

Safety Project Evaluation

| | |
|------------------|---|
| Order ID: | 41000065965 |
| Project ID: | W-5601AG (06-14-30635) |
| Location: | NC 53/NC 210 (Cedar Creek Rd) from 0.630 miles west of I-95 to 0.450 miles east of I-95 |
| Length: | 1.080 miles |
| GPS Coordinates: | 35.004677, -78.813583 to 35.010586, -78.830868 |
| County: | Cumberland |
| City: | Fayetteville |
| Division: | 6 |

| | |
|-------------------------|--|
| Countermeasure(s): | Construct raised median with directional crossovers/bulbouts for U-turns, mid-block pedestrian crossings with refuge islands and install rectangular rapid flashing beacons at the crossings, construct sidewalk and resurface the project area. |
| Estimated Project Cost: | \$1,945,000 |
| Completion Date: | 1/25/2018 |

| | Start Date | End Date | Length |
|------------------------|------------|-----------|---------|
| Before Period #1 | 3/1/2010 | 2/28/2013 | 3y, 0m |
| Construction Period #1 | 3/1/2013 | 9/30/2014 | 1y, 7m |
| Before Period #2 | 10/1/2014 | 3/31/2017 | 2y, 6m |
| Construction Period #2 | 4/1/2017 | 1/31/2018 | 0y, 10m |
| After Period | 2/1/2018 | 9/30/2021 | 3y, 8m |

| | |
|--------------------|---|
| Analysis Criteria: | Treatment data consists of all crashes on NC 53/210 (Cedar Creek Rd) from MP 12.900 to 13.980 |
|--------------------|---|

| | |
|-------------------|---|
| Target-1 Crashes: | Frontal Impact Crashes involving a vehicle making a movement that is restricted in the after period (left turn and angle crashes at PVA entrances/exits and unsignalized intersections) |
|-------------------|---|

| | |
|-------------------|--------------------|
| Target-2 Crashes: | Bicycle/Pedestrian |
|-------------------|--------------------|

| Treatment Information | Before Period #1 | Before Period #2 | After Period |
|------------------------------------|------------------|------------------|--------------|
| Total Crashes | 71 | 68 | 88 |
| Total Severity Index | 9.49 | 3.39 | 3.88 |
| Total Crashes Per Year | 23.67 | 27.20 | 23.98 |
| All Target Crashes | 22 | 22 | 4 |
| All Target Crash Severity Index | 20.58 | 4.03 | 21.80 |
| All Target Crashes Per Year | 7.33 | 8.80 | 1.09 |
| Target-1 Crashes | 17 | 22 | 1 |
| Target-1 Crash Severity Index | 8.07 | 4.03 | 1.00 |
| Target-1 Crashes Per Year | 5.67 | 8.80 | 0.27 |
| Target-2 Crashes | 5 | 0 | 3 |
| Target-2 Crash Severity Index | 63.12 | 0.00 | 28.73 |
| Target-2 Crashes Per Year | 1.67 | 0.00 | 0.82 |
| Volume (2012, 2016, 2020) | 11,600 | 11,100 | 10,800 |

| Injury Crash Summary | Before Period #1 | Before Period #2 | After Period |
|--------------------------------|------------------|------------------|--------------|
| Fatal Injury Crashes | 4 | 0 | 0 |
| Class A Injury Crashes | 2 | 0 | 1 |
| Class B Injury Crashes | 7 | 6 | 11 |
| Class C Injury Crashes | 13 | 16 | 13 |
| Property Damage Only | 45 | 46 | 63 |
| Injury Crashes Per Year | 8.67 | 8.80 | 6.81 |

| All Target Injury Crash Summary | Before Period #1 | Before Period #2 | After Period |
|---|------------------|------------------|--------------|
| Fatal Injury Crashes | 4 | 0 | 0 |
| Class A Injury Crashes | 1 | 0 | 1 |
| Class B Injury Crashes | 4 | 2 | 1 |
| Class C Injury Crashes | 3 | 7 | 0 |
| Property Damage Only | 10 | 13 | 2 |
| All Target Injury Crashes Per Year | 4.00 | 3.60 | 0.54 |

| Additional Information | Before Period #1 | Before Period #2 | After Period |
|---|------------------|------------------|---------------|
| U-Turn Crashes (crashes per year) | 1 (0.33cpy) | 1 (0.40cpy) | 12 (3.27cpy) |
| SS-SD Crashes (crashes per year) | 12 (4.00cpy) | 8 (3.20cpy) | 23 (6.27cpy) |
| Lane Dep. Crashes (crashes per year) | 2 (0.67cpy) | 2 (0.80cpy) | 8 (2.18cpy) |
| Judson Church Rd - Frontal Impact (cpy) | 2 (0.67 cpy) | 4 (1.60 cpy) | 13 (3.54 cpy) |

Project Development Comparison

| Crashes Per Year by Project Time Period | Project Development | Before Period #1 | Before Period #2 | After Period |
|---|---------------------|------------------|------------------|--------------|
| Years | 5.00 | 3.00 | 2.50 | 3.67 |
| Start Date | 7/1/2009 | 3/1/2010 | 10/1/2014 | 2/1/2018 |
| End Date | 6/30/2014 | 2/28/2013 | 3/31/2017 | 9/30/2021 |
| Total | 24.40 | 23.67 | 27.20 | 23.98 |
| Fatal Injury | 1.20 | 1.33 | 0.00 | 0.00 |
| Class A Injury | 0.40 | 0.67 | 0.00 | 0.27 |
| Class B Injury | 2.20 | 2.33 | 2.40 | 3.00 |
| Class C Injury | 4.20 | 4.33 | 6.40 | 3.54 |
| Property Damage Only | 16.40 | 15.00 | 18.40 | 17.17 |

Map/Satellite Views



Items for Discussion

- It should be noted that the before period of this evaluation was separated into two time periods due to the prior installation of SS# 06-12-19477 and SS# 06-14-28203 in 2013 and 2014 which constructed two mid-block pedestrian crosswalks with Rectangular Rapid Flashing Beacons and 400 ft of sidewalk on the north shoulder in the vicinity of Bureau Dr.
- In addition to the above stated countermeasure, it should be noted that the intersection of NC 53/210 at SR 2008 (Judson Church Rd)/I-95 NB Ramp was upgraded to include marked crosswalks and pedestrian signals during the same construction time frame based on Google Earth imagery.
- There was only one target 1 – frontal impact crash involving a restricted movement during the after period which involved a driver traveling the wrong way in the directional crossover at Bureau Dr to make a U-turn.
- Pedestrian crashes per year were reduced from before period 1 to the after period. 4 out of 5 of the before period 1 pedestrian crashes resulted in a fatality. No fatal pedestrian crashes occurred during the after period. There was an A-injury, B-injury and PDO (due to lack of information) pedestrian crash. All after period pedestrian crashes occurred east of the interchange, unlike in before period 1 in which 4 out of 5 pedestrian crashes occurred west of the interchange. During the after period, 2 pedestrian crashes occurred midblock east of Judson Church Rd and not within a crosswalk. The other after period pedestrian crash occurred at the Judson Church Rd intersection within a marked crosswalk.
- Note that there was a miscoded crash (PDO rather than fatality) that is not accurately reflected in the after period TEAAS document.

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: | Daniell L. Bagley |
| Work Group/Consultant: | Traffic Safety Unit |
| Date: | January 2022 |