

# Spot Safety Project Evaluation

## Project Information

Order ID: 41000033823

Project ID: 04-09-2778

Location: NC 111 at SR 1547 (Stoney Creek Church Rd)

County: Wayne

City: North of Goldsboro

Division: 4

Signal ID: 04-0834

Countermeasure: Install actuated shoulder mounted flashers with Vehicles Entering when Flashing Signs on both approaches of NC 111.

Project Completion: April 15, 2011

Project Cost: \$27,000

## Map and Aerial (from Google Maps – Coordinates are 35.444940, -77.957446)



**Naive Before and After Analysis**

Before Period: April 1, 2007 through February 28, 2011 (3 years 11 months)

Const. Period: March 1, 2011 through May 31, 2011

After Period: June 1, 2011 through April 30, 2015 (3 years 11 months)

Analysis Criteria: Treatment data consisted of all crashes within 150 feet of the subject intersection for the NC 111 and SR 1547 approaches.

Target Crashes: Frontal Impact Crashes (left-turn, same roadway; left-turn, different roadway; right-turn, same roadway; right-turn, different roadway; head-on; and angle crashes) in the intersection

| <b><u>Treatment Information – Countermeasure Actuated Shoulder Mounted Flashers on NC 111</u></b> |               |              |                                                       |
|---------------------------------------------------------------------------------------------------|---------------|--------------|-------------------------------------------------------|
| <b><u>Treatment Information</u></b>                                                               | <b>Before</b> | <b>After</b> | <b>Percent Reduction (-)<br/>Percent Increase (+)</b> |
| Total Crashes                                                                                     | 19            | 9            | - 52.6 %                                              |
| Total Severity Index                                                                              | 3.73          | 1.82         | - 51.2 %                                              |
|                                                                                                   |               |              |                                                       |
| Target Crashes                                                                                    | 11            | 8            | - 27.3 %                                              |
| Target Crash Severity Index                                                                       | 4.36          | 1.93         | - 55.7 %                                              |
|                                                                                                   |               |              |                                                       |
| Volume (2009, 2013)                                                                               | 6,100         | 4,800        | - 21.3 %                                              |

| <b><u>Injury Crash Summary</u></b> | <b>Before</b> | <b>After</b> | <b>Percent Reduction (-)<br/>Percent Increase (+)</b> |
|------------------------------------|---------------|--------------|-------------------------------------------------------|
| Fatal injury Crashes               | 0             | 0            | N/A                                                   |
| Class A injury Crashes             | 0             | 0            | N/A                                                   |
| Class B injury Crashes             | 3             | 1            | - 66.7 %                                              |
| Class C Injury Crashes             | 4             | 0            | - 100.0 %                                             |
| Property Damage Only               | 12            | 8            | - 33.3 %                                              |

| <b><u>Additional Information</u></b> | <b>Before</b> | <b>After</b> | <b>Percent Reduction (-)<br/>Percent Increase (+)</b> |
|--------------------------------------|---------------|--------------|-------------------------------------------------------|
| Frontal Impact Crashes (Target)      | 11            | 8            | - 27.3 %                                              |
|                                      |               |              |                                                       |
| Angle Crashes                        | 9             | 5            | - 44.4 %                                              |
| Night Crashes                        | 6             | 2            | - 66.7 %                                              |

### **Table 1 Summary Results**

|                        |        |             |
|------------------------|--------|-------------|
| Total Crashes:         | - 53 % | (reduction) |
| Total Crash Severity:  | - 51 % | (reduction) |
| Target Crashes:        | - 27 % | (reduction) |
| Target Crash Severity: | - 56 % | (reduction) |
| Volume:                | - 21 % | (reduction) |

### **Additional Summary Results**

|                                  |        |             |
|----------------------------------|--------|-------------|
| Frontal Impact Crashes (Target): | - 27 % | (reduction) |
| Angle Crashes:                   | - 44 % | (reduction) |
| Night Crashes:                   | - 67 % | (reduction) |

### **Items for Discussion/Concerns**

The study intersection experienced a 53 % reduction in total crashes (19 to 9 crashes).

The target crashes (Frontal Impact Crashes) experienced a 27 % reduction (11 to 8 crashes).

The intersection experienced a reduction in Angle Crashes (9 to 5 crashes) and a reduction in Night Crashes (6 to 2 crashes).

### **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: Andrew Covington, EI  
Work Group/Consultant: AECOM  
Date: May 29, 2015

SR 1547 (Stoney Creek Church Rd)  
55 MPH  
2009 ADT 1,600

SS# 04-09-2778  
Order # 41000033823  
Wayne County  
Before Period  
4/1/07 - 2/28/11

| LEGEND |                 |  |                |  |               |  |                 |
|--------|-----------------|--|----------------|--|---------------|--|-----------------|
|        | MOVING VEHICLE  |  | ANGLE          |  | 1 MPH OR LESS |  | PEDESTRIAN      |
|        | PEDESTRIAN      |  | TURNING        |  | 10 MPH TO 19  |  | TRAIN           |
|        | PARKED VEHICLE  |  | BACKING        |  | 20 MPH TO 29  |  | DRIVER AT FAULT |
|        | PARKING VEHICLE |  | SHOESHOPE      |  | 30 MPH TO 39  |  | DRY             |
|        | FIXED OBJECT    |  | OUT OF CONTROL |  | 40 MPH TO 49  |  | WET             |
|        | HEAD ON         |  | HURRY          |  | 50 MPH TO 59  |  | ICY OR SNOWY    |
|        | REAR END        |  | FATALITY       |  | 60 MPH TO 69  |  | ONLY            |
|        | RAN OFF ROAD    |  |                |  | 70 AND UP     |  |                 |
|        |                 |  |                |  | SPEED UNKNOWN |  |                 |

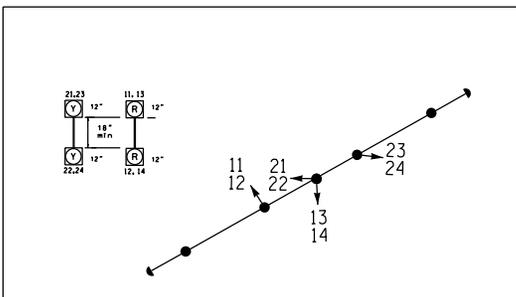


Pure Food Mart

NC 111  
55 MPH  
2009 ADT 6,150

NC 111  
55 MPH  
2009 ADT 3,000

SIG ID 04-0834 (Two Circuit Flasher)



SR 1547 (Stoney Creek Church Rd)  
No Posted Speed Limit  
2009 ADT 1,350

Frontal Impact Crashes

# AECOM

Prepared For:  
N.C. DEPARTMENT of TRANSPORTATION  
DIVISION of HIGHWAYS  
TRANSPORTATION MOBILITY and SAFETY DIVISION

## TRAFFIC SAFETY UNIT

Date: 5-29-2015      Prepared By: Andrew Covington, EI

SR 1547 (Stoney Creek Church Rd)  
55 MPH  
2013 ADT 2,100

SS# 04-09-2778  
Order # 41000033823  
Wayne County  
After Period  
6/1/11 - 4/30/15

**LEGEND**

|  |                 |  |                |  |               |  |                 |
|--|-----------------|--|----------------|--|---------------|--|-----------------|
|  | MOVING VEHICLE  |  | ANGLE          |  | 1 MPH OR LESS |  | PEDESTRIAN      |
|  | PEDESTRIAN      |  | TURNING        |  | 10 MPH TO 19  |  | TRAIN           |
|  | PAKED VEHICLE   |  | BACKING        |  | 20 MPH TO 29  |  | DRIVER AT FAULT |
|  | PARKING VEHICLE |  | SLOESWPE       |  | 30 MPH TO 39  |  | DRY             |
|  | FIXED OBJECT    |  | OUT OF CONTROL |  | 40 MPH TO 49  |  | WET             |
|  | HEAD ON         |  | HURRY          |  | 50 MPH TO 59  |  | ICY OR SNOW     |
|  | NEAR END        |  | FATALITY       |  | 60 MPH TO 69  |  | SPEED UNKNOWN   |
|  | RAN OFF ROAD    |  |                |  | 70 AND UP     |  | ONLY            |

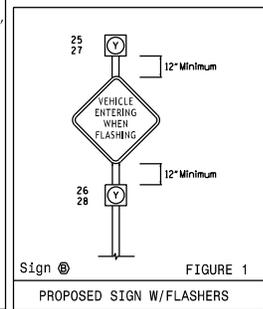
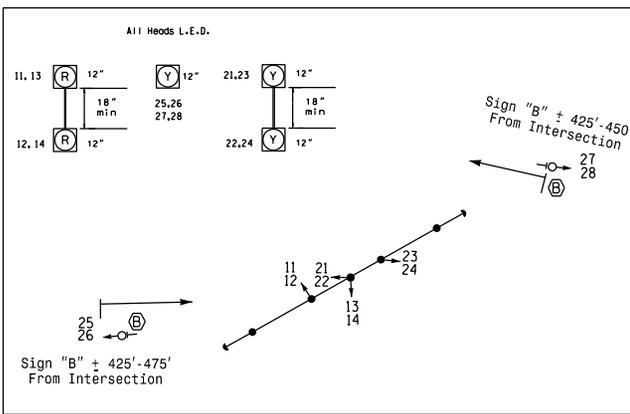


Pure Food Mart

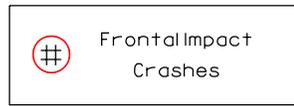
NC 111  
55 MPH  
2013 ADT 4,300

NC 111  
55 MPH  
2013 ADT 2,450

SIG ID 04-0834 (Actuated Flasher)



SR 1547 (Stoney Creek Church Rd)  
No Speed Limit Posted  
2013 ADT 750



**AECOM**

Prepared For:  
N.C. DEPARTMENT of TRANSPORTATION  
DIVISION of HIGHWAYS  
TRANSPORTATION MOBILITY and  
SAFETY DIVISION

**TRAFFIC SAFETY UNIT**

Date: 5-29-2015      Prepared By: Andrew Covington, EI