Safety Project Evaluation

Order ID:	41000069628 (Location 1 of 2)
Project ID:	SS-4905DE / 05-15-8057-1
Signal ID:	05-0907
Location:	US 70/US 401 (South Saunders St) at Ileagnes Rd
GPS Coordinates:	35.745017, -78.648857
County:	Wake
City:	Raleigh
Division:	5

Countermeasure(s):	1. Upgrade signal to FYA (4-section for US 70/401 approaches, 3-section for Ileagnes Rd approaches). 2. Install pedestrian accommodations: high-visibility crosswalks and countdown signals for all 4 crossings.
Estimated Project Cost:	$61,000 (total for both intersections)
Completion Date:	3/31/2019

	Start Date	End Date	Length
Before Period	11/1/2013	5/31/2018	4y, 7m
Construction Period	6/1/2018	3/31/2019	0y, 10m
After Period	4/1/2019	10/31/2023	4y, 7m

Analysis Criteria:	Intersection (150' y-line)
Target-1 Crashes:	Left-turn, Same Roadway Crashes along treated approaches (all approaches).
Target-2 Crashes:	Pedestrian and bicycle crashes

Project Development Comparison

Crashes Per Year by Project Time Period	Project Development	Before Period	After Period
Years	5.00 years	4.58 years	4.58 years
Start Date	5/1/2010	11/1/2013	4/1/2019
End Date	4/30/2015	5/31/2018	10/31/2023
Total	22.20	21.38	21.82
Fatal Injury	0.00	0.00	0.00
Class A Injury	0.40	0.22	0.65
Class B Injury	0.80	0.87	3.05
Class C Injury	6.20	5.67	4.58
Property Damage Only	14.80	14.62	13.53

Treatment Information	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	98	100	2.04%
Total Severity Index	4.04	5.86	45.19%
All Target Crashes	31	24	-22.58%
All Target Crash Severity Index	5.06	15.10	198.53%
Target-1 Crashes	31	21	-32.26%
Target-1 Crash Severity Index	5.06	12.80	153.06%
Target-2 Crashes	0	3	n/a
Target-2 Crash Severity Index	0.00	31.20	n/a
Volume (2017, 2021)	57,200	54,500	-4.72%

Injury Crash Summary	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal Injury Crashes	0	0	n/a
Class A Injury Crashes	1	3	200.00%
Class B Injury Crashes	4	14	250.00%
Class C Injury Crashes	26	21	-19.23%
Property Damage Only	67	62	-7.46%

All Target Injury Crash Summary	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal Injury Crashes	0	0	n/a
Class A Injury Crashes	0	3	n/a
Class B Injury Crashes	4	6	50.00%
Class C Injury Crashes	13	9	-30.77%
Property Damage Only	14	6	-57.14%

Additional Information	Before	After	Percent Reduction (-) Percent Increase (+)
Total Frontal Impact Crashes at Int.	37	31	-16.22%
PVA Frontal Impact Crashes	7	8	14.29%
Rear End Crashes	41	40	-2.44%
T-1 Crashes Involving U-turn	11	2	-81.82%

Map and Satellite Views

Items for Discussion

- Target-1 crashes by approach of turning vehicle, by time period: 5 NB, 24 SB, 2 EB, 0 WB before; 3 NB, 15 SB, 3 EB, 0 WB after.
- The 3 Target-2 crashes (all in after period) were all pedestrian-vehicle crashes. 1 each occurred on the N, S, and E legs outside the crosswalk.
- Before the project, no marked crosswalks existed at the intersection.
- A signal head was added to each US 70/US 401 approach (through lanes) during project construction.
- Bike lanes were added to the W leg of the intersection between April and July 2018.
- Non-target frontal impact crash types by period: 2 angle, 1 left-turn different roadway, 2 right-turn different roadway, 1 right-turn same roadway before; 4 angle, 4 left-turn different roadway, 2 right-turn different roadway after.

Data Prepared For:

The Traffic Safety Unit *of the*
Transportation Mobility and Safety Division *of the*
Division of Highways *of the*
North Carolina Department of Transportation

Data Prepared By:

Principal Investigator:	John Stanford, E.I.
Work Group/Consultant:	HNTB
Date:	1/19/2024

Safety Project Evaluation

Order ID:	41000069628 (Location 2 of 2)
Project ID:	SS-4905DE / 05-15-8057-2
Signal ID:	05-0272
Location:	US 70/US 401 (South Saunders St) at Pecan Rd/Carolina Pines Ave
GPS Coordinates:	35.7488202, -78.648956
County:	Wake
City:	Raleigh
Division:	5

Countermeasure(s):	Install pedestrian accommodations: high-visibility crosswalks and countdown signals for all 4 crossings.
Estimated Project Cost:	$61,000 (total for both intersections)
Completion Date:	3/31/2019

	Start Date	End Date	Length
Before Period	11/1/2013	5/31/2018	4y, 7m
Construction Period	6/1/2018	3/31/2019	0y, 10m
After Period	4/1/2019	10/31/2023	4y, 7m

Analysis Criteria:	Intersection (150' y-line)
Target Crashes:	Pedestrian and bicycle crashes

Project Development Comparison

Crashes Per Year by Project Time Period	Project Development	Before Period	After Period
Years	5.00 years	4.58 years	4.58 years
Start Date	5/1/2010	11/1/2013	4/1/2019
End Date	4/30/2015	5/31/2018	10/31/2023
Total	32.80	27.49	32.07
Fatal Injury	0.20	0.22	0.00
Class A Injury	0.20	0.00	0.22
Class B Injury	2.60	1.96	5.02
Class C Injury	8.60	6.33	3.49
Property Damage Only	21.20	18.98	23.35

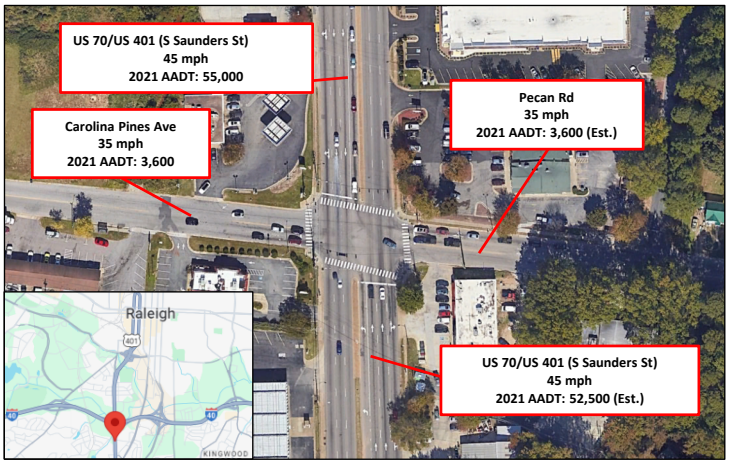
Treatment Information	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	126	147	16.67%
Total Severity Index	3.83	3.48	-9.25%
Target Crashes	3	6	100.00%
Target Crash Severity Index	31.20	18.57	-40.49%
Volume (2017, 2021)	61,000	57,400	-5.90%

Injury Crash Summary	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal Injury Crashes	1	0	-100.00%
Class A Injury Crashes	0	1	n/a
Class B Injury Crashes	9	23	155.56%
Class C Injury Crashes	29	16	-44.83%
Property Damage Only	87	107	22.99%

Target Injury Crash Summary	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal Injury Crashes	1	0	-100.00%
Class A Injury Crashes	0	1	n/a
Class B Injury Crashes	1	4	300.00%
Class C Injury Crashes	1	0	-100.00%
Property Damage Only	0	1	n/a

Additional Information	Before	After	Percent Reduction (-) Percent Increase (+)
Left-Turn, Same Rdwy. Crashes	3	4	33.33%
Total Frontal Impacts at Int.	23	46	100.00%
Rear End Crashes	73	60	-17.81%
n/a			n/a

Map/Satellite Views



Items for Discussion

o During the before period all quadrants of the intersection received updated sidewalk ramps with truncated domes. Based on Google Earth Imagery construction was in progress as of June 2015. The March 2020 signal plan added a 5-second Leading Pedestrian Interval (LPI) to phases 4 and 8.
o Before the project, no marked crosswalks existed at the intersection.
o All Target crashes involved pedestrians (no cyclists). Target crashes by leg of intersection, by time period: 2 N leg, 1 S leg, 0 E leg, 0 W leg before; 4 N leg, 2 S leg, 0 E leg, 0 W leg after.
o In the before period, 2 Target crashes occurred outside the unmarked crosswalk, and 1 occurred inside the unmarked crosswalk. In the after period, 3 occurred outside the marked crosswalk, 1 occurred in the marked crosswalk, and 2 occurred at unclear locations.
o Left-turn, same roadway crashes by approach of turning vehicle, by time period: 0 NB, 1 SB, 0 EB, 2 WB before; 0 NB, 2 SB, 1 EB, 1 WB after.
o Non-target frontal impact crash types by period: 13 angle, 2 left turn different roadway, 3 right turn different roadway, 4 left turn same roadway, 1 right turn same roadway before; 28 angle, 9 left turn different roadway, 4 right turn different roadway, 5 left turn same roadway after.

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Date:	1/19/2024

DISCLAIMER FOR 2020 DATA:

Reductions in typical roadway volumes were experienced Statewide in 2020 due to the COVID-19 pandemic. In addition, the frequency of total crashes in 2020 was found to have decreased from prior years, but the frequency of fatal crashes in 2020 was found to have increased from prior years. The potential impact of the COVID-19 pandemic and shift in data trends should be kept in mind when reviewing traffic safety analyses and/or data reports that incorporate 2020 volume and/or crash data. The analyses and reports that include this data may not represent typical conditions of the areas and locations being reviewed.