CITY OF IRWINDALE

Safe Streets for All

Comprehensive Safety Action Plan

FINAL - Adopted May 28, 2025

Prepared by

GTS
gentecsol.com

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VISION ZERO RESOLUTION

RESOLUTION NO. 2025-36-3624

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF IRWINDALE APPROVING AND ADOPTING A VISION ZERO POLICY AND THE SAFE STREETS FOR ALL COMPREHENSIVE SAFETY ACTION PLAN

WHEREAS, the City of Irwindale's Safe Streets for All Comprehensive Safety Action Plan (2025) seeks to achieve zero traffic fatalities and severe injuries among all road users; and

WHEREAS, the life and health of all persons living and traveling within the City of Irwindale are our utmost priority, and no one should die or be seriously injured while traveling on our city streets; and

WHEREAS, Vision Zero is the concept that traffic deaths and serious injuries on our roadways are unacceptable; and

WHEREAS, Vision Zero provides a framework for reducing traffic deaths and serious injuries to zero by all road users while increasing safe, healthy, equitable mobility for all; and

WHEREAS, streets and transportation systems have traditionally been designed primarily to move cars efficiently, and Vision Zero supports a paradigm shift by designing streets and transportation systems to move all people safely, including people of all ages and abilities, pedestrians, bicyclists, public transit users, scooter riders, and motorcyclists, as well as drivers and passengers of motor vehicles; and

WHEREAS, traffic crashes are among the leading causes of death in the United States; and

WHEREAS, the City of Irwindale's transportation infrastructure serves an increasing number of vulnerable road users such as pedestrians and bicyclists; and

WHEREAS, successful Vision Zero programs are a result of both a complete government approach (*i.e.*, interdepartmental, coordinated initiatives) and community support of Vision Zero objectives and action plans; and

WHEREAS, Vision Zero resolutions have been adopted by many jurisdictions across the United States; and

NOW, THEREFORE, the City Council of the City of Irwindale, California, does hereby resolve as follows:

SECTION 1. The Irwindale City Council commits to supporting the Vision Zero movement and becoming a Vision Zero Community, and approves and adopts the Vision Zero Polic and Safe Streets For All Comprehensive Safety Action Plan, attached hereto as Exhibit "A."

SECTION 2. The Irwindale City Council adopts a goal of eliminating traffic deaths and serious injuries by 2035 and adopts the analysis and recommendations set forth in the Safe Streets for All Action Plan to achieve this goal, by prioritizing traffic safety within infrastructure projects and implement strategies and engineering design measures that complement the Vision Zero approach to traffic safety.

PASSED, APPROVED and **ADOPTED** this 28th day of May 2025.

Larry G. Burrola, Mayor

ATTEST:

Laura M. Nieto, MMC
Chief Deputy City Clerk

STATE OF CALIFORNIA }
COUNTY OF LOS ANGELES } ss.
CITY OF IRWINDALE }

I, Laura M. Nieto, Chief Deputy City Clerk of the City of Irwindale, do hereby certify that the foregoing Resolution No. 2025-36-3624 as duly adopted by the City Council of the City of Irwindale, at a regular meeting held on the 28th day of May 2025, by the following vote:

AYES: Councilmembers: Ambriz, Breceda, Garcia, Ortiz, Mayor Burrola

NOES: Councilmembers: None

ABSENT: Councilmembers: None

ABSTAIN: Councilmembers: None

Laura M. Nieto, MMC
Chief Deputy City Clerk

1. INTRODUCTION

1.1. Safe Streets for All (SS4A) Program

The Safe Streets for All (SS4A) Comprehensive Safety Action Plan for the City of Irwindale is a framework for improving roadway safety by significantly reducing or eliminating the number of roadway fatalities and injuries in the City of Irwindale. The SS4A program was established as a result of the Bipartisan Infrastructure Act. Passed in 2021, the legislation provided funding for a multitude of transportation projects, including discretionary programs related to transportation safety. The SS4A program in particular focuses on supporting the United States Department of Transportation's (US DOT) goal of eliminating roadway fatalities and their National Roadway Safety Strategy.

The City of Irwindale, California (2020 Census population: 1,472) is in eastern Los Angeles County in the San Gabriel Valley, as shown in Exhibit 1. Most of the city is zoned as commercial, manufacturing, quarry, or open space, while the residential areas are located in the southeastern portion of the city adjacent to Irwindale Avenue and Arrow Highway, as well as in the northwestern part of the City.As a result, Irwindale sees a large amount of truck and pass-through traffic, including from the nearby interstates.

The City of Irwindale decided to pursue funding through the SS4A program to improve the safety of its transportation infrastructure. This SS4A plan addresses safety for all users, including those driving, walking, or biking. Through collaboration with local stakeholders and community members, as well as guidance from FHWA's Safe System approach and SS4A's Action Plan Components, the City has developed this comprehensive safety action plan. This plan will act as a guide for the City in its implementation of prioritized roadway safety improvements aimed at reducing the number of fatal and injury collisions.

In addition to providing the City a framework to reduce vehicle collisions and fatalities, this plan will make the City eligible for implementation grant funding through the SS4A program. Aside from providing funds for projects outlined in this plan, implementation grants can also be used for demonstration activities and additional planning for projects relating to this plan.

This plan was developed using the process established by the Federal Highway Administration (FHWA), including the following eight components:

1. Leadership Commitment and Goal Setting
2. Planning Structure
3. Safety Analysis
4. Engagement and Collaboration
5. Equity Considerations
6. Policy and Process Changes
7. Strategy and Project Selections
8. Progress and Transparency

1.2. Statement of Protection from Discovery and Admissions

Title 23, Chapter 4, Section 407 of U.S. Code states the following applicable to this report and associated data:

Discovery and admission as evidence of certain reports and surveys

Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 148 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds 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 mentioned or addressed in such reports, surveys, schedules, lists, or data.

available online at:

https://uscode.house.gov/browse/prelim@title23/chapter4&edition=prelim

1.3. Planning Process

The Safety Action Plan development process was initiated with a kick-off meeting to establish goals, objectives, and the requirements to be met. This was followed by the establishment of a multi-disciplinary Implementation Group, charged with oversight of the plan's development, implementation, and monitoring, and consisting of representatives from local and regional stakeholder entities. The Implementation Group held five meetings during a time period that overlapped with an extensive community engagement program. Community engagement tools and activities included an interactive website where users could post comments on a City map and complete a survey; in-person and virtual public meetings; and outreach via social media and flyers in both Spanish and English. Input received from the Implementation Group and from the community (through the various channels of input) was used to guide the plan's development and was instrumental in developing the recommendations contained in the plan.

In parallel with stakeholder and community engagement activities, a baseline assessment of collision data was carried out. Collision data, as well as community and stakeholder input, formed the basis for the analysis of existing conditions and historical trends. This allowed for the development of a baseline assessment of collisions throughout the City, which includes analysis of collision severity, collision type, contributing factors, location, travel mode, time of day, weather, and several other variables.

The initial assessment of collision trends was followed by statistical network screening using Highway Safety Manual Methods to identify locations with higher-than-expected collision activity. This resulted in the establishment of a high-injury network, consisting of intersections and corridors within the City with the highest rates and/or incidence of injury and fatal collisions. These intersections and corridors were then ranked by collision frequency and Equivalent Property Damage Only (EPDO) scores, as documented in the Highway Safety Manual. In this method, weighting factors related to the societal costs of fatal, injury, and property damage-only collisions are assigned to collisions by severity to develop an equivalent property damage-only score that considers the frequency and severity of collisions.

To further inform the plan development, the following relevant plans and documents were reviewed and the Safety Action Plan was coordinated and aligned with their contents as applicable:

- The City of Irwindale General Plan
- The City of Irwindale Active Transportation Plan
- The City of Irwindale Engineering and Traffic Survey
- Caltrans Strategic Highway Safety Plan

The data analysis and review of existing documents were supplemented by review of collision reports and by comprehensive site visits to observe roadway infrastructure and traffic operations throughout the City. Information collected through these activities was incorporated into the Safety Action Plan.

Subsequently, a set of recommended safety countermeasures were developed to address the identified safety issues, and these countermeasures were prioritized according to the methodology described in this document. The Safety Action Plan's recommendations include systemic countermeasures (which can be implemented at multiple locations throughout the City to address pervasive safety issues) and location-specific countermeasures (which address circumstances specific to their locations). The prioritized list of countermeasures in this document forms the Action Plan for Safe Streets for All in the City of Irwindale.

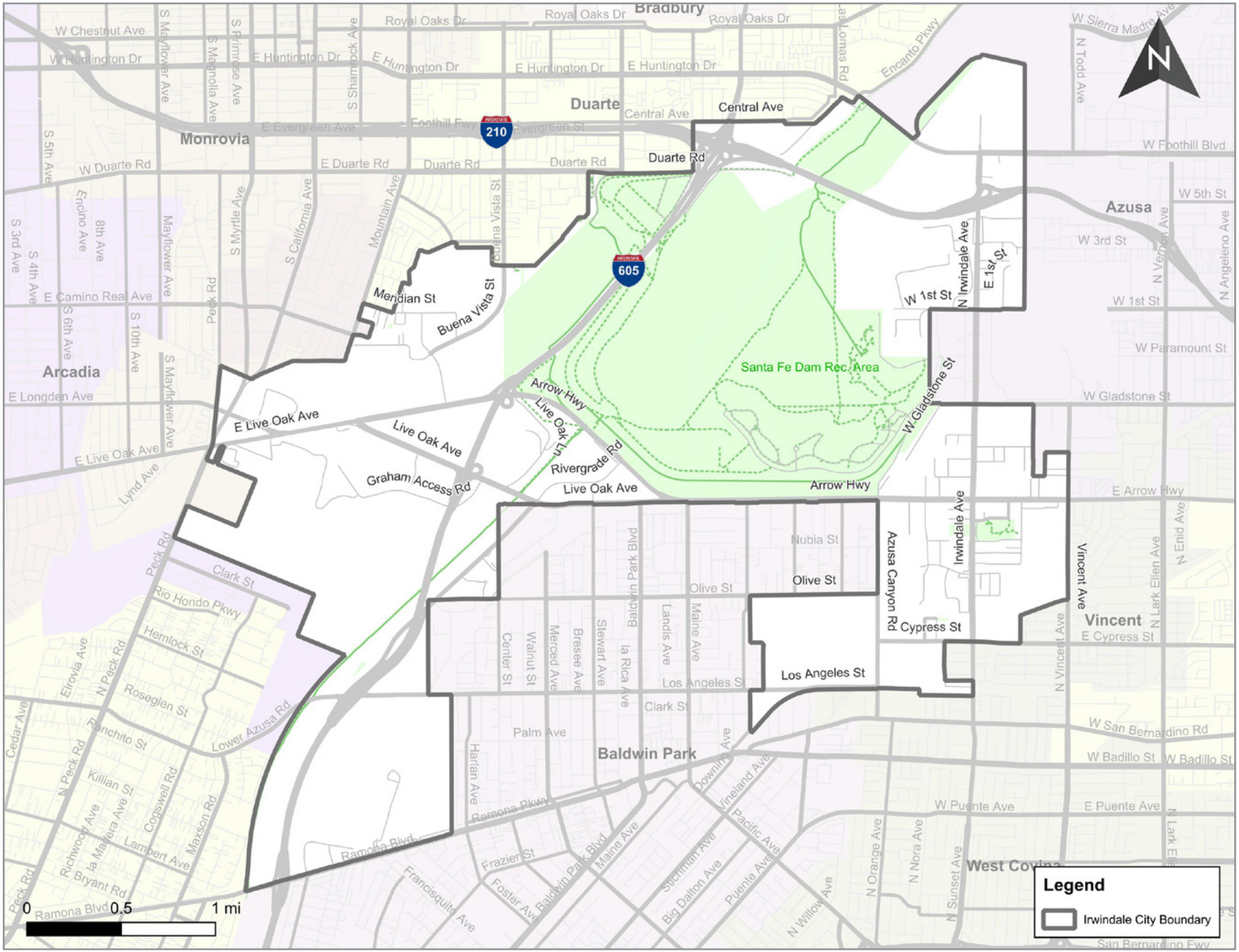


Exhibit 1. Irwindale city boundary

2. VISION STATEMENT AND GUIDING PRINCIPLES

This SS4A plan was developed in accordance with the following vision and guiding principles:

2.1. SS4A Vision

Eliminate serious injury and fatal collisions by creating a transportation network that provides a comfortable environment for all users and all modes, promotes traffic safety, and meets the needs of the community.

2.2. SS4A Guiding Principles

1. Have zero fatal and severe injury collisions on the city roadways
2. Reduce the number of pedestrian and bicycle collisions on City roadways
3. Partner with traffic safety stakeholders (fire, police, schools, parks, etc.) to exchange information and ideas specific to enhancing roadway safety performance through engineering, enforcement, and educational strategies
4. Improve available collision data and constantly monitor for improvements
5. Utilize community and traffic safety stakeholder input to identify opportunities to improve roadway safety
6. Reduce the number of rear end, broadside, and sideswipe collisions
7. Systemically implement safety countermeasures proven to reduce speeding and improper turning

3. COLLISION TREND ANALYSIS

A dataset of all reported collisions within the City of Irwindale for a five-year period between January 1, 2019 and December 31, 2023 was analyzed to understand the history of collisions and safety. Within this time period, there were **1,144 collisions** in the City of Irwindale (excluding those on I-210 and I-605). An overview of collision locations is shown in Exhibit 3. In collision reporting, the following standard categories are used to define the severity of collision events:[1]

- Fatality
- Severe injury (an injury that prevents the injured party from walking, driving, or performing activities they were normally capable of before the collision)
- Other visible injury (an injury, other than fatal or severe, that is evident to any person at the collision scene)
- Complaint of pain (injuries claimed but not evident)
- Property damage only

1 California Highway Patrol Glossary.

https://www.chp.ca.gov/InformationManagementDivisionSite/Documents/14-Glossary%202017%20(Crash)%20(Revised%20on%2010092019).pdf

Of these, **8 collisions (0.8%) resulted in fatalities**, **28 (2.7%) resulted in severe injury**, **112 (9.8%) resulted in other visible injury**, **202 (17.7%) resulted in complaint of pain**, and **794 (69.4%) resulted in property damage** only, as shown in Exhibit 2. The location of collisions, indicating their severity, is shown in Exhibit 4.

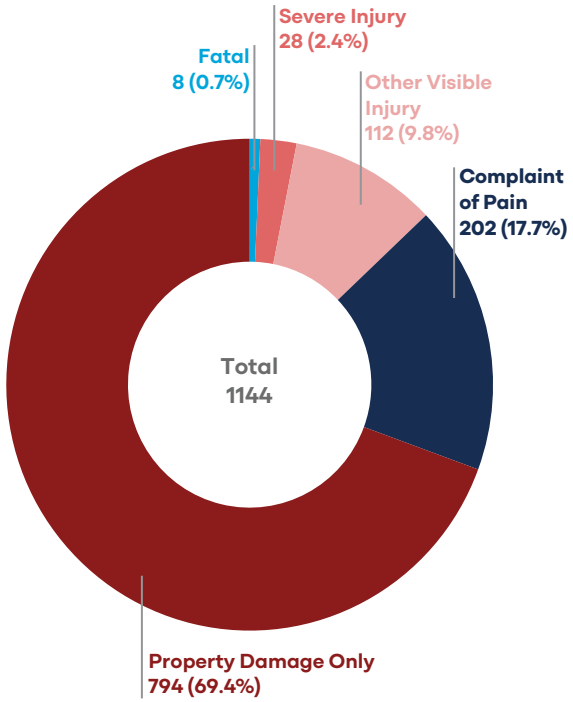


Exhibit 2. Severity of collisions, 2019-2023

The following patterns are noted:

- All fatal collisions occurred on major roads.
- There is a concentration of severe injury collisions observable on Live Oak Ave between Rivergrade Rd and Arrow Hwy.

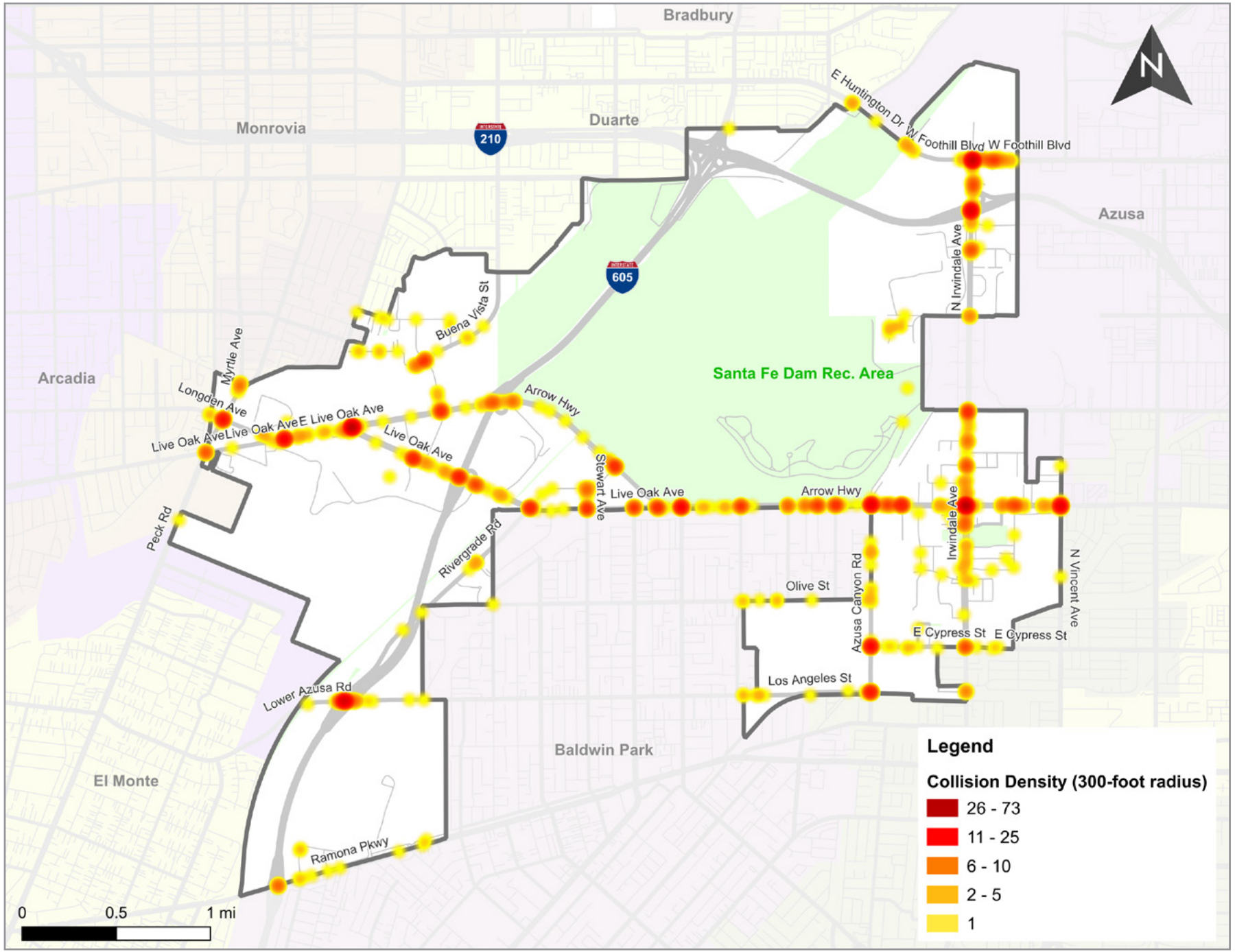


Exhibit 3. Collision locations, 2019-2023

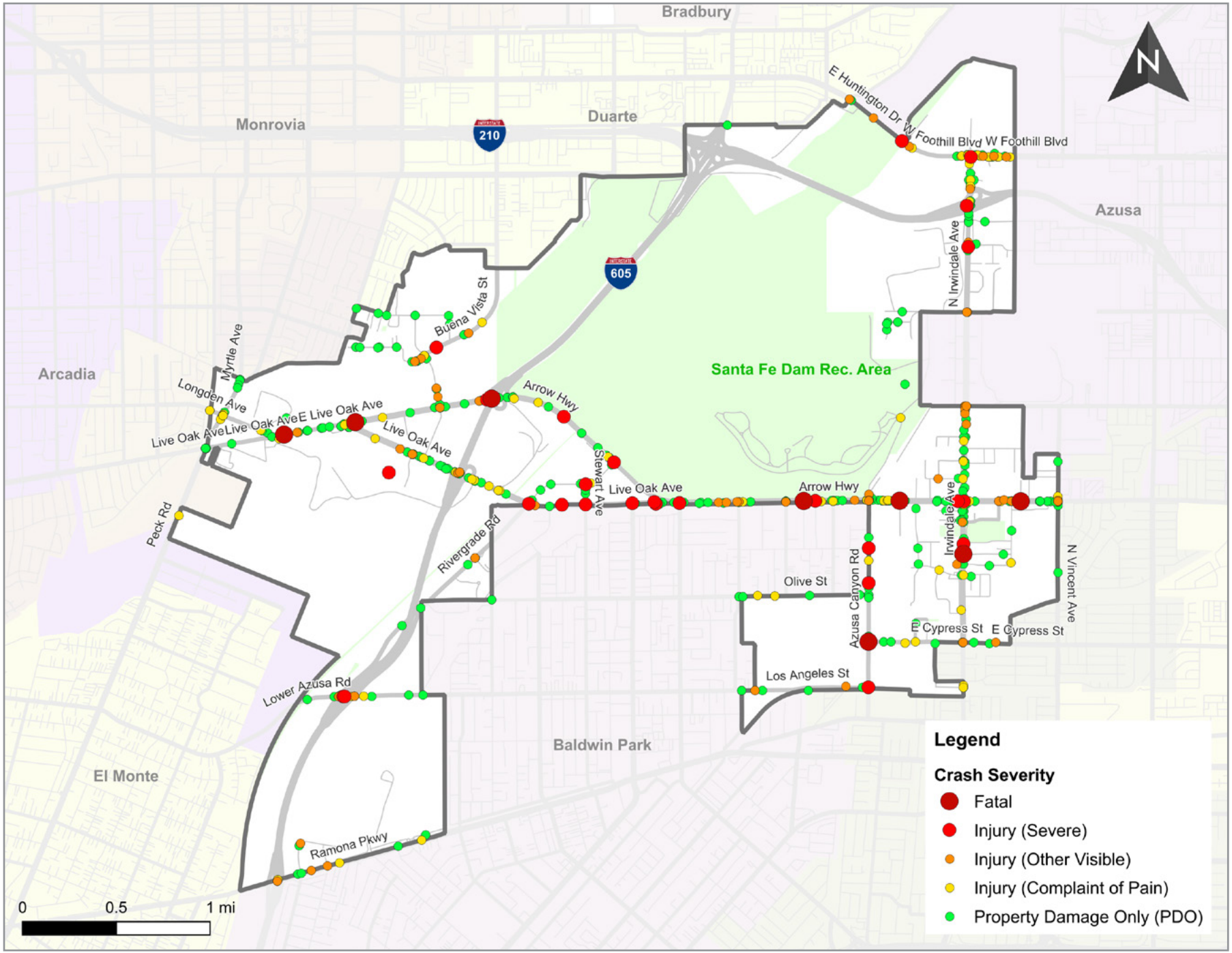


Exhibit 4. Collision locations by severity level, 2019-2023

3.1. Primary Contributing Factors

The three most prevalent Primary Contributing Factors (PCFs) for collisions were Unsafe Speed (32% meaning the vehicle was traveling faster than safe for driving conditions), Improper Turning (14%, meaning a driver made a turn prohibited by signage, failed to use turn signals, or turned at a distance too far from a curb), and Automobile Right of Way Violation (13%, meaning a maneuver that is made by a driver without respecting the right-of-way of another driver). For fatal and injury collisions, the three most prevalent PCFs were Unsafe Speed (33%), Traffic Signals and Signs (17%, meaning the collision was caused by inadequate, inconsistent, and/or confusing signage), and Automobile Right of Way Violation (16%). The numbers and percentages of collisions by PCF are shown in Exhibit 5 and represented graphically for the top 10 factors in Exhibit 6.

Primary Contributing Factor	Fatal & Injury	Property Damage Only	Total
Unsafe Speed	117 (33%)	246 (31%)	363 (32%)
Improper Turning	28 (8%)	134 (17%)	162 (14%)
Automobile Right of Way Violation	56 (16%)	89 (11%)	145 (13%)
Traffic Signals and Signs	60 (17%)	54 (7%)	114 (10%)
Unsafe Lane Change	15 (4%)	91 (11%)	106 (9%)
Unknown or not listed	15 (4%)	58 (7%)	73 (6%)
Alcohol or Drugs	25 (7%)	41 (5%)	66 (6%)
Unsafe Starting or Backing	7 (2%)	36 (5%)	43 (4%)
Wrong Side of Road	9 (3%)	9 (1%)	18 (2%)
Improper Passing	3 (1%)	10 (1%)	13 (1%)
Other Than Driver or Pedestrian (person not involved in collision)	6 (2%)	5 (1%)	11 (1%)
Other Hazardous Violation	2 (1%)	8 (1%)	10 (1%)
Following Too Closely	-	5 (1%)	6 (1%)
Equipment Failure (Other Than Lights or Brakes)	1 (0%)	4 (1%)	5 (0%)
Other Improper Driving	-	4 (1%)	4 (0%)
Pedestrian Violation of Automobile Right-of-Way	3 (1%)	-	3 (0%)
Automobile Violation of Pedestrian Right of Way	2 (1%)	-	2 (0%)

Exhibit 5. Primary Contributing Factors for collisions

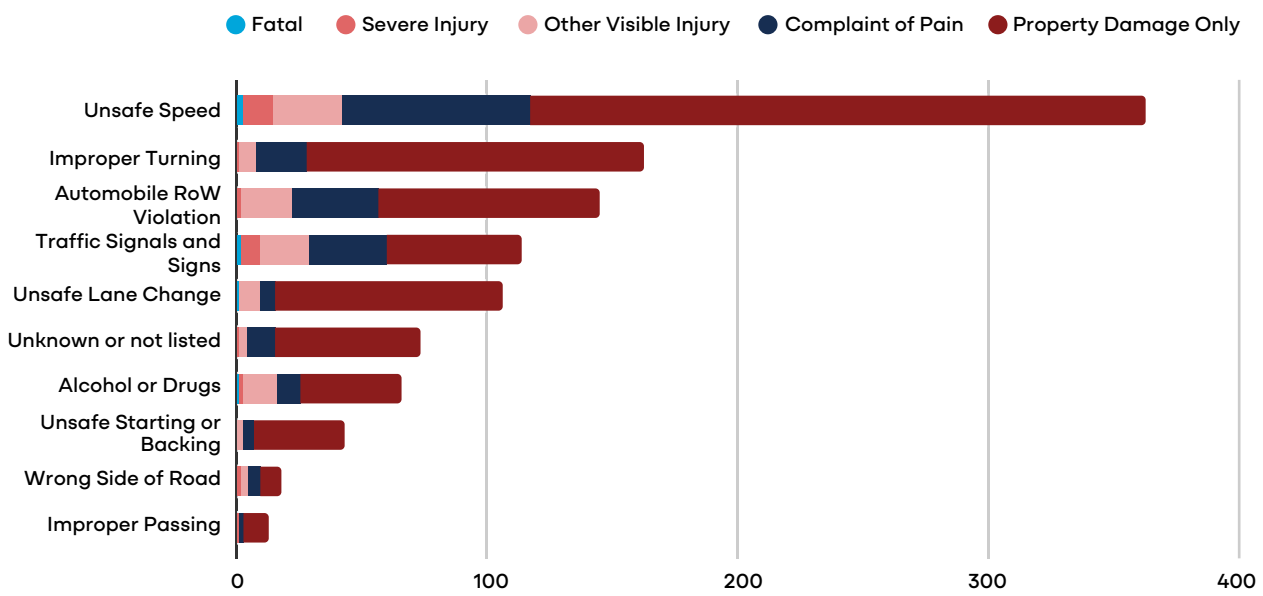


Exhibit 6. Top 10 Primary Contributing Factors for collisions (chart)

3.2. Collision Types

The three most prevalent collision types were Rear End (29%), Broadside (25%), and Sideswipe (20%). For fatal and injury collisions, the three most prevalent collision types were Broadside (36%), Rear End (30%), and Hit Object (12%). The numbers and percentages of collisions by type are shown in Exhibit 7 and represented graphically in Exhibit 8.

Collision Type	Fatal & Injury	Property Damage Only	Total
Head-On	23 (7%)	37 (5%)	60 (5%)
Sideswipe	127 (9%)	154 (25%)	230 (20%)
Rear End	106 (30%)	221 (28%)	327 (29%)
Broadside	127 (36%)	154 (19%)	281 (25%)
Hit Object	41 (12%)	150 (19%)	191 (17%)
Overturned	8 (2%)	9 (1%)	17 (1%)
Vehicle/Pedestrian	10 (3%)	1 (0%)	11 (1%)
Other	5 (1%)	6 (1%)	11 (1%)
Not Stated	-	16 (2%)	16 (1%)

Exhibit 7. Collision types

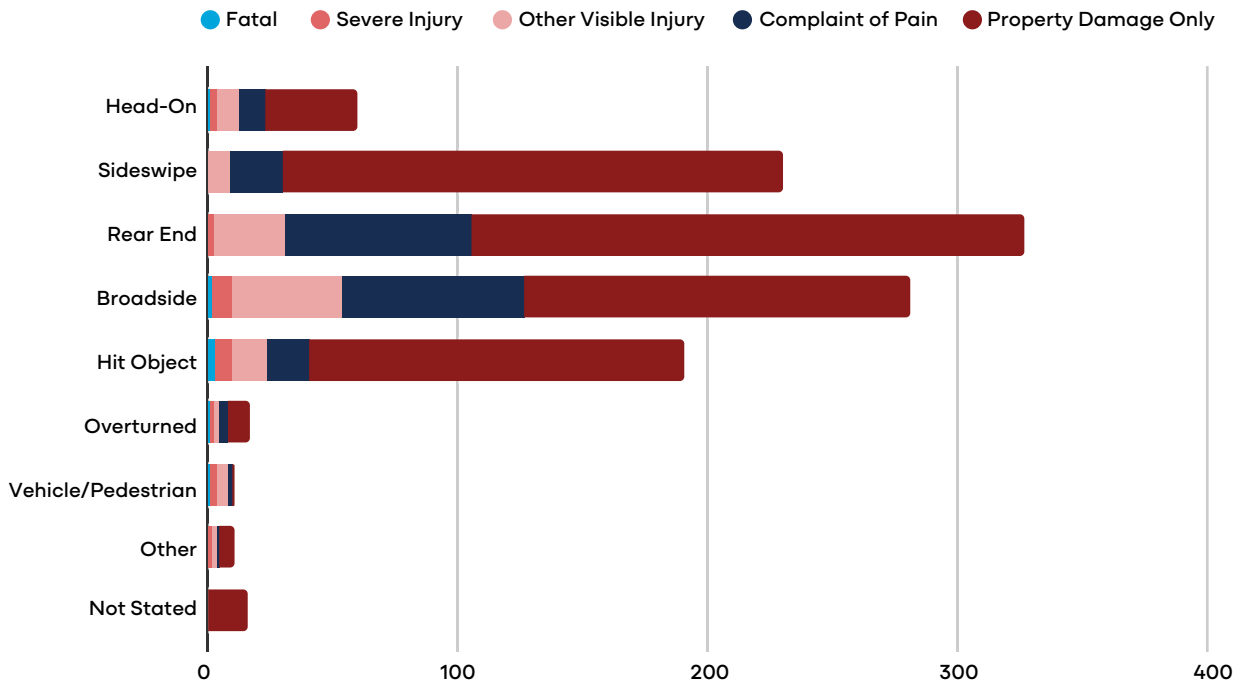


Exhibit 8. Collision types (chart)

3.3. Collisions Involving Pedestrians

Between January 1, 2019 and December 31, 2023, there were 9 reported collisions involving pedestrians in the City of Irwindale. As shown in Exhibit 9 (and graphically in Exhibit 12), one resulted in a fatality (11%), two in severe injury (22%), three in other visible injury (33%), and three in complaint of pain (33%). None resulted in property damage only. The locations of pedestrian collisions are shown in Exhibit 13. Collisions involving pedestrians have occurred on major roads except for one incident within the Santa Fe Dam Recreational Area.

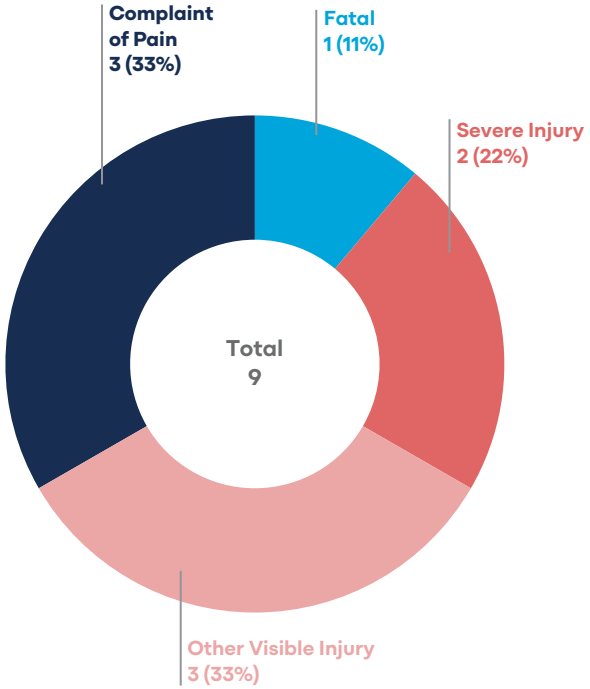


Exhibit 9. Pedestrian collisions by severity level

3.4. Collisions Involving Bicyclists

Between January 1, 2019 and December 31, 2023, there were 14 reported collisions involving bicyclists in the City of Irwindale. As shown in Exhibit 10 (and graphically in Exhibit 12), three resulted in severe injury (21%), five in other visible injury (36%), three in complaint of pain (21%), and three in property damage only (21%). None resulted in fatalities. The locations of bicycle collisions are shown in Exhibit 14. Most collisions involving bicyclists have occurred on major roads, with a notable cluster of incidents at the intersection of W Foothill Blvd and N Irwindale Ave.

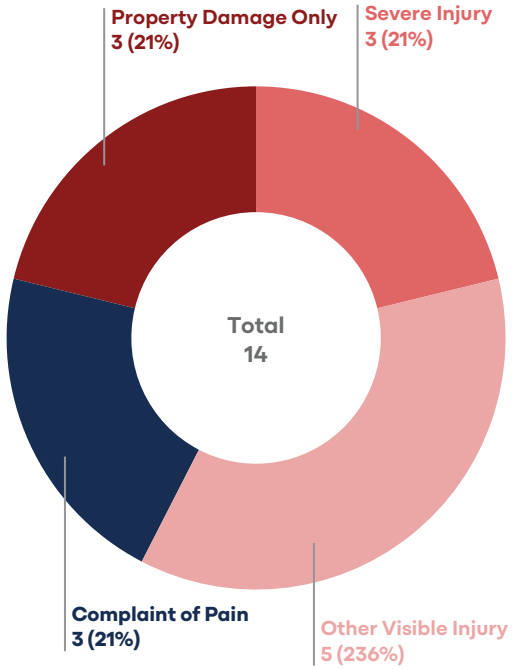


Exhibit 10. Bicyclist collisions by severity level

3.5. Collisions Involving Motorcycles

Between January 1, 2019 and December 31, 2023, there were 19 reported collisions involving motorcyclists in the City of Irwindale. As shown in Exhibit 11 (and graphically in Exhibit 12), three resulted in fatalities (15%), two in severe injury (10%), four in other visible injury (20%), six in complaint of pain (30%), and five in property damage only (25%). Collisions involving motorcycles represented 38% of fatal collisions in the City of Irwindale during these five years. The locations of motorcycle collisions are shown in Exhibit 15. All these collisions occurred on major roads, but beyond that no distinct geographic pattern is evident.

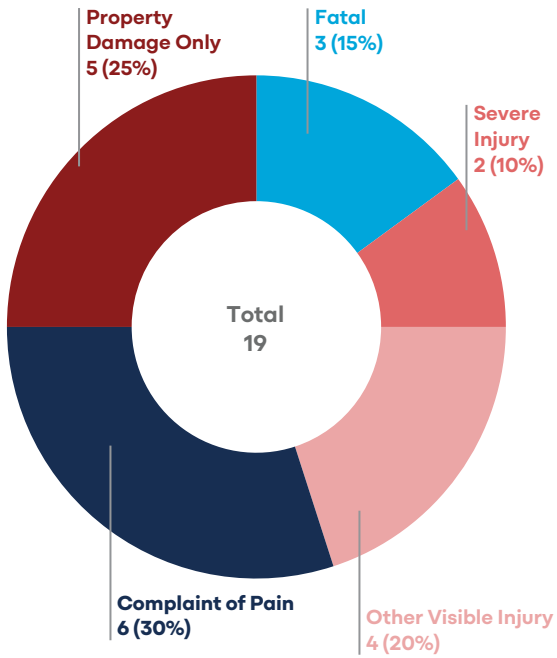
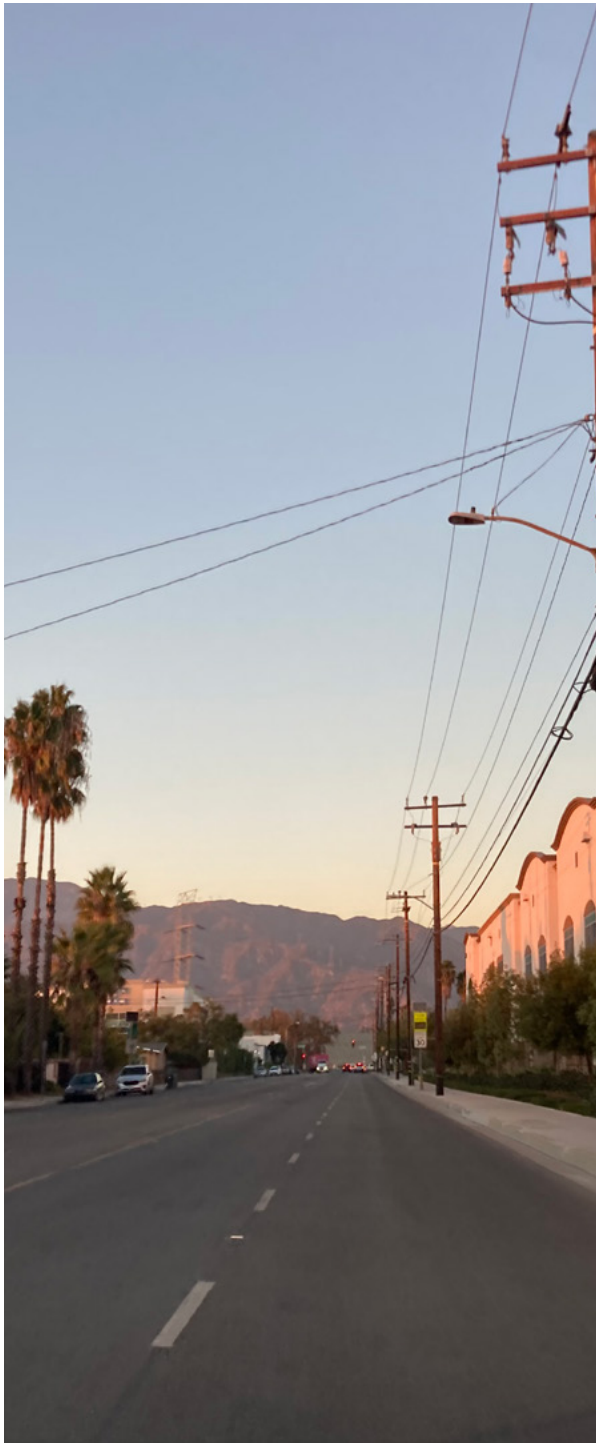


Exhibit 11. Motorcycle collisions by severity level



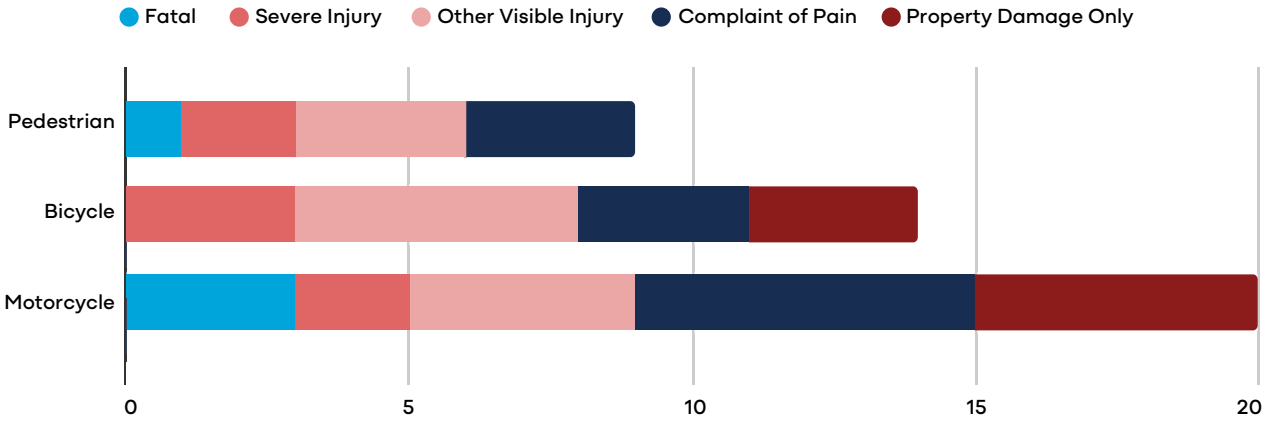


Exhibit 12. Pedestrian, bicycle, and motorcycle-involved collisions

Note: A recent fatal collision involving a bicyclist occurred on July 9, 2024 on Arrow Hwy near the Santa Gabriel River Trail. While this was outside of the 5-year period of collision data analyzed, it has also been considered when developing this plan's recommendations.

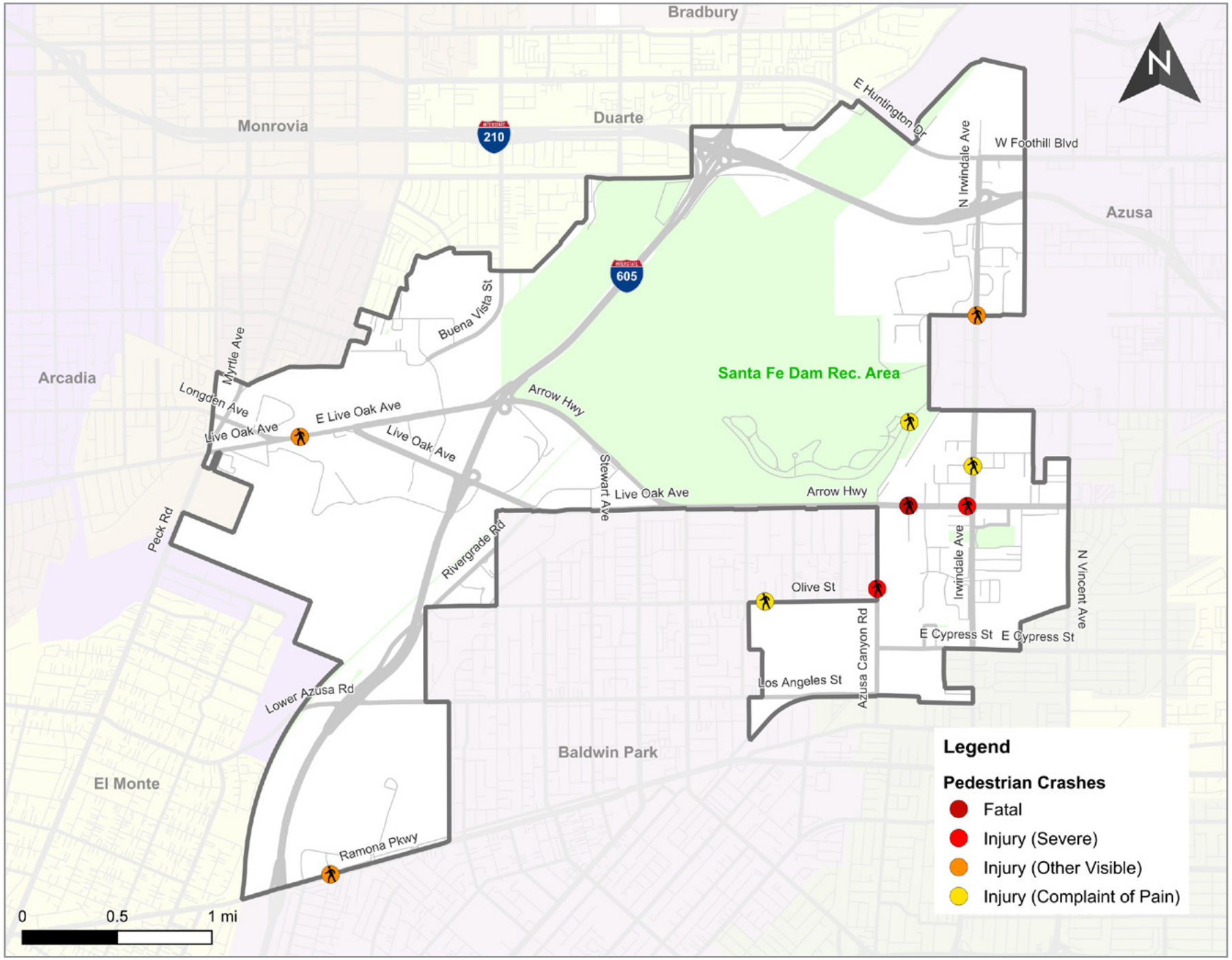


Exhibit 13. Locations of collisions involving pedestrians

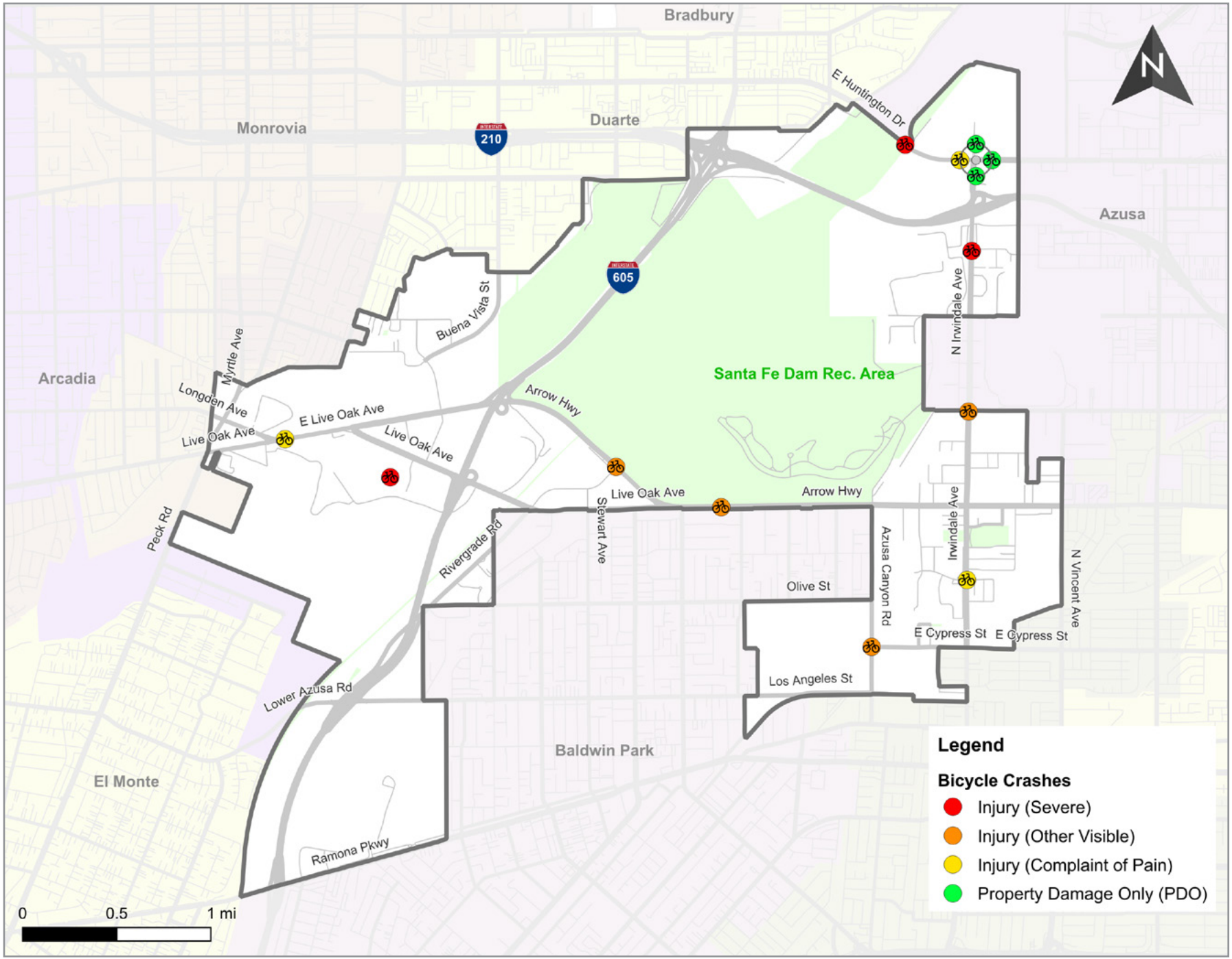


Exhibit 14. Locations of collisions involving bicyclists

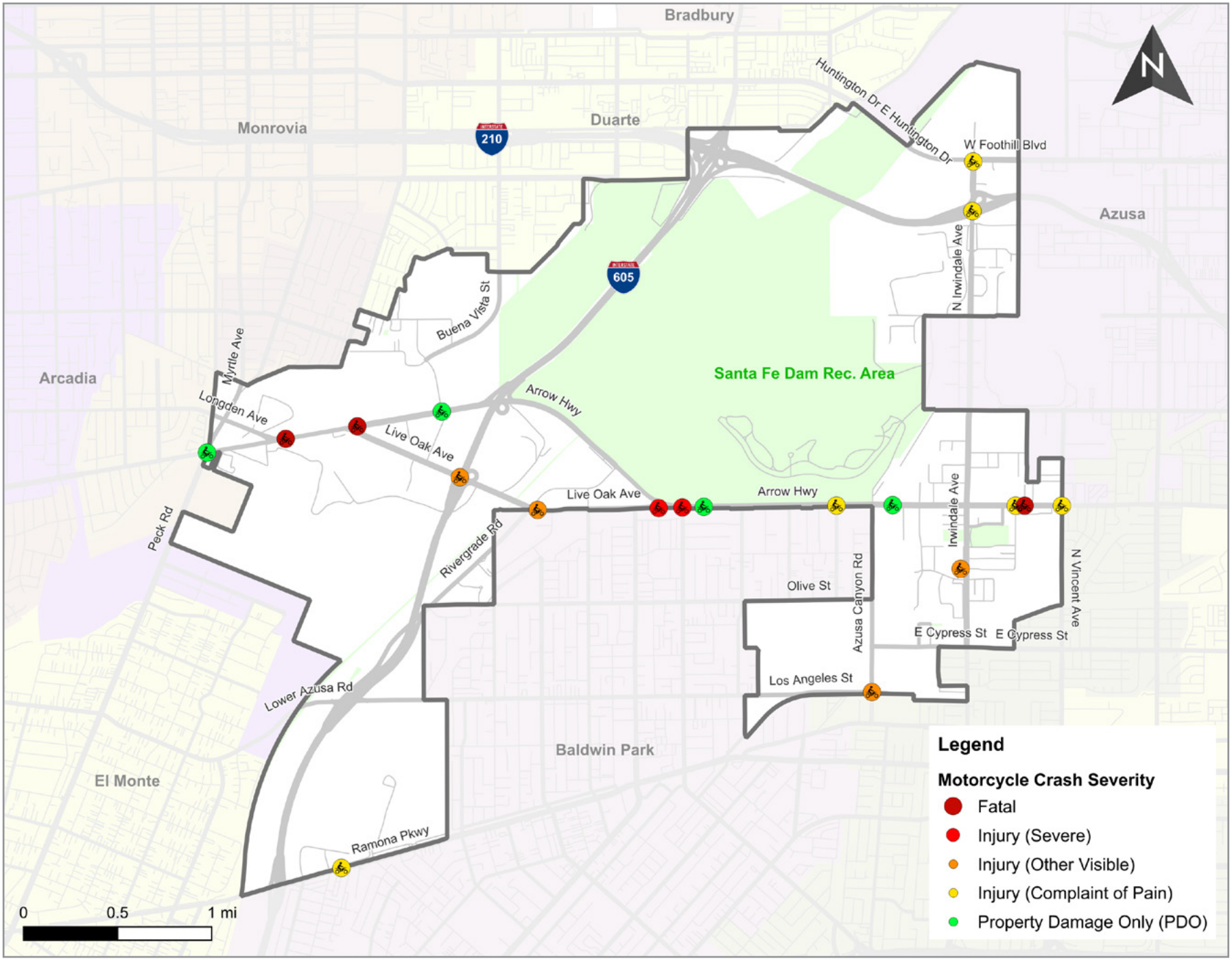


Exhibit 15. Locations of collisions involving motorcycles

3.6. Collisions Involving Trucks

Between January 1, 2019 and December 31, 2023, there were 104 collisions involving trucks (9% of the total). Of these, the four most prevalent PCFs were Improper Turning (27%), Unsafe Speed (19%), Automobile Right of Way Violation (12%), and Unsafe Lane Change (12%). 22 truck collisions resulted in injury (21%) and the remaining 82 resulted in property damage only (79%). There were no fatalities. Truck-involved collisions are listed by PCF in Exhibit 16. The locations of these collisions are shown in a heat map in Exhibit 17. The greatest prevalence of collisions involving trucks can be observed on Arrow Hwy and Live Oak Ave, with clusters also observable at the intersection of W Foothill Blvd and N Irwindale Ave (9 collisions) and at the interchange of Lower Azusa Rd and I-605 (5 collisions).

PCF	Injury	Property Damage Only	Total
Improper Turning	4 (18%)	24 (29%)	28 (27%)
Unsafe Speed	6 (27%)	14 (17%)	20 (19%)
Unsafe Lane Change	-	12 (15%)	12 (12%)
Automobile Right of Way Violation	5 (23%)	7 (9%)	12 (12%)
Unsafe Starting or Backing	2 (9%)	8 (10%)	10 (10%)
Unknown or not listed	1 (5%)	7 (9%)	8 (8%)
Traffic Signals and Signs	3 (14%)	2 (2%)	5 (5%)
Improper Passing	-	3 (4%)	3 (3%)
Alcohol or Drugs	1 (5%)	1 (1%)	2 (2%)
Equipment Failure (Other Than Lights or Brakes)	-	2 (2%)	2 (2%)
Other Hazardous Violation	-	2 (2%)	2 (2%)

Exhibit 16. Collisions involving trucks by PCF

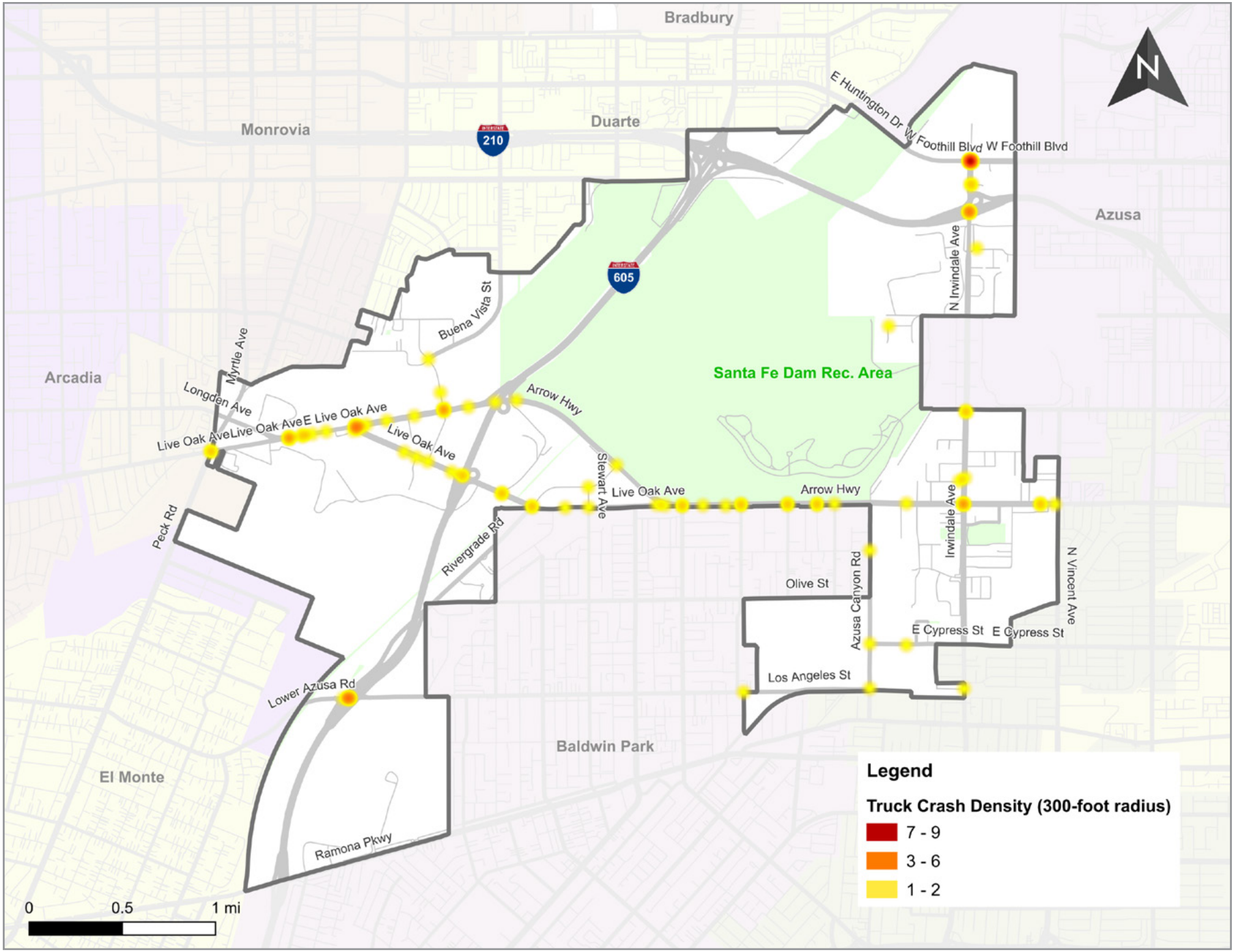


Exhibit 17. Heat map of collisions involving trucks

3.7. Collisions by Weather and Roadway Conditions

Collisions by weather conditions are shown in Exhibit 18. Most collisions (86%) occurred during clear weather conditions, followed by 10% during cloudy conditions, 4% during rainy conditions, and 0.7% during other conditions. Collisions by roadway surface conditions are shown in Exhibit 19. Most collisions (92%) occurred on roadways with dry conditions, followed by 7% on wet conditions, 0.6% not stated, and 0.3% on slippery conditions.

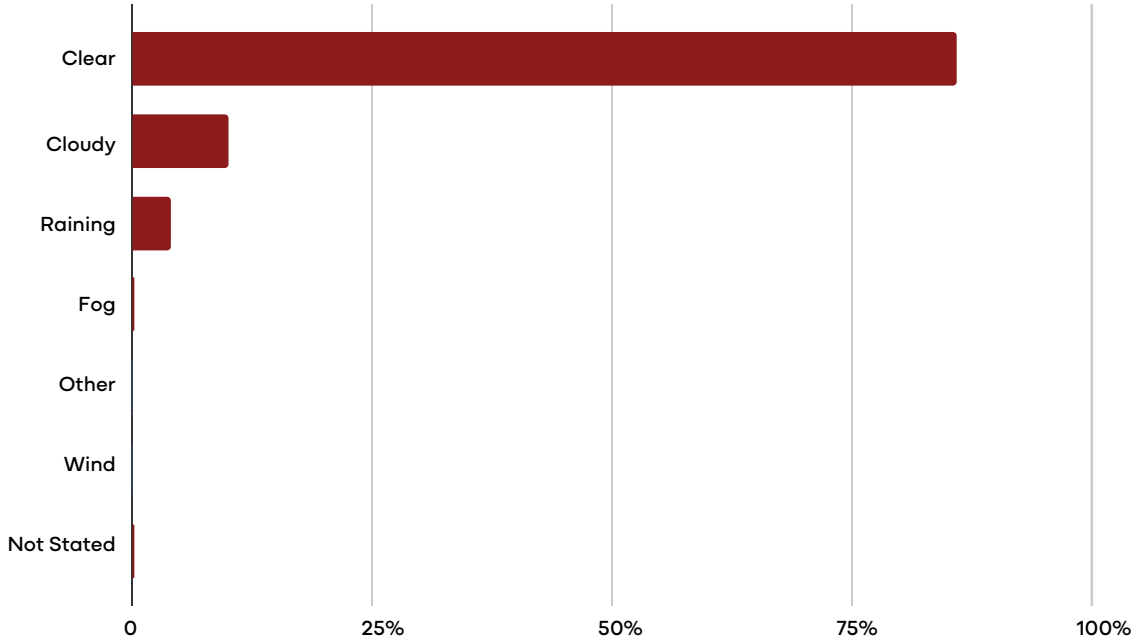


Exhibit 18. Collisions by weather conditions

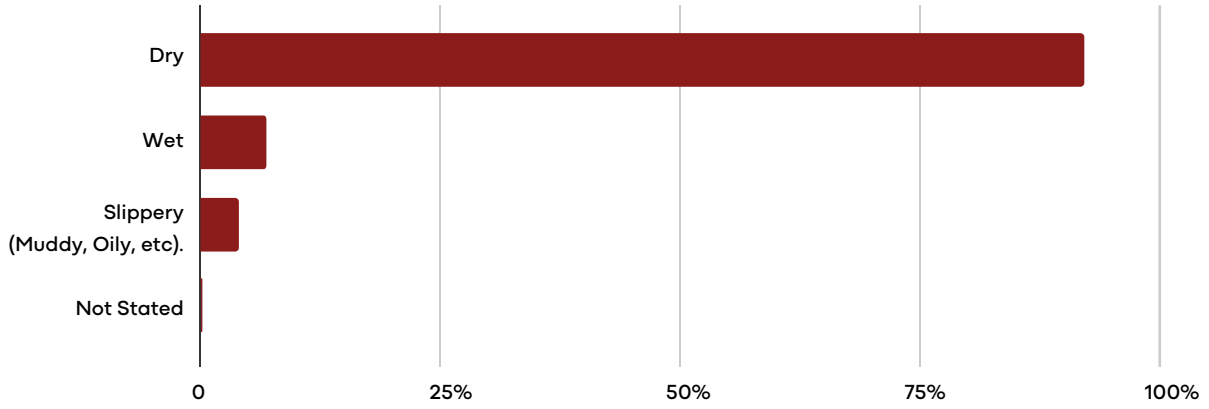


Exhibit 19. Collisions by roadway surface conditions

3.8. Collisions by Time of Day and Lighting Conditions

The distribution of collisions by time of day is shown in Exhibit 20. Hours with higher numbers of collisions coincide with typical hours of peak traffic, that is, with the morning peak hour (around 8:00 – 9:00 AM), school pick-up times (around 2:00 – 4:00 PM), and afternoon commute times (around 4:00 – 7:00 PM). Additionally, the distribution of collisions by lighting conditions is shown in Exhibit 20. While 63% of collisions occurred during daylight hours, 37% occurred while dark outside or during dusk/ dawn, with 31% of collisions occurring in areas with functioning streetlighting.

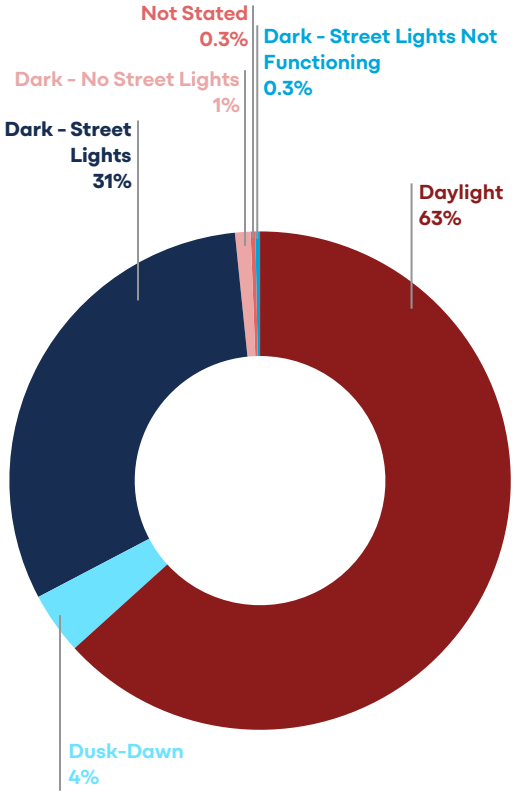


Exhibit 21. Collisions by lighting conditions

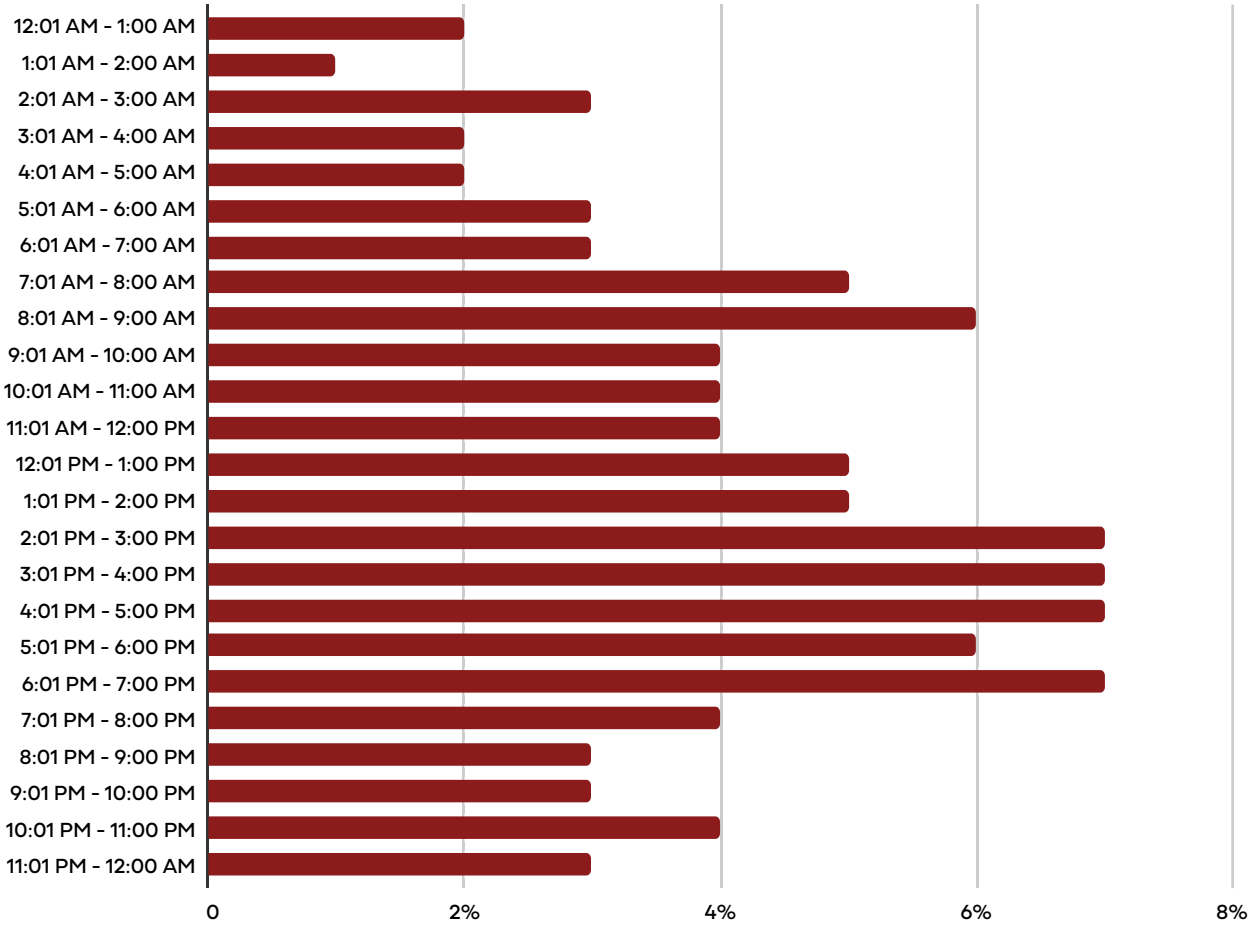


Exhibit 20. Collisions by time of day

3.9. Collisions by Day of the Week

Collisions by day of the week and severity are listed in Exhibit 22 and represented graphically in Exhibit 23. Higher numbers of collisions occurred on weekdays and lower numbers on weekends.

Day of Week	Fatal	Severe Injury	Other Visible Injury	Complaint of Pain	Property Damage Only	Total
Monday	1	4	12	34	108	159
Tuesday	-	6	17	24	125	172
Wednesday	2	2	18	34	130	186
Thursday	-	8	23	39	130	200
Friday	2	1	19	27	143	192
Saturday	2	3	15	27	96	143
Sunday	1	4	8	17	62	92
Total	**8**	**28**	**112**	**202**	**794**	**1144**

Exhibit 22. Collisions by day of the week and severity (table)

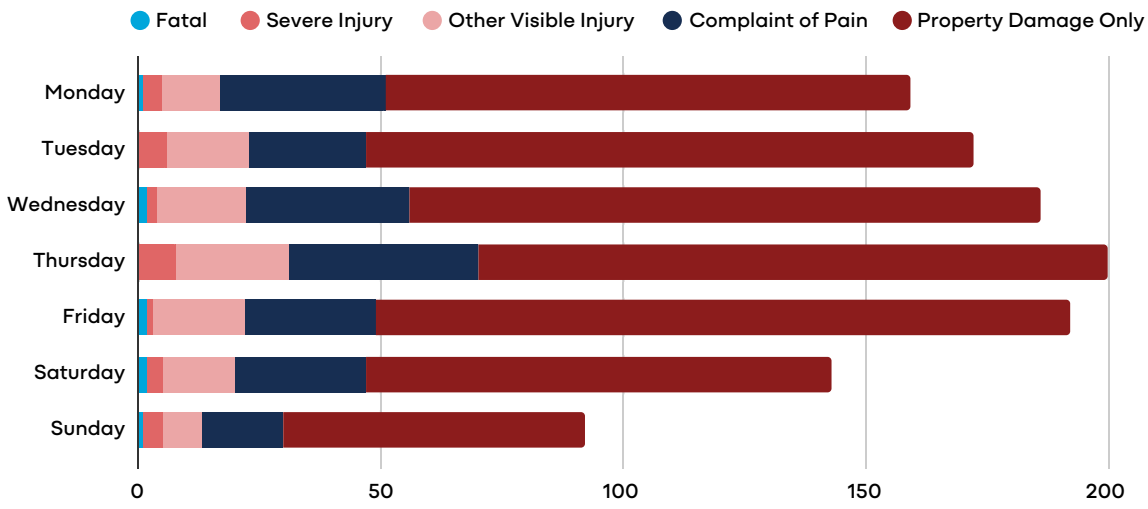


Exhibit 23. Collisions by day of the week and severity (chart)

3.10. Collisions By Year

Collisions by year and by severity are listed in Exhibit 24 and represented graphically in Exhibit 25. There was a 39% decrease in the number of collisions in 2023 versus 2019. However, fatal and severe-injury collisions more than tripled during this same time period. This combined category of fatal and severe-injury collisions represented 1.3% of all collisions in Irwindale in 2019, but 4.5% of all collisions in 2021, 2022, and 2023 combined.

Year	Fatal	Severe Injury	Other Visible Injury	Complaint of Pain	Property Damage Only	Total
2019	1	3	15	67	222	308
2020	1	2	24	39	127	193
2021	2	8	24	39	158	231
2022	2	8	26	32	155	223
2023	2	7	23	25	132	189
Total	**8**	**28**	**112**	**202**	**794**	**1144**

Exhibit 24. Collisions by year and by severity (table)

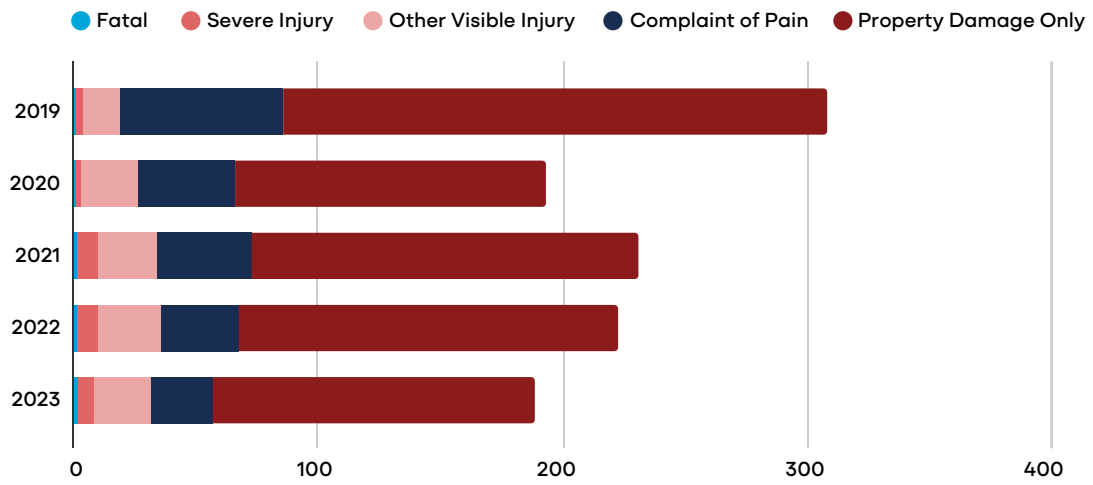


Exhibit 25. Collisions by year and by severity (chart)

3.11. Interstate Collisions

Collisions on I-210 and I-605 are not included in the Collision Trend Analysis because these facilities are within Caltrans jurisdiction. However, a basic overview of collision trends on interstate/Caltrans highways within the City of Irwindale's corporate boundaries is included here.

Between January 1, 2019 and December 31, 2023 there were **1,999 collisions** on interstate highways in Irwindale. Of these, there were **9 fatal collisions**, **34 resulting in severe injury**, **169 resulting in other visible injury**, **357 resulting in complaint of pain**, and **1,430 resulting in property damage only**. The locations and collision severity are shown on the map in Exhibit 26.

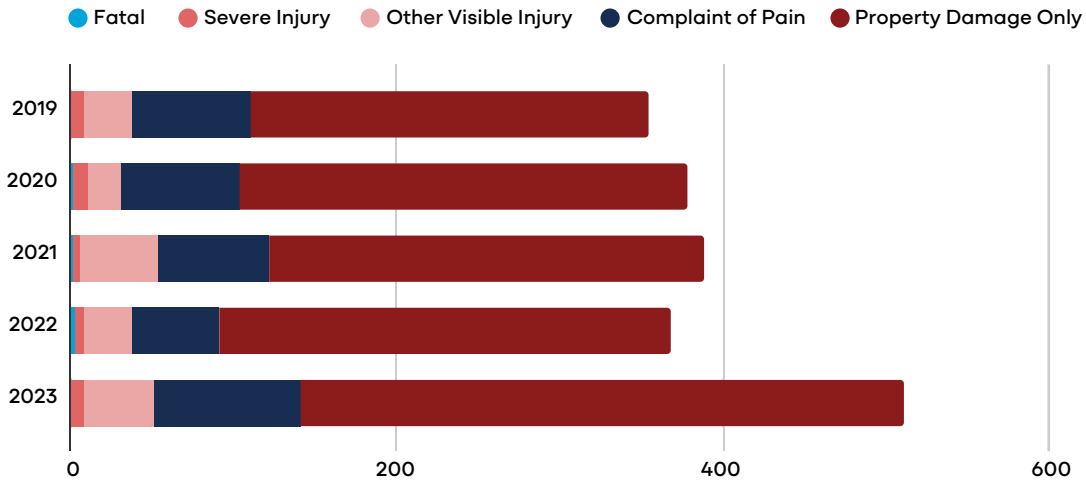


Exhibit 26-1. Collisions on interstate highways within Irwindale (chart)

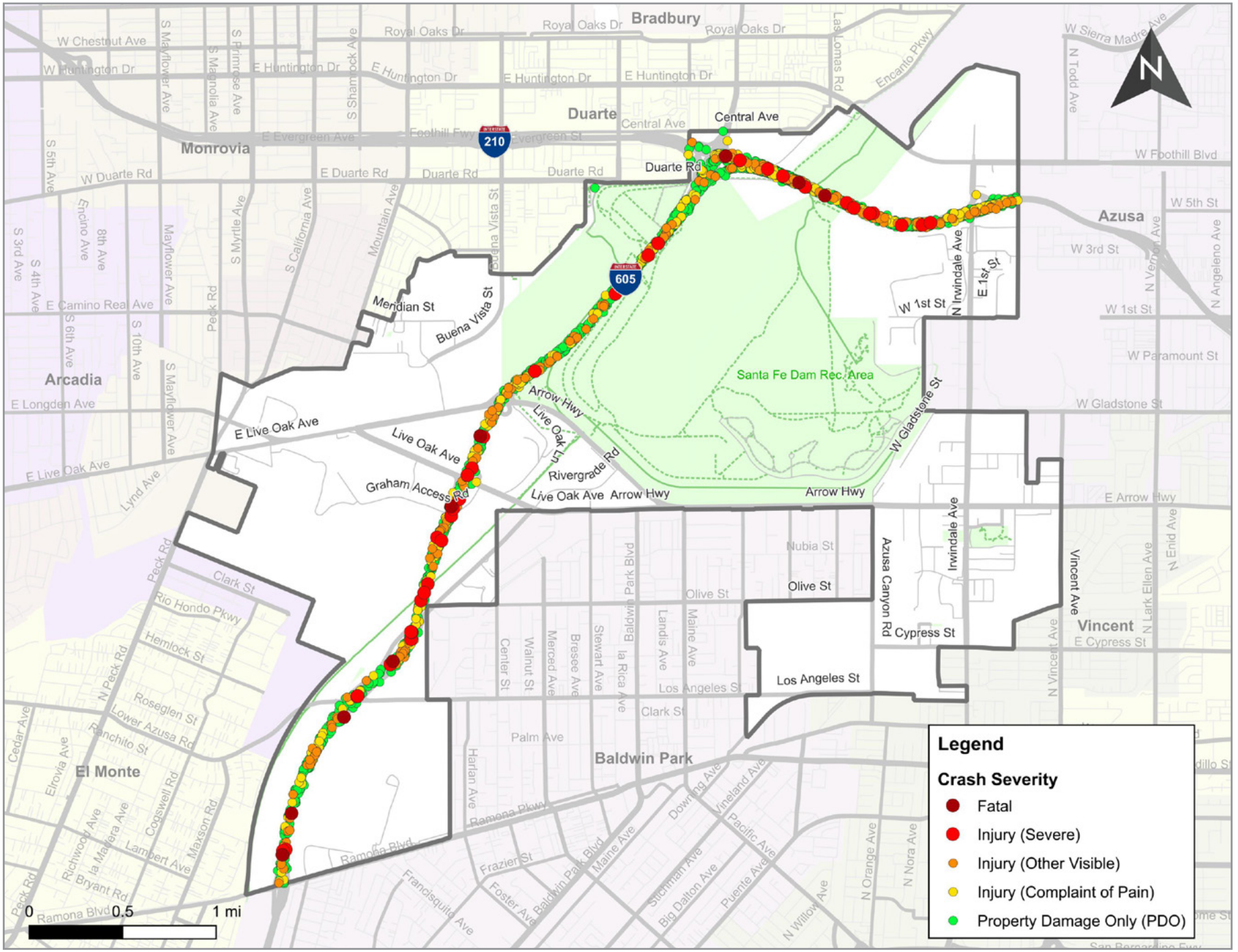


Exhibit 26-2. Collisions on interstate highways within Irwindale

3.12. High-Injury Network

To establish the City's high-injury network, network screening was conducted. Network screening is the process of studying safety conditions throughout the entire road network of the relevant jurisdiction. As in previous sections, I-210 and I-605 were excluded from this analysis due to being owned and maintained by Caltrans. The network screening examines collision trends at intersections and along corridors (sections of roadway determined by logical breaks in the road network, which are typically major signalized intersections and the City boundary). Consistent with standard practice for road network safety studies, a radius of 300 feet around each intersection was used for the analysis of intersection-related collisions, and a buffer of 100 feet around each road centerline was used for corridor collision analysis.

3.13. EPDO Ranking

This analysis establishes the high-injury network based on the Equivalent Property Damage Only (EPDO) weighted score for intersections and corridors. To determine the EPDO ranking, a weighted score was assigned to each collision event based on updated EPDO weights consistent with those used in benefit-cost analysis for the Highway Safety Improvement Program (HSIP), as shown in Exhibit 27. For intersections, the EPDO score was calculated based on collisions within a 300-foot radius of the intersection's center. For corridors, the EPDO score per mile was calculated. The top 20 signalized intersections by EPDO rank are listed in Exhibit 28.

Collision Severity	EPDO Weights[2]
Fatal	120
Severe injury	120
Other visible injury	11
Complaint of pain	6
Property damage only	1

Exhibit 27. EPDO weighted scores

2 Source: HSIP Cycle 12. https://dot.ca.gov/programs/local-assistance/fed-and-state-programs/highway-safety-improvement-program

Name	Total Collisions (2019-2023)	Fatal Collisions	Severe Injury Collisions	Other Visible Injury Collisions	Complaint of Pain Collisions	Property Damage Only Collisions	Pedestrian Collisions	Bicycle Collisions	EPDO Score	EPDO Rank
Arrow Hwy @ Irwindale Ave	73		2	3	7	61	1		760	1
N Irwindale Ave @ I-210 EB ramp	66		1	4	14	47			606	2
Lower Azusa Rd @ I-605 SB ramp	65		2	5	11	47			569	3
Arrow Hwy @ Maine Ave	25		2		6	17			545	4
Los Angeles St @ I-605 NB ramp	54		1	4	17	32			501	5
Live Oak Ave @ Rivergrade Rd	15		1	3	5	6			497	6
Arrow Hwy @ Live Oak Ave (east)	13		2	2	2	7			412	7
N Irwindale Ave @ W Foothill Blvd	60		1	3	15	41		4	374	8
Arrow Hwy @ Live Oak Ave (west)	68	1		8	9	50			358	9
Arrow Hwy @ I-605	12	1	1	2	1	7			286	10
Live Oak Ave @ Baldwin Park Rd	10		1	1	1	7			264	11
Rivergrade Rd @ Stewart Ave	8		1	1	1	5			262	12
Arrow Hwy @ Rivergrade Rd	14		1	2	4	7		1	185	13
Live Oak Ave @ Stewart Ave	11		1	1	4	5			183	14
Azusa Canyon Rd @ Cypress St	23	1		3	1	18		1	177	15
N Irwindale Ave @ Adelante St	9		1	1	1	6		1	165	16
Arrow Hwy @ Vincent Ave	36			3	9	24			157	17
Live Oak Ave (WB) @ I-605 NB ramp	51			3	10	38		1	142	18
Irwindale Ave @ Cll de Paseo	3		1			2			122	19
Arrow Hwy @ Morada St	3	1				2			122	20

Exhibit 28. Top 20 signalized intersections by EPDO rank, 2019-2023

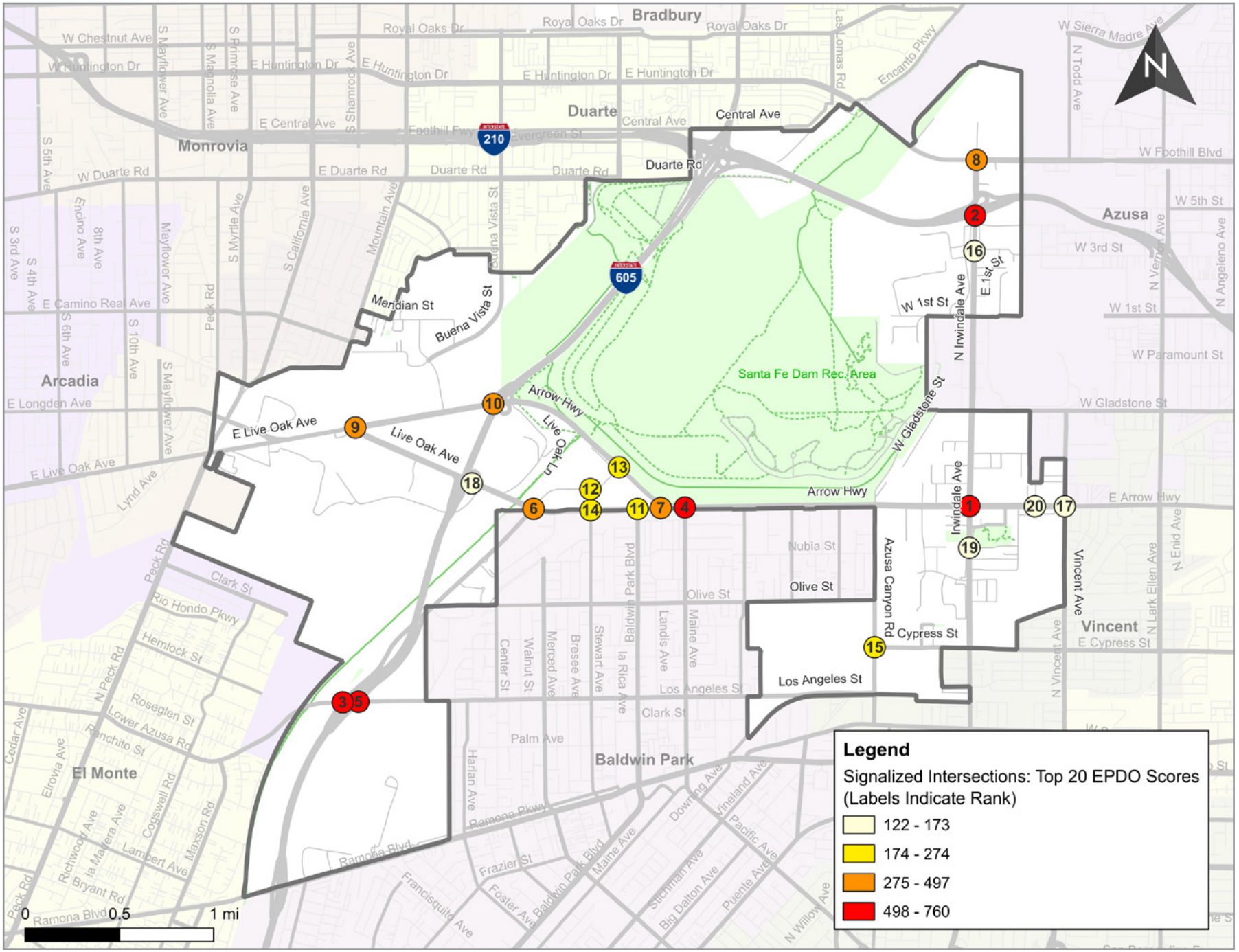


Exhibit 29. Map of the top 20 intersections by EPDO rank, 2019-2023

Corridor	Total Collisions (2019-2023)	Fatal Collisions	Severe Injury Collisions	Other Visible Injury Collisions	Complaint of Pain Collisions	Property Damage Only Collisions	Pedestrian Collisions	Bicycle Collisions	Length (miles)	EPDO Score	EPDO per mile	EPDO Rank
Arrow Hwy from Azusa Canyon Rd to Vincent Ave	118	2	3	8	11	94	2		0.9	1412	1577	1
Live Oak Ave from Arrow Hwy (West) to Arrow Hwy (East)	138		7	14	31	87		2	1.73	2134	1231	2
Lower Azusa Rd / Los Angeles St from City limits to Littlejohn St	81		2	6	17	56			0.62	661	1060	3
N Irwindale Ave from W Foothill Blvd to 1st St	81		2	4	15	60		1	0.72	744	1032	4
Arrow Hwy from Live Oak Ave (East) to Azusa Canyon Rd	51	1	1	7	10	32		1	0.9	858	956	5
Azusa Canyon Rd from Arrow Hwy to Los Angeles St	49	1	3	6	6	33	1	1	0.95	896	946	6
Irwindale Ave from Gladstone St to Cypress St	110	1	2	7	11	89	1	1	1.15	976	850	7
Huntington Dr / W Foothill Blvd from Encanto Pkwy to City limits	85		2	9	20	54		5	0.98	631	644	8
Rivergrade Rd from Arrow Hwy to Live Oak Ave	8		1	1	1	5			0.43	262	613	9
Los Angeles St from City limits to Azusa Canyon Rd	23		1	5	3	14			0.6	368	609	10
Live Oak Ave from Myrtle Ave to Arrow Hwy (West)	41	1		4	7	29	1	1	0.68	246	363	11
Arrow Hwy from Live Oak Ave (West) to Live Oak Ave (East)	57	1	3	5	10	38		1	1.84	656	357	12
Buena Vista St from Village Rd to Alpha St	4	1	1	1	1				0.56	149	267	13
Avenida Barbosa from Alpha St to Arrow Hwy	3		2		1				0.18	45	251	14
Rivergrade Rd from City limits to I-605	31	1	3	2	25				1.06	201	190	15
Longden Ave from City limits to Live Oak Ave	19			6	13				0.28	49	173	16
Myrtle Ave from City limits to Live Oak Ave	26			7	19				0.36	61	170	17
Ramona Blvd from City limits to City limits	20		4	5	11		1		1.14	135	118	18
Cypress St from Azusa Canyon Rd to City limits	17		2	3	12				0.7	69	99	19
Alpha St from Avenida Barbosa to end	8		2		6				0.42	28	67	20

Exhibit 30. Top 20 corridors by EPDO per mile rank, 2019-2023

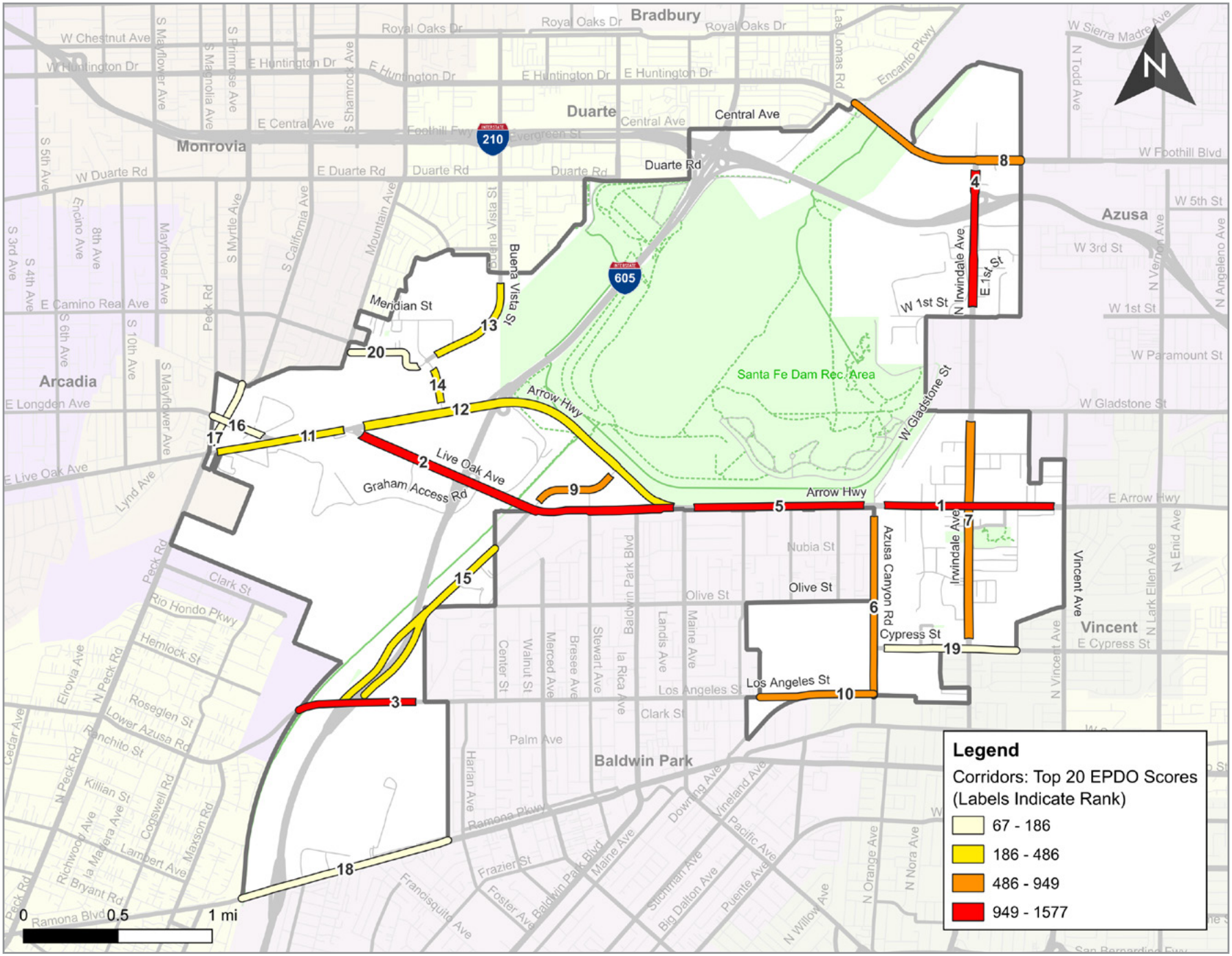


Exhibit 31. Map of the top 20 corridors by EPDO per mile rank, 2019-2023

Top 10 EPDO Intersections

Intersection 1: Arrow Hwy @ Irwindale Ave

Intersection Characteristics:

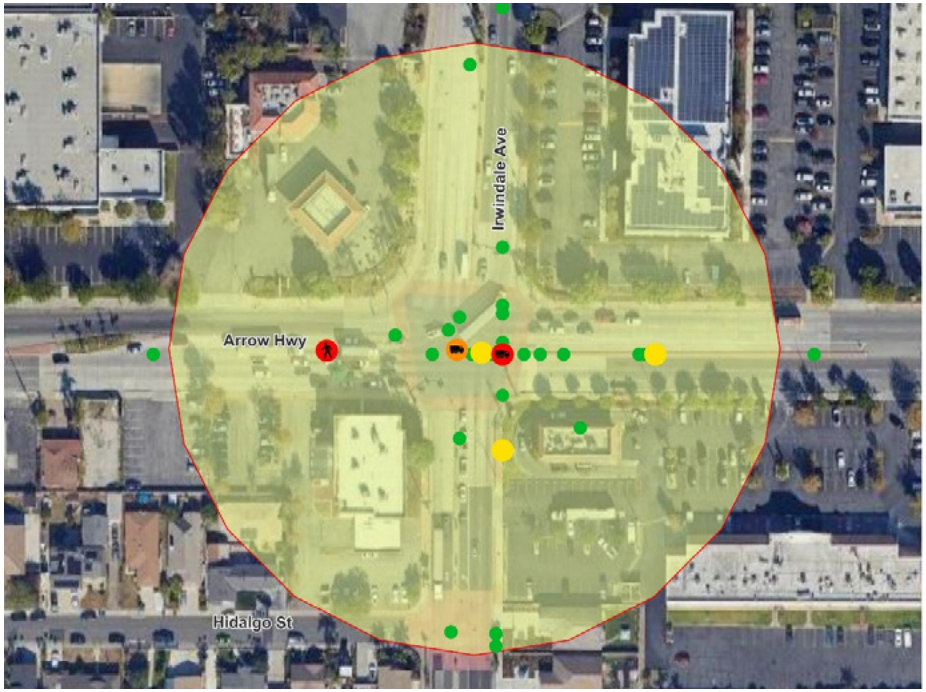
- Signalized
- 2 through lanes in the northbound, southbound, and westbound directions; 3 through lanes in the eastbound direction
- Dedicated left turn lanes on all approaches; eastbound double left-turn lanes
- Dedicated right turn lane on the southbound approach
- Brick crosswalks on all legs

EPDO Score: 760

Rainy Weather Collisions: 2

Wet/Slippery Road Surface Collisions: 4

Nighttime/Low Light Collisions: 45%



Collisions (2019-2023): 73

- Fatal: 0
- Injury: 12
- PDO: 61
- Involving Pedestrian: 1
- Involving Bicycle: 0
- Involving Motorcycle: 0
- Involving Truck: 3

Primary Contributing Factors:

1. Unsafe Speed (27%)
2. Improper Turning (23%)
3. Automobile Right of Way (8%)

Prevalent Collision Types:

1. Sideswipe (37%)
2. Broadside (18%)
3. Rear End (17%)

Prevalent Collision Patterns:

E Proceeding Straight vs E Stopped (5 occurrences) and W Proceeding Straight vs W Stopped (7 occurrences)

Top 10 EPDO Intersections

Intersection 2: N Irwindale Ave @ I-210 EB ramp

Intersection Characteristics:

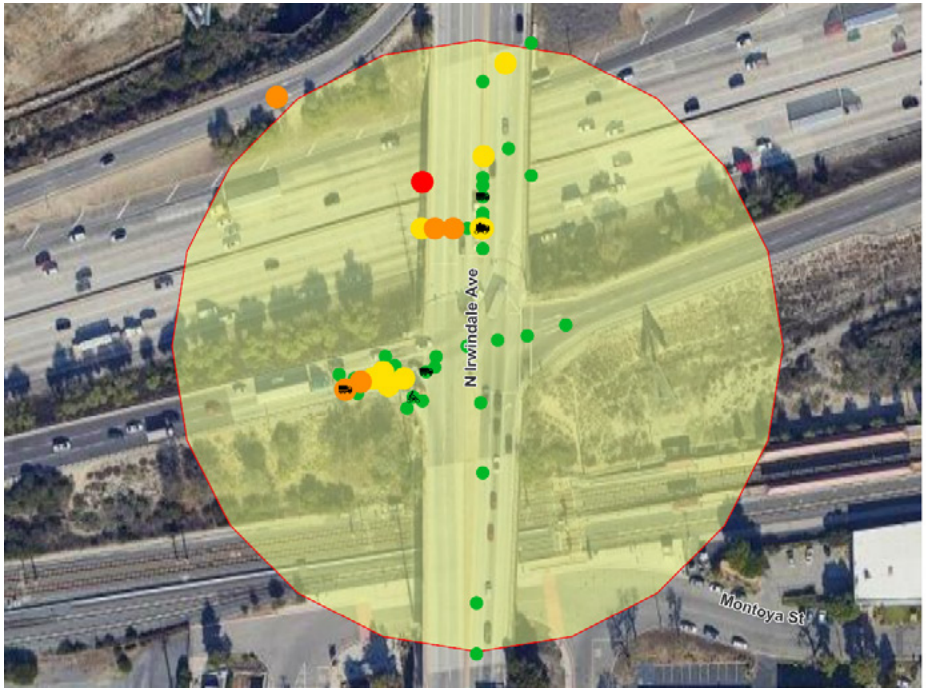
- Signalized
- 2 through lanes in the northbound, southbound, and westbound directions; 3 through lanes in the eastbound direction
- Dedicated left turn lanes on southbound and eastbound approaches; northbound has 2 through lanes and 1 right-turn lane
- One two-stripe crosswalk on east leg

EPDO Score: 606

Rainy Weather Collisions: 2

Wet/Slippery Road Surface Collisions: 6

Nighttime/Low Light Collisions: 38%



Collisions (2019-2023): 66

- Fatal: 0
- Injury: 19
- PDO: 47
- Involving Pedestrian: 0
- Involving Bicycle: 0
- Involving Motorcycle: 2
- Involving Truck: 6

Primary Contributing Factors:

1. Unsafe Speed (38%)
2. Traffic Signals and Signs (18%)
3. Improper Turning (11%)

Prevalent Collision Types:

1. Rear End (44%)
2. Broadside (23%)
3. Sideswipe (23%)

Prevalent Collision Patterns:

E Proceeding Straight vs E Stopped (16 occurrences)

Top 10 EPDO Intersections

Intersection 3: Lower Azusa Rd @ I-605 SB ramp

Intersection Characteristics:

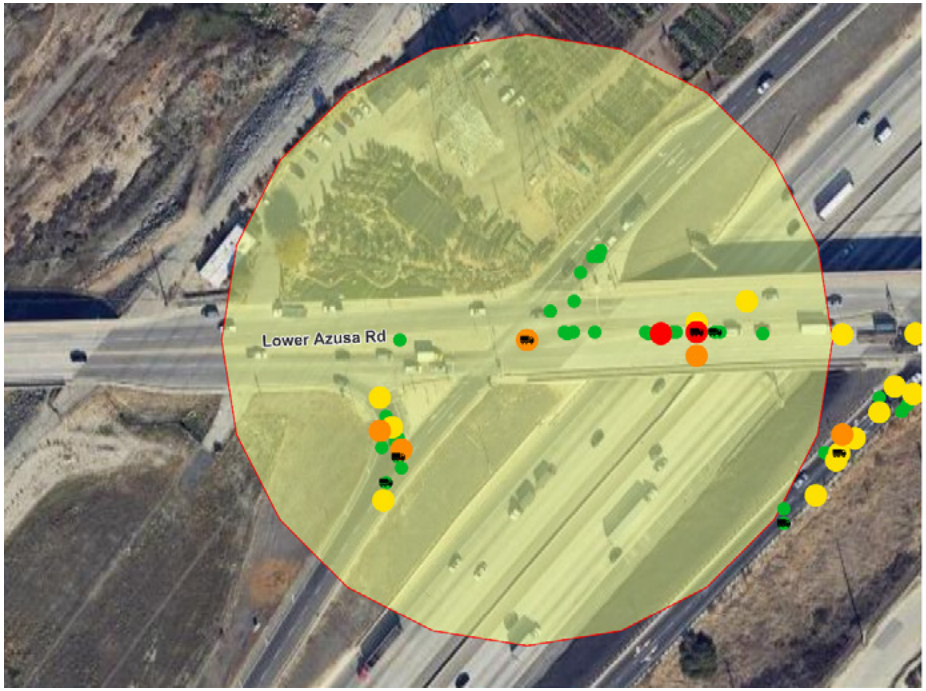
- Signalized
- 2 through lanes and 1 left-turn lane in the westbound direction; 2 through lane and 1 right-turn pocket into the entrance ramp in the eastbound direction; 1 through/left lane, 1 through/right, and 1 right-turn lane in the southbound direction
- Turning movements restricted by physical barriers in the median
- Two-stripe white crosswalks on north and south legs

EPDO Score: 569

Rainy Weather Collisions: 3

Wet/Slippery Road Surface Collisions: 7

Nighttime/Low Light Collisions: 43%



Collisions (2019-2023): 65

- Fatal: 0
- Injury: 18
- PDO: 47
- Involving Pedestrian: 0
- Involving Bicycle: 0
- Involving Motorcycle: 0
- Involving Truck: 7

Primary Contributing Factors:

1. Unsafe Speed (29%)
2. Traffic Signals and Signs (28%)
3. Improper Turning (15%)

Prevalent Collision Types:

1. Rear End (34%)
2. Broadside (34%)
3. Sideswipe (18%)

Prevalent Collision Patterns:

S Proceeding Straight vs S Stopped (7 occurrences)

Top 10 EPDO Intersections

Intersection 4: Arrow Hwy @ Maine Ave

Intersection Characteristics:

- Signalized, T-intersection
- 2 through-lanes in the eastbound direction; 3 through lanes in the eastbound direction; 2 left-turn lanes and 1 right-turn lane in the northbound direction
- Dedicated left turn lanes on the westbound and northbound approaches; northbound double left-turn lanes
- Zebra striped crosswalks on south and east legs of intersection
- Bicycle infrastructure on Maine Ave

EPDO Score: 545

Rainy Weather Collisions: 1

Wet/Slippery Road Surface Collisions: 2

Nighttime/Low Light Collisions: 44%

Collisions (2019-2023): 25

Fatal: 0

Injury: 8

PDO: 17

Involving Pedestrian: 0

Involving Bicycle: 0

Involving Motorcycle: 1

Involving Truck: 2

Primary Contributing Factors:

1. Unsafe Speed (36%)
2. Pedestrian Right of Way (24%)
3. Driving Under Influence (12%)

Prevalent Collision Types:

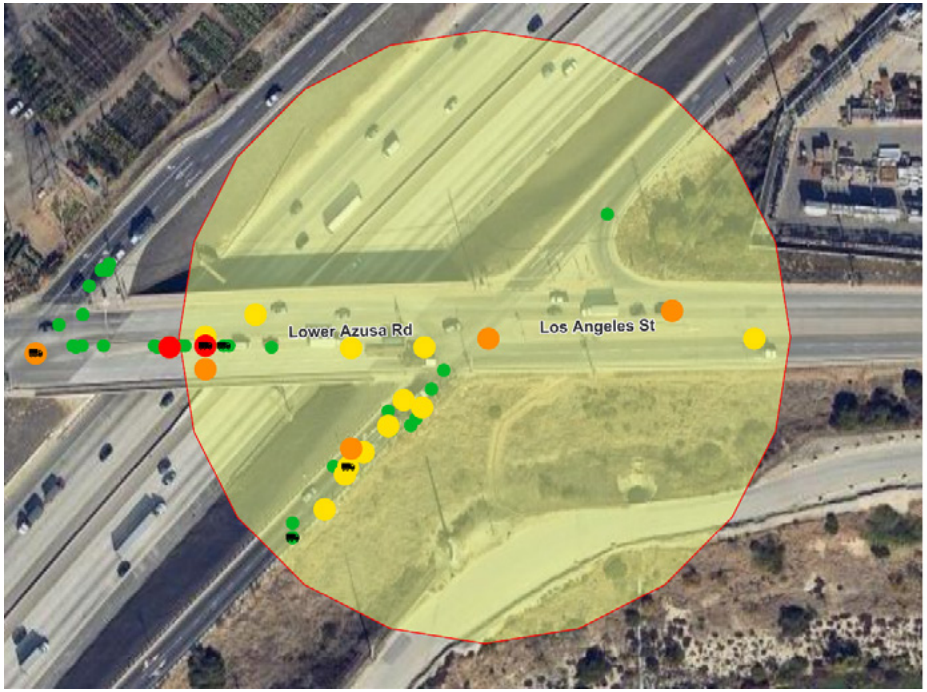
1. Rear End (40%)
2. Broadside (36%)
3. Sideswipe (12%)

Prevalent Collision Patterns:

E Proceeding Straight vs E Stopped (3 occurrences) and E Proceeding Straight vs N Making Left Turn (3 occurrences)

Top 10 EPDO Intersections

Intersection 5: Los Angeles St @ I-605 NB ramp



Intersection Characteristics:

- Signalized
- 2 through lanes in the northbound, southbound, eastbound, and westbound directions
- Dedicated left turn lane on eastbound approach; northbound 1 through/ right-turn lane and 1 through/left-turn lane
- Dedicated right turn pocket on the westbound approach onto the ramp
- Two-stripe white crosswalks on north and south legs

EPDO Score: 501

Rainy Weather Collisions: 3

Wet/Slippery Road Surface Collisions: 6

Nighttime/Low Light Collisions: 46%

Collisions (2019-2023): 54

Fatal: 0

Injury: 22

PDO: 32

Involving Pedestrian: 0

Involving Bicycle: 0

Involving Motorcycle: 0

Involving Truck: 6

Primary Contributing Factors:

1. Unsafe Speed (37%)
2. Traffic Signals and Signs (24%)
3. Improper Turning (11%)

Prevalent Collision Types:

1. Rear End (39%)
2. Broadside (30%)
3. Sideswipe (22%)

Prevalent Collision Patterns:

N Proceeding Straight vs N Stopped (15 occurrences)

Top 10 EPDO Intersections

Intersection 6: Live Oak Ave @ Rivergrade Rd

Intersection Characteristics:

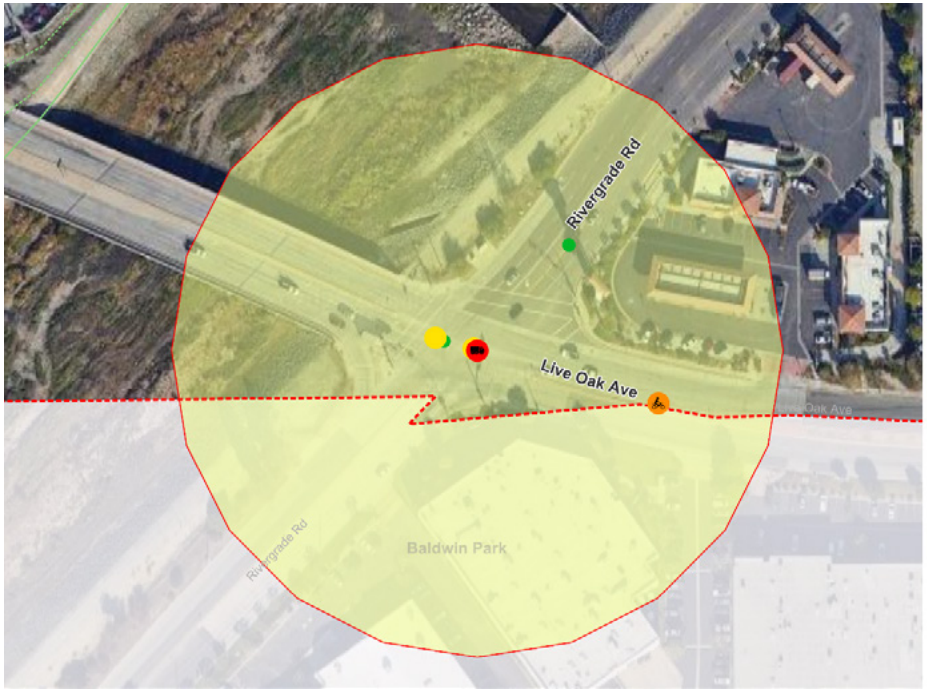
- Signalized
- 2 through lanes in the northbound, southbound, and westbound directions; 3 through lanes in the eastbound direction
- Dedicated left turn lanes on all approaches
- Dedicated right turn lane on the southbound and westbound approach; right-turn pocket on eastbound approach
- Two-stripe white crosswalks on all legs

EPDO Score: 497

Rainy Weather Collisions: 1

Wet/Slippery Road Surface Collisions: 2

Nighttime/Low Light Collisions: 13%



Collisions (2019-2023): 15

- Fatal: 0
- Injury: 9
- PDO: 6
- Involving Pedestrian: 0
- Involving Bicycle: 0
- Involving Motorcycle: 1
- Involving Truck: 2

Primary Contributing Factors:

1. Traffic Signals and Signs (53%)
2. Unsafe Speed (20%)
3. Unsafe Starting or Backing (13%)

Prevalent Collision Types:

1. Broadside (53%)
2. Rear End (27%)
3. Hit Object & Sideswipe (7% each)

Prevalent Collision Patterns:

W Proceeding Straight vs N Proceeding Straight (1 occurrence) and W Proceeding Straight vs S Proceeding Straight (1 occurrence). (Note: No single pattern dominates; multiple patterns have 1 occurrence.)

Top 10 EPDO Intersections

Intersection 7: Arrow Hwy @ Live Oak Ave (east)

Intersection Characteristics:

- Signalized, t-intersection
- 2 through lanes in the eastbound and westbound directions
- Northbound approach excluded from the intersection
- Dedicated left turn lane on eastbound approach; southbound double left-turn lanes
- Dedicated right turn lane on the southbound approach
- Two-stripe white crosswalk on west leg

EPDO Score: 412

Rainy Weather Collisions: 2

Wet/Slippery Road Surface Collisions: 4

Nighttime/Low Light Collisions: 23%

Collisions (2019-2023): 13

- Fatal: 0
- Injury: 6
- PDO: 7
- Involving Pedestrian: 0
- Involving Bicycle: 0
- Involving Motorcycle: 1
- Involving Truck: 2

Primary Contributing Factors:

1. Unsafe Speed (31%)
2. Automobile Right of Way (23%)
3. Improper Passing (15%)

Prevalent Collision Types:

1. Broadside (23%)
2. Hit Object (23%)
3. Sideswipe (23%)

Prevalent Collision Patterns:

E Making Left Turn vs W Proceeding Straight (2 occurrences) and W Making Left Turn vs (2 occurrences)

Top 10 EPDO Intersections

Intersection 8: N Irwindale Ave @ W Foothill Blvd

Intersection Characteristics:

- Signalized
- 1 through lane in the northbound direction; and 2 through lanes in the southbound, eastbound, and westbound directions (southbound approach is a private property driveway)
- Dedicated left turn lane on northbound and eastbound approaches; westbound double left-turn lanes; northbound through/left-turn lane
- Dedicated right turn lane on the eastbound approach; double right-turn lanes northbound
- Two-stripe white crosswalks on south and west legs

EPDO Score: 374

Rainy Weather Collisions: 3

Wet/Slippery Road Surface Collisions: 9

Nighttime/Low Light Collisions: 28%

Collisions (2019-2023): 60

- Fatal: 0
- Injury: 19
- PDO: 41
- Involving Pedestrian: 0
- Involving Bicycle: 4
- Involving Motorcycle: 1
- Involving Truck: 9

Primary Contributing Factors:

1. Unsafe Speed (27%)
2. Improper Turning (23%)
3. Automobile Right of Way (8%)

Prevalent Collision Types:

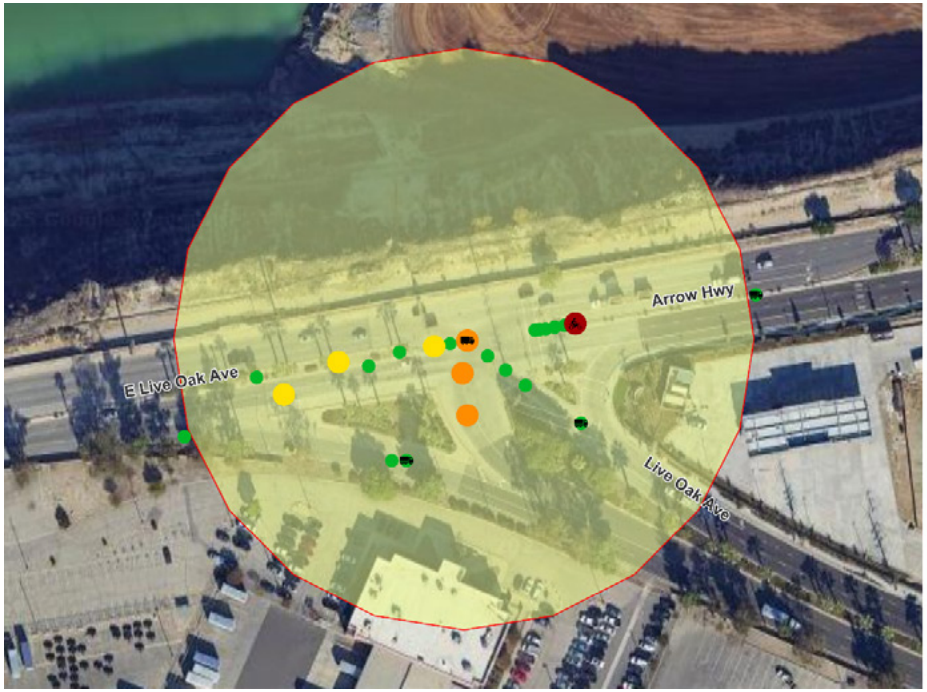
1. Sideswipe (37%)
2. Broadside (18%)
3. Rear End (17%)

Prevalent Collision Patterns:

N Making Right Turn vs N Making Right Turn (4 occurrences) and N Making Right Turn vs N Proceeding Straight (2 occurrences)

Top 10 EPDO Intersections

Intersection 9: Arrow Hwy @ Live Oak Ave (west)



Intersection Characteristics:

- Signalized
- 2 through lanes each on the eastbound and westbound approaches
- Double left turn lanes the westbound approach
- Dedicated right turn lane on the eastbound approach
- One right turn lane and two left turn lanes on the northbound (Live Oak Ave) approach
- Two-stripe white crosswalks on the east leg only
- Landscaped medians at all approaches
- Splitter islands on the eastbound and northbound approaches

EPDO Score: 68

Rainy Weather Collisions: 3

Wet/Slippery Road Surface Collisions: 4

Nighttime/Low Light Collisions: 60%

Collisions (2019-2023): 358

- Fatal: 1
- Injury: 17
- PDO: 50
- Involving Pedestrian: 0
- Involving Bicycle: 0
- Involving Motorcycle: 1
- Involving Truck: 5

Primary Contributing Factors:

1. Automobile Right of Way (25%)
2. Unsafe Speed (24%)
3. Improper Turning (19%)

Prevalent Collision Types:

1. Hit Object (31%)
2. Broadside (29%)
3. Sideswipe (16%)

Prevalent Collision Patterns:

E Making Left Turn vs W Proceeding Straight (2 occurrences) and W Making Left Turn vs (2 occurrences)

Top 10 EPDO Intersections

Intersection 10: Arrow Hwy @ I-605

Intersection Characteristics:

- Signalized, t-intersection
- 2 through lanes in the eastbound and westbound directions
- Dedicated left turn lane on westbound approaches
- Dedicated right turn pocket on the eastbound approach
- Two-stripe white crosswalks on south leg

EPDO Score: 286

Rainy Weather Collisions: 1

Wet/Slippery Road Surface Collisions: 1

Nighttime/Low Light Collisions: 42%

Collisions (2019-2023): 12

- Fatal: 1
- Injury: 4
- PDO: 7
- Involving Pedestrian: 0
- Involving Bicycle: 0
- Involving Motorcycle: 0
- Involving Truck: 1

Primary Contributing Factors:

1. Traffic Signals and Signs (25%)
2. Unsafe Speed (25%)
3. Improper Turning (17%)

Prevalent Collision Types:

1. Broadside (33%)
2. Rear End (25%)
3. Sideswipe (25%)

Prevalent Collision Patterns:

W Proceeding Straight vs S Making Left Turn (2 occurrences)

Top 10 EPDO Corridors

Corridor 1: Arrow Hwy from Azusa Canyon Rd to Vincent Ave

Legend

- Crashes Involving Pedestrians
- Crashes Involving Bicycles
- Crashes Involving Motorcycles
- Crashes Involving Trucks

Crash Severity

- Fatal
- Injury (Severe)
- Injury (Other Visible)
- Injury (Complaint of Pain)
- Property Damage Only (PDO)

Irwindale City Boundary

N

0 500 1,000 ft

Corridor Characteristics:

- 0.90 miles
- 3 eastbound lanes and 2 westbound lanes with landscaped median and left turn pocket lanes
- Sidewalks on both sides

EPDO Per Mile: 1577

Rainy Weather Collisions: 3

Wet/Slippery Road Surface Collisions: 7

Nighttime/Low Light Collisions: 44%

Collisions (2019-2023): 118

- Fatal: 2
- Injury: 22
- PDO: 94
- Involving Pedestrian: 2
- Involving Bicycle: 0
- Involving Motorcycle: 3
- Involving Truck: 6

Primary Contributing Factors:

1. Unsafe Speed (39%)
2. Improper Turning (15%)
3. Auto ROW (10%)

Prevalent Collision Types:

1. Rear End (36%)
2. Broadside (25%)
3. Sideswipe (19%)

Prevalent Collision Patterns:

W Proceeding Straight (27), E Proceeding Straight (22), N Proceeding Straight (11)

Top 10 EPDO Corridors

Corridor 2: Live Oak Ave from Arrow Hwy (West) to Arrow Hwy (East)

Corridor Characteristics:

- 1.73 miles
- 2-3 eastbound lanes and 2-3 westbound lanes with landscaped medians and left-turn pocket lanes
- Mix of sidewalks and no sidewalks on both sides

EPDO Per Mile: 1231

Rainy Weather Collisions: 6

Wet/Slippery Road Surface Collisions: 9

Nighttime/Low Light Collisions:40%

Collisions (2019-2023): 110

- Fatal: 1
- Injury: 20
- PDO: 89
- Involving Pedestrian: 1
- Involving Bicycle: 1
- Involving Motorcycle: 1
- Involving Truck: 4

Primary Contributing Factors:

1. Unsafe Speed (34%)
2. Traffic Signals and Signs (14%)
3. Improper Turning (9%)

Prevalent Collision Types:

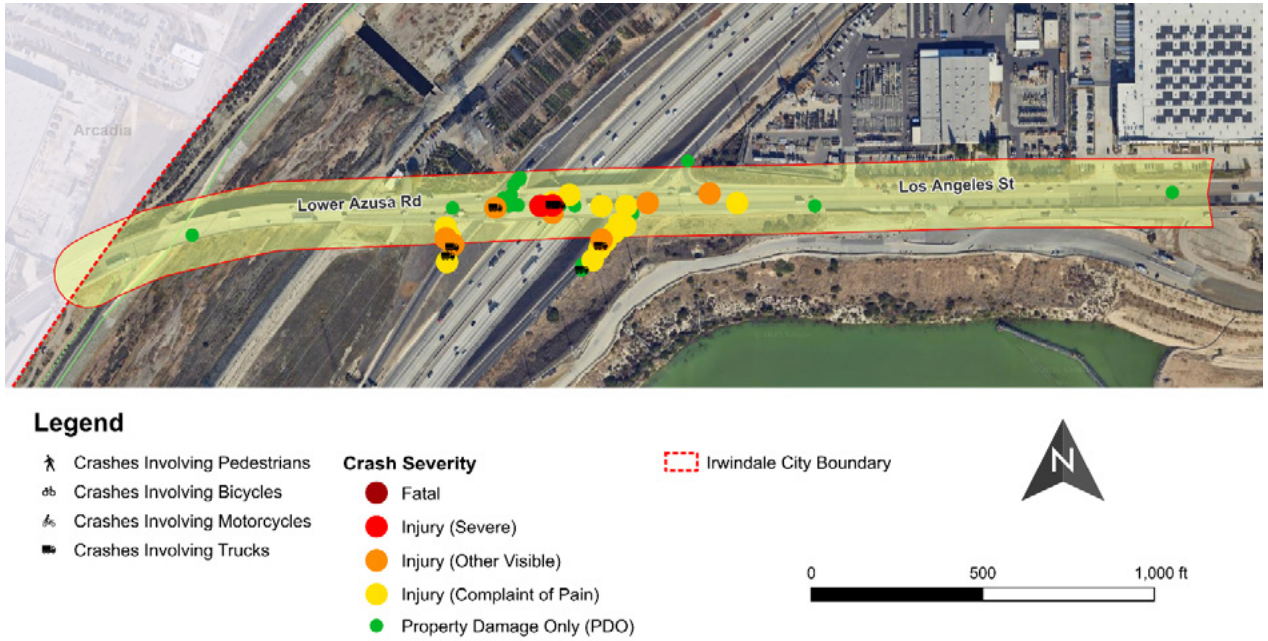
1. Rear End (45%)
2. Broadside (22%)
3. Sideswipe (16%)

Prevalent Collision Patterns:

E Proceeding Straight (34), N Proceeding Straight (28), W Proceeding Straight (19)

Top 10 EPDO Corridors

Corridor 3: Lower Azusa Rd / Los Angeles St from City Limits to Littlejohn St



Corridor Characteristics:

- 0.62 miles
- 2 eastbound lanes and 2 westbound lanes with two-way left-turn lane median
- Sidewalks on both sides

EPDO Per Mile: 1060

Rainy Weather Collisions: 4

Wet/Slippery Road Surface Collisions: 10

Nighttime/Low Light Collisions:35%

Collisions (2019-2023): 81

- Fatal: 0
- Injury: 25
- PDO: 56
- Involving Pedestrian: 0
- Involving Bicycle: 0
- Involving Motorcycle: 0
- Involving Truck: 5

Primary Contributing Factors:

1. Unsafe Speed (36%)
2. Traffic Signals and Signs (25%)
3. Improper Turning (10%)

Prevalent Collision Types:

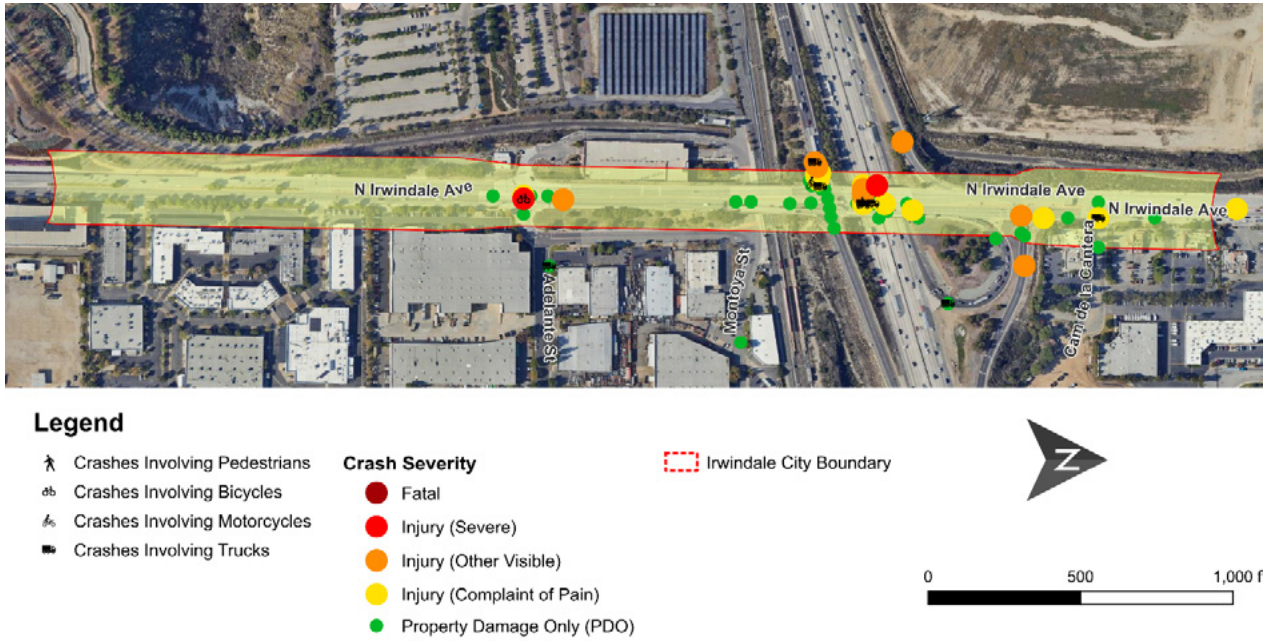
1. Rear End (38%)
2. Broadside (32%)
3. Sideswipe (16%)

Prevalent Collision Patterns:

E Proceeding Straight (17), N Proceeding Straight (15), W Proceeding Straight (12)

Top 10 EPDO Corridors

Corridor 4: N Irwindale Ave from W Foothill Blvd to 1st St



Corridor Characteristics:

- 0.72 miles
- 2-3 northbound lanes and 2-3 southbound lanes with a mix of concrete, landscaped, and striped medians
- Multiple areas with no sidewalks

EPDO Per Mile: 1032

Rainy Weather Collisions: 3

Wet/Slippery Road Surface Collisions: 7

Nighttime/Low Light Collisions:36%

Collisions (2019-2023): 81

- Fatal: 0
- Injury: 21
- PDO: 60
- Involving Pedestrian: 0
- Involving Bicycle: 1
- Involving Motorcycle: 2
- Involving Truck: 7

Primary Contributing Factors:

1. Unsafe Speed (23%)
2. Traffic Signals and Signs (19%)
3. Improper Turning (15%)

Prevalent Collision Types:

1. Rear End (32%)
2. Sideswipe (26%)
3. Broadside (25%)

Prevalent Collision Patterns:

N Proceeding Straight (17), E Proceeding Straight (14), S Proceeding Straight (11)

Top 10 EPDO Corridors

Corridor 5: Arrow Hwy from Live Oak Ave (East) to Azusa Canyon Rd

Corridor Characteristics:

- 0.90 miles
- 3 eastbound lanes and 3 westbound lanes with landscaped median and left turn pocket lanes
- Sidewalks on both sides

Legend

- Crashes Involving Pedestrians
- Crashes Involving Bicycles
- Crashes Involving Motorcycles
- Crashes Involving Trucks

Crash Severity

- Fatal
- Injury (Severe)
- Injury (Other Visible)
- Injury (Complaint of Pain)
- Property Damage Only (PDO)

- Irwindale City Boundary

N

0 500 1,000 ft

EPDO Per Mile: 956

Rainy Weather Collisions: 1

Wet/Slippery Road Surface Collisions: 2

Nighttime/Low Light Collisions: 75%

Collisions (2019-2023): 51

- Fatal: 1
- Injury: 18
- PDO: 32
- Involving Pedestrian: 0
- Involving Bicycle: 1
- Involving Motorcycle: 2
- Involving Truck: 9

Primary Contributing Factors:

1. Unsafe Speed (41%)
2. Auto ROW (31%)
3. Improper Turning (14%)

Prevalent Collision Types:

1. Broadside (33%)
2. Rear End (25%)
3. Hit Object (24%)

Prevalent Collision Patterns:

E Proceeding Straight (14), N Making Left Turn (6), W Proceeding Straight (6)

Top 10 EPDO Corridors

Corridor 6: Azusa Canyon Rd from Arrow Hwy to Los Angeles St

Corridor Characteristics:

- 0.95 miles
- 2 northbound lanes and 2 southbound lanes with two-way left-turn lane median
- Sidewalks on both sides
- Parking on southbound side

EPDO Per Mile: 946

Rainy Weather Collisions: 0

Wet/Slippery Road Surface Collisions: 1

Nighttime/Low Light Collisions:39%

Collisions (2019-2023): 49

- Fatal: 1
- Injury: 15
- PDO: 33
- Involving Pedestrian: 1
- Involving Bicycle: 1
- Involving Motorcycle: 1
- Involving Truck: 3

Primary Contributing Factors:

1. Unsafe Speed (24%)
2. Traffic Signals and Signs (14%)
3. Driving or Bicycling Under the Influence (14%)

Prevalent Collision Types:

1. Hit Object (24%)
2. Sideswipe (22%)
3. Head On (20%)

Prevalent Collision Patterns:

W Proceeding Straight (10), S Proceeding Straight (8), E Proceeding Straight (5)

Top 10 EPDO Corridors

Corridor 7: Irwindale Ave from Gladstone St to Cypress St

Corridor Characteristics:

- 1.15 miles
- 2 northbound lanes and 2 southbound lanes with landscaped medians and left-turn pocket lanes
- Red-colored crosswalks
- Sidewalks on both sides

EPDO Per Mile: 850

Rainy Weather Collisions: 5

Wet/Slippery Road Surface Collisions: 7

Nighttime/Low Light Collisions:44%

Collisions (2019-2023): 110

- Fatal: 1
- Injury: 20
- PDO: 89
- Involving Pedestrian: 1
- Involving Bicycle: 1
- Involving Motorcycle: 1
- Involving Truck: 4

Primary Contributing Factors:

1. Unsafe Speed (35%)
2. Improper Turning (15%)
3. Unsafe Lane Change (13%)

Prevalent Collision Types:

1. Broadside (28%)
2. Rear End (26%)
3. Sideswipe (19%)

Prevalent Collision Patterns:

N Proceeding Straight (25), E Proceeding Straight (13), S Proceeding Straight (13)

Top 10 EPDO Corridors

Corridor 8: Huntington Dr / W Foothill Blvd from Encanto Pkwy to City limits

Corridor Characteristics:

- 0.98 miles
- 2 eastbound lanes and 2 westbound lanes with double-yellow striped median
- Sidewalk on westbound side from split of Huntington Dr and W Foothill Blvd to Irwindale Ave and on both sides until City limits
- Mix of two-way left-turn lane and solid medians with left-turn pockets between Irwindale Ave and City limits

EPDO Per Mile: 644

Rainy Weather Collisions: 3

Wet/Slippery Road Surface Collisions: 9

Nighttime/Low Light Collisions:46%

Legend

- Crashes Involving Pedestrians
- Crashes Involving Bicycles
- Crashes Involving Motorcycles
- Crashes Involving Trucks

Crash Severity

- Fatal
- Injury (Severe)
- Injury (Other Visible)
- Injury (Complaint of Pain)
- Property Damage Only (PDO)

Irwindale City Boundary

N

0 500 1,000 ft

Collisions (2019-2023): 85

- Fatal: 0
- Injury: 31
- PDO: 54
- Involving Pedestrian: 0
- Involving Bicycle: 5
- Involving Motorcycle: 1
- Involving Truck: 9

Primary Contributing Factors:

1. Unsafe Speed (35%)
2. Improper Turning (18%)
3. Auto ROW (12%)

Prevalent Collision Types:

1. Sideswipe (29%)
2. Rear End (27%)
3. Broadside (19%)

Prevalent Collision Patterns:

W Proceeding Straight (19), N Making Right Turn (10), E Making Right Turn (8)

Top 10 EPDO Corridors

Corridor 9: Rivergrade Rd from Arrow Hwy to Live Oak Ave

Legend

- Crashes Involving Pedestrians
- Crashes Involving Bicycles
- Crashes Involving Motorcycles
- Crashes Involving Trucks

Crash Severity

- Fatal
- Injury (Severe)
- Injury (Other Visible)
- Injury (Complaint of Pain)
- Property Damage Only (PDO)

Irwindale City Boundary

N

0 500 1,000 ft

Corridor Characteristics:

- 0.43 miles
- 2 eastbound lanes and 2 westbound lanes with two-way left-turn lane medians
- Sidewalks on both sides, except on the westbound side after the road curves southwestwards.

EPDO Per Mile: 613

Rainy Weather Collisions: 0

Wet/Slippery Road Surface Collisions: 0

Nighttime/Low Light Collisions:75%

Collisions (2019-2023): 8

- Fatal: 0
- Injury: 3
- PDO: 5
- Involving Pedestrian: 0
- Involving Bicycle: 0
- Involving Motorcycle: 0
- Involving Truck: 1

Primary Contributing Factors:

1. Unsafe Lane Change (38%)
2. Auto ROW (25%)
3. Unsafe Speed (13%)

Prevalent Collision Types:

1. Hit Object (63%)
2. Sideswipe (25%)
3. Broadside (13%)

Prevalent Collision Patterns:

N Proceeding Straight (4)

Top 10 EPDO Corridors

Corridor 10: Los Angeles St from City limits to Azusa Canyon Rd

Legend

- Crashes Involving Pedestrians
- Crashes Involving Bicycles
- Crashes Involving Motorcycles
- Crashes Involving Trucks

Crash Severity

- Fatal
- Injury (Severe)
- Injury (Other Visible)
- Injury (Complaint of Pain)
- Property Damage Only (PDO)

Irwindale City Boundary

N

0 500 1,000 ft

Corridor Characteristics:

- 0.60 miles
- 2 eastbound lanes and 2 westbound lanes with double-solid yellow line median
- Sidewalks on both sides

EPDO Per Mile: 609

Rainy Weather Collisions: 0

Wet/Slippery Road Surface Collisions: 0

Nighttime/Low Light Collisions:65%

Collisions (2019-2023): 23

- Fatal: 0
- Injury: 9
- PDO: 14
- Involving Pedestrian: 0
- Involving Bicycle: 0
- Involving Motorcycle: 1
- Involving Truck: 1

Primary Contributing Factors:

1. Unsafe Speed (30%)
2. Traffic Signals and Signs (26%)
3. Driving or Bicycling Under the Influence (13%)

Prevalent Collision Types:

1. Broadside (26%)
2. Hit Object (22%)
3. Sideswipe (17%)

Prevalent Collision Patterns:

E Proceeding Straight (7), S Proceeding Straight (5), S Making Right Turn (2)

4. PUBLIC AND STAKEHOLDER INPUT

Public outreach and stakeholder input played a substantial role in identifying the areas where transportation safety improvements are needed and ensuring community members were able to directly influence the development of the plan. A variety of outreach efforts were employed throughout the duration of the project, including in-person and virtual events and feedback opportunities. This section describes the project website that was created to gather community input and share project information; the community events that were held; and the inter- and intra-governmental coordination that took place.

4.1. Public Website and Survey

A project website was created on the Social Pinpoint platform to inform the public about the SS4A Action Plan and provide a platform for community members to provide input. The website included an online interactive map, where stakeholders could submit comments about road safety conditions associated with specific travel modes and locations; and a survey intended to collect data regarding road safety conditions and needs in Irwindale.

Publicization of the website was undertaken by the City's social media team. The website was open for receiving comments from July 25 to November 30, 2024. The website received 68 comments provided by multiple stakeholders (including comments submitted from in-person events), and 66 survey responses (including surveys submitted at in-person events). The modes associated with the comments are shown in exhibit 33.. Exhibit 32 displays the top portion of the homepage for the website, found at:

https://safetyplan.mysocialpinpoint.com/irwindale-ss4a

Visitors to the page were invited to provide comments on an interactive project map and share their thoughts through a project survey.

Exhibit 32. Screenshot of interactive website homepage

The interactive map feature on the website allowed the public to drag icons to a location within the city and leave a comment regarding driving, pedestrian, bicycle, or other suggestions at that location. The comments on the interactive map were integrated into the recommendations in this SS4A. Exhibit 34 shows the interactive map feature from the website.

Some of the top locations for public comment, along with the common comment themes, are listed below:

- **Irwindale Avenue directly west of City Hall:** Multiple complaints of speeding, a lack of signage alerting vehicles to the presence of children, and poorly timed crossings and traffic signals.

- **San Gabriel River Trail:** Multiple complaints about homeless encampments making users feel unsafe on the trail, poor connectivity between the trail and bike routes on Peck Road and Myrtle Ave at the Live Oak Avenue crossing, and multiple requests for a bridge crossing Arrow Highway due to feeling unsafe around high-speed vehicles and multiple collisions.

- **Arrow Highway:** Complaints about a lack of ADA-accessible crossings and sidewalks, no bicycle connectivity, poor lighting, poor striping, speeding, and distractions caused by the palm trees in the median.

- **Overall:** Many people expressed concerns over speeding on both major roadways and residential streets, poor pedestrian crossings (particularly in terms of safety for children), and other location-specific comments like requests for red curbs, bad roadway alignments (Irwindale Avenue at Calle del Norte and Juarez Street), and sidewalks and lighting.

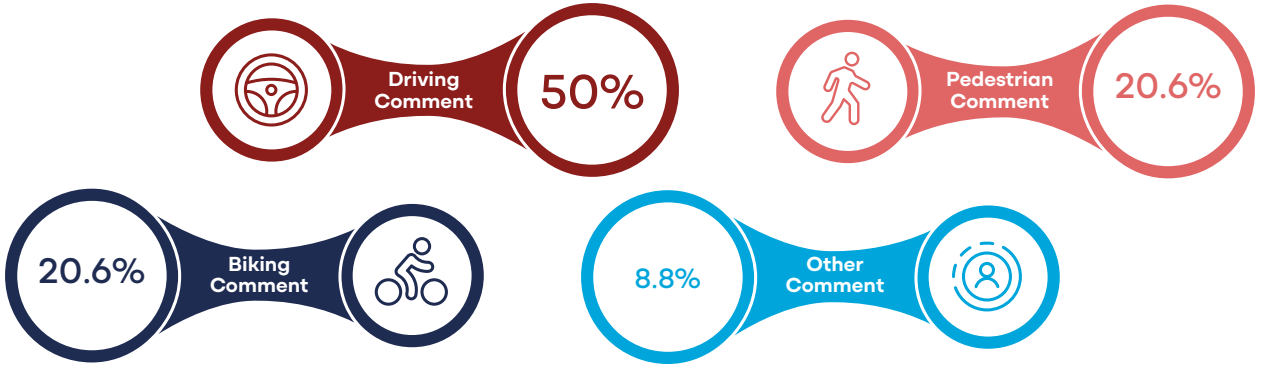


Exhibit 33. Breakdown of map comments by type

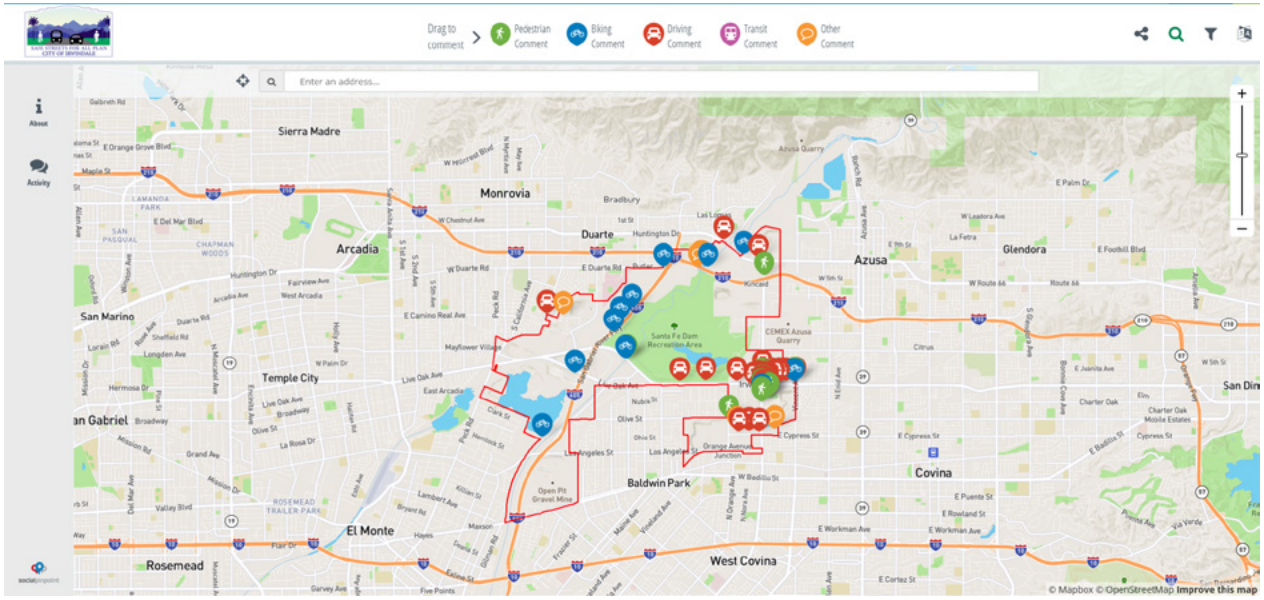


Exhibit 34. Screenshot of interactive map feature

In addition, a survey with 6 questions was posted on the website to gauge people's travel patterns in the city, their primary safety concerns in terms of driver behavior and infrastructure, and what they would like to see changed to make them feel safer. In addition, paper surveys were filled out by community members at both in-person outreach events and put into the website. A breakdown of the results is shown in Exhibit 35 through Exhibit 39.

1. Do you live in Irwindale, work there, or visit there for other reasons? ¿Vive en Irwindale, trabaja allí o visita la ciudad por otros motivos?

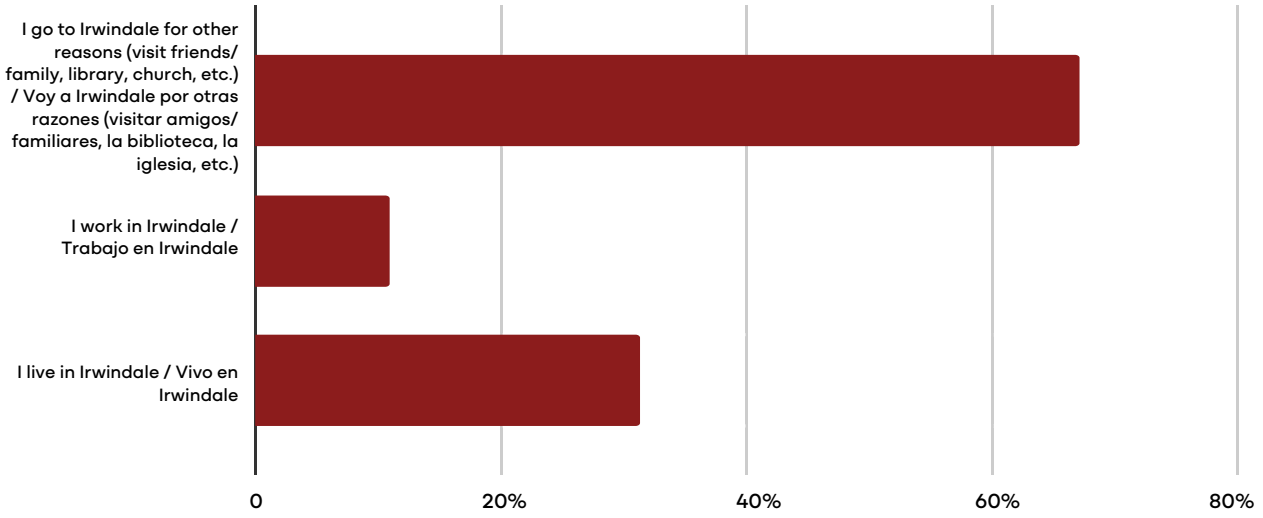


Exhibit 35. Survey question #1

2. How do you normally travel in Irwindale?

¿Cómo se moviliza normalmente en Irwindale?

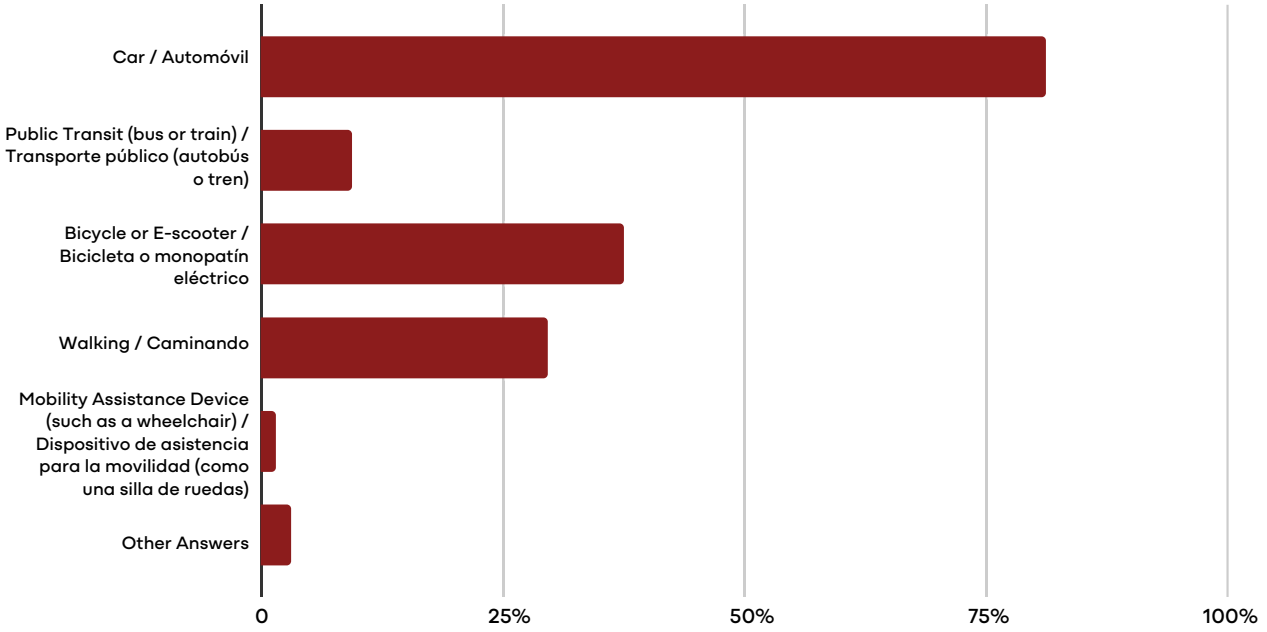


Exhibit 36. Survey question #2

3. What is your number one consideration when choosing how to get around?

¿Cuál es su consideración número uno a la hora de elegir cómo movilizarse?

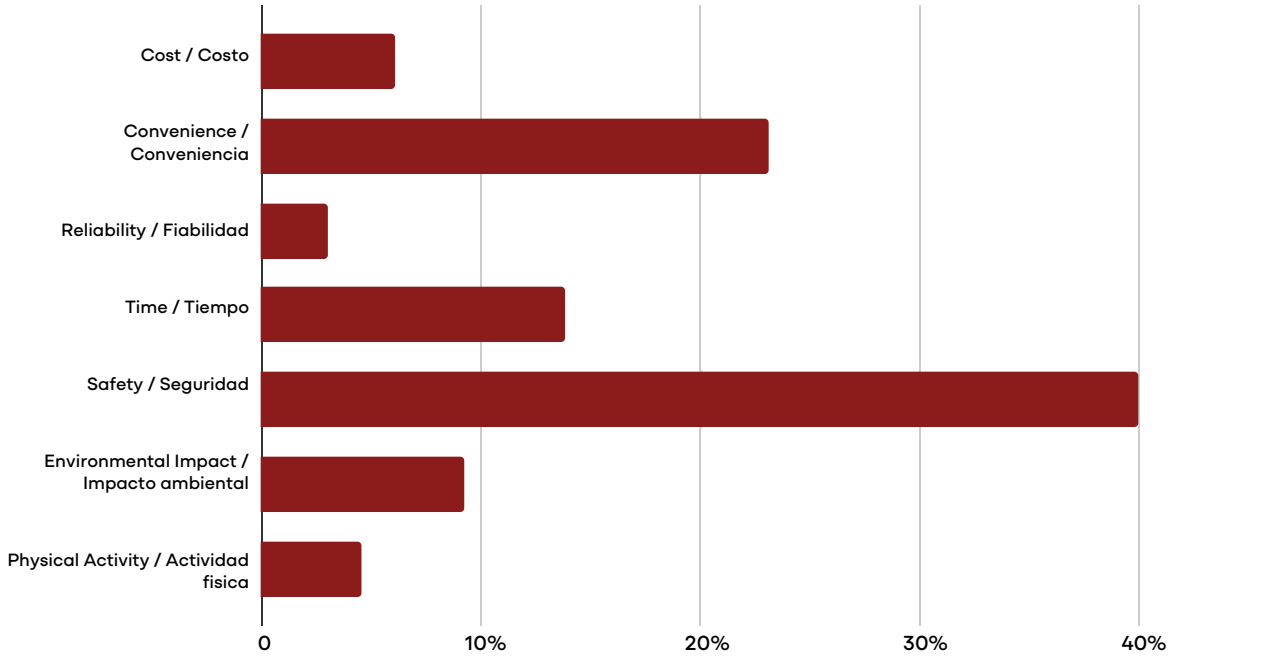


Exhibit 37. Survey question #3

4. What are your top three safety concerns with road users' behavior in Irwindale?

¿Cuáles son las tres principales preocupaciones de seguridad que usted tiene con respecto al comportamiento de los usuarios de la carretera en Irwindale?

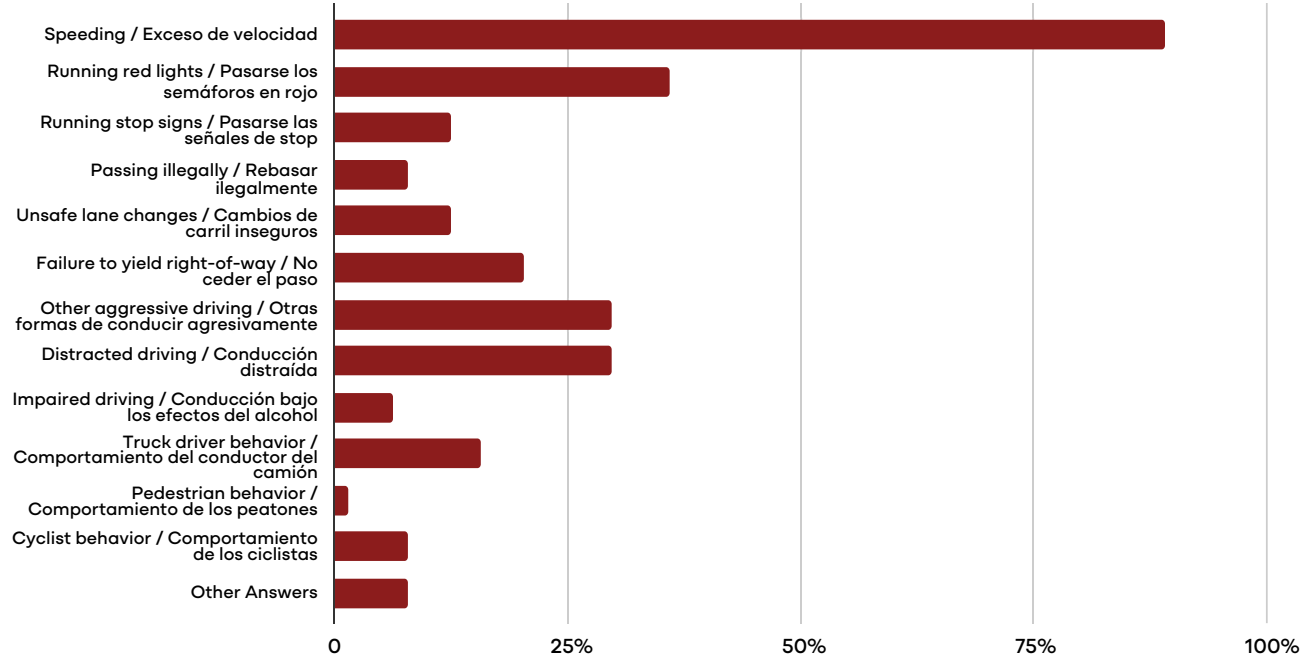


Exhibit 38. Survey question #4

5. What are your top three safety concerns with road infrastructure in Irwindale?

¿Cuáles son sus tres principales preocupaciones en relación con la seguridad de la infraestructura vial en Irwindale?

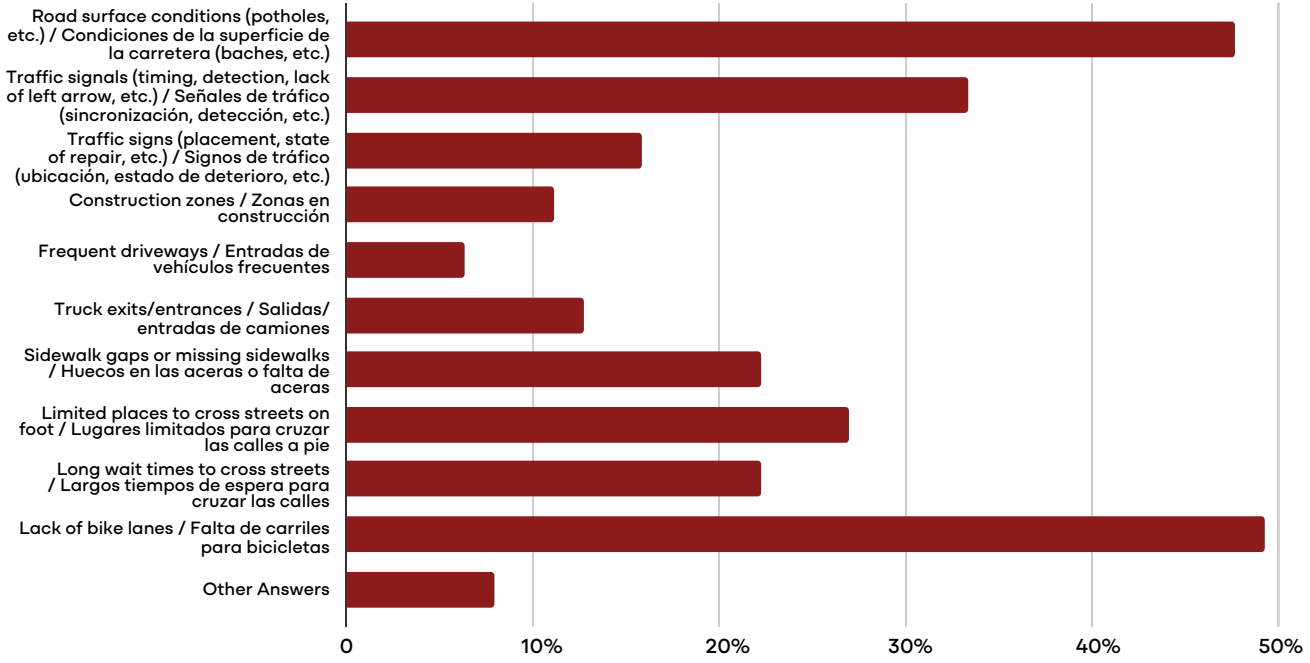


Exhibit 39. Survey question #5

Community members were also asked what one thing they would do to improve road safety in Irwindale. Answers included:

- **Improve Pedestrian and Crosswalk Safety:** Add safer pedestrian crossings, including overpasses/ underpasses, better lighting, school crossing guards, and enhanced signage.
- **Expand and Protect Bike Infrastructure:** Build connected, protected bike lanes, especially near the Metro A Line, Santa Fe Dam, and major streets, with safety-focused designs to separate cyclists from vehicles.
- **Enforce Speed Control:** Implement stricter speed zones, add speed humps and feedback signs, and increase traffic patrols to curb speeding, particularly on Irwindale Avenue and Cypress East.
- **Enhance Street Design:** Introduce traffic-calming measures like lane reductions, medians, and shade trees, especially near public facilities such as the Metro station and Santa Fe Dam.
- **Fix Infrastructure and Parking Issues:** Repair road surfaces, remove excessive red curbs for better parking, and clear streets of junk vehicles.
- **Educate and Promote Safety:** Provide public education on bike and pedestrian etiquette while ensuring the safety of vulnerable users, including those visually impaired or in wheelchairs.

4.2. Community Meetings

The project team hosted two in-person events and one virtual Zoom event to inform the public about the SS4A plan and collect input about transportation safety and concerns in Irwindale. The first event was a pop-up table hosted at the city's "Music in the Park" event on August 1st, 2024, where community members congregated at the park by City Hall to listen to free music outdoors. Project team members printed out bilingual fliers with project information and QR codes to the website, and then handed them out to attendees. In addition, bilingual surveys were printed and filled out by 26 attendees and input into the website by project staff.

The second event was an open house-style discussion at the Irwindale Senior Center on October 3rd, 2024. Attendees were split up into three tables where project staff hosted roundtable discussions on safety concerns and specific areas of the city they wanted to see improvements in. Comments were written on printed maps and input into the website by project staff. Attendees were also asked to provide contact information for future project updates and to fill out printed surveys. The event saw about 15 attendees, with 9 surveys completed and 48 comments input on the map.

Exhibit 40. Music in the Park pop-up table

Exhibit 41. October 3rd open house event

The third event was held virtually on Zoom on November 21, 2024 to give community members who were unable to attend in-person events an opportunity to give feedback and learn about the project. Project staff prepared a bilingual presentation and advertised the event both on social media and flyers at City facilities. Despite the advertising, the event saw no attendees.

Exhibit 42. Informational flyer handed out at public events (English)

Exhibit 43. Informational flyer handed out at public events (Spanish)

Exhibit 44. Social media posts advertising the public events (English) (Spanish)

4.3. Implementation Group

Project staff identified and established an Implementation Group charged with the plan's development, implementation, and monitoring, consisting of multi-disciplinary stakeholders to provide insight, oversight, and monitoring throughout the project's development and in the subsequent implementation phase. Implementation Group members included representatives from the following entities:

- City of Irwindale Public Works Department
- City of Irwindale Police Department
- City of Irwindale Recreation Department
- City of Irwindale Community Development
- City of Irwindale Chamber of Commerce
- ActiveSGV
- Los Angeles County Fire Department
- Covina Valley Unified School District
- San Gabriel Valley Council of Governments (SGVCOG)
- California Department of Transportation (Caltrans)
- Los Angeles County Metropolitan Transportation Authority (Metro)
- Foothill Transit

The Implementation Group met virtually over Microsoft Teams five times between July and December 2024, where members were introduced to the project, given information about the safety analysis, presented with initial and updated countermeasures, updated on outreach and public feedback, and kept up to date on project progress. Implementation Group members were also given the opportunity to review and comment on the drafts of the final planning document.

In addition to providing guidance for the plan development process, the Implementation Group meetings also provided a venue for inter- and intra-governmental cooperation and collaboration, functioning as a meeting point for representatives of various departments within the City to meet and discuss safety issues, as well as representatives of external and regional stakeholder entities.

5. EQUITY CONSIDERATIONS

The development of this plan and its recommended projects and strategies was shaped heavily by ensuring equity for all members of the community. Project staff used input from community outreach efforts and the Implementation Group to give as many community members as possible the opportunity to give feedback for the plan. In addition to seeking direct input from the community, the success of this plan and its focus on equity was shaped using multiple tools that provide quantitative and qualitative data showing disadvantages faced by different members of the community.

5.1. USDOT Equitable Transportation Community Explorer (ETC)

The USDOT's Equitable Transportation Community Explorer was created to showcase and track data that identifies communities who are disadvantaged from a lack of transportation investment or other burdens, including: Climate & Disaster Risk, Environmental, Health, and Social. The tool is maintained by the DOT and was created as a response to the Justice40 Initiative from the Biden Administration, or Executive Order 14008.

The tool uses 2020 census data to identify the level of impact from each burden on communities. According to the DOT, disadvantaged communities are either any census tract meeting the threshold for one or more of the burden categories, or any federally recognized tribe or tribal entity, regardless of if they have land or not.

As shown in Exhibit 45, when compared to national data, Irwindale does not meet the definition of a disadvantaged community. However, it is considered disadvantaged in terms of Environmental Burden (92%). Additionally, under the Transportation Insecurity category, Irwindale is considered disadvantaged for Traffic Safety (100%), demonstrating that the city has a major problem with safety.

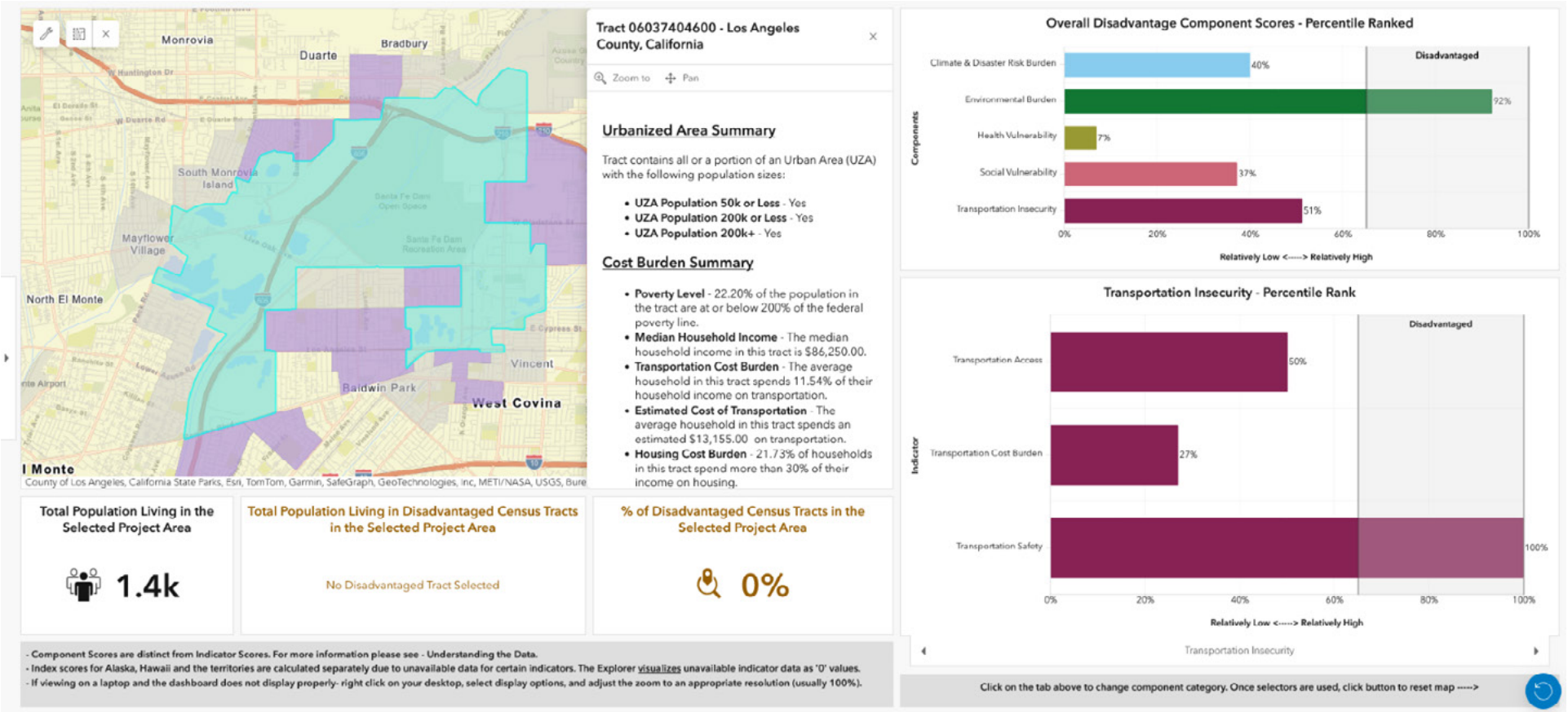


Exhibit 45. USDOT ETC Explorer dashboard for Irwindale census block

5.2. Climate and Economic Justice Screening Tool

The Climate and Economic Justice Screening Tool was created in 2021 by the Council of Environmental Quality to identify communities considered disenfranchised or overburdened across the following areas: Climate change, Energy, Health, Housing, Legacy pollution, Transportation, Water and wastewater, and Workforce development. Communities are considered disadvantaged by the tool under the same qualifications used by the USDOT ETC tool.

To be considered disadvantaged for transportation, census tracts must:

Be at or above the 90th percentile for diesel particulate matter exposure

OR

Transportation barriers

OR

Traffic proximity and volume

AND

Be at or above the 65th percentile for low income.

As shown in Exhibit 46, according to the tool, Irwindale is not considered a disadvantaged community due to not meeting any burden thresholds or at least one associated socioeconomic threshold.

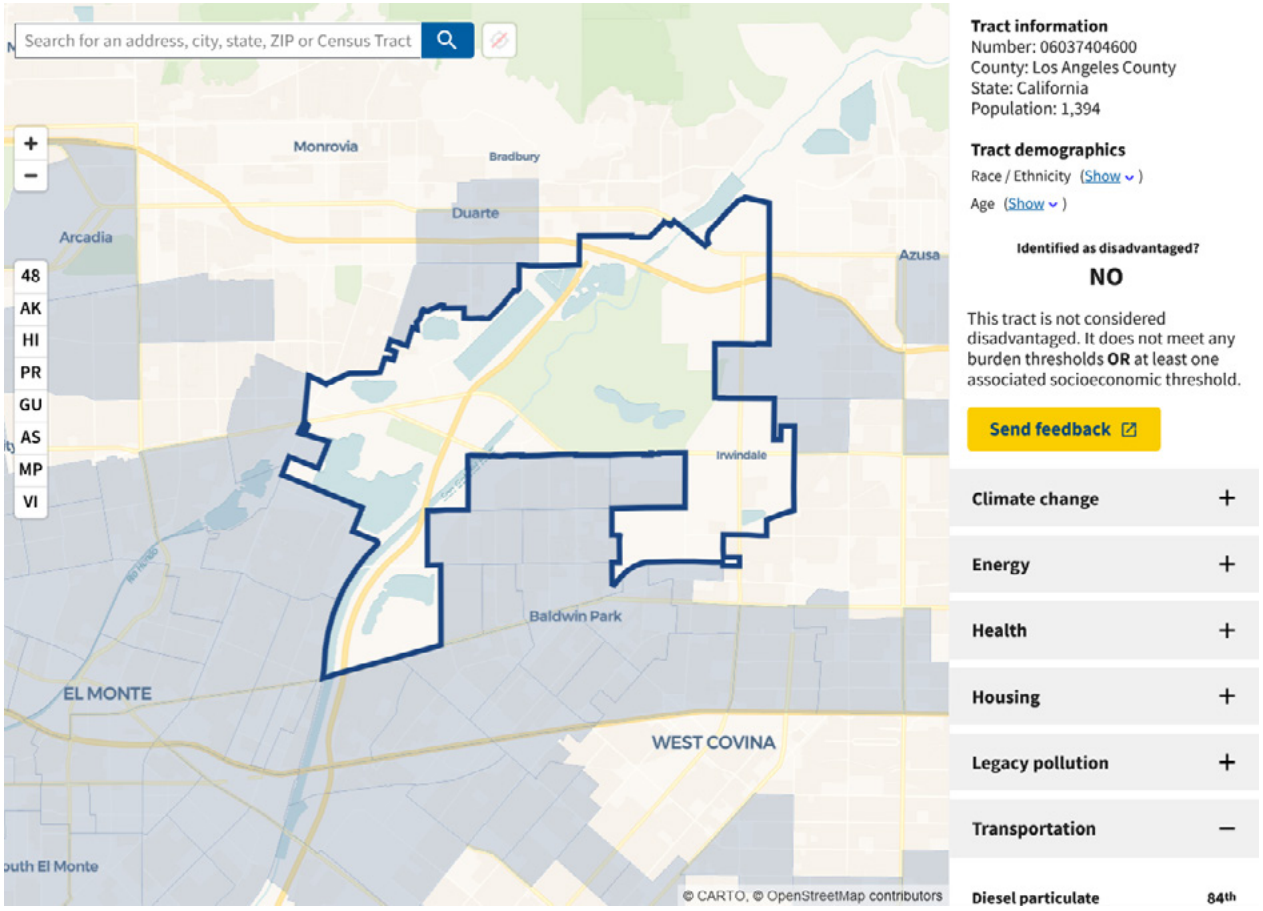


Exhibit 46. Climate and Economic Justice Screening Tool results for Irwindale

5.3. Caltrans Transportation Equity Index (EQI)

The California Department of Transportation (Caltrans) Transportation Equity Index (EQI) tool was developed to identify transportation-based priority areas by census tract through spatial analysis.

For a community to qualify, it must meet the following criteria:

Median Household Income:

< HCD-defined low-income cutoff

OR

< 80% statewide median income

OR

Block intersects or is fully contained within a Tribal Land

Upon analysis, it was found that the EQI tool did not screen Irwindale. Therefore, it is underdetermined if Irwindale is considered a transportation-based priority area.

5.4. Initial Equity Assessment

The strategies, projects, and countermeasures proposed in this Comprehensive Safety Action Plan are primarily systemic, meaning that they can be implemented at multiple locations that have broadly similar roadway characteristics and/or collision patterns. As such, it is expected that the range of countermeasures, once implemented, will not be concentrated in any particular location and will benefit the community as a whole. In the prioritization of projects, emphasis was placed on projects located in or near the residential areas of the City and the areas near trail access points, where more vulnerable road users (pedestrians, bicyclists, and mobility aid users) are typically present.

6. STRATEGIES, PROJECTS, AND COUNTERMEASURES

This section contains a comprehensive set of projects and strategies to address the safety problems identified in the Collision Trend Analysis, informed by data, evidence, best practices, public and stakeholder input, and equity considerations.

The engineering Action Items recommended in this section have been drawn from the following sources:

- **Local Roadway Safety Manual:** A Manual for California's Local Road Owners, Version 1.7, April 2024, created by Caltrans in conjunction with FHWA and SafeTREC.
- **FHWA Proven Safety Countermeasures:** A collection of 28 countermeasures and strategies that studies have shown to be effective in reducing fatalities and serious injuries.
- **Crash Modification Factors (CMF) Clearinghouse:** A searchable database of safety countermeasures and their related CMF values, accompanied by guidance and resources for the use of CMFs to improve road safety.
- **California Manual on Uniform Traffic Control Devices (CA-MUTCD):** The standard for all official traffic control devices in California.
- **Countermeasures That Work:** A Highway Safety Countermeasure Guide for State Highway Safety Offices, a reference guide published by the National Highway Traffic Safety Administration (NHTSA).
  - Best practices
  - Engineering judgment
  - Community and stakeholder input

The Action Items in this section are divided into the following two categories:

- **Systemic countermeasures**, which can be implemented at multiple locations that have broadly similar roadway characteristics and/or collision patterns. These are typically lower-cost action items that can be implemented together as a single project, incorporated into routine maintenance, or added onto location-specific projects.
- **Location-specific countermeasures**, which address circumstances specific to their locations.

Countermeasures are listed in Exhibit 47 (for intersections) and Exhibit 48 (for roadways).

This listing is followed by a detailed description and conceptual illustration of each countermeasure.

The majority of these countermeasures are systemic. However, during the development of the SS4A Plan, specific locations were identified where certain countermeasures are recommended. These are shown on the maps in Exhibit 51 (for intersections) and Exhibit 52 (for roadway corridors).

Action Item Number	Systemic Safety Countermeasure	Location Type	Crash Reduction Factor	Countermeasure Reference	Systemic/ Location-specific
S1	Convert signal to mast arm (from pedestal-mounted)	Signalized intersections	30%[1]	Local Roadway Safety Manual SI07	Systemic
S2	Crosswalk visibility enhancements	Signalized and unsignalized intersections	40%[2]	Crash Modification Factors Clearinghouse 4123	Systemic
S3	Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number	Signalized intersections	15%[1]	Local Roadway Safety Manual SI02	Systemic
S4	Improve signal timing (coordination, phases, red, yellow, or operation)	Signalized intersections	15%[1]	Local Roadway Safety Manual SI03	Systemic
S5	Install near-side signal indicators	Signalized intersections	Varies depending on location	N/A	Systemic
S6	Modify signal phasing to implement a Leading Pedestrian Interval (LPI)	Signalized intersections	60%[1]	Local Roadway Safety Manual SI22PB	Systemic
S7	Upgrade signing and striping	Signalized and unsignalized intersections	Varies depending on location	N/A	Systemic
S8	Daylight intersections (remove obstacles to lines of sight by restricting parking and removing fixed objects)	Signalized and unsignalized intersections	30%[3]	FHWA-SA-18-041	Systemic
S9	Ensure lighting is adequate at nighttime	Signalized and unsignalized intersections	23%[3]	FHWA-SA-18-041	Systemic
S10	Provide protected left turn phase (left turn lane already exists)	Signalized intersections	30%[1]	Local Roadway Safety Manual SI06	Systemic
S11	Increase the length of turn lanes	Signalized and unsignalized intersections	Varies depending on location	N/A	Systemic

1 Caltrans, Local Roadway Safety Manual: A Manual for California's Local Road Owners (LRSM), Version 1.7, April 2024

2 FHWA, Proven Safety Countermeasures: Crosswalk Visibility Enhancements, FHWA-SA-21-049

3 FHWA, Toolbox of Pedestrian Countermeasures and Their Potential Effectiveness, FHWA-SA-18-041

Exhibit 47. Safety countermeasures for intersections

Action Item Number	Systemic Safety Countermeasure	Location Type	Crash Reduction Factor	Countermeasure Reference	Systemic/ Location-specific
R1	Install raised median (with left turn pockets as needed)	Roadways	25%[1]	Local Roadway Safety Manual R08	Location-specific
R2	Install delineators, reflectors and/or object markers	Roadways	15%[2]	Local Roadway Safety Manual R27	Systemic
R3	Install dynamic/variable speed warning signs	Roadways	30%[1]	Local Roadway Safety Manual R26	Systemic
R4	Install/upgrade pedestrian crossing (with enhanced safety features)	Roadways	35%[1]	Local Roadway Safety Manual R36PB	Systemic
R5	Remove or relocate fixed objects outside of Clear Recovery Zone	Roadways	35%[1]	Local Roadway Safety Manual R02	Systemic
R6	Road Diet (Right-size wide no. 2 lanes by striping parking lanes or bike lanes where feasible)	Roadways	35%[1]	Local Roadway Safety Manual R14	Systemic
R7	Ensure lighting is adequate at nighttime	Roadways	23%[2]	FHWA-SA-18-041	Systemic
R8	Install sidewalk/pathway	Roadways	80%[1]	Local Roadway Safety Manual R35PB	Systemic

1 Caltrans, Local Roadway Safety Manual: A Manual for California's Local Road Owners (LRSM), Version 1.7, April 2024

2 FHWA, Toolbox of Pedestrian Countermeasures and Their Potential Effectiveness, FHWA-SA-18-041

Exhibit 48. Safety countermeasures for roadways

S1. Convert signal to mast arm (from pedestal-mounted)

Intersections that have pedestal-mounted signals may have poor visibility and can result in vehicles not being able to stop in time for a signal change. Providing better visibility of intersection signs and signals aids the drivers' advance perception of the upcoming intersection. Visibility and clarity of the signal should be improved without creating additional confusion or distraction for drivers.

Location Type:	Signalized intersections
Crash Types Addressed:	All
CRF:	30%
Expected Life:	20 years

S2. Crosswalk visibility enhancements

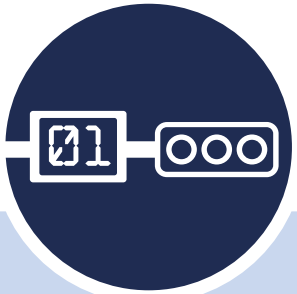
High-visibility crosswalks use patterns (i.e., bar pairs, continental, ladder) that are visible to both the driver and pedestrian from farther away compared to traditional transverse line crosswalks. They should be considered at all midblock pedestrian crossings and uncontrolled intersections. Agencies should use materials such as inlay or thermoplastic tape, instead of paint or brick, for highly reflective crosswalk markings.

Location Type:	Signalized and unsignalized intersections
Crash Types Addressed:	Pedestrian, Bicycle
CRF:	40%
Expected Life:	20 years

S3. Improve signal hardware: lenses, back-plates with retroreflective borders, mounting, size, and number

Signalized intersections with a high frequency of right-angle and rear-end crashes occurring because drivers are unable to see traffic signals sufficiently in advance to safely negotiate the intersection being approached. Signal intersection improvements include new LED lighting, signal back plates, retro-reflective tape outlining the back plates, or visors to increase signal visibility, larger signal heads, relocation of the signal heads, or additional signal heads. Providing better visibility of intersection signals aids the drivers' advance perception of the upcoming intersection. Visibility and clarity of the signal should be improved without creating additional confusion for drivers.

Location Type:	Signalized intersections
Crash Types Addressed:	All
CRF:	15%
Expected Life:	10 years



S4. Improve signal timing (coordination, phases, red, yellow, or operation)

Signalization improvements may include adding phases, lengthening clearance intervals, eliminating or restricting higher-risk movements, and coordinating signals at multiple locations. Certain timing, phasing, and control strategies can produce multiple safety benefits. Sometimes capacity improvements come along with the safety improvements and other times adverse effects on delay or capacity occur. Corridor improvements often have the highest benefit but may take longer to implement. Projects focused on capacity improvements (without a separate focus on signal timing safety needs) may not result in a reduction in future crashes.

Location Type:	Signalized intersections
Crash Types Addressed:	All
CRF:	15%
Expected Life:	10 years

S5. Install near-side signal indicators

Near-side signal indicators are traffic signal lights placed on the near side of an intersection, supplementing those that are mounted on the far side and/or overhead. These signals are typically positioned close to the point where vehicles or pedestrians stop, so drivers or pedestrians can easily see them when approaching the intersection. In the case of near-side signals for vehicles, they are often mounted on the same side of the road as the approaching traffic and are visible before the intersection itself. This setup helps drivers anticipate changes in the signal and prepare to stop or go accordingly. Near-side signals are commonly used in some urban areas or places with complex intersections where overhead signals might be obstructed (for example, by large trucks) or less visible.

Location Type:	Signalized intersections
Crash Types Addressed:	All
CRF:	Varies depending on location
Expected Life:	20 years

S6. Modify signal phasing to implement a Leading Pedestrian Interval (LPI)

A leading pedestrian interval (LPI) gives pedestrians the opportunity to enter an intersection 3-7 seconds before vehicles are given a green indication. With this head start, pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn right or left. LPIs provide (1) increased visibility of crossing pedestrians; (2) reduced conflicts between pedestrians and vehicles; (3) Increased likelihood of motorists yielding to pedestrians; and (4) enhanced safety for pedestrians who may be slower to start into the intersection.

Location Type:	Signalized intersections
Crash Types Addressed:	Pedestrian, Bicycle
CRF:	60%
Expected Life:	10 years

S7. Upgrade signing and striping

Upgrading the signing and striping at an intersection involves improving or updating road markings (striping) and traffic signs (signing) to enhance safety, traffic flow, and visibility. This can include adding, replacing, or improving signs that are currently damaged, deteriorated, or outdated, and installing new ones to better guide traffic and pedestrians. It also involves updating lane markings, crosswalks, stop lines, and other pavement markings to replace faded or deteriorated paint markings and upgrade the intersection to current standards.

Location Type:	Signalized and unsignalized intersections
Crash Types Addressed:	All
CRF:	Varies depending on location
Expected Life:	10 years

S8. Daylight intersections (remove obstacles to lines of sight by restricting parking and removing fixed objects)

Daylighting, or removing visual obstructions like parked cars or fixed objects in advance of an intersection, can help prevent vehicles from entering the intersection incorrectly and increase visibility of pedestrians crossing the street. Parking restriction can include the removal of parking space markings, installation of new "parking prohibition" pavement markings or curb paint, and signs. The minimum setback is 20 feet in advance of the crosswalk where speeds are 25 mph or less, and 30 feet where speeds are between 26 and 35 mph.

Location Type:	Signalized and unsignalized intersections
Crash Types Addressed:	All, emphasis on pedestrian and bicycle crashes
CRF:	30%
Expected Life:	20 years

S9. Ensure lighting is adequate at nighttime

Providing lighting at the intersection itself, or both at the intersection and on its approaches, improves the safety of an intersection during nighttime conditions by (1) making drivers more aware of the surroundings at an intersection, which improves drivers' perception-reaction times, (2) enhancing drivers' available sight distances, and (3) improving the visibility of non-motorists. Intersection lighting is of particular benefit to non-motorized users as lighting not only helps them navigate the intersection, but also helps drivers see them better.

Location Type:	Signalized and unsignalized intersections
Crash Types Addressed:	Nighttime
CRF:	40%
Expected Life:	20 years

S10. Provide protected left turn phase (left turn lane already exists)

Left turns are widely recognized as the highest-risk movements at signalized intersections. Providing Protected left-turn phases (i.e., the provision for a specific phase for a turning movement) for signalized intersections with existing left turn pockets can significantly improve safety for left-turn maneuvers by removing the need for the drivers to navigate through gaps in oncoming/opposing through traffic. Where left turn pockets are not protected, the pedestrian and bicyclist crossing phase often conflicts with these left turn maneuvers. Protected left-turn phases are warranted based on a number of factors; agencies need to document their consideration of the MUTCD, Section 4D.19.

Location Type:	Signalized intersections
Crash Types Addressed:	Left turn, pedestrian, bicycle
CRF:	30%
Expected Life:	120 years

S11. Increase the length of turn lanes

Increasing the length of an existing turn lane to provide additional deceleration and storage for turning vehicles can help to address safety issues resulting from queuing, such as crash history or observed conflicts between vehicles waiting to turn and vehicles proceeding straight. Extending the lane may require additional right-of-way and utility relocation.

Location Type:	Signalized and unsignalized intersections
Crash Types Addressed:	All, emphasis on rear end and sideswipe
CRF:	Varies depending on location
Expected Life:	20 years

R1. Install raised median (with left turn pockets as needed)

Upgrading the signing and striping at an intersection involves improving or updating road markings (striping) and traffic signs (signing) to enhance safety, traffic flow, and visibility. This can include adding, replacing, or improving signs that are currently damaged, deteriorated, or outdated, and installing new ones to better guide traffic and pedestrians. It also involves updating lane markings, crosswalks, stop lines, and other pavement markings to replace faded or deteriorated paint markings and upgrade the intersection to current standards.

Location Type:	Roadways
Crash Types Addressed:	All
CRF:	25%
Expected Life:	20 years

R2. Install delineators, reflectors and/or object markers

Daylighting, or removing visual obstructions like parked cars or fixed objects in advance of an intersection, can help prevent vehicles from entering the intersection incorrectly and increase visibility of pedestrians crossing the street. Parking restriction can include the removal of parking space markings, installation of new "parking prohibition" pavement markings or curb paint, and signs. The minimum setback is 20 feet in advance of the crosswalk where speeds are 25 mph or less, and 30 feet where speeds are between 26 and 35 mph.

Location Type:	Signalized and unsignalized intersections
Crash Types Addressed:	All, emphasis on pedestrian and bicycle crashes
CRF:	30%
Expected Life:	20 years

R3. Install dynamic/variable speed warning signs

This strategy primarily addresses crashes caused by motorists traveling too fast around sharp curves. It is intended to get the drivers attention and give them a visual warning that they may be traveling over the recommended speed for the approaching curve. Care should be taken to limit the placement of these signs to help maintain their effectiveness.

Location Type:	Signalized and unsignalized intersections
Crash Types Addressed:	Nighttime
CRF:	40%
Expected Life:	20 years

R4. Install/upgrade pedestrian crossing (with enhanced safety features)

Adding pedestrian crossings has the opportunity to greatly enhance pedestrian safety at locations noted as being problematic. The enhanced safety elements, which may include curb extensions, medians and pedestrian crossing islands, beacons, and lighting, combined with pavement markings delineating a portion of the roadway that is designated for pedestrian crossing. Care must be taken to warn drivers of the potential for pedestrians crossing the roadway and enhanced improvements added to the crossing increase the likelihood of pedestrians crossing in a safe manner.

Location Type:	Roadways
Crash Types Addressed:	Pedestrian, Bicycle
CRF:	35%
Expected Life:	20 years

R5. Remove or relocate fixed objects outside of Clear Recovery Zone

While this strategy does not prevent the vehicle leaving the roadway, it does provide a mechanism to reduce the severity of a resulting crash. A clear zone is an unobstructed, traversable roadside area that allows a driver to stop safely or regain control of a vehicle that has left the roadway. Removing or moving fixed objects, flattening slopes, or providing recovery areas reduces the likelihood of a crash.

Location Type:	Roadways
Crash Types Addressed:	All
CRF:	35%
Expected Life:	20 years

R6. Road Diet (Right-size wide no. 2 lanes by striping parking lanes or bike lanes where feasible)

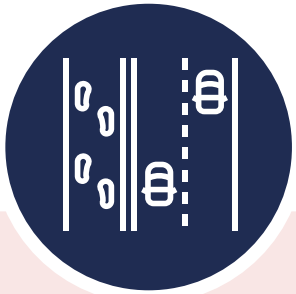
A Road Diet, or roadway reconfiguration, can improve safety, calm traffic, provide better mobility and access for all road users, and enhance overall quality of life. A Road Diet typically involves converting an existing four-lane undivided roadway to a three-lane roadway consisting of two through lanes and a center two-way left-turn lane (TWLTL). The application of this strategy usually reduces the roadway segment speeds and serious head-on crashes. In many cases the extra pavement width can be used for the installation of bike lanes. In addition to increasing bicycle safety, these bike lanes can improve the safety of on-street parking.

Location Type:	Roadways
Crash Types Addressed:	All
CRF:	35%
Expected Life:	20 years

R7. Ensure lighting is adequate at nighttime

Providing roadway lighting improves the safety during nighttime conditions by (1) making drivers more aware of the surroundings, which improves drivers' perception-reaction times, (2) enhancing drivers' available sight distances to perceive roadway characteristic in advance of the change, and (3) improving non-motorist's visibility and navigation.

Location Type:	Roadways
Crash Types Addressed:	Nighttime
CRF:	23%
Expected Life:	20 years



R8. Install sidewalk/pathway

Sidewalks and shared-use pedestrian/bicycle paths provide people with space to travel within the public right-of-way that is separated from roadway vehicles. The presence of sidewalks or paths on both sides of the street has been found to be related to significant reductions in the "walking along roadway" pedestrian crash risk compared to locations where no sidewalks or walkways exist. In combination with this countermeasure, better guidance signs and markings for non-motorized and motorized roadway users should be considered, including: signs and markings directing pedestrians and cyclists on appropriate/legal travel paths and signs and markings warning motorists of non-motorized uses of the roadway that should be expected.

Location Type:	Roadways
Crash Types Addressed:	Pedestrian, Bicycle
CRF:	80%
Expected Life:	20 years

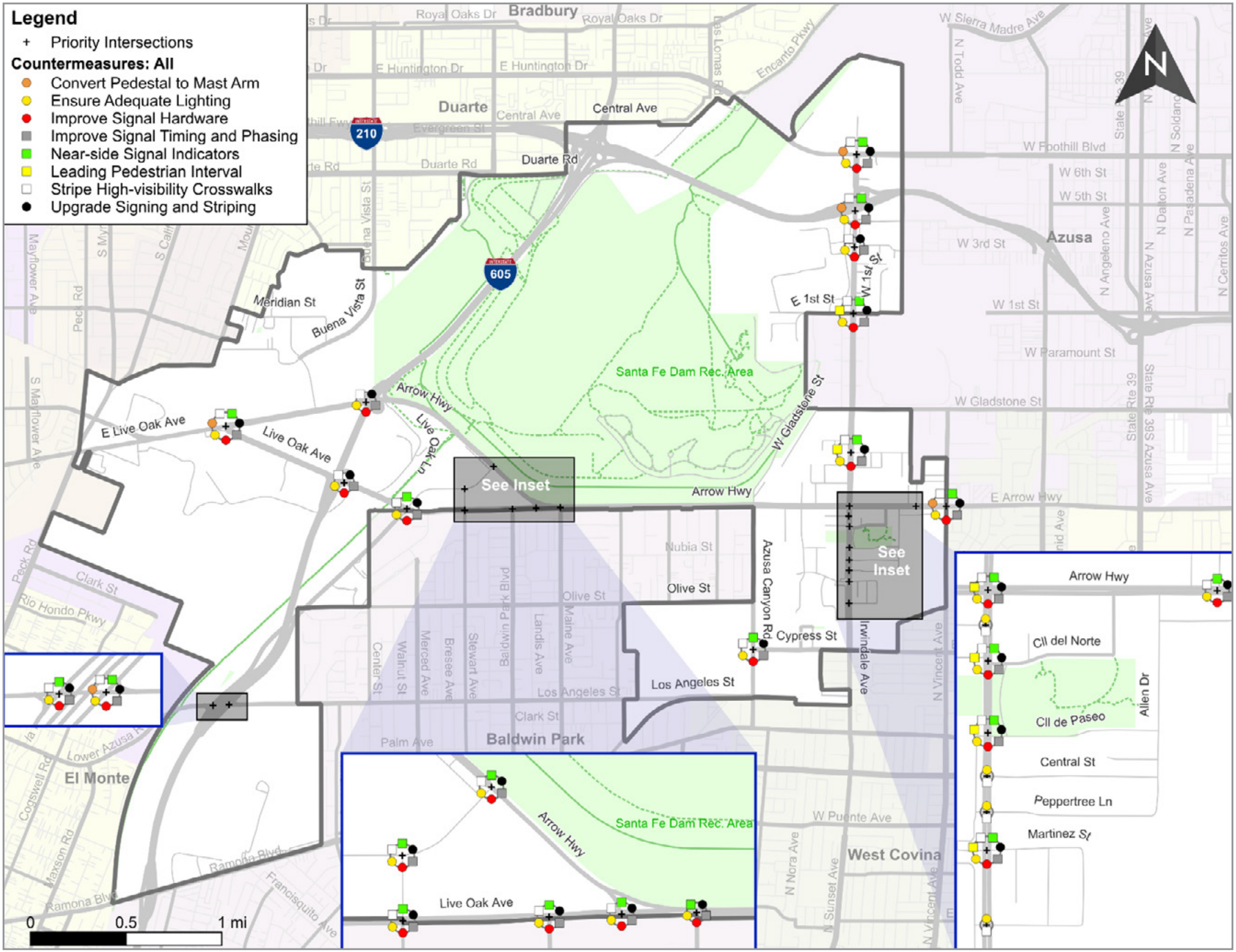


Exhibit 51. Map of priority locations for systemic intersection countermeasures

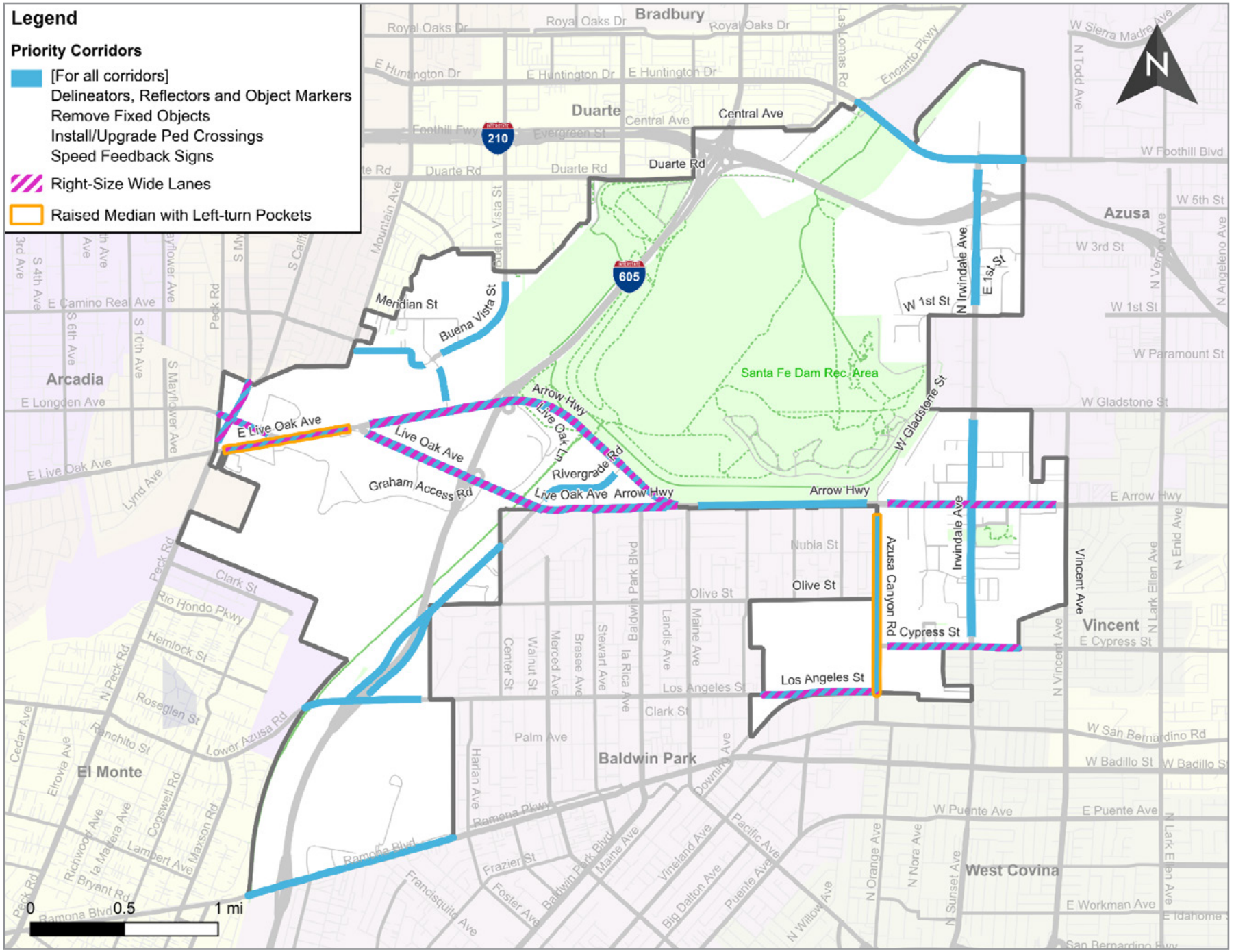


Exhibit 52. Map of priority roadway corridors for systemic countermeasures

7. POLICY AND PROCESS CHANGES

During the process of developing the Comprehensive Safety Action Plan, the City's current policies, plans, guidelines, and processes were assessed. The following suggested policy and process changes were identified as having potential to improve road safety:

- **Enforce City Code Ch. 8.12 - Abandoned or Inoperative Vehicles.** In some locations (specifically Alpha Street), it was found through collision data analysis and site visits that inoperative vehicles parked on the street may be obstructing drivers' view at intersections and driveways and contributing to safety problems. Enforcement of existing codes could help to address this issue.
- **Enforce existing parking restrictions (red curbs).** Some areas were found to have vehicles parked in violation of red curbing and an association with increased collision trends was observed. Enforcement of parking restrictions could help to address this issue.
- **Conduct a photometric study to assess lighting adequacy.** As shown in the Baseline Analysis, 31% of collisions occurred at night with streetlights operating. Based on site observations, some streetlights are operating but may not produce adequate light. To further assess this, the City could conduct a photometric study to assess whether the following intersections are adequately lit:
  - Arrow Hwy @ Irwindale Ave
  - Irwindale Ave @ Cll de Paseo
  - Irwindale Ave @ Juarez St
  - Irwindale Ave @ Tapia St / Martinez
  - N Irwindale Ave @ Adelante St

In addition to the strategies listed in this plan, the implementation of the above policy and process changes could contribute to an overall improvement in road safety.

8. PRIORITIZED ACTION PLAN

An essential part of the Safe Street for All planning process is the prioritization of strategies. This section presents the identified engineering countermeasures for intersections and corridors ranked according to priority. The countermeasures were evaluated and prioritized based on benefit-to-cost ratios following the methodology prescribed in the current Caltrans Local Road Safety Manual and using the HSIP Analyzer for BCR applications provided by Caltrans.

The prioritization of engineering countermeasures for the top ten high-injury intersections is shown in Exhibit 49, and the prioritization of engineering countermeasures for the top ten high-injury corridors is shown in Exhibit 50.

Intersection	Signalized	Total Crashes 2019-2023	Pedestrian Crashes	Bicycle Crashes	EPDO Score	Countermeasures	Estimated Countermeasure Cost	Estimated Crash Reduction Benefit	Benefit/Cost Ratio	BCR Rank
Arrow Hwy @ Irwindale Ave	Y	73	1		760	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Add Leading Pedestrian Interval, Stripe high-visibility crosswalks, Upgrade signing and striping	$920,000	$65,119,600	70.78	1
Lower Azusa Rd @ I-605 SB ramp	Y	65			569	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$900,000	$51,648,000	57.39	2
Arrow Hwy @ Live Oak Ave (east)	Y	13			412	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$900,000	$46,360,000	51.51	3
Arrow Hwy @ I-605	Y	12			286	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Stripe high-visibility crosswalks, Upgrade signing and striping	$800,000	$39,122,100	48.90	4
Arrow Hwy @ Maine Ave	Y	25			545	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Upgrade signing and striping	$850,000	$37,878,400	44.56	5
Irwindale Ave @ Cll de Paseo	Y	3			122	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Add Leading Pedestrian Interval, Stripe high-visibility crosswalks, Upgrade signing and striping	$920,000	$29,203,200	31.74	6
Los Angeles St @ I-605 NB ramp	Y	54			501	Convert pedestal to mast arm, Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$1,150,000	$35,003,700	30.44	7
N Irwindale Ave @ I-210 EB ramp	Y	66			606	Convert pedestal to mast arm, Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$1,150,000	$34,403,400	29.92	8
N Irwindale Ave @ W Foothill Blvd	Y	60		4	374	Convert pedestal to mast arm, Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$1,150,000	$34,182,600	29.72	9
Arrow Hwy @ Live Oak Ave (west)	Y	68			358	Convert pedestal to mast arm, Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$1,150,000	$34,129,700	29.68	10
Live Oak Ave @ Rivergrade Rd	Y	15			497	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$900,000	$25,264,000	28.07	11
Arrow Hwy @ Rivergrade Rd	Y	14		1	185	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$900,000	$24,628,000	27.36	12
Azusa Canyon Rd @ Cypress St	Y	23		1	177	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$900,000	$24,312,000	27.01	13
Live Oak Ave @ Stewart Ave	Y	11			183	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$900,000	$24,230,000	26.92	14
Live Oak Ave @ Baldwin Park Rd	Y	10			264	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$900,000	$23,292,000	25.88	15
Rivergrade Rd @ Stewart Ave	Y	8			262	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$900,000	$23,228,000	25.81	16
Arrow Hwy @ Morada St	Y	3			122	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$900,000	$22,464,000	24.96	17
N Irwindale Ave @ Adelante St	Y	9		1	165	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Stripe high-visibility crosswalks, Upgrade signing and striping	$800,000	$19,771,000	24.71	18
Azusa Canyon Rd @ Los Angeles St	N	18			343	Signalize intersection if warranted. Collaborate with Railroad to explore appropriate treatments for railroad crossing at intersection.	$1,000,000	$12,378,000	12.38	19
Live Oak Ave (WB) @ I-605 NB ramp	Y	51		1	142	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Stripe high-visibility crosswalks, Upgrade signing and striping	$800,000	$4,724,300	5.91	20
Arrow Hwy @ Vincent Ave	Y	36			157	Convert pedestal to mast arm, Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Stripe high-visibility crosswalks, Upgrade signing and striping	$1,150,000	$5,492,400	4.78	21
N Irwindale Ave @ 1st St	Y	4	1		35	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Add Leading Pedestrian Interval, Stripe high-visibility crosswalks, Upgrade signing and striping	$920,000	$951,600	1.03	22
Irwindale Ave @ Tapia St / Martinez St	Y	4		1	19	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Add Leading Pedestrian Interval, Stripe high-visibility crosswalks, Upgrade signing and striping	$920,000	$951,600	1.03	23
Irwindale Ave @ Juarez St	Y	10			20	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Add Leading Pedestrian Interval, Stripe high-visibility crosswalks, Upgrade signing and striping	$920,000	$808,600	0.88	24
Irwindale Ave @ Ornelas St	Y	2			7	Daylight intersection, Ensure adequate lighting, Improve signal hardware, Improve signal timing and phasing, Install near-side signal indicators, Add Leading Pedestrian Interval, Stripe high-visibility crosswalks, Upgrade signing and striping	$920,000	$475,800	0.52	25
Irwindale Ave @ Central St	N	5			253	Daylight intersection, Ensure adequate lighting, Stripe high-visibility crosswalks	$250,000	$-	N/A	N/A
Irwindale Ave @ Hidalgo St	N	66			245	Daylight intersection, Ensure adequate lighting, Stripe high-visibility crosswalks	$250,000	$-	N/A	N/A
Irwindale Ave @ Peppertree Ln	N	4			133	Daylight intersection, Ensure adequate lighting, Stripe high-visibility crosswalks	$250,000	$-	N/A	N/A
Irwindale Ave @ Cll Breceda	N	0			0	Daylight intersection, Ensure adequate lighting, Stripe high-visibility crosswalks	$50,000	$-	N/A	N/A

Exhibit 49. Intersection Countermeasures

Corridor	Total Crashes 2019-2023	Pedestrian Crashes	Bicycle Crashes	EPDO Per Mile	Countermeasures	Estimated Countermeasure Cost	Estimated Crash Reduction Benefit	Benefit/Cost Ratio	BCR Rank
Arrow Hwy from Azusa Canyon Rd to Vincent	118	2		1577	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects, Right-size lanes and add bicycle lanes or on-street parking	$745,000	$152,787,250	205.08	1
Live Oak Ave from Arrow Hwy (West) to Arrow Hwy (East)	138		2	1231	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects, Right-size lanes and add bicycle lanes or on-street parking	$745,000	$106,184,750	142.53	2
Lower Azusa Rd / Los Angeles St from City limits to Littlejohn St	81			1060	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$745,000	$83,847,750	112.55	3
N Irwindale Ave from W Foothill Blvd to 1st St	81		1	1032	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$595,000	$53,242,000	89.48	4
Arrow Hwy from Live Oak Ave (East) to Azusa Canyon Rd	51		1	956	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$595,000	$39,349,800	66.13	5
Azusa Canyon Rd from Arrow Hwy to Los Angeles St	49	1	1	946	Install raised median with left-turn pockets, Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$595,000	$37,991,800	63.85	6
Irwindale Ave from Gladstone St to Cypress St	110	1	1	850	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$595,000	$37,146,200	62.43	7
Huntington Dr / W Foothill Blvd from Encanto Pkwy to City limits	85		5	644	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$595,000	$36,051,400	60.59	8
Rivergrade Rd from Arrow Hwy to Live Oak Ave	8			613	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$1,595,000	$78,097,800	48.96	9
Los Angeles St from City limits to Azusa Canyon Rd	23			609	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects, Right-size lanes and add bicycle lanes or on-street parking	$745,000	$22,330,000	29.97	10
Live Oak Ave from Myrtle Ave to Arrow Hwy (West)	41	1	1	363	Install raised median with left-turn pockets, Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects, Right-size lanes and add bicycle lanes or on-street parking	$595,000	$17,409,000	29.26	11
Arrow Hwy from Live Oak Ave (West) to Live Oak Ave (East)	57		1	357	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects, Right-size lanes and add bicycle lanes or on-street parking	$595,000	$16,259,600	27.33	12
Buena Vista St from Village Rd to Alpha St	4			267	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$595,000	$16,170,000	27.18	13
Avenida Barbosa from Alpha St to Arrow Hwy	3			251	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$1,745,000	$27,002,000	15.47	14
Rivergrade Rd from City limits to I-605	31			190	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$595,000	$2,350,600	3.95	15
Longden Ave from City limits to Live Oak Ave	19			173	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects, Right-size lanes and add bicycle lanes or on-street parking	$745,000	$2,577,750	3.46	16
Myrtle Ave from City limits to Live Oak Ave	26			170	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects, Right-size lanes and add bicycle lanes or on-street parking	$595,000	$1,797,250	3.02	17
Ramona Blvd from City limits to City limits	20	1		118	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$745,000	$2,117,500	2.84	18
Cypress St from Azusa Canyon Rd to City limits	17			99	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects, Right-size lanes and add bicycle lanes or on-street parking	$595,000	$602,000	1.01	19
Alpha St from Avenida Barbosa to end	8			67	Install speed feedback signs, Install/upgrade pedestrian crossings, Remove or relocate fixed objects	$595,000	$490,000	0.82	20

Exhibit 50. Roadway corridor countermeasures

9. EVALUATION AND MEASUREMENT OF PROGRESS

To evaluate the success of this plan, measures of success were identified. Each of these measures is associated with one of the goals of the plan.

1. **Goal:** Have zero fatal and severe injury collisions on City roadways

   Measure of Success: Progress toward this goal will be measured by the annual numbers of fatal and severe injury collisions on local roadways in the City of Irwindale. A trend toward zero will indicate movement toward success in achieving the goal.

2. **Goal:** Reduce the number of pedestrian and bicycle collisions on City roadways

   Measure of Success: Progress toward this goal will be measured by the annual numbers of collisions that involve pedestrians and cyclists on City roads. A downward trend will indicate movement toward success.

3. **Goal:** Exchange information and ideas specific to enhancing roadway safety performance through engineering, enforcement, and educational strategies

   Measure of Success: Success will be indicated by a satisfactory number of useful exchanges of information and ideas.

4. **Goal:** Improve available collision data and constantly monitor for improvements

   Measure of Success: Progress toward this goal will be measured by the availability of improved collision data beyond what is currently available.

5. **Goal:** Utilize community and traffic safety stakeholder input to identify opportunities to improve roadway safety

   Measure of Success: Progress toward this goal will be measured by the annual number of broadside collisions on City roads. A downward trend will indicate movement toward success.

6. **Goal:** Reduce the number of rear end, broadside, and side swipe collisions

   Measure of Success: Progress toward this goal will be measured by the number of opportunities to improve roadway safety that are identified using community and traffic safety stakeholder input.

7. **Goal:** Systemically implement safety countermeasures proven to reduce collisions caused by Unsafe Speed and Improper Turning

   Measure of Success: Progress toward this goal will be measured by the number of safety countermeasures proven to reduce Unsafe Speed and Improper Turning that are implemented on City roads.

10. PROJECT FUNDING MECHANISMS

With the adoption of this plan, the City of Irwindale will be eligible for Implementation Grant funding through the SS4A program. Implementation Grants must be used to fund projects and strategies from this plan within 5 years of agreements being signed.

The Highway Safety Improvement Program provides grant funding to implement engineering countermeasures. The HSIP Cycle 15 Call-for-Projects will be announced in 2026. HSIP funds can pay for preliminary engineering, right of way (must be less than 10% of construction costs), and construction. Proposed projects are evaluated based on the Benefit/Cost Ratios (BCRs). All applications without fatal flaws are prioritized in descending order, statewide, by the BCRs.

The Active Transportation Program (ATP) funds projects that further ATP goals, which relate to increasing active transportation mode share and safety. Infrastructure projects can be funded, as well as plans and non-infrastructure projects. Applications are scored on several criteria, including an emphasis on safety.

The Bipartisan Infrastructure Law (BIL) continues the Congestion Mitigation and Air Quality Improvement Program (CMAQ) to provide funding to local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. In some cases, projects that improve safety may also meet the criteria for CMAQ funding. The California Office of Traffic Safety provides funding for non-engineering projects to improve safety, such as educational programs.

In addition, the City of Irwindale can look for opportunities to incorporate safety enhancements within the Capital Improvement Program. This can be achieved primarily by incorporating safety enhancements into routine maintenance activities, such as periodic road resurfacing projects. By integrating improved safety practices into signing and striping and related design elements when carrying out scheduled resurfacing, the City can achieve some safety improvements with minimal additional cost.

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