Alabama Department of Transportation
Highway Safety Improvement Program (HSIP)
Introduction to the HSIP Project Application Form

10/2/2015

The Alabama Department of Transportation (ALDOT) is pleased to provide this Highway Safety Improvement Program (HSIP) Project Application Form to assist your agencies in applying for funding for much needed highway safety projects across the State. Counties, cities, and various ALDOT offices may propose projects at any time during the year. **In order for HSIP projects to be selected for funding, ALDOT must confirm that the project application is complete and based on sound engineering principles.** All project applicants MUST coordinate their applications with their ALDOT Region Office. **Once the Region Office reviews the application for completeness, it is forwarded to the ALDOT Office of Safety Operations (OSO) for final approval. The application is then forwarded to the Federal Highway Administration (FHWA) for coordination and funding approval.**

Please note that one HSIP project application is REQUIRED for each type of project. Proposed project cannot include intersection(s) and road segment(s). If proposed project includes both, two (2) separate forms will need to be completed and submitted separately. However, up to three (3) highway safety countermeasures may be proposed for EACH project. For the purposes of this application, the term "countermeasure" means a proposed implementation action or safety-related improvement. If you have any questions about the HSIP Project Application Form, please contact your ALDOT Region Office.

The following items should be included in the HSIP Project Application to be considered "complete" by ALDOT.

- Cover letter from Project Sponsor Agency stating that the designated Contact Person is authorized to work with ALDOT on the project application and that non-federal matching funds will be made available for the HSIP project if it is selected for federal funding.
- HSIP Project Application Form - Worksheet 1 & Worksheet 2 (two pages) - signed by authorized representative of the sponsoring agency.
- Completed Questions Form
- For proposed intersection improvement projects - Drawing or map of intersection showing key features, safety problems and proposed countermeasures.
- For proposed road segment improvement projects - Drawing or map of project area showing key features, safety problems and proposed countermeasures.
- Labeled photos of project area with photo key showing location and orientation of photo
- Traffic data and traffic growth rate calculations
- For proposed intersection improvement projects - Intersection turning movement counts (OPTIONAL)
- Crash Summary Form and collision diagram
- For proposed traffic signal projects - submit traffic signal warrant worksheets
- If proposing a countermeasure that is not in the Improvement Table and spreadsheet, the applicant must provide information to support the service life and crash reduction factors (CRF) for the proposed countermeasure
- Preliminary project cost estimate with any supporting documentation for each proposed countermeasure. Also provide supporting documentation for estimated maintenance costs for each countermeasure.
- Engineering study for the proposed HSIP project signed by a Licensed Engineer in the State of Alabama
- Other data or information that supports the need for the proposed HSIP project (i.e. news articles, local government resolutions, etc.)

The HSIP Project Application Form requires data and information related to the location of the proposed project, the project sponsor agency and contact information, detailed description of the nature and location of proposed improvements, annual average traffic data (either for the intersection(s) or road segment(s)); detailed crash data (by type), detailed data on the potential reductions of crashes (by fatality, injury, and property damage categories), and other data. ***Please refer to the "Guidance" tab for assistance. See also "Roadway Segment Example" and "Intersection Example" tabs for examples of completed worksheets.***

Please note: All crash data included in the ALDOT HSIP Project Application should be obtained from the CARE System (Critical Analysis Reporting Environment), where possible. For more information about the CARE system, please contact Waymon Benlfield, (334)353-6404 or benlfieldw@dot.state.al.us of the Safety Section of ALDOT's Modal Programs Office. CARE website - http://care.cs.ua.edu

For more information about the HSIP Program, please contact:

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Office of Safety Operations
1110 John Overton Drive
Montgomery, Alabama 36110

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Alabama Department of Transportation
Highway Safety Improvement Program (HSIP) Project Application Form *(10/2/2015)*
Page 1 of 2

FOR ALDOT USE ONLY
Logged in:
Project Mgr.
HSIP Ref. #:

1. Project Type:	Intersection		Road Segment		2. Sponsoring Agency:				Review Date:	(for ALDOT use only)
3. Project to be Administered By:				4. Contact Person:		5. Phone Number:		6. E-Mail Address:		
7. Street Address:				8. Fax: (optional)		9. ALDOT Region:		10. MPO/RPO Area:		
11. City, State, Zip :				12. Priority # (if submitting 2 or more forms):				13. Application submitted before?		

Note to Applicants: Each project must have a separate application form. Up to three (3) safety improvement actions may be included per application.	14. County	15. Route (including local name)	16. On State Hwy System?	17. Traffic Control	18. From (Cross Street, Milepost, Etc.):	19. To (Cross Street, Milepost, Etc.):

20. Functional Class Name (Federal):		21. Omitted	Omitted	22. Omitted	Omitted

23. Risk Narrative - describe the safety problem(s) and the proposed project to address it.

Crash Data (Items 24 - 34) - collision diagram is required for each application form	Severity \ Crash Type		24.	25.	26.	27.	28.	29.	30.	31.	32. Total Related Crashes	33. Total Unrelated Crashes	34. Total Crashes
	Fatal	K									0	0	0
	Personal Injury (PI)	A									0	0	0
		B									0	0	0
		C									0	0	0
	PDO	PDO									0	0	0
	Total												

Traffic Data (Intersection Project)	36. Total ADT Entering Intersection	37. NB Entering ADT	38. SB Entering ADT	39. EB Entering ADT	40. WB Entering ADT	41. Other Leg Enter ADT	42. # of Approaches	43. ALDOT Node No.	44. Traffic Annual Growth Rate	35. Number of Years of Crash Data Used:	
		0	0	0	0	0					

Traffic Data (Road Segment Project)		Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Total/ Average
	45. Seg. Length (mi)	0.000					
	46. Speed Limit	0					
	47. Average AADT	0					
	48. No. of Lanes	0					
	49. Lane Width	0					

Worksheet Color Legend:

Blue	Information to be input by Applicant
Green	Data Automatically Generated
Yellow	Drop-Down List (Choose Item)
Orange	For ALDOT's Use
Gray or White	No Information Required

Alabama Department of Transportation
Highway Safety Improvement Program (HSIP) Project Application Form *(10/2/2015)*
Page 2 of 2

50. No. of Countermeasures or Improvement Actions		51. Discount Rate (X.X%)	3.0%

Items 52 - 58: Potential Reduction of Crashes (by type) and Total

Proposed Countermeasures or Improvement Actions	Action No.	52. Proposed Countermeasure or Improvement Action	53. Service Life (in yrs)	54. Crash Reduction Factors (CRF)			55. K Crashes Reduced	56. A Crashes Reduced	57. B Crashes Reduced	58. C Crashes Reduced	59. PDO Crashes Reduced	60. Total Potentially Reduced Crashes	61. Annual Reduced Crashes by Countermeasure
				K	A, B, & C	PDO							
	1	No Improvement	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	#DIV/0!
	2	No Improvement	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	#DIV/0!
	3	No Improvement	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	#DIV/0!
							#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
			Max Service Life	Combined CRF			Potentially Reduced Crashes						

Project Schedule (After STIP Approval)	62. Begin PE Date (MM/YYYY)		63. Target Ad Date (MM/YYYY)		64. Begin Construction Date (MM/YYYY)		65. Estimated Project Complete Date (MM/YYYY)	

Estimated Project Costs

Improvements		66. Design & Engineering Cost	67. R/W & Utility Cost	68. Construction and CE&I Cost	69. Maint. cost for service life of project	70. Total Project Cost	71. Annual Project Cost
Action No.	1	$ -	$ -	$ -	$ -	$ -	
	2	$ -	$ -	$ -	$ -	$ -	
	3	$ -	$ -	$ -	$ -	$ -	
TOTAL		$ -	$ -	$ -	$ -	$ -	$ -

Estimated Project Benefits

Type of Crash	72. Annual Reduced Crashes by Type	73.* Cost per Crash (2015 $)	74. Annual Benefit
K	#VALUE!	$ 190,200	#VALUE!
A	#VALUE!	$ 190,200	#VALUE!
B	#VALUE!	$ 190,200	#VALUE!
C	#VALUE!	$ 54,000	#VALUE!
PDO	#VALUE!	$ 8,900	#VALUE!
75. Total Annual Reduction in Crashes	#VALUE!	76. Total Annualized Benefit	#VALUE!

Calculation of Benefit/Cost (B/C) Ratio				77. Traffic Growth Factor	1.00	78. Total Annual Benefit	#VALUE!
	Benefit	76. Total Annualized Benefit	#VALUE!				
	Cost	79. Annual Project Cost					
		$ -					
	80. Benefit/Cost Ratio:	#VALUE!					

* *Cost data from the North Carolina Department of Transportation (NCDOT) adjusted by the Consumer Price Index (CPI)*

Signature of Sponsor with Authority to Expend 10% Non-Federal Matching Funds

Name (Print): _____ Signature: _____ Date: _____

HSIP Project Application Form Guidance *(10/2/2015)*

Item No.	Item Name	Definition/Explanation
Items 1 - 23 pertain to information about the project type, contact information for the sponsoring agency, and basic project information.		
1.	Project Type	Use drop-down list to select Yes or No for whether the proposed project is an intersection or road segment project. Proposed project can include intersection(s) and road segment(s). If proposed project includes both, check Yes in both Intersection and Road Segment boxes.
2.	Sponsoring Agency	Enter name of the agency sponsoring the project. May be a local government (City/County) or ALDOT office.
3.	Project to be administered by	Enter the name of the agency responsible for administering the project (ALDOT or local government).
4.	Contact Person	Enter name of person at the sponsoring agency most knowledgeable about the project.
5.	Phone Number	Enter phone number of the contact person.
6.	E-mail Address	Enter e-mail address of the contact person.
7.	Street Address	Enter mailing address for the sponsoring agency.
8.	Fax (optional)	Enter fax number of the sponsoring agency (optional).
9.	ALDOT Region	Use the drop-down list to select the ALDOT Region in which project is located.
10.	MPO/RPO Area	Use the drop-down list to select the name of the metropolitan planning organization (MPO) area or rural planning organization (RPO) where the project is located.
11.	City, State, Zip	Enter the city, state, and zip code for the sponsoring agency.
12.	Priority # (if submitting 2 or more forms)	If sponsoring agency is submitting more than one HSIP application, please note the priority number for each application. Enter 1 if only one application being submitted.
13.	Application submitted before?	Use the drop-down list to indicate if this project has been previously submitted for HSIP funding.
14.	County	Use the drop-down list to select the county where the proposed project is located.
15.	Route (including local name)	Enter the route number (US or State) and the local name of the route on which the project is located.
16.	On State Hwy System?	Use the drop-down list to indicate if the project is located on the State highway system (State or Federal route).
17.	Traffic Control	For intersection projects, use the drop-down list to select the type of traffic control currently in use at the intersection. You may also enter a traffic control type if it is now shown in the drop-down list. Leave this blank for road segment projects.
18.	From	For an intersection project, enter the cross/intersecting street to the primary route in #14. For road segment projects, enter the location of the starting point of the project (cross street name, milepost or other description).
19.	To	For road segment projects, enter the location of the end point of the project (cross street name, milepost or other description). For intersection projects, leave this cell blank.
20.	Functional Class Name (Federal)	Use the drop-down list to select the federal functional classification type for the main road where the project is located.
21.	Omitted	Omitted
22.	Omitted	Omitted
23.	Risk Narrative	Explain in detail the safety problem and the proposed countermeasure(s).
Items 24-35: Crash Data - please note that all of these items are either drop-down boxes (yellow) or automatically calculating boxes (green).		

24. - 31.	Crash Type	Based on the crash data obtained for the project location, use the drop-down list to select the crash type (or enter crash type if not shown in drop-down list) and enter the number of **RELATED** crashes using the KABCO severity scale (see below). **RELATED** crashes are those that can be addressed by the proposed safety countermeasures or improvement actions. KABCO severity scale is as follows: K = Killed, A = Incapacitating Injury, B = Non-Incapacitating Injury, C = Possible Injury, and PDO = Property Damage Only. Complete Crash Summary tab and Crash Diagram.
32.	Total Related Crashes	The sum of all **RELATED** crashes by severity (automatically generated).
33.	Total Unrelated Crashes	**UNRELATED** crashes (by type) for this location are populated from the Crash Summary Tab. UNRELATED crashes cannot be addressed by the proposed countermeasures.
34.	Total Crashes	The sum of all **RELATED** and **UNRELATED** crashes (automatically generated).
35.	Number of Years of Crash Data Used	Use the drop-down list to select the number of years of crash data used for project. The minimum number of years is three (3).
Items 36-43 pertain to traffic data for INTERSECTION projects. Enter traffic data in the Intersection Turning Movements Worksheet. Totals for Items 36-41 will be automatically entered on Worksheet 1. Items 44-49 pertain to traffic data for ROAD SEGMENT projects. For Items 45-49, the total or average values for each data element will be automatically calculated.		
36.	Total ADT Entering Intersection	Total number of vehicles entering the intersection. This number is automatically calculated. Enter intersection traffic data into the Intersection Turning Movement Counts tab.
37.	NB Entering ADT	Total number of vehicles entering northbound (average daily traffic). This number is automatically pulled from intersection traffic data input into the Intersection Turning Movement Counts tab.
38.	SB Entering ADT	Total number of vehicles entering southbound (average daily traffic). This number is automatically pulled from intersection traffic data input into the Intersection Turning Movement Counts tab.
39.	EB Entering ADT	Total number of vehicles entering eastbound (average daily traffic). This number is automatically pulled from intersection traffic data input into the Intersection Turning Movement Counts tab.
40.	WB Entering ADT	Total number of vehicles entering westbound (average daily traffic). This number is automatically pulled from intersection traffic data input into the Intersection Turning Movement Counts tab.
41.	Other Leg Entering ADT	If more than four approaches to the intersection exist, this is the number of vehicles entering the 5th leg (average daily traffic). This number is automatically pulled from intersection traffic data input into the Intersection Turning Movement Counts tab.
42.	# of Approaches	Enter the number of intersection approaches.
43.	ALDOT Node No.	Enter the ALDOT node number for the intersection (contact ALDOT Region Office).
44.	Traffic Annual Growth Rate	Enter the traffic annual growth rate from the Region Traffic Engineer.
45.	Segment Length (mile)	Enter the length of each individual road segment(s) in miles.
46.	Speed Limit	Enter the posted speed limit for each road segment.
47.	Average AADT	Enter the Annual Average Daily Traffic (AADT) for each road segment.
48.	No. of Lanes	Enter the number of lanes for each individual road segment.
49.	Lane Width	Enter the lane width for each individual road segment.
Items 49 - 54 pertain to the proposed safety countermeasures or improvement actions.		

49.	No. of Countermeasures or Improvement Actions	Enter the number of proposed countermeasures or improvement actions (up to 3 allowed for each application).
50.	Discount Rate (X.X%)	Enter ALDOT recommended discount rate (default value = 3.0%); Coordinate with ALDOT Region Office.
52.	Proposed Countermeasure or Improvement Action	Using the drop-down list, select the proposed countermeasure/improvement action. Only three (3) countermeasures are allowed.
53.	Service Life (in yrs.)	The service life for each of the proposed countermeasure is automatically entered from the Improvement Table.
54.	Crash Reduction Factors (CRFs)	The crash reduction factors for each proposed countermeasure are automatically entered from the Improvement Table.
Items 55-61 pertain to the estimates of the potential reduction of crashes (by type) due to the implementation of proposed countermeasures.		
55.	Type K Crashes Reduced	The potential reduction in **K** crashes (**Killing Injury**) per countermeasure (automatically generated).
56.	Type A Crashes Reduced	The potential reduction in **A** crashes (**Incapacitating Injury**) per countermeasure (automatically generated).
57.	Type B Crashes Reduced	The potential reduction in **B** crashes (**Non-Incapacitating Injury**) per countermeasure (automatically generated).
58.	Type C Crashes Reduced	The potential reduction in **C** crashes (**Possible Injury**) per countermeasure (automatically generated).
59.	Type PDO Crashes Reduced	The potential reduction in **PDO** crashes (**Property Damage Only**) per countermeasure (automatically generated).
60.	Total Potentially Reduced Crashes	The total of the **REDUCED** crashes by countermeasure (automatically generated).
61.	Annual Reduced Crashes by	The total annual estimated crash reduction (automatically generated).
Items 62-65 pertain to the project schedule.		
62.	Begin PE Date	Enter the proposed start date of preliminary engineering for the project (month/year).
63.	Target Ad Date	Enter the target bid advertisement date for the project letting (month/year).
64.	Begin Construction Date	Enter the estimated start date for the construction of the project (month/year).
65.	Estimated Project Completion Date	Enter the estimated project completion date (month/year).
Items 66 - 71 pertain to the calculation of project costs.		
66.	Design & Engineering Cost	Enter the estimated Design & Engineering costs (environmental study/document, surveying (if any) and design) for each proposed countermeasure(s).
67.	R/W and Utility Cost	Enter the estimated costs of right-of-way acquisition and utility relocation cost for each proposed countermeasure(s).

68.	Construction and CE&I Cost	Enter the estimated construction cost and construction engineering and inspection (CE&I) cost for each proposed countermeasure(s). When proposing combined countermeasures, must include the construction & CE&I cost of replacing the countermeasures with shorter service lives to get the longest service life countermeasure. For example: Countermeasure 1 has a 7 year service life, Countermeasure 2 has a 10 year service life Countermeasure 3 has a 20 year service life For Countermeasure 1: Cost = Initial Construction + CE&I cost + Replacement cost in Year 8 + Replacement cost in Year 15 For Countermeasure 2: Cost = Initial Construction + CE&I cost + Replacement cost in year 11 For Countermeasure 3: Cost = Initial Construction + CE&I cost For a more detailed explanation with an example, please see Appendix E of the HSIP Program Management Manual.
69.	Maintenance Cost for service life of Project	Enter the total estimated maintenance cost for each proposed countermeasure(s) for the service life of the project. When proposing combining countermeasures, must include the total maintenance costs for the number of years of the countermeasure with the longest service life. For example: Countermeasure 1 has a 7 year service life Countermeasure 2 has a 10 year service life For Countermeasure 1, maintenance costs should be calculated for 10 years For Countermeasure 2, maintenance costs should be calculated for 10 years.
70.	Total Project Cost	The total of PE Cost, the R/W and Utility, Construction and CEI, and Maintenance cost (automatically generated).
71.	Annual Project Cost	The total annualized cost of the project per year (automatically generated). This factors in the service life of the proposed countermeasure(s).
Items 72-76 pertain to the calculation of project benefits.		
72.	Annual Reduced Crashes (by type)	The annual crash reduction for each crash type based on the combined CRF for the countermeasure(s) proposed (automatically generated).
73.	Cost per Crash (in 2015 $)	These values are established by ALDOT.
74.	Annual Benefit	The annual benefit is the annual reduced crashes by crash type multiplied by the cost/crash (automatically generated).
75.	Total Reduction in Crashes	The total crash reduction estimated based on the proposed countermeasures selected.
76.	Total Annualized Benefit	The total annual benefit for all crash types based on the countermeasures selected (automatically generated).
Items 77 - 80 pertain to the calculation of the proposed project's benefit/cost (B/C) ratio.		

77.	Traffic Growth Factor	The growth factor is computed using the annual traffic growth rate and the service life of the project (automatically generated).
78.	Total Annual Benefit	The total annual benefit is the total annualized benefit multiplied by the traffic growth factor (automatically generated).
79.	Annual Project Cost	The total annualized cost of the project per year (automatically generated). This factors in the service life of the proposed countermeasure(s).
80.	Benefit/Cost (B/C) Ratio	The benefit/cost ratio is the total annual benefit divided by the total annual cost (automatically generated).

Alabama Department of Transportation
Highway Safety Improvement Program (HSIP) Project Application - Questions Form *(10/2/2015)*
Add additional sheets as necessary

1. Please describe in detail the specific location of the proposed HSIP project. Please identify whether project relates to an INTERSECTION or a ROAD SEGMENT. Please attach at least ONE sketch or map of the project area and at least ONE labeled photo describing the project area.
2. Please describe in detail the identified safety problems at this location and the need for the proposed improvement(s).
3. Please describe the proposed improvement action(s) or countermeasure(s) and document proposed improvements that do NOT have known crash reduction factors (CRFs), but are expected to reduce the risk of crashes.
4. Please describe the other alternative solutions that were considered, implemented, or eliminated at this location.
5. Please describe how the project cost was calculated and how you can ensure the project can be completed within the proposed budget and schedule.

Summary of Crashes at Proposed Improvement Location (Related, Unrelated, and Total Crashes)

10/2/2015)

DEPARTMENT OF TRANSPORTATION

RELATED CRASHES

	AL Crash Report Number (DPS Case No.)	Date	Crash Severity (Check the most severe one)					DUI? (Y or N)	Crash Type	Comments
			Fatal (K)	Injury (A)	Injury (B)	Injury (C)	PDO			
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

UNRELATED CRASHES

	AL Crash Report Number (DPS Case No.)	Date	Crash Severity (Check the most severe one)					DUI? (Y or N)	Crash Type	Comments
			Fatal (K)	Injury (A)	Injury (B)	Injury (C)	PDO			
31										
32										
33										
34										
35										
36										
37										
38										
39										
40										

TOTAL CRASH SUMMARY

	Fatal	Injury A	Injury B	Injury C	PDO	Total
Total RELATED Crashes:	0	0	0	0	0	0
Total UNRELATED Crashes:	0	0	0	0	0	0
Total Crashes:	0	0	0	0	0	0

Legend:
PDO - Property Damage Only
DUI - Driving Under the Influence

Definitions: "Related Crashes" are those that can be addressed by the proposed safety countermeasures or improvement actions.
"Unrelated Crashes" refer to crashes occurring at the proposed project location that cannot be addressed by the proposed countermeasure.
"Total Crashes" is the sum of related and unrelated crashes at a specific location.
Collision diagrams or maps should include all pertinent data related to the related crashes.

Worksheet Color Legend:

Blue - Information to be input by Applicant
Green - Data Automatically Generated
Yellow - Drop-Down List (Choose One)

TABLE OF HSIP IMPROVEMENT/COUNTERMEASURE TYPES

	IMPROVEMENT OR COUNTERMEASURE TYPE	Service Life	Crash Reduction Factor (CRF)			Target Crashes												
			Fatal	Injury	PDO	All	Head On	Rear End	Right Angle	Side Swipe	Left Turn	Right Turn	Fixed Object	Pedestrian	Run Off Road	Overturn	Wet Pavement	Night
Traffic Sign Improvement																		
	Warning sign																	
	Curve warning	10	0.30	0.30	0.30		X								X	X		X
	School zone	10	0.15	0.15	0.15	X												
	Regulatory Signs	10																
	Stop sign (Two-way)	10	0.30	0.30	0.30				X		X	X		X				
	Yield	10	0.25	0.25	0.25				X	X								
	All-way stop	10	0.50	0.50	0.50				X		X	X		X				
	Guide sign	10	0.10	0.10	0.10	X												
	Variable message sign	10	0.25	0.25	0.25	X												
	Upgrade signs (Increase size, conspicuity)	10	0.10	0.10	0.10													
	Flashing light on sign (Linked to signal)	10	0.25	0.25	0.25			X	X						X			
	Flashing light on sign (Flashing all time)	10	0.10	0.10	0.10			X	X									
	Intersection-related warning	10	0.25	0.25	0.25			X	X									
	Pavement condition	10	0.05	0.05	0.05												X	
	Eliminate parking at intersection	10	0.35	0.35	0.35				X	X			X	X				
	Prohibit turns	10									X	X		X				
Traffic Signal Improvement																		
	Install a traffic signal	20							X									
	3 legs		0.34	0.34	0.34													
	4 legs		0.67	0.67	0.67				X									
	Remove traffic signal and install 4-way stop	20	0.24	0.24	0.24	X												
	Signal upgrading (hardware)	20	0.20	0.20	0.20	X												
	Signal phasing																	
	Add all-red interval/increase yellow time	50	0.30	0.30	0.30				X									
	Interconnect and optimize signals	5	0.25	0.25	0.25	X												
	Add pedestrian phase	20	0.50	0.50	0.50									X				
	Optimize signal timing	5	0.10	0.10	0.10	X												
	Add exclusive left-turn phase	20	0.25	0.25	0.25						X							
	Add protected/permissive left turn phase	25	0.10	0.10	0.10						X							

	IMPROVEMENT OR COUNTERMEASURE TYPE	Service Life	Crash Reduction Factor (CRF)			Target Crashes												
			Fatal	Injury	PDO	All	Head On	Rear End	Right Angle	Side Swipe	Left Turn	Right Turn	Fixed Object	Pedestrian	Run Off Road	Overturn	Wet Pavement	Night
	Change from pre-timed to actuated	10					X	X	X	X	X							
Channelization Improvements																		
	Add exclusive LT lane (with physical separation)	8	0.48	0.48	0.48			X			X							
	Increase turn lane length (with physical separation)	8	0.15	0.15	0.15			X										
	Add two-way LT lane (with physical separation)	8	0.25	0.25	0.25			X			X			X	X			
	Add exclusive RT lane (rural unsignalized)	8	0.26	0.26	0.26				X	X		X						
	Add exclusive RT lane (urban signalized)	8	0.08	0.08	0.08				X	X		X						
	Install roundabout	20	0.72	0.72	0.72	X												
Pavement Improvement																		
Marking	Improving markings (conspicuity)	7	0.20	0.20	0.20	X											X	X
	Two-way turn ln (4 L to 3L or 2 to 3)	7	0.25	0.25	0.25					X	X	X					X	X
	Center line marking	7	0.25	0.25	0.25		X			X(O)							X	X
	Left turn lane	7	0.25	0.25	0.25			X			X						X	X
	Edge line markings	7	0.25	0.25	0.25								X		X	X		
	Raised pavement marking (RPM)	8	0.15	0.15	0.15	X												
	Add-No Passing Zone	7	0.40	0.40	0.40		X			X								
	Install post-mounted delineators	10	0.30	0.30	0.30													X
	Pedestrian crosswalk	7	0.25	0.25	0.25									X				
	Widen marking	7	0.25	0.25	0.25										X			
Widening	Widen the shoulder width (paved, ADT>2k)	12					X			X			X		X	X		
	From 0 ft to 2 ft		0.13	0.13	0.13													
	From 2 ft to 4 ft		0.12	0.12	0.12													
	From 4 ft to 6 ft		0.13	0.13	0.13													
	From 6 ft to 8 ft		0.13	0.13	0.13													
	Widen lane width	20				X												
	From 9 ft to 10 ft		0.13	0.13	0.13													
	From 9 ft to 11 ft		0.30	0.30	0.30													
	From 9 ft to 12 ft		0.33	0.33	0.33													
Treatment																		
	Pavement skid resistance overlay	8	0.25	0.25	0.25	X												
	Superelevation	8	0.25	0.25	0.25								X		X	X		
	Rumble strip at stop controlled approach	8	0.25	0.25	0.25			X	X									
	Shoulder rumble strip	8	0.40	0.40	0.40	X												

	IMPROVEMENT OR COUNTERMEASURE TYPE	Service Life	Crash Reduction Factor (CRF)			Target Crashes												
			Fatal	Injury	PDO	All	Head On	Rear End	Right Angle	Side Swipe	Left Turn	Right Turn	Fixed Object	Pedestrian	Run Off Road	Overturn	Wet Pavement	Night
	Centerline rumble strip	8	0.21	0.21	0.21		X			X(O)								
Construction/Reconstruction																		
	Add lanes (without physical separation)						X	X	X	X	X				X	X		
	Lengthen acceleration/deceleration lane	10	0.10	0.10	0.10			X										
	Auxiliary left turn lane	10	0.43	0.43	0.43			X			X					X		
	Auxiliary right turn lane	10	0.21	0.21	0.21			X				X						
	Install pedestrian sidewalk	20	0.50	0.50	0.50									X				
	Install the median barriers	20	0.60	0.10	-0.25		X			X(O)			X		X	X		
Roadside Improvement																		
	New/upgrade guardrail	20	0.35	0.35	0.05		X						X		X	X		
	Remove fixed object	10	0.30	0.30	0.30					X			X		X	X		
	Relocate fixed object	10	0.30	0.30	0.30								X					
	Flatten side slope	20	0.10	0.10	0.10								X		X	X		
	Impact attenuator	10	0.25	0.25	0.25	X												
	Install animal fencing (only collisions with animals)		0.85	0.85	0.85													
	Increase roadside clear zone recovery distance	10											X		X	X		
	Add 5 ft		0.10	0.10	0.10								X		X	X		
	Add 8 ft		0.20	0.20	0.20								X		X	X		
	Add 10 ft		0.25	0.25	0.25								X		X	X		
	Add 15 ft		0.35	0.35	0.35								X		X	X		
	Add 20 ft		0.45	0.45	0.45								X		X	X		
	Install breakable sign support	10	0.05	0.05	0.05								X					
Realignment Improvement																		
	Horizontal alignment changes (general)	25	0.25	0.25	0.25	X												
	Redesign Intersection	25	0.25	0.25	0.25	X												
	Vertical alignment/improve vertical curve	25	0.25	0.25	0.25	X												
	Improving the sight distance	25	0.30	0.30	0.30	X												
Illumination																		
	Install the street light/roadway segment	20	0.25	0.25	0.25													X
	Lighting-intersection and interchange	20	0.25	0.25	0.25													X
Regulation Improvement																		
	Two-way to one-way operation	20	0.50	0.50	0.50	X												
	Convert two-way stop to four-way stop	20	0.47	0.47	0.47													

	IMPROVEMENT OR COUNTERMEASURE TYPE	Service Life	Crash Reduction Factor (CRF)			Target Crashes												
			Fatal	Injury	PDO	All	Head On	Rear End	Right Angle	Side Swipe	Left Turn	Right Turn	Fixed Object	Pedestrian	Run Off Road	Overturn	Wet Pavement	Night
	Prohibit right turn on red at signalized intersection	10	0.25	0.25	0.25				X		X	X		X				
Drainage																		
	Provide adequate drainage	10	0.50	0.50	0.50												X	

Source: Virginia Department of Transportation

"O" under sideswipe crash type indicate opposite sideswipe crashes only.

Selection of proposed countermeasure selection should be based on sound engineering judgement and should confirm to applicable ALDOT and FHWA policies.

More information on safety countermeasures can be found at : http://safety.fhwa.dot.gov/provencountermeasures

More information on Crash Modification Factors (CMFs) can be found at: http://www.cmfclearinghouse.org/

Alabama Department of Transportation

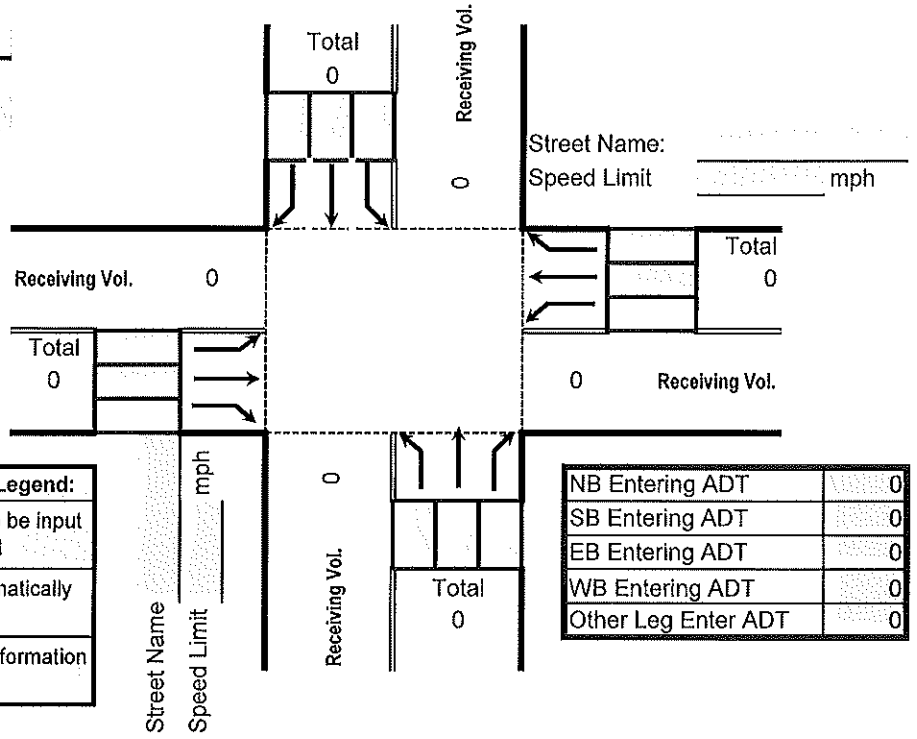
Highway Safety Improvement Program (HSIP) Project Application

(10/2/2015)

Please Complete for Proposed Intersection Project Only

INTERSECTION TURNING MOVEMENT COUNTS

Time of the Day:
AM Peak
Start:
End:

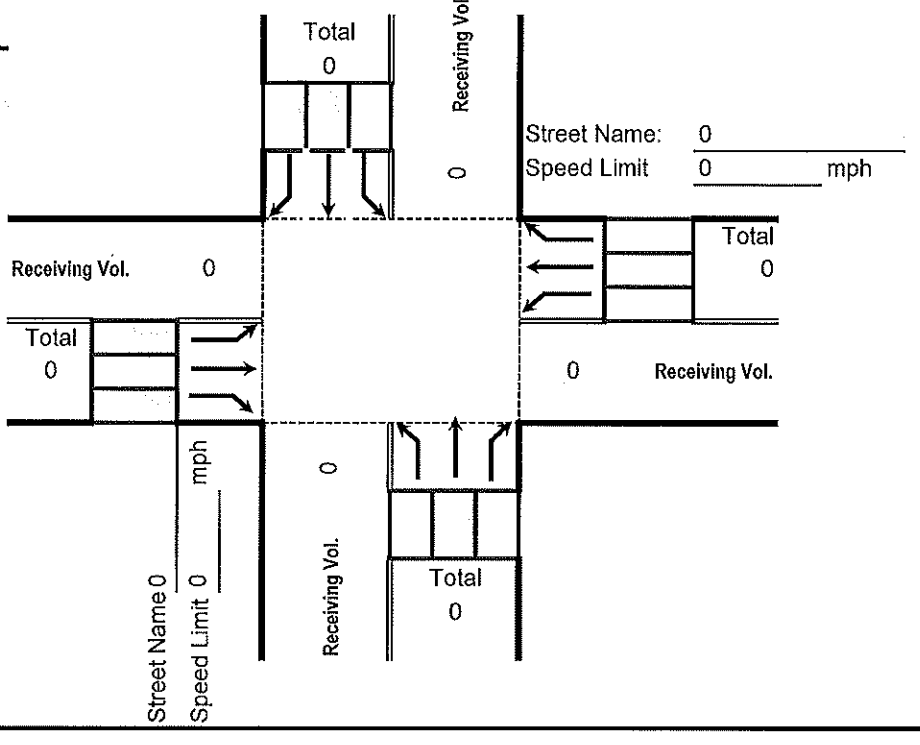


Worksheet Color Legend:
Blue - Information to be input by applicant
Green - Data automatically generated
Gray or White - no information required

NB Entering ADT	0
SB Entering ADT	0
EB Entering ADT	0
WB Entering ADT	0
Other Leg Enter ADT	0

INTERSECTION 0 & 0

Time of the Day:
PM Peak
Start:
End:



Alabama Department of Transportation

Highway Safety Improvement Program (HSIP) Project Application

(10/2/2015)

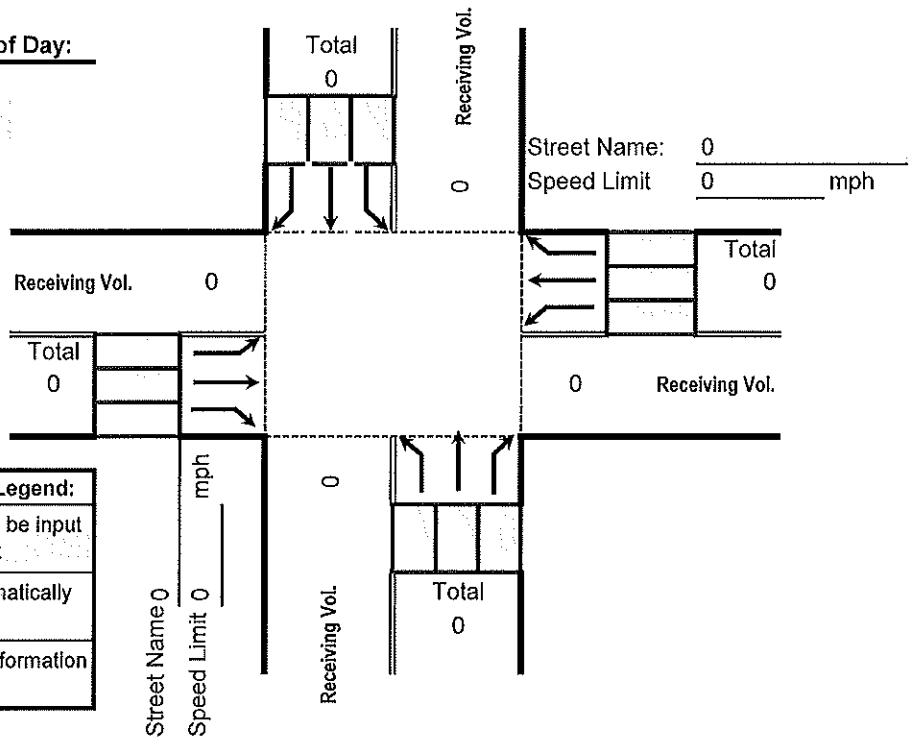
Please Complete for Proposed Intersection Project Only

INTERSECTION TURNING MOVEMENT COUNTS

Other Peak Time of Day:

Start:

End:



Worksheet Color Legend:
Blue - Information to be input by applicant
Green - Data automatically generated
Gray or White - no information required

INTERSECTION 0 & 0

Alabama Department of Transportation
Highway Safety Improvement Program (HSIP) Project Application Form (6/1/2015)
Page 1 of 2

FOR ALDOT USE ONLY
Logged in:
Project Mgr.
HSIP Ref. #:

1. Project Type:	Intersection	No	Road Segment	Yes	2. Sponsoring Agency:	XYZ County			Review Date:		(for ALDOT use only)
3. Project to be Administered By:	XYZ County			4. Contact Person:	John Doe	5. Phone Number:	xxx-xxx-xxxx		6. E-Mail Address:	xxxxxx@xyzcounty.org	
7. Street Address:	123 Main Street			8. Fax: (optional)	xxx-xxx-xxxx	9. ALDOT Region:	North		10. MPO/RPO Area:	Huntsville MPO	
11. City, State, Zip :	Huntsville, AL 35811			12. Priority # (if submitting 2 or more forms):			2	13. Application submitted before?			No

Note to Applicants: Each project must have a separate application form. Up to three (3) safety improvement actions may be included per application.	14. County	15. Route (including local name)	16. On State Hwy System?	17. Traffic Control	18. From (Cross Street, Milepost, Etc.):	19. To (Cross Street, Milepost, Etc.):
	XYZ	General Drive	No		Main Street	Box Street

20. Functional Class Name (Federal):	4 - Rural Major Collector	21. Omitted	Omitted	22. Omitted	Omitted

23. Risk Narrative - describe the safety problem(s) and the proposed project to address it.

Roadway has sharp curves, steep drop-offs, and narrow lanes with no shoulders. Proposed improvements include widening shoulders, upgrading guardrail (at selected locations), and centerline raised pavement markers.

Crash Data (Items 24 - 34) - collision diagram is required for each application form	Crash Type / Severity		24. Rear End	25. Head On	26. Run off the Road	27. Backed Into	28. Miscellaneous or Other	29.	30.	31.	32. Total Related Crashes	33. Total Unrelated Crashes	34. Total Crashes
	Fatal	K	0	0	1	0	0				1	0	1
	Personal Injury (PI)	A	0	0	0	0	0				0	0	0
		B	0	0	1	0	0				1	0	1
		C	0	1	0	0	1				2	0	2
	PDO	PDO	1	0	12	1	0				14	0	14
	Total		1	1	14	1	1				18		18

Traffic Data (Intersection Project)	36. Total ADT Entering Intersection	37. NB Entering ADT	38. SB Entering ADT	39. EB Entering ADT	40. WB Entering ADT	41. Other Leg Enter ADT	42. # of Approaches	43. ALDOT Node No.	44. Traffic Annual Growth Rate	35. Number of Years of Crash Data Used:	3
		0	0	0	0	0			4.0%		

Traffic Data (Road Segment Project)		Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Total/ Average
	45. Section Lng (mi)	5.400					5.400
	46. Speed Limit	50					50.00
	47. Average AADT	1251					1251.00
	48. No. of Lanes	2					2.00
	49. Lane Width	11.5					11.50

Worksheet Color Legend:

Blue	Information to be input by Applicant
Green	Data Automatically Generated
Yellow	Drop-Down List (Choose Item)
Orange	For ALDOT's Use
Gray or White	No Information Required

Alabama Department of Transportation
Highway Safety Improvement Program (HSIP) Project Application Form (6/11/2015)

50. No. of Countermeasures or Improvement Actions	3	51. Discount Rate (X.X%)	3.0%

Items 52 - 58: Potential Reduction of Crashes (by type) and Total

Proposed Countermeasures or Improvement Actions: Action No.	52. Proposed Countermeasure or Improvement Action	53. Service Life (in yrs)	54. Crash Reduction Factors (CRF) K	54. CRF A, B, & C	54. CRF PDO	55. K Crashes Reduced	56. A Crashes Reduced	57. B Crashes Reduced	58. C Crashes Reduced	59. PDO Crashes Reduced	60. Total Potentially Reduced Crashes	61. Annual Reduced Crashes by Countermeasure
1	Widening - Widen the shoulder width (paved, ADT>2k) - From 0 ft to 2 ft	12	0.13	0.13	0.13	0.13	0.00	0.13	0.26	1.82	2.34	0.78
2	Roadside Improvement - New/upgrade guardrail	20	0.35	0.35	0.05	0.35	0.00	0.35	0.70	0.70	2.10	0.70
3	Pavement Marking Improvement - Raised pavement marking (RPM)	8	0.15	0.15	0.15	0.15	0.00	0.15	0.30	2.10	2.70	0.90
		20	0.52	0.52	0.30	0.52	0.00	0.52	1.04	4.16	6.24	2.08
		Max Service Life	Combined CRF			Potentially Reduced Crashes						

Project Schedule (After STIP Approval)	62. Begin PE Date (MM/YYYY)	12/2015	63. Target Ad Date (MM/YYYY)	01/2016	64. Begin Construction Date (MM/YYYY)	05/2016	65. Estimated Project Complete Date (MM/YYYY)	09/2016

Estimated Project Costs

Improvements: Action No.	66. Design & Engineering Cost	67. R/W & Utility Cost	68. Construction and CE&I Cost	69. Maint. cost for service life of project	70. Total Project Cost	71. Annual Project Cost
1	$ 68,787.00		$ 859,836.00		$ 928,623	$ 93,291
2	$ 12,495.00		$ 156,188.00		$ 168,683	$ 11,338
3	$ 783.00		$ 9,791.00		$ 10,574	$ 1,506
TOTAL	$ 82,065	$ -	$ 1,025,815	$ -	$ 1,107,880	$ 106,136

Estimated Project Benefits

Type of Crash	72. Annual Reduced Crashes by Type	73.* Cost per Crash (2015 $)	74. Annual Benefit
K	0.17	$ 190,200	$ 32,925
A	0.00	$ 190,200	$ -
B	0.17	$ 190,200	$ 32,925
C	0.35	$ 54,000	$ 18,696
PDO	1.39	$ 8,900	$ 12,355
75. Total Annual Reduction in Crashes	2.08	76. Total Annualized Benefit	$ 96,901

Calculation of Benefit/Cost (B/C) Ratio							
	Benefit	76. Total Annualized Benefit	$96,901	77. Traffic Growth Factor	1.55	78. Total Annual Benefit	$150,048
	Cost	79. Annual Project Cost	$ 106,136				
	80. Benefit/Cost Ratio:	1.41					

* Cost data from the North Carolina Department of Transportation (NCDOT) adjusted by the Consumer Price Index (CPI)

Signature of Sponsor with Authority to Expend 10% Non-Federal Matching Funds

Name (Print): _____ Signature: _____ Date: _____

Alabama Department of Transportation
Highway Safety Improvement Program (HSIP) Project Application Form (8/11/2015)
Page 1 of 2

FOR ALDOT USE ONLY
Logged in:
Project Mgr.
HSIP Ref. #:

1. Project Type:	Intersection	Yes	Road Segment	No	2. Sponsoring Agency:	XYZ County			Review Date:		(for ALDOT use only)
3. Project to be Administered By:	XYZ County			4. Contact Person:	John Doe	5. Phone Number:	xxx-xxx-xxxx		6. E-Mail Address:	xxxxxx@xyzcounty.org	
7. Street Address:	123 Main Street			8. Fax: (optional)	xxx-xxx-xxxx	9. ALDOT Region:	North		10. MPO/RPO Area:	Huntsville MPO	
11. City, State, Zip :	Huntsville, AL 35811			12. Priority # (if submitting 2 or more forms):		1	13. Application submitted before?		No		

Note to Applicants: Each project must have a separate application form. Up to three (3) safety improvement actions may be included per application.	14. County	15. Route (including local name)	16. On State Hwy System?	17. Traffic Control	18. From (Cross Street, Milepost, Etc.):	19. To (Cross Street, Milepost, Etc.):
	XYZ	General Drive	No	All Way Stop	Main Street	

20. Functional Class Name (Federal):	4 - Rural Major Collector	21. Omitted	Omitted	22. Omitted	Omitted

23. Risk Narrative - describe the safety problem(s) and the proposed project to address it.

Intersection has had more than 5 accidents in a one year period. The intersection has an existing flashing beacon. Proposed improvements include installing a traffic signal.

Crash Data (Items 24 - 34) - collision diagram is required for each application form	Severity \ Crash Type		24. Rear End	25. Angle	26. Head On	27. Sideswipe - Same Dir	28. Run off the Road	29.	30.	31.	32. Total Related Crashes	33. Total Unrelated Crashes	34. Total Crashes
	Fatal	K	0	0	0	0	0				0	0	0
	Personal Injury (PI)	A	0	2	1	0	0				3	0	3
		B	1	10	0	0	0				11	0	11
		C	0	1	0	0	1				2	0	2
	PDO	PDO	3	13	0	0	0				16	0	16
	Total		4	26	1		1				32		32

Traffic Data (Intersection Project)	36. Total ADT Entering Intersection	37. NB Entering ADT	38. SB Entering ADT	39. EB Entering ADT	40. WB Entering ADT	41. Other Leg Enter ADT	42. # of Approaches	43. ALDOT Node No.	44. Traffic Annual Growth Rate	35. Number of Years of Crash Data Used:	3
	8700	3200	2800	1200	1500	0	4	xxxx	4.0%		

Traffic Data (Road Segment Project)		Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Total/ Average
	45. Section Lng (mi)	0.000					
	46. Speed Limit	0					
	47. Average AADT	0					
	48. No. of Lanes	0					
	49. Lane Width	0					

Worksheet Color Legend:

Blue	Information to be input by Applicant
Green	Data Automatically Generated
Yellow	Drop-Down List (Choose Item)
Orange	For ALDOT's Use
Gray or White	No Information Required

Alabama Department of Transportation
Highway Safety Improvement Program (HSIP) Project Application Form (5/11/2015)

50. No. of Countermeasures or Improvement Actions	1	51. Discount Rate (X.X%)	3.0%

Items 52 – 58: Potential Reduction of Crashes (by type) and Total

Proposed Countermeasures or Improvement Actions: Action No.	52. Proposed Countermeasure or Improvement Action	53. Service Life (in yrs)	54. Crash Reduction Factors (CRF) K	54. Crash Reduction Factors (CRF) A, B, & C	54. Crash Reduction Factors (CRF) PDO	55. K Crashes Reduced	56. A Crashes Reduced	57. B Crashes Reduced	58. C Crashes Reduced	59. PDO Crashes Reduced	60. Total Potentially Reduced Crashes	61. Annual Reduced Crashes by Countermeasure
1	Traffic Signal Improvement - Install a traffic signal - 4 legs	20	0.67	0.67	0.67	0.00	2.01	7.37	1.34	10.72	21.44	7.15
2	No Improvement	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	No Improvement	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		20	0.67	0.67	0.67	0.00	2.01	7.37	1.34	10.72	21.44	7.15
		Max Service Life	Combined CRF			Potentially Reduced Crashes						

Project Schedule (After STIP Approval)	62. Begin PE Date (MM/YYYY)	12/2015	63. Target Ad Date (MM/YYYY)	01/2016	64. Begin Construction Date (MM/YYYY)	05/2016	65. Estimated Project Complete Date (MM/YYYY)	09/2016

Estimated Project Costs

Improvements: Action No.	66. Design & Engineering Cost	67. R/W & Utility Cost	68. Construction and CE&I Cost	69. Maint. cost for service life of project	70. Total Project Cost	71. Annual Project Cost
1	$ 17,612.00	$ -	$ 220,150.00	$ -	$ 237,762	$ 15,981
2	$ -	$ -	$ -	$ -	$ -	
3	$ -	$ -	$ -	$ -	$ -	
TOTAL	$ 17,612	$ -	$ 220,150	$ -	$ 237,762	$ 15,981

Estimated Project Benefits

Type of Crash	72. Annual Reduced Crashes by Type	73.* Cost per Crash (2015 $)	74. Annual Benefit
K	0.00	$ 190,200	$ -
A	0.67	$ 190,200	$ 127,434
B	2.46	$ 190,200	$ 467,256
C	0.45	$ 54,000	$ 24,120
PDO	3.57	$ 8,900	$ 31,803
75. Total Annual Reduction in Crashes	7.15	76. Total Annualized Benefit	$ 650,615

Calculation of Benefit/Cost (B/C) Ratio							
	Benefit	76. Total Annualized Benefit	$650,615	77. Traffic Growth Factor	1.55	78. Total Annual Benefit	$1,007,451
	Cost	79. Annual Project Cost	$ 15,981				
	80. Benefit/Cost Ratio:	63.04					

* Cost data from the North Carolina Department of Transportation (NCDOT) adjusted by the Consumer Price Index (CPI)

Signature of Sponsor with Authority to Expend 10% Non-Federal Matching Funds

Name (Print): _____ Signature: _____ Date: _____