisions.

Cost of Collisions: $6,824,900*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 28

Fatal: 1

Severe: 2

Other Visible: 2

Complain of Pain: 5

Property Damage: 18

Type of Collisions

Type of Collision	Count of Collision Type
Unknown	2
Broadside	8
Head-On	1
Rear-End	11
Sideswipe	5
Vehicle - Pedestrian	1
Grand Total	28

Lighting Conditions

Lighting	Count of Lighting
Dark - No Street Lights	1
Dark - Street Lights	8
Daylight	15
Dusk - Dawn	4
Grand Total	28

Primary Collision Factor

Cause of Collision	Count of Cause
Auto R/W Violation	1
Driving Under Influence	4
Following Too Closely	1
Improper Turning	5
Not Stated	4
Pedestrian Violation	1
Traffic Signals and Signs	1
Unknown	2
Unsafe Speed	9
Grand Total	28

Party 1 Movement

Party 1 Movement	Count of Movement1
Unknown	2
Making Left Turn	5
Making Right Turn	1
Proceeding Straight	14
Slowing / Stopping	3
Stopped In Road	3
Grand Total	28

Potential Countermeasures

- Install acceleration/deceleration lanes (R11).
- Install sidewalk/pathway (R37).

3. RIVERSIDE DR FROM LAKESHORE DR TO ROBERTSON STREET

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Riverside Drive from Lakeshore Drive to Robertson Street is a two lane roadway.
- The roadway segment is surrounded by vacant land, retail and houses.
- Riverside Drive is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.45 Miles.
- The collisions per mile rate of the segment is 144.
- Unsafe Speed (20) and Driving Under Influence (12) are the major causes of collisions on this segment of Riverside Drive.
- Most of the collision types on this segments were Rear End (27) or Sideswipe (10) collisions.

Cost of Collisions: $12,882,200*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 65

Fatal: 2

Severe: 3

Other Visible: 9

Complain of Pain: 19

Property Damage: 32

Type of Collisions

Type of Collisions	Count of Collisions Type
Unknown	1
Broadside	5
Head-On	9
Hit Object	9
Overturned	2
Rear-End	27
Sideswipe	10
Vehicle - Pedestrian	2
Grand Total	65

Lighting Conditions

Lighting	Count of Lighting
Unknown	1
Dark - No Street Lights	4
Dark - Street Lights	21
Daylight	36
Dusk - Dawn	3
Grand Total	65

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	1
Driving Under Influence	12
Following Too Closely	1
Improper Turning	6
Not Stated	10
Other Equipment	1
Other Improper Driving	1
Pedestrian Violation	2
Traffic Signals and Signs	2
Unknown	8
Unsafe Speed	20
Unsafe Starting or Backing	1
Grand Total	65

Party 1 Movement

Party 1 Movement	Count of Movement 1
Unknown	1
Changing Lanes	1
Crossed Into Opposing Lane - Unplanned	3
Making Left Turn	7
Making Right Turn	1
Merging	2
Other	2
Other Unsafe Turning	3
Parked	1
Passing Other Vehicle	1
Proceeding Straight	26
Ran Off Road	5
Slowing / Stopping	1
Stopped In Road	9
Traveling Wrong Way	2
Grand Total	65

Potential Countermeasures

- Improve Pavement Friction (High Friction Surface Treatments) (R24).
- Install curve advance warning signs (R28).
- Install curve advance warning signs (flashing beacon) (R29).
- Install dynamic/ variable speed warning signs (R30).

4. RIVERSIDE DR FROM GUNNERSON ST TO COLLIER AVENUE

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Riverside Drive from Gunnerson Street to Collier is a two lane roadway.
- The roadway segment is surrounded by vacant land, retail and houses.
- Riverside Drive is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.66 Miles.
- The collision per mile rate of the segment is 44.
- Unsafe Speed (10) and Driving Under influence (4) are the major causes of collisions on this segment of Riverside Drive.
- Most of the collision types on this segment were Rear End (11) or Head-On (6) collisions.

Cost of Collisions: $5,662,400*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 29

Fatal: 1

Severe: 1

Other Visible: 7

Complain of Pain: 9

Property Damage: 11

Type of Collisions

Type of Collisions	Count of Collisions Type
Broadside	4
Head-On	6
Hit Object	2
Other	1
Overturned	2
Rear-End	11
Sideswipe	3
Grand Total	29

Lighting Conditions

Lighting	Count of Lighting
Dark - No Street Lights	2
Dark - Street Lights	6
Daylight	21
Grand Total	29

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	3
Driving Under Influence	4
Improper Turning	4
Not Stated	2
Other Hazardous Movement	1
Traffic Signals and Signs	2
Unknown	1
Unsafe Speed	10
Wrong Side of Road	2
Grand Total	29

Party 1 Movement

Party 1 Movement	Count of Movement1
Crossed Into Opposing Lane - Unplanned	1
Making Left Turn	1
Making Right Turn	1
Proceeding Straight	18
Ran Off Road	2
Slowing / Stopping	2
Stopped In Road	4
Grand Total	29

Potential Countermeasures

- Improve pavement friction (High Friction Surface Treatments) (R24).
- Install/Upgrade signs with new fluorescent sheeting (regulatory or warning) (R26).
- Install curve advance warning signs (R28).
- Install curve advance warning signs (flashing beacon) (R29).
- Install dynamic/variable speed warning signs (R30).

5. RIVERSIDE DR FROM COLLIER AVENUE TO CENTRAL AVENUE

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Riverside Drive from Collier Avenue to Central Avenue is a four lane roadway.
- The roadway segment is surrounded by vacant land, retail and houses.
- Riverside Drive is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.51 Miles.
- The rate of collision of the segment is 74.
- Unsafe Speed (19) and Driving Improper Turning (3) are the major causes of collisions on this segment of Riverside Drive.
- Most of the collision types on this segments were Rear End (25) or Broadside (6) collisions.

Cost of Collisions: $12,882,200*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 38

Fatal: 1

Severe: 1

Other Visible: 3

Complain of Pain: 12

Property Damage: 21

Type of Collisions

Type of Collisions	Count of Collisions Type
Unknown	2
Broadside	6
Head-On	2
Hit Object	1
Rear-End	25
Sideswipe	1
Vehicle - Pedestrian	1
Grand Total	38

Lighting Conditions

Lighting	Count of Lighting
Unknown	1
Dark - No Street Lights	1
Dark - Street Lights	3
Daylight	33
Grand Total	38

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	1
Driving Under Influence	2
Following Too Closely	1
Improper Turning	3
Lights	1
Not Stated	6
Other Hazardous Movement	1
Other Improper Driving	2
Pedestrian Violation	1
Unsafe Speed	19
Wrong Side of Road	1
Grand Total	38

Party 1 Movement

Party 1 Movement	Count of Movement1
Unknown	1
Making Left Turn	2
Making Right Turn	2
Making U Turn	1
Proceeding Straight	17
Slowing / Stopping	1
Slowing / Stopping	1
Stopped In Road	13
Grand Total	38

Potential Countermeasures

- Install/ Upgrade signs with new fluorescent sheeting (R26).
- Install dynamic/variable speed warning signs (R30).
- Install delineators, reflectors and/or object markers (R31).

6. RIVERSIDE DR FROM COLLIER AVENUE TO CAMBERN AVENUE

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Riverside Drive from Collier Avenue to Central Avenue is a six lane roadway.
- The roadway segment is surrounded by vacant land, retail and houses.
- Riverside Drive is identified as Augmented Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.50 Miles.
- The collisions per mile rate of the segment is 238.
- Unsafe Speed (38) and Traffic Signal and Signs (15) are the major causes of collisions on this segment of Riverside Drive.
- Most of the collision types on this segments were Rear End (48) or Broadside (33) collisions.

Cost of Collisions: $10,865,200*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 119

Fatal: -

Severe: 3

Other Visible: 9

Complain of Pain: 41

Property Damage: 66

Type of Collisions

Type of Collisions	Count of Collision Type
Unknown	1
Broadside	33
Head-On	6
Hit Object	4
Other	3
Rear-End	48
Sideswipe	20
Vehicle - Pedestrian	4
Grand Total	119

Lighting Conditions

Lighting	Count of Lighting
Unknown	1
Dark - Street Lights	25
Daylight	92
Dusk - Dawn	1
Grand Total	119

Primary Collision Factor

Cause of Collisions	Count of Cause
Unknown	1
Auto R/W Violation	13
Driving Under Influence	6
Following Too Closely	5
Improper Turning	14
Not Stated	3
Other Hazardous Movement	1
Other Improper Driving	2
Pedestrian Violation	2
Traffic Signals and Signs	15
Unknown	13
Unsafe Lane Change	2
Unsafe Speed	38
Unsafe Starting or Backing	3
Wrong Side of Road	1
Grand Total	119

Party 1 Movement

Party 1 Movement	Count of Movement 1
Unknown	3
Changing Lanes	3
Crossed Into Opposing Lane - Unplanned	1
Making Left Turn	21
Making Right Turn	4
Parking Maneuver	1
Proceeding Straight	58
Ran Off Road	1
Slowing / Stopping	3
Slowing/Stopping	1
Stopped In Road	23
Grand Total	119

Potential Countermeasures

- Install pavement fiction (High Friction Surface Treatments) (R24).
- Install/Upgrade signs with new fluorescent sheeting (R26).

7. LAKE STREET FROM ALBERHILL RANCH ROAD TO LAKESHORE STREET

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Lake Street from Alberhill Ranch Road to Lakeshore Street is a two lane roadway.
- The roadway segment is surrounded by vacant land and residential houses.
- Lake Street is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.70 Miles.
- The Collision per mile rate of the segment is 57.
- Improper Turning (11) and Traffic Signal and Signs (7) are the major causes of collisions on this segment of Lake Street.
- Most of the collision types on this segments were Rear End (10) or Broadside (10) collisions.

Cost of Collisions: $12,882,200*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 40

Fatal: -

Severe: 3

Other Visible: 6

Complain of Pain: 16

Property Damage: 15

Type of Collisions

Type of Collisions	Count of Collisions Type
Unknown	3
Broadside	10
Head-On	4
Hit Object	5
Other	2
Rear-End	10
Sideswipe	5
Vehicle - Pedestrian	1
Grand Total	40

Lighting Conditions

Lighting	Count of Lighting
Unknown	2
Dark - No Street Lights	1
Dark - Street Lights	13
Daylight	21
Dusk - Dawn	3
Grand Total	40

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	3
Driving Under Influence	2
Following Too Closely	1
Improper Turning	11
Not Stated	3
Other Hazardous Movement	1
Other Than Driver	1
Traffic Signals and Signs	7
Unknown	3
Unsafe Speed	6
Unsafe Starting or Backing	2
Grand Total	40

Party 1 Movement

Party 1 Movement	Count of Movement 1
Unknown	3
Backing	1
Making Left Turn	9
Making Right Turn	1
Proceeding Straight	20
Ran Off Road	2
Slowing / Stopping	2
Stopped In Road	1
Traveling Wrong Way	1
Grand Total	40

Potential Countermeasures

- Install/Upgrade signs with new fluorescent sheeting (regulatory or warning) (R26).
- Improve pavement friction (High Friction Surface Treatments) (R24).

8. LAKESHORE DRIVE FROM LAKE STREET TO TERRA COTTA

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Lakeshore Drive from Lake Street to Terra Cotta is a four lane roadway.
- The roadway segment is surrounded by residential houses.
- Lakeshore Drive is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.5 Miles.
- The collisions per mile rate of the segment is 34.
- Improper Turning (3) and Pedestrian Violation (3) are the major causes of collisions on this segment of Lakeshore Drive.
- Most of the collision types on this segments were Broadside (5) or Hit-Object (4) collisions.

Cost of Collisions: $3,226,600*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 17

Fatal: 1

Severe: -

Other Visible: 8

Complain of Pain: 2

Property Damage: 6

Type of Collisions

Type of Collisions	Count of Collisions Type
Broadside	5
Head-On	1
Hit Object	4
Rear-End	1
Sideswipe	3
Vehicle - Pedestrian	3
Grand Total	17

Lighting Conditions

Lighting	Count of Lighting
Dark - Street Lights	7
Daylight	10
Grand Total	17

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	3
Driving Under Influence	2
Improper Turning	3
Not Stated	1
Other	1
Other Than Driver	1
Pedestrian Violation	3
Unknown	1
Unsafe Speed	1
Wrong Side of Road	1
Grand Total	17

Party 1 Movement

Party 1 Movement	Count of Movement 1
Crossed Into Opposing Lane - Unplanned	1
Making Left Turn	4
Making Right Turn	1
Other Unsafe Turning	2
Proceeding Straight	7
Ran Off Road	2
Grand Total	17

Potential Collisions

- Install/Upgrade signs with new fluorescent sheeting (R26).
- Install pedestrian crossing (with enhanced safety features) (R38).
- Install raised pedestrian crossing (R39).

9. LAKESHORE DRIVE FROM TERRA COTTA RD TO MACHADO ST

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Lakeshore Drive from Lake Street to Terra Cotta is a four lane roadway.
- The roadway segment is surrounded by residential houses and vacant land.
- Lakeshore Drive is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.5 Miles.
- The rate of Collision of the segment is 50.
- Driving under Influence (8) and Auto R/W Violation (4) are the major causes of collisions on this segment of Lakeshore Drive.
- Most of the collision types on this segments were Broadside (9) or Hit-Object (5) collisions.

Cost of Collisions: $9,362,200*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 25

Fatal: 1

Severe: 3

Other Visible: 5

Complain of Pain: 9

Property Damage: 7

Type of Collisions

Type of Collisions	Count of Collisions Type
Broadside	9
Head-On	5
Hit Object	5
Other	1
Overturned	2
Sideswipe	1
Vehicle - Pedestrian	2
Grand Total	25

Lighting Conditions

Lighting	Count of Lighting
Dark - Street Lights	13
Daylight	12
Grand Total	25

Primary Collision Factor

Cause of Collisions	Count of Cause
Not Stated	1
Auto R/W Violation	4
Driving Under Influence	8
Improper Turning	2
Not Stated	1
Pedestrian Violation	1
Traffic Signals and Signs	3
Unknown	1
Unsafe Speed	3
Wrong Side of Road	1
Grand Total	25

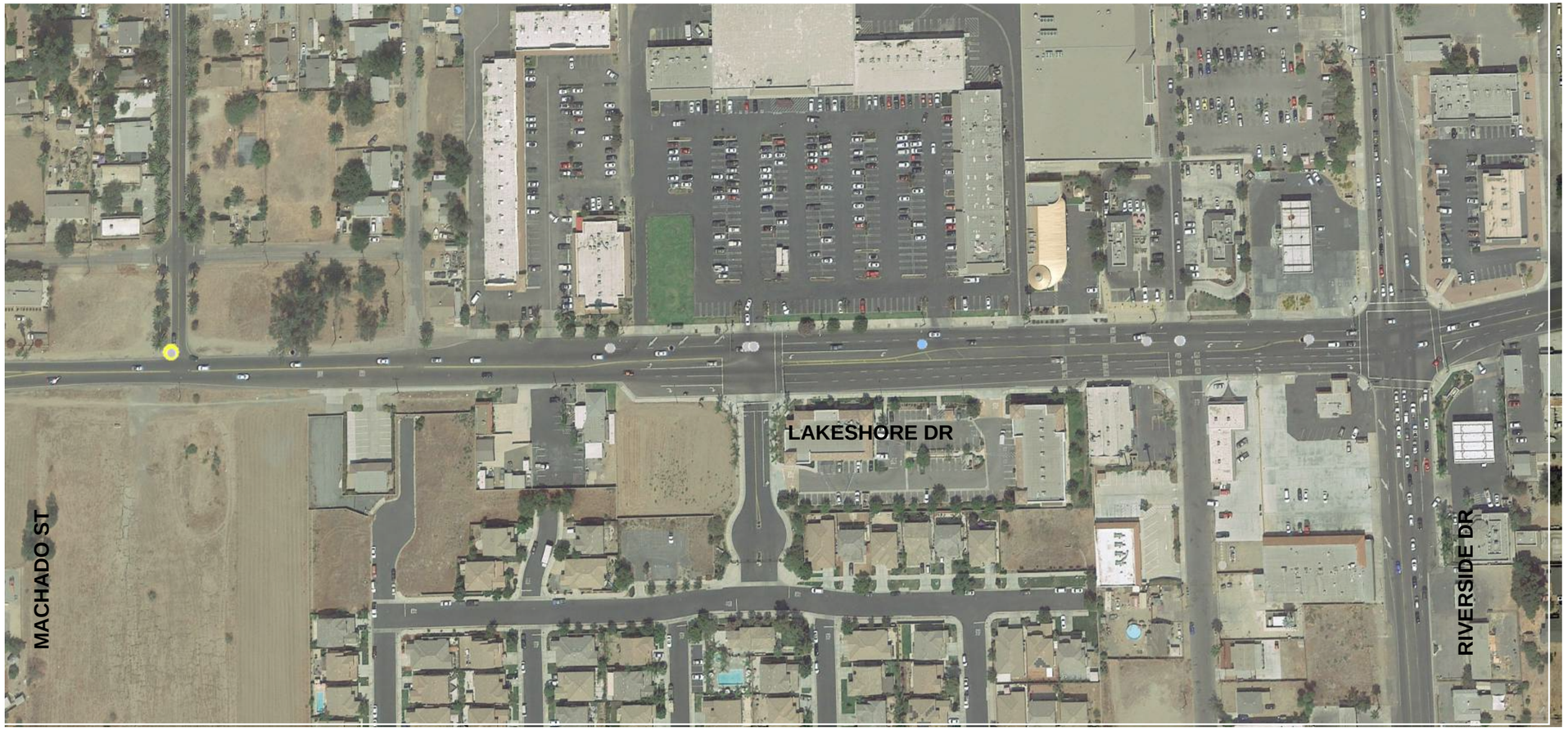
Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	1
Making Left Turn	7
Making Right Turn	2
Proceeding Straight	9
Ran Off Road	5
Traveling Wrong Way	1
Grand Total	25

Potential Countermeasures

- Install/Upgrade signs with new fluorescent sheeting (R26).
- Install delineators, reflector and/or object markers (R30).

10. LAKESHORE DRIVE FROM MACHADO ST TO RIVERSIDE DR



LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Lakeshore Drive from Machado Street to Riverside Drive is a four lane roadway.
- The roadway segment is surrounded by residential houses and open space.
- Lakeshore Drive is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.5 Miles.
- The collision rate of the segment is 56.
- Driving under Influence (8) and Auto R/W Violation (4) are the major causes of collisions on this segment of Lakeshore Drive.
- Most of the collision types on this segments were Broadside (12) or Sideswipe (5) collisions.

Cost of Collisions: $5,383,900*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 28

Fatal: -

Severe: 1

Other Visible: 3

Complain of Pain: 12

Property Damage: 12

Type of Collisions

Row Labels	Count of Collision Type
Broadside	12
Head-On	3
Hit Object	2
Rear-End	3
Sideswipe	5
Vehicle - Pedestrian	3
Grand Total	28

Lighting Conditions

Row Labels	Count of Lighting
Dark - No Street Lights	1
Dark - Street Lights	7
Dark - Street Lights Not Functioning	1
Daylight	18
Dusk - Dawn	1
Grand Total	28

Primary Collision Factor

Row Labels	Count of Cause
Auto R/W Violation	2
Driving Under Influence	1
Improper Passing	1
Improper Turning	8
Not Stated	5
Other Improper Driving	1
Pedestrian Violation	2
Traffic Signals and Signs	3
Unknown	3
Unsafe Speed	2
Grand Total	28

Party 1 Movement

Row Labels	Count of Movement1
Not Stated	2
Making Left Turn	7
Making Right Turn	2
Other Unsafe Turning	1
Passing Other Vehicle	2
Proceeding Straight	11
Stopped In Road	3
Grand Total	28

Potential Collisions

- Install/Upgrade signs with new fluorescent sheeting (R26).
- Install delineators, reflectors and/or object markers (R31).
- Install pedestrian crossing (R38).

11. LAKESHORE DRIVE FROM RIVERSIDE DR TO GRAHAM ST

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Lakeshore Drive from Riverside Drive to Graham St is a four lane roadway.
- The roadway segment is surrounded by residential houses and vacant land.
- Lakeshore Drive is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 1.7 Miles.
- The rate of Collision of the segment is 36.4.
- Unsafe Speed (18) and Improper Turning (16) are the major causes of collisions on this segment of Lakeshore Drive.
- Most of the collision types on this segments were Rear End (14) or Broadside (13) collisions.

Cost of Collisions: $13,092,700*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 62

Fatal: 1

Severe: 4

Other Visible: 8

Complain of Pain: 25

Property Damage: 24

Type of Collisions

Type of Collisions	Count of Injury
Complaint of Pain	25
Fatal	1
Other Visible Injury	8
Property Damage Only	24
Severe Injury	4
Grand Total	62

Lighting Conditions

Lighting	Count of Lighting
Dark - No Street Lights	1
Dark - Street Lights	18
Daylight	40
Dusk - Dawn	3
Grand Total	62

Primary Collision Factor

Cause of Collision	Count of Cause
Auto R/W Violation	10
Driving Under Influence	2
Impeding Traffic	1
Improper Passing	1
Improper Turning	16
Not Stated	4
Other Hazardous Movement	1
Other Than Driver	1
Pedestrian Violation	1
Traffic Signals and Signs	1
Unsafe Speed	18
Unsafe Starting or Backing	1
Wrong Side of Road	5
Grand Total	62

Party 1 Movement

Party 1 Movement	Count of Movement 1
Backing	1
Making Left Turn	7
Making Right Turn	1
Making U Turn	3
Other Unsafe Turning	1
Passing Other Vehicle	1
Proceeding Straight	36
Ran Off Road	8
Slowing / Stopping	1
Stopped In Road	3
Grand Total	62

Potential Countermeasures

- Install acceleration/deceleration lanes (R11).
- Install/Upgrade signs with new fluorescent sheeting (R26).
- Improve pavement friction (R24).
- Install/Upgrade signs with new fluorescent sheeting (R26).
- Install dynamic/variable speed warning signs (R30).
- Install delineators, reflectors and/or object markers (R31).
- Install sidewalk/pathway (R37).

12. MISSION TRAIL FROM MALAGA RD TO CARYDON RD

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Mission Trail from Malaga Rd to Corydon St is a four lane roadway.
- The roadway segment is surrounded by residential houses and vacant land.
- Mission Trail is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 1.4 Miles.
- The rate of collision of the segment is 31.4.
- Unsafe Speed (12) and Auto Driving under Influence (10) are the major causes of collisions on this segment of Lakeshore Drive.
- Most of the collision types on this segments were Rear End (13) or Hit Object (11) collisions.

Cost of Collisions: $12,175,600*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 44

Fatal: 2

Severe: 3

Other Visible: 5

Complain of Pain: 19

Property Damage: 15

Type of Collisions

Type of Collisions	Count of Injury
Not Stated	1
Broadside	5
Head-On	4
Hit Object	11
Overturned	1
Rear-End	13
Sideswipe	5
Vehicle - Pedestrian	4
Grand Total	44

Lighting Conditions

Lighting	Count of Lighting
Dark - No Street Lights	5
Dark - Street Lights	14
Daylight	24
Dusk - Dawn	1
Grand Total	44

Primary Collision Factor

Cause of Collisions	Count of Collision
Auto R/W Violation	3
Driving Under Influence	10
Following Too Closely	1
Improper Turning	8
Lights	1
Not Stated	1
Other	1
Other Improper Driving	1
Pedestrian Violation	3
Traffic Signals and Signs	1
Unknown	1
Unsafe Speed	12
Unsafe Starting or Backing	1
Grand Total	44

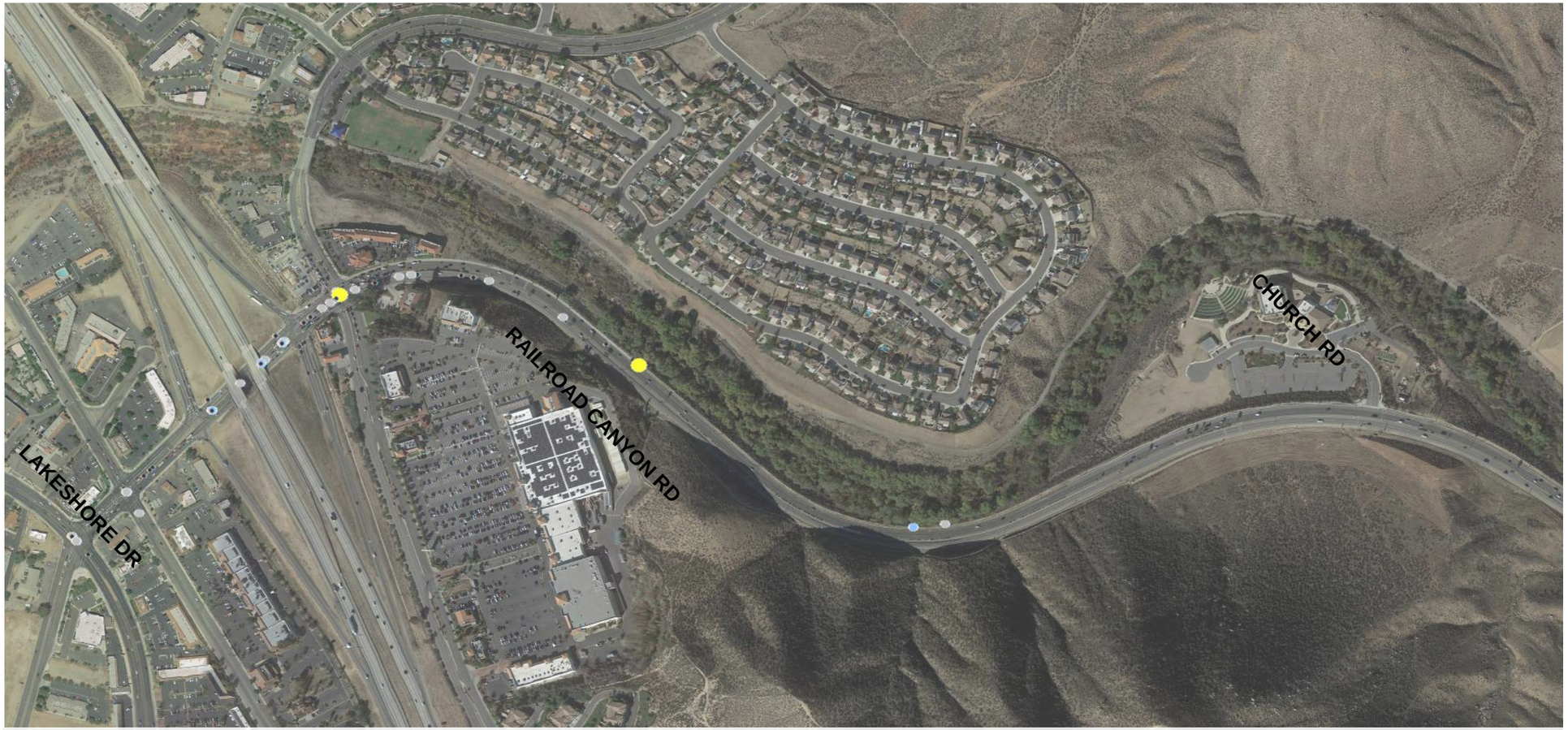
Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	1
Crossed Into Opposing Lane - Unplanned	4
Making Left Turn	5
Making Right Turn	2
Other Unsafe Turning	1
Proceeding Straight	23
Ran Off Road	5
Stopped In Road	3
Grand Total	44

Potential Countermeasures

- Improve pavement friction (R24).
- Install dynamic/variable speed warning signs (R30).
- Install delineators, reflectors and/or object markers (R31).
- Install sidewalk/pathway (R37).
- Install raised pedestrian crossing (R39).

13. Railroad Canyon Rd from Lakeshore Dr to Church Rd



LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Railroad Canyon Rd from Lakeshore Dr to Church Rd is a four lane roadway.
- The roadway segment is surrounded by residential houses, commercial and vacant lots.
- Railroad Canyon is identified as Augmented Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 1.1 Miles.
- The rate of Collision of the segment is 128.
- Improper Turning (31) and Unsafe Speed under Influence (28) are the major causes of collisions on this segment of Railroad Canyon Rd.
- Most of the collision types on this segments were Rear End (40) or Broadside (49) collisions.

Cost of Collisions: $11,588,000*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 146

Fatal: -

Severe: 3

Other Visible: 12

Complain of Pain: 42

Property Damage: 89

Type of Collisions

Type of Collisions	Count of Injury
Complaint of Pain	42
Other Visible Injury	12
Property Damage Only	89
Severe Injury	3
Grand Total	146

Lighting Conditions

Lighting	Count of Lighting
Not Stated	2
Dark - Street Lights	39
Daylight	103
Dusk - Dawn	2
Grand Total	146

Primary Collision Factor

Cause of Collisions	Count of Collisions
Not Stated	2
Auto R/W Violation	12
Driving Under Influence	8
Following Too Closely	4
Improper Turning	31
Not Stated	12
Other Hazardous Movement	5
Other Improper Driving	2
Other Than Driver	1
Ped R/W Violation	2
Pedestrian Violation	1
Traffic Signals and Signs	18
Unknown	17
Unsafe Lane Change	1
Unsafe Speed	28
Unsafe Starting or Backing	2
Grand Total	146

Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	3
Backing	3
Changing Lanes	3
Crossed Into Opposing Lane - Unplanned	1
Making Left Turn	21
Making Right Turn	23
Other Unsafe Turning	1
Proceeding Straight	62
Ran Off Road	3
Slowing / Stopping	7
Slowing/Stopping	1
Stopped In Road	18
Grand Total	146

Potential Countermeasures

- Install acceleration/deceleration lanes (R11).
- Improve pavement friction (R24).
- Install/Upgrade signs with new fluorescent sheeting (R26).
- Install curve advance warning signs (R28).
- Install curve advance warning signs (flashing beacon) (R29).
- Install sidewalk/pathway (R37).

14. Machado Road from Lincoln St to Grand Avenue

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Machado Rd from Lincoln St to Grand Ave is a two lane roadway.
- The roadway segment is surrounded by residential houses, commercial and open space.
- Machado Rd is identified as Secondary (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 1.4 Miles.
- The rate of collision of the segment is 17.14.
- Unsafe Speed (4) and Improper Turning (7) are the major causes of collisions on this segment of Machado Road.
- Most of the collision types on this segments were Broadside (11) or Head-On (3) collisions.

Cost of Collisions: $6,903,400*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 24

Fatal: 2

Severe: 1

Other Visible: 1

Complain of Pain: 9

Property Damage: 11

Type of Collisions

Type of Collision	Count of Collisions
Broadside	11
Head-On	3
Hit Object	3
Rear-End	3
Sideswipe	2
Vehicle - Pedestrian	2
Grand Total	24

Lighting Conditions

Lighting	Count of Collisions
Dark - Street Lights	6
Daylight	17
Dusk - Dawn	1
Grand Total	24

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	4
Driving Under Influence	1
Improper Turning	7
Not Stated	2
Other	1
Ped R/W Violation	1
Traffic Signals and Signs	3
Unknown	1
Unsafe Speed	4
Grand Total	24

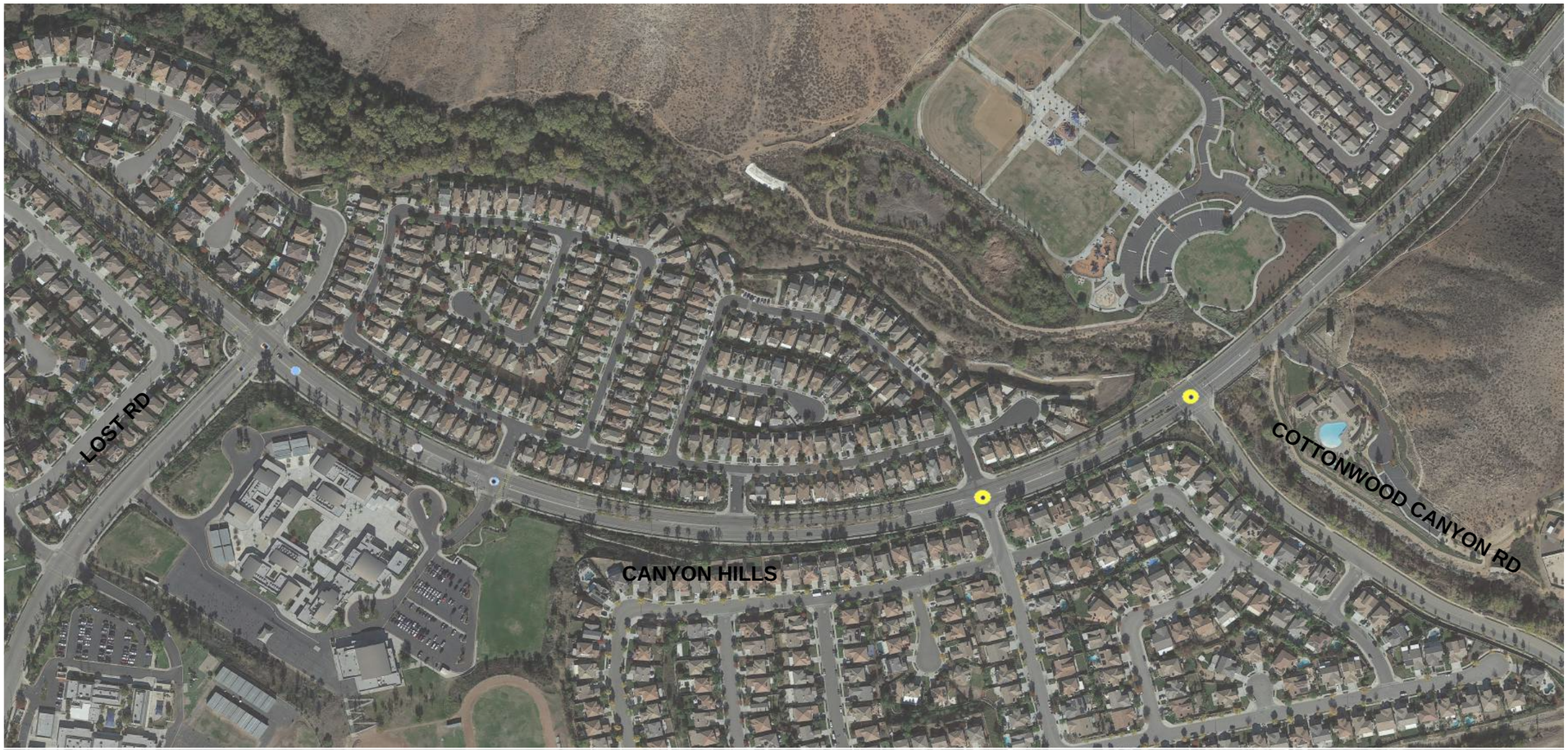
Party 1 Movement

Party 1 Movement	Count of Movement 1
Making Left Turn	7
Making Right Turn	1
Other Unsafe Turning	1
Parked	1
Proceeding Straight	12
Ran Off Road	2
Grand Total	24

Potential Countermeasures

- Improve pavement friction (R24).
- Install/Upgrade signs with new fluorescent sheeting (R26).
- Install delineators, reflectors and/or object markers (R31).

15. Canyon Hills from Lost Road to Cottonwood Canyon Rd



LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Canyon Hills from Lost Road to Cottonwood Canyon Rd is a four lane roadway.
- The roadway segment is surrounded by residential houses, commercial and open space.
- Canyon Hills is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.5 Miles.
- The rate of collision of the segment is 32.4.
- Driving Under Influence (4) and Improper Turning (4) are the major causes of collisions on this segment of Canyon Hills.
- Most of the collision types on this segments were Broadside (7) or Hit Object (5) collisions.

Cost of Collisions: $4,466,500*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 17

Fatal: -

Severe: 2

Other Visible: 2

Complain of Pain: 1

Property Damage: 12

Type of Collisions

Type of Collisions	Count of Collision Type
Not Stated	1
Broadside	7
Head-On	1
Hit Object	5
Rear-End	1
Sideswipe	2
Grand Total	17

Lighting Conditions

Lighting	Count of Lighting
Dark - Street Lights	6
Daylight	11
Grand Total	17

Primary Collision Factor

Cause of Collisions	Count of Cause
Driving Under Influence	4
Improper Turning	4
Other	1
Traffic Signals and Signs	2
Unknown	3
Unsafe Speed	3
Grand Total	17

Party 1 Movement

Party 1 Movement	Count of Movement1
Making Left Turn	5
Making Right Turn	4
Other Unsafe Turning	1
Proceeding Straight	5
Stopped In Road	2
Grand Total	17

Potential Countermeasures

- Install/Upgrade signs with new fluorescent sheeting (R26).
- Install curve advance warning signs (R29).
- Install dynamic/variable speed warning signs (R30).
- Install delineators, reflectors and/or object markers (R31).

16. SUMMERHILL ROAD FROM RAILROAD CANYON TO VIA DE VALLE

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Summerhill Road from Railroad Canyon Rd to Via De Valle is a four lane roadway.
- The roadway segment is surrounded by residential houses, commercial and open space.
- Summerhill Road is identified as Major (100'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 1.4 Miles.
- The rate of Collision of the segment is 32.4.
- Auto R/W Violation (5) and Improper Turning (10) are the major causes of collisions on this segment of Summerhill Road.
- Most of the collisions occurred on this segments were Broadside (14) or Sideswipe (7) collisions.

Cost of Collisions: $7,317,200*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 35

Fatal: -

Severe: 3

Other Visible: 4

Complain of Pain: 8

Property Damage: 20

Type of Collisions

Type of Collisions	Count of Collision Type
Not Stated	3
Broadside	14
Hit Object	9
Overturned	1
Rear-End	1
Sideswipe	7
Grand Total	35

Lighting Conditions

Lighting	Count of Lighting
Not Stated	1
Dark - Street Lights	11
Daylight	23
Grand Total	35

Primary Collision Factor

Cause of Collisions	Count of Collisions
Auto R/W Violation	5
Driving Under Influence	3
Improper Turning	10
Not Stated	5
Other	1
Ped R/W Violation	1
Traffic Signals and Signs	1
Unknown	3
Unsafe Lane Change	2
Unsafe Speed	4
Grand Total	35

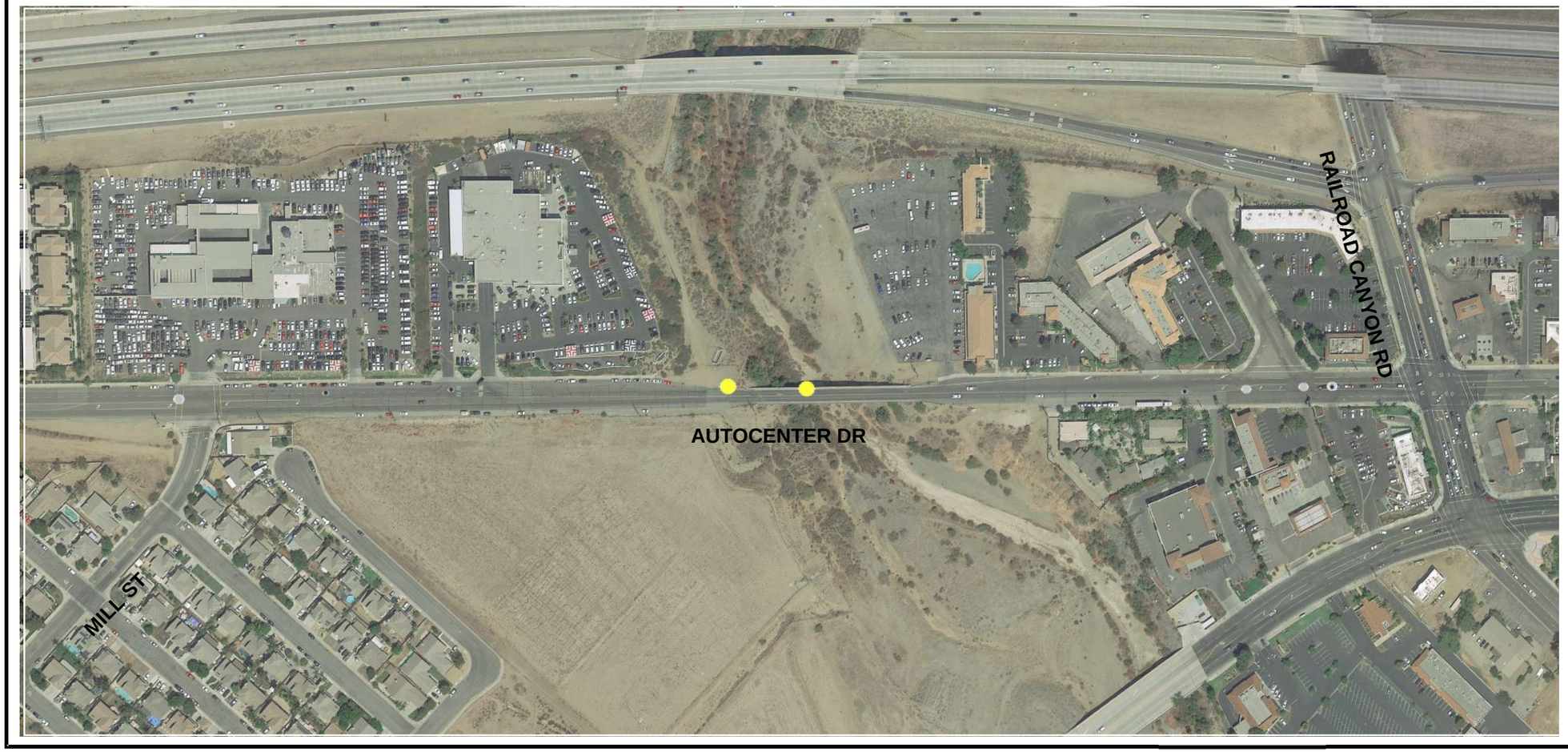
Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	1
Changing Lanes	1
Making Left Turn	12
Making Right Turn	2
Making U Turn	1
Other Unsafe Turning	1
Passing Other Vehicle	1
Proceeding Straight	13
Ran Off Road	3
Grand Total	35

Potential Countermeasures

- Install acceleration/deceleration lanes (R11).
- Improve pavement friction (R24).
- Install/Upgrade signs with new fluorescent sheeting (R26).
- Install curve advance warning signs (R28).
- Install curve advance warning signs (R29).
- Install dynamic/variable speed warning signs (R30).

17. AUTO CENTER DR FROM MILL ST TO RAILROAD CANYON RD



LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Auto Center Drive from Mill Street to Railroad Canyon Road is a four lane roadway.
- The roadway segment is surrounded by residential houses, commercial and open space.
- Auto Center Drive is identified as Major (100'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.75 Miles.
- The rate of collision of the segment is 24.
- Auto R/W Violation (6) and Improper Turning (4) are the major causes of collisions on this segment of Auto Center Dr.
- Most of the collision types on this segments were Broadside (10) or Rear-end (3) collisions.

Cost of Collisions: $4,844,000*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 18

Fatal: -

Severe: 2

Other Visible: 1

Complain of Pain: 9

Property Damage: 6

Type of Collisions

Type of Collisions	Count of Collision Type
Not Stated	1
Broadside	10
Head-On	1
Hit Object	1
Overturned	1
Rear-End	3
Vehicle - Pedestrian	1
Grand Total	18

Lighting Conditions

Lighting	Count of Lighting
Not Stated	1
Dark - Street Lights	4
Daylight	13
Grand Total	18

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	6
Driving Under Influence	1
Improper Passing	1
Improper Turning	4
Not Stated	1
Other Than Driver	1
Pedestrian Violation	1
Traffic Signals and Signs	2
Unsafe Speed	1
Grand Total	18

Party 1 Movement

Party 1 Movement	Count of Movement1
Not Stated	1
Entering Traffic	1
Making Left Turn	7
Proceeding Straight	6
Ran Off Road	1
Slowing/Stopping	1
Stopped In Road	1
Grand Total	18

Potential Collisions

- Install/Upgrade signs with new fluorescent sheeting (R26).
- Improve pavement friction (R24).

18. CORYDON ST FROM GRAND AVE TO MISSION TRL

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Corydon St from Grand Ave to Mission Trail is a four lane roadway.
- The roadway segment is surrounded by residential houses, commercial and open space.
- Corydon St is identified as Major (100'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 1.53 Miles.
- The rate of collision of the segment is 12.41.
- Improper Turning (7) and Auto R/W Violation (4) are the major causes of collisions on this segment of Corydon Street.
- Most of the collisions occurred on this segments were Broadside (4) or Sideswipe (4) collisions.

Cost of Collisions: $978,000*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 19

Fatal: -

Severe: -

Other Visible: 5

Complain of Pain: 3

Property Damage: 11

Type of Collisions

Type of Collisions	Count of Collision Type
Not Stated	1
Broadside	4
Head-On	3
Hit Object	4
Rear-End	2
Sideswipe	4
Vehicle - Pedestrian	1
Grand Total	19

Primary Collision Factor

Cause of Collision	Count of Cause
Auto R/W Violation	4
Driving Under Influence	3
Improper Turning	7
Unknown	1
Unsafe Lane Change	2
Unsafe Speed	2
Grand Total	19

Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	1
Changing Lanes	1
Crossed Into Opposing Lane - Unplanned	1
Making Left Turn	3
Making Right Turn	1
Passing Other Vehicle	1
Proceeding Straight	6
Ran Off Road	4
Stopped In Road	1
Grand Total	19

Lighting Conditions

Lighting	Count of Lighting
Dark - No Street Lights	2
Dark - Street Lights	3
Daylight	13
Dusk - Dawn	1
Grand Total	19

Potential Countermeasures

- Add segment lighting (R1).
- Install/Upgrade signs with new fluorescent sheeting (R26).
- Install curve advance warning signs (R28).
- Install curve advance warning signs (R29).
- Install delineators, reflectors and/or object markers (R31).

19. LAKE STREET FROM TEMESCAL CANYON RD TO NORTH CITY BOUNDARY

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Lake Street from Temescal Canyon Rd to North City Boundary is a four lane roadway.
- The roadway segment is surrounded by vacant space.
- Lake St is identified as Urban Arterial (120'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.5 Miles.
- The rate of collision of the segment is 48.
- Unsafe Speed (7) and Auto R/W (3) are the major causes of collisions on this segment of Lake Street.
- Most of the collisions occurred on this segments were Broadside (6) or Overturned (5) collisions.

Cost of Collisions: $3,604,200*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 24

Fatal: -

Severe: 1

Other Visible: 9

Complain of Pain: 5

Property Damage: 9

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	6
Head-On	4
Hit Object	3
Overturned	5
Rear-End	4
Sideswipe	2
Grand Total	24

Lighting Conditions

Lighting	Count of Lighting
Dark - No Street Lights	1
Dark - Street Lights	5
Daylight	17
Dusk - Dawn	1
Grand Total	24

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	3
Driving Under Influence	2
Improper Passing	1
Improper Turning	2
Not Stated	4
Other	1
Other Improper Driving	1
Other Than Driver	1
Unknown	2
Unsafe Speed	7
Grand Total	24

Party 1 Movement

Party 1 Movement	Count of Movement1
Not Stated	1
Crossed Into Opposing Lane - Unplanned	1
Making Left Turn	3
Making Right Turn	2
Other Unsafe Turning	1
Passing Other Vehicle	1
Proceeding Straight	8
Ran Off Road	5
Slowing / Stopping	1
Stopped In Road	1
Grand Total	24

Potential Countermeasures

- Install/Upgrade signs with new fluorescent sheeting (R26).
- Install delineators, reflectors and/or object markers (R31).

20. LANGSTAFF RD FROM LIMITED ST TO POTTERY ST

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Langstaff Rd from Limited St to Pottery St is a four lane roadway.
- The roadway segment is surrounded by residential houses, commercial and open space.
- Langstaff Rd is identified as Collector (68'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.5 Miles.
- The rate of collision of the segment is 16.
- Driving Under Influence (2) and Improper Turning (1) are the major causes of collisions on this segment of Langstaff Rd.
- Most of the collision types on this segments were Broadside (2) or Hit-Object (2) collisions.

Cost of Collisions: $4,130,900*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 8

Fatal: 1

Severe: 1

Other Visible: -

Complain of Pain: 1

Property Damage: 5

Type of Collisions

Type of Collisions	Count of Collision Type
Not Stated	1
Broadside	2
Hit Object	2
Rear-End	1
Vehicle - Pedestrian	2
Grand Total	8

Lighting Conditions

Lighting	Count of Lighting
Not Stated	1
Dark - Street Lights	3
Daylight	4
Grand Total	8

Primary Collision Factor

Cause of Collisions	Count of Cause
Driving Under Influence	2
Improper Turning	1
Not Stated	1
Other Hazardous Movement	1
Pedestrian Violation	1
Traffic Signals and Signs	1
Unsafe Speed	1
Grand Total	8

Party 1 Movement

Party 1 Movement	Count of Movement 1
Backing	1
Making Right Turn	2
Parked	1
Proceeding Straight	4
Grand Total	8

Potential Countermeasures

- Add segment lighting (R1).
- Install/Upgrade signs with new fluorescent sheeting (R26).

21. GRAND AVENUE FROM ORTEGA HWY TO RIVERSIDE DR

LEGEND

- Fatal
- Severe Injury
- Other Visible
- Complain of Pain
- Property Damage Only

DATE OF COLLISIONS

May 2013 to May 2018

Summary of the Roadway Segment

- Grand Avenue from Ortega Hwy to Riverside Drive is a two lane roadway.
- The roadway segment is surrounded by residential houses and open space.
- Grand Avenue is identified as Collector (68'ROW) in the City of Lake Elsinore General Plan Circulation Element.
- The length of the segment is 0.65 Miles.
- The rate of collision of the segment is 75.
- Unsafe Speed (24) and Driving Under Influence (5) are the major causes of collisions on this segment of Grand Avenue.
- Most of the collision types on this segments were Rear-End (21) or Sideswipe (12) collisions.

Cost of Collisions: $4,451,100*

*Severity of each collision multiplied by values provided in the Caltrans Local Roadway Safety Manual, Version 1.4, Appendix D.

Summary of Collisions by Severity

All Collisions: 49

Fatal: -

Severe: 1

Other Visible: 7

Complain of Pain: 18

Property Damage: 23

Type of Collisions

Type of Collisions	Count of Collision Type
Not Stated	1
Broadside	4
Head-On	2
Hit Object	7
Overturned	1
Rear-End	21
Sideswipe	12
Vehicle - Pedestrian	1
Grand Total	49

Lighting Conditions

Lighting	Count of Lighting
Not Stated	1
Dark - No Street Lights	6
Dark - Street Lights	13
Daylight	25
Dusk - Dawn	4
Grand Total	49

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	1
Driving Under Influence	5
Following Too Closely	1
Improper Passing	1
Improper Turning	8
Not Stated	2
Traffic Signals and Signs	2
Unknown	2
Unsafe Lane Change	1
Unsafe Speed	24
Wrong Side of Road	2
Grand Total	49

Party 1 Movement

Party 1 Movement	Count of Movement1
Not Stated	1
Crossed Into Opposing Lane - Unplanned	1
Making Left Turn	1
Making Right Turn	5
Merging	1
Other Unsafe Turning	1
Passing Other Vehicle	1
Proceeding Straight	31
Stopped In Road	7
Grand Total	49

Potential Countermeasures

- Improve pavement friction (R24).
- Install/Upgrade signs with new fluorescent sheeting (R26).
- Install curve advance warning signs (R28).
- Install curve advance warning signs (R29).
- Install dynamic/variable speed warning signs (R30).
- Install delineators, reflectors and/or object markers (R31).

TOP 29 INTERSECTIONS

1. GRAPE STREET AND RAILROAD CANYON ROAD

Summary of Intersection Existing Condition

- The intersection of Grape Street and Railroad Canyon Road is a signalized intersection.
- Median is installed on the North, South, and East approaches of the intersection.
- Existing bus stops in the vicinity of the intersection on Grape Street.
- Three 12’ wide crosswalk markings across three legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (12) and Improper Turning (14) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear End (21) and Broadside (15).
- Surrounding Land Use
  - North: Shopping Center
  - West: Restaurant
  - South: Gasoline Station
  - East: Shopping Center

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Grape Street and Railroad Canyon Road (Within 250’)

- All Collisions: 56
- Fatal: -
- Severe Collisions: 2
- Other Visible Injury: -
- Complaint of Pain: 10
- Property Damage Only: 44

Note: This Intersection was included in the HSIP cycle 9.

2. CENTRAL AVENUE AND DEXTER AVENUE

Summary of Intersection Existing Condition

- The intersection of Central Avenue and Dexter Avenue is a signalized intersection.
- There is no existing median at the intersection.
- Existing bus stops in the vicinity of the intersection on Central Avenue.
- Three 12’ wide crosswalk markings across three legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Traffic Signal and Signs (8) and Automobile R/W (10) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear End (6) and Broadside (21).
- Surrounding Land Use
  - North: Gasoline Station
  - West: Restaurant
  - South: Gasoline Station
  - East: Gasoline Station

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Central Avenue and Dexter Avenue (Within 250’)

- All Collisions: 40
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: 4
- Complaint of Pain: 10
- Property Damage Only: 26

Note: This Intersection is included in the HSIP cycle 9.

3. COLLIER STREET AND CENTRAL AVENUE

Summary of Intersection Existing Condition

- The intersection of Collier Street and Central Avenue is a signalized intersection.
- There is no existing median at the intersection.
- Existing bus stops in the vicinity of the intersection on Collier Avenue.
- Two 12’ wide crosswalk markings across two legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (12) and Improper Turning (6) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear End (9) and Broadside (10).
- Surrounding Land Use
  - North: Shopping Center
  - West: Shopping Center
  - South: Business Offices
  - East: Shopping Center Development

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Collier Street and Central Avenue (Within 250’)

- All Collisions: 34
- Fatal: -
- Severe Collisions: 2
- Other Visible Injury: 2
- Complaint of Pain: 8
- Property Damage Only: 22

Cost of Collisions: $4,007,800

Type of Collisions

Collision Type	Count of Collision Type
Not Stated	1
Broadside	10
Head-On	2
Hit Object	1
Rear-End	9
Sideswipe	9
Vehicle - Pedestrian	2
Grand Total	34

Lighting

Lighting	Count of Lighting
Not Stated	1
Dark - Street Lights	9
Daylight	23
Dusk - Dawn	1
Grand Total	34

Primary Collision Factor

Collision Cause	Count of Cause
Not Stated	1
Auto R/W Violation	2
Improper Turning	6
Not Stated	1
Pedestrian Violation	2
Traffic Signals and Signs	2
Unknown	4
Unsafe Lane Change	1
Unsafe Speed	12
Unsafe Starting or Backing	2
Wrong Side of Road	1
Grand Total	34

Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	1
Changing Lanes	2
Making Left Turn	9
Making Right Turn	3
Proceeding Straight	13
Stopped In Road	6
Grand Total	34

Potential Countermeasures

- Improve signal hardware: lenses, back-plates, mounting, size, and number (S2).
- Provide advanced dilemma zone detection system (S4).
- Install flashing beacon advance warning (S9).
- Improve pavement friction (S11).

4. RIVERSIDE DRIVE AND LINCOLN STREET

Summary of Intersection Existing Condition

- The intersection of Riverside Drive and Lincoln Street is a signalized intersection.
- There is no existing median at the intersection.
- Existing bus stops in the vicinity of the intersection on Lincoln Street.
- Two 12’ wide crosswalk markings across two legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (18) and Driving Under Influence (3) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear End (21) and Broadside (2).
- Surrounding Land Use
  - North: Restaurant
  - West: Vacant
  - South: Boat Launch
  - East: Boat Launch

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Riverside Drive and Lincoln Street (Within 250’)

- All Collisions: 31
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: 2
- Complaint of Pain: 9
- Property Damage Only: 20

Cost of Collisions: $1,136,100

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	2
Hit Object	3
Rear-End	21
Sideswipe	2
Vehicle - Pedestrian	3
Grand Total	31

Lighting

Lighting	Count of Lighting
Not Stated	1
Dark - Street Lights	5
Daylight	24
Dusk - Dawn	1
Grand Total	31

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	1
Driving Under Influence	3
Improper Turning	1
Not Stated	1
Other Hazardous Movement	1
Ped R/W Violation	1
Pedestrian Violation	1
Unknown	3
Unsafe Speed	18
Wrong Side of Road	1
Grand Total	31

Party 1 Movement

Party 1 Movement	Count of Movement 1
Making Left Turn	2
Making Right Turn	4
Proceeding Straight	17
Slowing / Stopping	1
Slowing/Stopping	1
Stopped In Road	6
Grand Total	31

Potential Countermeasures

- Improve signal hardware: lenses, back-plates, mounting, size, and number (S2).
- Provide advanced dilemma zone detection system (S4).
- Install pedestrian countdown signal heads (S19).
- Install pedestrian crossing (S20).

5. DIAMOND DRIVE AND AUTO CENTER DRIVE

Summary of Intersection Existing Condition

- The intersection of Diamond Drive and Auto Center Drive is a signalized intersection.
- Median is installed on the North-South approaches of the intersection.
- Existing bus stops in the vicinity of the intersection on Diamond Drive.
- Four 12’ wide crosswalk markings across four legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (5) and Improper Turning (6) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Broadside (13) and Rear-End (7).
- Surrounding Land Use
  - North: Restaurant
  - West: Restaurant
  - South: Gasoline Station
  - East: Gasoline Station

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Diamond Drive and Auto Center Drive (Within 250’)

- All Collisions: 30
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: 3
- Complaint of Pain: 12
- Property Damage Only: 15

Cost of Collisions: $1,419,300

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	13
Head-On	2
Hit Object	2
Rear-End	7
Sideswipe	5
Vehicle - Pedestrian	1
Grand Total	30

Lighting

Lighting	Count of Lighting
Dark - Street Lights	10
Daylight	19
Dusk - Dawn	1
Grand Total	30

Primary Collision Factor

Cause of Collisions	Count of Cause
Not Stated	1
Auto R/W Violation	4
Driving Under Influence	1
Following Too Closely	2
Improper Turning	6
Not Stated	1
Other Hazardous Movement	3
Traffic Signals and Signs	5
Unknown	2
Unsafe Speed	5
Grand Total	30

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	13
Head-On	2
Hit Object	2
Rear-End	7
Sideswipe	5
Vehicle - Pedestrian	1
Grand Total	30

Potential Countermeasures

- Improve signal hardware; lenses, back-plates, mounting, size, and number (S2).
- Improve pavement friction (S11).
- Install pedestrian countdown signal heads (S19).
- Install pedestrian crossing (S20).

6. CANYON HILLS ROAD AND RAILROAD CANYON ROAD

Summary of Intersection Existing Condition

- The intersection of Canyon Hills Drive and Railroad Canyon Drive is a signalized intersection.
- Median is installed on all approaches of the intersection.
- Existing bus stops in the vicinity of the intersection on Railroad Canyon Road.
- Four 12’ wide crosswalk markings across four legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Auto R/W (4) and Improper Turning (2) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear End (3) and Broadside (10).
- Surrounding Land Use
  - North: Restaurant
  - West: Gasoline Station
  - South: Shopping Center
  - East: Vacant

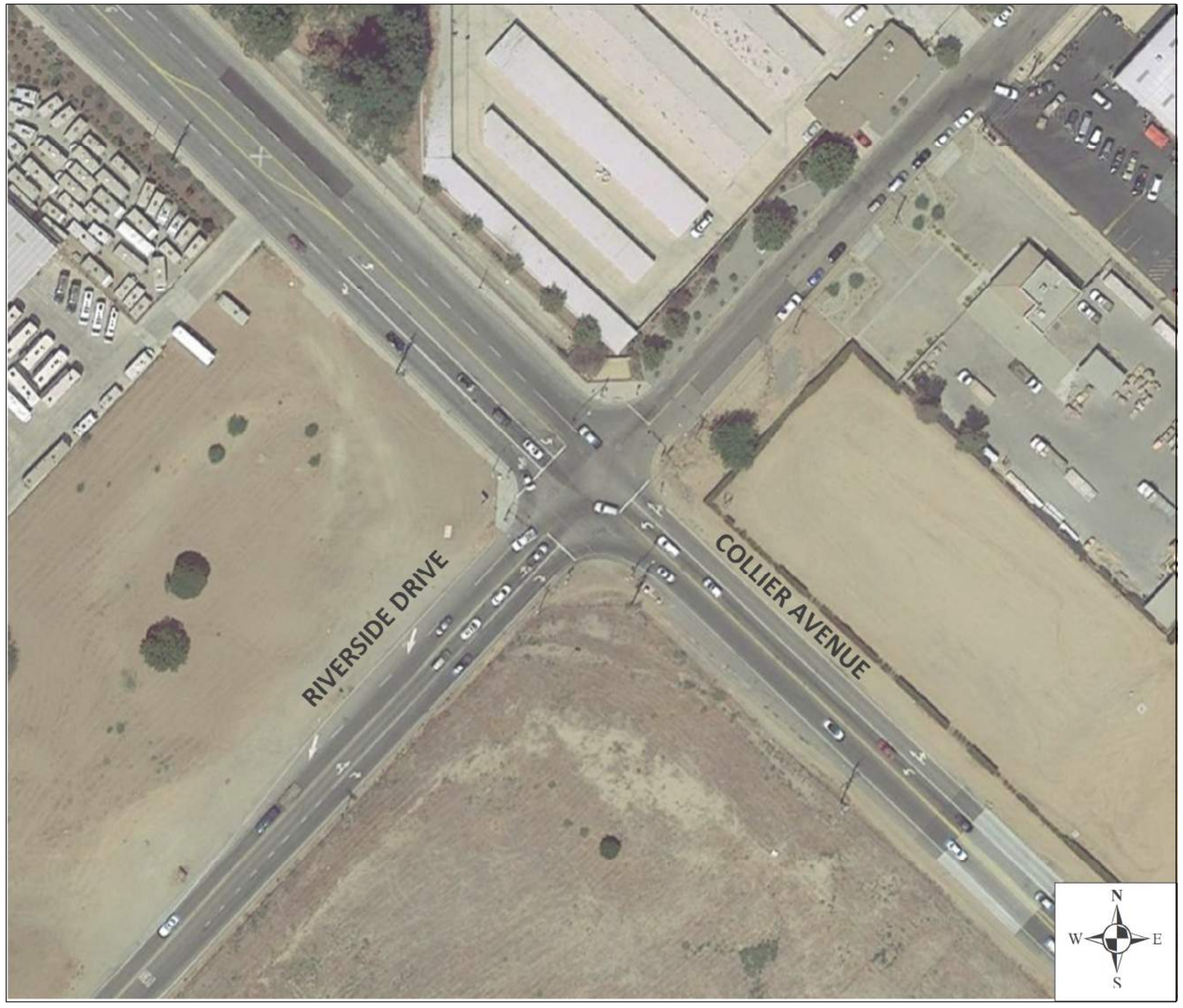
Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Canyon Hills Road and Railroad Canyon Road (Within 250’)

- All Collisions: 29
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: 1
- Complaint of Pain: 8
- Property Damage Only: 20

Note: Canyon Hills Road and Railroad Canyon Road Intersection is included in the HSIP cycle 9.

7. COLLIER AVENUE AND RIVERSIDE DRIVE



Summary of Intersection Existing Condition

- The intersection of Collier Avenue and Riverside Drive is a signalized intersection.
- There is no existing median at the intersection.
- Existing bus stops in the vicinity of the intersection on Collier Avenue.
- There are no crosswalk markings across all four legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (11) and DUI (2) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear End (16) and Broadside (5).
- Surrounding Land Use
  - North: Self-Storage
  - West: Vacant
  - South: Vacant
  - East: Vacant

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Collier Avenue and Riverside Drive (Within 250')

- All Collisions: 27
- Fatal: 1
- Severe Collisions: -
- Other Visible Injury: 2
- Complaint of Pain: 8
- Property Damage Only: 16

Cost of Collisions: $2,477,000

Type of Collisions

Type of Collisions	Count of Collision Type
Not Stated	2
Broadside	5
Head-On	1
Hit Object	1
Rear-End	16
Sideswipe	1
Vehicle - Pedestrian	1
Grand Total	27

Lighting

Lighting	Count of Lighting
Not Stated	1
Dark - No Street Lights	1
Dark - Street Lights	3
Daylight	22
Grand Total	27

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	1
Driving Under Influence	2
Following Too Closely	1
Improper Turning	2
Lights	1
Not Stated	6
Other Improper Driving	2
Pedestrian Violation	1
Unsafe Speed	11
Grand Total	27

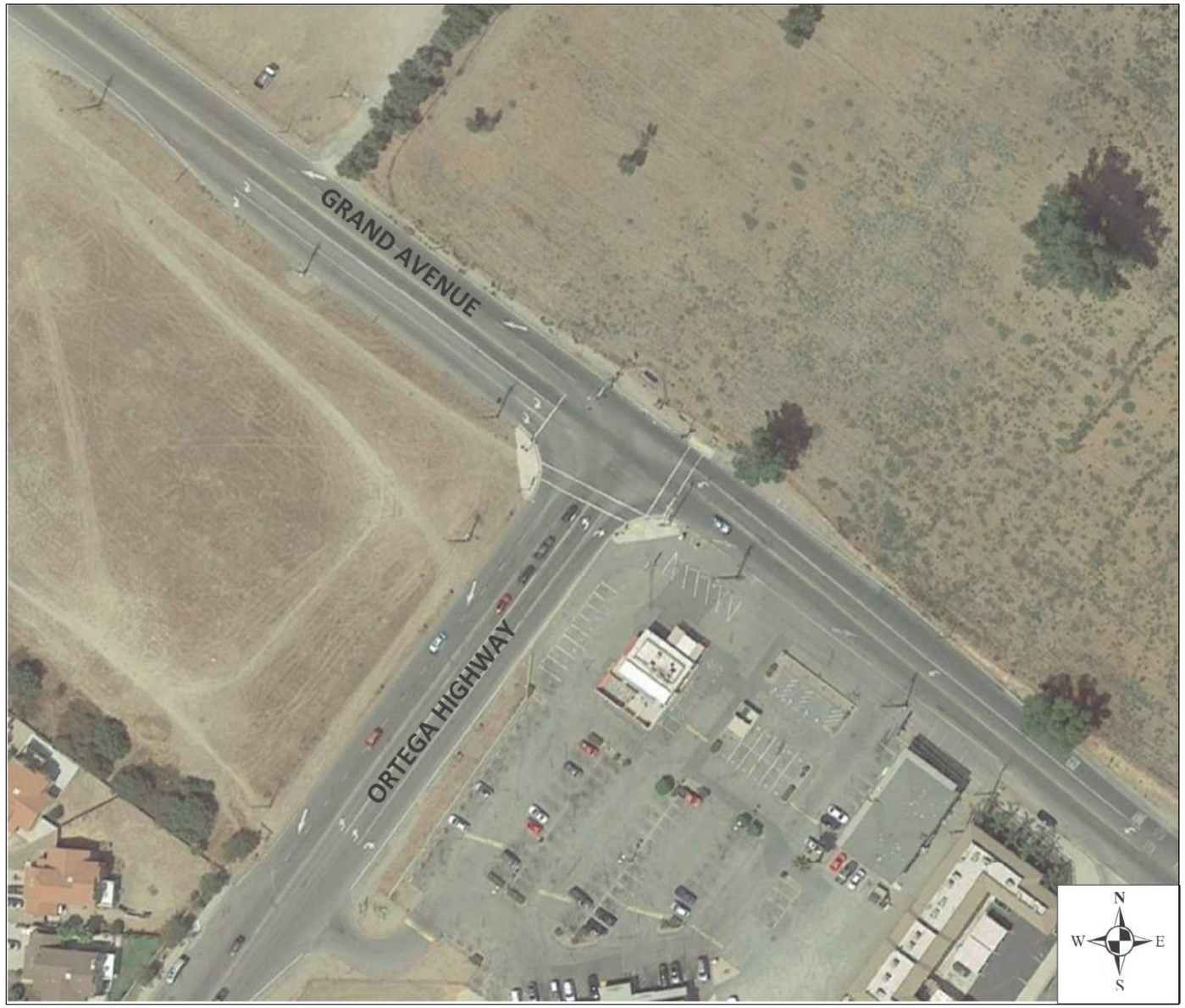
Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	1
Making Left Turn	1
Making Right Turn	2
Making U Turn	1
Proceeding Straight	14
Slowing/Stopping	1
Stopped In Road	7
Grand Total	27

Potential Countermeasures

- Improve signal hardware: lenses, back-plates, mounting, size and number (S2).
- Provide advanced dilemma zone detection (S4).
- Improve pavement friction (S11).
- Install pedestrian countdown signal heads (S19).

8. GRAND AVENUE AND ORTEGA HIGHWAY



Summary of Intersection Existing Condition

- The intersection of Grand Avenue and Ortega Highway is a signalized intersection.
- There is no existing median at the intersection.
- Existing bus stops in the vicinity of the intersection on Grand Avenue.
- Two 12’ wide existing crosswalk markings across two legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (8) and Improper Turning (3) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Hit Object (2) and Head-On (2).
- Surrounding Land Use
  - North: Vacant
  - West: Vacant
  - South: Restaurant
  - East: Vacant

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Grand Avenue and Ortega Highway (Within 250’)

- All Collisions: 20
- Fatal: -
- Severe Collisions: 1
- Other Visible Injury: 3
- Complaint of Pain: 5
- Property Damage Only: 11

Cost of Collisions: $2,328,800

Type of Collisions

Type of Collisions	Count of Collision Type
Not Stated	1
Broadside	1
Head-On	2
Hit Object	2
Overturned	1
Rear-End	7
Sideswipe	6
Grand Total	20

Lighting

Lighting	Count of Lighting
Not Stated	1
Dark - No Street Lights	1
Dark - Street Lights	7
Daylight	8
Dusk - Dawn	3
Grand Total	20

Primary Collision Factor

Cause of Collisions	Count of Cause
Driving Under Influence	2
Following Too Closely	1
Improper Passing	1
Improper Turning	3
Not Stated	1
Unknown	2
Unsafe Lane Change	1
Unsafe Speed	8
Wrong Side of Road	1
Grand Total	20

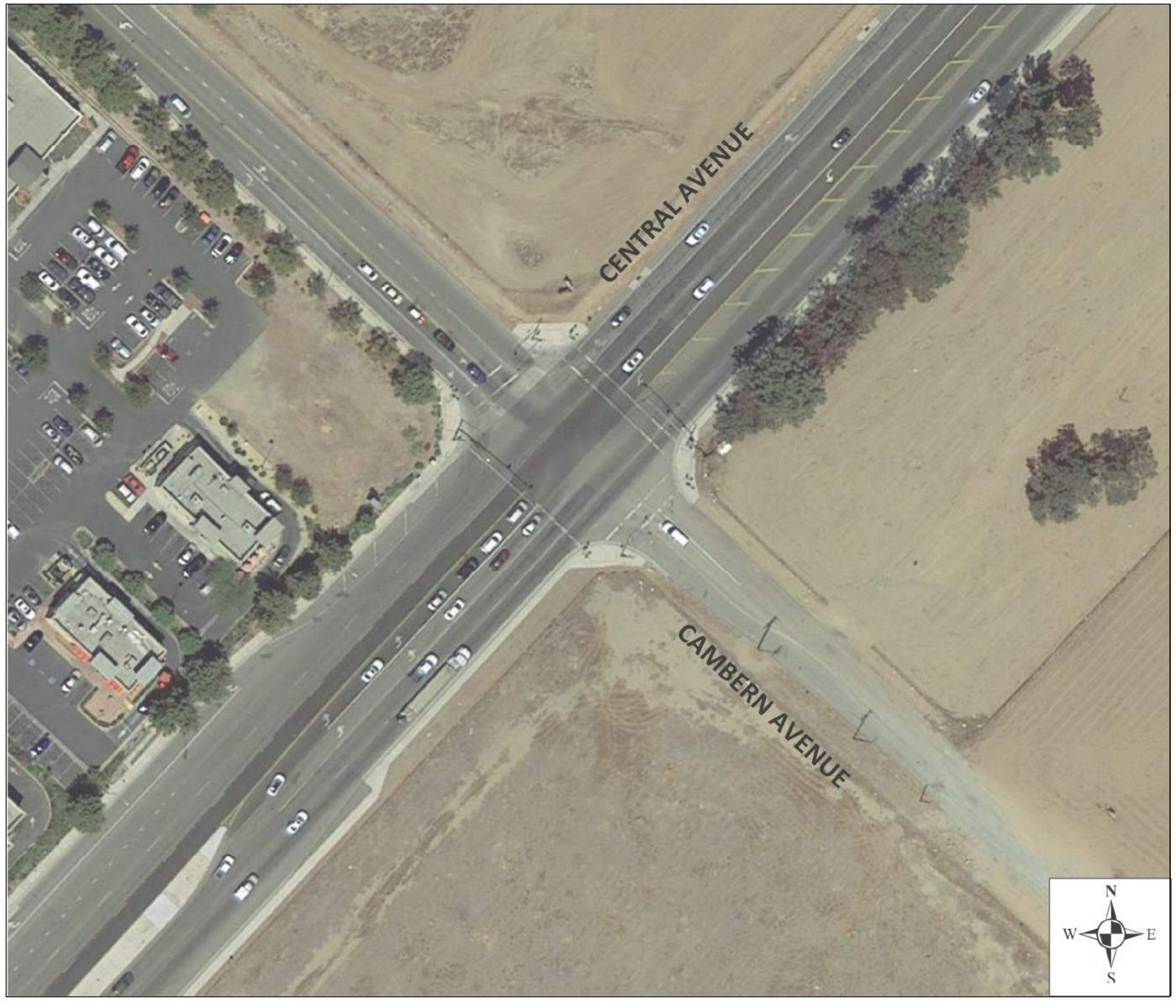
Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	1
Making Right Turn	3
Passing Other Vehicle	1
Proceeding Straight	13
Stopped In Road	2
Grand Total	20

Potential Countermeasures

- Improve signal hardware: lenses, back-plates, mounting, size, and number (S2)
- Provide advanced dilemma zone detection system (S4).
- Improve pavement friction (S11).
- Install pedestrian countdown signal heads (S19).

9. CAMBERN AVENUE AND CENTRAL AVENUE



Summary of Intersection Existing Condition

- The intersection of Cambern Avenue and Central Avenue is a signalized intersection.
- There is no existing median at the intersection.
- Existing bus stops in the vicinity of the intersection on Central Avenue.
- Existing crosswalk markings across three legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (8) and Automobile R/W (2) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear End (12) and Broadside (2).
- Surrounding Land Use
  - North: Vacant
  - West: Restaurant
  - South: Vacant
  - East: Vacant

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Cambern Avenue and Central Avenue (Within 250')

- All Collisions: 19
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: 1
- Complaint of Pain: 7
- Property Damage Only: 11

Cost of Collisions: $759,600

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	2
Head-On	2
Rear-End	12
Sideswipe	2
Vehicle - Pedestrian	1
Grand Total	19

Lighting

Lighting	Count of Lighting
Dark - Street Lights	6
Daylight	13
Grand Total	19

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	2
Driving Under Influence	2
Improper Turning	1
Not Stated	1
Other Improper Driving	1
Traffic Signals and Signs	1
Unknown	2
Unsafe Speed	8
Unsafe Starting or Backing	1
Grand Total	19

Party 1 Movement

Party 1 Movement	Count of Movement 1
Making Left Turn	2
Parking Maneuver	1
Proceeding Straight	10
Stopped In Road	6
Grand Total	19

Potential Countermeasures

- Improve signal hardware: lenses, back-plates, mounting, size, and number (S2).
- Provide advanced dilemma zone detection system (S4).
- Improve pavement friction (S11).
- Install pedestrian countdown signal heads (S19).

10. DIAMOND DRIVE AND LAKESHORE DRIVE

Summary of Intersection Existing Condition

- The intersection of Diamond Drive and Lakeshore Drive is a signalized intersection.
- There is existing median on the North and East approaches of the intersection.
- Existing bus stops in the vicinity of the intersection on Lakeshore Drive.
- Existing crosswalk markings across four legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Auto R/W Violation (4) and Improper Turning (2) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear End (3) and Broadside (10).
- Surrounding Land Use
  - North: Restaurant
  - West: Shopping Center
  - South: Pharmacy
  - East: Gasoline Station

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Diamond Drive and Lakeshore Drive (Within 250')

- All Collisions: 18
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: 1
- Complaint of Pain: 7
- Property Damage Only: 10

Cost of Collisions: $747,800

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	10
Hit Object	2
Other	1
Rear-End	3
Sideswipe	1
Vehicle - Pedestrian	1
Grand Total	18

Lighting

Lighting	Count of Lighting
Dark - Street Lights	4
Daylight	14
Grand Total	18

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	4
Driving Under Influence	1
Following Too Closely	1
Improper Turning	2
Not Stated	2
Other Improper Driving	1
Ped R/W Violation	1
Traffic Signals and Signs	2
Unknown	3
Unsafe Starting or Backing	1
Grand Total	18

Type of Collisions

Party 1 Movement	Count of Movement 1
Backing	1
Making Left Turn	3
Making Right Turn	2
Proceeding Straight	11
Stopped In Road	1
Grand Total	18

Potential Countermeasures

- Improve signal hardware: lenses, back-plates, mounting, size, and number (S2).
- Provide advanced dilemma zone detection system (S4).
- Improve pavement friction (S11).
- Install pedestrian countdown signal heads (S19).

11.RIVERSIDE DRIVE AND STRICKLAND AVENUE

Summary of Intersection Existing Condition

- The intersection of Riverside Drive and Strickland Avenue is an unsignalized intersection.
- There is no existing median at the intersection.
- Existing bus stops in the vicinity of the intersection on Riverside Drive.
- There are no existing crosswalk markings across any leg of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (6) and DUI (3) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear End (8) and Head-On (5).
- Surrounding Land Use
  - North: Vacant
  - West: Vacant
  - South: Vacant
  - East: Vacant

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Riverside Drive and Strickland Avenue (Within 250')

- All Collisions: 18
- Fatal: -
- Severe Collisions: 1
- Other Visible Injury: 4
- Complaint of Pain: 7
- Property Damage Only: 6

Cost of Collisions: $3,390,100

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	3
Head-On	5
Hit Object	1
Rear-End	8
Sideswipe	1
Grand Total	18

Lighting

Lighting	Count of Lighting
Dark - No Street Lights	1
Dark - Street Lights	4
Daylight	13
Grand Total	18

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	2
Driving Under Influence	3
Improper Turning	2
Not Stated	1
Other Hazardous Movement	1
Traffic Signals and Signs	2
Unknown	1
Unsafe Speed	6
Grand Total	18

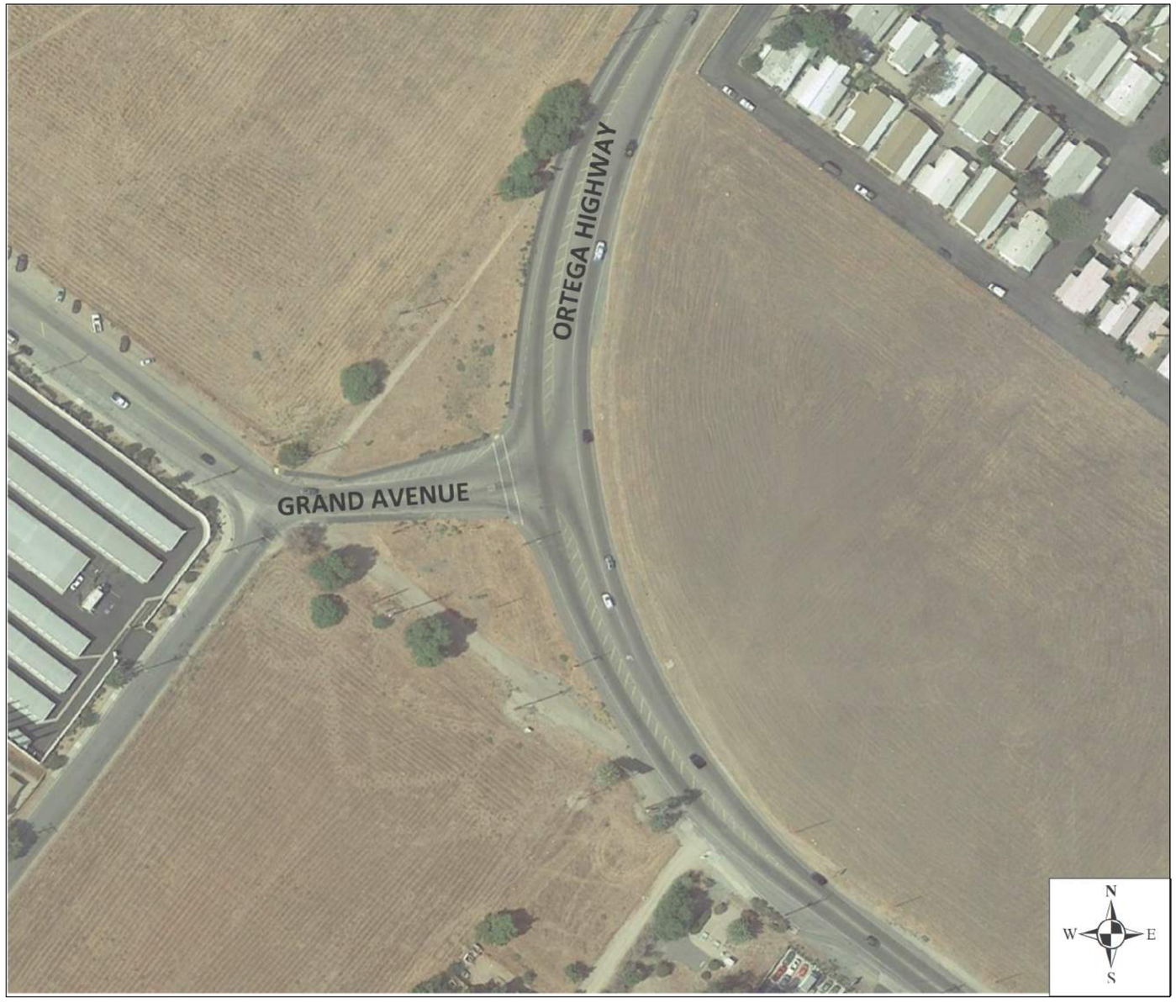
Party 1 Movement

Party 1 Movement	Count of Movement 1
Making Left Turn	1
Making Right Turn	1
Proceeding Straight	13
Slowing / Stopping	2
Stopped In Road	1
Grand Total	18

Potential Countermeasures

- Add intersection lighting (NS1).
- Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs (NS5).
- Install flashing beacons as advance warning (NS8).

12.GRAND AVENUE AND RIVERSIDE DRIVE



Summary of Intersection Existing Condition

- The intersection of Grand Avenue and Riverside Drive is an unsignalized intersection.
- There is no existing median at the intersection.
- Existing bus stops in the vicinity of the intersection on Riverside Drive.
- Existing crosswalk markings across one leg of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (4) and Improper Turning (5) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Hit Object (5) and Broadside (4).
- Surrounding Land Use
  - North: Vacant
  - West: Vacant
  - South: Vacant
  - East: Vacant

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Grand Avenue and Riverside Drive (Within 250')

- All Collisions: 16
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: -
- Complaint of Pain: 4
- Property Damage Only: 12

Cost of Collisions: $429,200

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	4
Head-On	1
Hit Object	5
Rear-End	1
Sideswipe	3
Vehicle - Pedestrian	2
Grand Total	16

Type of Collisions

Lighting	Count of Lighting
Dark - No Street Lights	2
Dark - Street Lights	4
Daylight	9
Dusk - Dawn	1
Grand Total	16

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	2
Driving Under Influence	1
Improper Turning	5
Not Stated	2
Ped R/W Violation	1
Traffic Signals and Signs	1
Unsafe Speed	4
Grand Total	16

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	4
Head-On	1
Hit Object	5
Rear-End	1
Sideswipe	3
Vehicle - Pedestrian	2
Grand Total	16

Potential Countermeasures

- Add intersection lighting (NS1).
- Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs (NS5).
- Upgrade intersection pavement markings (NS6).

13.MACHADO STREET AND LINCOLN STREET

Summary of Intersection Existing Condition

- The intersection of Machado Street and Lincoln Street is a signalized intersection.
- There is no existing median at the intersection.
- Existing bus stops in the vicinity of the intersection on Machado Street.
- Four 12’ wide existing crosswalk markings across four legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (2) and Automobile R/W (3) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Broadside (10) and Hit Object (2).
- Surrounding Land Use
  - North: Residential
  - West: Residential
  - South: Residential
  - East: Residential

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Machado Street and Lincoln Street (Within 250’)

- All Collisions: 14
- Fatal: 1
- Severe Collisions: -
- Other Visible Injury: 1
- Complaint of Pain: 6
- Property Damage Only: 6

Note: This intersection is included in HSIP cycle 8.

14. RAILROAD CANYON ROAD AND CHURCH ROAD

Summary of Intersection Existing Condition

- The intersection of Railroad Canyon Road and Church Road is a signalized intersection.
- Median is installed on the East-West approaches of the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- One 12’ wide existing crosswalk marking across one leg of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (16) and Improper Turning (12) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear End (14) and Hit Object (15).
- Surrounding Land Use
  - North: Church
  - West: Vacant
  - South: Vacant
  - East: Vacant

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Railroad Canyon Road and Church Road (Within 250’)

- All Collisions: 39
- Fatal: 4
- Severe Collisions: 1
- Other Visible Injury: 4
- Complaint of Pain: 9
- Property Damage Only: 21

Note: This intersection is included in HSIP cycle 8.

15.GRAND AVENUE AND LINCOLN STREET

Summary of Intersection Existing Condition

- The intersection of Grand Avenue and Lincoln Street is a signalized intersection.
- Median is installed on the East, West, and South approaches of the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- Four 12’ wide existing crosswalk marking across four legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Auto R/W Violation (3) and Traffic Signals and Signs (2) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Broadside (7) and Rear-End (1).
- Surrounding Land Use
  - North: Residential
  - West: Residential
  - South: Residential
  - East: Residential

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Grand Avenue and Lincoln Street (Within 250’)

- All Collisions: 12
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: 1
- Complaint of Pain: 5
- Property Damage Only: 6

Note: This intersection is included in HSIP cycle 9.

16.RIVERSIDE DRIVE AND JOY STREET

Summary of Intersection Existing Condition

- The intersection of Riverside Drive and Joy Street is a signalized intersection.
- There is no existing median at the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- There are no existing crosswalk markings across any leg of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The DUI (3) and Unsafe Speed (2) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Broadside (6) and Rear-End (4).
- Surrounding Land Use
  - North: Car Wash
  - West: Vacant
  - South: Restaurant
  - East: Bar

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Riverside Drive and Joy Street (Within 250')

- All Collisions: 11
- Fatal: 1
- Severe Collisions: 1
- Other Visible Injury: -
- Complaint of Pain: 1
- Property Damage Only: 8

Cost of Collisions: $4,786,300

Type of Collisions

Type of Collisions	Count of Collision Type
Not Stated	1
Broadside	6
Rear-End	4
Grand Total	11

Lighting

Lighting	Count of Lighting
Dark - Street Lights	2
Daylight	7
Dusk - Dawn	2
Grand Total	11

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	1
Driving Under Influence	3
Following Too Closely	1
Improper Turning	1
Not Stated	1
Unknown	2
Unsafe Speed	2
Grand Total	11

Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	1
Making Left Turn	3
Proceeding Straight	4
Slowing / Stopping	2
Stopped In Road	1
Grand Total	11

Potential Countermeasures

- Upgrade intersection pavement markings (NS6).
- Install flashing beacon as advance warning (NS8).

17.RIVERSIDE DRIVE AND LASH STREET

Summary of Intersection Existing Condition

- The intersection of Riverside Drive and Lash Street is an unsignalized intersection.
- There is no existing median at the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- There are no existing crosswalk markings across any leg of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Improper Turning (2) and DUI (3) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Hit-Object (3) Head-On (2).
- Surrounding Land Use
  - North: Vacant
  - West: Massage Therapy
  - South: Vacant
  - East: Vacant

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Riverside Drive and Lash Street (Within 250')

- All Collisions: 9
- Fatal: -
- Severe Collisions: 2
- Other Visible Injury: 2
- Complaint of Pain: 2
- Property Damage Only: 3

Cost of Collisions: $5,052,200

Type of Collisions

Type of Collision	Count of Collision Type
Not Stated	1
Broadside	1
Head-On	2
Hit Object	3
Overturned	1
Vehicle - Pedestrian	1
Grand Total	9

Primary Collision Factor

Cause of Collisions	Count of Cause
Driving Under Influence	3
Improper Turning	2
Not Stated	1
Pedestrian Violation	1
Unknown	1
Unsafe Speed	1
Grand Total	9

Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	1
Crossed Into Opposing Lane - Unplanned	2
Making Left Turn	3
Proceeding Straight	1
Ran Off Road	2
Grand Total	9

Lighting

Lighting	Count of Lighting
Not Stated	1
Dark - Street Lights	3
Daylight	3
Dusk - Dawn	2
Grand Total	9

Potential Countermeasures

- Add intersection lighting (NS1).
- Upgrade intersection pavement markings (NS6).
- Install flashing beacons as advance warning (NS8).
- Improve sigh distance to intersection (NS10).
- Improve pavement friction (NS20).

18.ALBERHILL RANCH ROAD AND LAKE STREET

Summary of Intersection Existing Condition

- The intersection of Alberhill Ranch Road and Lake Street is a signalized intersection.
- Median is installed on the East approach of the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- There are no existing crosswalk markings across any leg of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (3) and Improper Turning (3) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear-End (5) and Broadside (1).
- Surrounding Land Use
  - North: Vacant
  - West: Vacant
  - South: Residential
  - East: Residential

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Alberhill Ranch Road and Lake Street (Within 250')

- All Collisions: 8
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: 1
- Complaint of Pain: 4
- Property Damage Only: 3

Note: This intersection is included in HSIP cycle 8.

19. COLLIER AVENUE AND NICHOLS ROAD

Summary of Intersection Existing Condition

- The intersection of Collier Avenue and Nichols Road is an unsignalized intersection.
- Median is installed on the South approach of the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- There are no existing crosswalk markings across any leg of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Auto R/W (3) and Improper Turning (1) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Broadside (5) and Hit Object (2).
- Surrounding Land Use
  - North: Vacant
  - West: Vacant
  - South: Vacant
  - East: Gasoline Station

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Collier Avenue and Nichols Road (Within 250')

- All Collisions: 8
- Fatal: -
- Severe Collisions: 1
- Other Visible Injury: -
- Complaint of Pain: 4
- Property Damage Only: 3

Cost of Collisions: $2,633,000

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	5
Hit Object	2
Rear-End	1
Grand Total	8

Lighting

Lighting	Count of Lighting
Dark - Street Lights	1
Daylight	7
Grand Total	8

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	3
Brakes	1
Driving Under Influence	1
Improper Turning	1
Traffic Signals and Signs	1
Unsafe Speed	1
Grand Total	8

Party 1 Movement

Party 1 Movement	Count of Movement 1
Making Left Turn	3
Passing Other Vehicle	1
Proceeding Straight	2
Ran Off Road	1
Stopped In Road	1
Grand Total	8

Potential Countermeasures

- Add intersection lighting (NS1).
- Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs (NS5).
- Upgrade intersection pavement markings (NS6).
- Improve pavement friction (NS20).

20.LAKESHORE DRIVE AND MACHADO STREET

Summary of Intersection Existing Condition

- The intersection of Lakeshore Drive and Machado Street is a signalized intersection.
- There is no existing median at the intersection.
- Existing bus stops in the vicinity of the intersection on Lakeshore Drive.
- Four 12’ wide crosswalk markings across four legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Traffic Signal and Signs (3) and Auto R/W (2) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Broadside (5) and Head-On (3).
- Surrounding Land Use
  - North: Residential
  - West: Residential
  - South: Shopping Center
  - East: Residential

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Riverside Drive and Joy Street (Within 250’)

- All Collisions: 8
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: 1
- Complaint of Pain: 4
- Property Damage Only: 3

Note: This intersection is included in HSIP cycle 9.

21. MISSION TRAIL AND OLIVE STREET

Summary of Intersection Existing Condition

- The intersection of Mission Trail and Olive Street is a signalized intersection.
- There is no existing median at the intersection.
- Existing bus stops in the vicinity of the intersection on Mission Trail.
- Three 12’ wide crosswalk markings across three legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (4) and DUI (1) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear-End (2) and Hit-Object (2).
- Surrounding Land Use
  - North: Residential
  - West: Vacant
  - South: Counseling Center
  - East: Residential

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Mission Trail and Olive Street (Within 250’)

- All Collisions: 7
- Fatal: -
- Severe Collisions: 2
- Other Visible Injury: -
- Complaint of Pain: 3
- Property Damage Only: 2

Cost of Collisions: $3,159,300

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	1
Hit Object	2
Rear-End	2
Vehicle - Pedestrian	1
Grand Total	6

Lighting

Lighting	Count of Lighting
Dark - Street Lights	3
Daylight	3
Grand Total	6

Primary Collision Factor

Cause of Collisions	Count of Cause
Driving Under Influence	1
Other Hazardous Movement	1
Ped R/W Violation	1
Traffic Signals and Signs	1
Unsafe Speed	2
Grand Total	6

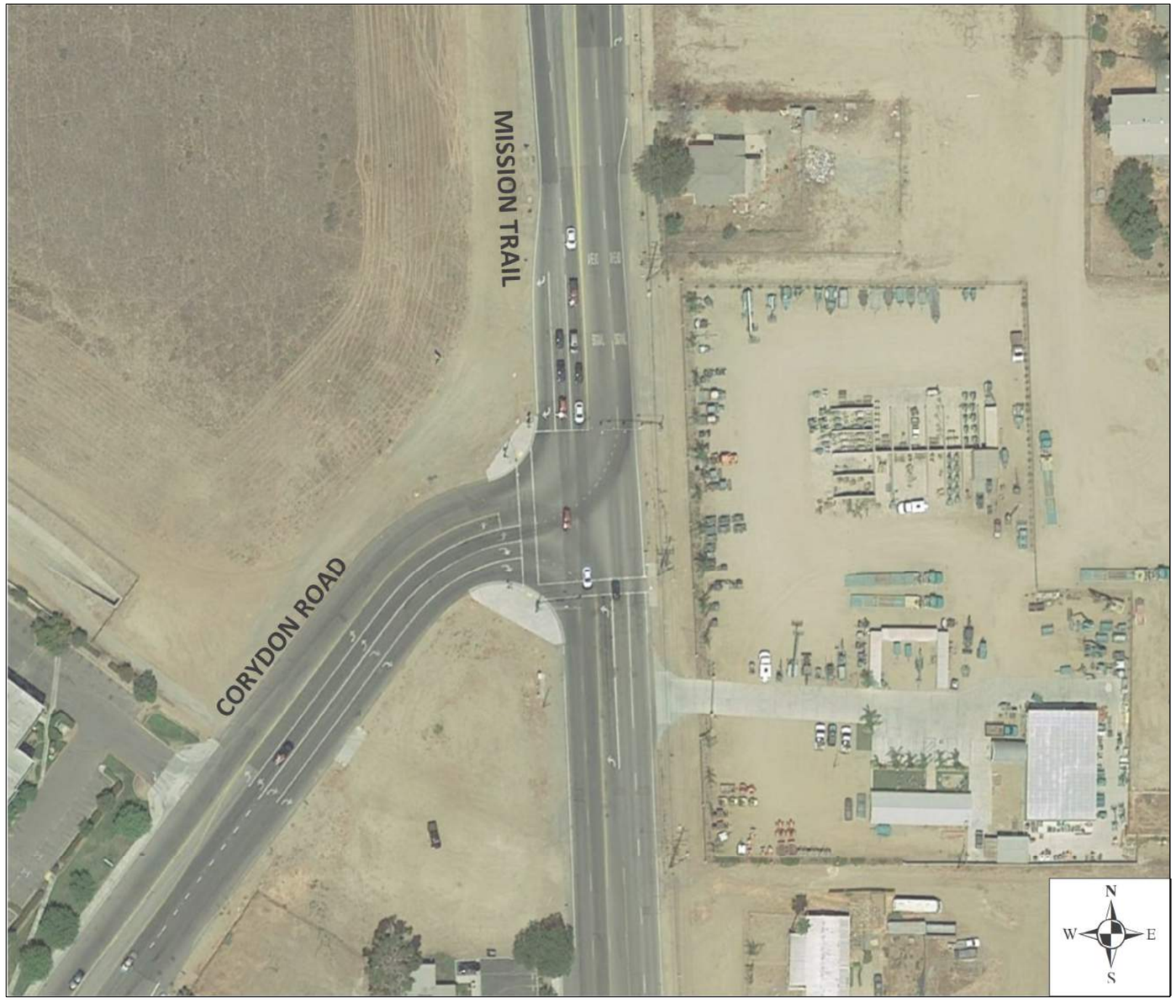
Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	1
Proceeding Straight	4
Slowing / Stopping	1
Grand Total	6

Potential Countermeasures

- Improve signal hardware: lenses, back-plates, mounting, size, and number (S2).
- Provide advanced dilemma zone detection system (S4).
- Improve pavement friction (S11).
- Install pedestrian countdown signal heads (S19).

22.CORYDON ROAD AND MISSION TRAIL



Summary of Intersection Existing Condition

- The intersection of Corydon Road and Mission Trail is a signalized intersection.
- There is no existing median at the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- Two 12’ wide crosswalk markings across two legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Auto R/W Violation (2) and Improper Turning (1) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Head-On (3) and Broadside (2).
- Surrounding Land Use
  - North: Vacant
  - West: Vacant
  - South: Animal Shelter
  - East: Heavy Equipment Rental

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Corydon Road and Mission Trail (Within 250’)

- All Collisions: 6
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: 1
- Complaint of Pain: 4
- Property Damage Only: 1

Cost of Collisions: $425,900

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	2
Head-On	3
Sideswipe	1
Grand Total	6

Lighting

Lighting	Count of Lighting
Dark - Street Lights	2
Daylight	4
Grand Total	6

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	2
Improper Turning	1
Not Stated	1
Traffic Signals and Signs	1
Unsafe Speed	1
Grand Total	6

Party 1 Movement

Party 1 Movement	Count of Movement 1
Making Left Turn	3
Making Right Turn	1
Proceeding Straight	2
Grand Total	6

Potential Countermeasures

- Improve signal hardware: lenses, back-plates, mounting, size, and number (S2).
- Provide advanced dilemma zone detection system (S4).
- Install flashing beacons as advance warning (S9).
- Improve pavement friction (S11).
- Install pedestrian countdown signal heads (S18).
- Install pedestrian crossing (S20).

23.LAKE STREET AND TEMESCAL CANYON ROAD

Summary of Intersection Existing Condition

- The intersection of Lake Street and Temescal Canyon Road is a signalized intersection.
- There is no existing median at the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- There are no existing crosswalk markings across any leg of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (2) and DUI (1) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Broadside (1) and Rear-End (3).
- Surrounding Land Use
  - North: Vacant
  - West: Vacant
  - South: Vacant
  - East: Vacant

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Lake Street and Temescal Canyon Road (Within 250')

- All Collisions: 6
- Fatal: -
- Severe Collisions: -
- Other Visible Injury: 3
- Complaint of Pain: 1
- Property Damage Only: 2

Cost of Collisions: $475,000

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	1
Head-On	1
Overturned	1
Rear-End	3
Grand Total	6

Lighting

Lighting	Count of Lighting
Dark - Street Lights	1
Daylight	5
Grand Total	6

Primary Collision Factor

Cause of Collisions	Count of Cause
Driving Under Influence	1
Improper Turning	1
Not Stated	1
Other Improper Driving	1
Unsafe Speed	2
Grand Total	6

Party 1 Movement

Party 1 Movment	Count of Movement 1
Making Left Turn	1
Proceeding Straight	1
Ran Off Road	2
Slowing / Stopping	1
Stopped In Road	1
Grand Total	6

Potential Countermeasures

- Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs (NS5).
- Upgrade intersection pavement markings (NS6).
- Install flashing beacons as advance warning (NS8).

24.MACHADO STREET AND JOY STREET

Summary of Intersection Existing Condition

- The intersection of Machado Street and Joy Street is a non-signalized intersection.
- There is no existing median at the intersection.
- Bus stops in the vicinity of the intersection on Machado Street.
- Two 12’ crosswalk markings across two legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (2) and DUI (1) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Hit Object (2) and Rear-End (2).
- Surrounding Land Use
  - North: Residential
  - West: Residential
  - South: Residential
  - East: Park

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Machado Street and Joy Street (Within 250’)

- All Collisions: 6
- Fatal: -
- Severe Collisions: 1
- Other Visible Injury: -
- Complaint of Pain: 3
- Property Damage Only: 2

Cost of Collisions: $2,549,300

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	1
Hit Object	2
Rear-End	2
Vehicle - Pedestrian	1
Grand Total	6

Primary Collision Factor

Cause of Collisions	Count of Cause
Driving Under Influence	1
Other Hazardous Movement	1
Ped R/W Violation	1
Traffic Signals and Signs	1
Unsafe Speed	2
Grand Total	6

Party 1 Movement

Party 1 Movement	Count of Movement 1
Not Stated	1
Proceeding Straight	4
Slowing / Stopping	1
Grand Total	6

Lighting

Lighting	Count of Lighting
Dark - Street Lights	3
Daylight	3
Grand Total	6

Potential Countermeasures

- Install flashing beacons as advance warning (NS8).
- Improve pavement friction (NS20).

25.LAKESHORE DRIVE AND GRAHAM AVENUE

Summary of Intersection Existing Condition

- The intersection of Lakeshore Drive and Graham Avenue is an non-signalized intersection.
- There is no existing median at the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- There are no existing crosswalk markings across any leg of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (2) and Improper Turning (2) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Hit Object (2) and Broadside (1).
- Surrounding Land Use
  - North: School
  - West: Residential
  - South: Residential
  - East: School

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Lakeshore Drive and Graham Avenue (Within 250')

- All Collisions: 5
- Fatal: -
- Severe Collisions: 1
- Other Visible Injury: -
- Complaint of Pain: 1
- Property Damage Only: 3

Cost of Collisions: $2,417,300

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	1
Hit Object	2
Overturned	1
Rear-End	1
Grand Total	5

Primary Collision Factor

Cause of Collisions	Count of Cause
Improper Turning	2
Not Stated	1
Unsafe Speed	2
Grand Total	5

Party 1 Movement

Party 1 Movement	Count of Movement 1
Proceeding Straight	3
Ran Off Road	2
Grand Total	5

Lighting

Lighting	Count of Lighting
Dark - Street Lights	2
Daylight	3
Grand Total	5

Potential Countermeasures

- Install/upgrade larger or additional stop signs or other intersection warning/regulatory signs (NS5).
- Install flashing beacons as advance warning (NS8).

26.LAKESHORE DRIVE AND GUNNERSON STREET

Summary of Intersection Existing Condition

- The intersection of Lakeshore Drive and Gunnerson Street is an unsignalized intersection.
- There is no existing median at the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- There are no existing crosswalk markings across any leg of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (2) and Improper Turning (1) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Rear End (3) and Sideswipe (1).
- Surrounding Land Use
  - North: Vacant
  - West: Vacant
  - South: Vacant
  - East: Vacant

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Lakeshore Drive and Gunnerson Street (Within 250')

- All Collisions: 4
- Fatal: -
- Severe Collisions: 1
- Other Visible Injury: -
- Complaint of Pain: 1
- Property Damage Only: 2

Cost of Collisions: $2,405,500

Type of Collisions

Type of Collisions	Count of Collision Type
Rear-End	3
Sideswipe	1
Grand Total	4

Lighting

Lighting	Count of Lighting
Dark - No Street Lights	1
Dark - Street Lights	2
Daylight	1
Grand Total	4

Primary Collision Factor

Cause of Collisions	Count of Cause
Improper Passing	1
Not Stated	1
Unsafe Speed	2
Grand Total	4

Party 1 Movement

Party 1 Movement	Count of Movement 1
Passing Other Vehicle	1
Proceeding Straight	1
Stopped In Road	2
Grand Total	4

Potential Countermeasures

- Upgrade intersection pavement markings (NS6).
- Install flashing beacon as advance warning (NS8).

27.CORTE SERIUI AND SUMMERHILL DRIVE

Summary of Intersection Existing Condition

- The intersection of Corte Seriui and Summerhill Drive is an unsignalized intersection.
- There is no existing median at the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- One 12’ wide crosswalk marking across one leg of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Improper Turning (2) and Unsafe Speed (1) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Hit Object (2) and Broadside (1).
- Surrounding Land Use
  - North: Residential
  - West: Residential
  - South: Residential
  - East: Residential

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Corte Seriui and Summerhill Drive (Within 250’)

- All Collisions: 3
- Fatal: -
- Severe Collisions: 1
- Other Visible Injury: 1
- Complaint of Pain: -
- Property Damage Only: 1

Cost of Collisions: $2,448,300

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	1
Hit Object	2
Grand Total	3

Lighting

Lighting	Count of Lighting
Dark - Street Lights	1
Daylight	2
Grand Total	3

Primary Collision Factor

Cause of Collisions	Count of Cause
Improper Turning	2
Unsafe Speed	1
Grand Total	3

Party 1 Movement

Party 1 Movement	Count of Movement 1
Making Left Turn	1
Proceeding Straight	2
Grand Total	3

28.COTTONWOOD CANYON ROAD AND CANYON HILLS ROAD

Summary of Intersection Existing Condition

- The intersection of Cottonwood Canyon Road and Canyon Hills Road is a signalized intersection.
- Median is installed on the East-West approach of the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- Two 12’ wide crosswalk marking across two legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Unsafe Speed (2) and Improper Turning (1) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Broadside (2) and Hit Object (1).
- Surrounding Land Use
  - North: Park
  - West: Residential
  - South: Residential
  - East: Community Pool

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Cottonwood Canyon Road and Canyon Hills Road (Within 250’)

- All Collisions: 3
- Fatal: -
- Severe Collisions: 1
- Other Visible Injury: -
- Complaint of Pain: -
- Property Damage Only: 2

Note: This intersection is included in HSIP cycle 9.

29. LAKESHORE DRIVE AND OHIO STREET

Summary of Intersection Existing Condition

- The intersection of Lakeshore Drive and Ohio Street is an unsignalized intersection.
- There is no existing median at the intersection.
- There are no existing bus stops in the vicinity of the intersection.
- Two 12’ wide crosswalk marking across two legs of the intersection.
- There is no existing bulb out at any corner of the intersection.
- The Auto R/W Violation (1) and Other Collisions (1) are the major causes of collision at the intersection.
- The majority of the collisions occurred at the intersection are Broadside (2) and Head-On (1).
- Surrounding Land Use
  - North: Residential
  - West: Residential
  - South: Residential
  - East: Residential

Summary of Collisions by Severity *(From May 2013 to May 2018)*

Intersection of Lakeshore Drive and Ohio Street (Within 250’)

- All Collisions: 3
- Fatal: 1
- Severe Collisions: -
- Other Visible Injury: 2
- Complaint of Pain: -
- Property Damage Only: -

Cost of Collisions: $2,563,000

Type of Collisions

Type of Collisions	Count of Collision Type
Broadside	2
Head-On	1
Grand Total	3

Lighting

Lighting	Count of Lighting
Daylight	3
Grand Total	3

Primary Collision Factor

Cause of Collisions	Count of Cause
Auto R/W Violation	1
Not Stated	1
Other	1
Grand Total	3

Party 1 Movement

Party 1 Movement	Count of Movement 1
Making Left Turn	2
Proceeding Straight	1
Grand Total	3

Potential Countermeasures

- Install flashing beacons as advance warning (NS8).