Mariner Boulevard from County Line Road to S.R. 50 (Cortez Boulevard)

Corridor Safety Study

September 10, 2025

TARGET ZERO
FATALITIES & SERIOUS INJURIES

Introduction

Study Scope and Objective

Evaluate safety on Mariner Blvd (County Line Rd to S.R. 50) to qualify for HSIP funding through crash analysis and mitigation proposals.

Stakeholder Concerns

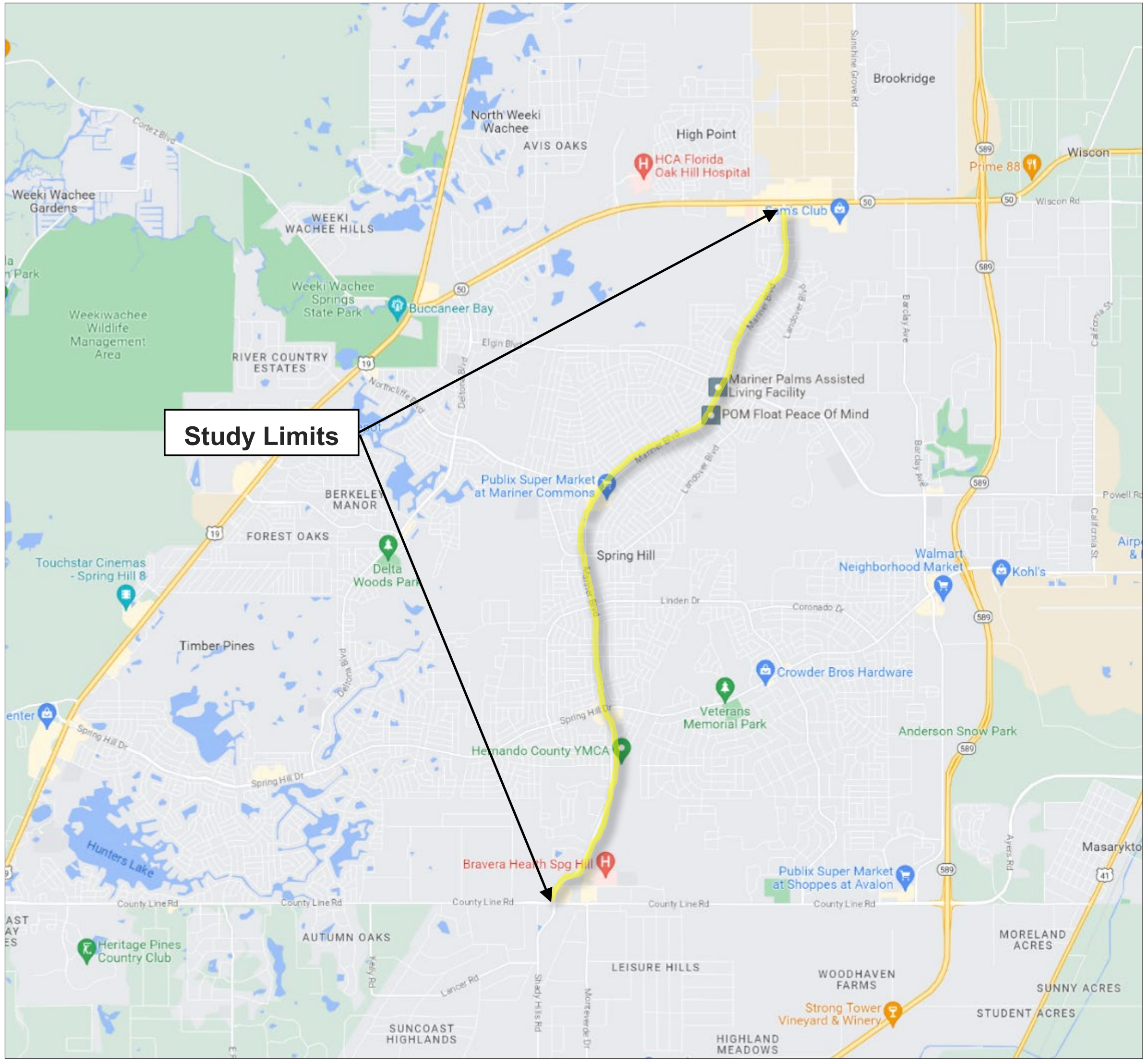
CTST feedback from HCSO highlighted safety issues due to high traffic and pedestrian activity near homes, schools, and shopping areas.

Analytical Methods

Used HCM, MUTCD, MUTS, TEM, and Signal Four Analytics for data-driven analysis.

Crash Data Analysis

Reviewed five years of crash data, focusing on reports, crash rates, and statewide comparisons.



Existing Conditions

Location:

County Line Rd to S.R. 50 (Cortez Blvd) – 7.9 miles

Roadway Type:

4-lane divided urban arterial with raised medians and two-way left turn lanes

Lane Details:

Four 11-ft lanes, curb & gutter, no paved shoulders

Speed Limits:

45 mph (County Line Rd to Audie Brook Dr), 40 mph (Audie Brook Dr to Abbeville St), 45 mph (Abbeville St to S.R. 50)

Lighting:

HPS cobra-style luminaires on utility poles; intermittent spacing with gaps

Land Use:

Mix of residential, commercial, educational, retail, and religious facilities

Midblock Crosswalks:

Uncontrolled midblock school crossings near Frank W. Springstead HS and Spring Hill ES.

Transit:

TheBus with stops throughout the corridor

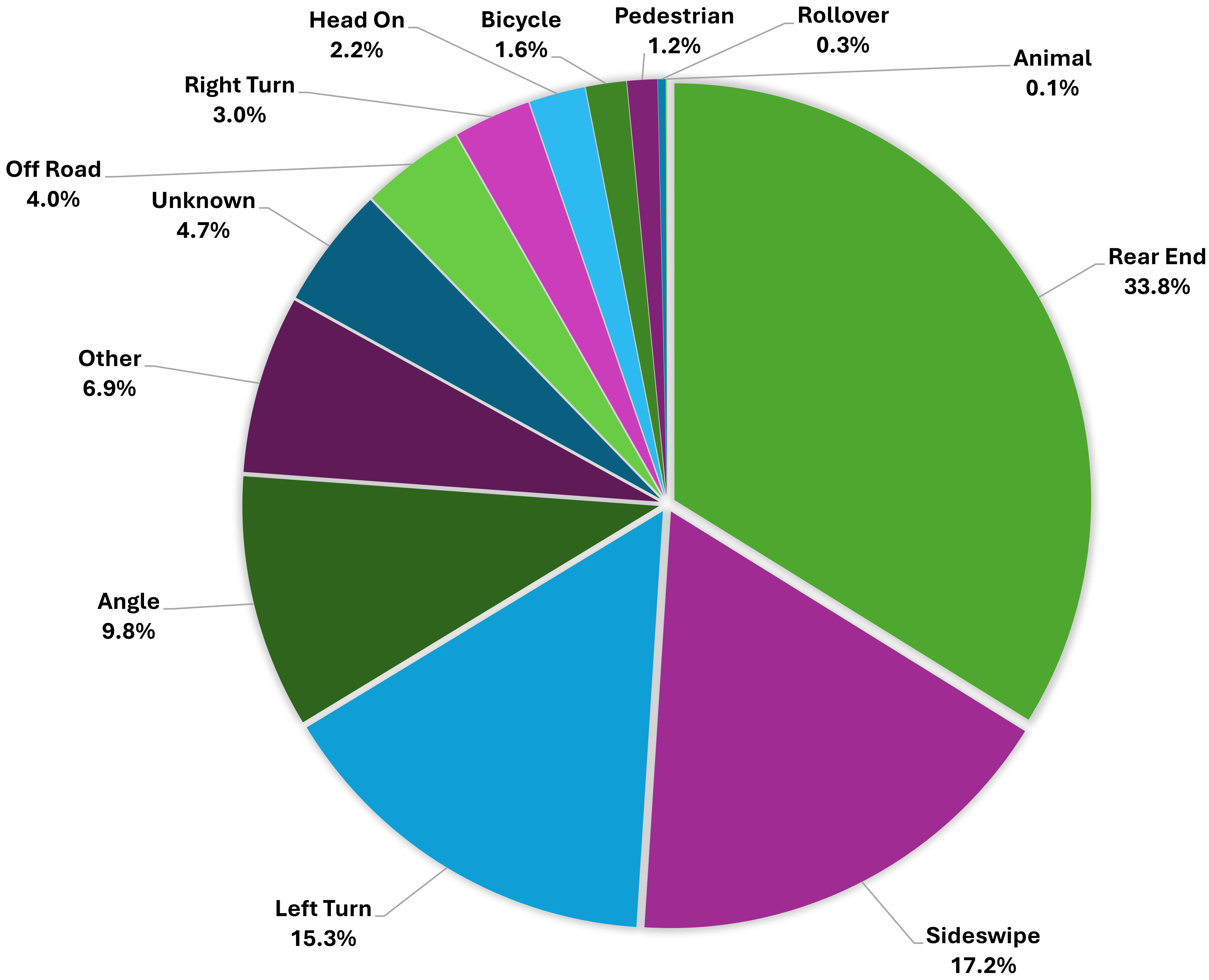
Bicycle Facilities:

No bike lanes; limited sidewalk connections at minor intersections.

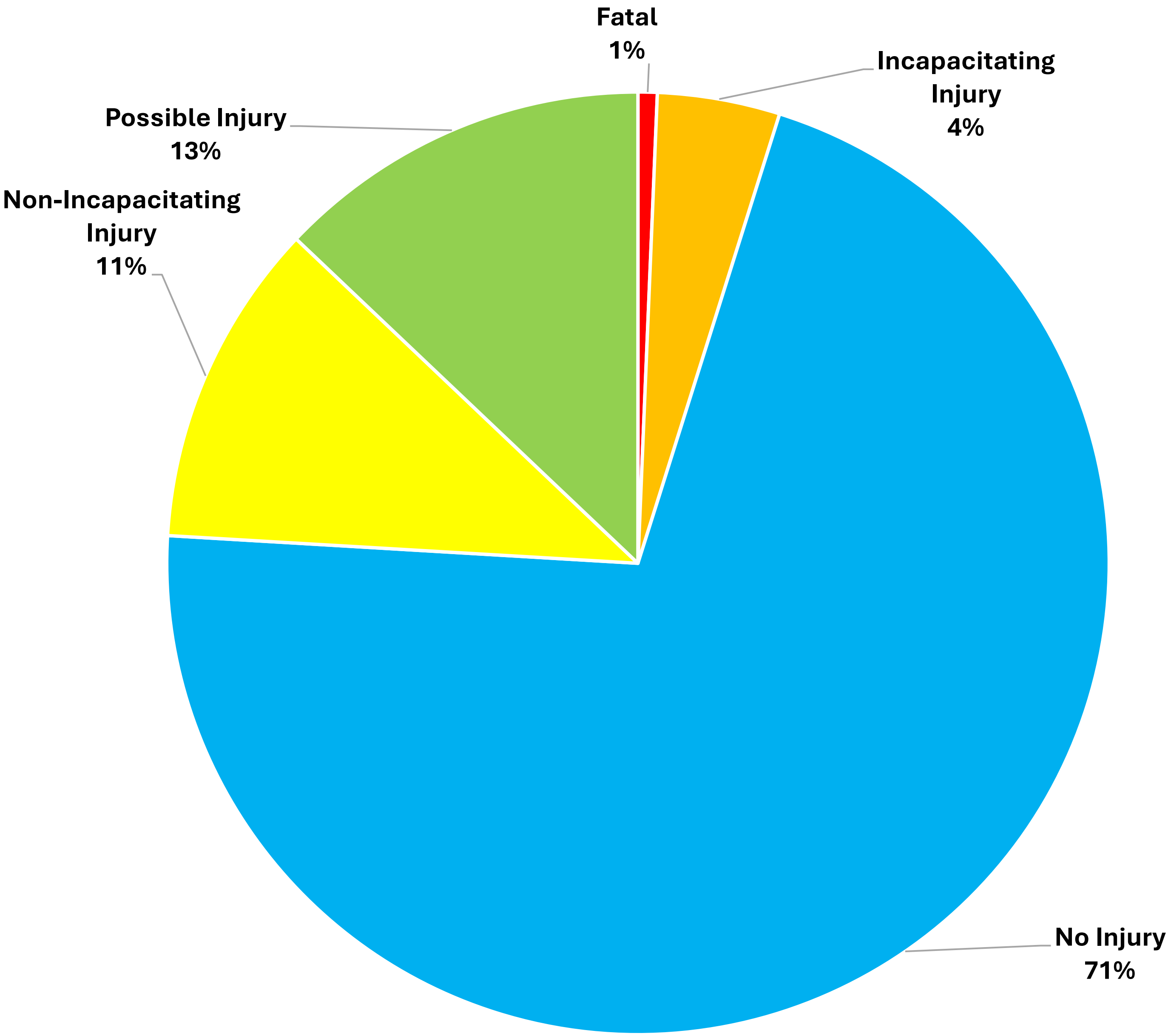
Sidewalks:

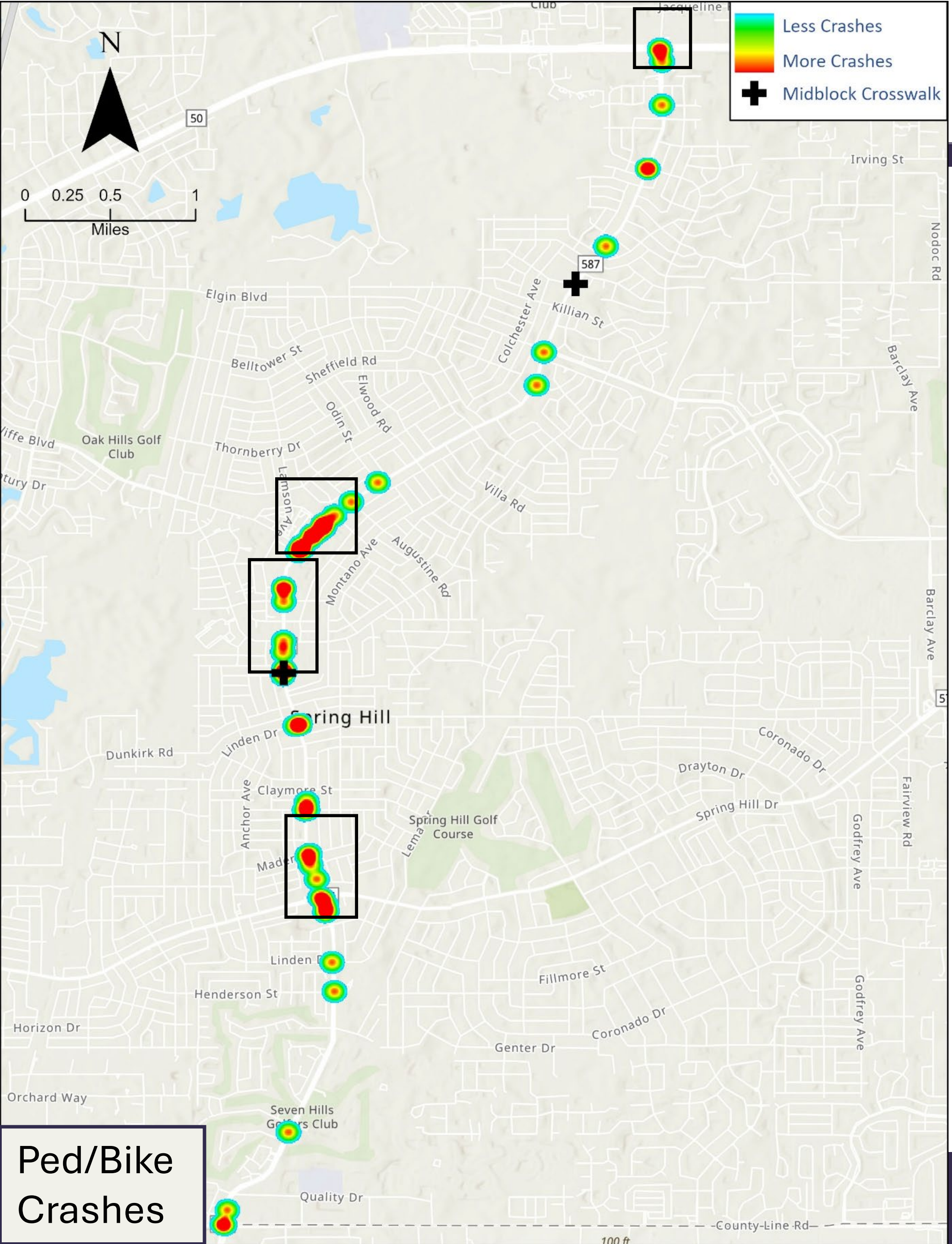
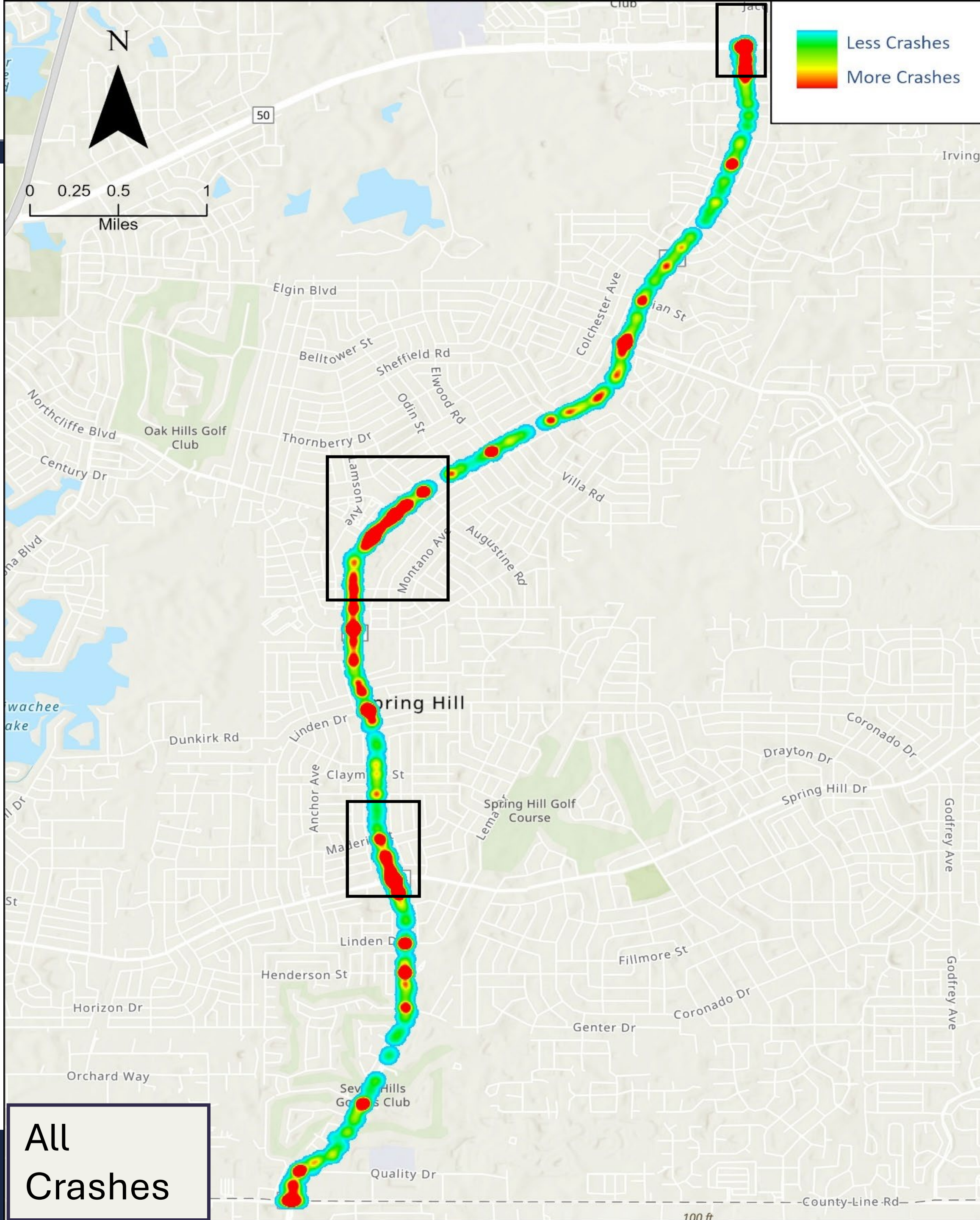
West side (County Line Rd to Henderson St); both sides (Henderson St to S.R. 50).

COLLISION TYPE	2019	2020	2021	2022	2023	TOTAL
Rear End	139	106	123	152	148	668
Sideswipe	58	60	86	78	57	339
Left Turn	47	47	66	72	70	302
Other/Unknown	35	34	53	59	48	229
Angle	39	37	42	42	34	194
Run-Off-Road	15	13	13	18	20	79
Right Turn	14	12	8	17	8	59
Head On	6	5	10	11	11	43
Pedestrian	6	5	5	2	5	23
Bicycle	4	6	4	6	11	31
Rollover	1	1	0	3	1	6
Animal	1	0	0	0	0	1
Total	***365***	***326***	***410***	***460***	***413***	***1,974***
Fatal (K)	2	2	1	1	7	13
Incapacitating (A)	17	14	22	18	12	83
Non-Incapacitating (B)	55	36	47	37	45	220
Possible Injury (C)	52	38	49	69	47	255
Property Damage Only (O)	239	236	291	335	302	1,403
Day	263	257	311	347	318	1,496
Night	102	69	99	113	95	478
Dry	318	279	373	403	385	1758
Wet	47	47	37	57	28	216



Head On
2.2%
Bicycle
1.6%
Pedestrian
1.2%
Rollover
0.3%
Animal
0.1%
Right Turn
3.0%
Off Road
4.0%
Unknown
4.7%
Rear End
33.8%
Other
6.9%
Angle
9.8%
Left Turn
15.3%
Sideswipe
17.2%


Fatal
1%
Incapacitating
Injury
4%
Possible Injury
13%
Non-Incapacitating
Injury
11%
No Injury
71%


Less Crashes
More Crashes
Midblock Crosswalk
N
0 0.25 0.5 1
Miles
50
587
Irving St
Elgin Blvd
Killian St
Colchester Ave
Belltower St
Sheffield Rd
Elwood Rd
Odin St
Thornberry Dr
Oak Hills Golf Club
Lamson Ave
Villa Rd
Montano Ave
Augustine Rd
Barclay Ave
Nodoc Rd
Spring Hill
Dunkirk Rd
Linden Dr
Coronado Dr
Drayton Dr
Claymore St
Anchor Ave
Spring Hill Golf Course
Spring Hill Dr
Godfrey Ave
Fairview Rd
Linden Dr
Fillmore St
Henderson St
Horizon Dr
Genter Dr
Coronado Dr
Orchard Way
Seven Hills
Quality Dr
County Line Rd
Ped/Bike Crashes

Less Crashes
More Crashes
N
0 0.25 0.5 1
Miles
50
Irving
Elgin Blvd
Colchester Ave
Belltower St
Sheffield Rd
Elwood Rd
Odin St
Northcliffe Blvd
Oak Hills Golf Club
Century Dr
Thornberry Dr
Lamson Ave
Villa Rd
Montano Ave
Augustine Rd
Dunkirk Rd
Linden Dr
Coronado Dr
Drayton Dr
Anchor Ave
Spring Hill Golf Course
Spring Hill Dr
Godfrey Ave
Linden D
Fillmore St
Henderson St
Horizon Dr
Genter Dr
Coronado Dr
Orchard Way
Quality Dr
County Line Rd
All Crashes

Qualitative Assessment

Speeding Behavior
- Most vehicles exceeded posted limits (often >50 mph in 45 mph zone)
- High speeds noted through horizontal curves

Traffic Signals
- No retroreflective backplates at 7 key intersections
- “Doghouse” signal heads used at 4 locations for left turns

School Zone Signage
- Faded signs; not compliant with fluorescent yellow-green standard

Lighting Deficiencies
- HPS lighting intermittent; corridor not up to standard
- Crosswalks lack proper illumination

Curve near Audie Brook Drive

5-section signal and no backplates at Northcliffe Boulevard

Uncontrolled midblock crosswalk at Frank W. Springstead High School

High pressure sodium luminaire on joint-use pole

CMF ID	CMF Description	CRF%	CRF% | Correctable Crash Types	CMF Star Quality Rating	Number of Correctable Crashes
1410	Add 3-inch yellow retroreflective sheeting to signal backplates	15.0%	All crash types	3-Stars	456
1905	Install chevron signs and curve warning signs	40.8%	All crashes	4-Stars	248
4462	Install intersection lighting	11.9%	All crashes at night	3-Stars	231
2515	Replace TWLTL with raised medians	36.0%	Angle crashes	4-Stars	100
2453	Advance street name signs	10.3%	Sideswipe crashes	4-Stars	96
7696	Change from 5-section “doghouse” protected/permissive left turn to flashing yellow arrow protected/permissive left turn	16.2%	Left turn crashes	3-Stars	77
11288	Lower posted speed	14.4%	All fatal, incapacitating, minor, and possible injury crashes	3-Stars	77
1706	Install raised pavement markers	33.0%	Nighttime, wet road crashes	0-Stars	70
3071	Presence of right turning lane on arterial with signal coordination	96.6%	Rear end crashes	3-Stars	25
5252	Increase length of signal phases to allow pedestrians more crossing time	51.0%	Vehicle/pedestrian/bicycle crashes	3-Stars	17
4123	Install high-visibility crosswalk	40.0%	Pedestrian or bicycle crashes	2-Stars	16
2844	Install lighting	49.0%	Nighttime fatal crashes	3-Stars	9
10591	Install a pedestrian hybrid beacon (PHB or HAWK)	43.3%	Vehicle/pedestrian/bicycle crashes	5-Stars	3

Low-Cost Improvements

Leading Pedestrian Interval (LPI)

CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
5252	Increase length of signal phases to allow pedestrians more crossing time	51% decrease in vehicle/pedestrian /bicycle crashes	3-Stars	17	Pedestrian and bicycle crashes at signalized intersections

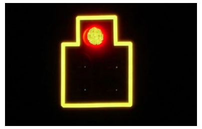
- 54 pedestrian and bicycle crashes
  - 17 (32%) occurred at a signalized intersection

Recommendation: In the short term, consider evaluating the traffic signal operation and adding a LPI to all the signals in the study segment, prioritizing locations with a history of pedestrian and bicycle crashes, to allow pedestrians and bicyclists more crossing time.

Retroreflective Backplates

CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
1410	Add 3-inch yellow retroreflective sheeting to signal backplates	15% decrease in all crash types	3-Stars	456	Quality Drive, Wexford Boulevard/Fairchild Road, Henderson Street, Spring Hill Drive, Linden Drive, Landover Boulevard (south), Northcliffe Boulevard

- 668 rear-end crashes (34% of total)
  - 310 (46%) occurred at signalized intersections
    - 135 (44%) of those **lacked retroreflective backplates**
- 456 total crashes at signals **without backplates**



Recommendation: In the short term, consider adding retroreflective backplates to all the signalized intersections.

Advance Street Name Signage

CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
2453	Advance street name signs	10.3% decrease in sideswipe crashes	4-Stars	96	All signalized intersections except County Line Road

- 825 crashes (42% of total) occurred at or near signalized intersections
    - 113 sideswipe crashes (14% of those) were within this group

Recommendation: In the short term, consider installing advanced street name signs at the signalized intersections to indicate the name of the next signalized cross street.

Curve Signage

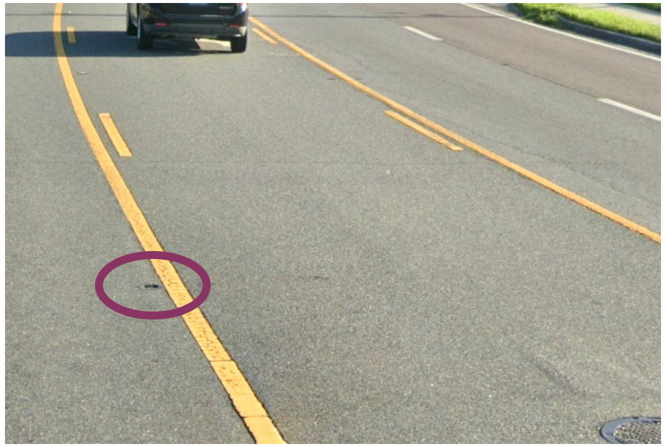
CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
1905	Install chevron signs and curve warning signs	40.8% decrease in all crashes	4-Stars	248	Carriage Way, Casa Grande Circle, Hearth Road, excluding signalized intersections

- 3 fatal crashes near Casa Grande Circle — all occurred at night
- 41 total crashes along the curve near Casa Grande Circle
- 42 crashes along the curve between County Line Rd and Carriage Way (excluding signalized intersections); 1 fatal crash occurred here
- 165 crashes near the curve at Hearth Road (excluding Northcliffe Blvd intersection)

Recommendation: In the short term, consider installing chevron signs and curve warning signage at and near the curves.

Raised Pavement Markers

CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
1706	Install raised pavement markers	33% decrease in nighttime, wet road crashes	No Rating	70	Entire corridor RPMs are missing in two-way left-turn lane sections



Recommendation: In the short term, consider installing additional raised pavement markers (RPMs) where missing along the lane lines and edge lines within the curves.

High Visibility Crosswalks

CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
4123	Install high-visibility crosswalk	40% decrease in pedestrian or bicycle crashes	2-Stars	16	Pedestrians and bicycle crashes at driveways or crosswalks

- 16 pedestrian and bicycle crashes that occurred at a driveway or a crosswalk
  - This represents 30% of all pedestrian and bicycle crashes

Recommendations:
- Consider installing high-visibility crosswalks on all side streets.
- Consider installing high-visibility crosswalks at the signalized intersections of Quality Drive, Wexford Boulevard/Fairchild Road, Henderson Street, and Spring Hill Drive.
- Consider adding missing crosswalk legs to the signalized intersections at Frontage Road, Landover Boulevard (north), Henderson Street, Wexford Boulevard/Fairchild Road, and Quality Drive (medium cost).

Speeding

CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
11288	Lower posted speed	14.4% decrease in all fatal, incapacitating injury, minor injury, and possible injury crashes	3-Stars	77	County Line Road to south of Audie Brook Drive

- 226 crashes occurred between County Line Road and south of Audie Brooke Drive
  - 11% of corridor total
  - 54 crashes (24%) were lane departure

Recommendation:

- Current speed study does not support lowering the posted speed limit
- Short-term: Use speed feedback signs, curve signage, pavement markings, and RPMs
- Long-term: Reassess speeds after implementation and if effective, reduce speed limit from 45 mph to 40 mph.

Safety Edge Tool

- A review of the crash history identified a small grouping of run-off-road crashes on at the southern end of the corridor along the segment with flush shoulder.

Recommendation: In the long term, include safety edge along the flush segments of the corridor with future resurfacing projects.

Medium-Cost Improvements

Traffic Signal Configuration

CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
7696	Change from 5-section “doghouse” protected/permissive left turn to flashing yellow arrow protected/permissive left turn	16.2% decrease in left turn crashes	3-Stars	77	Linden Drive, Landover Boulevard (south), Northcliffe Boulevard, Elgin Boulevard

- 174 left-turn crashes occurred at signalized intersections
  - 58% of all left-turn crashes
- 77 crashes were at intersections with **5-section signal heads**

Recommendation: If feasible, consider replacing the 5-section signal heads with 4-section flashing yellow arrow signal heads and 3-section signal heads.

Traffic Signal Coordination

CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
3071	Presence of right turning lane on arterial with signal coordination	96.6% reduction in rear end crashes	3-Stars	25	Northbound at Mariner Boulevard and S.R. 50 (Cortez Boulevard)

- 87 rear end crashes at signalized intersection of Mariner Boulevard and S.R. 50
  - 58% of all left-turn crashes

Recommendation: In the mid-term consider changing the lane configuration for northbound Mariner Boulevard at S.R. 50 from two exclusive left turn lanes, a through lane, and an exclusive right turn lane to one exclusive left turn lane, a through lane, and two exclusive right turn lanes. An operational analysis would need to be performed to determine the feasibility of this change.

Lighting

CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
4462	Install intersection lighting	11.9% decrease in all crashes at night	3-Stars	231	All signalized intersections; install/retrofit HPS
2844	Install lighting	49% decrease in nighttime fatal crashes	3-Stars	9	Entire corridor

- 231 crashes occurred at signalized intersections at night
    - This accounts for 48% of all nighttime crashes and 28% of all signalized intersection crashes
- 9 fatals at night, representing 69% of all the fatal crashes

Recommendations:
Evaluate and upgrade lighting at intersections with substandard levels
Retrofit all corridor and intersection lighting from HPS to LED
Install additional lighting where gaps exist

High-Cost Improvements

Midblock Crosswalk

CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
10591	Install a pedestrian hybrid beacon (PHB or HAWK)	43.3% decrease in vehicle/pedestrian/bicycle crashes	5-Stars	3	Ireland Street

- 3 of 54 pedestrian/bike crashes (6%) occurred near Ireland Street
  - All involved students traveling to/from school
  - Just north of Ireland Street near Frank W. Springstead High School, there is a marked pedestrian crossing that is uncontrolled.

Recommendation: Conduct a Traffic Engineering Manual (TEM) 5.2 study to see if a PHB is justified at the marked crosswalks at:

- North of Ireland Street near Frank W. Springstead High School and south of Seagate Street near Spring Hill Elementary School

Access Management

CMF ID	CMF DESCRIPTION	CRF% AND CORRECTABLE CRASH TYPES	CMF STAR QUALITY RATING	NUMBER OF CORRECTABLE CRASHES	LOCATIONS OF CORRECTABLE CRASHES
2515	Replace TWLTL with raised medians	36% decrease in angle crashes	4-Stars	100	North of Spring Hill Drive to S.R. 50 (Cortez Boulevard), excluding signalized intersections

- 212 left-turn crashes occurred where the raised median transitions to a two-way left-turn lane (TWLTL)
  - This is 70% of all left-turn crashes in the corridor
    - 48% of these were not at signalized intersections
- 146 angle crashes also occurred in this same segment
  - 75% of all angle crashes
  - 68% of these were not at signalized intersections

Recommendation: In the long term, consider replacing the two-way left turn lanes with raised medians pending an access management study to increase safety while minimizing potential access impacts.

High Friction Surface Treatment

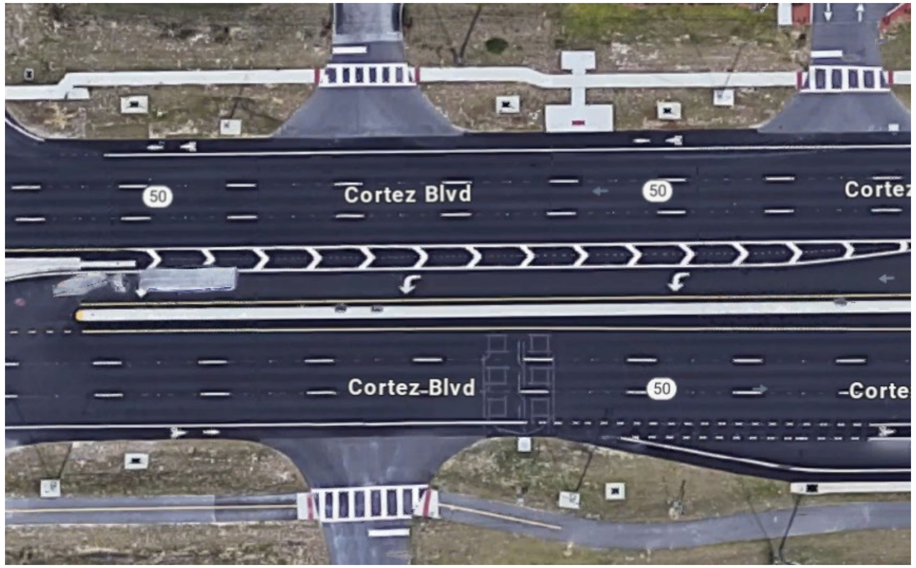
Rear-End Crash Patterns

- 668 rear-end crashes (34% of total); 310 occurred at signalized intersections
  - 135 of those were at signals without retroreflective backplates
- Injury crash clusters at:
  - Spring Hill Dr, north of Landover Blvd, and Elgin Blvd
- Wet-weather rear-end crashes concentrated from south of Linden Dr to Libby Rd

Recommendation: In the mid-term, consider targeted high friction surface treatment at locations of injury rear-end crashes and wet weather rear-end crashes.

Widewalk

- 31 bicycle crashes along the corridor
  - 1 fatal, 3 incapacitating, 13 non-incapacitating, 7 possible injury, 7 no injury
- Sidewalks used by bicycles, pedestrians, and mobility scooters
- Land use includes schools, academic centers, and other community facilities



Recommendation: In the long-term consider a installing a wider sidewalk to better accommodate the mix of users, including school students, along the existing 5-foot sidewalk

PUT IT DOWN

DNT TXT + DRV

FDOT

Thank You!

Questions?