



## Naive Before and After Analysis

- Before Period: December 1, 2002 through May 31, 2008 (5 years, 6 months)
- Const. Period: June 1, 2008 through July 31, 2008
- After Period: August 1, 2008 through January 31, 2014 (5 years, 6 months)
- Analysis Criteria: Treatment data consisted of all crashes on NC 251 from MP 0.12 to MP 12.687, with a 0-ft y-line.
- Target Crashes: Lane Departure – Ran-Off Road (Left, Right, Straight), Sideswipe (Opposite Direction), Fixed Object, and Head-On

<u>Treatment Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	95	91	-4.2
Total Severity Index	8.36	4.42	-47.1
Target Crashes – Lane Departure	63	50	-20.6
Target Crash Severity Index	8.51	4.55	-46.5
Guardrail Hit Crashes	1	4	300.0
Guardrail Hit Severity Index	1	2.85	185.0
Volume (2005, 2011)	2,900	3,000	3.4

<u>Target Crash Injury Summary</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal injury Crashes	1	0	-100.0
Class A injury Crashes	3	0	-100.0
Class B injury Crashes	12	10	-16.7
Class C Injury Crashes	11	14	27.3
Property Damage Only	36	26	-27.8

<u>Additional Information</u>	Before	After	Percent Reduction (-) Percent Increase (+)
Night Crashes	19	18	-5.3
Wet Crashes	22	12	-45.5
Alcohol / Drug Involvement Crashes	10	7	-30.0
Animal Crashes	1	1	0.0

## **Overall Summary Results**

Total Crashes:	- 4 %	(reduction)
Total Crash Severity:	- 47 %	(reduction)
Target Crashes:	- 21 %	(reduction)
Target Crash Severity:	- 47 %	(reduction)
Volume:	3 %	(increase)

## **Items for Discussion/Concerns**

Guardrail was installed at select locations along the route. Since the exact placement was not known, target crashes included all lane departure crashes along the entire route. For this reason the majority of lane departure crashes did not result in a guardrail being struck, even in the after period. The crash reports of the target crashes were then examined to determine the number of times guardrail was struck. The attached collision diagrams identify the crashes involving guardrail hits.

## **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: Brad Robinson, PE  
Work Group/Consultant: NCDOT - Safety Evaluation Group  
Date: April 14, 2014

**BUNCOMBE COUNTY**  
**NC 251 from SR 1781 to the Madison CL**  
**Before Period - 12/1/02-5/31/08**



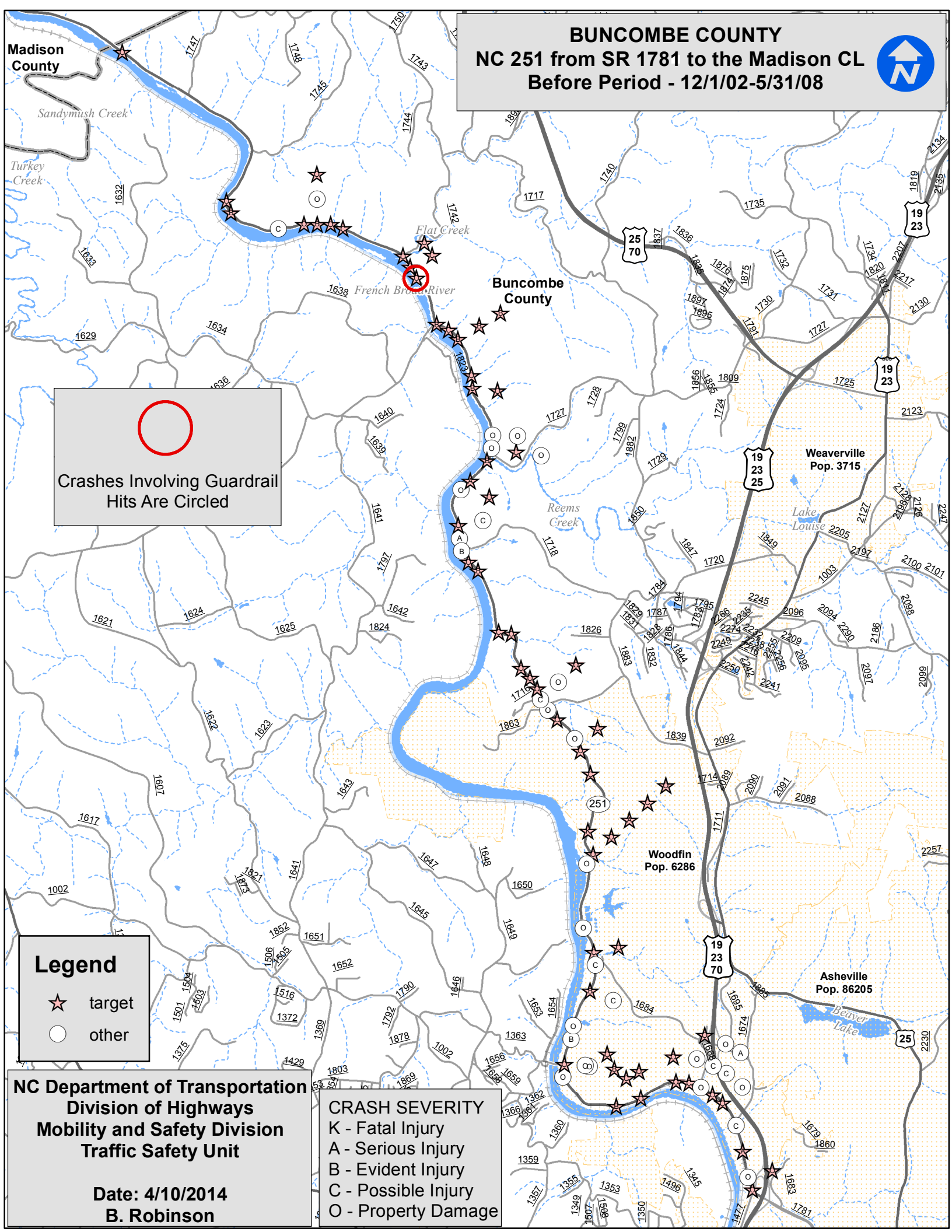
  
**Crashes Involving Guardrail Hits Are Circled**

**Legend**  
 ☆ target  
 ○ other

**NC Department of Transportation**  
**Division of Highways**  
**Mobility and Safety Division**  
**Traffic Safety Unit**

**Date: 4/10/2014**  
**B. Robinson**

**CRASH SEVERITY**  
 K - Fatal Injury  
 A - Serious Injury  
 B - Evident Injury  
 C - Possible Injury  
 O - Property Damage




# BUNCOMBE COUNTY

## NC 251 from SR 1781 to the Madison CL

### After Period - 8/1/08-1/31/14



  
Crashes Involving Guardrail Hits Are Circled

**Legend**

- ☆ target
- other

**NC Department of Transportation**  
**Division of Highways**  
**Mobility and Safety Division**  
**Traffic Safety Unit**

**Date: 4/10/2014**  
**B. Robinson**

**CRASH SEVERITY**  
K - Fatal Injury  
A - Serious Injury  
B - Evident Injury  
C - Possible Injury  
O - Property Damage

