

# **Spot Safety Project Evaluation**

Project Log # 200512202

Spot Safety Project # 02-96-200

## **Spot Safety Project Evaluation of the Intersection Realignment of SR 1141 (John Greene Smith Rd) and SR 1143 (Liddell Shortcut Rd) Lenoir County**

Documents Prepared By:

Safety Evaluation Group  
Traffic Safety Systems Management Section  
Traffic Engineering and Safety Systems Branch  
North Carolina Department of Transportation

**Principal Investigator**

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Brad Robinson, EI

Traffic Safety Project Engineer

9/6/2006  
Date

# ***Spot Safety Project Evaluation Documentation***

## **Subject Location**

Evaluation of Spot Safety Project Number 02-96-200 – The Intersection of SR 1141 (John Greene Smith Rd) and SR 1143 (Liddell Shortcut Rd) in Lenoir County.

## **Project Information and Background from the Project File Folder**

The spot safety project improvement countermeasure chosen for the subject location was the realignment of the intersection of SR 1141 (John Greene Smith Rd) and SR 1143 (Liddell Shortcut Rd). SR 1141 and SR 1143 are both 2-lane facilities with no turn lanes.

Before the project, SR 1143 intersected SR 1141 to form a “Y” intersection, with a stop sign on SR 1143. The original statement of problem was that due to the sharp angle the roads intersected at, the intersection was too large to control and created problems for motorists entering. It was also suspected that after NC 11 was widened that SR 1143 would become the major road. According to the spot safety project justification sheet and the work plans, SR 1141 was to be realigned so that it intersected SR 1143 at a 90-degree angle. The stop condition would then be changed so that SR 1141 traffic would stop at the intersection. In addition, a traffic island was to be installed on SR 1141 at the intersection to channelize traffic. After conducting a site investigation, it was observed that SR 1143 was instead realigned so that it intersected SR 1141 at a 90-degree angle. A traffic island was not installed on either street. Please refer to the attached *Treatment Site Photos* for further details.

The initial crash analysis for this intersection was completed from June 1, 1992 to May 31, 1998 with a total of 3 crashes. These crashes included 2 left turn crashes and 1 rear end crash, which resulted in 1 class “A”, 1 class “B”, and 4 class “C” injuries. The final completion date for the relocation of the intersection was November 30, 2001, with a total cost of \$42,000.

## **Naive Before and After Analysis**

After reviewing the spot safety project file folder along with all the crashes at the subject location, the crash data omitted from this analysis to consider for an adequate construction period was from September 1, 1997 to February 28, 2002. The before period consisted of reported crashes from November 1, 1997 through August 31, 2001 (3 Years, 10 Months) and the after period consisted of reported crashes from March 1, 2002 through December 31, 2005 (3 Years, 10 Months). The ending date for this analysis was determined by the available crash data at the time the crash analysis was completed.

The treatment data consisted of all reported crashes within 150 feet of the subject intersection. Please see attached *Location Map* for further detail.

<u>Treatment Information</u>			
	<b>Before</b>	<b>After</b>	<b>Percent Reduction (-) Percent Increase (+)</b>
Total crashes	0	0	N/A
Volume	1750	1550	-11.4

There were no reported crashes in the before or the after period at the subject location. In addition, the Average Daily Traffic (ADT) decreased 11 percent from the before to the after period. The before period ADT year was 1999 and the after period ADT year was 2004.

### **Results and Discussion**

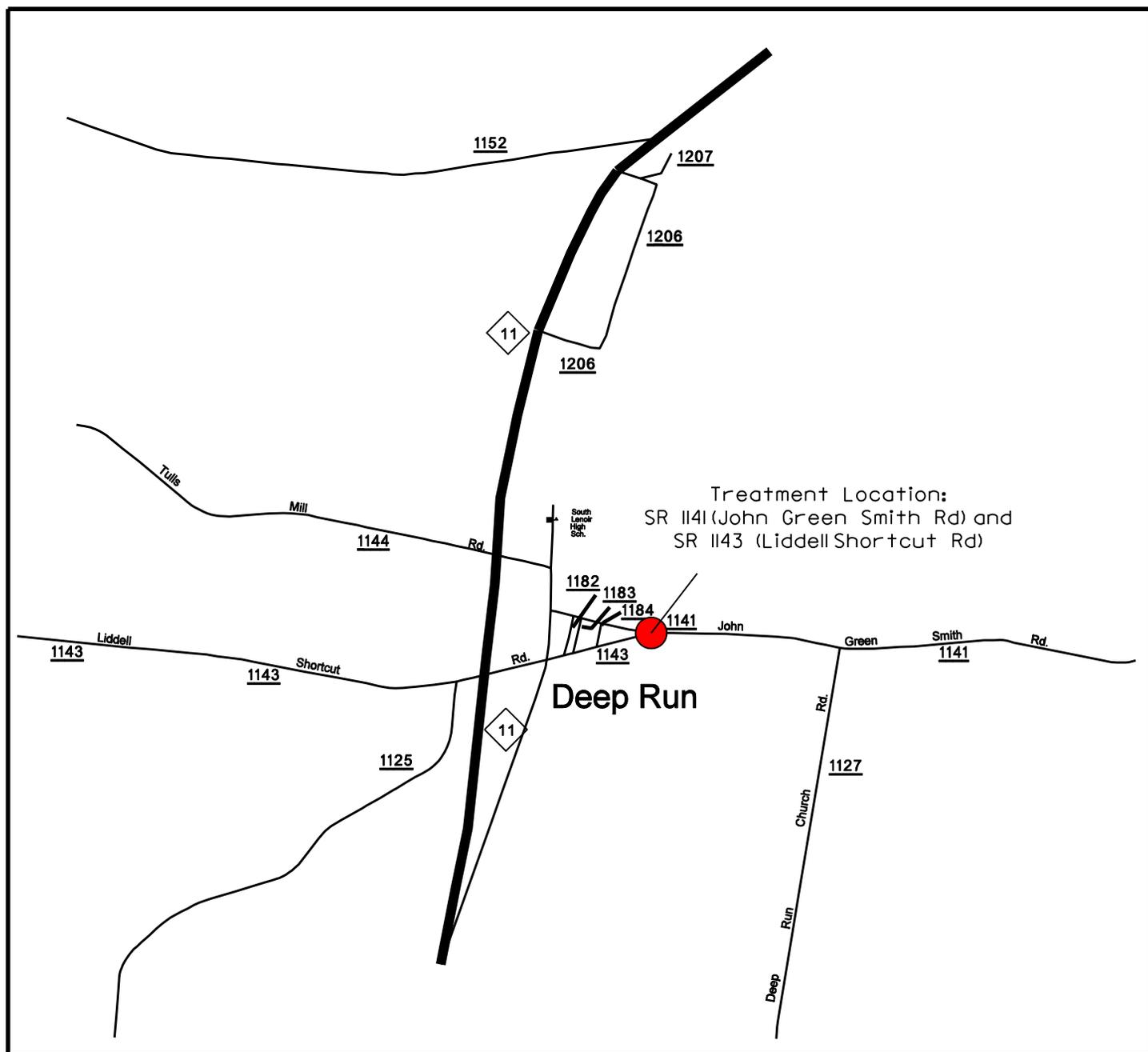
The naive before and after analysis involving the comparison of treatment actual before data versus treatment actual after data shows no crashes in either the before or the after period.

After conducting a field investigation, it appears that SR 1143 did not become the major road as predicted.

Please see the attached *Treatment Site Photos*. Photos from each approach are provided.

As the Safety Evaluation Group completes additional spot safety reviews for this type of countermeasure, we will be able to provide objective and definite information regarding actual crash reduction factors for this type of intersection.

Location Map  
Lenoir County  
Evaluation of Spot Safety Project  
#02-96-200



**Treatment Site Photos Taken July 18, 2006**



Looking East on SR 1141 (John Greene Smith Rd)



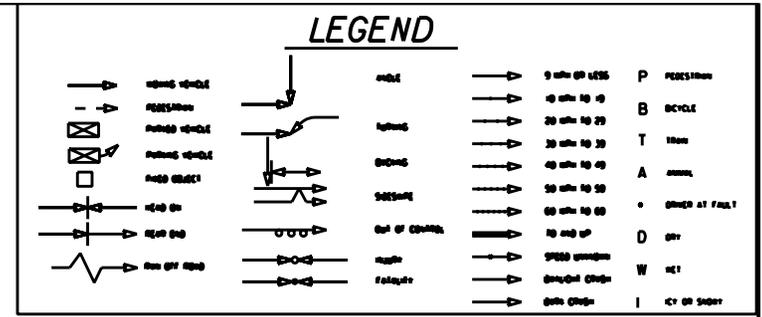
Looking West on SR 1141 (John Greene Smith Rd)



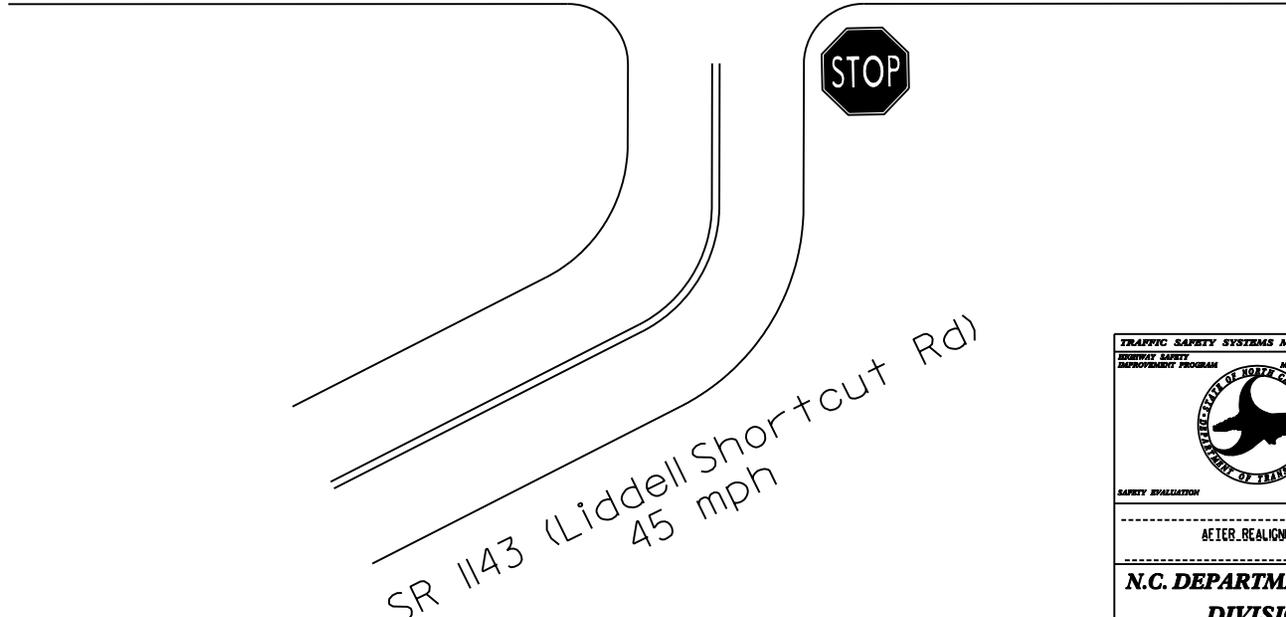
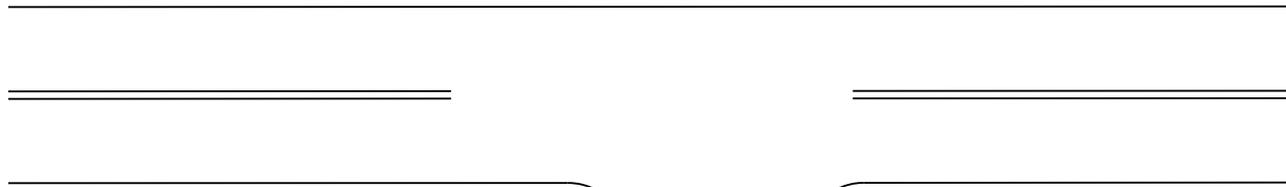
Looking From SR 1143 (Liddell Shortcut Rd)



SR 1141 (John Greene Smith Rd)  
 At SR 1143 (Liddell Shortcut Rd)  
 In the After Period  
 From 3/1/2002-12/31/2005



SR 1141 (John Greene Smith Rd)  
 45 mph



SR 1143 (Liddell Shortcut Rd)  
 45 mph

<small>TRAFFIC SAFETY SYSTEMS MANAGEMENT UNIT</small> <small>HIGHWAY SAFETY IMPROVEMENT PROGRAM</small>		<small>SAFETY INFORMATION</small> <small>MANAGEMENT AID SUPPORT</small>		<b>COLLISION DIAGRAM</b>			
		DIVISION: 2	AREA: ..	STUDY PERIOD: 2/1/2002 TO 12/31/2005			
		DISTANCE: .....		Y-LINE: 150 FT			
		ANALYSIS PREPARED BY: B.Boobosoo		DIAGRAM PREPARED BY: B.Boobosoo		DIAGRAM REVIEWED BY: .....	
		SAFETY EVALUATION		TRAFFIC SAFETY		SCALE: NOT TO SCALE	
		BEFORE REALIGNMENT		DATE: September, 2006		LOG NUMBER: 20050202	
<b>N.C. DEPARTMENT of TRANSPORTATION</b> <b>DIVISION of HIGHWAYS</b> <b>TRAFFIC ENGINEERING AND SAFETY</b> <b>SYSTEMS BRANCH</b>							