

CHAPTER 6.1: CITY OF BELLMEAD

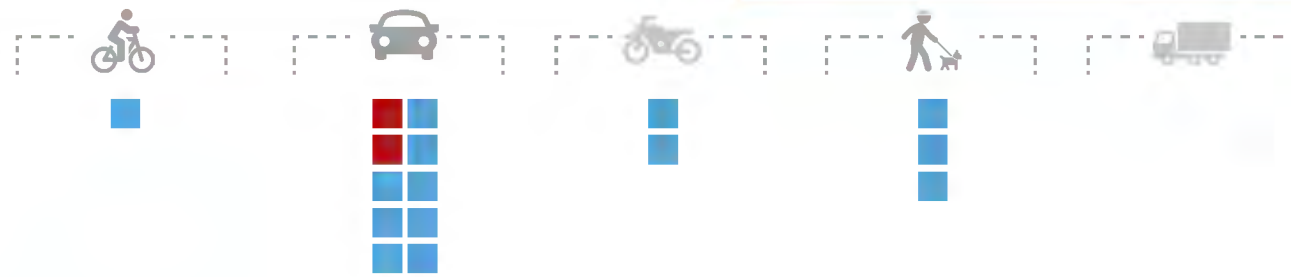
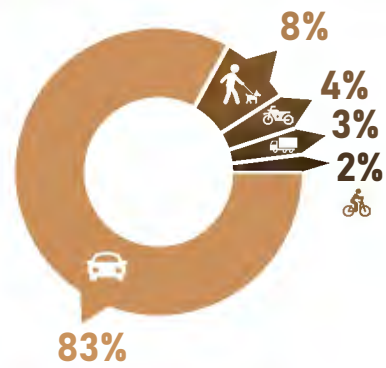
INTRODUCTION

The City of Bellmead is on SH-31, two miles northeast of Waco in east central McLennan County. The city has an estimated population of 10,494 according to the 2020 census. This chapter provides information on the City of Bellmead's collision statistics from 2014 to 2023. A total of 160 collisions occurred on Bellmead streets in the last 10 years, including two fatalities and 14 serious injuries. TxDOT roadways within Bellmead city limits observed 811 collisions during the same period, with 26 fatal injuries and 58 serious injuries. The majority of injury collisions in both City and TxDOT rights-of-way resulted into possible injuries, with 50 percent in City right-of-way and approximately 58 percent in TxDOT right-of-way.



COLLISIONS 2014 TO 2023		CITY		TxDOT	
Total Collisions	160	100 %	811	100 %	
Fatal Injury	2	1.25 %	26	3.21 %	
Serious Injury	14	8.75 %	58	7.15 %	
Minor Injury	64	40.00 %	253	31.20 %	
Possible Injury	80	50.00 %	474	58.45 %	
Total Persons Involved	216	100 %	1175	100 %	
Fatal Injury	2	0.93 %	27	2.30 %	
Serious Injury	16	7.41 %	66	5.62 %	
Minor Injury	80	37.04 %	367	31.23 %	
Possible Injury	118	54.63 %	715	60.85 %	

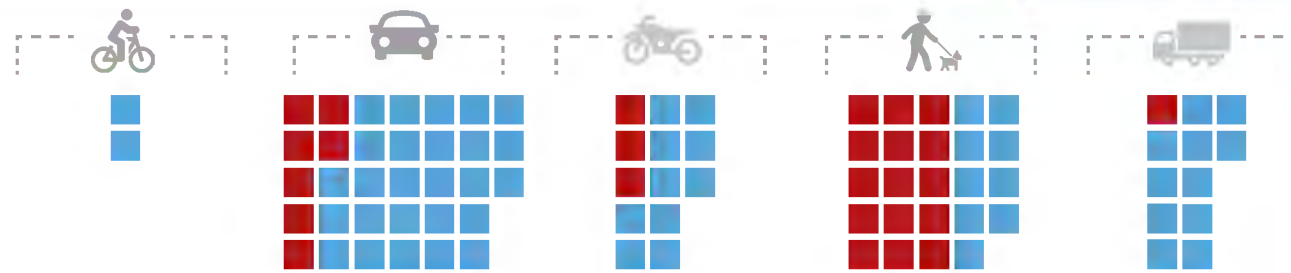
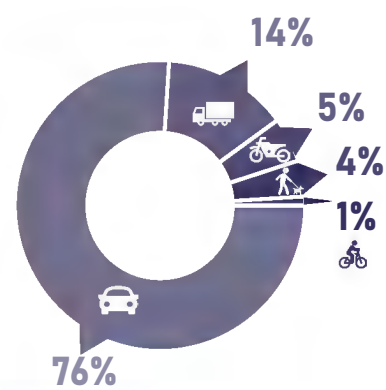
COLLISIONS BY MODE - CITY



Mode	Bicycle	Car	Motorcycle	Pedestrian	Truck
Fatal Injury	0 %	2 %	0 %	0 %	0 %
Serious Injury	25 %	6 %	33 %	25 %	0 %
Minor Injury	50 %	38 %	67 %	58 %	20 %
Possible Injury	25 %	55 %	0 %	17 %	80 %
Total	100 %	100 %	100 %	100 %	100 %

Note: Each box represents one fatal or severe injury collision.

COLLISIONS BY MODE - TxDOT



Mode	Bicycle	Car	Motorcycle	Pedestrian	Truck
Fatal Injury	0 %	1 %	8 %	48 %	1 %
Serious Injury	22 %	4 %	25 %	29 %	9 %
Minor Injury	44 %	32 %	43 %	10 %	28 %
Possible Injury	33 %	63 %	25 %	13 %	61 %
Total	100 %	100 %	100 %	100 %	100 %

Note: Each box represents one fatal or severe injury collision.

The following summary provides information on the number of collisions, persons injured, and the proportion of persons involved in collisions based on mode of transportation, age group, and gender. It also draws comparisons between collisions on Bellmead's city streets, TxDOT facilities, and McLennan County across various categories.

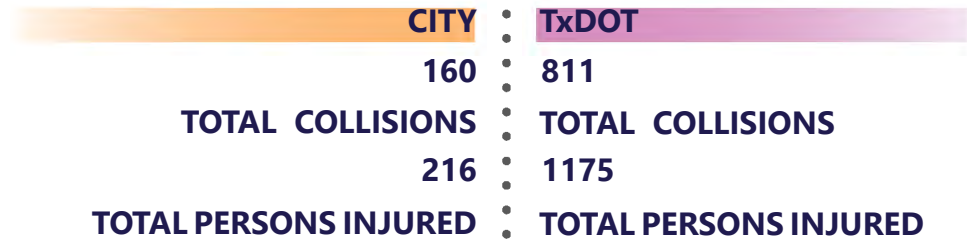
On Bellmead city streets, there were a total of 160 collisions, resulting in 216 persons injured. In comparison, TxDOT reported a total of 811 collisions, resulting in 1,175 persons injured within Bellmead city limits.

This section also identifies several major collision trends on Bellmead city streets, including hit object collisions, broadside collisions due to distracted driving, and right-of-way violations by automobiles. On TxDOT roadways, the prominent trends were rear end collisions, broadside collisions, unsafe speed violations, and collisions due to distracted driving. A detailed summary analyzing these collision trends is provided in the collision profile section of this chapter.

The pie charts below compare the severity of collisions on roadways with different speed limits. The charts indicate that roads with a 40 mph speed limit accounted for the highest proportion of KSI collisions out of the speed limits examined.

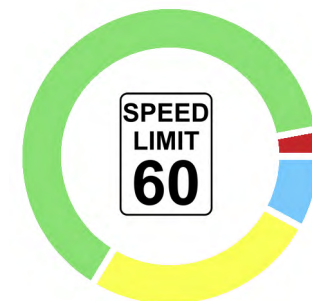
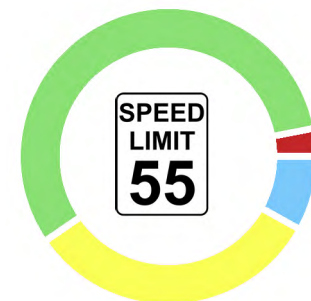
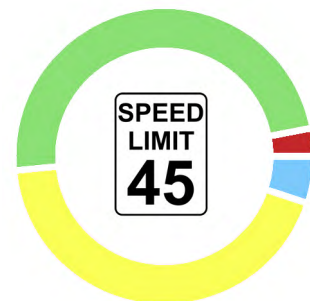
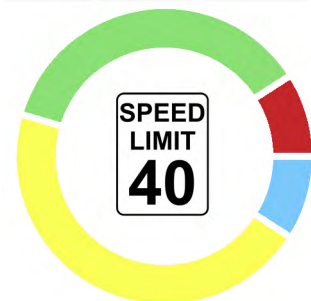
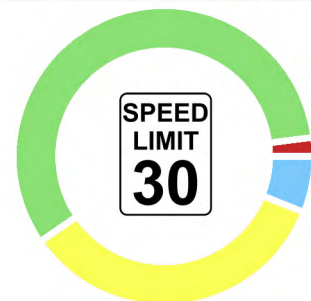
CITY OF BELLMEAD VS. McLENNAN COUNTY COLLISIONS - RELATIVE SHARES

	CITY	TxDOT	McLENNAN COUNTY
MODE			
Bicycle	3 %	Bicycle 1 %	Bicycle 1 %
Car	83 %	Car 76 %	Car 85 %
Motorcycle	4 %	Motorcycle 5 %	Motorcycle 4 %
Pedestrian	8 %	Pedestrian 4 %	Pedestrian 3 %
Truck	3 %	Truck 14 %	Truck 7 %
FIRST HARMFUL EVENT			
Motor Vehicle in Transport	55 %	Motor Vehicle in Transport 85 %	Motor Vehicle in Transport 72 %
Fixed Object	28 %	Fixed Object 7 %	Fixed Object 17 %
Pedestrian	8 %	Pedestrian 4 %	Overturned 4 %
MANNER OF COLLISION			
Hit Object	45 %	Rear End 41 %	Broadside 42 %
Broadside	42 %	Broadside 35 %	Hit Object 28 %
Rear End	6 %	Hit Object 15 %	Rear End 24 %
Head-On	5 %	Sideswipe 7 %	Sideswipe 5 %
VIOLATION CATEGORY			
Distracted Driving	20 %	Unsafe Speed 25 %	Unsafe Speed 23 %
Automobile Right-of-Way	19 %	Distracted Driving 19 %	Automobile Right-of-Way 22 %
Unsafe Speed	11 %	Automobile Right-of-Way 15 %	Traffic Signals and Signs 12 %
Traffic Signals and Signs	11 %	Traffic Signals and Signs 10 %	Distracted Driving 8 %
Other Unforeseen Reasons	10 %	Following Too Closely 6 %	Other Improper Driving 6 %
Driving/ Bicycling under Influence	6 %	Other Unforeseen Reasons 5 %	Other Unforeseen Reasons 6 %
LOCATION			
Intersection	58 %	Intersection 57 %	Intersection 59 %
Roadway	43 %	Roadway 43 %	Roadway 41 %
LIGHTING			
Daylight	72 %	Daylight 75 %	Daylight 70 %
Dark, Lighted	13 %	Dark, Lighted 14 %	Dark, Lighted 16 %
Dark, Not Lighted	12 %	Dark, Not Lighted 8 %	Dark, Not Lighted 11 %



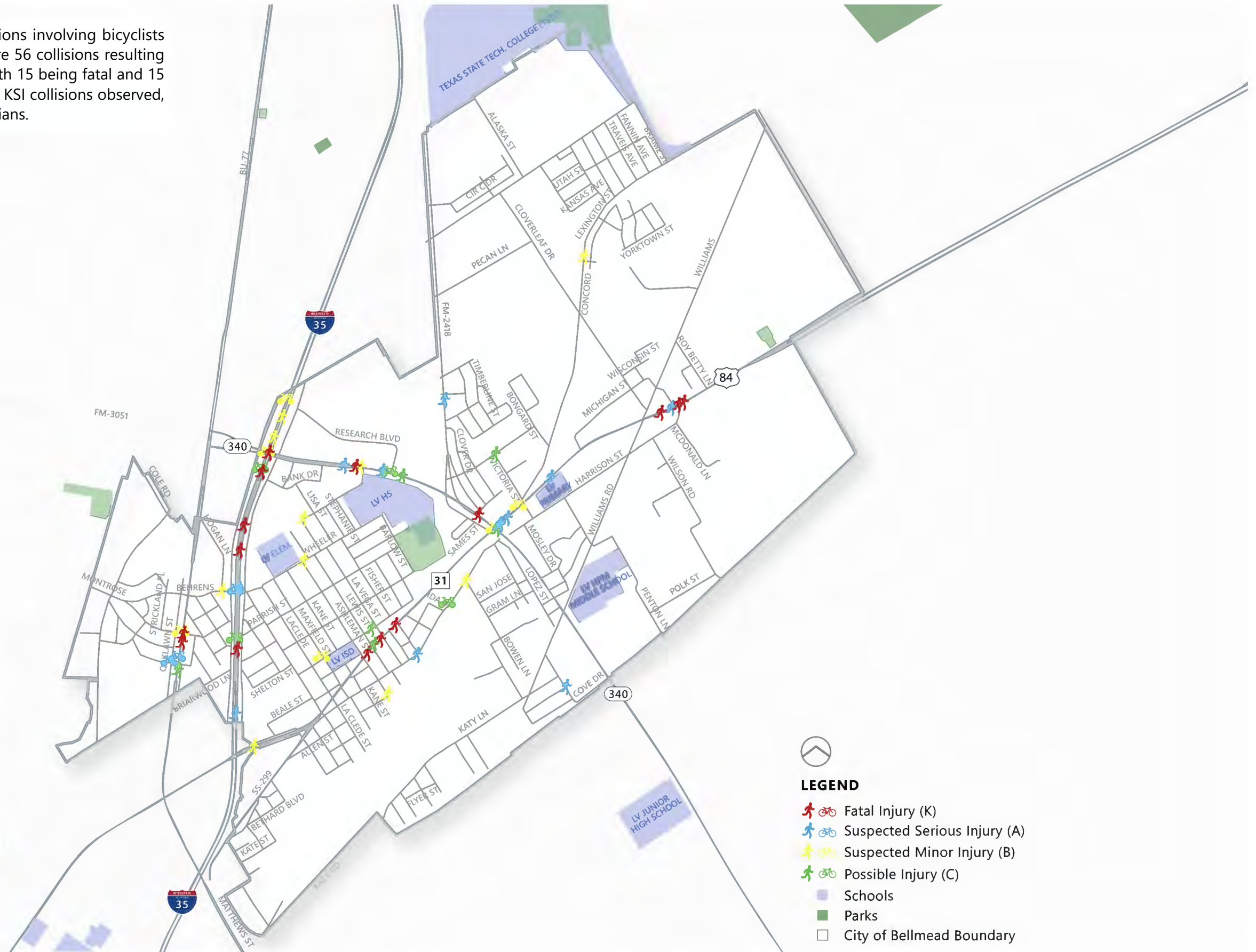
	PERSONS INVOLVED				PERSONS INVOLVED			
	CITY		TxDOT		CITY		TxDOT	
	MODE							
Bicycle	0 %	0 %	1 %	0 %	0 %	0 %	0 %	0 %
Car	1 %	5 %	30 %	52 %	1 %	4 %	28 %	57 %
Motorcycle	0 %	1 %	2 %	0 %	0 %	1 %	1 %	1 %
Pedestrian	0 %	1 %	3 %	1 %	1 %	1 %	0 %	0 %
Truck	0 %	0 %	1 %	0 %	0 %	0 %	1 %	2 %
	AGE							
Below 15	0 %	0 %	4 %	2 %	0 %	0 %	2 %	6 %
15 - 65	1 %	6 %	28 %	44 %	2 %	5 %	26 %	48 %
Above 65	0 %	1 %	5 %	8 %	1 %	1 %	3 %	6 %
	GENDER							
Male	0 %	6 %	19 %	26 %	2 %	4 %	15 %	23 %
Female	0 %	2 %	19 %	28 %	1 %	2 %	16 %	38 %

SPEED LIMIT



BICYCLE & PEDESTRIAN COLLISION BY SEVERITY

The map displays the locations of injury collisions involving bicyclists and pedestrians in Bellmead. In total, there were 56 collisions resulting in injuries to both bicyclists and pedestrians, with 15 being fatal and 15 resulting in serious injuries. Among the total 30 KSI collisions observed, three involved bicyclist and 27 involved pedestrians.



SEVERITY INDEX

The Collision Severity Index methodology is used to identify the locations within a jurisdiction that are experiencing the most severe crashes. This approach assigns weighted point values based on the injury outcomes of individual collisions - 3 points for each fatal or severe injury, 2 points for minor injuries, and 1 point for possible injuries. By summing these scores for all crashes along defined roadway segments between intersections, locations with a history of the most severe crashes receive the highest overall severity index.

This data-driven analysis allows the project team to prioritize infrastructure improvements and safety countermeasures in high-risk areas. Visualizing the severity index through a color-coded collision heat map further highlights the geographic concentrations of injury crashes, guiding decision-makers to target the most vulnerable locations for mitigation. Locations with the highest severity scores are selected for inclusion in the High Risk Network, shown on this map.



LEGEND

Severity Index

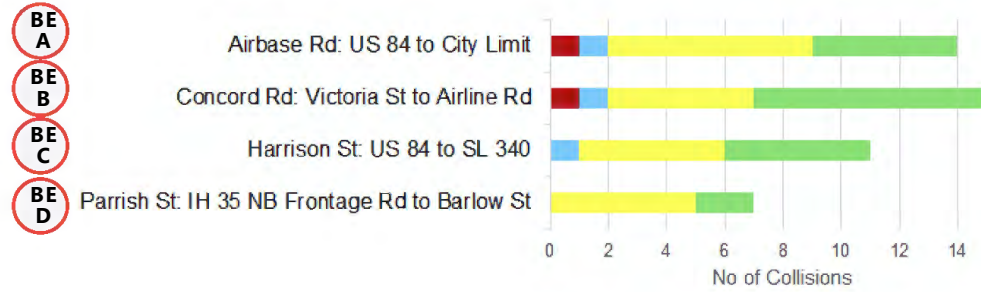
Low High

- Other Roads
- Schools
- Parks
- City of Bellmead Boundary

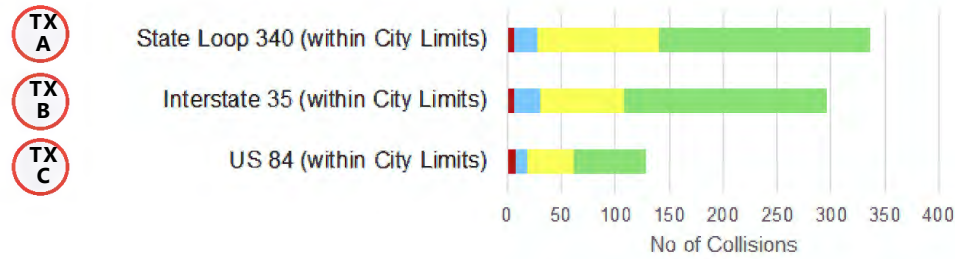
ROADWAYS & INTERSECTIONS

This section lists high risk roadway segments and intersections within Bellmead city limits. The accompanying graph depicts the name and limits of each roadway along with the number of collisions categorized by severity at that location. A severity index methodology was utilized to identify these high risk spots. This methodology assigns 3 points for each fatal or severe injury collision, 2 points for each minor injury collision, and 1 point for each possible injury collision.

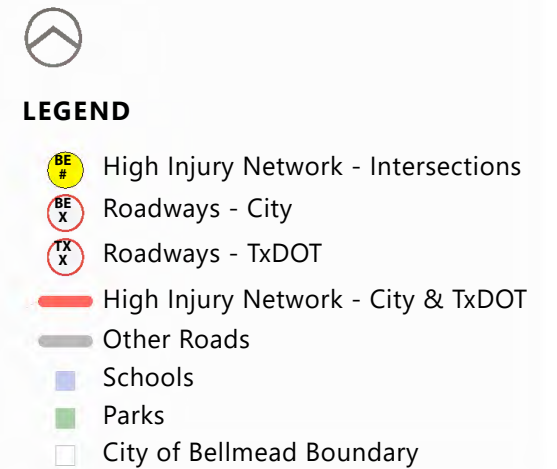
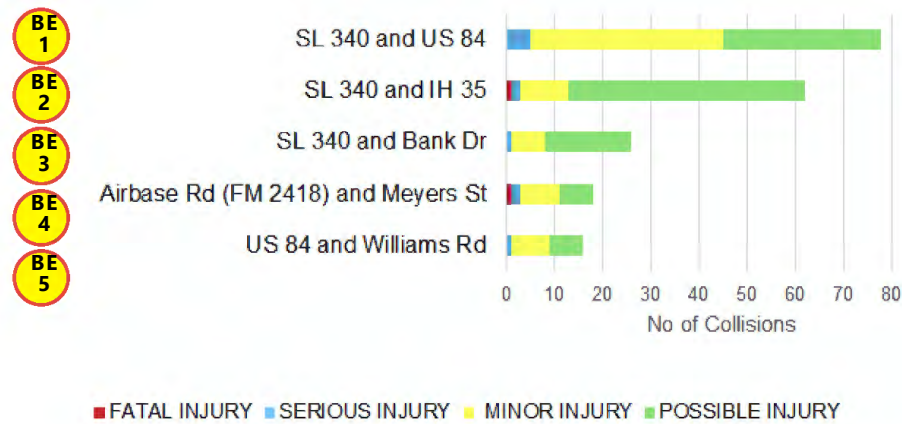
ROADWAYS



TxDOT ROADWAYS



INTERSECTIONS

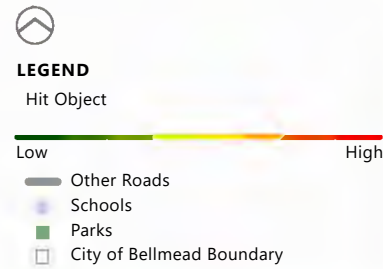
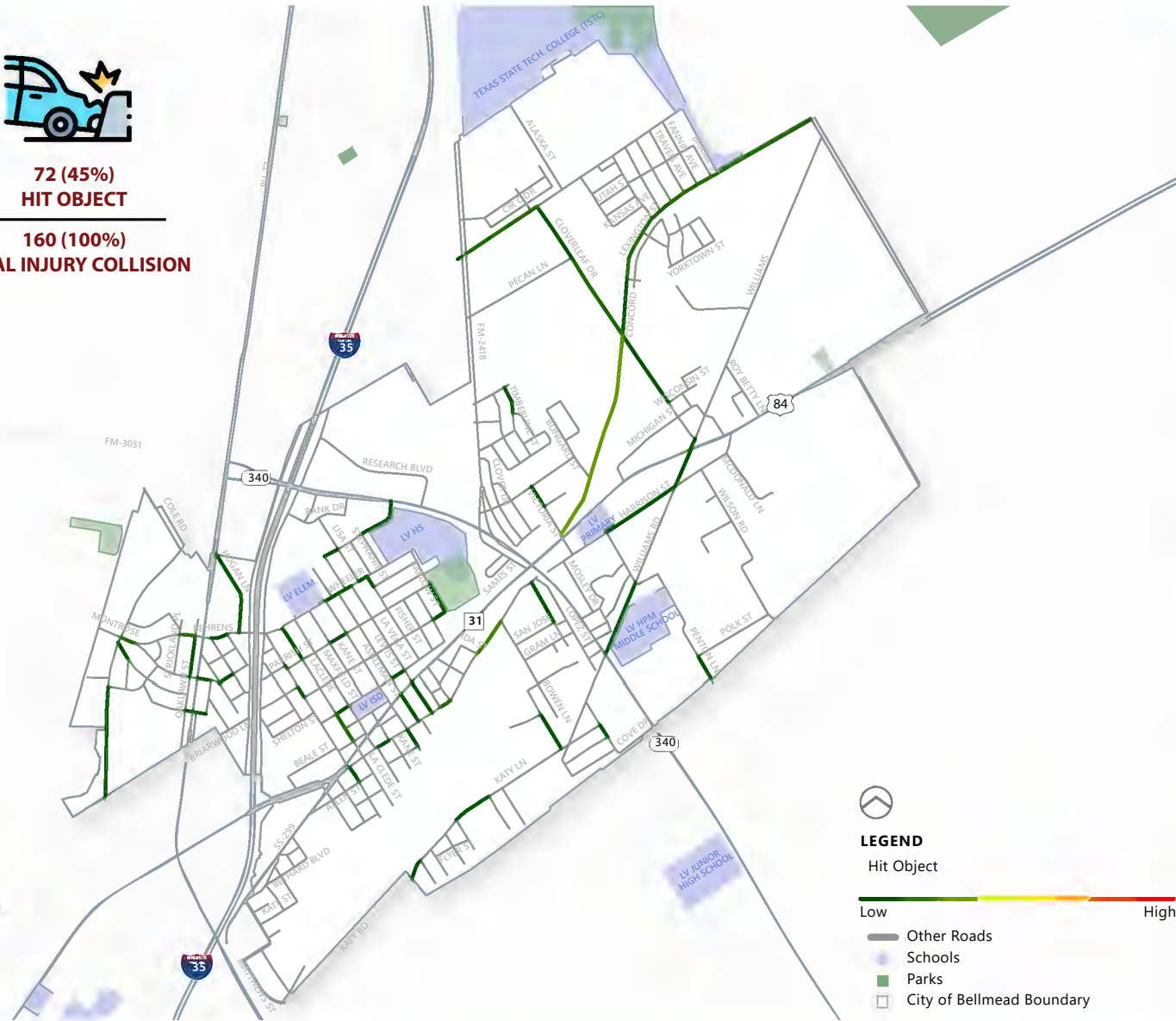


PROFILES - CITY

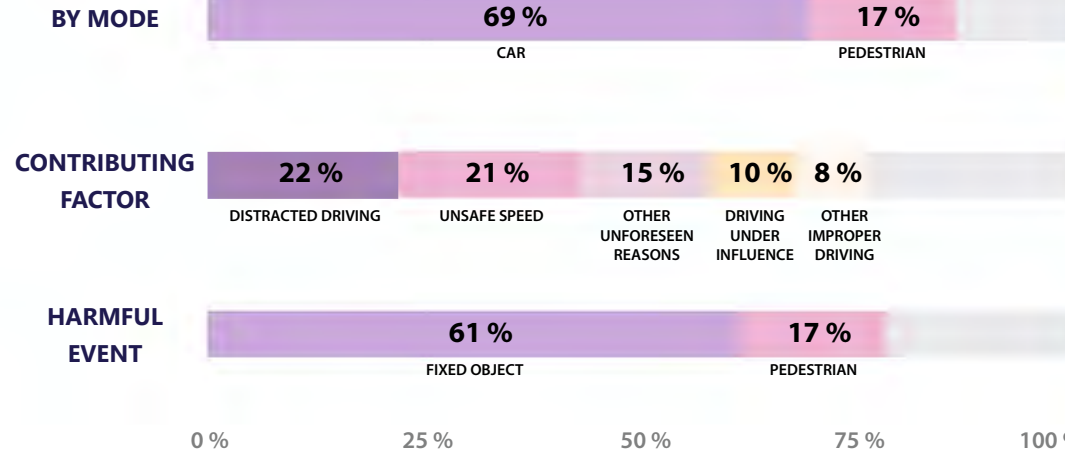
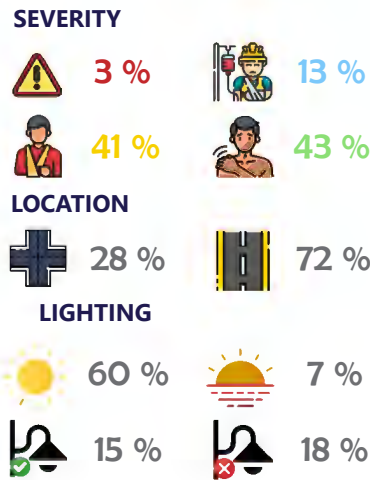
PROFILE 1 - HIT OBJECT



72 (45%)
HIT OBJECT
160 (100%)
TOTAL INJURY COLLISION



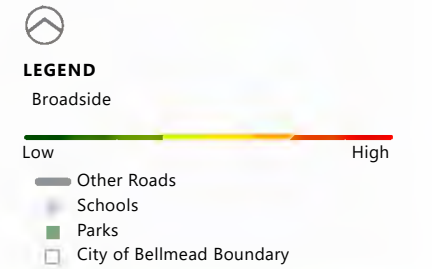
72 COLLISIONS



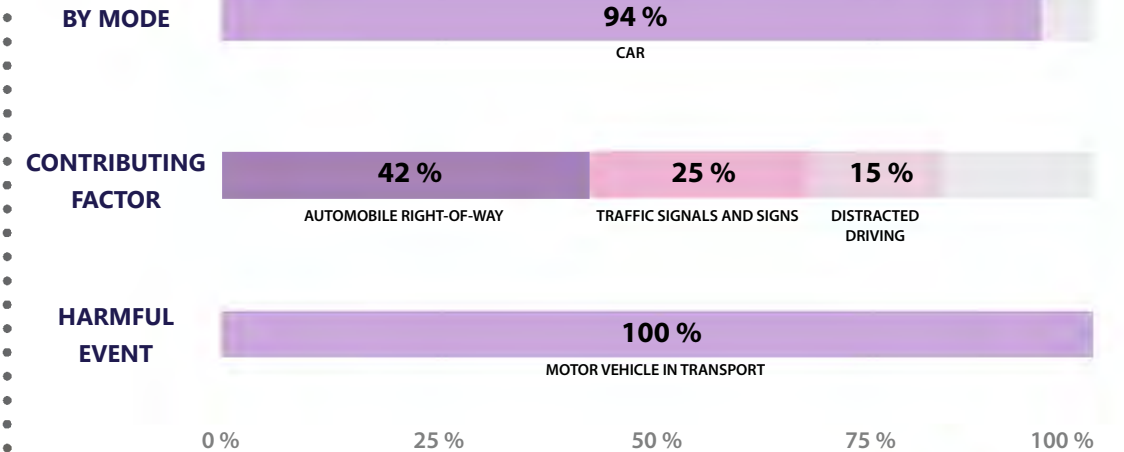
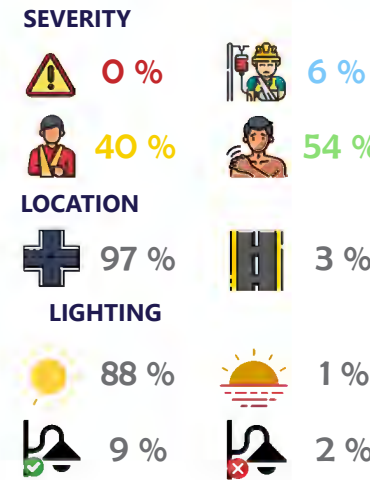
PROFILE 2 - BROADSIDE



67 (42%)
BROADSIDE
160 (100%)
TOTAL INJURY COLLISION



67 COLLISIONS

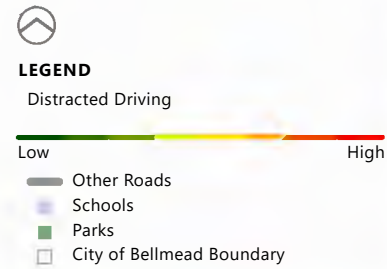
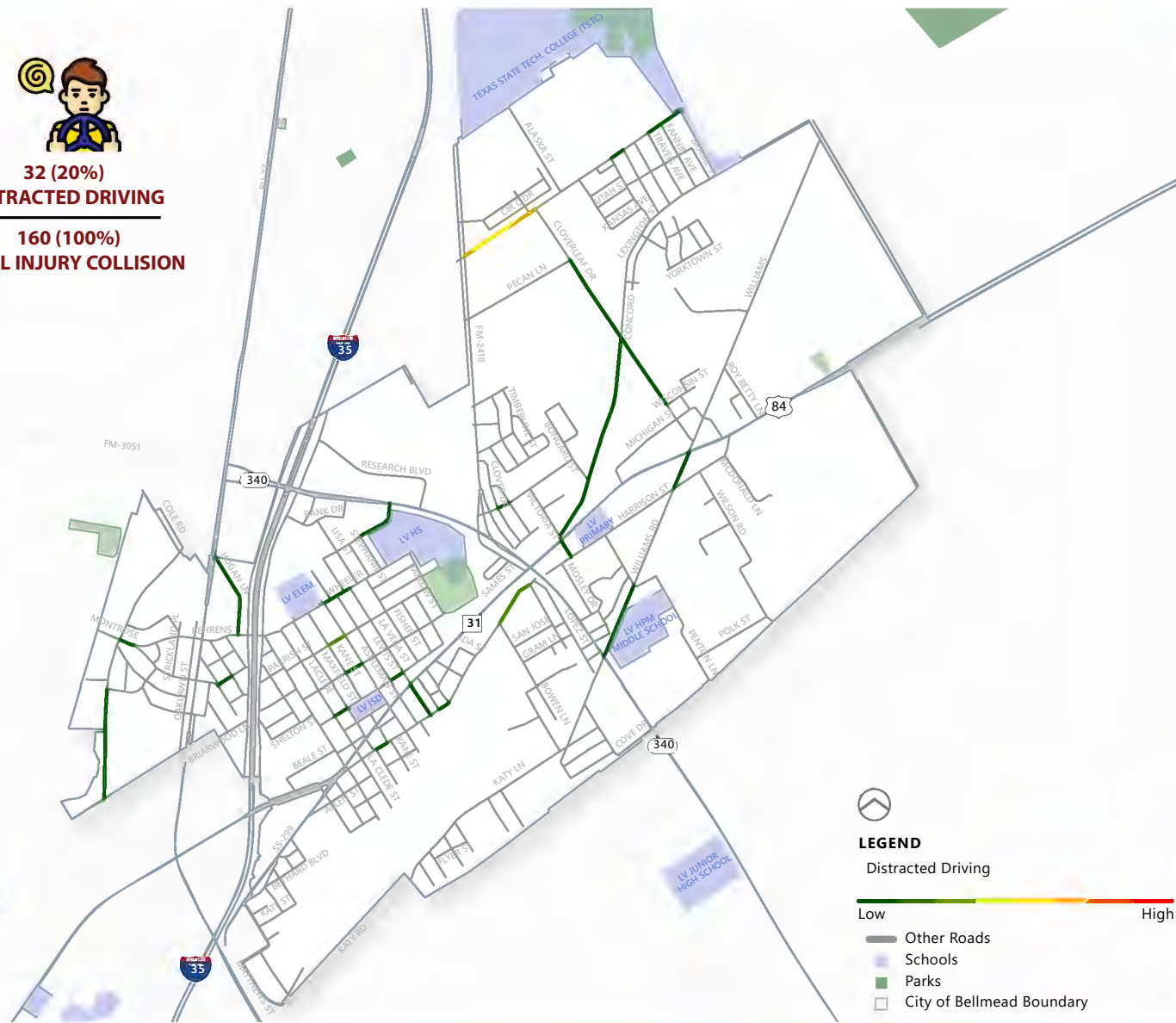


PROFILES - CITY

PROFILE 3 - DISTRACTED DRIVING



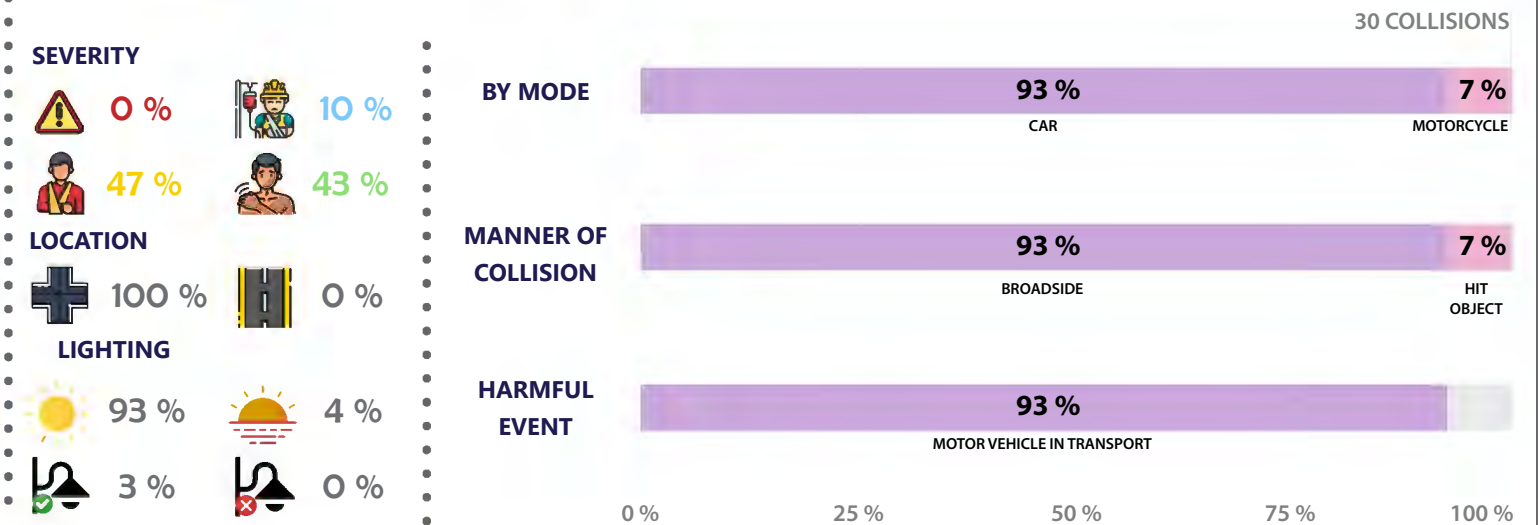
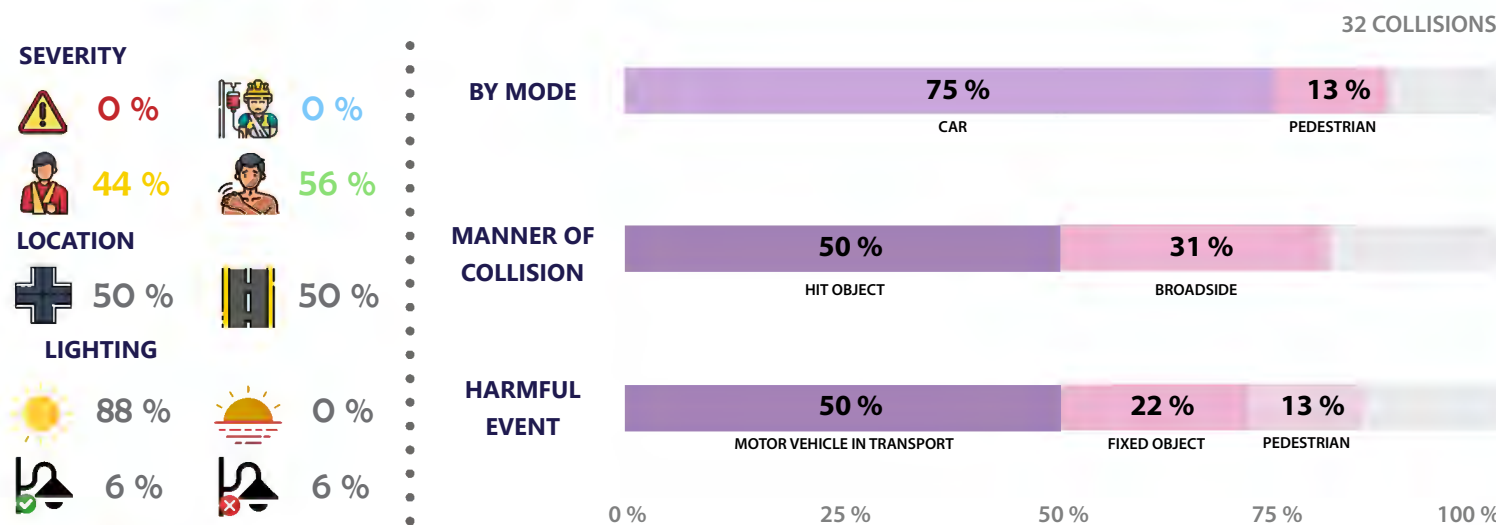
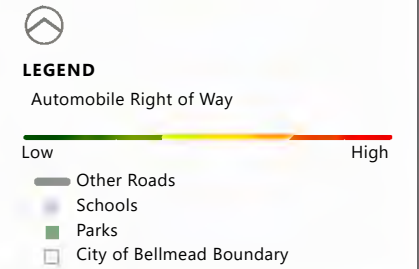
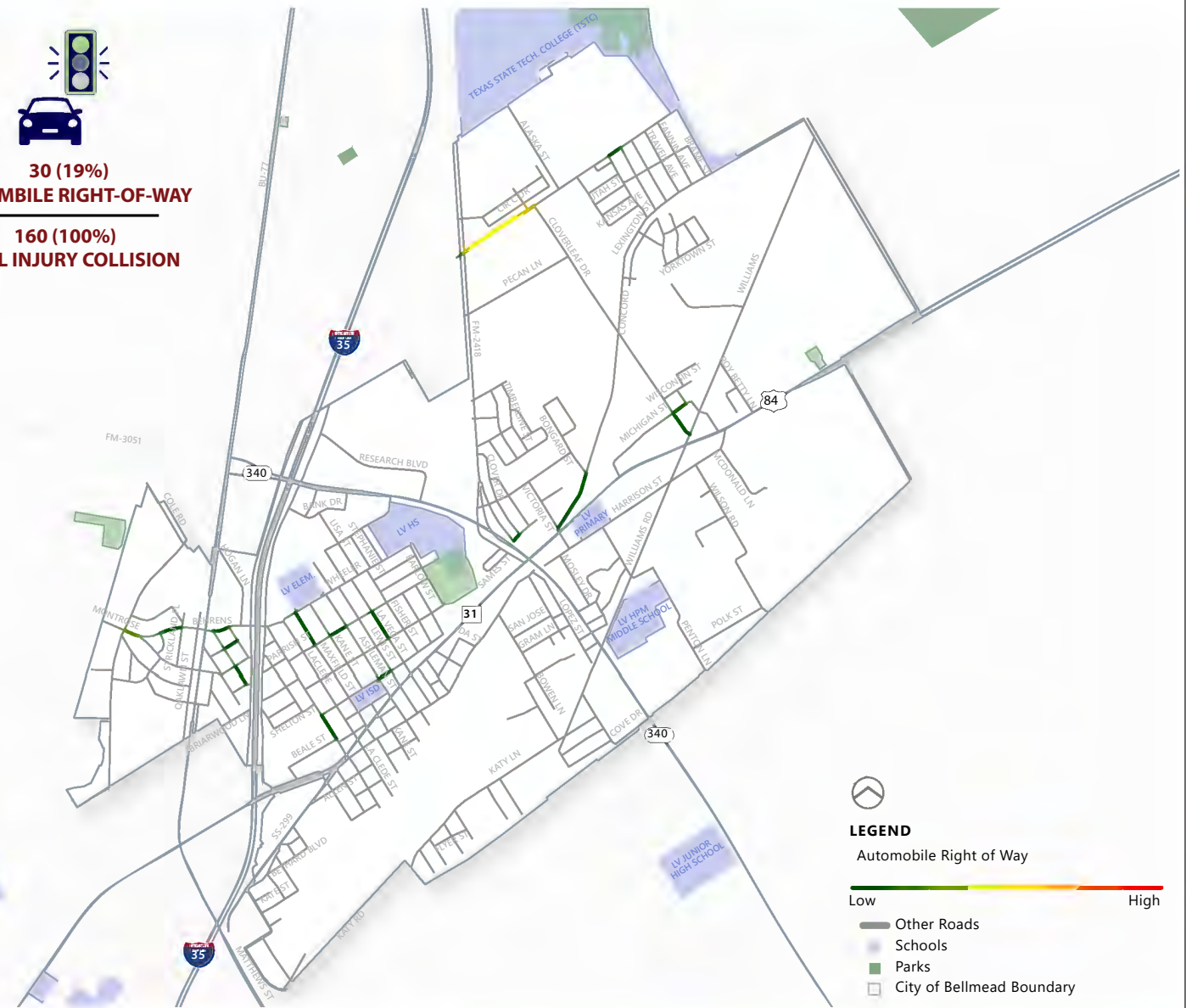
32 (20%)
DISTRACTED DRIVING
160 (100%)
TOTAL INJURY COLLISION



PROFILE 4 - AUTOMOBILE RIGHT-OF-WAY



30 (19%)
AUTOMOBILE RIGHT-OF-WAY
160 (100%)
TOTAL INJURY COLLISION



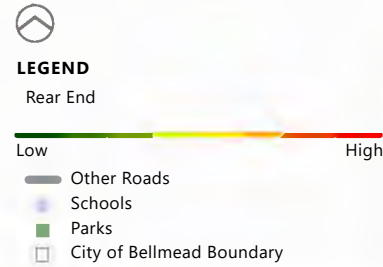
PROFILES - TXDOT

PROFILE 1 - REAR END

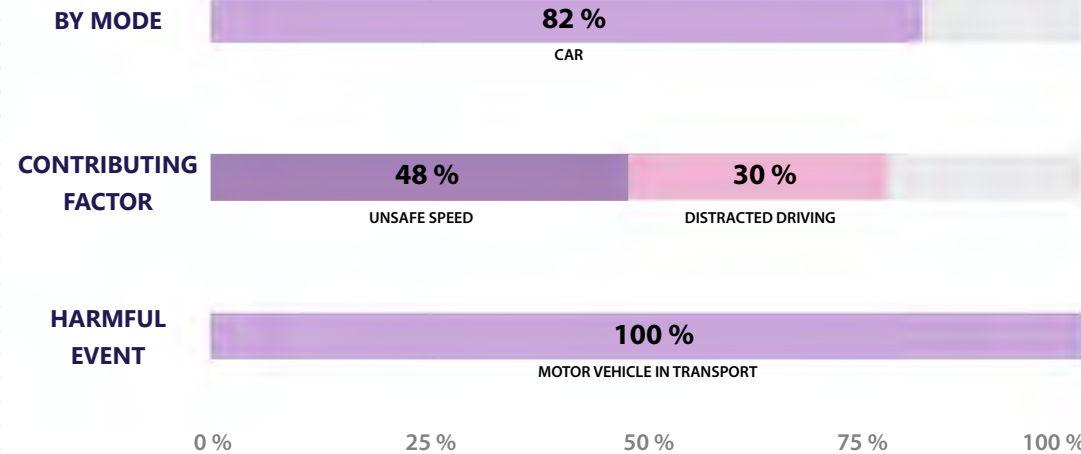
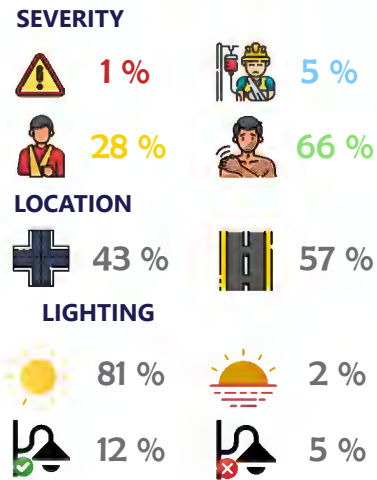


336 (41%)
REAR END

811 (100%)
TOTAL INJURY COLLISION



336 COLLISIONS

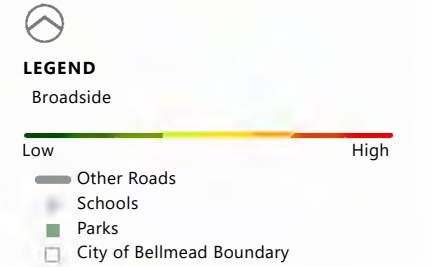


PROFILE 2 - BROADSIDE

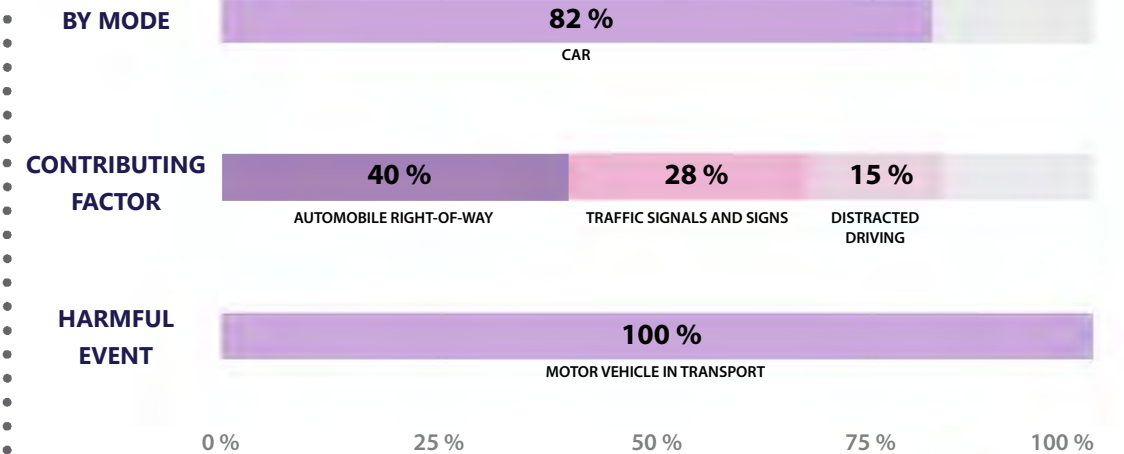
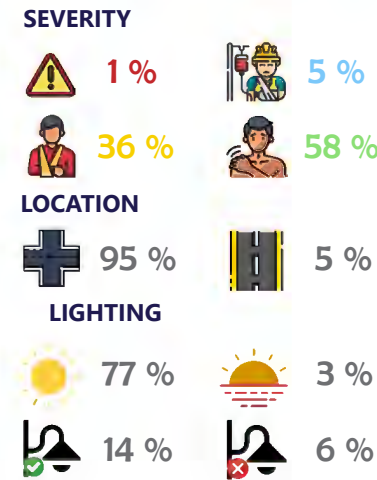


284 (35%)
BROADSIDE

811 (100%)
TOTAL INJURY COLLISION



284 COLLISIONS

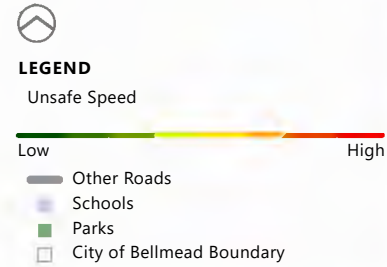


PROFILES - TXDOT

PROFILE 3 - UNSAFE SPEED



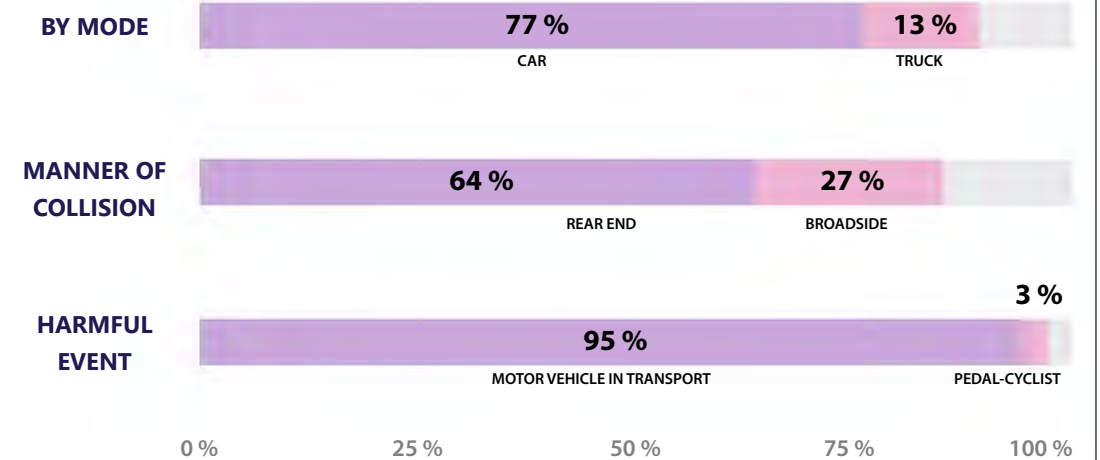
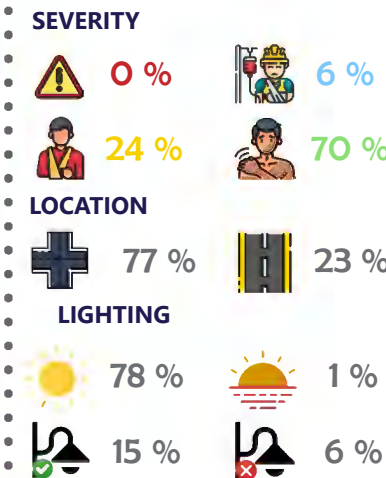
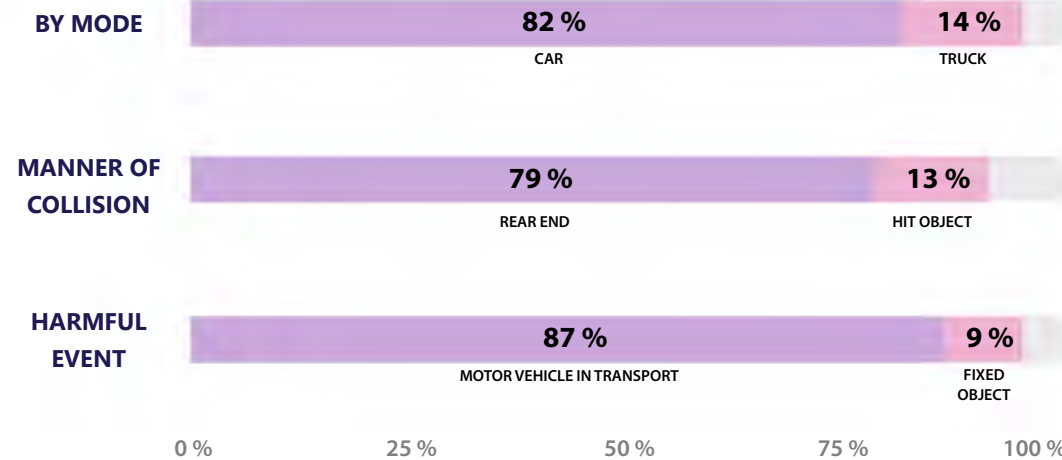
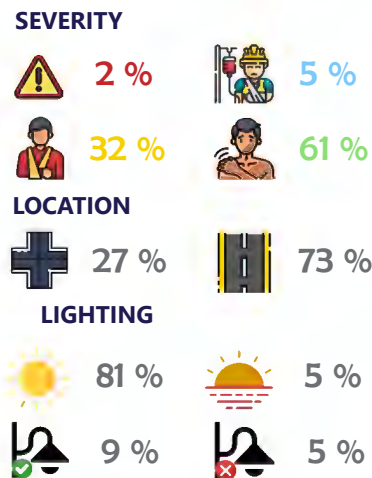
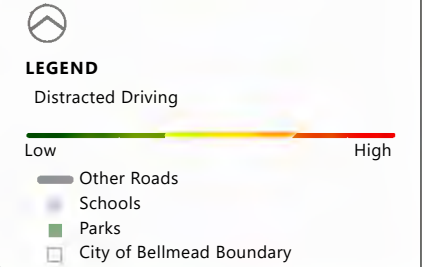
203 (25%)
UNSAFE SPEED
811 (100%)
TOTAL INJURY COLLISION



PROFILE 4 - DISTRACTED DRIVING



158 (19%)
DISTRACTED DRIVING
811 (100%)
TOTAL INJURY COLLISION



BASIC THOROUGHFARE PLANNING

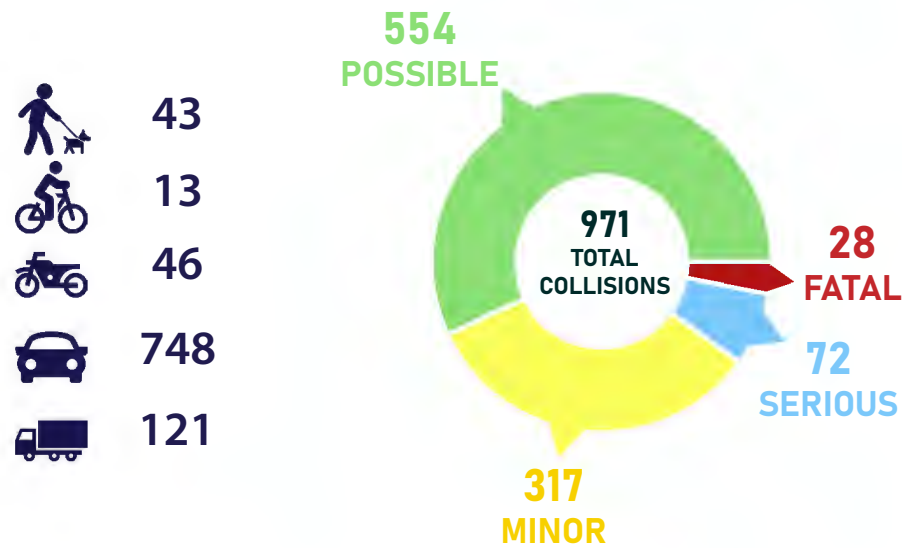
The City of Bellmead should consider undertaking a Basic Thoroughfare Planning process to comprehensively evaluate its existing transportation network and identify strategic improvements. With Bellmead’s growing population and economic activity, a thorough assessment of the city’s major roads, intersections, and mobility patterns is crucial for addressing current challenges and planning for future needs. The thoroughfare planning effort could involve analyzing traffic volumes, crash data, multimodal access, pavement conditions, and other key metrics to develop a data-driven plan for optimizing the efficiency, safety, and connectivity of Bellmead’s thoroughfare system. This planning initiative could provide the roadmap for targeted projects to upgrade major corridors, enhance intersection operations, expand bicycle/pedestrian facilities, and ensure the transportation network keeps pace with the community’s development. Investing in this comprehensive transportation planning would position Bellmead to proactively manage its growing mobility demands and foster a safe, accessible, and sustainable thoroughfare network.



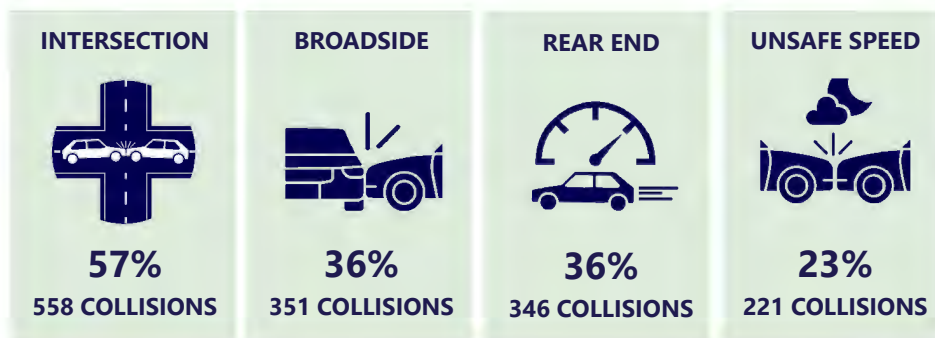
PROJECT 1: CITYWIDE SIGN INVENTORY & PAVEMENT DELINEATION

The City of Bellmead is proposing a Citywide Sign Inventory and Pavement Delineation project to improve roadway safety and navigation for drivers. The proposed initiative would commence with a thorough assessment of all existing traffic signs throughout the city to identify any that are damaged, faded, obstructed, or non-compliant with current regulations regarding reflectivity. Such signs would be replaced as necessary to ensure clear visibility during both day and night. Additionally, the project would encompass surveying all road markings, including lane lines, turn arrows, crosswalks, and other pavement delineations across the city.

INJURY COLLISION STATISTICS



TRENDS



ESTIMATED COST OF IMPROVEMENT

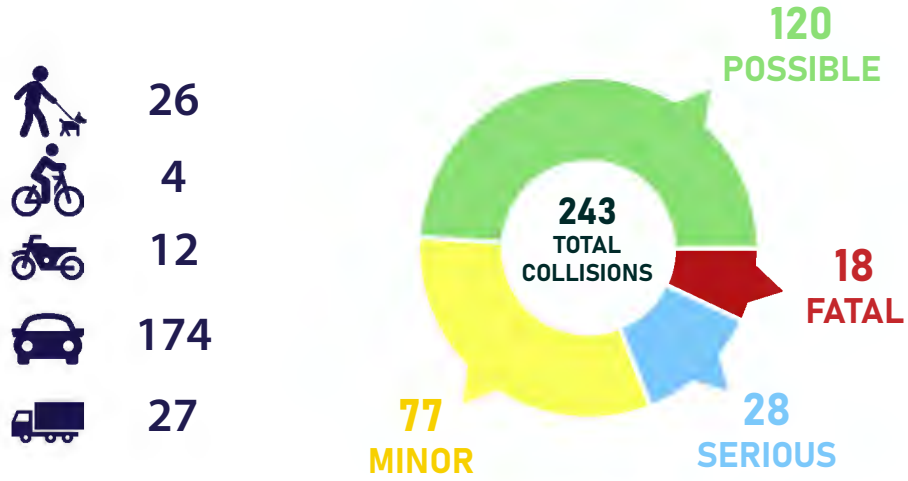
	IMPROVEMENTS	LIMIT	ESTIMATED COST
	Citywide Sign Inventory, Replacement & Installation	Citywide	\$782,200
	Citywide Pavement Delineation	Citywide	\$2,777,800
		CONTINGENCY COST	\$712,000
		ENGINEERING COST	\$1,068,000
		TOTAL COST	\$5,340,000



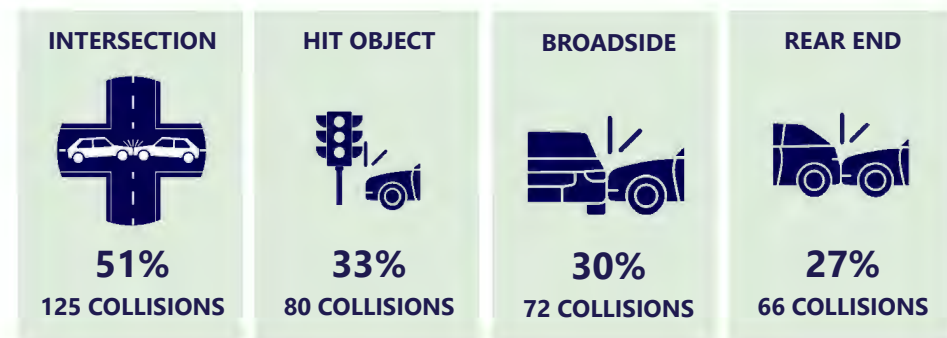
PROJECT 2: CITYWIDE STREET LIGHT INVENTORY

The City of Bellmead is proposing a Citywide Streetlight Inventory and Replacement initiative designed to improve nighttime visibility and safety for motorists, cyclists, and pedestrians. This project involves conducting a comprehensive inventory of all current streetlights across the city to identify missing streetlights, update outdated inventories, generate reports for non-functioning fixtures, and identify types of lights. Subsequently, outdated, damaged, or inadequately illuminating lights will be replaced with new LED streetlights. It is expected that the enhanced lighting will reduce injury crashes and enhance safety for both residents and visitors navigating Bellmead's streets during the nighttime hours.

NIGHTTIME INJURY COLLISION STATISTICS



TRENDS



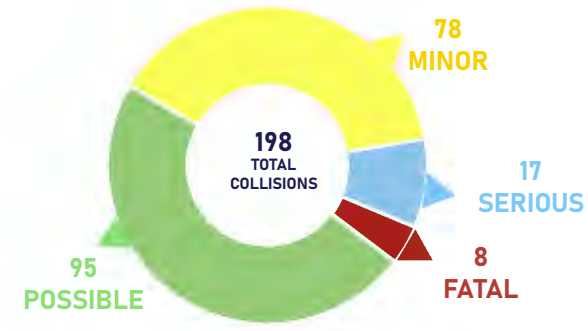
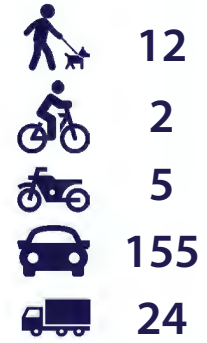
ESTIMATED COST OF IMPROVEMENT

IMPROVEMENTS	LIMIT	ESTIMATED COST
Install/ Replace Street Lights	Citywide	\$5,232,500
	CONTINGENCY COST	\$1,046,500
	ENGINEERING COST	\$2,197,700
	TOTAL COST	\$8,476,700

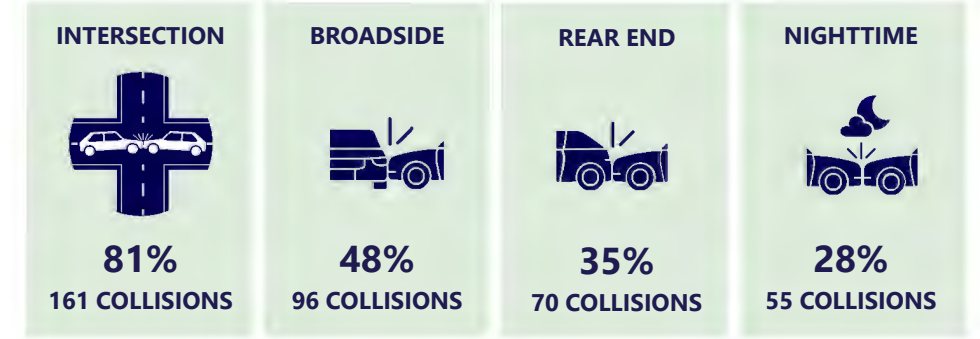


Bellmead Drive serves as a primary east-west arterial within the City of Bellmead. This segment of the corridor is a two lane roadway with a center two-way left turn lane, and the speed limits vary, it ranges from 30 mph to 55 mph. The comprehensive plan (2023) identifies a need for sidewalks, biking infrastructure, landscaping and curb packing along this corridor. This road also provides access to La Vega Primary School.

INJURY COLLISION STATISTICS



TRENDS



EXISTING CONDITIONS



Existing Condition:
Bellmead Dr at E 27th St facing east

Existing Condition:
Bellmead Dr between Lewis St and La Vega Dr facing east

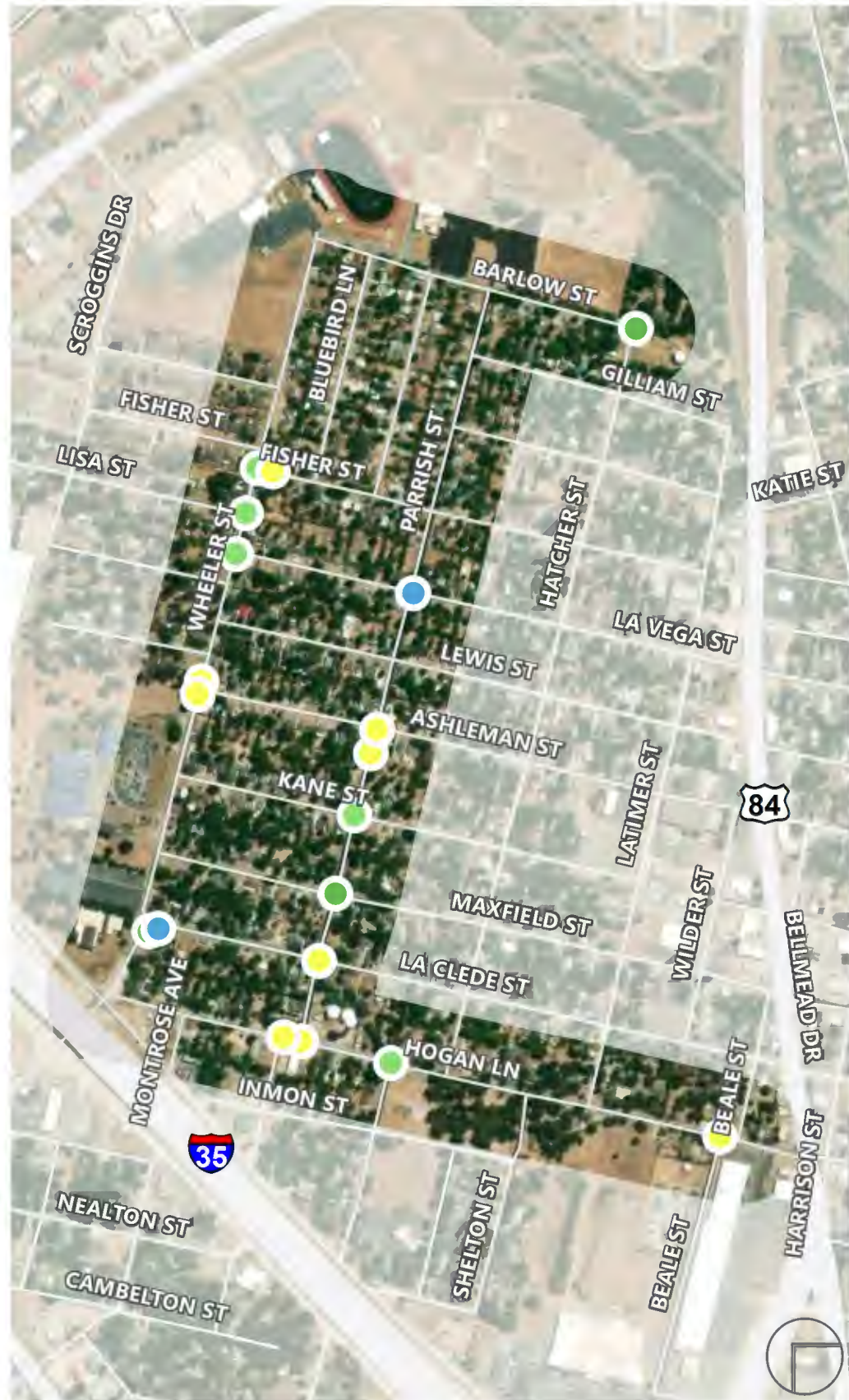


ESTIMATED COST OF IMPROVEMENT

3: US-84 (BELLMEAD DR)- CORRIDOR SAFETY IMPROVEMENTS			
IMPROVEMENTS	LOCATIONS	ESTIMATED COST	
Install Median and Access Management		\$4,275,300	
Pedestrian Connectivity Improvements		\$7,009,300	
Install Street Lighting	From E 26th St to East City Limits	\$994,800	
Install Speed Feedback Sign		\$69,000	
Pull-out Bus Stop		\$25,900	
Install Roundabout	US-84 & E 27th St	\$862,500	
	CONTINGENCY COST	\$2,647,400	
	ENGINEERING COST	\$5,559,500	
	TOTAL COST	\$21,443,700	

■ Fatal Injury
 ■ Serious Injury
 ■ Minor Injury
 ■ Possible Injury

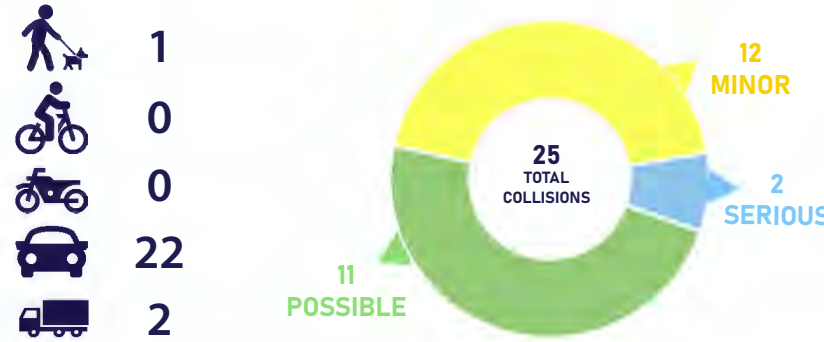
PROJECT 4: PEDESTRIAN SAFETY IN SCHOOL ZONE



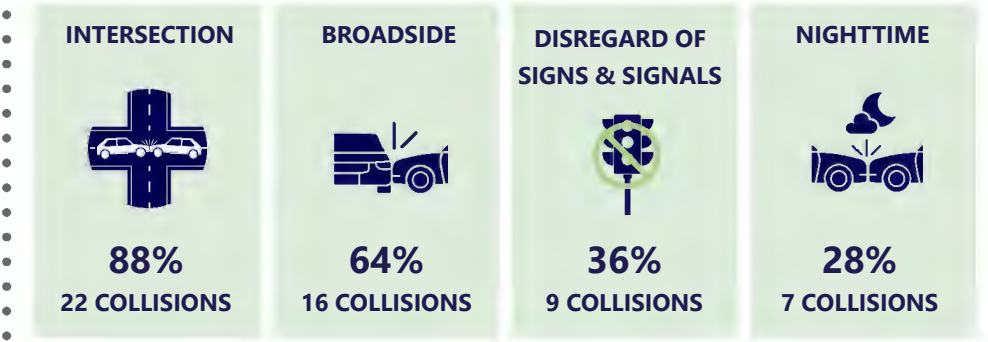
■ Fatal Injury
 ■ Serious Injury
 ■ Minor Injury
 ■ Possible Injury

Wheeler Street, a two-lane undivided major collector, provides access to La Vega Elementary School, residential neighborhoods, and Bellmead Civic Center. Parrish Street, a two-lane undivided local street runs parallel to Wheeler Street and provides access to residential neighborhoods. Both roadways have a posted speed limit of 30 mph. Hogan Lane and Barlow Street complete the network. The comprehensive plan (2023) recommends bike infrastructure, and sidewalks on Hogan Lane and Wheeler Street. This project is within a 0.25 mile of La Vega Elementary and High Schools and the Bellmead Civic Center.

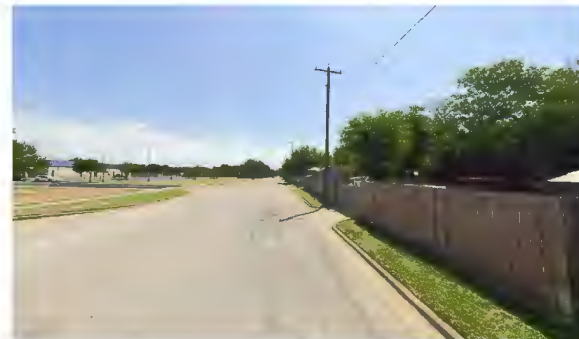
INJURY COLLISION STATISTICS



TRENDS



EXISTING CONDITIONS



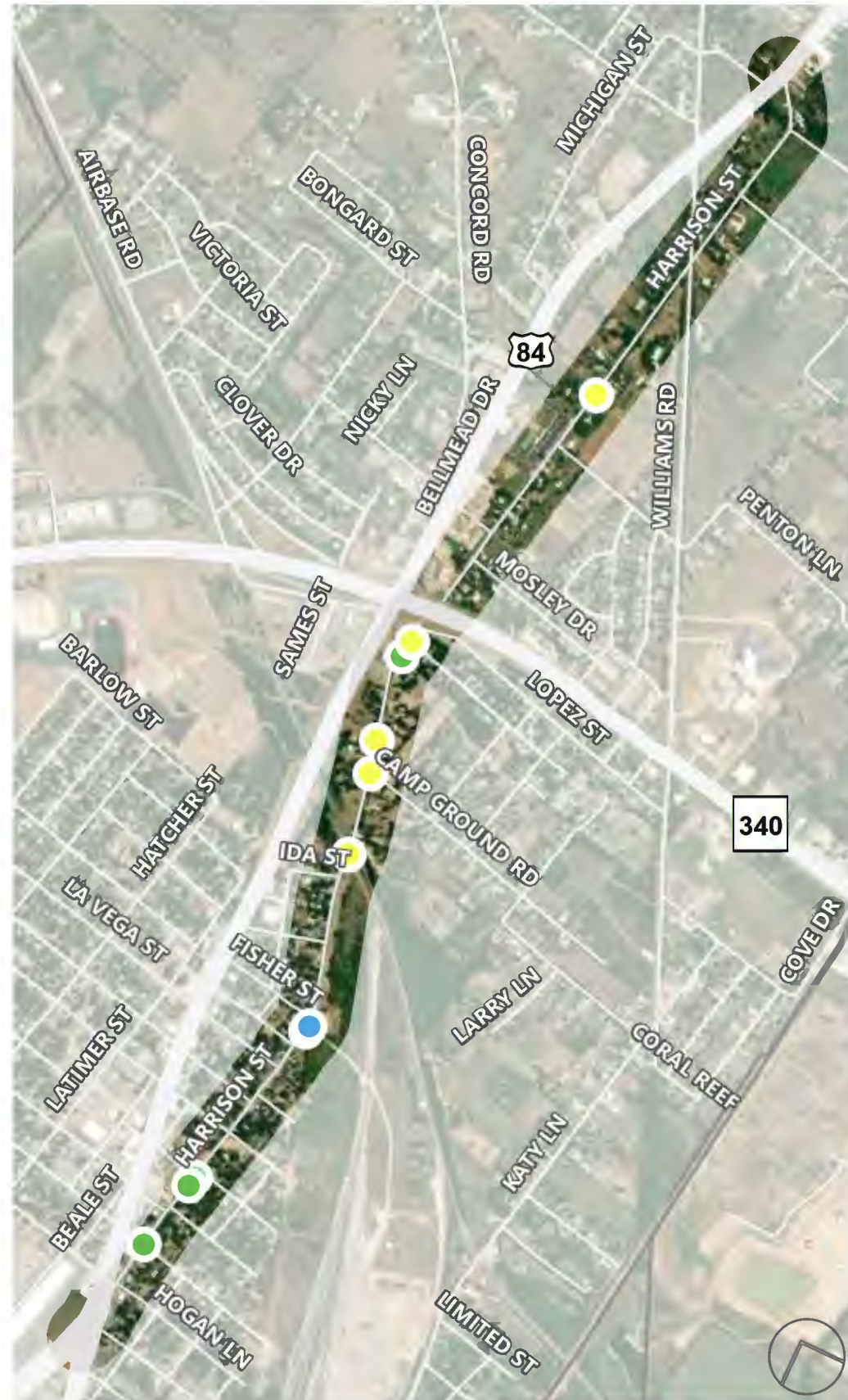
Existing Condition:
Wheeler St at Maxfield St facing east



Existing Condition:
Parrish St at Lewis St facing east

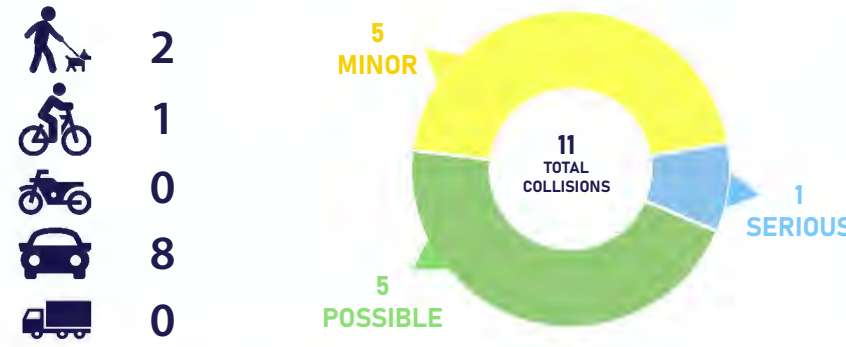
ESTIMATED COST OF IMPROVEMENT

4: PEDESTRIAN SAFETY IMPROVEMENTS IN SCHOOL ZONE		
IMPROVEMENTS	LOCATIONS	ESTIMATED COST
	Wheeler St	\$996,200
	Parrish St	\$1,988,800
	Barlow St	\$439,300
	Hogan Ln	\$854,100
	CONTINGENCY COST	\$855,700
	ENGINEERING COST	\$1,797,000
	TOTAL COST	\$6,931,100

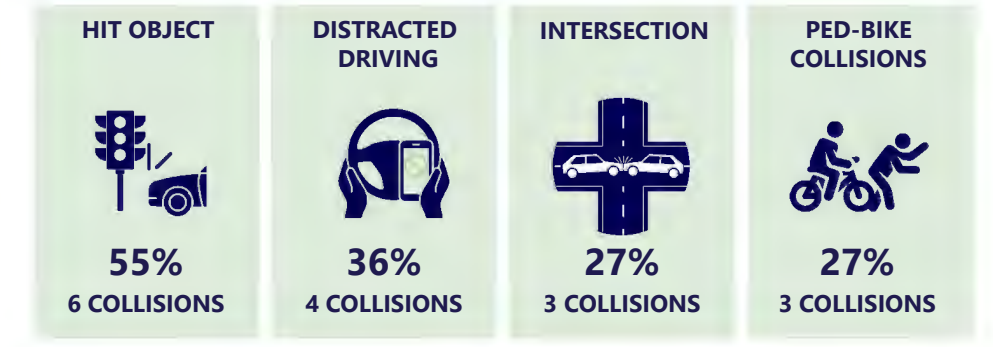


Harrison Street is an east-west local roadway that runs between Bellmead Drive and State Loop 340. This segment of Harrison Street is a two-lane undivided roadway with a posted speed limit of 30 mph. This road provides access to East La Vega Primary School. The comprehensive plan (2023) also recommends multimodal improvements along this corridor.

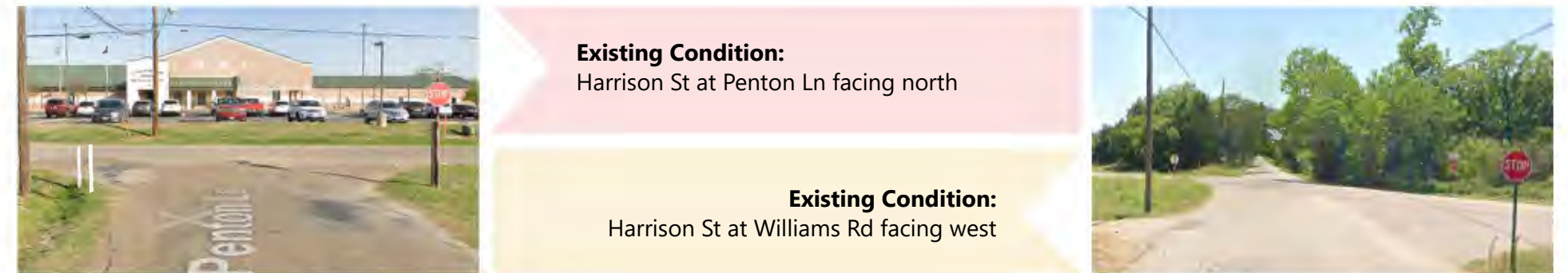
INJURY COLLISION STATISTICS



TRENDS



EXISTING CONDITIONS

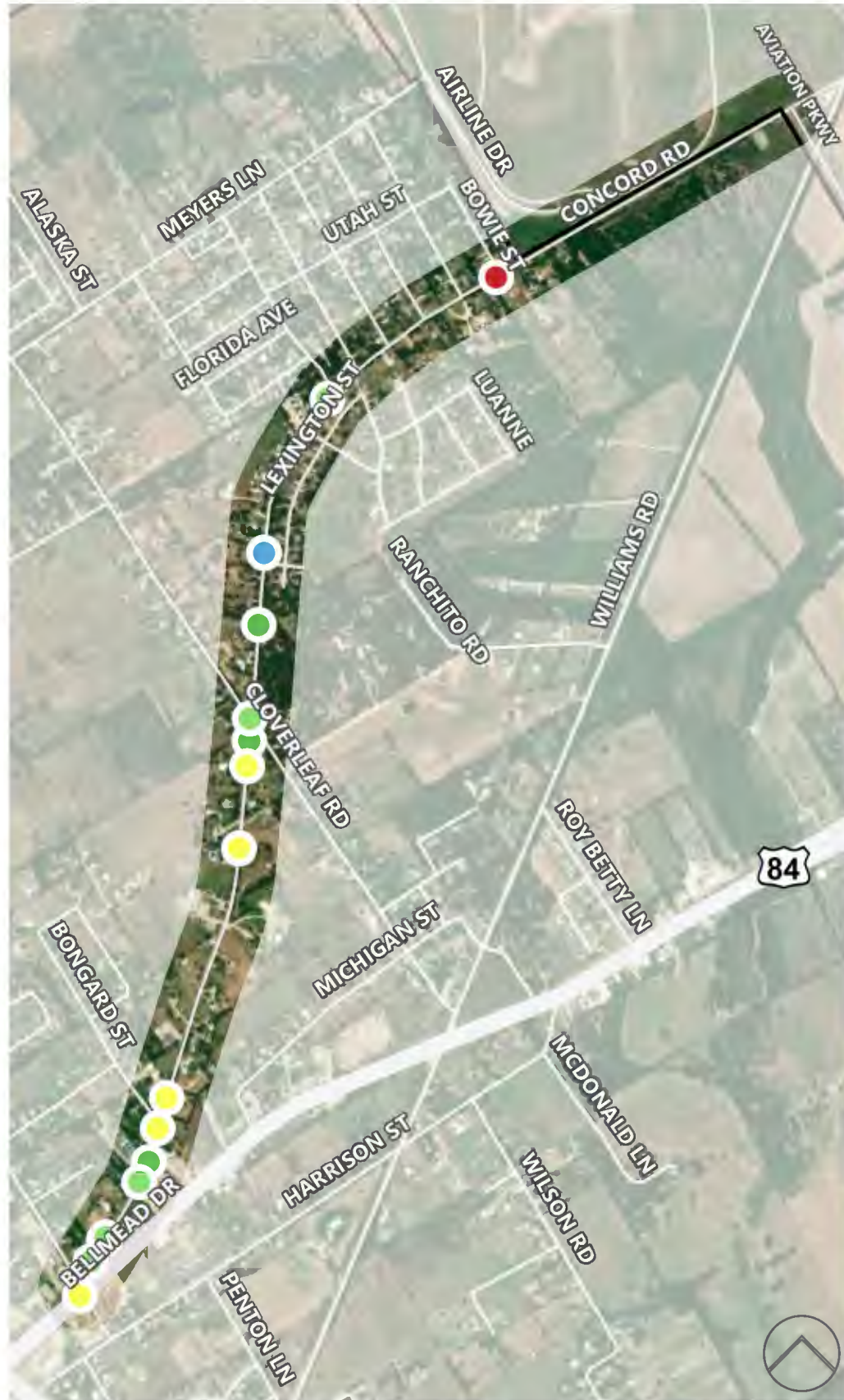


ESTIMATED COST OF IMPROVEMENT

5: HARRISON STREET- MULTIMODAL CORRIDOR SAFETY IMPROVEMENTS		
IMPROVEMENTS	LOCATIONS	ESTIMATED COST
Install Centerline and Edgeline Striping		\$153,000
Minor Street Improvements	Harrison St from Hogan Ln to US-84 (East of SL 340)	\$18,100
Improve Sight Distance		\$19,600
Install Shared Use Path		\$4,876,400
Install Street Lighting		\$492,200
	CONTINGENCY COST	\$1,111,900
	ENGINEERING COST	\$2,335,000
	TOTAL COST	\$9,006,200

■ Fatal Injury
 ■ Serious Injury
 ■ Minor Injury
 ■ Possible Injury

PROJECT 6: CONCORD ROAD- CORRIDOR SAFETY IMPROVEMENTS

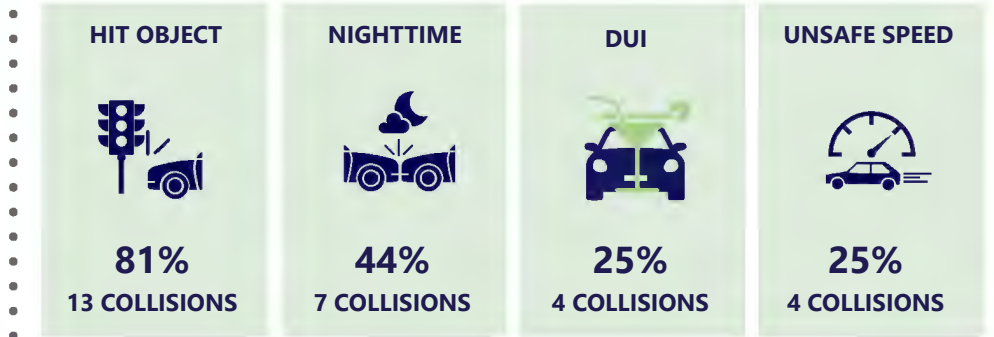


Concord Road serves as a significant east-west collector street, spanning from US-84 (Bellmead Drive) to Aviation Parkway within the City of Bellmead. This particular segment of Concord Road is a two-lane undivided roadway with a posted speed limit of 30 mph. Concord Road provides connectivity to La Vega Primary School. The comprehensive plan (2023) identifies drainage issues along this corridor.

INJURY COLLISION STATISTICS



TRENDS



EXISTING CONDITIONS



Existing Condition:
Concord Rd at Bongard St facing south



Existing Condition:
Concord Rd at Cloverleaf Rd facing south

ESTIMATED COST OF IMPROVEMENT

6: CONCORD RD- CORRIDOR SAFETY IMPROVEMENTS		
IMPROVEMENTS	LOCATIONS	ESTIMATED COST
Install Striping and Pavement Marking Upgrade	US-84 (Bellmead Dr) to Aviation Pkwy	\$130,400
Install Street Lighting		\$648,600
Install Speed Feedback Sign		\$34,500
Pedestrian Connectivity Improvements	US-84 (Bellmead Dr) to Bowie St	\$3,062,400
	CONTINGENCY COST	\$775,200
	ENGINEERING COST	\$1,627,900
	TOTAL COST	\$6,279,000

Fatal Injury Serious Injury Minor Injury Possible Injury

PROJECT 7: AIRBASE ROAD- INTERSECTION SAFETY IMPROVEMENTS



Airbase Rd & Meyers Ln



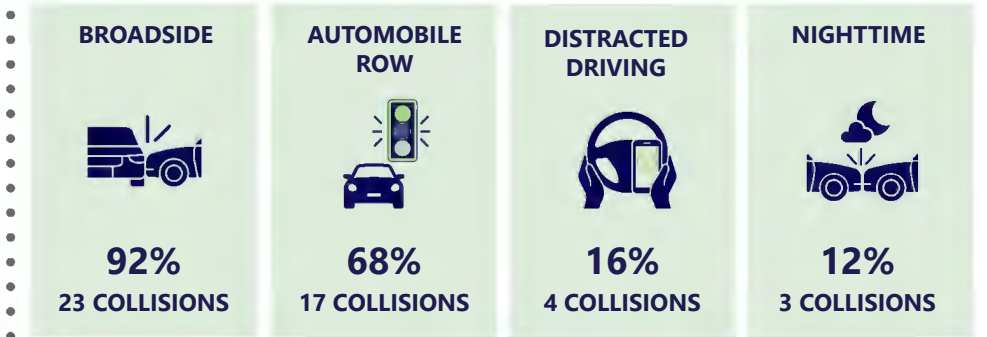
Airbase Rd & Pecan Ln

Airbase Road is classified as a minor arterial roadway within the City of Bellmead. The intersections at Airbase Road/Meyers Lane, and Airbase Road/Pecan Lane are two-way stop-controlled intersections. The posted speed limit on Airbase Road is 55 mph, while it is 30 mph on Meyers Lane and Pecan Lane. Airbase Road provides primary access to Texas State Technical College.

INJURY COLLISION STATISTICS



TRENDS



EXISTING CONDITIONS



Existing Condition:
Airbase Rd at Meyers Ln facing south



Existing Condition:
Airbase Rd at Pecan Ln facing north

ESTIMATED COST OF IMPROVEMENT

7: AIRBASE RD- INTERSECTION SAFETY IMPROVEMENTS			
IMPROVEMENTS	LOCATIONS	ESTIMATED COST	
	Install Roundabout	Airbase Rd and Meyers Ln	\$918,900
	Install Roundabout	Airbase Rd and Pecan Ln	\$918,900
	CONTINGENCY COST	\$367,600	
	ENGINEERING COST	\$771,900	
	TOTAL COST	\$2,977,300	

■ Fatal Injury
 ■ Serious Injury
 ■ Minor Injury
 ■ Possible Injury