



PINAL COUNTY
WIDE OPEN OPPORTUNITY

May 23, 2018

Ms. Mona Aglan-Swick, P.E.
Transportation Systems Management & Operations, Traffic Safety Section
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: Pinal County Public Works
Project Name: Kings Ranch Road HAWK
Project Location: Kings Ranch Road at Sunrise Sky Drive in Gold Canyon

Dear Ms. Aglan-Swick:

The Pinal County Public Works Department is submitting herewith a project application for state Highway Safety Improvement Program (HSIP) funding. This road safety improvement project was identified through the local network crash data screening process and meets all requirements of Title 23. The proposed request is for installation of a pedestrian hybrid beacon on Kings Ranch Road at Sunrise Sky Drive and does not include any non-infrastructure request. This improvement will directly address the fatal pedestrian crash issue experienced at this location, namely a fatal pedestrian crash. It is anticipated that this work will be performed by a specialty contractor. Ground disturbing activities will be required; no utility relocations are anticipated.

From 2012 through 2016, one fatal crash was reported within the proposed project area. With a Crash Reduction Factor (CRF) of 69% for pedestrian fatal crashes obtained from the Crash Modification Factors Clearinghouse, this corridor could see a 5-year reduction of 0.70 fatal crashes.

Pinal County has determined that, in accordance with 23 USC 148(a)(4)(A), this project is consistent with the MAG and State's 2014 SHSP and supports the Pedestrians Emphasis Areas.
BC Ratio = 14.3

Public Works Department

31 N. Pinal Street, Building F., PO Box 727 Florence, AZ 85132
T 520-509-3555 Hours: M-F 8:00 am – 5:00 pm F 520-866-6511

www.pinalcountyaz.gov



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Pinal County has estimated the total project cost of this project to be \$372,350, and is requesting \$371,517 in HSIP funds, with a local match of \$833. In accordance with Title 23, the federal share of most of the improvements in this project is 100% per 23 U.S.C. 120(c) as described in Code of Federal Register 23 CFR Part 924. Pinal County proposes to contribute an \$833 local match for this project.

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

Pinal County agrees to conduct and 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.

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

If you have any questions, please contact me at 520-866-6345 or email at scott.bender@pinalcountyyaz.gov.

Sincerely,

Scott Bender, PE
Pinal County Public Works
31 N. Pinal Street
Florence, AZ 85132

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

Agency:	Pinal County Public Works	Title of Project:	Kings Ranch Road HAWK
County:	Pinal County	COG/MPO:	MAG
District:	Central	Date:	23-May-18
Contact:		Phone:	E-Mail:
Scott Bender		520-866-6345	scott.bender@pinalcountyz.gov
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 checked="" type="checkbox"/> Design <input checked="" type="checkbox"/> Const. <input type="checkbox"/> Procurement <input type="checkbox"/> Non-Infrastructure			
Anticipated Total Cost Estimate:		\$372,350.00	
Anticipated dollar amount of HSIP Funding:		\$371,517.00	
Anticipated Dollar amount of Local Match (5.7%) (5.66%):		\$833.00	
Anticipated Dollar amount of Other:		\$0.00	
Funding Source: <input checked="" type="checkbox"/> 100% HSIP <input type="checkbox"/> 94.3% HSIP <input type="checkbox"/> 94.34% HSIP		Cost Estimate Tab:	8. 94.3% Spot Improvement
Administration of Project:	Agency: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	ADOT: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
Name and Title of COG/MPO Representative:		Margaret Boone	
Basic Project Information			
Anticipated Design Year (Construction year cannot be the same):		<input checked="" type="checkbox"/> FY21	
If additional ROW is needed, what FY is purchase anticipated?:		<input 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:	Pedestrian crash occurred in past 2 years.	
2.	Which 23 USC 148 highway safety improvement project category does this project come under?		
2a.	5. Improvement for pedestrian or bicyclist safety or safety of persons with disabilities		
3.	Describe your safety improvement project in detail: (50 words or less)		
3a.	Installation of a pedestrian hybrid beacon on Kings Ranch Road at Sunrise Sky Drive in Gold Canyon		
4.	Describe the location of this safety project:		

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4a.	Kings Ranch Road at Sunrise Sky Drive in Gold Canyon		
5.	What crash data screening method was used to identify this project?		
5a.	Network screening of most recent five years of crash data ending December 31, 2016 as part of the development of the Pinal County STSP.		
6.	What is the safety justification for the proposed project?		
6a.	To address lane departure and speed-related crashes.		
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 type="checkbox"/> NO
8a.	If NO please explain:		
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 type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
10a.	If YES please explain:		
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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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:		Rural Major Collector		
17.	Average Daily Traffic Volume and Year Collected:		ADT: 10,100	Year: 2014	
18.	What is the source of ADT?:	Pinal County Count Program			
19.	What is the posted speed limit?	35			
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"/> County	
			<input type="checkbox"/> Contractor	<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 type="checkbox"/> YES <input checked="" type="checkbox"/> NO
34.	If YES please explain:		
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?:	Nonmotorized_Users	
37a.	Which EA Strategy does it support?:	(Pedestrians) Reduce pedestrian exposure to vehicle traffic.	
37b.	Does this project support a second SHSP EA? If so, which EA.:		
37c.	Which EA Strategy supports the second EA?		
37d.	Does this project support a third SHSP EA? If so, which EA.:		

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37e.	Which EA Strategy supports the third EA?		
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?:	Pedestrian Hybrid Beacon	
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?:	Pedestrian	
40.	Which HSIP Improvement Category does this project support?:	Pedestrians_and_Bicyclists	
40a.	Which HSIP Improvement Sub-Category does this project support?:		
	Pedestrian signal – Pedestrian Hybrid Beacon		
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:	Pedestrians	
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:	14.30	

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

Agency:		Name of Project:		Pedestrian Hybrid Beacon at Kings Ranch Rd/Sunrise Sky Dr		Spot Improvement			
Pinal County Public Works									
HSIP Project Cost Estimate Worksheet									
Project Cost Estimate:	Description:	Unit	Quantity:	Unit Cost:	Total Cost:	HSIP:	Local Match:	Other Amt:	TOTAL COST
						94.30%	5.70%	0.00%	
Scoping			1	\$15,000.00	\$ 15,000.00	\$ 14,966.46	\$ 33.54	\$ -	\$ 15,000.00
Design			1	\$ 120,000.00	\$ 120,000.00	\$ 119,731.67	\$ 268.33	\$ -	\$ 120,000.00
Environmental Clearance			1	\$ 20,000.00	\$ 20,000.00	\$ 19,955.28	\$ 44.72	\$ -	\$ 20,000.00
ADOT Admin Costs:			1	\$ 30,000.00	\$ 30,000.00	\$ 29,932.92	\$ 67.08	\$ -	\$ 30,000.00
Design Sub-Total					\$ 185,000.00	\$ 184,586.33	\$ 413.67	\$ -	\$ 185,000.00
Construction:	Install Pedestrian Hybrid Beacon	EA	1	\$ 120,000.00	\$ 120,000.00	\$ 120,000.00	No Match Required	\$ -	\$ 120,000.00
Construction:	Sidewalk Extension to HAWK Crossing	Sq Ft	400	\$ 3.25	\$ 1,300.00	\$ 1,225.90	\$ 74.10		\$ 1,300.00
Construction:	Curb Ramps at HAWK Crossing	EA	2	\$ 1,800.00	\$ 3,600.00	\$ 3,394.80	\$ 205.20		\$ 3,600.00
HSIP Eligible Sub-Total					\$ 124,900.00	\$ 124,620.70	\$ 279.30	\$ -	\$ 120,000.00
Non-HSIP Eligible Sub-Total					\$ -			\$ -	\$ -
Construction Sub-Total					\$ 124,900.00	\$ 124,620.70	\$ 279.30	\$ -	\$ 124,900.00
Traffic Control:			10.00%		\$ 12,490.00	\$ 12,462.07	\$ 27.93	\$ -	\$ 12,490.00
Mobilization:			10.00%		\$ 12,490.00	\$ 12,462.07	\$ 27.93	\$ -	\$ 12,490.00
Construction Sub-Total					\$ 149,880.00	\$ 149,544.84	\$ 335.16	\$ -	\$ 149,880.00
Construction Admin :			14.00%		\$ 20,983.20	\$ 20,936.28	\$ 46.92	\$ -	\$ 20,983.20
Contingencies :			5.00%		\$ 7,494.00	\$ 7,477.24	\$ 16.76	\$ -	\$ 7,494.00
Post Design:			1.00%		\$ 1,498.80	\$ 1,495.45	\$ 3.35	\$ -	\$ 1,498.80
Communications:			5.00%		\$ 7,494.00	\$ 7,477.24	\$ 16.76	\$ -	\$ 7,494.00
					\$ -	\$ -	\$ -	\$ -	\$ -
Post Sub-Total					\$ 37,470.00	\$ 37,386.21	\$ 83.79	\$ -	\$ 37,470.00
Post Const Sub-Total					\$ 187,350.00	\$ 186,931.05	\$ 418.95	\$ -	\$ 187,350.00
TOTAL REQUEST					\$ 372,350.00	\$ 371,517.38	\$ 832.62	\$ -	\$ 372,350.00

Comments:

Required for all HSIP Applications

Agency:	Pinal County	Title of Project:	Kings Ranch Road HAWK
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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	69%	0.14	\$5,800,000	\$800,400
Incapacitating Injury	0.00	69%	0.00	\$400,000	\$0
Total Annual Benefits					\$800,400

Costs

Total Project Cost	\$372,350
Project Life (years)	10
Interest Rate (%)	8%
Capital Recovery Factor	0.1490
Annual Construction Cost	\$55,491
Annual Maintenance Cost	\$300
Total Annual Costs	\$55,791

Benefit / Cost

Annual Benefit	Annual cost	Benefit / Cost Ratio
\$800,400	\$55,791	14.3

***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**

Fitzpatrick and Park, "Safety Effectiveness of the HAWK Pedestrian Crossing Treatment," FHWA-HRT-10-042, July, 2010.

Id	Date	Date	Time	Onroad	CrossingFeatu re	Offset	InjurySeverit y	FirstHarmful	CollisionMa nner Desc	LightCondi tion	Weather	IntersectionTypeD esc	JunctionRelationD esc	TrafficWayType	UnitTravelDirectio nDesc	UnitActionDes c	UnitRoadCondition Desc1	SurfaceCondit ion	EnvCondition	UnitDefect	UnitNum ber	UnitEvent Sequence	UnitEvent Sequence	UnitEvent Sequence	UnitEvent Sequence	PersonSafety Device	PersonViolati on	PersonPh ysical	PersonPhysical
2936873	3/11/2015 0:06	3/11/2015	12:06:00 AM	Kings Ranch Rd	Sunrise Sky Dr		Fatal	Pedestrian	Other	Dark Not Lighted	Clear	Non Intersection Related	Not Junction Related	Two Way Divided Unprotected Painted 4 Feet Median	North	Going Straight Ahead	Unknown	Dry	Unknown	Unknown	1	Pedestrian	None	None	None	Shoulder And Lap Belt	NO_IMPROP ER_ACTION	NO_APPA RENT_INF LUENCE	NO_APPARENT_ INFLUENCE

- a. Most recent 5 years of data from the ADOT crash database.
- b. Only crashes that the proposed countermeasure will correct
- c. Only crashes in the countermeasure's influence area
- d. Severity of each crash, Fatal and Serious Injury only
- e. Manner of collision
- f. Driver behavior of U1. (Alcohol related or other driver behavior influenced crashes can be included in infrastructure countermeasure calculations).
- g. Other relevant attributes
- h. Do not include crashes unreported by law enforcement unless supporting documentation, i.e. crash reports, is provided and attested to.