LAKE-SUMTER MPO VISION ZERO ACTION PLAN

Draft Plan

April 8, 2026

U.S. Department of Transportation

FY23 Planning and Demonstration

$689,992 awarded
+ UCF match

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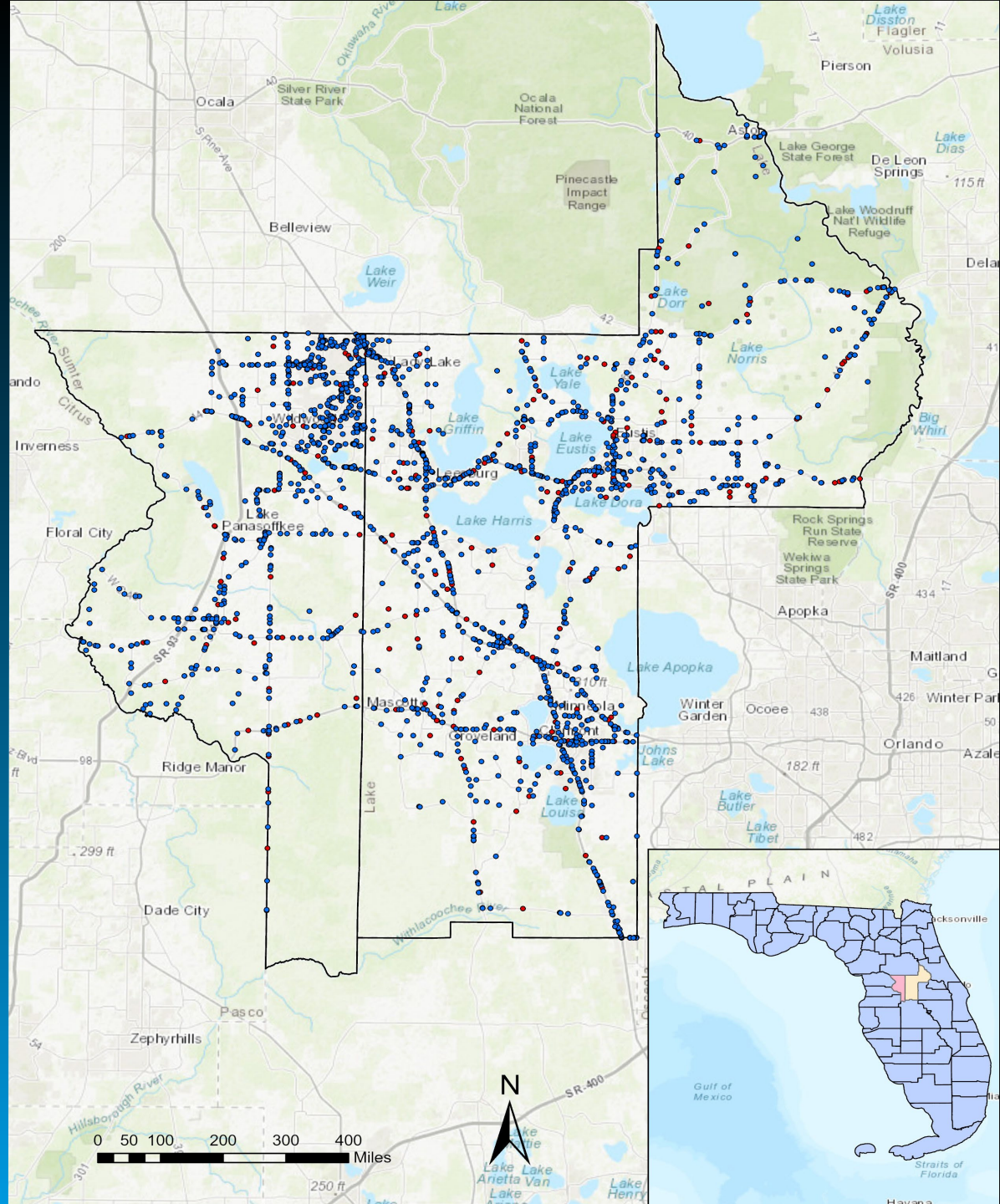
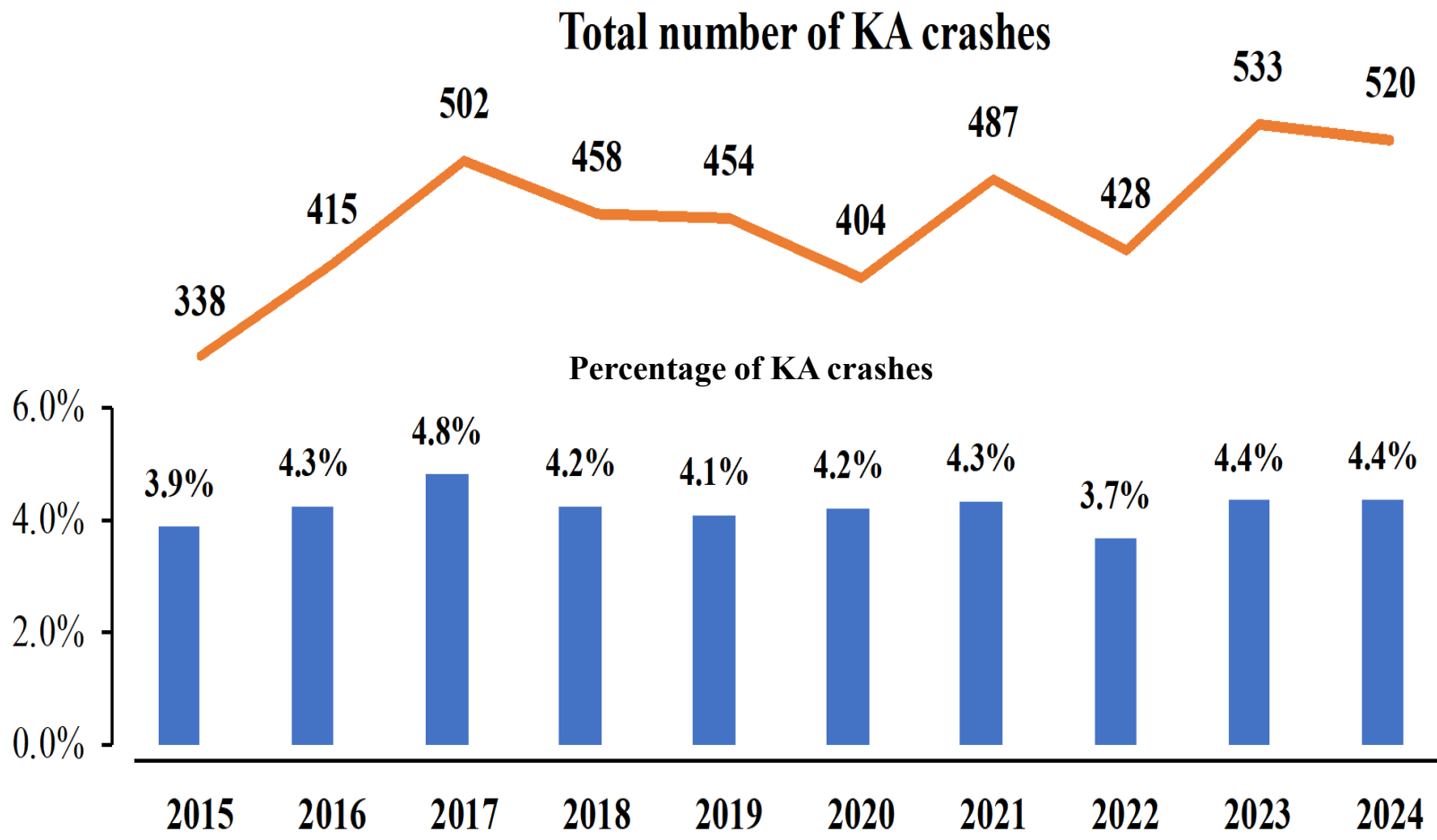
Vision Zero Action Plan (VZAP)

- In February 2018, the Lake-Sumter MPO (LSMPO) Governing Board adopted targets of zero traffic-related fatalities and serious injuries and has annually renewed this commitment in subsequent years.
- LSMPO joined UCF to attract $862,500 in USDOT grant and UCF match to develop a VZAP for LSMPO.
- Extensive data analysis of various databases (Signal Four Analytics, Connected Vehicle data from Streetlight, FDOT RCI data) were used to identify the safety problems and their solutions.
- Corridors with Substantial Sever crashes were identified as the High Injury Network and targeted treatments identified for each.
- After the board adopts this plan, work will begin with the counties and partners to implement the identified solutions.
- Continued evaluation and monitoring will ensure that the VZAP will bring about substantial reduction in fatal and sever crashes.

CRASH TRENDS AND SAFETY ANALYSIS



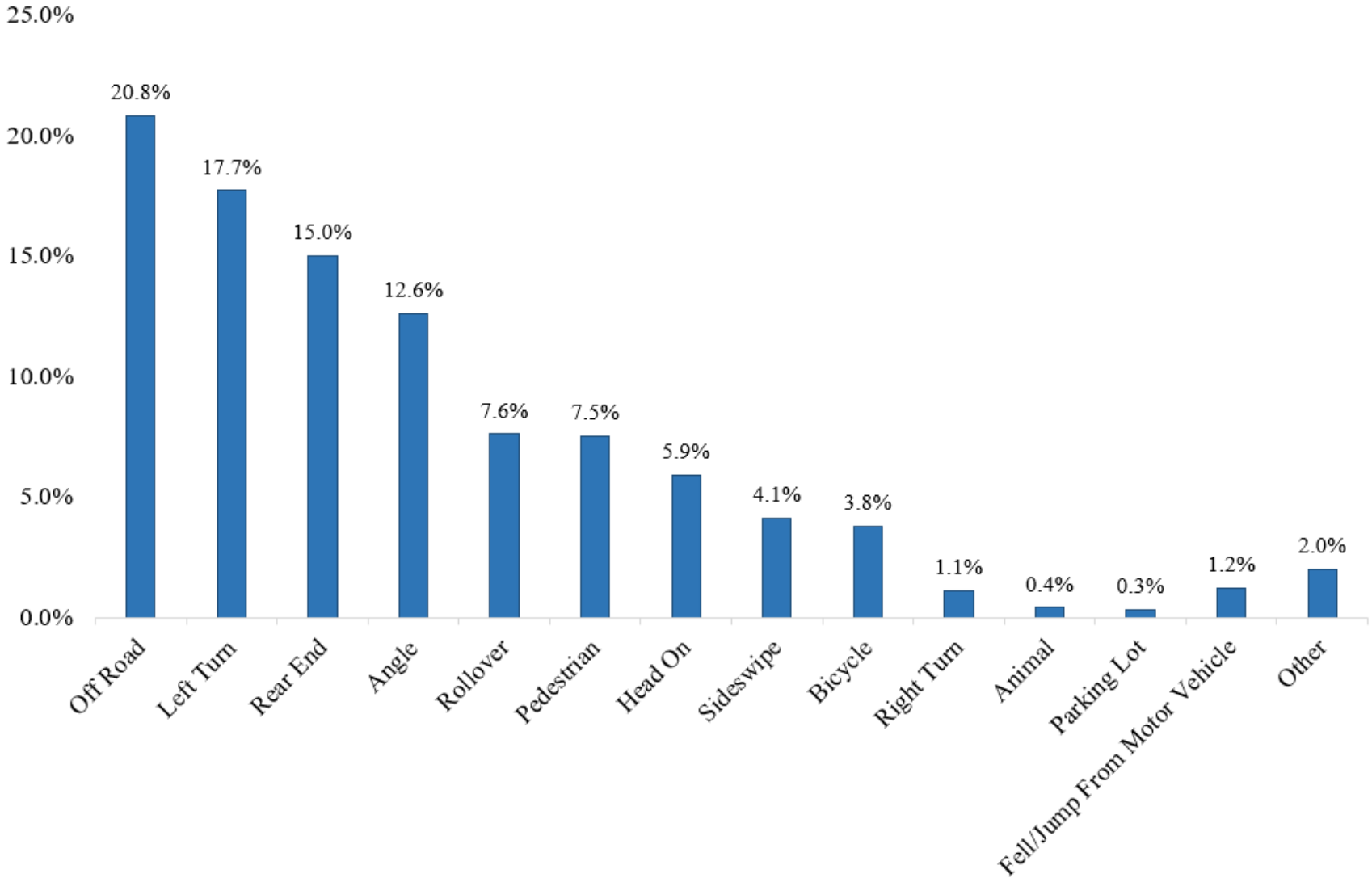
Ten-years trend for KA crashes



Note:

- State of Florida 10-year KA crash rate is 2.4%
- Orange County 5-year KA crash rate is 3.1%

In Depth Crash Analysis 5 years (2020-2024)



Four typical crash types that causing most of severe crashes (85.0%):

- **30.3%** of the severe crashes are **left-turn/angle** crashes.
- **Off road/roll over** , rear-end, and pedestrian/bicycle crashes account for **28.4%, 15.0%,** and **11.3%** of KA crashes, respectively.

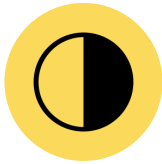
KA Crash Patterns: 5-Year Data

Key Takeaways: Off-Road/Rollover Crashes

1. Off road/rollover KA crashes were overwhelmingly concentrated on roadway segments **(84.3%)**

2. Rural areas accounted for two-thirds **(65.8%)**, of total off road/rollover crashes.

3. A notable portion of KA crashes occurred under dark–not lighted conditions **(26.7%)**



4. Higher crash frequencies among younger drivers **(ages 15–29)** and old drivers **(age ≥70)**

KA Crash Patterns: 5-Year Data

Left-Turn/Angle Crashes:

- 83.4% of all LT/ANG KA occur at intersections
- Stop sign control account for (40.2%)
- Of segments LT/ANG, 53.8% occurred on 2-lane undivided roadways
- Majority of left turn crashes are in urban (57.2%) vs. rural

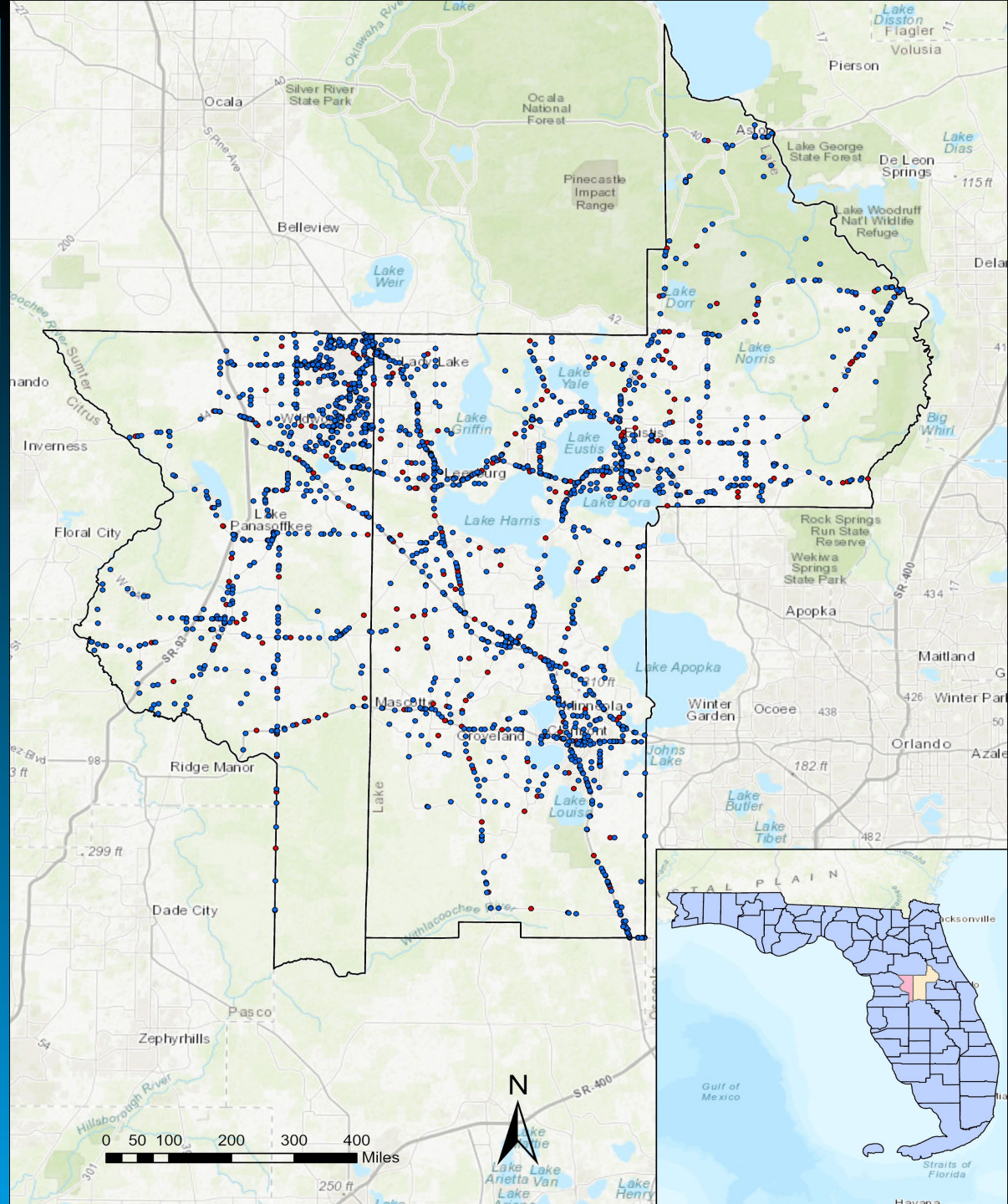
Pedestrian/Bike Crashes:

- 71.2% occurred on segments vs. intersections: with a majority (58.4%) on 2-lane roads
- Among intersection crashes (28.8%), most occurred at non-signalized (46.1%)
- More frequent in urban areas (57.4%)
- (20.1%) at urban intersections
- A significant portion occurred in dark–not lighted conditions (26.1%)

Rear end crashes:

- 62.9% on roadway segments
- Among intersection crashes (37.1%), 57% non-signalized and 43% signalized
- RE Crashes were more frequent in urban areas (61.5%).

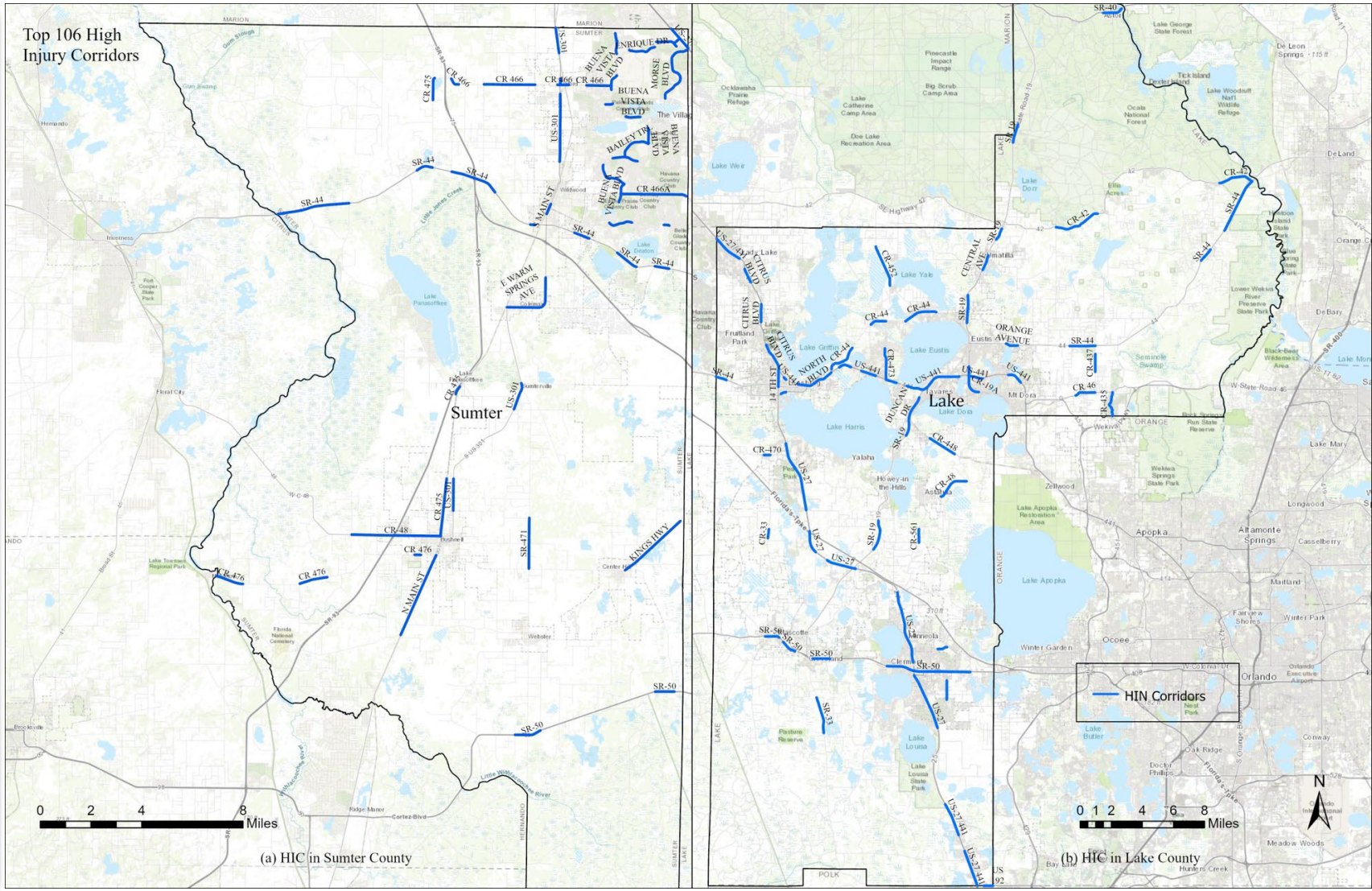
IDENTIFYING THE HIGH-INJURY NETWORK



High Injury Corridor

Key Takeaways

- Total of **106** corridors
- Lake County: **58** corridors accounting for 633 KA crashes within 99 miles
- Sumter County: **48 corridors** include 518 KA crashes over 59 miles
- Selection Criteria:
  - KA frequency≥**5** in 5 years
  - Ranked based on per mile EPDO
- Critical corridors include:
  - US27/441, Marion County Line to Morse Blvd, 45 KA crashes (1.01 miles)
  - US301, CR 466 to NE 120 recorded 15 KA crashes (0.26 miles)



High Injury Corridors

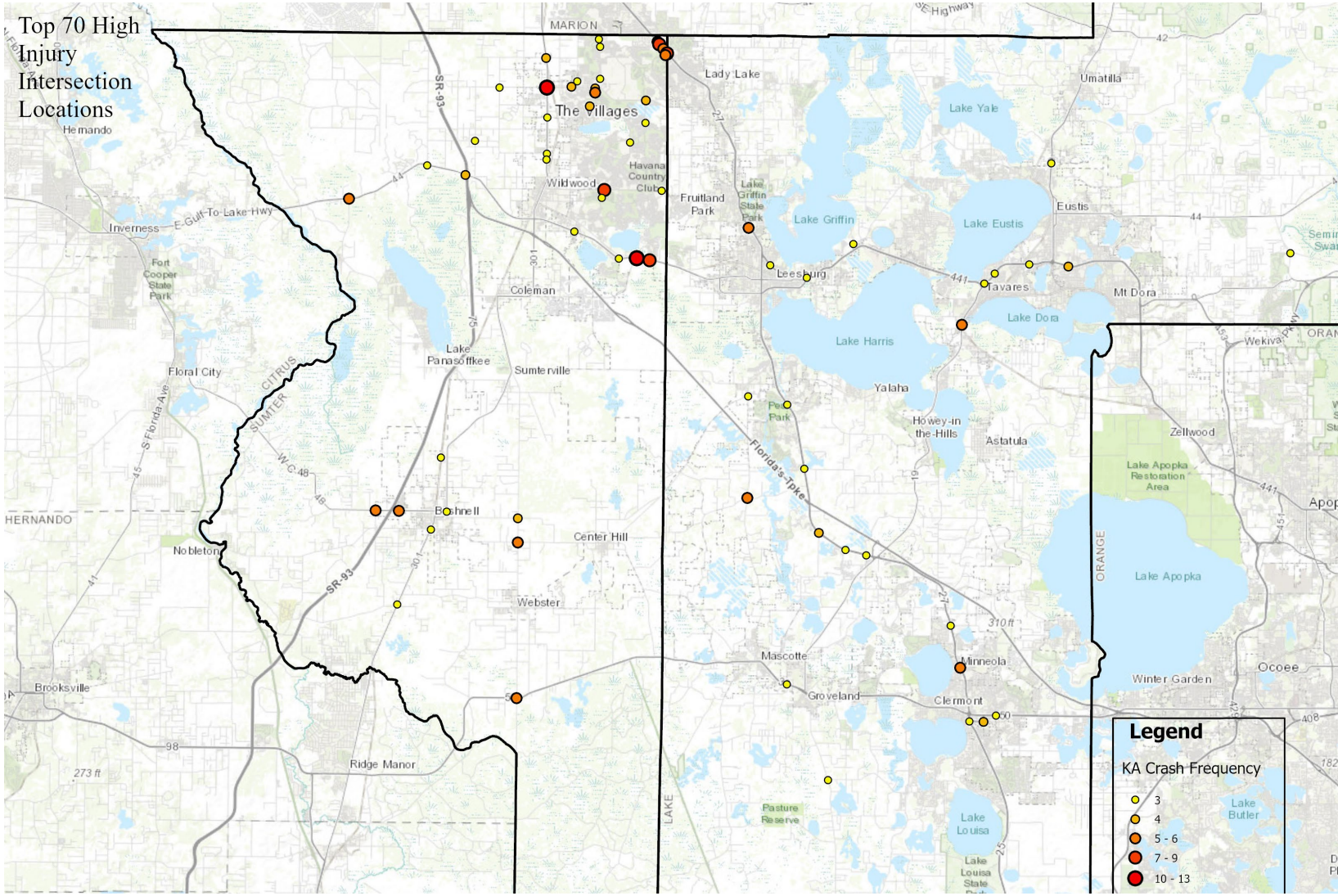
No	Name	County	From Intersecting Road	To Intersecting Road	All Crashes (KABCO)	Total Severe Crashes (KA)	Total Pedestrian Involved KA Crashes	Total Bicyclist Involved KA Crashes	Total motorcycle involved KA	Per mile EPDO	Length (mile)
1	SR-44	Sumter	MORSE BLVD	VIVIENNE DR	177	24	0	0	3	13638	0.60
2	US 192	Lake	KERSEY ST	OUTDOOR RV RESORTS	278	14	6	0	2	12467	0.60
3	US-301	Sumter	NE 120 XING	CR 466	200	15	0	0	0	10262	0.30
4	CR 475	Sumter	RAMP 18130016	RAMP 18130020	50	6	0	0	0	10238	0.30
5	DIXIE AVE	Lake	MCKENZIE ST	S 9TH ST	71	5	1	0	3	9991	0.30
6	US-27/441	Sumter	MARION CNTY LINE	MORSE BLVD	434	46	1	0	2	9652	1.00
7	CR-33	Lake	AUSTIN MERRITT RD	CHARTER LN	62	7	0	0	0	9091	0.60
8	SR-44	Sumter	POWELL RD	BUENA VISTA BLVD	123	6	1	0	0	8616	0.60
9	SR-44	Lake	SPRUCE DR	RORY LN	35	7	1	1	1	8153	0.90
10	CITRUS BLVD	Lake	PALM ST	GRAFFIN RD	679	23	5	1	2	7525	1.70
11	14 TH ST	Lake	CR-44A/GRIFFIN RD	W MAIN ST	486	10	1	3	2	7390	1.20
12	BUENA VISTA BLVD	Sumter	ST CHARLES PL	PINELLAS PL	155	17	0	1	1	6515	0.80
13	CR-19A	Lake	W CHARLOTTE AVE	OLD US-441	381	18	4	3	5	5818	2.0
14	US-441	Lake	11010005 WB OFF	SPRING HARBOR BLVD	261	8	0	0	0	5679	0.80
15	BUENA VISTA BLVD	Sumter	SOUTHERN TRCE	PARR DR	118	16	0	2	1	5539	0.70
16	NORTH BLVD	Lake	N LAKE ST	CR-44	788	22	2	0	7	5465	2.40
17	SR-44	Sumter	CR-231	CR-44A	321	23	4	1	1	5418	2.00
18	SR-50	Lake	PEARL ST	VILLA CITY RD	134	6	0	2	1	5354	1.00
19	US-441	Lake	PERKINS ST	LEE ST	94	4	0	1	0	5340	0.20
20	CR-470	Lake	PALMETTO AVE	CR 33	48	5	0	0	2	5080	0.40

Note: The ranking is based on the per mile EPDO score

High Injury Intersections

Key Takeaways

1. **70 intersections** as High Injury Intersections
   - 32 are signalized
   - 38 are unsignalized
2. Selection Criteria: KA crash frequency ≥ 3 in 5 years
3. They were ranked by total KA frequency, fatal (K) frequency, and KA crash rate (calculated using total entering volume, TEV)



High Injury Intersections

Top 10 HIN Signalized

SL	County	Intersection Type	Area	Major Roadway	Minor Roadway	KA	K	BCO	KA Crash Rate
1	Sumter	Four Way Intersection	Urban	US 301	CR 466	13	0	167	0.23
2	Sumter	Four Way Intersection	Urban	SR 44	MORSE BLVD	11	1	96	0.17
3	Sumter	Four Way Intersection	Urban	CR 466A	BUENA VISTA BLVD	8	1	71	0.15
4	Sumter	Four Way Intersection	Urban	US 27/441	MORSE BLVD	8	0	75	0.08
5	Sumter	Four Way Intersection	Urban	US 27/441	NE 136TH AVE	7	0	91	0.10
6	Sumter	Four Way Intersection	Rural	SR 50	SR 471	6	1	27	0.22
7	Sumter	T Intersection	Rural	CR 48	LOWERY ST	6	0	30	0.59
8	Sumter	Four Way Intersection	Urban	CITRUS BLVD	DR MLK JR BLVD	5	1	44	0.06
9	Sumter	Four Way Intersection	Rural	SR 471	E SOUTHLAND AVE	5	0	20	0.19
10	Sumter	Four Way Intersection	Urban	US 27/441	BELLA CRUZ DR	5	0	38	0.07

Top 10 HIN Unsignalized

SL	Location	Intersection Type	Area	Major Roadway	Minor Roadway	KA	K	BCO	KA Crash Rate
1	Lake	T Intersection	Rural	SR 33	CR 474	9	1	35	0.29
2	Sumter	T Intersection	Urban	SR 44	VIVIENNE DR	8	1	27	0.19
3	Lake	Four Way Intersection	Urban	CR 33	BRIDGES RD	6	2	46	0.41
4	Lake	Four Way Intersection	Urban	SR 19	CR 561	6	2	24	0.10
5	Sumter	T Intersection	Rural	SR 44	CR 470	6	0	25	0.18
6	Sumter	T Intersection	Rural	CR 48	CR 616	5	2	11	0.49
7	Sumter	Roundabout	Urban	MORSE BLVD	EL CAMINO REAL	5	1	104	0.08
8	Sumter	Four Way Intersection	Urban	BUENA VISTA BLVD	PARR DR	5	0	14	0.23
9	Sumter	T Intersection	Urban	US 27/441	NE 86TH DR	5	0	16	0.07
10	Sumter	Four Way Intersection	Rural	SR 471	CR 476 E	4	2	6	0.21

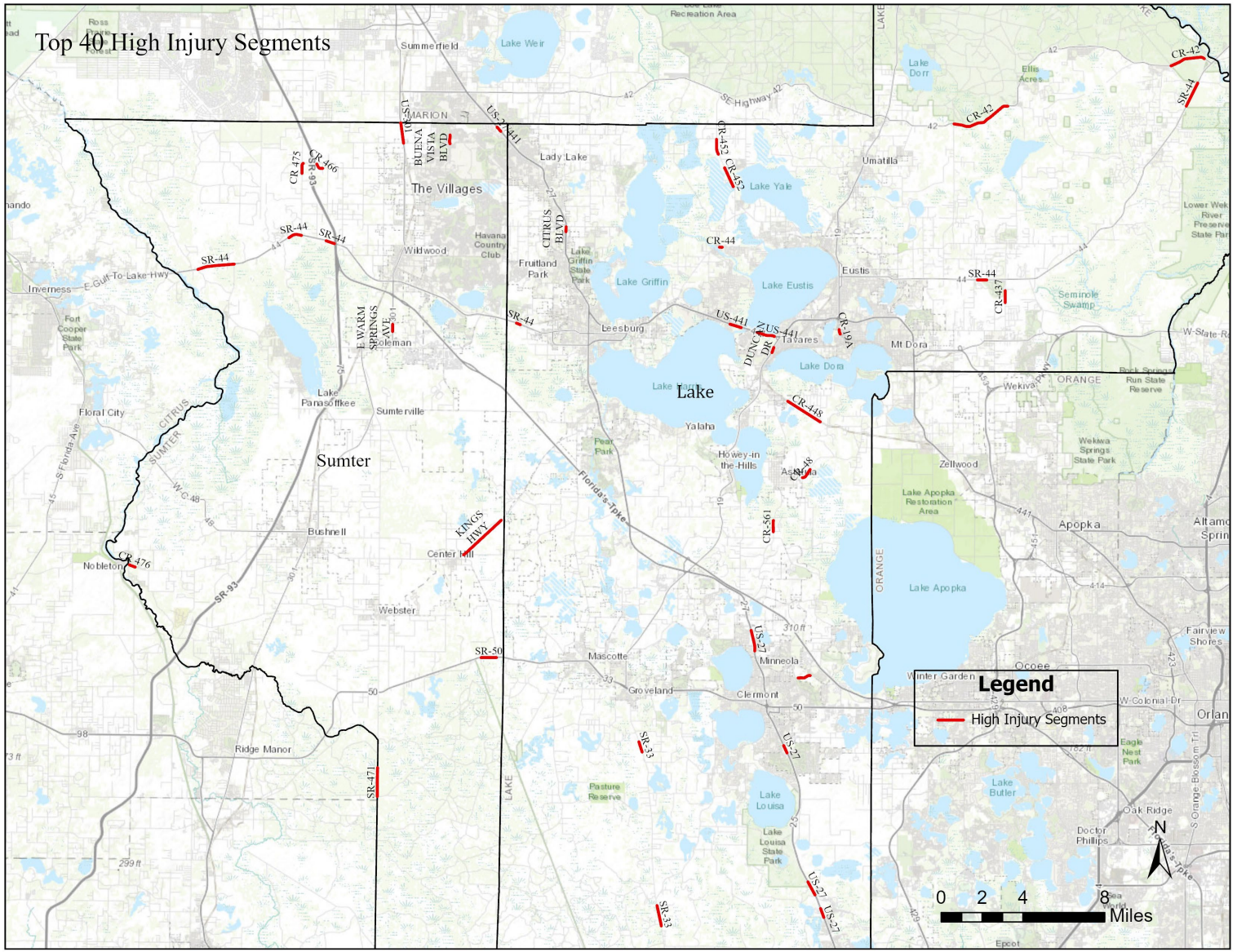
High Injury Segments

Key Takeaways

1. **40 segments** as High Injury Segments

2. Selection Criteria: KA crash frequency ≥ 3 in 5 years

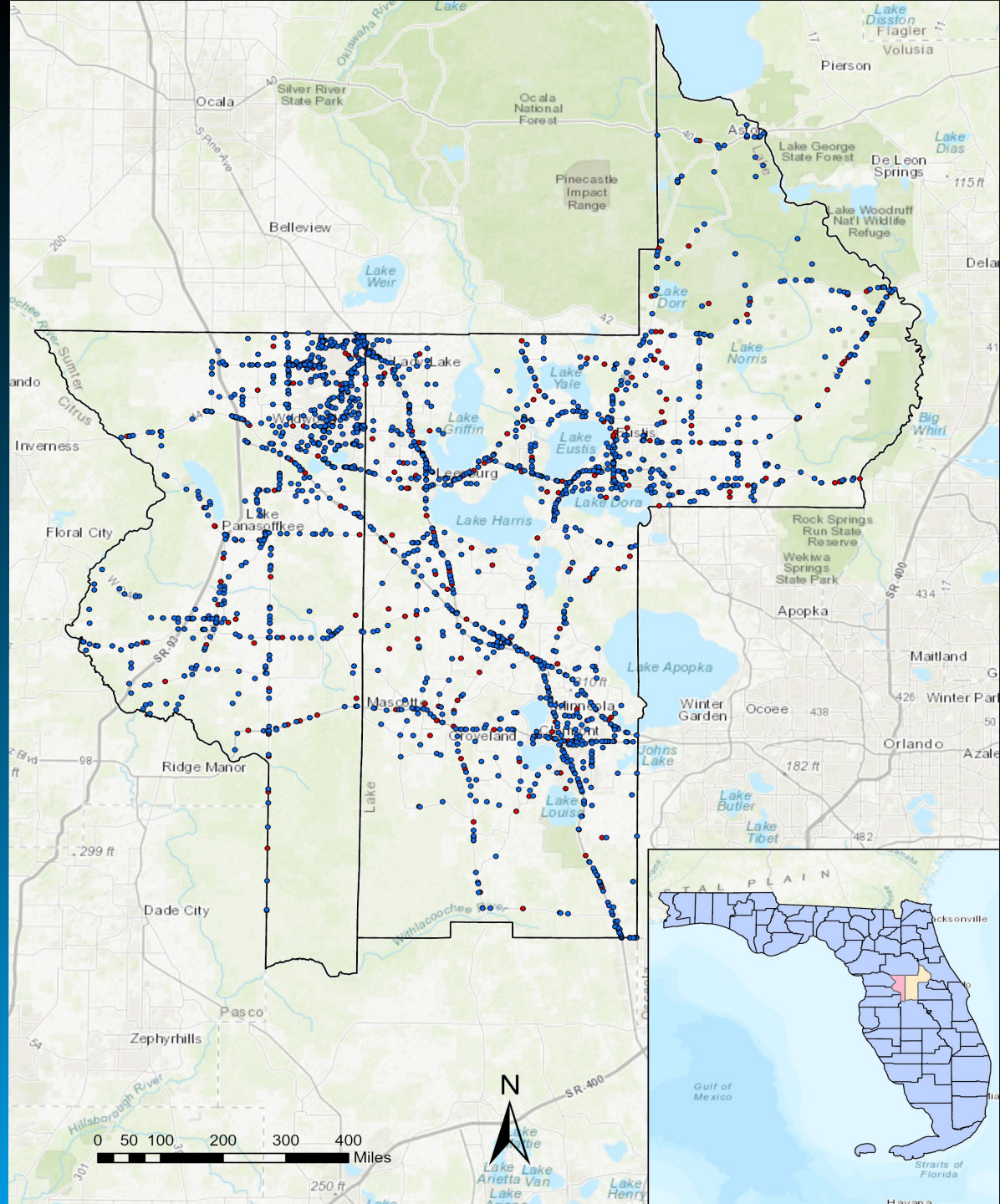
3. They were ranked by KA crash rate (calculated using Million Vehicle Miles , MVM), total KA frequency and K frequency.



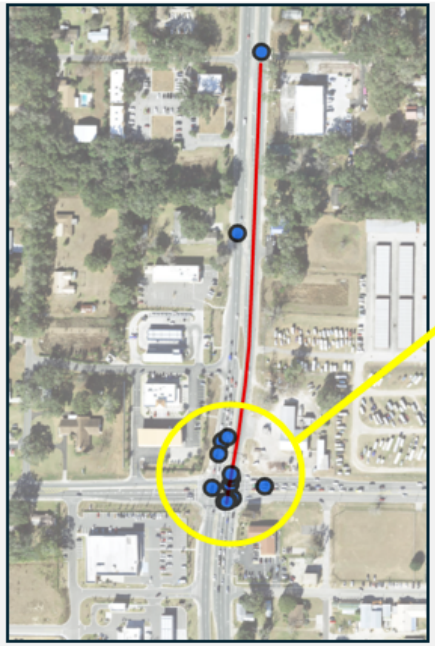
High Injury Segments

No	Roadway Name	County	From Intersecting Road	To Intersecting Road	Functional Class	Context Classification	Lane Per Direction	Speed (mph)	Total KA	Total BCO	KA Crash Rate	Length (mile)
1	CR 476	Sumter	CR 647	CR 659	Rural Major Collector	-	1	45	3	16	1.274	0.31
2	CR-44	Lake	EMERALDA AVE	RHETT RD	Urban Major Collector	C3R	1	40	3	12	1.062	0.14
3	US-27/441	Sumter	NE 138TH	LOWES	Urban Principal Arterial-Other	C3C	3	45	8	43	0.782	0.14
4	CR-42	Lake	TENTH ST	RIVER FOREST BLVD	Rural Major Collector	-	1	55	8	24	0.699	1.73
5	CR-19A	Lake	BAY RD	DODSON CUTOFF	Urban Minor Arterial	C3C	1	45	3	23	0.651	0.23
6	CR 475	Sumter	CR 245E	CR 246 S	Rural Major Collector	-	1	45	3	6	0.626	0.52
7	SR-44	Sumter	CR-231	18120021 SB ON	Rural Principal Arterial-Other	C3C	2	45	5	73	0.590	0.43
8	CR-561	Lake	DOUBLE RUN RD	WHITE CYPRESS RD	Rural Major Collector	C2	1	50	4	7	0.498	0.56
9	CR-48	Lake	LAYLAINE DR	RANCH RD	Rural Major Collector	-	1	55	3	10	0.498	0.57
10	E WARM SPRINGS AVE	Sumter	NE 41 LN	NE 37 PL	Urban Principal Arterial-Other	C2	1	55	5	13	0.478	0.35
11	SR-44	Lake	FOREST DR	TOMAHAWK TRL	Rural Principal Arterial-Other	C2	1	55	3	8	0.474	0.40
12	CR 466	Sumter	CR 475	N MAIN ST	Rural Major Collector	-	1	45	3	16	0.465	0.41
13	CR-42	Lake	CR 439	CLEARWATER LAKE REC	Rural Major Collector	-	1	55	7	40	0.357	2.97
14	SR-44	Lake	COUNTRYSIDE BLVD	UNSIGNED	Urban Principal Arterial-Other	C3R	2	55	3	8	0.353	0.21
15	OLD HIGHWAY 50	Lake	N HANCOCK RD	BLACK STILL LAKE RD	Urban Major Collector	-	1	35	3	16	0.314	0.63
16	SR-33	Lake	GROVENLAND FARMS RD	MCGILL RD	Urban Principal Arterial-Other	C2	1	60	3	10	0.310	0.53
17	US-27/441	Sumter	Lowe's	NE 136TH	Rural Minor Arterial	C3C	3	45	3	52	0.310	0.14
18	SR-44	Sumter	CR 243	CR 475	Rural Principal Arterial-Other	C2	2	60	4	18	0.309	0.66
19	KINGS HWY	Sumter	CR 702	CR 558	Rural Minor Collector	-	1	45	5	22	0.300	2.51
20	SR-471	Sumter	S CARTER RD	N GRADE RD	Rural Minor Arterial	-	1	60	3	6	0.273	1.41

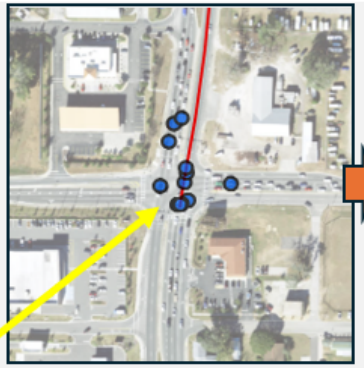
STRATEGIES, PRIORITIZATION, & PROJECT SELECTION



Development of Safety Countermeasure Strategies for HIC



High Injury Corridor (HIC)



High Risk Intersection in the HIC

Step1: Crash Data & Narrative Review

- Reviewed detailed police crash reports and crash patterns
- Identified dominant crash types and contributing factors

A southbound left turning vehicle failed to yield under a flashing yellow arrow and collided with a northbound through vehicle with a green signal

Step2: Crash Pattern Review and Issue Identification

- Identified recurring failure patterns (e.g., failure to yield, red-light running, speeding)
- Identified key safety issues contributing to repeated crashes

- ***(5 cases) SBLT V1 failed to yield (FYA) and entered the path of NBT V2 with green***
- *V1 ran on **red light** (NB) and entered the path of WBLT V2 on green arrow*
- *NBT V1 ran on **red light** and entered the path of SBLT V2 (green arrow)*
- *V1 making U-turn failed to yield and entered the path of SBT V2 (green)*

Sources of Countermeasures

Sources: FHWA & NHTSA

Step3: Countermeasure Identification and Application

- Identified candidate countermeasures using the **CMF Clearinghouse, FHWA Proven Safety Countermeasures, & NHTSA Countermeasures That Work**
- Selected context appropriate treatments

Proposed countermeasures

- Convert left-turning movement to Protected-Only Left-Turn Phasing (CMF = 0.239)
- Install red-light cameras at intersections (CMF=0.82)

Development of Safety Countermeasure Strategies for HIC

❑ Fact Sheet

Corridor Overview and Roadway Characteristics

HIGH INJURY CORRIDOR: 1

HIGH INJURY CORRIDOR FACT SHEET

Corridor Name:	S.R. 44	**Posted Speed Limit:**	55 mph
From-To:	From Morse Blvd to Vivienne Dr	**Mean Operating Speed:**	31.3 mph
Jurisdiction:	Sumter County	**85th percentile speed:**	56 mph
Functional Classification:	Principal Arterial-Other	**Corridor Length:**	0.56 miles
Context Classification:	C3C (Suburban Commercial)	**Number of lanes:**	4
Location:	Urban	**Target Speed:**	35 mph

CRASH STATISTICS (2020-2024)

Total Crash	Fatal	Incapacitating Injury
177	3	21

CRASH TYPE & CONTRIBUTING FACTORS

Crash Type		KA	BCO
Left turn/angle		13	27
Off Road/Rollover		3	4
Right turn		1	5
Rear end		7	92
Sideswipe		0	15
Other		0	10
VRU involved number of crashes	**Pedestrian**	0	0
	Bicyclist	0	0
	Motorcycle	3	1

Contributing factors		KA	BCO
TIME OF DAY	**Day**	19	116
	Dawn-Dusk	2	13
	Night	3	24
LIGHTING CONDITION	**Lighted**	0	13
	Not lighted	3	11
BEHAVIORAL FACTOR	**Speeding**	1	2
	Aggressive driving	2	3
	Distracted Driving	5	54
	DUI	2	2

Note: Contributing actions may total more than the number of crashes because multiple actions can be associated with a single crash

Crash Statistics & Contributing Factors

Development of Safety Countermeasure Strategies for HIC

❑ Fact Sheet

Summary of KA crashes from Crash Report

Summary of KA Crash Narratives from Police Crash Reports

Intersection at S.R. 44 and Morse Boulevard is identified as a key high-risk location along the corridor, with a total of ten fatal and serious injury (KA) crashes reported over the last 5 years (2020-2024).

- Five KA crashes involved westbound (three cases) and eastbound (two cases) vehicles failing to stop for queued or slowing traffic at a red signal, resulting in multi-vehicle rear end collisions. In one of these cases, the at-fault driver was found to be both speeding and driving under the influence
- Four KA crashes occurred during left-turn maneuvers, where the left-turning vehicle failed to yield to opposing through traffic. These included one eastbound left turn red light running crash, two westbound left turn crashes, and one northbound left turn crash.
- An additional KA crash involved red light running by an east bound through vehicle collided with south bound through vehicle

In addition to the intersection-related crashes, one single-vehicle rollover crash occurred when an eastbound vehicle approached the signalized intersection at S.R. 44 and Morse Boulevard and failed to slow down for a red signal.

Intersection at S.R.44 and John Michael Ct three crashes were reported:

- A southbound right-turning vehicle failed to yield and was struck by a westbound through vehicle
- A southbound right-turning vehicle was rear-ended by another southbound right-turning vehicle while approaching John Michael Court
- An eastbound left-turning vehicle failed to yield to a westbound through vehicle, causing the westbound vehicle to lose control

The intersection of S.R. 44 and John Michael Ct is another key high-risk location with eight reported KA crashes:

- Six crashes involved southbound left turning vehicles that failed to yield at the stop sign and entered the path of westbound through vehicles.
- One crash involved a southbound right turning vehicle that failed to yield at the stop sign and entered the path of a westbound through vehicle.
- One rear end crash occurred when a southbound vehicle rear ended another southbound vehicle that was stopped at the intersection.

Along the corridor two more segment-related crashes were identified:

- One rear end crash occurred when a westbound vehicle failed to slow for traffic ahead and struck another westbound vehicle near John Michael Court.
- One off road crash involved a westbound dump truck striking the Chitty Chatty golf cart bridge while approaching Morse Boulevard.

List of Proposed Countermeasures

The specific countermeasures are noted on the map. The other improvements need to be considered:

- Due to high number of night-time crashes, **lighting** along the corridor should be evaluated
- Upgrade the worn pavement marking throughout the corridor
- Install advance warning signs that notify drivers of the need to stop at an upcoming signalized intersection
- Consider reducing lane width
- Increase pavement friction (CMF for rear end = 0.58)
- Install leading pedestrian interval

Speed Management

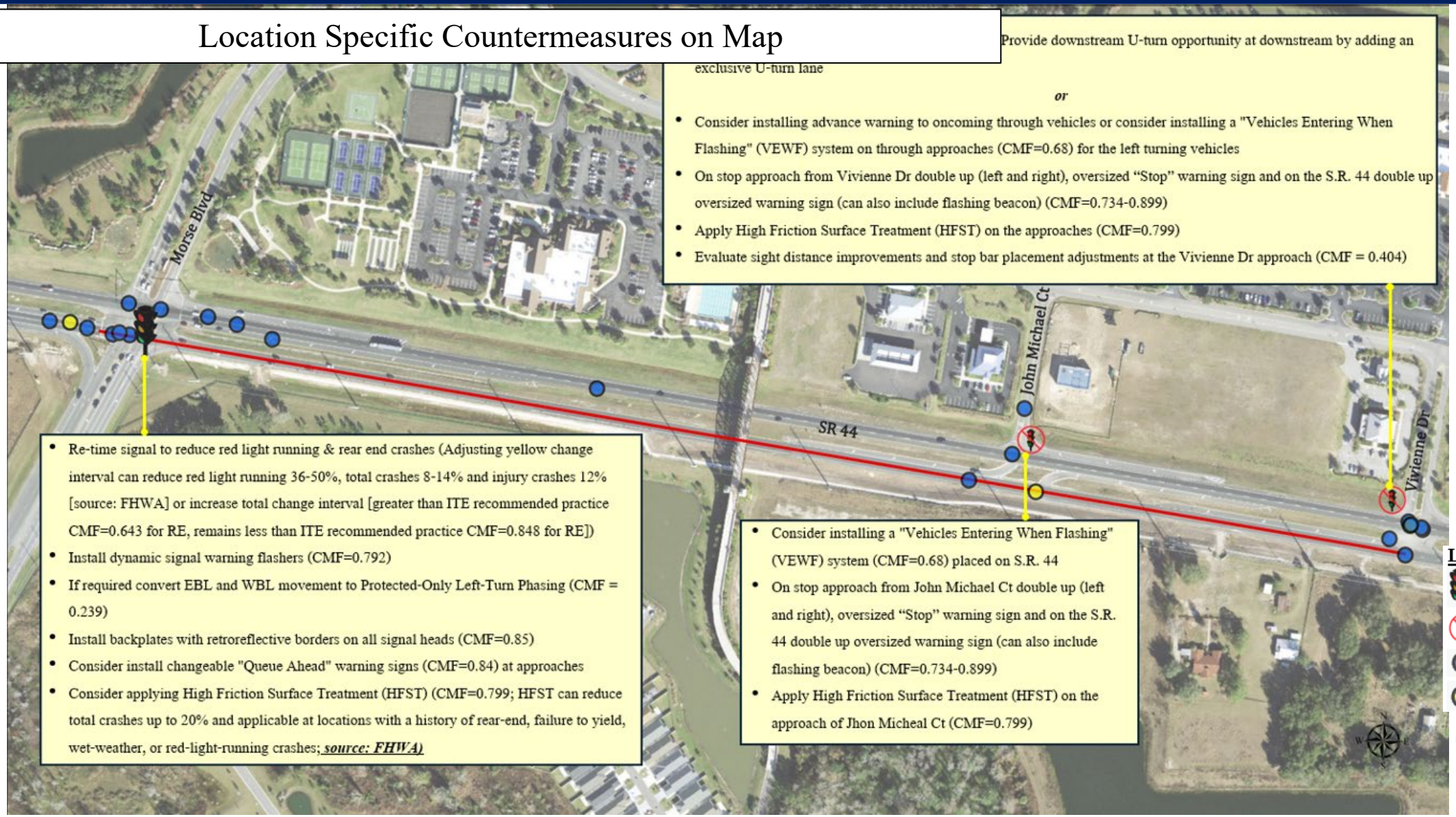
Note: Although the mean operating speed is lower than the posted speed limit, 85th percentile operating speed exceeds the posted speed limit.

- Consider reducing the target speed to 35 mph. Speed management strategies will be required to achieve the target speed
- Implement automated speed enforcement cameras (CMF=0.74)

Proposed Countermeasure

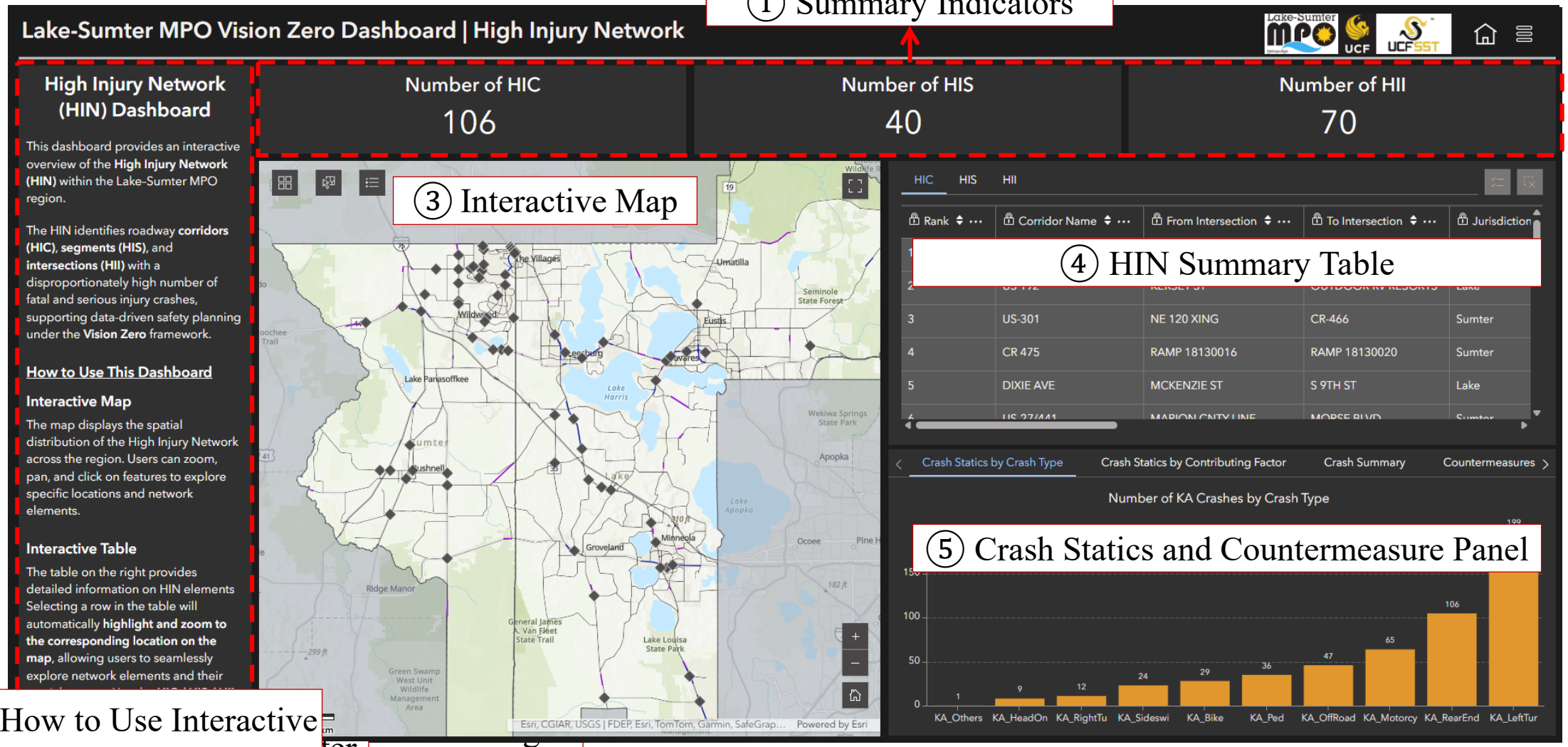
Development of Safety Countermeasure Strategies for HIC

Location Specific Countermeasures on Map



Vision Zero Dashboard

❑ **Vision Zero Dashboard** (1) Crash Trends (2) High Injury Network & Countermeasures



Thank You

Dr. Mohamed Abdel-Aty and UCF SST team

https://smartsafe.ucf.edu/