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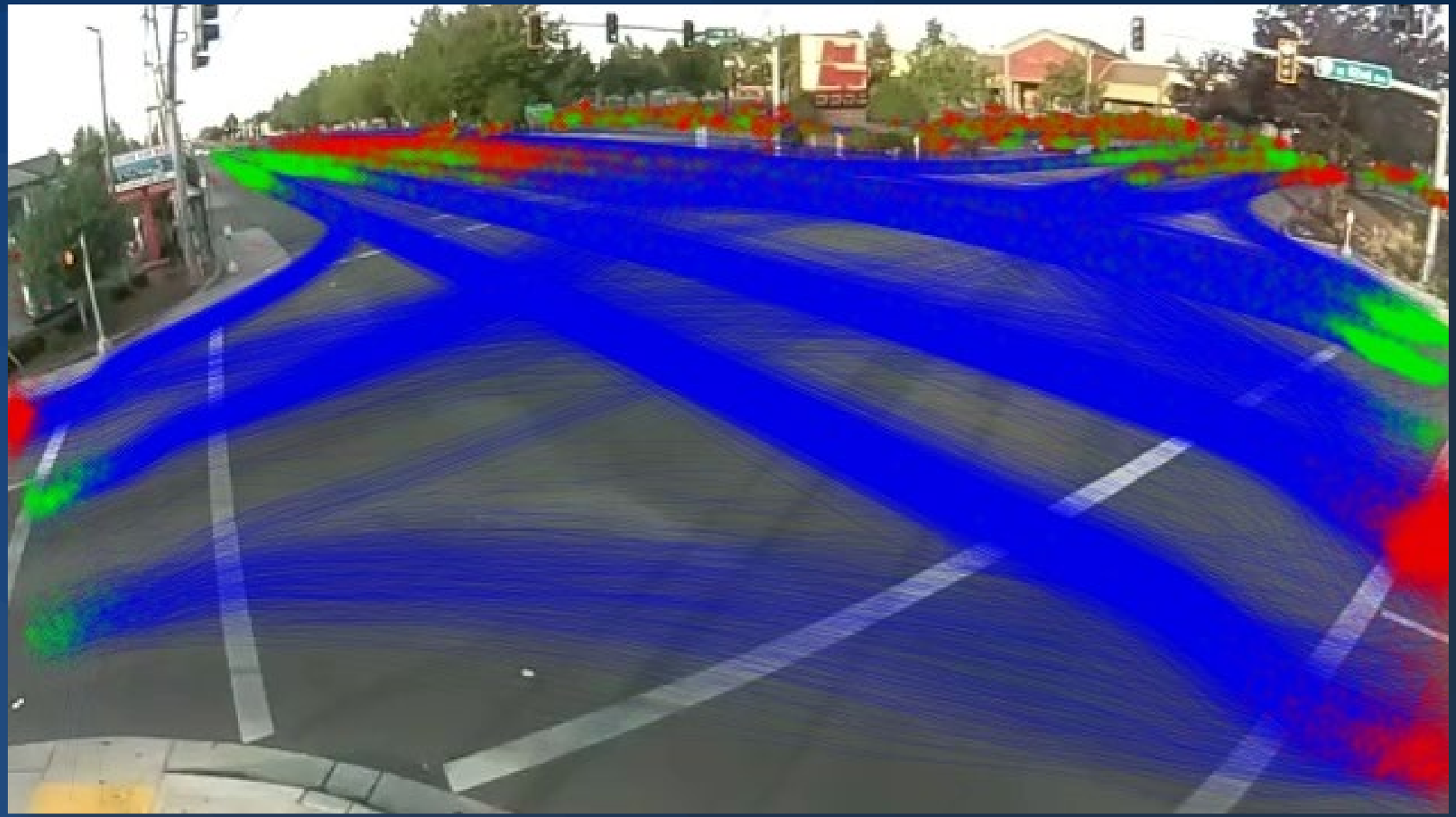
TRUE DATA TO IMPROVE MOBILITY

Innovations in Near Miss Conflict Data

Steven Hollenkamp | Josh Peterman | April 9, 2026

TRUE DATA TO IMPROVE MOBILITY



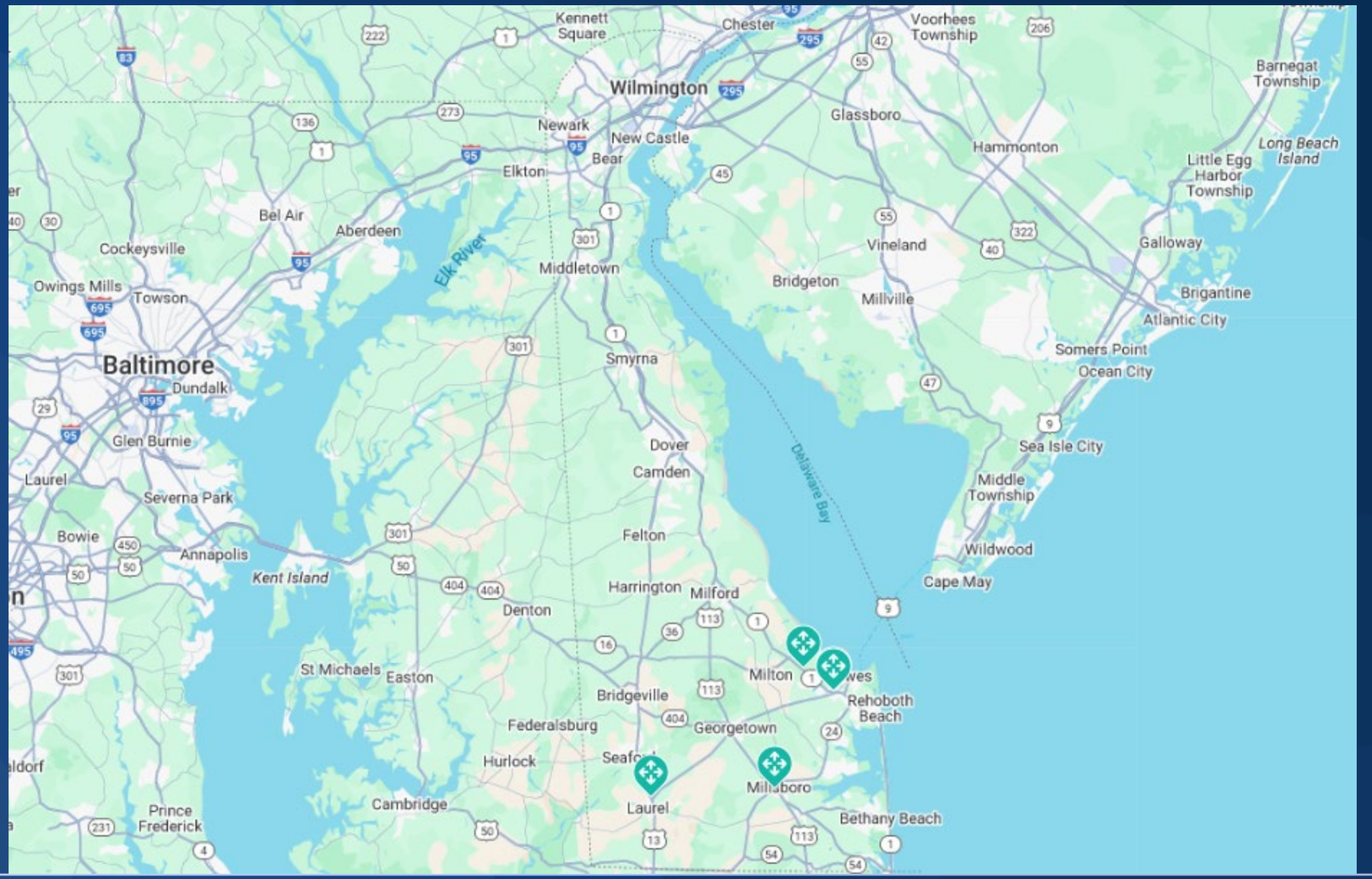
Near Miss Conflict Analysis

DelDOT Project – July 2025

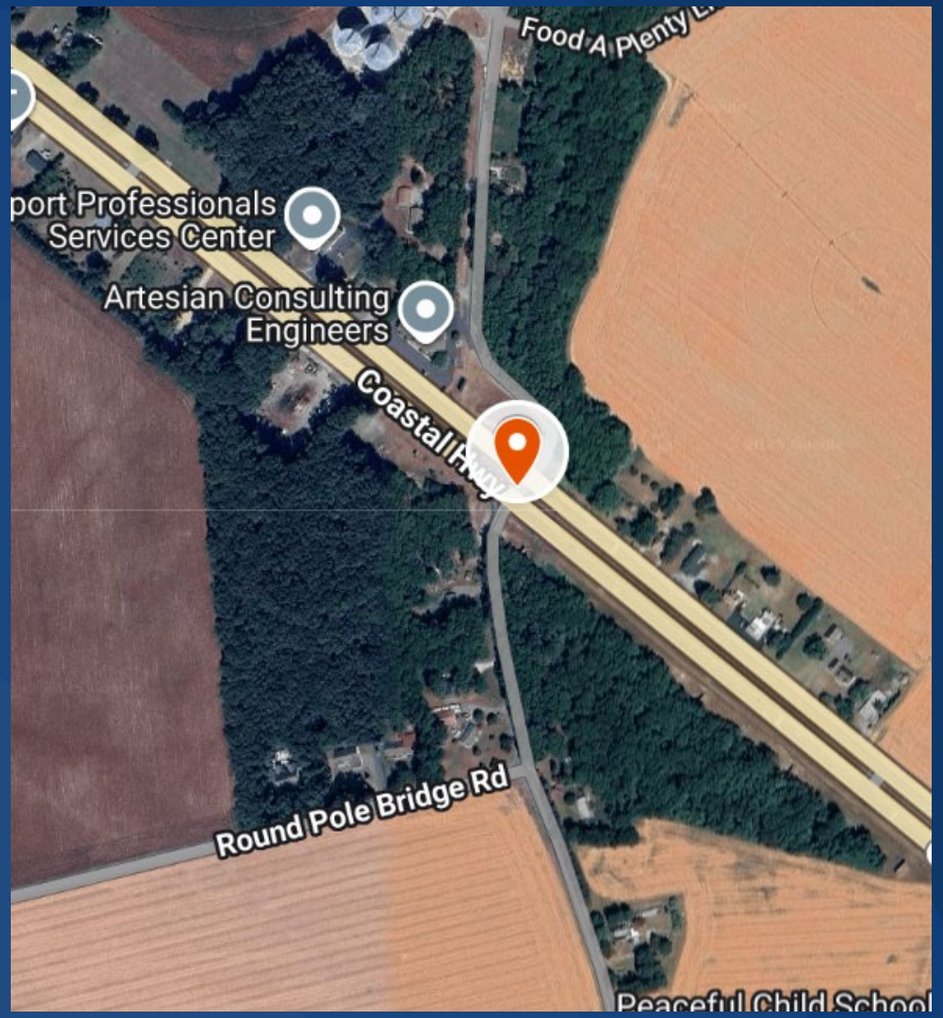
Locations in Study

1. College Ave – Delaware Ave
2. N Walnut St – E Front St
3. US 13– Hickory Ridge Rd/Spring Meadow Dr
4. Belltown Rd/Salt Marsh Blvd – Rd 285/Plantation Rd
5. Belltown Rd – US 9
6. Hudson Rd – DE 1
7. US 13– US 9
8. Delaware Ave – SR 24 (Laurel Rd)

Location Map



Hudson Rd – DE 1



Hudson Rd – DE 1

Route 1 crossovers: Cars stack up, so do crashes

Since 2012, five intersections have seen 212 collisions

Traffic piles up at Nassau Road after a crash in the crossover in July. MELISSA STEELE PHOTO

By Melissa Steele • September 15, 2017

A school bus with two students still on board was stopped in a crossover median, waiting to merge onto Route 1 northbound, when it was struck by a car.

The bus driver and a boy on the bus were uninjured; an 11-year-old girl was later taken to a hospital for an undetermined injury.

But the driver of the car was trapped when his car became stuck under the bus. The 26-year-old man was flown to Christiana Medical Center in critical condition.

"These crossovers are crazy," said a neighbor who came out to witness the commotion off Reynolds Road. "The cars come so fast, you can't see them coming."

There have been 33 crashes at Minos Conaway Road in the past five years. MADDY LAURIA PHOTO

It's a scenario played out daily up and down the dual highway from the Milton area and south to Lewes.

EDITORIALS

Changes needed at Route 1-Hudson Road

September 5, 2025

Cape Gazette

EDITORIAL

Yet another serious accident occurred at the intersection of Route 1 and Hudson Road last week — the second major crash at this location in just a few months. Each time, Route 1 was shut down and traffic was diverted onto alternate routes, causing widespread disruption.

This most recent incident was particularly disastrous, as it happened on a Friday afternoon at the start of a holiday weekend, compounding traffic woes and public safety risks.

Hudson Road has become a popular alternative route for travelers heading westbound to Route 9 or south to destinations like Long Neck in an effort to avoid congestion in the Five Points area. It's also a key commuter corridor, often backed up during morning and evening rush hours.

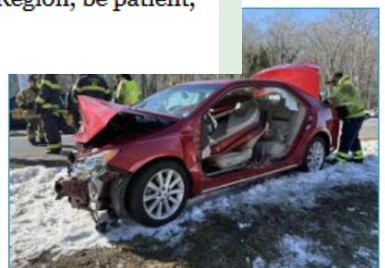
With many drivers exceeding the posted 55 mph speed limit on the straight stretch between Route 16 and the Nassau Bridge, this crossover has grown increasingly dangerous. It's long past time for meaningful action.

At a Five Points Working Group meeting in April 2019, Delaware Department of Transportation officials proposed several projects to be completed by the end of that year. Among them were short-term improvements to four Route 1 crossovers between Milton and Lewes. While upgrades were made at Cave Neck Road and Route 5, progress at Hudson Road and nearby Eagle Crest Road has lagged significantly.

Public crash data shows more than 60 accidents at the Route 1-Hudson Road intersection between 2011 and 2023. That's not just a statistic; that's a red flag. The urgency is real, and something must be done.

At the same time, drivers must do their part. Sitting at the front of the line waiting for a safe gap in traffic can be frustrating, but taking risks isn't worth the cost. Don't gamble with your life, your passengers' lives or the lives of others on the road.

Until DelDOT makes long-overdue changes at this and other dangerous intersections across the Cape Region, be patient, be courteous and be safe.

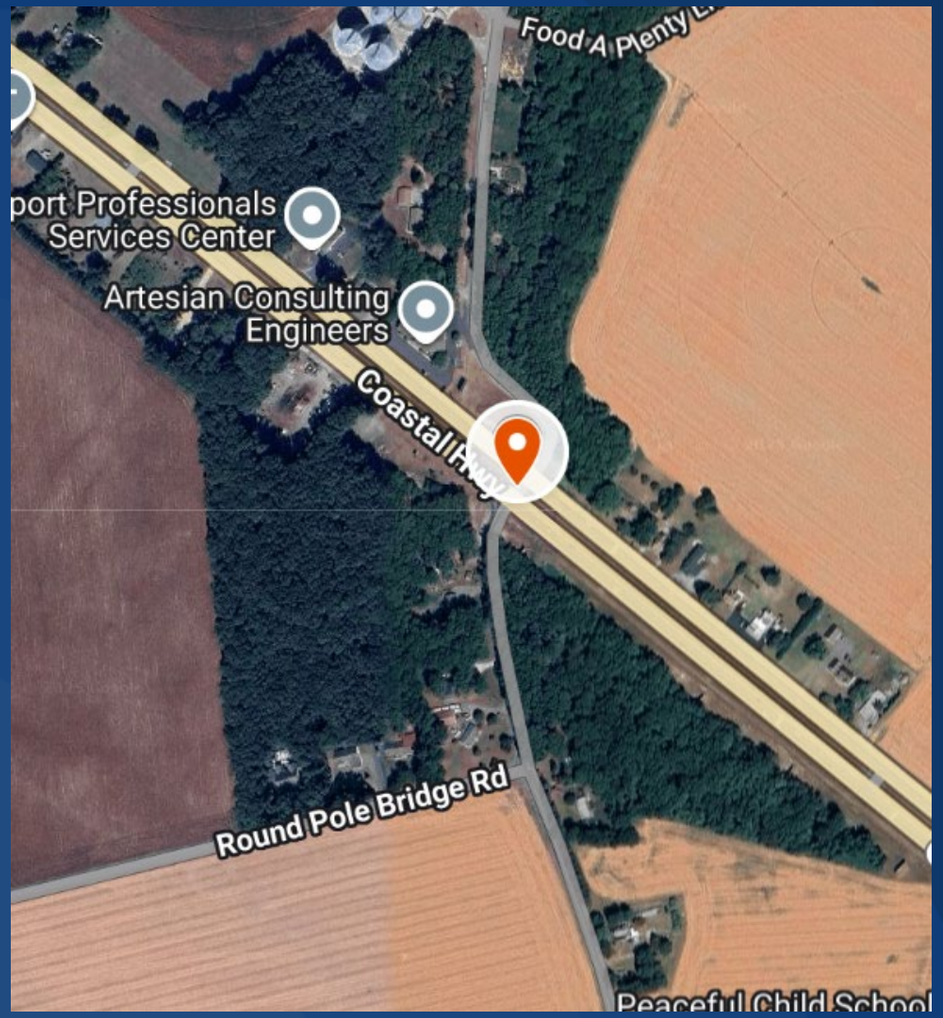


The crash happened at 11:23 a.m. when Chevrolet Camaro stopped at the intersection with Route 1 and Hudson Road, but then continued east and crossed into the path of a Toyota Camry that was travelling southbound on Route 1, police said.

The driver of the Toyota, a Frederica woman, 71, was extricated from the vehicle and flown to an area hospital with serious injuries, police said. The driver of the Camaro, a Lewes girl, 16, was not injured. She was cited

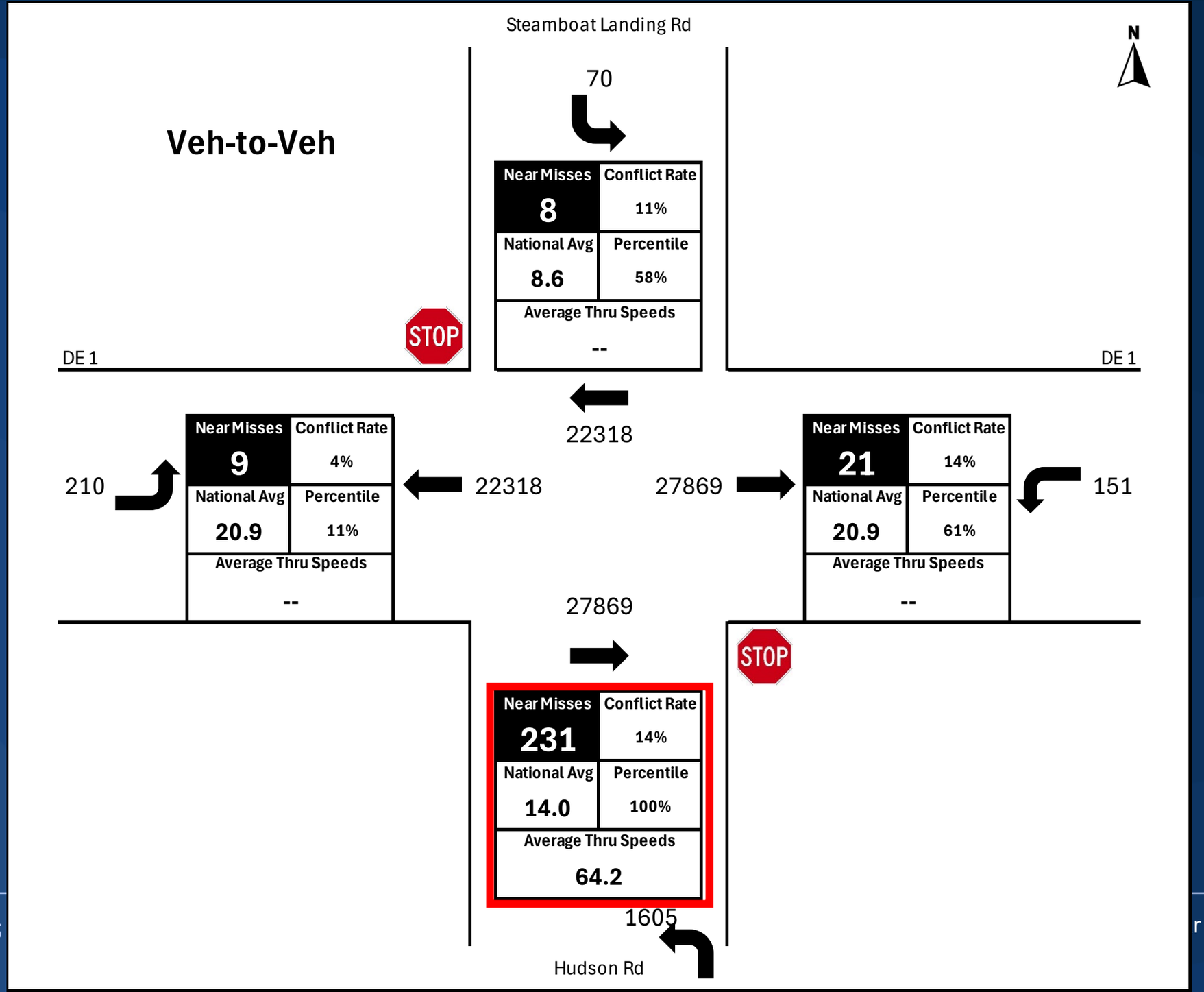

Hudson Rd – DE 1

Hudson Rd – DE 1



Hudson Rd – DE 1

		Total Conflicts			Veh - Veh Conflicts			Ped - Veh Conflicts			Bike - Veh Conflicts		
Site Name	Total Hours Studied	0.0 - 1.5s	1.5 - 2.0s	2.0 - 3.0s	0.0 - 1.5s	1.5 - 2.0s	2.0 - 3.0s	0.0 - 1.5s	1.5 - 2.0s	2.0 - 3.0s	0.0 - 1.5s	1.5 - 2.0s	2.0 - 3.0s
College Ave - Delaware Ave	24	17	28	105	0	0	10	14	23	85	3	5	10
N Walnut St - E Front St	24	22	36	153	0	0	1	20	29	135	2	7	17
US 13 - Hickory Ridge Rd/Spring Meadow Dr	24	0	1	3	0	0	3	0	1	0	0	0	0
elltown Rd/Salt Marsh Blvd - Rd 285/Plantation R	24	22	72	317	21	71	315	1	0	2	0	1	0
Belltown Rd - US 9	24	0	2	12	0	0	6	0	2	3	0	0	3
Hudson Rd / Steamboat Landing Rd - DE 1	24	6	25	256	6	25	256	0	0	0	0	0	0
US 13 - US 9	24	2	2	4	1	2	3	1	0	1	0	0	0
Delaware Ave - SR 24 (Laurel Rd)	24	2	10	73	2	9	70	0	0	2	0	1	1


Steamboat Landing Rd
N
Veh-to-Veh
70
Near Misses
8
Conflict Rate
11%
National Avg
8.6
Percentile
58%
Average Thru Speeds
--
STOP
DE 1
DE 1
22318
210
Near Misses
9
Conflict Rate
4%
National Avg
20.9
Percentile
11%
Average Thru Speeds
--
22318
27869
Near Misses
21
Conflict Rate
14%
National Avg
20.9
Percentile
61%
Average Thru Speeds
--
151
27869
STOP
Near Misses
231
Conflict Rate
14%
National Avg
14.0
Percentile
100%
Average Thru Speeds
64.2
1605
Hudson Rd


403158 2025/07/18 10:15:32
PC 2153
QualityCounts.net

Hudson Rd – DE 1: After

Hudson Rd – DE 1: After

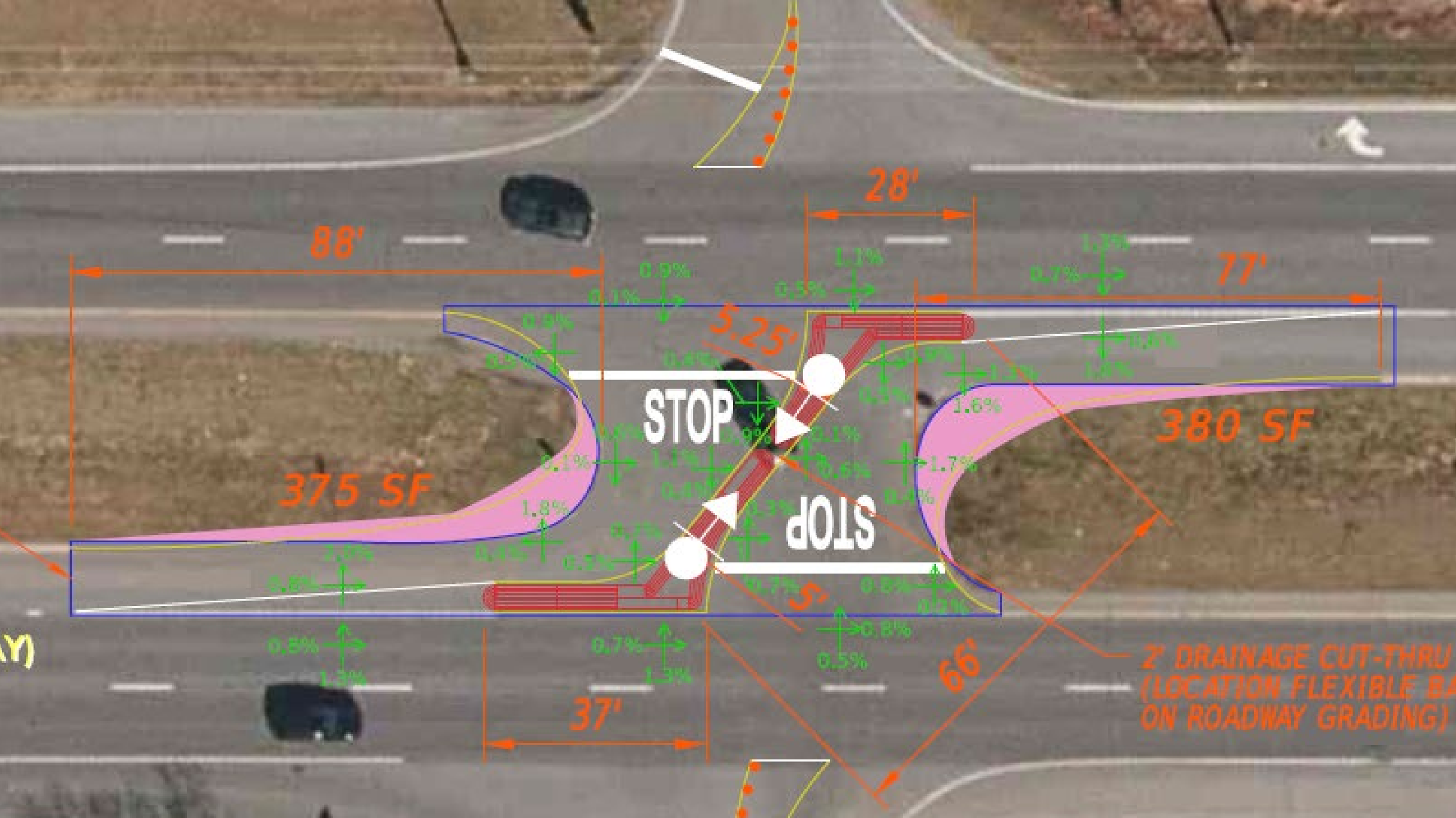
		Total Conflicts			Veh - Veh Conflicts		
Site Name	Total Hr	0.0 - 1.5s	1.5 - 2.0s	2.0 - 3.0s	0.0 - 1.5s	1.5 - 2.0s	2.0 - 3.0s
Steamboat Landing Rd/Hudson Rd - Rt 1	120	0	6	67	0	6	67


401353 2025/11/18 08:39:35
QualityCounts.net

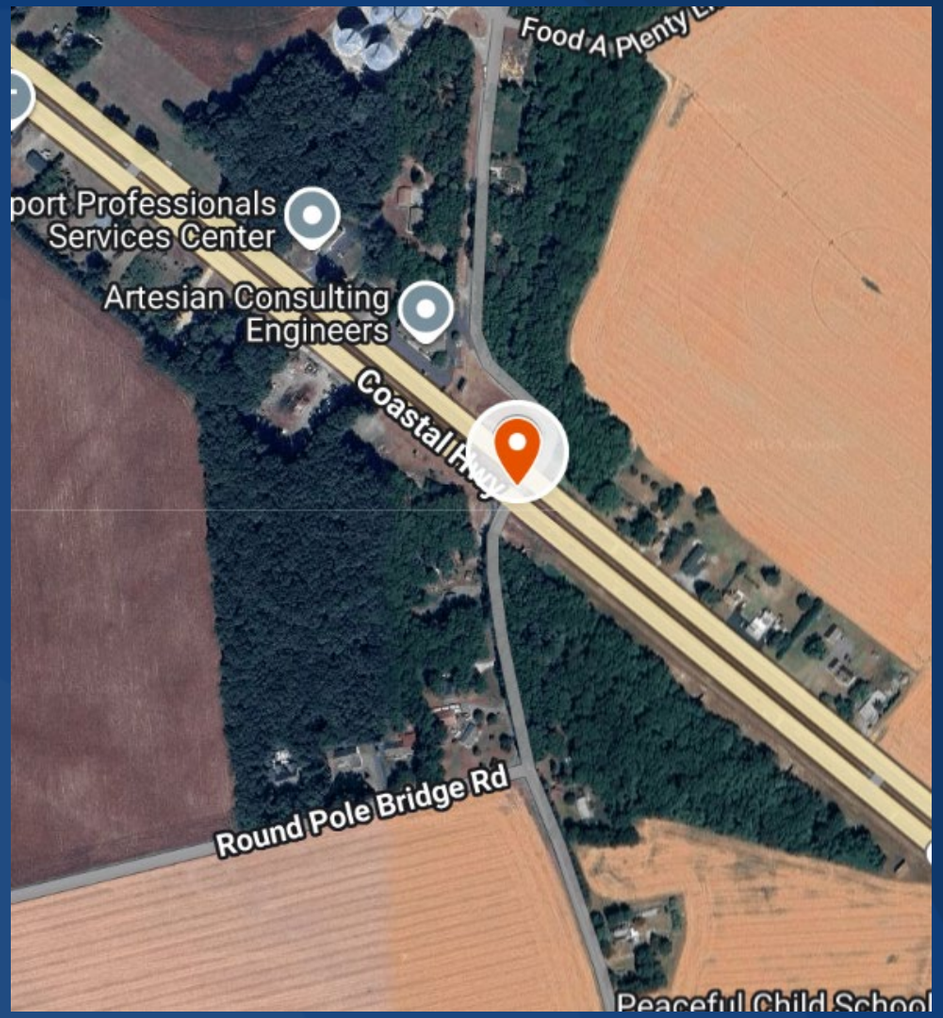
Hudson Rd – DE 1: Results

RESULTS

- The average of 14.6 in a 24-hour span in the after study compares to 287 conflicts in the 24 hours collected in the before study.
- There were 231conflicts between NBLs and EBTs in the 24 hours of the before period and there were 8.2 per day in the after period, a 97% reduction.
- When compared to similar roadways in our database, the number of NBL vs EBT conflicts was in the 100th percentile nationally in the before period and in the after study, is now in 17th percentile nationally.
- There are still 131vehicles per day making this “impossible” movement.


28'
88'
77'
5.25'
STOP
STOP
380 SF
375 SF
5'
37'
66
2' DRAINAGE CUT-THRU
(LOCATION FLEXIBLE B
ON ROADWAY GRADING)

Hudson Rd – DE 1



SEPTEMBER 2025

Denton, TX

Fehr & Peers | QC

Fehr & Peers

335+

Fehr & Peers Safety Projects:

Bicycle Safety Plans, Long Range Safety Plans, Pedestrian Safety Plans, Roadway Safety Plans, Safe Routes to School Plans, Vision Zero Plans, and more!

50+

Safety Action / Vision Zero Plans

Alabama: Birmingham

California: Berkeley, Burbank, Contra Costa County, Contra Costa Transportation Authority, Culver City, Daly City, Fremont, Los Angeles, Oakland, Pittsburg, Redwood City, Sacramento, San Francisco, Sunnyvale, Vallejo

Colorado: Boulder, Brighton, Denver Regional Council of Governments, Denver

Florida: Broward MPO, Center for Urban Transportation Research, Florida Department of Transportation District - Wide, Manatee County, Pinellas County, Charlotte County, MetroPlan Orlando

Texas: El Paso, Denton, Arlington, CAMPO

Utah: St. George

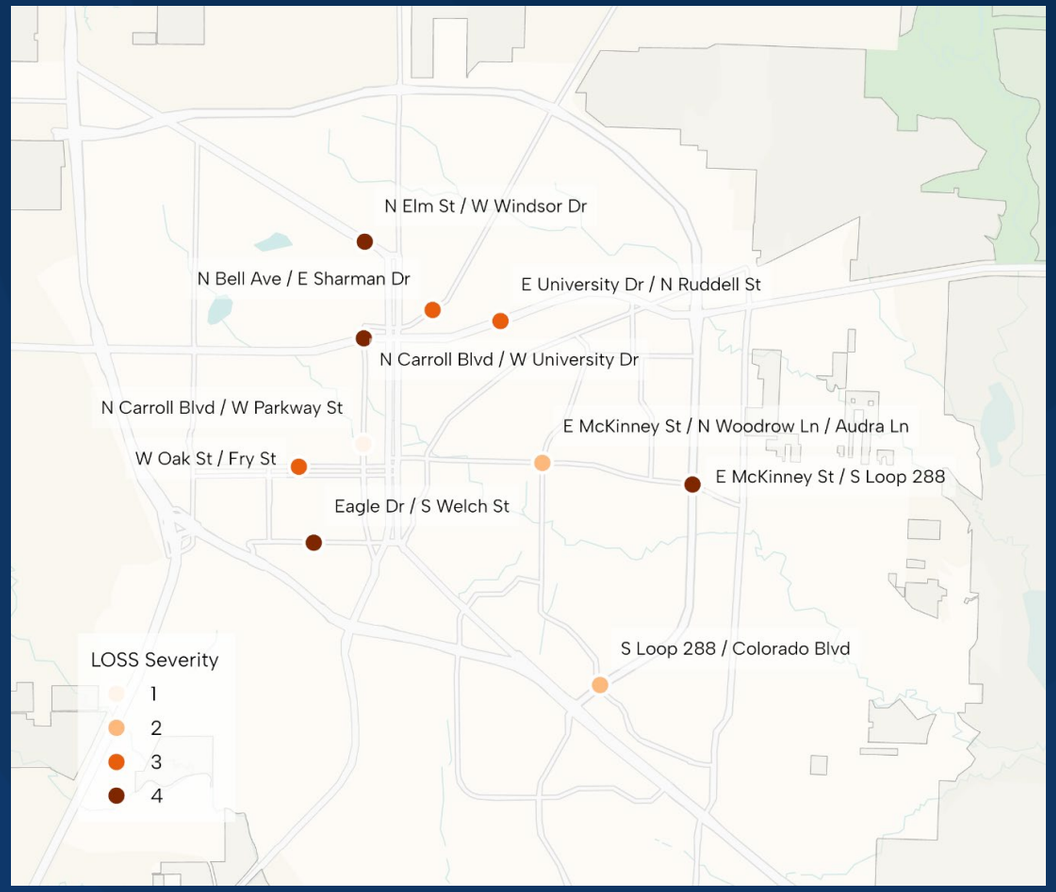
Washington: Bellevue

Washington D.C. Area: Federal Highway Administration, The Maryland - National Capital Park and Planning Commission

Our goal is to create safer, sustainable, and accessible systems that improve everyday life.

Denton Intersection Safety Performance

- Pilot HIN locations identified based on:
  - Crash frequency
  - History of KSI crashes
  - History of bike/ped crashes
- Data from 2020 - 2024



DiExSys VZ Suite: Level of Service of Safety (LOSS)

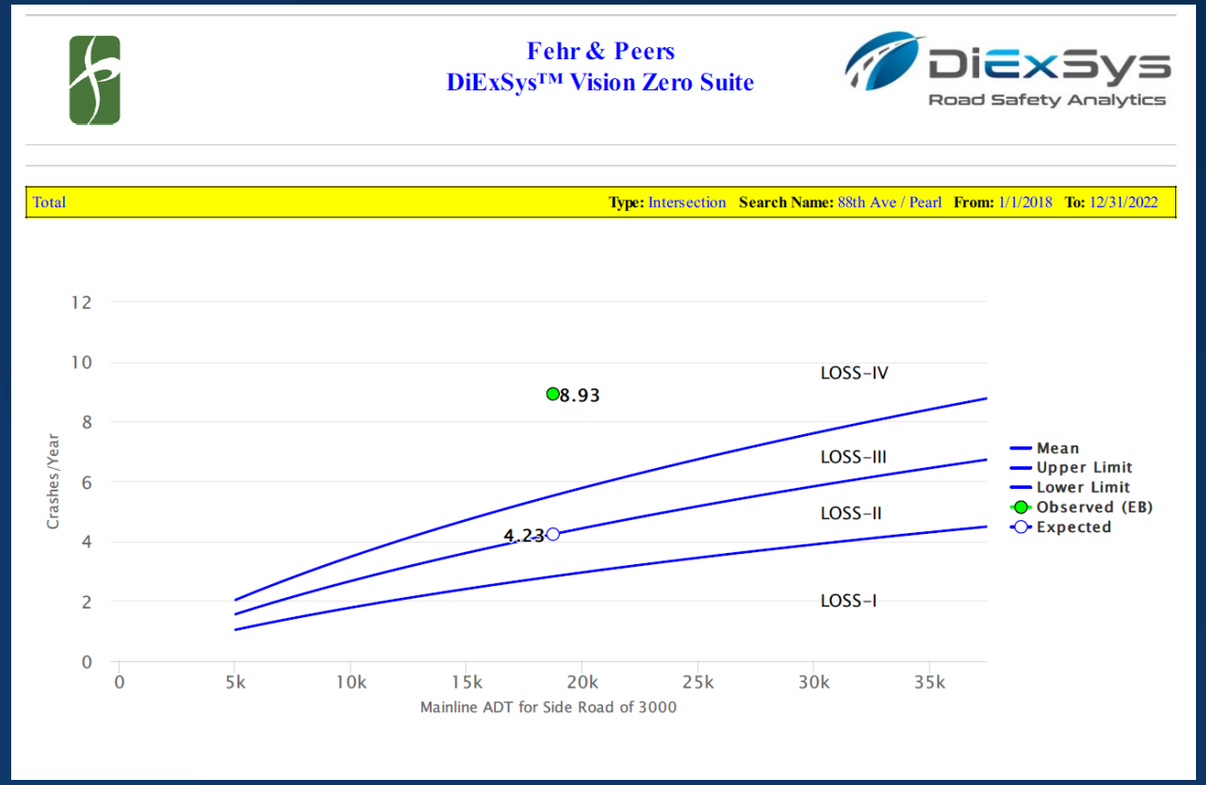
- LOSS Total = Crash Rate
- LOSS Severity = Crash Severity
- Safety improvement potential:

LOSS 4
>80th percentile
High potential for crash reduction

LOSS 3
50th –80th percentile
Moderate to high potential for crash reduction

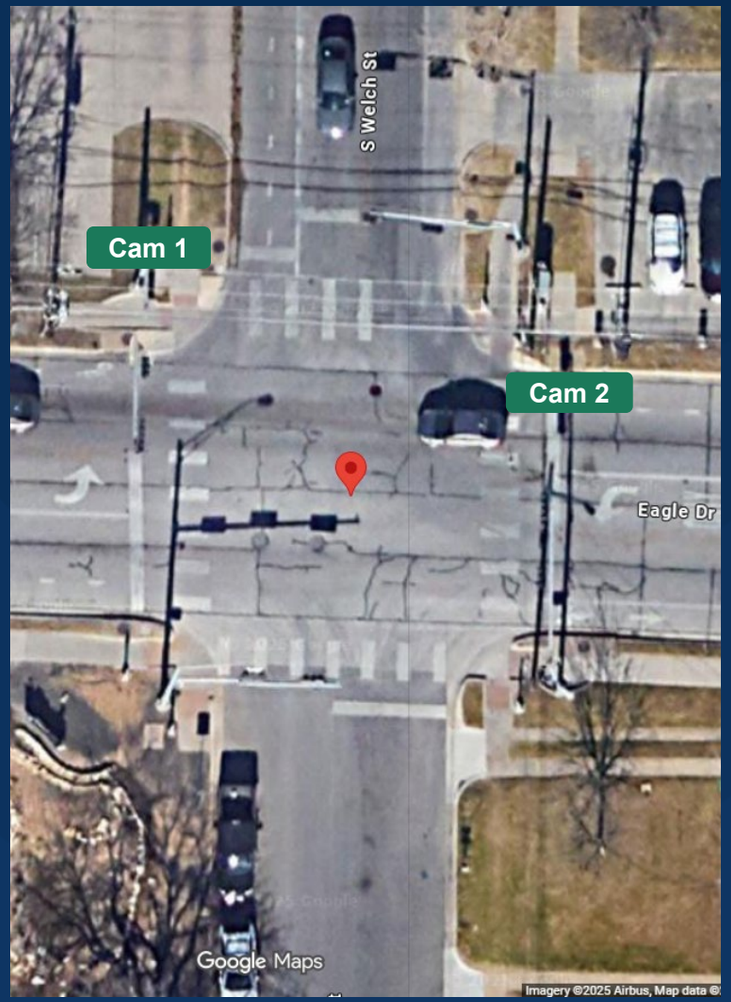
LOSS 2
20th –50th percentile
Lower to moderate potential for crash reduction

LOSS I
<20th percentile
Lower potential for crash reduction



Intersection	Total Crashes	Fatal Crashes	Level A Crashes	Level B Crashes	Level C Crashes	PDO Crashes	LOSS Total	LOSS Severity	Diagnostic Patterns
E McKinney St / S Loop 288	133	0	4	25	21	83	4	4	Approach Turn, Dark – Lighted
N Carroll Blvd / W University Dr	121	0	1	21	15	84	4	4	Approach Turn, Overtaking Turn, Dark – Lighted
S Loop 288 / Colorado Blvd	92	0	3	14	7	68	2	2	Approach Turn, Dawn or Dusk
E University Dr / N Ruddell St	47	1	0	8	11	27	3	3	Approach Turn
E McKinney St / N Woodrow Ln / Audra Ln	42	0	1	6	7	28	2	2	
N Bell Ave / E Sharman Dr	24	0	2	4	2	16	4	3	Wet Road, Rain
Eagle Dr / S Welch St	23	0	3	3	2	15	4	4	
N Elm St / W Windsor Dr	23	0	1	6	7	9	4	4	Approach Turn
N Carroll Blvd / W Parkway St	15	0	1	4	1	9	1	1	
W Oak St / Fry St	13	0	1	0	4	8	3	3	

S Welch St
- Eagle Dr

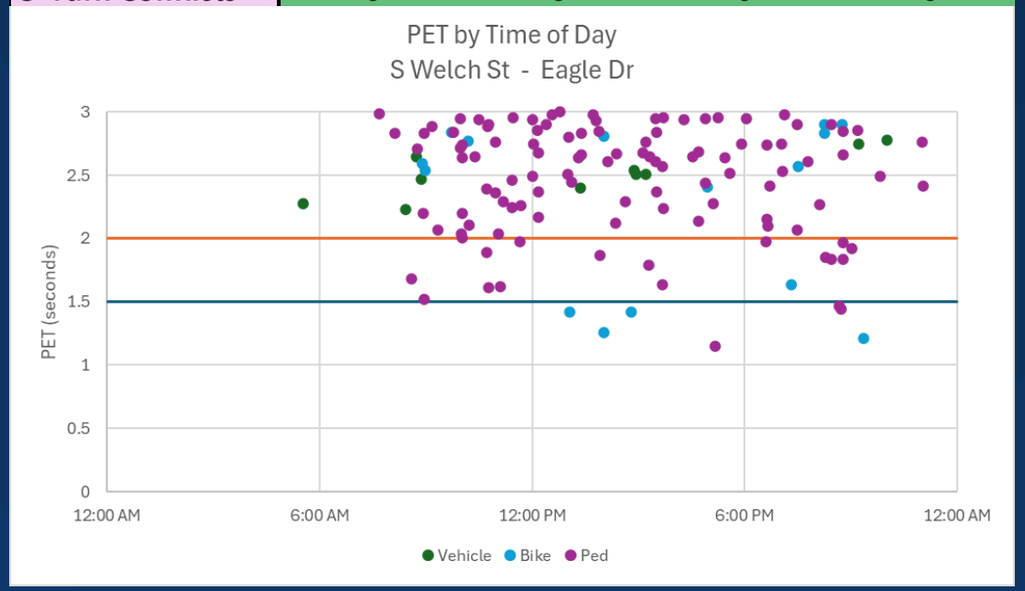


Denton Intersection Safety Performance

Near Miss Takeaways

- Identifies frequent ped and vehicle - bike conflicts
- High conflict legs:
  - **North Leg:** With WBR and EBL
  - **East Leg:** With SBL and east- west through vehicles (pedestrians crossing against signal)

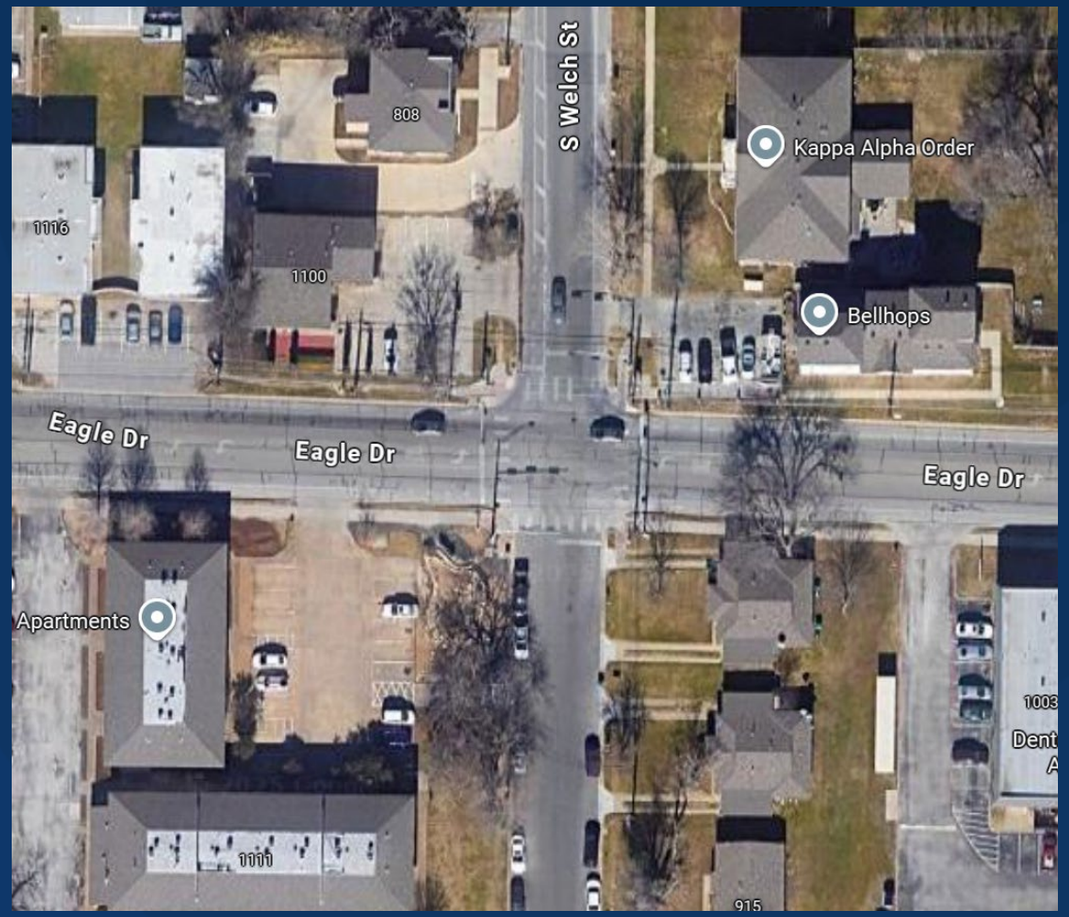
	Ped Conflicts by Leg			
	NL	SL	EL	WL
Total	45	2	38	25
Right Turn Conflicts	24	0	2	9
Left Turn Conflicts	13	0	22	8
Thru Conflicts	8	2	14	8
U-Turn Conflicts	0	0	0	0



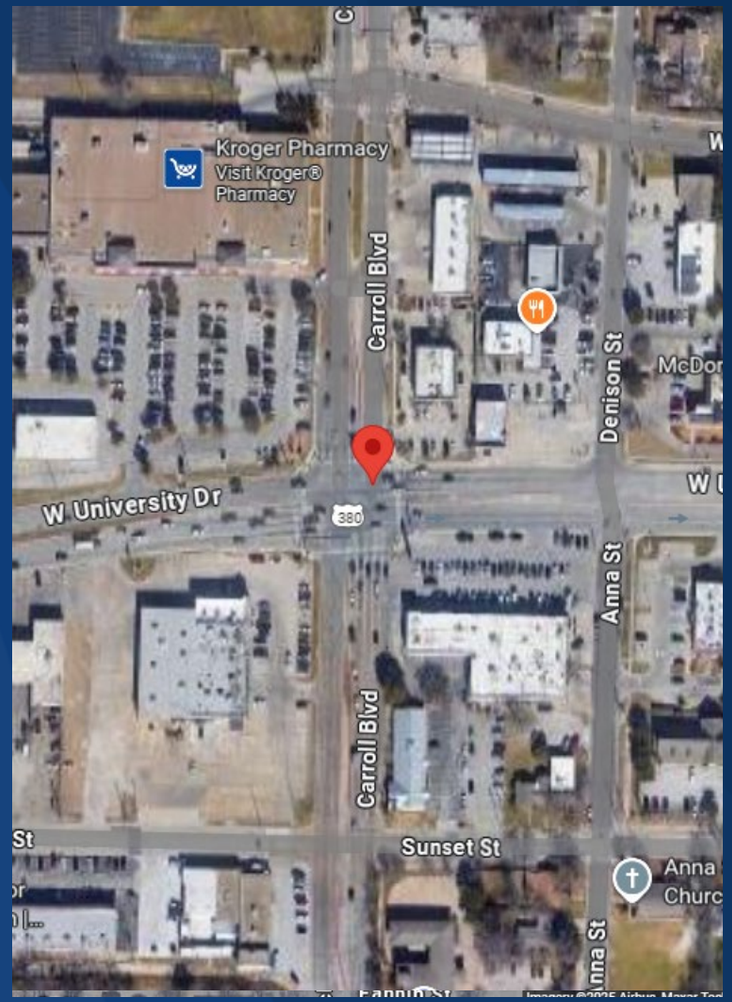
Eagle Dr - S Welch St

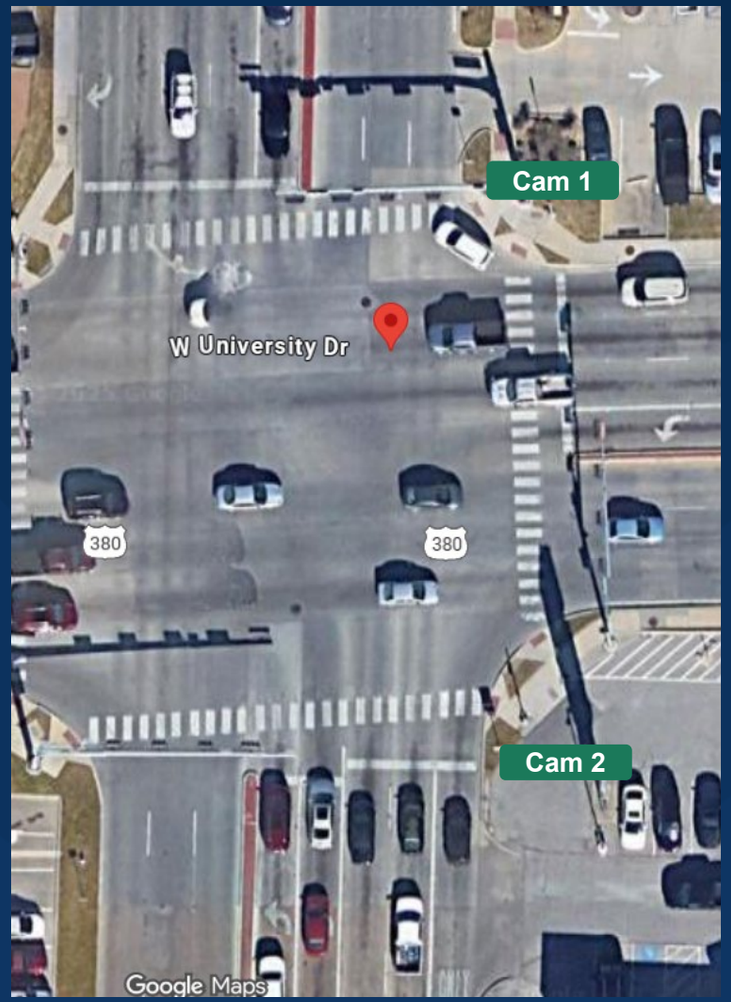
Near Miss Possible Countermeasures

- LPI
- Reduce cycle length
- Install pedestrian refuge islands or hardened centerline (north leg, east leg)
- Protect eastbound left - turn, southbound left - turn
- Other: Streetlighting



Carroll Blvd - W University Dr

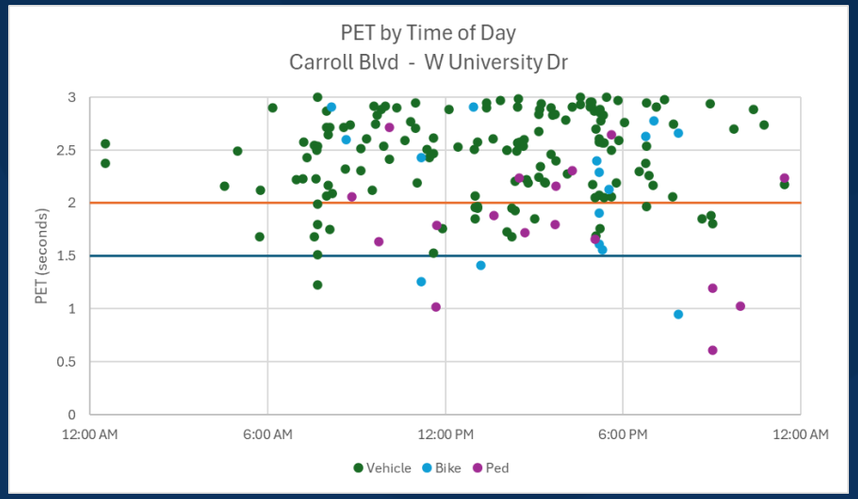




N Carroll Blvd - W University Dr

Near Miss Takeaways

- Reinforces diagnostics findings
- Adds new insight into vehicle - pedestrian conflicts
  - Highest on east leg w/ NBR (LPI?)
  - Low lighting at night

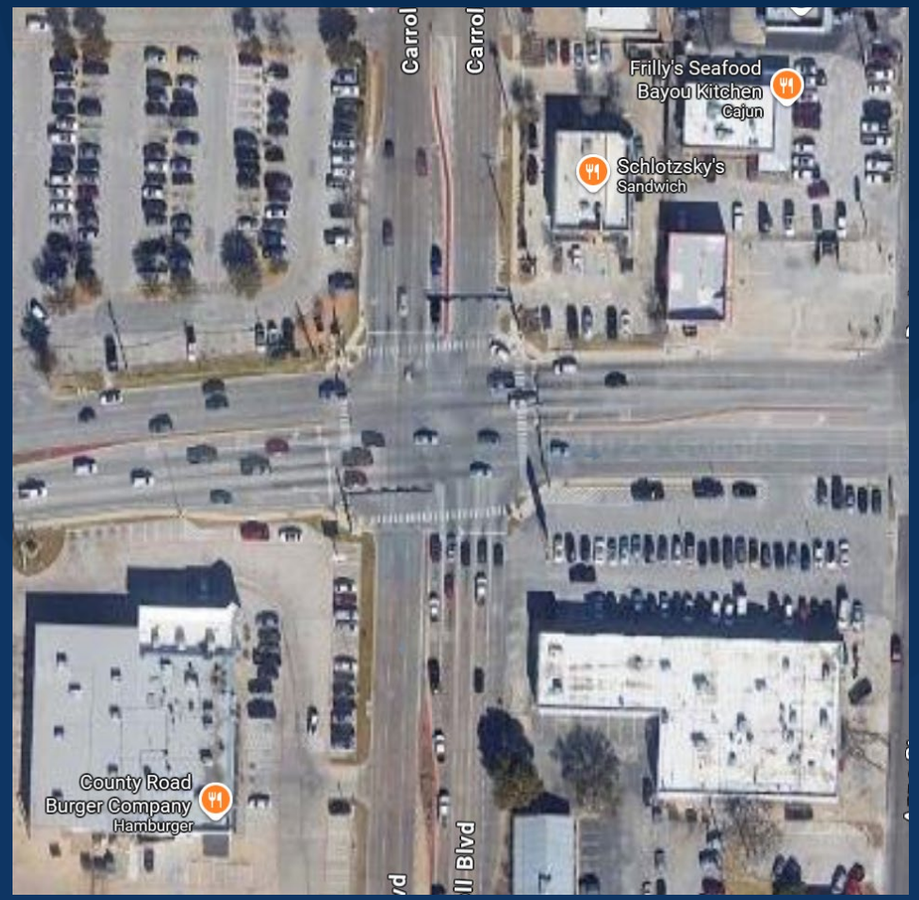


								National Comparison			Regional Comparison		
Sitecode	Intersection	Conflict Type	Control Type	# of Crossing Lanes	Left Turn Volumes	Thru Volumes	Permitted Left Turn Conflicts	Average Conflicts	Percentile	Sample Size (Locations)	Average Conflicts	Percentile	Sample Size (Locations)
02	Carroll Blvd - W University Dr	SBL x NBT	Signal (protected/permissive)	2	Medium	Low	4	14.8	2%	205	25.5	1%	8
		NBL x SBT		3	Medium+High	Low+Medium	78	37.6	100%	84	31.0	100%	10
		EBL x WBT		3	High	High	33	61.6	5%	115	40.4	49%	8
		WBL x EBT		3	High	High	32	61.6	5%	115	40.4	47%	8

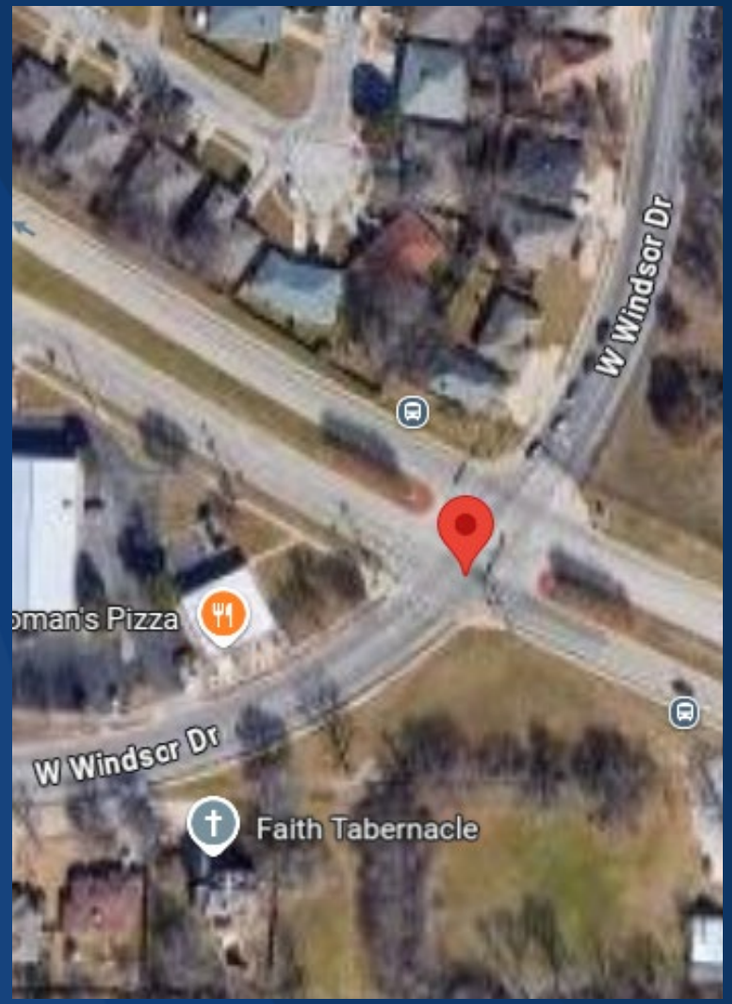
N Carroll Blvd - W University Dr

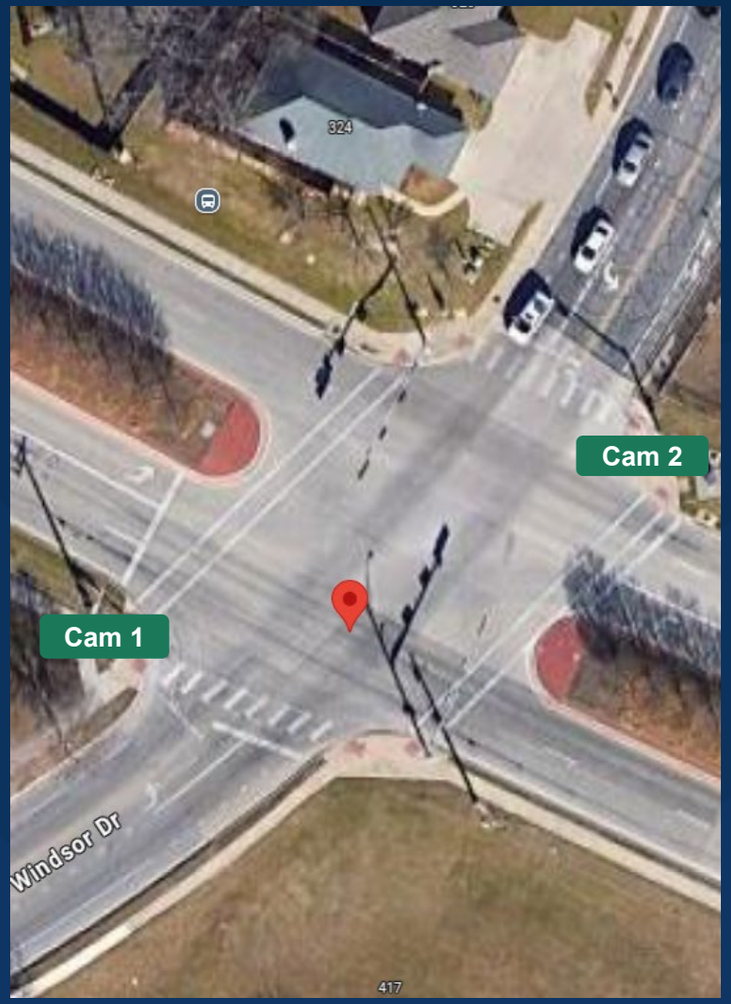
Near Miss Possible Countermeasures

- LPI
- Protected left - turns (all approaches)
- Protect right - turns (where exclusive right - turn lanes are present, overlap with corresponding left - turns)
- Evaluate red clearance interval
- Other: Wider crosswalks, high - vis marking pattern, streetlighting



W Windsor Dr - N Elm St

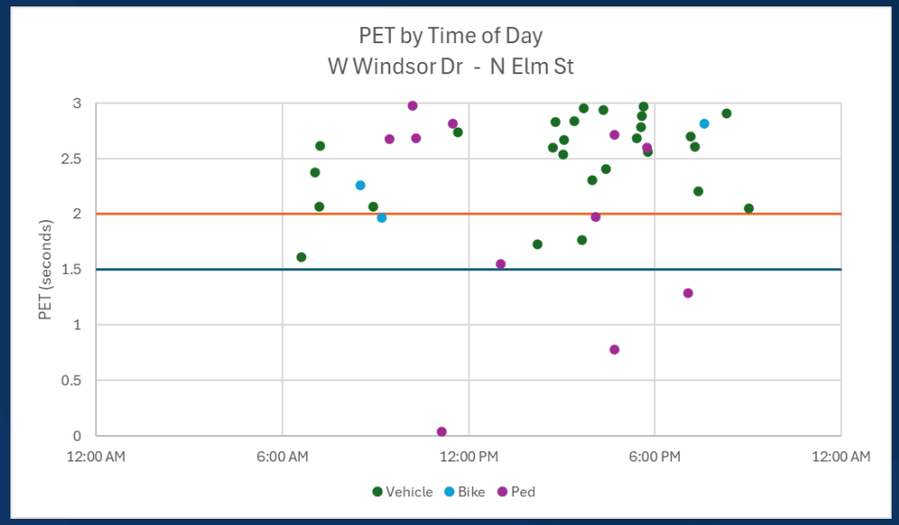




N Elm St - W Windsor Dr

Near Miss Takeaways

- Reinforces diagnostics findings
- Adds new insight into vehicle - pedestrian conflicts
  - Highest on south leg with EBR and WBL
  - Peds use median as refuge when crossing against signal

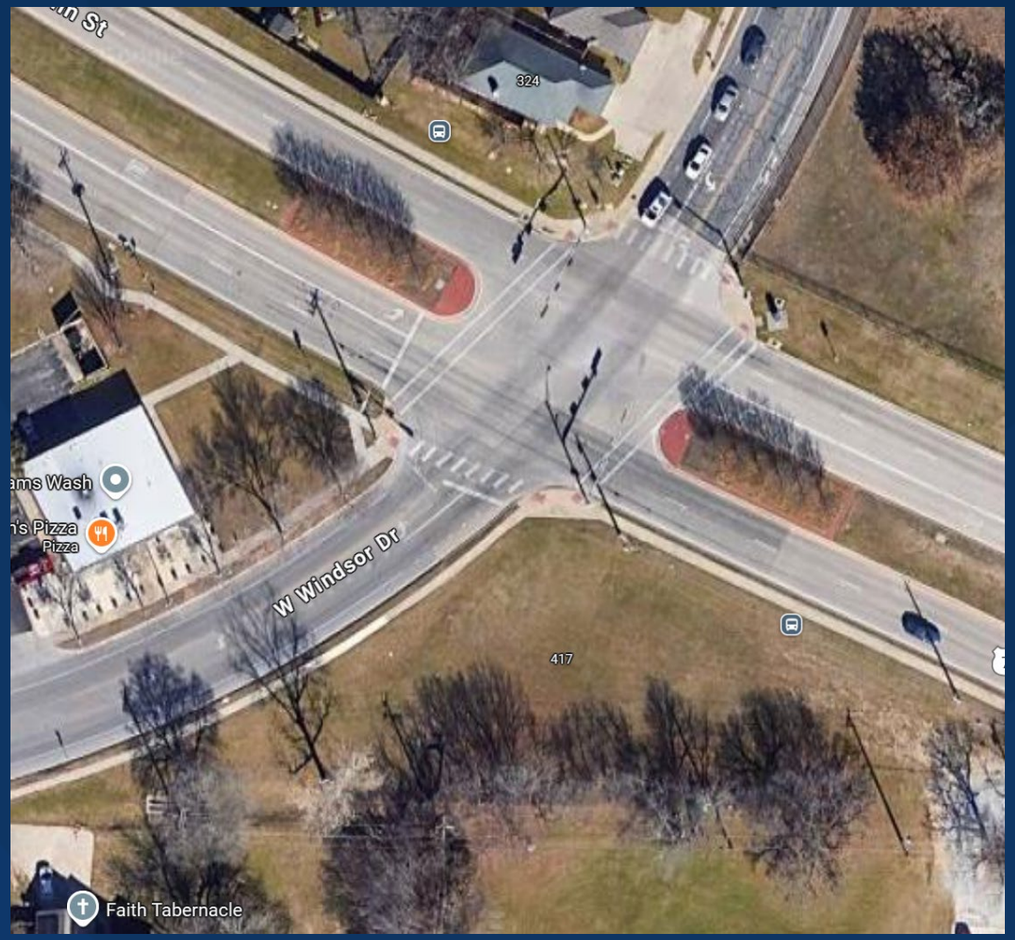


							National Comparison			Regional Comparison		
Intersection	Conflict Type	Control Type	# of Crossing Lanes	Left Turn Volumes	Thru Volumes	Permitted Left Turn Conflicts	Average Conflicts	Percentile	Sample Size (Locations)	Average Conflicts	Percentile	Sample Size (Locations)
W Windsor Dr - N Elm St	NBL x SBT	Signal (protected/permissive)	1	Low	Low	5	5.3	59%	292	4.7	65%	5
	SBL x NBT		1	Low	Low	5	5.3	59%	292	4.7	65%	5
	EBL x WBT		2	Low	Low	15	6.3	96%	101	8.3	100%	3
	WBL x EBT		2	Medium	Low	2	14.8	0%	205	25.5	0%	8

N Elm St - W Windsor Dr

Near Miss Possible Countermeasures

- LPI
- Protected left - turns (east/west) – retains median for pedestrians crossing Elm St against the signal
- Other: Wider crosswalks, high - vis marking pattern, streetlighting



CONCLUSION

Report Review

Thank You!

Innovations in Near Miss Conflict Data

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