



Transportation Department

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March 28, 2018

Ms. Mona Aglan-Swick, P.E.
Transportation Systems Management & Operations, Traffic Safety
Arizona Department of Transportation
1615 W. Jackson ST., MD 065R
Phoenix, AZ 85007-3217

RE: Highway Safety Improvement Program (HSIP) Project Determination and Application

COG/MPO: MAG

Agency: City of Scottsdale

Project Name: Scottsdale Rd/Dynamite Blvd Intersection Improvements

Project Location: Intersection of Scottsdale Road and Dynamite Boulevard.

Dear Ms. Aglan-Swick,

The City of Scottsdale is submitting herewith a project application for local Highway Safety Improvement Program (HSIP) funding. This road safety improvement project was identified through an in-house screening of the state network crash data and meets all requirements of Title 23. The proposed request is for the construction of a modern roundabout at the intersection of Scottsdale Road and Dynamite Boulevard. Scottsdale Road is a key north-south corridor within in the City of Scottsdale, while travel demand continues to grow on Dynamite Boulevard. Currently, the intersection is signalized with single right turn and left turn bays on each leg. The proposed request does not include any non-infrastructure funding request. Per the AASHTO Highway Safety Manual, roundabouts reduce the types of crashes where people are seriously hurt or killed by 78-82% when compared to conventional stop-controlled and signalized intersections. The design and construction of the modern roundabout will be performed by an outside consultant and contractor and will require ground disturbing activities. It is anticipated that right-of-way acquisition will be required, and some utilities will be impacted by the construction of the modern roundabout.

During the most recent five-year period ending in 2016, the City experienced 1 fatal and 7 incapacitating crashes. With a Crash Reduction Factor (CRF) of 74.1%, as provided in the ADOT approved 4-star Clearinghouse countermeasure titled "Convert Signalized Intersection to Modern Roundabout" (CMF ID 4259), the City could see a 5-year reduction of 0.7 fatal and 5.2 serious injury crashes.

The City of Scottsdale has determined that, in accordance with 23 USC 148(a)(4)(A), this project is consistent with the MAG and State's 2016 SHSP. It supports ADOT's Roadway Infrastructure and Operations emphasis area (EA) Reduce frequency and severity of intersection crashes through geometric improvements and MAG's action area (AA) Eliminate death and serious injury related to intersections.

B/C Ratio = 5.7

The City of Scottsdale has estimated the total cost of this project to be \$2,182,207. Of that amount, it is requested that ADOT determine if \$1,874,207 is HSIP eligible for construction, with \$0 being non-HSIP eligible, \$0 being local match, and \$308,000 being Other funds for design, environmental clearance and minor right-of-way acquisition. In accordance with 23 U.S.C. 120(c)(1), construction of roundabouts is eligible to be funded at 100% federal share. If HSIP construction funding is approved, the City of Scottsdale will initiate project design no later than September 2019.

The City of Scottsdale is aware that, if funded, additional HSIP funds above the attached estimated cost are not available to pay for excess costs and the other funds, whether STP, local or other will have to be provided or secured by the City of Scottsdale to cover the additional costs, or the project will have to be withdrawn and resubmitted in the next call-for-projects.

RE: Highway Safety Improvement Program (HSIP) Project Determination and Application
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The City of Scottsdale is aware that, if funded, additional HSIP funds above the attached estimated cost are not available to pay for excess costs and the other funds, whether STP, local or other will have to be provided or secured by the City of Scottsdale to cover the additional costs, or the project will have to be withdrawn and resubmitted in the next call-for-projects.

The City of Scottsdale agrees to provide to ADOT TSS on a yearly basis a written before-and-after study utilizing the same crash data included in the countermeasure influence area, in order to determine the effectiveness of the countermeasure on fatal and serious injury crashes.

The City of Scottsdale further understands that Federal funds can only be used once to install or upgrade either a spot or systemic countermeasure and that once installed, the City of Scottsdale will maintain the countermeasure at or above the standard to which it was installed.

If you have any questions, please contact me at 480-312-7645 or email pkercher@scottsdaleaz.gov.

Sincerely,



Phil Kercher, P.E., PTOE
Traffic Engineering Manager
City of Scottsdale
7447 East Indian School Road, Suite 205
Scottsdale, AZ 85251

Attachments: Application (excel format) to include cost estimate, vicinity map and/or list of locations, B/C Ratio and Crash Data

Agency:	City of Scottsdale	Title of Project:	Scottsdale Road and Dynamite Boulevard Intersection Improvements
County:	Maricopa	COG/MPO:	MAG
District:	Central	Date:	
Contact:		Phone:	E-Mail:
Phil Kercher			
Type of Safety Improvement:	Spot: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Systemic: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
Mark all that apply to your project: <input type="checkbox"/> Design <input checked="" type="checkbox"/> Const. <input type="checkbox"/> Procurement <input type="checkbox"/> Non-Infrastructure			
Anticipated Total Cost Estimate:		\$2,182,207.00	
Anticipated dollar amount of HSIP Funding:		\$1,874,207.00	
Anticipated Dollar amount of Local Match (5.7%) (5.66%):		\$0.00	
Anticipated Dollar amount of Other:		\$308,000.00	
Funding Source: <input checked="" type="checkbox"/> 100% HSIP <input type="checkbox"/> 94.3% HSIP <input type="checkbox"/> 94.34% HSIP	Cost Estimate Tab:	5. 100% Contract Install	
Administration of Project:	Agency: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	ADOT: <input type="checkbox"/> YES <input type="checkbox"/> NO	
Name and Title of COG/MPO Representative:		Margaret Boone, ITS Safety Engineer III	
Basic Project Information			
Anticipated Design Year (Construction year cannot be the same):		<input type="checkbox"/> FY21	
If additional ROW is needed, what FY is purchase anticipated?:		<input checked="" type="checkbox"/> FY21 <input type="checkbox"/> FY22	
Anticipated Construction Year:		<input type="checkbox"/> FY21* <input checked="" type="checkbox"/> FY22	
1.	Have lower cost countermeasures been considered or implemented?		<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
1a.	If "Yes", describe: If "No", explain why not:	Scottsdale's Transportation Master Plan (adopted by City Council 7/5/16) prioritizes roundabouts at this type of intersection. This countermeasure also has a higher CRF than those for modifying a signalized intersection.	
2.	Which 23 USC 148 highway safety improvement project category does this project come under?		
2a.	1. Intersection safety improvement		
3.	Describe your safety improvement project in detail: (50 words or less)		
3a.	Convert a signalized, 4-leg suburban intersection to a modern roundabout (countermeasure CMF 4259).		
4.	Describe the location of this safety project:		

Agency:	City of Scottsdale	Title of Project:	Scottsdale Road and Dynamite Boulevard Intersection Improvements
County:	Maricopa	COG/MPO:	MAG
District:	Central	Date:	
4a.	The proposed project is located at the intersection of Scottsdale Road and Dynamite Boulevard.		
5.	What crash data screening method was used to identify this project?		
5a.	MAG crash rankings were reviewed in coordination with anticipated future capital improvement program fund availability. The selected site tied for the City's highest total weighted severity score, and it is also in a corridor included MAG's Regional Transportation Master Plan.		
6.	What is the safety justification for the proposed project?		
6a.	The intent of the modern roundabout is to better manage intersection approach speeds and significantly reduce the likelihood of head-on and high-speed right angle collisions. Per the AASHTO Highway Safety Manual, roundabouts reduce the types of crashes where people are seriously hurt or killed by 78-82% when compared to conventional stop-controlled and signalized intersections.		
7.	Will there be ground disturbing activities?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
8.	Is project within applicants permanent ROW?	<input checked="" type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
8a.	If NO please explain:	Based on existing right-of way maps, a portion of the roundabout may need to be constructed on land currently under private control. Any of the three undeveloped corners that come in for development prior to construction of the project will be required to dedicate sufficient right-of-way to the City of Scottsdale.	
9.	Will any temporary right-of-way acquisitions be required?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
10.	Will there be any utility relocation needed?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
10a.	If YES please explain:	It is likely that some some utilities (primarily telecommunications) will need to be relocated a short distance.	
11.	Does Section 4(f) apply to any portion of this project?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
11a.	If YES please explain:		
12.	Are there any other issues that may impact or delay development or construction of this project?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO

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District:	Central	Date:			
12a.	If YES please explain:				
13.	Is this project in compliance with revised ADA Standards?			<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
13a.	If NO please explain:				
14.	Does the project support Arizona's Strategic Highway Safety Plan?			<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
15.	Are there any Studies, RSA's or Other evaluations that support this project?			<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
16.	HSIP Roadway Functional Classification:		Urban Principal Arterial - Other		
17.	Average Daily Traffic Volume and Year Collected:		27,400/9,600	2016	
18.	What is the source of ADT?:	City of Scottsdale traffic counts			
19.	What is the posted speed limit?	50 mph			
20.	Detailed engineer's cost estimate attached:			<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
"Systemic" Safety Project					
21.	Completed B/C Ratio Tabulation Sheet Attached (Required):			<input type="checkbox"/> YES	<input type="checkbox"/> NO
22.	Most current 5 Years Crash Data from ADOT ALISS database sorted by year & severity (required):			<input type="checkbox"/> YES	<input type="checkbox"/> NO
23.	What are the inclusive dates of the crash data?				
24.	Have all crashes that will not be influenced by this countermeasure been deleted from the crash list? (pedestrian, pedalcycle, etc. as applicable)			<input type="checkbox"/> YES	<input type="checkbox"/> NO
25.	If purchasing equipment or materials, who will install?		<input type="checkbox"/> Town/City <input type="checkbox"/> Contractor	<input type="checkbox"/> County <input type="checkbox"/> Tribe	
26.	Does the project require proprietary Items (23CFR 635.411)?:			<input type="checkbox"/> YES	<input type="checkbox"/> NO
27.	Is a list of locations for systemic projects provided on the attached form?			<input type="checkbox"/> YES	<input type="checkbox"/> NO
28.	How are (will) the proposed locations be prioritized for replacement? (explain below)				
28a.					

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29.	Are the supporting structures in good condition, meet local standards and have an anticipated service life longer than the countermeasure being installed?		<input type="checkbox"/> YES <input type="checkbox"/> NO
"Spot" Improvement Projects Only			
30.	Completed B/C Ratio Tabulation Sheet Attached (required):		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
31.	Is the most current 5 Years Crash Data from ADOT ALISS database sorted by year & severity attached and in correct format? (required):		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
32.	What are the inclusive dates of the crash data?	2012-2016	
	Have all crashes that will not be influenced by this countermeasure been deleted from the crash list? (pedestrian, pedalcycle etc. as applicable)		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
33.	Have any infrastructure changes occurred within the work limits of this project during the years the crash data covers?		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
34.	If YES please explain:	NB and SB right turn bays were constructed in 2013.	
35.	Project vicinity map is provided:		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
36.	Project work limits map is provided:		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
SHSP - All Projects			
37.	Which SHSP Emphasis Area (EA) does this project support?:	Roadway_Infrastructure_and_Operations	
37a.	Which EA Strategy does it support?:	(Intersections) Reduce frequency and severity of intersection crashes through geometric improvements.	
37b.	Does this project support a second SHSP EA? If so, which EA.:	Speeding_and_Aggressive_Driving	
37c.	Which EA Strategy supports the second EA?	Use engineering design to reduce speeds.	
37d.	Does this project support a third SHSP EA? If so, which EA.:	Nonmotorized_Users	

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37e.	Which EA Strategy supports the third EA?	(Pedestrians) Reduce pedestrian exposure to vehicle traffic.	
38.	Does this project support one of the nine FHWA proven countermeasures?:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
38a.	If so, which countermeasure?:	Roundabouts	
39.	Does this project support one of the three Arizona Focus Areas?:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
39a.	If so, which focus area?:	Intersection	
40.	Which HSIP Improvement Category does this project support?:	Intersection_Traffic_Control	
40a.	Which HSIP Improvement Sub-Category does this project support?:	Modify control – traffic signal to roundabout	
41.	Does your COG/MPO have a Strategic Transportation Safety Plan (STSP)?:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
41a.	If "YES", does this project support an Emphasis Area in the COG/MPO STSP?:	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
41b.	List the EA:	Eliminate death and serious injury related to intersections	
41c.	If your COG/MPO has a STSP and it was Federally Funded and you answered NO in 41a, explain why this project is being submitted over a STSP identified project. (For Local Agencies Only)		
41d.	Rational		
42.	Are any temporary safety countermeasures needed prior to this permanent solution being installed?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
42a.	If yes, please explain:		
43.	For State Agencies, has the Regional Traffic Engineer been made aware of this potential project and does he/she concur with it?	<input type="checkbox"/> YES	<input type="checkbox"/> NO
B/C Ratio			
44.	The calculated B/C Ratio is:	5.70	

**HIGHWAY SAFETY IMPROVEMENT PROGRAM
APPLICATION - COST ESTIMATE**

Agency:		City of Scottsdale		Name of Project:		Scottsdale Rd./Dynamite Blvd. Intersection Improvements - Contractor Installed			
HSIP Project Cost Estimate Worksheet									
Project Cost Estimate:	Description:	Quantity:	Cost (Unit):	Total Cost	HSIP:	Local Match:	Other Amt:	TOTAL COST	
					100.00%	0.00%	0.00%		
Design:		1	\$ 253,000.00	\$ 253,000.00	\$ -	\$ -	\$ 253,000.00	\$ 253,000.00	
ROW Acquisition:		1	\$ 40,000.00	\$ 40,000.00	\$ -	\$ -	\$ 40,000.00	\$ 40,000.00	
Environmental Clearance:		1	\$ 15,000.00	\$ 15,000.00	\$ -	\$ -	\$ 15,000.00	\$ 15,000.00	
ADOT Admin Costs:		1	\$ 30,000.00	\$ 30,000.00	\$ 30,000.00	\$ -	\$ -	\$ 30,000.00	
Sub-Total			\$ 338,000.00	\$ 338,000.00	\$ 30,000.00	\$ -	\$ 308,000.00	\$ 338,000.00	
Materials:	Construction Surveying	1	\$ 30,000.00	\$ 30,000.00	\$ 30,000.00	\$ -	\$ -	\$ 30,000.00	
Materials:	Truck Apron PCCP (SY)	497	\$ 100.00	\$ 49,700.00	\$ 49,700.00	\$ -	\$ -	\$ 49,700.00	
Materials:	Vertical Curb (LF)	300	\$ 25.00	\$ 7,500.00	\$ 7,500.00	\$ -	\$ -	\$ 7,500.00	
Materials:	Roll Curb (LF)	390	\$ 25.00	\$ 9,750.00	\$ 9,750.00	\$ -	\$ -	\$ 9,750.00	
Materials:	Vert. Curb/Gutter (LF)	4,300	\$ 20.00	\$ 86,000.00	\$ 86,000.00	\$ -	\$ -	\$ 86,000.00	
Materials:	8' sidewalk MAG 230 (SF)	19,200	\$ 7.00	\$ 134,400.00	\$ 134,400.00	\$ -	\$ -	\$ 134,400.00	
Materials:	Remove AC (SY)	8,667	\$ 10.00	\$ 86,670.00	\$ 86,670.00	\$ -	\$ -	\$ 86,670.00	
Materials:	Restore Landscape (SF)	8,750	\$ 4.00	\$ 35,000.00	\$ 35,000.00	\$ -	\$ -	\$ 35,000.00	
Materials:	Remove Traffic Signals (LS)	1	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ -	\$ -	\$ 10,000.00	
Materials:	Sidewalk Ramps	8	\$ 2,500.00	\$ 20,000.00	\$ 20,000.00	\$ -	\$ -	\$ 20,000.00	
Materials:	Pedestrian Refuge	4	\$ 1,000.00	\$ 4,000.00	\$ 4,000.00	\$ -	\$ -	\$ 4,000.00	
Materials:	Landscaping (SF)	20,000	\$ 7.00	\$ 140,000.00	\$ 140,000.00	\$ -	\$ -	\$ 140,000.00	
Materials:	Ped. Crossing Signals	4	\$ 12,000.00	\$ 48,000.00	\$ 48,000.00	\$ -	\$ -	\$ 48,000.00	
Materials:	Signage	1	\$ 7,000.00	\$ 7,000.00	\$ 7,000.00	\$ -	\$ -	\$ 7,000.00	
Materials:	Striping	1	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ -	\$ -	\$ 10,000.00	
Materials:	Street Lights	4	\$ 6,500.00	\$ 26,000.00	\$ 26,000.00	\$ -	\$ -	\$ 26,000.00	
Materials:	6" ABC (SY)	9,533	\$ 15.00	\$ 142,995.00	\$ 142,995.00	\$ -	\$ -	\$ 142,995.00	
Materials:	6" AC (SY)	9,533	\$ 35.00	\$ 333,655.00	\$ 333,655.00	\$ -	\$ -	\$ 333,655.00	
Materials Sub-Total:				\$ 1,180,670.00	\$ 1,180,670.00	\$ -	\$ -	\$ 1,180,670.00	
Traffic Control:		10.00%		\$ 118,067.00	\$ 118,067.00	\$ -	\$ -	\$ 118,067.00	
Mobilization:		10.00%		\$ 118,067.00	\$ 118,067.00	\$ -	\$ -	\$ 118,067.00	
Sub-Total			\$ -	\$ 1,298,737.00	\$ 1,298,737.00	\$ -	\$ -	\$ 1,298,737.00	
Construction Admin :		16.00%			\$ 207,797.92	\$ -	\$ -	\$ 207,797.92	
Contingencies :		20.00%			\$ 259,747.40	\$ -	\$ -	\$ 259,747.40	
Post Design:		1.00%			\$ 12,987.37	\$ -	\$ -	\$ 12,987.37	
Communications		5.00%			\$ 64,936.85	\$ -	\$ -	\$ 64,936.85	
		0			\$ -	\$ -	\$ -	\$ -	
		0			\$ -	\$ -	\$ -	\$ -	
		0			\$ -	\$ -	\$ -	\$ -	
		0			\$ -	\$ -	\$ -	\$ -	
		0			\$ -	\$ -	\$ -	\$ -	
Sub-Total					\$ 545,469.54	\$ -	\$ -	\$ 545,469.54	
								\$ -	
TOTAL REQUEST					\$ 1,874,206.54	\$ -	\$ 308,000.00	\$ 2,182,206.54	

Comments:

Required for all HSIP Applications

Agency:	City of Scottsdale	Title of Project:	Scottsdale Road and Dynamite Boulevard Intersection Improvements
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Benefit / Cost Ratio Tabulation

Annual Benefit Tabulation

Severity	Annual Average	Estimated CRF* Reduction	Total Reduction	Unit Cost	Annual Benefit
Fatal	0.20	74%	0.15	\$5,800,000	\$859,560
Incapacitating Injury	1.40	74%	1.04	\$400,000	\$414,960
Total Annual Benefits					\$1,274,520

Costs

Total Project Cost	\$2,182,207
Project Life (years)	20
Interest Rate (%)	8%
Capital Recovery Factor	0.1019
Annual Construction Cost	\$222,263
Annual Maintenance Cost	\$0.00
Total Annual Costs	\$222,263

Benefit / Cost

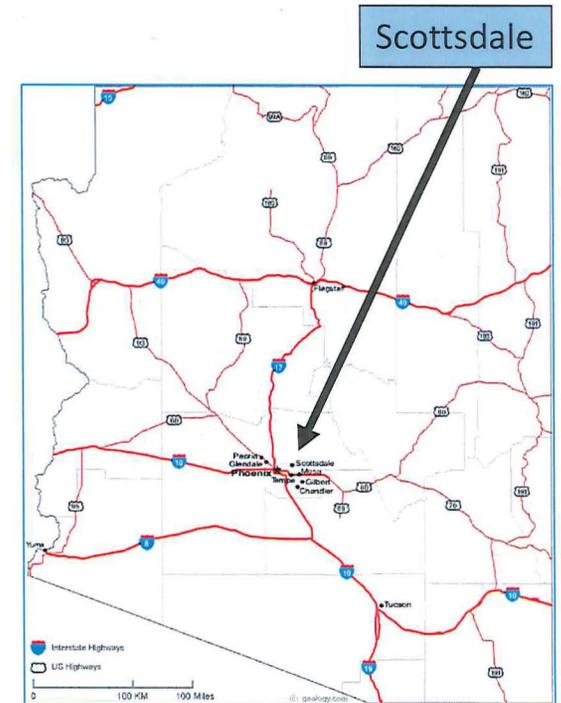
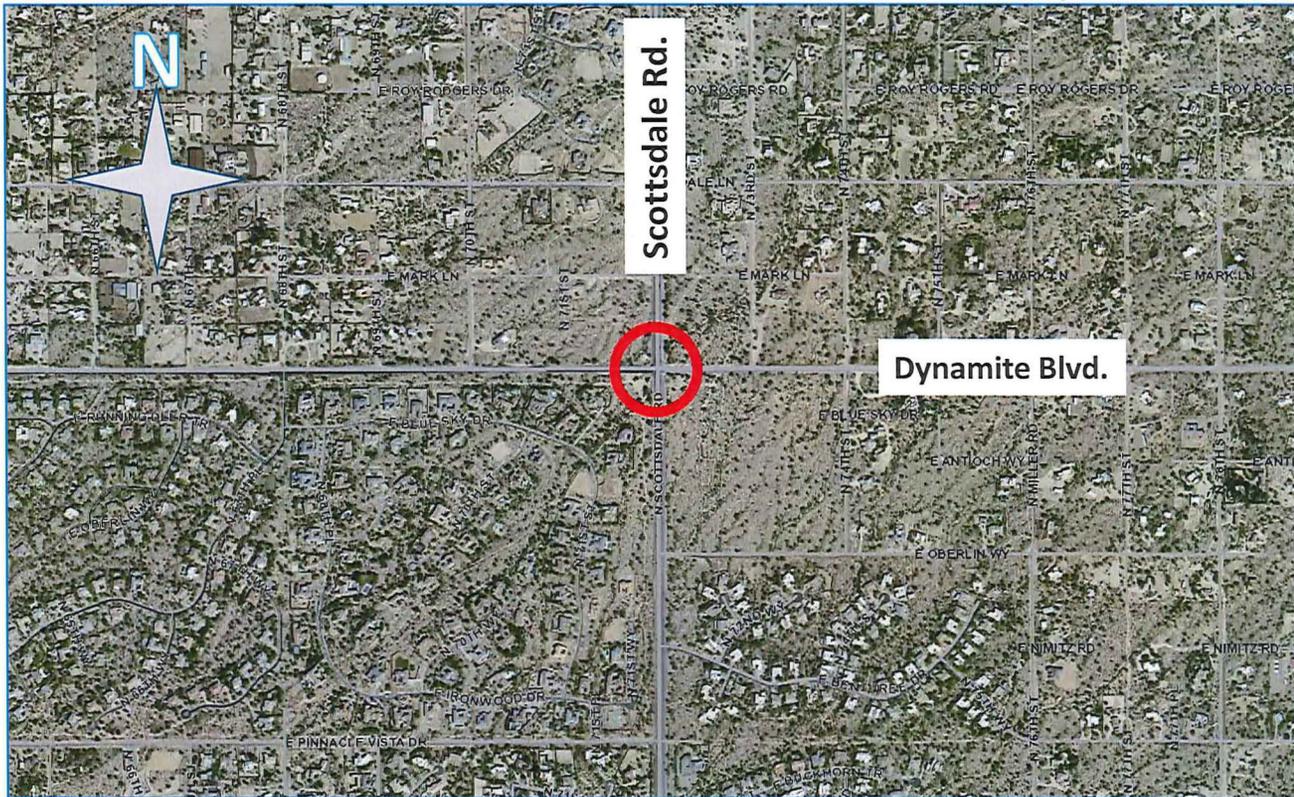
Annual Benefit	Annual cost	Benefit / Cost Ratio
\$1,274,520	\$222,263	5.7

***REQUIRED: Use 4 and 5 star CMFs from ADOT Lists Only at Tabs 14 - 15 preferred. The CMF's CRF is used in the above calculation**

CMF 4259 - Convert signalized intersection to modern roundabout

Id	Date/Time	Onroad	Crossing/Feature	Offset	InjurySeverity	FirstHarmful	CollisionManner Desc	LightCondition	Weather	IntersectionType	JunctionRelationDesc	TrafficWayType	UnitTravelDirection	UnitActionDesc	UnitRoadCondition Desc1	SurfaceCondition	EnvCondition	UnitDefect	UnitNumber	UnitEvent Sequence1	UnitEvent Sequence2	UnitEvent Sequence3	UnitEvent Sequence4	PersonSafety Device	PersonViolation	PersonPhysical	PersonPhysical
2618501	3/12/2012 13:33	DYNAMITE BLVD	SCOTTSDALE RD	0	SUSPECTED SERIOUS INJURY	MOTOR VEHICLE IN TRANSPORT	ANGLE (front to side other than left turn)	DAYLIGHT	CLEAR	FOUR-WAY INTERSECTION	INTERSECTION NON-INTERCHANGE	TWO-WAY DIVIDED	2 - SOUTH	GOING STRAIGHT AHEAD	NO CONTRIBUTING CIRCUMSTANCES	DRY	NO CONTRIBUTING CIRCUMSTANCES	NO CONTRIBUTING CIRCUMSTANCES	1	MOTOR VEHICLE IN TRANSPORT				Shoulder And Lap Belt	DISREGARDED TRAFFIC SIGNAL	0 - NO APPARENT INFLUENCE	
2742420	5/12/2013 15:36	SCOTTSDALE RD	DYNAMITE BLVD	0	FATAL	MOTOR VEHICLE IN TRANSPORT	LEFT TURN	DAYLIGHT	CLEAR	FOUR-WAY INTERSECTION	INTERSECTION NON-INTERCHANGE	TWO-WAY DIVIDED	1 - NORTH	MAKING LEFT TURN	No Data	DRY	MOVING VEHICLE	No Data	1	MOTOR VEHICLE IN TRANSPORT				RFI BRG Deployed/Shoulder-Lap Belt	MADE IMPROPER TURN	0 - NO APPARENT INFLUENCE	
2769413	7/31/2013 6:56	DYNAMITE BLVD	SCOTTSDALE RD	0	SUSPECTED SERIOUS INJURY	MOTOR VEHICLE IN TRANSPORT	ANGLE (front to side other than left turn)	DAYLIGHT	CLEAR	FOUR-WAY INTERSECTION	INTERSECTION NON-INTERCHANGE	TWO-WAY DIVIDED	4 - WEST	GOING STRAIGHT AHEAD	NO CONTRIBUTING CIRCUMSTANCES	DRY	NO CONTRIBUTING CIRCUMSTANCES	NO CONTRIBUTING CIRCUMSTANCES	1	MOTOR VEHICLE IN TRANSPORT				Shoulder And Lap Belt	DISREGARDED TRAFFIC SIGNAL	0 - NO APPARENT INFLUENCE	
2808734	11/29/2013 8:46	DYNAMITE BLVD	SCOTTSDALE RD	0	SUSPECTED SERIOUS INJURY	MOTOR VEHICLE IN TRANSPORT	ANGLE (front to side other than left turn)	DAYLIGHT	CLEAR	FOUR-WAY INTERSECTION	INTERSECTION NON-INTERCHANGE	TWO-WAY NOT DIVIDED	4 - WEST	GOING STRAIGHT AHEAD	NO CONTRIBUTING CIRCUMSTANCES	DRY	NO CONTRIBUTING CIRCUMSTANCES	NO CONTRIBUTING CIRCUMSTANCES	1	MOTOR VEHICLE IN TRANSPORT	MOTOR VEHICLE IN TRANSPORT		Shoulder And Lap Belt	DISREGARDED TRAFFIC SIGNAL	0 - NO APPARENT INFLUENCE		
2947550	4/4/2015 12:48	DYNAMITE BLVD	SCOTTSDALE RD	0	SUSPECTED SERIOUS INJURY	MOTOR VEHICLE IN TRANSPORT	LEFT TURN	DAYLIGHT	CLEAR	FOUR-WAY INTERSECTION	INTERSECTION NON-INTERCHANGE	TWO-WAY DIVIDED	4 - WEST	MAKING LEFT TURN	NO CONTRIBUTING CIRCUMSTANCES	DRY	NO CONTRIBUTING CIRCUMSTANCES	NO CONTRIBUTING CIRCUMSTANCES	1	MOTOR VEHICLE IN TRANSPORT				RFI BRG Deployed/Shoulder-Lap Belt	FAILED TO YIELD RIGHT OF WAY	0 - NO APPARENT INFLUENCE	
2969216	6/18/2015 11:01	DYNAMITE BLVD	SCOTTSDALE RD	0	SUSPECTED SERIOUS INJURY	MOTOR VEHICLE IN TRANSPORT	LEFT TURN	DAYLIGHT	CLEAR	FOUR-WAY INTERSECTION	INTERSECTION NON-INTERCHANGE	TWO-WAY NOT DIVIDED	2 - SOUTH	AVOIDING VEHICLE OBSTC PEDESTRIAN	UNKNOWN	DRY	UNKNOWN	UNKNOWN	1	MOTOR VEHICLE IN TRANSPORT	MOTOR VEHICLE IN TRANSPORT	MOTOR VEHICLE IN TRANSPORT		Shoulder And Lap Belt	UNKNOWN	0 - NO APPARENT INFLUENCE	
3101961	6/17/2016 14:44	DYNAMITE BLVD	SCOTTSDALE RD	0	SUSPECTED SERIOUS INJURY	MOTOR VEHICLE IN TRANSPORT	ANGLE (front to side other than left turn)	DAYLIGHT	CLEAR	FOUR-WAY INTERSECTION	INTERSECTION NON-INTERCHANGE	TWO-WAY DIVIDED	1 - NORTH	GOING STRAIGHT AHEAD	NO CONTRIBUTING CIRCUMSTANCES	DRY	NO CONTRIBUTING CIRCUMSTANCES	NO CONTRIBUTING CIRCUMSTANCES	1	MOTOR VEHICLE IN TRANSPORT				Shoulder And Lap Belt	DISREGARDED TRAFFIC SIGNAL	0 - NO APPARENT INFLUENCE	
3157801	11/9/2016 7:32	SCOTTSDALE RD	DYNAMITE BLVD	0.0089	SUSPECTED SERIOUS INJURY	MOTOR VEHICLE IN TRANSPORT	REAR END	DAYLIGHT	CLEAR	FOUR-WAY INTERSECTION	INTERSECTION NON-INTERCHANGE	TWO-WAY NOT DIVIDED	2 - SOUTH	GOING STRAIGHT AHEAD	NO CONTRIBUTING CIRCUMSTANCES	DRY	NO CONTRIBUTING CIRCUMSTANCES	NO CONTRIBUTING CIRCUMSTANCES	1	MOTOR VEHICLE IN TRANSPORT				Shoulder And Lap Belt	OTHER	0 - NO APPARENT INFLUENCE	

Vicinity/Location Map - Scottsdale Road/Dynamite Boulevard Intersection Improvements





CMF / CRF Details

CMF ID: 4259

Convert signalized intersection to modern roundabout

Description:

Prior Condition: Signalized intersection

Category: Intersection geometry

Study: [*Evaluation of Safety Strategies at Signalized Intersections, Srinivasan, et al., 2011*](#)

Star Quality Rating:	
	[View score details]

Crash Modification Factor (CMF)	
Value:	0.259
Adjusted Standard Error:	
Unadjusted Standard Error:	0.066

Crash Reduction Factor (CRF)	
Value:	74.1 (This value indicates a decrease in crashes)
Adjusted Standard Error:	

Unadjusted Standard Error:

6.6

Applicability

Crash Type:

All

Crash Severity:

K (fatal),A (serious injury),B (minor injury),C (possible injury)

Roadway Types:

Not specified

Number of Lanes:

1 to 2

Road Division Type:

Speed Limit:

Area Type:

Suburban

Traffic Volume:

Time of Day:

Not specified

If countermeasure is intersection-based

Intersection Type:

Roadway/roadway (not interchange related)

Intersection Geometry:

3-leg,4-leg

Traffic Control:

Roundabout

Major Road Traffic Volume:

5322 to 43123 Annual Average Daily Traffic (AADT)

Minor Road Traffic Volume:

Development Details

Date Range of Data Used:

1999 to 2009

Municipality:

State:

CO, FL, IN, MD, MI, NY, NC, SC, VT, WA

Country:	USA
Type of Methodology Used:	Before/after using empirical Bayes or full Bayes
Sample Size Used:	Sites
Before Sample Size Used:	15 Sites
After Sample Size Used:	15 Sites

Other Details	
Included in Highway Safety Manual?	No
Date Added to Clearinghouse:	Dec-06-2012
Comments:	Countermeasure name has been slightly modified for consistency across Clearinghouse

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