



CMF / CRF Details

CMF ID: 2941

Replacement of traditional intersection with roundabout with cycle lanes

Description: Installation of a roundabout with cycle lanes at a traditional (signalized or unsignalized) intersection. Cycle lanes in this study included: -lines + barrier (predominately) -line + no barrier (predominately) -no line + barrier -no line + no barrier

Prior Condition: Traditional signalized or unsignalized intersection

Category: Bicyclists

Study: [*Injury crashes with bicyclists at roundabouts: influence of some location characteristics and the design of cycle facilities, Daniels et al., 2009*](#)

Star Quality Rating:	
<input type="text" value="2 Stars"/>	[View score details]

Crash Modification Factor (CMF)	
Value:	1.37
Adjusted Standard Error:	
Unadjusted Standard Error:	0.398

Crash Reduction Factor (CRF)	
Value:	-37 (This value indicates an increase in crashes)
Adjusted Standard Error:	

Unadjusted Standard Error:	39.8
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Applicability

Crash Type:	Vehicle/bicycle
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Crash Severity:	K (fatal),A (serious injury)
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Roadway Types:	Not Specified
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Number of Lanes:	
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Road Division Type:	All
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Speed Limit:	
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Area Type:	Urban
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Traffic Volume:	
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Time of Day:	All
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If countermeasure is intersection-based

Intersection Type:	Roadway/roadway (not interchange related)
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Intersection Geometry:	3-leg,4-leg
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Traffic Control:	Roundabout
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Major Road Traffic Volume:	
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Minor Road Traffic Volume:	
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Development Details

Date Range of Data Used:	1991 to 2001
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Municipality:	
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State:	
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Country:	Belgium
Type of Methodology Used:	2
Sample Size Used:	
Before Sample Size Used:	40
After Sample Size Used:	40

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Mar-21-2011
Comments:	The number of crashes in the after period were not reported in this study, however, they have been recorded as 300 to give 10 points as a benefit of doubt for one or more of the following: (1) number of miles/sites in the reference/treatment group, (2) number of crashes in the references/treatment group, (3) reporting AADTs for the aggregate dataset but not for the disaggregate dataset used for CMF development.

This site is funded by the U.S. Department of Transportation Federal Highway Administration and maintained by the University of North Carolina Highway Safety Research Center

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