

General Project Information

Project Sponsoring Agency	ODOT District 12
Project Name	CUY-480-14.1-14.4 Safety Study
PID	I-480/SR 94 interchange safety improvements
Project Manager	Brian Blayney
Contact Phone	(216) 584-2102
Contact Email	Brian.Blayney@dot.state.oh.us

Location Information

ODOT District	12	County	CUY
Route Number	SR-94R	Road Name	State Road
Begin Logpoint	10.050	End Logpoint	10.450
Begin Latitude		Begin Longitude	
End Latitude		End Longitude	

Project Description

Summary of Crash Patterns

1. State Road/I-480 Eastbound ramps intersection: 43 crashes
 - 24 rear-end, 9 angle/left turn, 7 sideswipe-passing crashes
 - 8 of the 9 turning angle crashes involved redlight running violation.
2. State Road/I-480 Westbound ramps intersection: 36 crashes
 - 19 rear-end, 11 angle/left turn, 6 sideswipe-passing crashes
 - 11 of the 19 rear-end crashes occurred on the I-480 WB exit ramp approach
 - 7 left turn crashes involving NB left and SB through vehicles were the result of red light running by the SB through vehicles.
 - 4 sideswipe crashes involved dual NB left turning vehicles.
 - 12 additional crashes on the I-480 WB mainline near the SR 94 exit/gore area during weekday PM peak hour conditions are also attributed to congestion/queue spillback from State Road signals
3. State Road/Brookpark Road intersection: 76 crashes
 - 42 rear-end, 18 angle/left turn, 5-fixed object, 6-sideswipe-passing crashes; 55% rear-end crashes vs. statewide average of 30.9%
 - Time of Day: 33% of crashes between 3pm and 6pm
4. State Road/Burger/Ralph Intersection: 17 crashes
 - 8 angle, 6 rear-end crashes
 - 65% injury crashes vs. a statewide average of 25%

Summary of Recommended Countermeasures

- Revise interchange phasing to operate Buckeye diamond sequence
- Revise lane configuration on NB approach at the I-480 EB ramp from T(L)-T-TR-R configuration to a T(L)-T(L)-T-R configuration
- Extend storage lengths on the I-480 WB Exit ramp (600') (L-L-R)
- Revise lane configuration on SB approach at the I-480 WB ramp from T-T-TR configuration to a T(L)-T-T-R configuration
- Add WB right turn lane on Brookpark Road at State Road (350')
- Restripe auxiliary turn lanes on State Road at Wetzels/ Springdale

Project Priority Information

- 2013 Safety Analyst Priority Ranking
1. I-480 SLM 14.27 to 14.37 - Urban Freeway Rank # 67
 2. SR 94/Brookpark intersection - Urban Intersection Rank # 87

Crash Data					
Crash Totals					
	Fatal & Serious Injury (KA)	Visible Injury (B)	Non-Visible (C)	Property Damage Only (O)	Total
Existing Conditions: Predicted Crash Frequency	1.7288	6.8934	9.3107	30.6540	48.59
Existing Conditions: Expected Crash Frequency	1.6310	6.8815	9.7632	34.4489	52.72
Potential for Safety Improvement	-0.0978	-0.0119	0.4525	3.7949	4.14
Proposed Conditions: Expected Crash Frequency	1.2846	5.8522	8.7440	31.1308	47.01
Observed Crashes	0.3333	8.3333	12.3333	44.0000	65.00
Observed People Injury Totals					
	Fatal Injury (K)	Serious Injury (A)	Visible Injury (B)	Non-Visible (C)	Total
Observed People Injury Totals	0.0000	0.6667	12.3333	20.3333	33.33
Application Scoring					
Category	Scoring Value	Points Awarded	Points Possible		
Expected Crash Frequency	52.72	10	10		
Ratio of Observed Fatal and Serious Injuries to Observed Total Crashes	0.01	1	5		
% of the Potential for Safety Improvement to Total Expected Crashes	7.85%	14	20		
Relative Severity Index	\$24,973	8	10		
Equivalent Property Damage Only Index	3.49	3	10		
Volume to Capacity Ratio	1.00	10	10		
Benefit Cost Ratio	2.01	21	30		
Safety Funding Request Percentage	100.00%	0	5		
Total		67	100		

Strategic Highway Safety Plan	
Functional Class	Other Principal Arterial Roadway
Major Route AADT	18,500
Ohio Emphasis Area	Emphasis Area V - Incident and Congestion Related Crashes
Ohio Emphasis Area Subcategory	Rear End Crashes
FHWA Emphasis Area	Improving the design and operation of highway intersections
FHWA Improvement Category	Interchange design
FHWA Improvement Subcategory	Interchange design - other

Work Locations					
NLFID	Begin Logpoint	End Logpoint	Begin Latitude	Begin Longitude	Location Termini (i.e. from Street 1 to Street 2)
SCUYSR00094**C	10.050	10.450			Brookpark Road to Burger/Ralph Ave

Project Funding							
Project Phase	Safety Study	Interchange Mod. Study	PE - Environmental	PE - Detailed Design	Right of Way /Utilities	Construction	Total
Fiscal Year	2015						
Project Phase Completed	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	N/A	
Previous Safety	\$73,300.00						\$73,300.00
New Safety				\$162,000.00	\$108,000.00	\$1,512,000.00	\$1,782,000.00
Sponsor Funding							\$0.00
Total	\$73,300.00	\$0.00	\$0.00	\$162,000.00	\$108,000.00	\$1,512,000.00	\$1,855,300.00

Additional Funding Detail

Project Development		
Project Phase	Completed by	Completion Date
Safety Study	LJB Inc	9/11/2015

Applicant Information		
Name	Title	Phone Number
		(216) 584-2102
Signature		Date
		September 19, 2015

Version: 20140214

The following information should be included in submission of the safety project application:

1. An electronic copy of the Safety Engineering Study
2. All Excel Analysis Files
 - May include Crash Analysis Module (CAM) Tool, Economic Crash Analysis Tool (ECAT), HSIP Application and Scoring Tool.
3. Benefit-Cost Results (Economic Analysis)
4. DSRT approval signatures