

Spot Safety Project Evaluation

Project Log # 200512162

Spot Safety Project # 04-96-209

Spot Safety Project Evaluation of the Traffic Signal Installation at SR 1938 (Old Mount Olive Rd) and SR 1941 (Northeast Church Rd) in Wayne County

Documents Prepared By:

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Date

Spot Safety Project Evaluation Documentation

Subject Location

Evaluation of Spot Safety Project Number 04-96-209 – Traffic Signal Installation at SR 1938 (Old Mount Olive Rd) and SR 1941 (Northeast Church Rd) in Wayne County.

Project Information and Background from the Project File Folder

SR 1938 was a two lane facility with a speed limit of 55 mph. SR 1941 was a two lane facility with a speed limit of 55 mph. The intersection was controlled by a stop condition on SR 1938. There is a railroad oriented north and south approximately 30 feet east of the intersection on SR 1941.

Due to the rural nature of this intersection, drivers failed to recognize the stop condition before passing through it on SR 1938. The original countermeasure chosen for this location was a standard flasher. The scope of the project was changed to a signal installation due to the proximity of the railroad crossing. The final completion date for the improvement at the subject location was on August 19, 1997 at a cost of \$45,000.

Naive Before and After Analysis

After reviewing the spot safety project file folder along with all the crashes along the subject road, the crash data omitted from this analysis to consider for an adequate construction period was from July 1997 through September 1997. The before period consisted of reported crashes from January 1, 1990 through June 30, 1997 (7 years, 6 months) and the after period consisted of reported crashes from October 1, 1997 through March 31, 2005 (7 Years, 6 months). The ending date for this analysis was determined by the available time frame in the before period.

The treatment data consisted of all crashes within 150 feet of the subject intersection. The following data table depicts the Naive Before and After Analysis for the above information. Please note that Frontal Impact crash types were the target crashes for the applied countermeasure. These crash types considered are as follows: Left Turn, same roadway; Left Turn, different roadway; Right Turn, same roadway; Right Turn, different roadway; Head On and Angle.

<u>Treatment Information</u>			
	Before	After	Percent Reduction (-) Percent Increase (+)
Total Crashes	17	11	-35.3
Total Severity Index	4.1	3.0	-25.4
Frontal Impact Crashes	15	7	-53.3
Frontal Severity Index	4.0	2.1	-48.1
Volume	2620	3660	39.7
<u>Frontal Impact Injury Crashes</u>			
	Before	After	Percent Reduction (-) Percent Increase (+)
Fatal	0	0	N/A
Class A	0	0	N/A
Class B	2	0	-100.0
Class C	4	1	-75.0
Property Damage Only	9	6	-33.3

Table 1.

The naive before and after analysis at the treatment location resulted in a 35 percent decrease in Total Crashes, a 53 percent decrease in Frontal Impact Crashes, and a 40 percent increase in Average Daily Traffic (ADT). The before period ADT year was 1993 and the after period ADT year was 2001.

Results and Discussion

The naïve before and after analysis involving the comparison of treatment actual before data versus treatment actual after data resulted in a 35 percent decrease in Total Crashes and a 53 percent decrease in Frontal Impact Crashes. The summary results above demonstrate that the treatment location appears to have had a decrease in the number of Total Crashes and a decrease in the number of Frontal Impact Crashes from the before to the after period.

The treatment location shows a decrease in the number of Frontal Impact Crashes and severity from the before to the after period. Referencing the after period collision diagram there seems to be a small issue with left turning vehicles. During the field visit on October 6, 2006, SR 1938 was observed to be overlaid or repaved with left turn lanes spray painted on the pavement. The project seemed to be completed recently so the after period collision diagram does not reflect the change. Investigating the newly installed left turn lanes may prove beneficial to see if a further crash reduction occurs.

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 road.



Location Map: Wayne County, SR 1938 (Old Mount Olive Rd) at SR 1941 (Northeast Church Rd)

Treatment Site Photos Taken October 6, 2006



On SR 1941 facing west



On SR 1941 looking south along SR 1938



On SR 1941 looking north along SR 1938



On SR 1938 facing south



On SR 1938 looking east along SR 1941



On SR 1938 looking west along SR 1941



On SR 1941 facing east



On SR 1941 looking north along SR 1938



On SR 1941 looking south along SR 1938



On SR 1938 facing north



On SR 1938 looking west along SR 1941



On SR 1938 looking east along SR 1941

