

<b>Agency:</b>	Avondale		<b>Title of Project:</b>	Pedestrian Hybrid Beacon at Avondale Blvd south of MC85		
<b>Date:</b>	9/15/2020					
<b>Contact Name and Title:</b>		<b>Phone:</b>		<b>E-Mail:</b>		
Thomas Peterson, PE		623-333-4217		<a href="mailto:tpeterson@avondaleaz.gov">tpeterson@avondaleaz.gov</a>		
<b>Roadway Safety Program (RSP) Project Scope</b>						
<b>1.</b>	<b>Describe your safety improvement project in detail: (50 words or less)</b>					
<b>1a.</b>	Design and construction of a Pedestrian Hybrid Beacon (HAWK)					
<b>2.</b>	<b>Describe the project location, include pertinent demographic and land development information:</b>					
<b>2a.</b>	PHB will be located across Avondale Blvd, approximately 600 LF south of MC85. This will serve students at the adjacent Littleton Elementary School, as well as users of the Zoom Circulator.					
<b>3</b>	<b>For projects on State System (ADOT):</b>	<b>BMP: (Begin Milepost)</b>		<b>EMP: (End Milepost)</b>		
<b>4.</b>	<b>What network screening method was used to identify this project?</b>			<input checked="" type="checkbox"/> MAG	<input type="checkbox"/> ADOT	<input type="checkbox"/> Other (Below)
<b>4a</b>	Recommendation from Safe Routes to School Study for Littleton Elementary School					
<b>5.</b>	<b>Was this project identified as a recommendation in a study? If so, what kind? (check all that apply)</b>					
<b>5a</b>	<input type="checkbox"/> RSA <input type="checkbox"/> PA <input checked="" type="checkbox"/> SRTS Study <input type="checkbox"/> LASS Study <input type="checkbox"/> Other					
<b>6.</b>	<b>Was the project identified using an agency adopted predictive safety analysis?</b>			<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	
<b>7.</b>	<b>What is the safety justification for the proposed project?</b>					
<b>7a</b>	During the SRTS Study, it was noted that approximately 50 students crossed Avondale Blvd in the designated crosswalk in both the morning and afternoon time periods. Traffic speeds have been observed to be 40 mph on Avondale Blvd, and traffic volumes have been observed to be 20,000 vpd.					
<b>8.</b>	<b>Is Public outreach required for your project? If "yes" Provide what was done, the date(s) and outcomes. (Attach documentation if applicable)</b>					
<b>8a</b>	Public outreach was conducted during the SRTS Study, which recommended this countermeasure and is supported by the School District.					
<b>9.</b>	<b>What safety related public education will your agency be providing before placing the safety improvement in service, if applicable?</b>					
<b>9a</b>	Information regarding the PHB will be posted on the City of Avondale website as well as distributed to the School District prior to construction.					
<b>10.</b>	<b>Equity: Input the largest percent for each element for the one-mile radius or offset (Click on the hyperlinks in the text to open maps. See directions on side on maps):</b>					
	<a href="#">65 yrs and Older</a>	<a href="#">Minority Groups</a>	<a href="#">No Vehicle Households</a>	<a href="#">Disabled</a>	<a href="#">Living in Poverty</a>	
<b>10a</b>	4.2	69.8	3.9	8.58	3.8	
<b>11.</b>	<b>Avg Daily Traffic (ADT) Volume:</b>		19,980	<b>Year Collected:</b>		2017
<b>12.</b>	<b>Total Crash Frequency:</b>		13	<b>Crash Rate (MVM or MEV) (Insert from "Crash Rate" Work Sheet):</b>		2.4
<b>13.</b>	<b>What is the posted speed limit?</b>		35	<b>Benefit/Cost:</b>		1.2

## PROJECT COST ESTIMATE WORKSHEET

**(Cost Estimates Are Required Regardless of Programming)**

<b>PROCUREMENT</b>	<b>REQUESTED PROGRAMMING</b>	Location Description				
		Work Description				
		Funding Source	RSP			
		Preferred Year to Program Work	2022			
	COST ESTIMATE FOR PROCUREMENT		UNITS	QUANTITY	UNIT COST	TOTAL
	PROCUREMENT/INSTALL	Place for entering item #1	EA			\$ -
		Place for entering item #2	EA		\$ -	
<b>TOTAL – PROCUREMENT</b>					<b>\$ -</b>	
<b>DESIGN</b>	<b>REQUESTED PROGRAMMING</b> <small>(Complete if Item will be programmed in the MAG TIP)</small>	Location Description	Avondale Blvd approx 580 LF south of MC85			
		Work Description	Design of a Pedestrian Hybrid Beacon			
		Funding Source	Local			
		Preferred Year to Program Work	2022			
	COST ESTIMATE FOR DESIGN		UNITS	QUANTITY	UNIT COST	TOTAL
	<b>PRELIMINARY ENGINEERING</b> <small>(15% plans) (Required for Budget)</small>	Topographic Survey	LS	1		\$ -
		Design Concept Report (DCR)	LS	1		\$ -
		Federal Project Environmental Determination	LS	1		\$ -
		HAZMAT Assessment	LS	1		\$ -
		<b>SUBTOTAL – PRELIMINARY ENGINEERING COSTS</b>				
	<b>FINAL DESIGN</b> <small>(30, 60, 95, 100% plans) (Required for Budget)</small>	Plans, Specifications, Cost Estimates, Bidding	LS	1		\$ 35,000.00
		Geotechnical Report	LS	1		\$ 4,500.00
		Drainage Report	LS	1		\$ 4,000.00
SWPPP		LS	1		\$ 2,500.00	
<b>SUBTOTAL – FINAL DESIGN COSTS</b>					<b>\$ 46,000.00</b>	
<b>TOTAL PRELIMINARY ENGINEERING AND DESIGN COST AVAILABLE FOR PROGRAMMING</b>					<b>\$ 46,000.00</b>	

# PROJECT COST ESTIMATE WORKSHEET

## (Cost Estimates Are Required Regardless of Programming)

CONSTRUCTION	REQUESTED PROGRAMMING (Complete only if Construction will be programmed in the MAG TIP)	Location Description	Avondale Blvd approx 580 LF south of MC85			
		Work Description	Construction of a Pedestrian Hybrid Beacon			
		Funding Source	RSP			
		Preferred Year to Program Work	2022			
COST ESTIMATE FOR CONSTRUCTION			UNITS	QUANTITY	UNIT COST	TOTAL
<b>UTILITY RELOCATIONS (Required for Budget, May be 0 if no Utilities)</b>  <small>The cost of minor utility relocation for the safety improvement project are eligible if the costs/activities involved are directly related to the safety project. Generally, burying overhead utilities is cost prohibitive</small>		Relocate 69 kv (+) Poles	EA			\$ -
		Relocate/Underground 12 kv lines	LF			\$ -
		Relocate/Underground Irrigation Canal	LF			\$ -
		SWG Relocations	LS			\$ -
		Telephone/Cable TV Relocations	LS			\$ -
		Upgrade Railroad Crossings	LS			\$ -
	<b>SUBTOTAL - UTILITY RELOCATION COSTS</b>					
<b>CONSTRUCTION (Required for Budget)</b>		Contractor Mobilization	LS	1		\$ 15,000.00
		Install PHB Equipment	LS	1		\$ 270,000.00
		Construction Survey and Layout	LS	1		\$ 5,000.00
		Temporary Traffic Control	LS	1		\$ 15,000.00
		Remove Existing Improvements	LS	1		\$ -
		Remove Curb and Gutter	LF			\$ -
		Sawcut Asphalt Pavement	LF			\$ -
		Remove Pavement	SY			\$ -
		4" Asphalt Concrete Pavement	TON			\$ -
		12" Class 2 A.B.	TON			\$ -
		Concrete Single Curb	LF			\$ -
		Signage	EA			\$ 2,000.00
		White Thermoplastic Pavement Markings	LF			\$ 15,000.00
		Subgrade Preparation	SY			\$ -
		Median Paving	SY			\$ -
<b>SUBTOTAL - CONSTRUCTION COST</b>						<b>\$ 322,000.00</b>
<b>MOBILIZATION AND ADMINISTRATION COSTS</b>	<b>CONTRACTOR MOBILIZATION (Typically 8% of construction cost)</b>				8%	\$ 25,760.00
	<b>TRAFFIC CONTROL (0-8% of construction cost)</b>				5%	\$ 16,100.00
	<b>CONSTRUCTION CONTINGENCIES (Typically 5% of construction cost)</b>				5%	\$ 16,100.00
	<b>CONSTRUCTION ADMINISTRATION (Averaging 18% of construction cost)</b>				15%	\$ 48,300.00
<b>SUBTOTAL - MOBILIZATION &amp; ADMINISTRATION COSTS</b>						<b>\$ 106,260.00</b>
<b>TOTAL UTILITIES, CONSTRUCTION AND MOBILIZATION FOR PROGRAMMING</b>						<b>\$ 428,260.00</b>
<b>TOTAL COST ESTIMATE</b>						<b>\$ 474,260</b>

## Budget and Signature Page

Please describe the agency programming of this project in the agency's CIP

Phase	Location Description	Work Description	Year to be Programmed	Funding Source	Amount
Design	Avondale Blvd approx 580 LF south of MC85	Design of a Pedestrian Hybrid Beacon	2022	Local	\$ 46,000
Construction	Avondale Blvd approx 580 LF south of MC85	Construction of a Pedestrian Hybrid Beacon	2022	RSP	\$ 428,260
<b>Total Cost</b>					<b>\$ 474,260</b>

**Signature: To be signed with printed hard copy that is sent to MAG**

As the jurisdiction's manager/administrator or designated representative, I certify that the information contained in this application is accurate and complete and that the local funds for this project will be included in the Lead Agency's local current CIP/TIP or budget document if the project is selected for M... Safety Program funding. I also certify the Lead Agency's commitment to maintain or operate the facility.

Signature:



Name: David A. Janover, PE, F.NSPE, CFM

Title: City Engineer, City of Avondale

Date: 10/1/2020

## RSP Application Benefit-Cost Tabulation Sheet

<b>Agency:</b>	Avondale	<b>Title of Project:</b>	Pedestrian Hybrid Beacon at Avondale Blvd south of MC85
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### Annual Benefit Tabulation

Severity	Annual Average	Estimated CRF* Reduction	Total Reduction	Unit Cost	Annual Benefit
Fatal	<b>0.00</b>	<b>57%</b>	0.00	\$9,515,371	\$0
Incapacitating Injury	<b>0.20</b>	<b>57%</b>	0.11	\$550,499	\$62,537
Non-Incapacitating	<b>0.00</b>	<b>57%</b>	0.00	\$149,132	\$0
Possible Injury	<b>0.00</b>	<b>57%</b>	0.00	\$103,145	\$0
<b>Total Annual Benefits</b>					<b>\$62,537</b>

### Costs

Total Project Cost	\$474,260
Project Life (years)	20
Interest Rate (%)	8%
Capital Recovery Factor	0.1019
Annual Construction Cost	\$48,304
Annual Maintenance Cost	\$0.00
<b>Total Annual Costs</b>	<b>\$48,304</b>

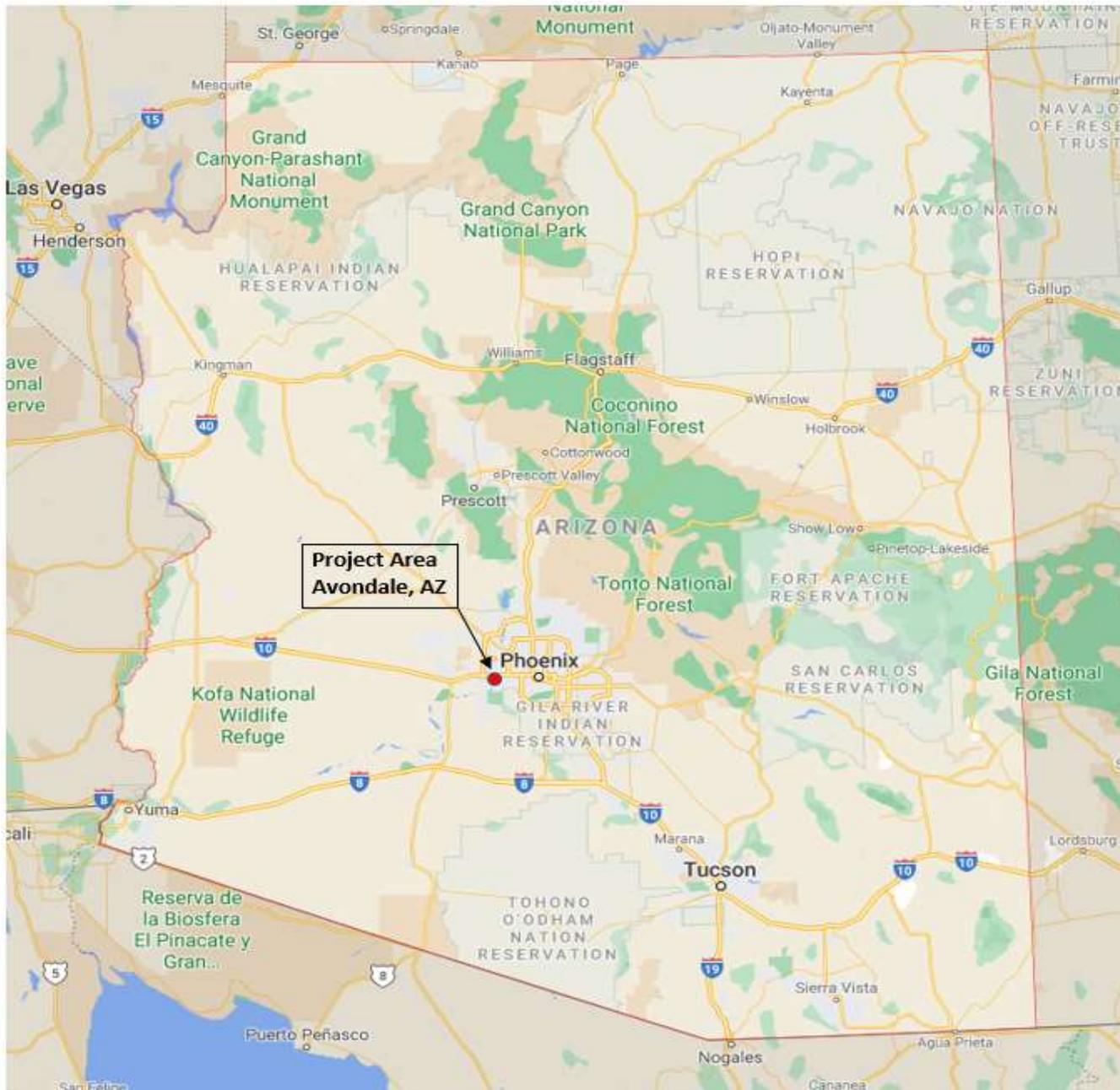
### Benefit / Cost

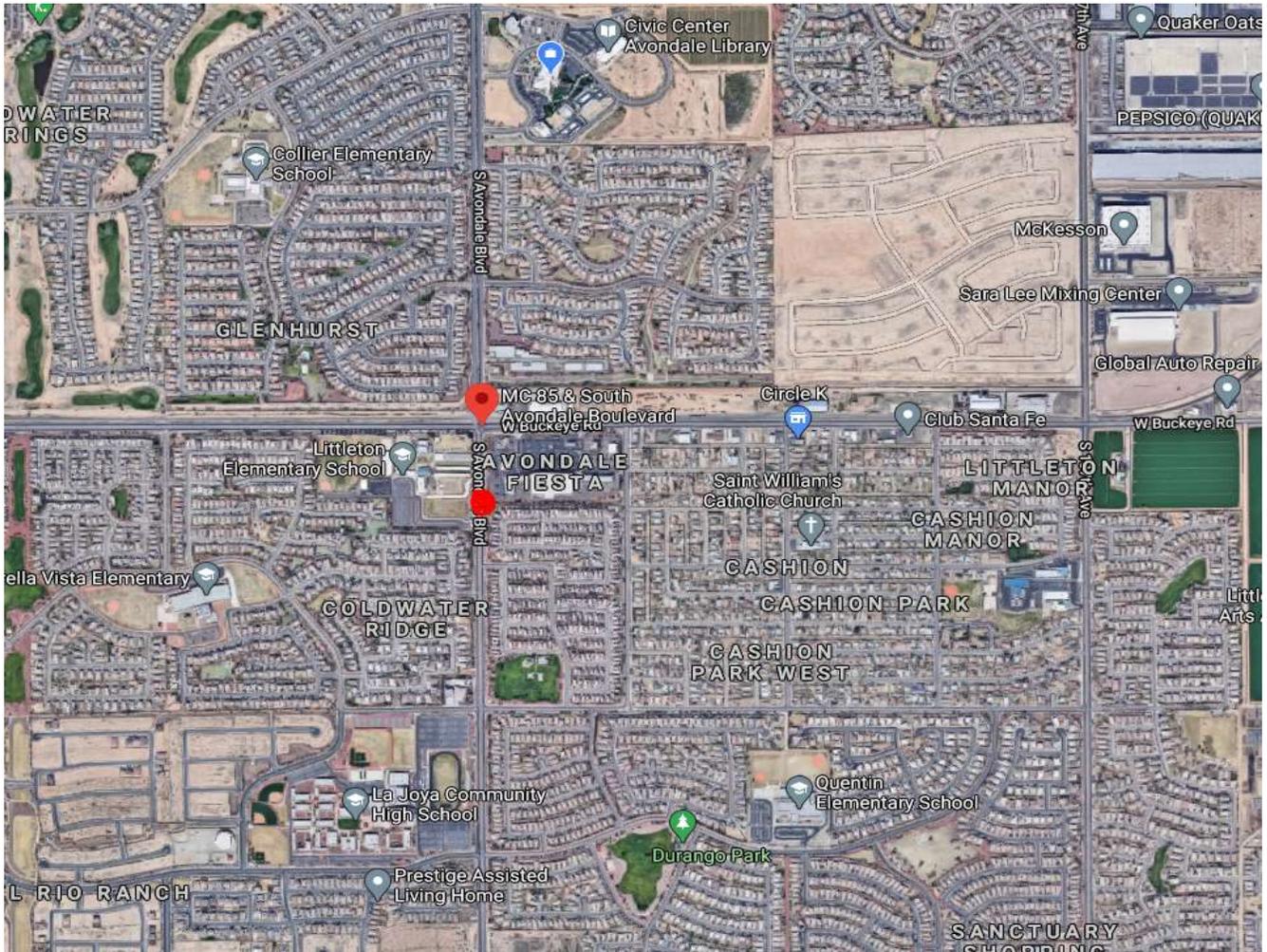
Annual Benefit	Annual cost	Benefit / Cost Ratio
\$62,537	\$48,304	1.2

### List CMF(s) Used in the field below and its associated countermeasure(s)

Install PHB with advanced yield markings and signs Countermeasure 9021. CRF=57%







**Note: This should be a map of the Project Extents. If your project includes several areas in your City/Town, this map will need to include all locations.**