

Agency:	Peoria		Title of Project:	91st Avenue and Thunderbird Road Median Improvements	
Date:					
Contact Name and Title:		Phone:		E-Mail:	
Brandon Forrey		(623) 773-7201		brandon.forrey@peoriaaz.gov	
Roadway Safety Program (RSP) Project Scope					
1.	Describe your safety improvement project in detail: (50 words or less)				
1a.	The proposed project improvements include modifications to the medians on Thunderbird Road at the 91st Avenue intersection to improve the left-turn lane offset to create a positive offset.				
2.	Describe the project location, include pertinent demographic and land development information:				
2a.	The project will be located at the intersection of 91st Avenue and Thunderbird Road in the City of Peoria. Project work will occur on the east and west legs of the intersection along Thunderbird Road.				
3	For projects on State System (ADOT):	BMP: (Begin Milepost)		EMP: (End Milepost)	
4.	What network screening method was used to identify this project?				<input type="checkbox"/> MAG <input checked="" type="checkbox"/> ADOT <input type="checkbox"/> Other (Below)
4a	An in-house screening of ALISS data was performed and found a high volume of left-turn, angle and rear-end crashes.				
5.	Was this project identified as a recommendation in a study? If so, what kind? (check all that apply)				
5a	<input type="checkbox"/> RSA <input type="checkbox"/> PA <input type="checkbox"/> SRTS Study <input type="checkbox"/> LASS Study <input type="checkbox"/> Other				
6.	Was the project identified using an agency adopted predictive safety analysis?				<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
7.	What is the safety justification for the proposed project?				
7a	The intent of a positive left-turn offset is to improve the sight distance for left-turn and opposing through vehicles at intersections. A negative offset limits the ability for a left-turning vehicle to see around opposing left-turn traffic and appropriately navigate gaps in vehicles in the opposing through lanes in which it is safe to cross. The FHWA TECHBRIEF titled "Safety Evaluation of Offset Improvements for Left-Turn Lanes" states that this strategy is most effective at signalized intersections with permissive or permissive/protected left-turn movements. The eastbound left-turn movement at this intersection is a permissive/protected left.				
8.	Is Public outreach required for your project? If "yes" Provide what was done, the date(s) and outcomes. (Attach documentation if applicable)				
8a	No business or residential access is impacted, therefore public outreach is not necessary for this project.				
9.	What safety related public education will your agency be providing before placing the safety improvement in service, if applicable?				
9a	As the improvements proposed are common across the Valley, it is felt that no public outreach is necessary.				
10.	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):				
	65 yrs and Older	Minority Groups	No Vehicle Households	Disabled	Living in Poverty
10a	27%	34	18%	27%	8%
11.	Avg Daily Traffic (ADT) Volume:		34,508	Year Collected:	
12.	Total Crash Frequency:		15	Crash Rate (MVM or MEV) (Insert from "Crash Rate" Work Sheet):	
13.	What is the posted speed limit?		40 mph	Benefit/Cost:	
				74.4	

PROJECT COST ESTIMATE WORKSHEET

(Cost Estimates Are Required Regardless of Programming)

PROCUREMENT	REQUESTED PROGRAMMING	Location Description	91st Avenue and Thunderbird Road			
		Work Description	Left Turn Offset Improvements			
		Funding Source	RSP			
		Preferred Year to Program Work	2020			
	COST ESTIMATE FOR PROCUREMENT		UNITS	QUANTITY	UNIT COST	TOTAL
	PROCUREMENT/INSTALL	Place for entering item #1	EA			\$ -
Place for entering item #2		EA			\$ -	
TOTAL – PROCUREMENT					\$ -	
DESIGN	REQUESTED PROGRAMMING (Complete if Item will be programmed in the MAG TIP)	Location Description				
		Work Description				
		Funding Source	Local			
		Preferred Year to Program Work	2020			
	COST ESTIMATE FOR DESIGN		UNITS	QUANTITY	UNIT COST	TOTAL
	PRELIMINARY ENGINEERING (15% plans) (Required for Budget)	Topographic Survey	LS	1		\$ -
		Design Concept Report (DCR)	LS	1		\$ -
		Federal Project Environmental Determination	LS	1		\$ -
		HAZMAT Assessment	LS	1		\$ -
		SUBTOTAL – PRELIMINARY ENGINEERING COSTS				
	FINAL DESIGN (30, 60, 95, 100% plans) (Required for Budget)	Plans, Specifications, Cost Estimates, Bidding	LS	1	20,000.00	\$ 20,000.00
		Geotechnical Report	LS	1		\$ -
		Drainage Report	LS	1		\$ -
		SWPPP	LS	1		\$ -
		SUBTOTAL – FINAL DESIGN COSTS				
TOTAL PRELIMINARY ENGINEERING AND DESIGN COST AVAILABLE FOR PROGRAMMING					\$ 20,000.00	

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				
		Work Description				
		Funding Source	RSP			
		Preferred Year to Program Work	2021			
COST ESTIMATE FOR CONSTRUCTION			UNITS	QUANTITY	UNIT COST	TOTAL
UTILITY RELOCATIONS (Required for Budget, May be 0 if no Utilities) 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		Relocate 69 kv (+) Poles	EA	1		\$ -
		Relocate/Underground 12 kv lines	LF			\$ -
		Relocate/Underground Irrigation Canal	LF			\$ -
		SWG Relocations	LS	1		\$ -
		Telephone/Cable TV Relocations	LS	1		\$ -
		Upgrade Railroad Crossings	LS	1		\$ -
	SUBTOTAL – UTILITY RELOCATION COSTS					
CONSTRUCTION (Required for Budget)		CONSTRUCTION SURVEY AND LAYOUT	LS	1	3,000.00	\$ 3,000.00
		CRACK SEALING	LF	1,600	1.50	\$ 2,400.00
		MICROSURFACING	SY	3,900	3.00	\$ 11,700.00
		SAWCUT AND REMOVE EXISTING ASPHALT PAVEMENT AND BASE MATERIAL FULL DEPTH (5" AC & 12" ABC)	SY	50	200.00	\$ 10,000.00
		REMOVE EXISTING CONCRETE VERTICAL CURB	LF	200	30.00	\$ 6,000.00
		REMOVE CONCRETE MEDIAN AND 17 INCH BASE MATERIAL	SY	60	325.00	\$ 19,500.00
		REMOVE CONCRETE MEDIAN NOSE TRANSITION	EA	2	1,500.00	\$ 3,000.00
		SUBGRADE PREPARATION (MAG 301)	SY	120	40.00	\$ 4,800.00
		AGGREGATE BASE COURSE, 12 INCH (MAG 702)	TON	90	80.00	\$ 7,200.00
		ASPHALT CONCRETE PAVEMENT, 5 INCH (MAG 710 & 711)	TON	40	225.00	\$ 9,000.00
		CONSTRUCT MEDIAN NOSE TRANSITION (MAG STD DTL 223)	EA	2	3,000.00	\$ 6,000.00
		REMOVE AND RELOCATE SIGN POST AND PANEL	EA	2	1,000.00	\$ 2,000.00
		OBLITERATE PAVEMENT MARKINGS (STRIPE)	LF	2,400	5.00	\$ 12,000.00
		OBLITERATE PAVEMENT MARKINGS (ARROWS)	EA	6	300.00	\$ 1,800.00
		OBLITERATE RAISED PAVEMENT MARKERS	EA	59	10.00	\$ 590.00
		4" BROKEN WHITE 15' LINE 25' GAP (15 MIL WATER BASED)	LF	765	10.00	\$ 7,650.00
		4" DASHED DOUBLE YELLOW 2' LINE 4' GAP (15 MIL WATER BASED)	LF	205	10.00	\$ 2,050.00
		4" SOLID DOUBLE YELLOW (15 MIL WATER BASED)	LF	100	10.00	\$ 1,000.00
		4" DASHED WHITE 2' LINE 4' GAP (15 MIL WATER BASED)	LF	105	10.00	\$ 1,050.00
		8" SOLID WHITE LINE (15 MIL WATER BASED)	LF	900	10.00	\$ 9,000.00
		PAVEMENT MARKING, PREFORMED, TYPE I, SINGLE ARROW	EA	6	750.00	\$ 4,500.00
		12" SOLID WHITE LINE (90 MIL ALKYD THERMOPLASTIC)	LF	452	10.00	\$ 4,520.00
		INSTALL RAISED PAVEMENT MARKERS	EA	83	20.00	\$ 1,660.00
SUBTOTAL - CONSTRUCTION COST						\$ 130,420.00
MOBILIZATION AND ADMINISTRATION COSTS	CONTRACTOR MOBILIZATION (Typically 8% of construction cost)				8%	\$ 10,433.60
	TRAFFIC CONTROL (0-8% of construction cost)				8%	\$ 10,433.60
	CONSTRUCTION CONTINGENCIES (Typically 5% of construction cost)				5%	\$ 6,521.00
	CONSTRUCTION ADMINISTRATION (Averaging 18% of construction cost)				18%	\$ 23,475.60
SUBTOTAL – MOBILIZATION & ADMINISTRATION COSTS						\$ 50,863.80
TOTAL UTILITIES, CONSTRUCTION AND MOBILIZATION FOR PROGRAMMING						\$ 181,283.80
TOTAL COST ESTIMATE						\$ 201,284

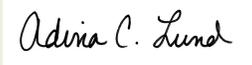
Budget and Signature Page

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	91st Avenue and Thunderbird Road	Left Turn Offset Improvements	2020	Local	\$ 20,000
Construction	91st Avenue and Thunderbird Road	Left Turn Offset Improvements	2021	RSP	\$ 181,284
Total Cost					\$ 201,284

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 MAG Roadway Safety Program funding. I also certify the Lead Agency's commitment to maintain or operate the facility.

Signature: 

Name: Adina C. Lund, P.E.

Title: Development and Engineering Director

Date: 9/29/2020

RSP Application Benefit-Cost Tabulation Sheet

Agency:	Peoria	Title of Project:	91st Avenue and Thunderbird Road Median Improvements
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Annual Benefit Tabulation

Severity	Annual Average	Estimated CRF* Reduction	Total Reduction	Unit Cost	Annual Benefit
Fatal	0.40	36%	0.14	\$9,515,371	\$1,370,213
Incapacitating Injury	0.20	36%	0.07	\$550,499	\$39,636
Non-Incapacitating	1.60	36%	0.58	\$149,132	\$85,900
Possible Injury	0.80	36%	0.29	\$103,145	\$29,706
Total Annual Benefits					\$1,525,455

Costs

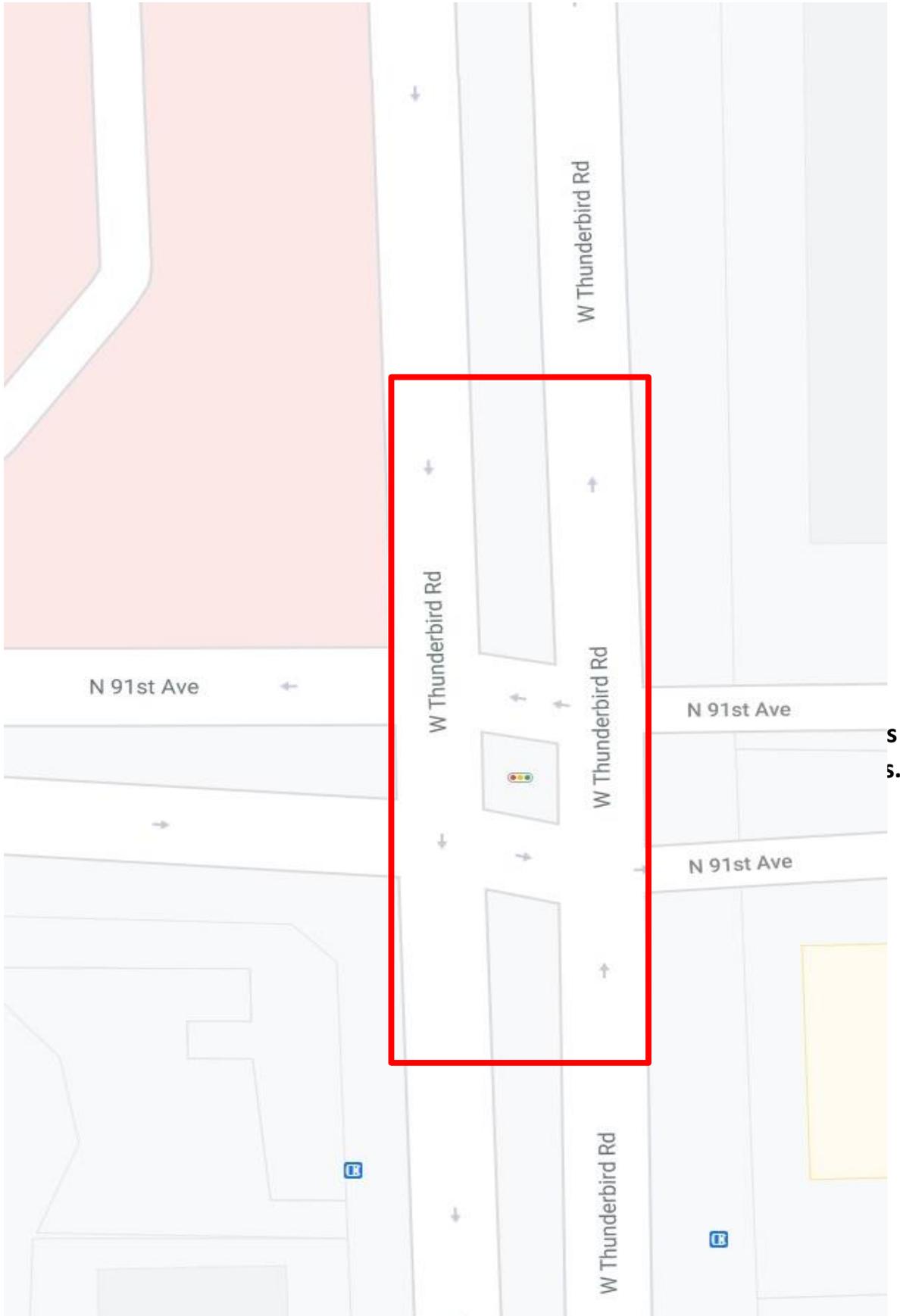
Total Project Cost	\$201,284
Project Life (years)	20
Interest Rate (%)	8%
Capital Recovery Factor	0.1019
Annual Construction Cost	\$20,501
Annual Maintenance Cost	\$0.00
Total Annual Costs	
\$20,501	

Benefit / Cost

Annual Benefit	Annual cost	Benefit / Cost Ratio
\$1,525,455	\$20,501	74.4

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

CMF ID 6096 Improve left-turn lane offset to create positive offset. CRF = 35.6% for all crash types and for fatal, serious injury and minor injury crash severities.



 - Project Area