

Agency:	Carefree	Title of Project:	PEDESTRIAN CROSSWALKS IMPROVEMENTS PROJECT		
Date:	10/01/2020				
Contact Name and Title:	Phone:	E-Mail:			
Gary Neiss	480-488-3686	gary@carefree.org			
Roadway Safety Program (RSP) Project Scope					
1.	Describe your safety improvement project in detail: (50 words or less)				
1a.	Reconstruction of 2 arterial road crosswalks with (1) Install Rectangular Rapid Flashing Beacons, (2) Install Raised Crosswalks with High Visibility Markings, (3) Install Dynamic Speed Feedback Sign, (4) Traffic Calming (Curb Bulbouts, Increased Diameter of Roundabout Inscribed Circles, and reduce number of lanes from 4 to 2), and (5) Install Raised Median (Pedestrian Refuge).				
2.	Describe the project location, include pertinent demographic and land development information:				
2a.	Tom Darlington Drive from 500 feet south of Wampum Way to 500 feet north of Ho Road.				
3	For projects on State System (ADOT):	BMP: (Begin Milepost)	N/A	EMP: (End Milepost)	N/A
4.	What network screening method was used to identify this project? <input type="checkbox"/> MAG <input type="checkbox"/> ADOT <input checked="" type="checkbox"/> Other (Below)				
4a	An in-house screening of ADOT crash data was performed and a high volume of speed related crashes was found.				
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 checked="" 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 Town has received many resident complaints about the high speed traffic on Tom Darlington Dr with great concern about their safety in attempting to use the existing crosswalks and many complaints about 'near misses' and 'close calls'. This project addresses those safety concerns by slowing traffic and upgrading crosswalks with lane reductions from two to one in each direction, curb bulbouts for shorter crossing length, medians for pedestrian refuges, signaling each of the two crosswalks with RRFBs, providing raised crosswalks with high visibility crosswalk markings at crosswalk locations, speed feedback sign, ped crossing pavement markings, increased diameter of the roundabout inscribed circles, and more.				
8.	Is Public outreach required for your project? If "yes" Provide what was done, the date(s) and outcomes. (Attach documentation if applicable)				
8a	Yes, a public meeting was conducted on 12/12/2019 and a town council presentation was made on 03/03/2020.				
9.	What safety related public education will your agency be providing before placing the safety improvement in service, if applicable?				
9a	The Town of Carefree will post information regarding the new raised crosswalks and RRFBs at the two locations and send informational news releases to the local newspaper regarding the project prior to putting the RRFBs in service.				
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	62.20%	80.90%	4.10%	17.85%	16.90%
11.	Avg Daily Traffic (ADT) Volume:	13,101	Year Collected:	2019	
12.	Total Crash Frequency:	14 crashes in 5 years	Crash Rate (MVM or MEV) (Insert from "Crash Rate" Work Sheet):	2.0	
13.	What is the posted speed limit?	30 mph	Benefit/Cost:	2.3	

PROJECT COST ESTIMATE WORKSHEET (Cost Estimates Are Required Regardless of Programming)						
PROCUREMENT	REQUESTED PROGRAMMING	Location Description	TOWN OF CAREFREE			
		Work Description	ADVERTISEMENT, SOQ REVIEW, INTERVIEWS & RELATED WORK			
		Funding Source	RSP	0	-	\$0.00
		Preferred Year to Program Work	2022			
	COST ESTIMATE FOR PROCUREMENT		UNITS	QUANTITY	UNIT COST	TOTAL
	PROCUREMENT/INSTALL	TOWN ADMINISTRATIVE COSTS	EA	1	-	\$0.00
		NO ADDITIONAL LOCAL FUNDS EXPENDED				\$ -
TOTAL - PROCUREMENT					\$ -	
DESIGN	REQUESTED PROGRAMMING (Complete if Item will be programmed in the MAG TIP)	Location Description	TOWN OF CAREFREE DRIVE - PHASE 1 AND PHASE 2			
		Work Description	TRANSPORTATION PLANNING & ENGINEERING SERVICES			
		Funding Source	Local	1	\$ 24,950.00	\$ 24,950.00
		Preferred Year to Program Work	2021 LOCAL FUNDS			
	COST ESTIMATE FOR DESIGN		UNITS	QUANTITY	UNIT COST	TOTAL
	PRELIMINARY ENGINEERING (15% plans) (Required for Budget)	Topographic Survey	LS	1	2,450.00	\$ 2,450.00
		Alternative Analysis	LS	1	4,300.00	\$ 4,300.00
		Preliminary Plan Preparation	LS	1	10,000.00	\$ 10,000.00
		Cost Estimates, Meetings, Funding Sources, etc.	LS	1	1,200.00	\$ 1,200.00
		SUBTOTAL - PRELIMINARY ENGINEERING COSTS				\$ 17,950.00
	FINAL DESIGN (30, 60, 95, 100% plans) (Required for Budget)	Plans, Specifications, Cost Estimates, Bidding	LS	1	4,750.00	\$ 4,750.00
		Bid Documents & Technical Specifications	LS	1	1,750.00	\$ 1,750.00
		Final Cost Estimates	LS	1	250.00	\$ 250.00
		Town Council Briefings & Presentation	LS	1	250.00	\$ 250.00
		SUBTOTAL - FINAL DESIGN COSTS				\$ 7,000.00
TOTAL PRELIMINARY ENGINEERING AND DESIGN COST AVAILABLE FOR PROGRAMMING					\$ 24,950.00	

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	PHASE 1, TOM DARLINGTON DR, S OF WAMPUM WAY TO N OF HO RD			
		Work Description	RAISED CROSSWALKS, RRFBS, MARKINGS, CURB/PAVEMENT RECONSTRUCT			
		Funding Source	RSP	1	205,500.00	\$ 205,500.00
		Preferred Year to Program Work	2022			
COST ESTIMATE FOR CONSTRUCTION		UNITS	QUANTITY	UNIT COST	TOTAL	
UTILITY RELOCATIONS (Required for Budget, May be 0 if no Utilities) <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	1	0.01	\$ 0.01
		Relocate/Underground 12 kv lines	LF	1	0.01	\$ 0.01
		Relocate/Underground Irrigation Canal	LF	1	0.01	\$ 0.01
		SWG Relocations	LS	1	(0.01)	\$ (0.01)
		Telephone/Cable TV Relocations	LS	1	(0.01)	\$ (0.01)
		Upgrade Railroad Crossings	LS	1	(0.01)	\$ (0.01)
SUBTOTAL – UTILITY RELOCATION COSTS					\$	0.00
CONSTRUCTION (Required for Budget)		PAVEMENT REMOVAL	SY	380	\$ 15.00	\$ 5,700.00
		CURB AND GUTTER OR SINGLE CURB REMOVAL	LF	222	\$ 10.00	\$ 2,220.00
		SIDEWALK REMOVAL	SF	445	\$ 5.00	\$ 2,225.00
		TRAFFIC SIGN REMOVAL	EA	8	\$ 100.00	\$ 800.00
		VEGETATION REMOVAL	LS	1	\$ 2,000.00	\$ 2,000.00
		DETECTABLE WARNING AREA REMOVAL	EA	2	\$ 25.00	\$ 50.00
		SLOPE AREA (CONCRETE) REMOVAL	SF	87	\$ 15.00	\$ 1,305.00
		CONCRETE SLAB REMOVAL	SF	911	\$ 10.00	\$ 9,110.00
		SAW CUT	LF	706	\$ 2.00	\$ 1,412.00
		EXCAVATION	CY	114	\$ 20.00	\$ 2,280.00
		STRIPING REMOVAL	LF	1,712	\$ 1.00	\$ 1,712.00
		CONSTRUCT CONCRETE PEDESTRIAN REFUGE AREA (4" THICKNESS)	SF	565	\$ 10.00	\$ 5,650.00
		CONSTRUCT CONCRETE PAD TO EXTEND EXISTING PEDESTRIAN AREA (4" THICKNESS)	SF	248	\$ 10.00	\$ 2,480.00
		CONSTRUCT 4" THICKNESS RAISED ASPHALT CROSSWALK PER STD DTL 7, SHT GN03	SY	72	\$ 100.00	\$ 7,200.00
		CONSTRUCT CURB & GUTTER PER MAG STD DTL 220-1 TYPE A	LF	101	\$ 25.00	\$ 2,525.00
		CONSTRUCT CURB TRANSITION (MAG DTL 221)	LF	25	\$ 25.00	\$ 625.00
		CONSTRUCT SINGLE CURB PER MAG STD DTL 222	LF	488	\$ 20.00	\$ 9,760.00
		INSTALL PEDESTRIAN DETECTABLE MAT (2 FEET WIDE)	EA	6	\$ 100.00	\$ 600.00
		CONSTRUCT SIDEWALK (4" THICKNESS)	SF	704	\$ 10.00	\$ 7,040.00
		CONSTRUCT ASPHALT PAVEMENT (MATCH EXISTING SECTION)	SF	1,390	\$ 10.00	\$ 13,900.00
		INSTALL ALTERNATIVE RED/GRAY HEXAGONAL PAVER	SF	1,132	\$ 10.00	\$ 11,320.00
		INSTALL RRFB SYSTEM (EACH POLE ASSEMBLY)	EA	2	\$ 12,000.00	\$ 24,000.00
		INSTALL PEDESTRIAN TYPE "PB" POLE PER ADOT T-SL 4.27	EA	3	\$ 800.00	\$ 2,400.00
		INSTALL PEDESTRIAN PUSH BUTTON (APS) AND SIGN	EA	3	\$ 500.00	\$ 1,500.00
		PEDESTRIAN SIGNAL HEAD (COMPLETE COUNTDOWN)	EA	4	\$ 750.00	\$ 3,000.00
		TRENCH, INSTALL OF (3") PVC CONDUIT, & BACKFILL	LF	186	\$ 12.00	\$ 2,232.00
		ELECTRICAL WIRING (CONNECTIONS BETWEEN CRFB'S AND MEDIAN PEDESTRIAN PUSH BUTTONS)	LS	1	\$ 1,000.00	\$ 1,000.00
		INSTALL DYNAMIC SPEED FEEDBACK SIGN	EA	1	\$ 8,000.00	\$ 8,000.00
		INSTALL RPMS (ADOT TYPE "D" & "G")	LS	1	\$ 794.00	\$ 794.00
		INSTALL WHITE THERMOPLASTIC PAVEMENT MARKING	SF	1,656	\$ 3.00	\$ 4,968.00
		INSTALL YELLOW THERMOPLASTIC PAVEMENT MARKING	SF	214	\$ 3.00	\$ 642.00
		INSTALL WHITE PAVEMENT LEGEND	EA	4	\$ 300.00	\$ 1,200.00
		INSTALL WHITE PAVEMENT SYMBOL	EA	12	\$ 300.00	\$ 3,600.00
	INSTALL TRAFFIC SIGN	EA	3	\$ 250.00	\$ 750.00	
	INSTALL TRAFFIC SIGN POST AND FOUNDATION	EA	2	\$ 500.00	\$ 1,000.00	

PROJECT COST ESTIMATE WORKSHEET
(Cost Estimates Are Required Regardless of Programming)

		INSTALL NEW LANDSCAPING	LS	1	\$ 5,000.00	\$ 5,000.00
		SUBTOTAL - CONSTRUCTION COST				\$ 150,000.00
MOBILIZATION AND ADMINISTRATION COSTS		CONTRACTOR MOBILIZATION (Typically 8% of construction cost)			8%	\$ 12,000.00
		TRAFFIC CONTROL (0-8% of construction cost)			6%	\$ 9,000.00
		CONSTRUCTION CONTINGENCIES (Typically 5% of construction cost)			5%	\$ 7,500.00
		CONSTRUCTION ADMINISTRATION (Averaging 18% of construction cost)			18%	\$ 27,000.00
		SUBTOTAL - MOBILIZATION & ADMINISTRATION COSTS				\$ 55,500.00
		TOTAL UTILITIES, CONSTRUCTION AND MOBILIZATION FOR PROGRAMMING				\$ 205,500.00
TOTAL COST ESTIMATE						\$ 230,450

Budget and Signature Page

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

The Town of Carefree has completed the design and 60% plans for the project using local funds. The Town is requesting MAG RSP funds to construct the initial phase of the project in the amount of \$205,500. The Town will request MAG add this project to the work program for the Town, with Phase 2 (approximately \$250,000) in the following year.

Phase	Location Description	Work Description	Year to be Programmed	Funding Source	Amount
Construction	PHASE 1, TOM DARLINGTON DR, S OF WAMPUM WAY TO N OF HO RD	RAISED CROSSWALKS, RRFBS, MARKINGS, CURB/PAVEMENT RECONSTRUCT	2022	RSP	\$ 205,500
Total Cost					\$ 230,450

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: 

Gary Neiss

Title: **Town Administrator**

10/01/2020

RSP Application Benefit-Cost Tabulation Sheet

Agency:	Carefree	Title of Project:	PEDESTRIAN CROSSWALKS IMPROVEMENTS PROJECT
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Annual Benefit Tabulation

Severity	Annual Average	Estimated CRF* Reduction	Total Reduction	Unit Cost	Annual Benefit
Fatal	0.00	69%	0.00	\$9,515,371	\$0
Incapacitating Injury	0.00	69%	0.00	\$550,499	\$0
Non-Incapacitating	0.20	69%	0.14	\$149,132	\$20,700
Possible Injury	0.60	69%	0.42	\$103,145	\$42,950
Total Annual Benefits					\$63,649

Costs

Total Project Cost	\$230,450
Project Life (years)	15
Interest Rate (%)	8%
Capital Recovery Factor	0.1168
Annual Construction Cost	\$26,923
Annual Maintenance Cost	\$250.00
Total Annual Costs	\$27,173

Benefit / Cost

Annual Benefit	Annual cost	Benefit / Cost Ratio
\$63,649	\$27,173	2.3

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

TRAFFIC CALMING, #131, CRF 33, CMF 0.67, CRASH TYPES: ALL
 INSTALL RAISED PEDESTRIAN CROSSWALK, #135, CRF 36, CMF 0.64, CRASH TYPES: ALL
 INSTALL RAISED MEDIAN, #9014, CRF 28.6, CMF 0.714, CRASH TYPES: ALL

Carfax			PEDESTRIAN CROSSWALKS IMPROVEMENTS PROJECT										RSP App VI, 2019																										
Incident ID	Incident Date & Time	Incident On Road	Incident Crossing Features	Incident Other	Incident Injury Severity Description	Incident First Responded Description	Incident Collision Howver Desc	Incident Light Condition Desc	Incident Weather Desc	Incident Intersection Type Desc	Incident Junction Related Desc	Incident Traffic Way Type Desc	Unit Travel Direction Desc	Unit Action Desc	Unit Road Condition Desc	Unit Surface Condition Desc	Unit Evt Condition Desc	Unit Defect Desc	Unit Number	Unit Event Response Desc	Unit Event Response Desc	Unit Event Response Desc	Unit Event Response Desc	Unit Event Response Desc	Person Type Desc	Person Status Desc	Person Violation Desc	Person Physical Desc	Person Physical Desc	Person Physical Desc	Person Physical Desc	Person Physical Desc	Person Physical Desc	Person Physical Desc	Person Physical Desc	Person Physical Desc			
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	31	32	33	34	35	36	37			
291421	1/21/2015 11:13:00 AM	07 TOM GARLINGTON RD	Wumpup Way		0 Possible Injury	Motor Vehicle In Transport	Angle (Front To Side) Other Than Left Turn	Daylight	Clear	Roundabout	Intersection Non-Interchange	Two Way Divided Positive Median Barrier	3 - East	Going Straight Ahead	No Contributing Circumstances	Dry	No Contributing Circumstances	No Contributing Circumstances			Motor Vehicle In Transport				Driver	Shoulder And Lap Belt	Failed To Yield Right Way	0 - No Apparent Influence											
289941	5/6/2015 11:4:00 PM	07 TOM GARLINGTON RD	Cave Creek Rd		100 No Injury	Motor Vehicle In Transport	Left Turn	Daylight	Clear	N/A At An Intersection	Not Junction Related	Two Way Divided Positive Median Barrier	2 - South	Making Left Turn	No Contributing Circumstances	Dry	No Contributing Circumstances	No Contributing Circumstances			Motor Vehicle In Transport				Driver	Shoulder And Lap Belt	Made Improper Turn	0 - No Apparent Influence											
299269	9/19/2015 6:28:09 PM	07 TOM GARLINGTON RD	Cave Creek Rd		200 No Injury	Free Bush Slump Standing	Single Vehicle	Dark	Clear	N/A At An Intersection	Not Junction Related	Two Way Divided Positive Median Barrier	90 -	Unknown	Unknown	Unknown	Unknown	Unknown			Ran Off Road Left	Free Bush Slump Standing			Driver	Unknown	Unknown												99 - Unknown
187196	12/22/2015 12:10:00 PM	07 TOM GARLINGTON RD	Wumpup Way		10 No Injury	Other Fixed Object	Single Vehicle	Daylight	Rain	Traffic Circle	Crossover Related	Two Way Divided Positive Median Barrier	1 - North	Making Left Turn	No Contributing Circumstances	Wet	No Contributing Circumstances	No Contributing Circumstances			Other Fixed Object	Other Fixed Object			Driver	Shoulder And Lap Belt	Speed To Fast For Conditions	0 - No Apparent Influence											
394331	3/22/2016 3:55:08 PM	07 TOM GARLINGTON RD	Wumpup Way		0 Possible Injury	Embankment	Single Vehicle	Daylight	Clear	T Intersection	Intersection Non-Interchange	Two Way Divided Positive Median Barrier	4 - West	Going Straight Ahead	Other	Dry	Other	Other			Motor Vehicle In Transport				Driver	Shoulder And Lap Belt	Other											2 - Physical Impairment	
387182	4/24/2016 1:15:08 PM	07 TOM GARLINGTON RD	Ed Inverly Way		20 No Injury	Other Non Fuel Object	Single Vehicle	Daylight	Clear	T Intersection	Intersection Non-Interchange	Two Way Not Divided	1 - North	Making Left Turn	Other	Dry					Other Non Fuel Object				Driver	Shoulder And Lap Belt	No Improper Action	0 - No Apparent Influence											
321834	4/6/2017 8:46:00 PM	07 TOM GARLINGTON RD	Lucky Ln		100 No Injury	Curb	Single Vehicle	Daylight	Clear	Roundabout	Intersection Non-Interchange	Two Way Divided Positive Median Barrier	4 - West	Going Straight Ahead	Other	Dry	Other	Other			Ran Off Road Left	Curbside Rubover	Curb		Driver	Shoulder And Lap Belt	No Improper Action	0 - No Apparent Influence											
321894	4/12/2017 10:04:00 AM	07 TOM GARLINGTON RD	Cavertree Dr		0 No Injury	Motor Vehicle In Transport	Left Turn	Daylight	Clear	Intersection As Part Of Interchange	Other Part Of Interchange	Two Way Not Divided	4 - West	Other		Dry	Minor Vehicle				Motor Vehicle In Transport	Fire Extinguisher			Driver	Lap Belt	Failed To Yield Right Of Way	0 - No Apparent Influence											
328484	10/26/2017 2:38:00 PM	07 TOM GARLINGTON RD	Wumpup Way		0 No Injury	Motor Vehicle In Transport	Angle (Front To Side) Other Than Left Turn	Daylight	Clear	Traffic Circle	Intersection Non-Interchange	Two Way Divided Positive Median Barrier	4 - West	Going Straight Ahead	No Contributing Circumstances	Dry	No Contributing Circumstances	No Contributing Circumstances			Motor Vehicle In Transport				Driver	Lap Belt	Speed To Fast For Conditions	0 - No Apparent Influence											
429171	11/12/2017 6:04:09 PM	07 TOM GARLINGTON RD	No Rd		100 Possible Injury	Free Bush Slump Standing	Single Vehicle	Dark Not Lighted	Clear	N/A At An Intersection	Not Junction Related	Two Way Divided Positive Median Barrier	2 - South	Going Straight Ahead	No Contributing Circumstances	Dry	No Contributing Circumstances	No Contributing Circumstances			Ran Off Road Right	Free Bush Slump Standing	Free Bush Slump Standing	Other Non Fuel Object	Driver	Unknown	Unknown												4 - Alcohol
393256	12/4/2017 6:10:00 PM	07 TOM GARLINGTON RD	Wumpup Way		0 No Injury	Motor Vehicle In Transport	Left Turn	Dark Lighted	Rain	Roundabout	Intersection Non-Interchange	Two Way Divided Positive Median Barrier	4 - West	Making Left Turn	No Contributing Circumstances	Wet	No Contributing Circumstances	No Contributing Circumstances			Motor Vehicle In Transport				Driver	Shoulder And Lap Belt	Disengaged Traffic Signal	0 - No Apparent Influence											
118490	4/5/2018 12:12:00 PM	07 TOM GARLINGTON RD	Wumpup Way		0 No Injury	Motor Vehicle In Transport	Other	Daylight	Clear	Roundabout	Intersection Non-Interchange	Two Way Divided Positive Median Barrier	1 - North	Going Straight Ahead	No Contributing Circumstances	Dry	No Contributing Circumstances	No Contributing Circumstances			Motor Vehicle In Transport				Driver	Shoulder And Lap Belt	Unknown	0 - No Apparent Influence											
344142	11/13/2018 6:58:00 PM	07 TOM GARLINGTON RD	Wumpup Way		0 No Injury	Motor Vehicle In Transport	Left Turn	Dark Unknown Lighting	Clear	Not Reported	Intersection Related	Two Way Divided Positive Median Barrier	1 - North	Going Straight Ahead	No Contributing Circumstances	Dry	No Contributing Circumstances	No Contributing Circumstances			Motor Vehicle In Transport				Driver	Shoulder And Lap Belt	Unknown	0 - No Apparent Influence											
311851	5/19/2019 7:44:00 PM	07 TOM GARLINGTON RD	Wumpup Way		0 Suspected Minor Injury	Motor Vehicle In Transport	Sideview Opposite Direction	Daylight	Clear	Not Reported	Other	Two Way Not Divided With Continuous Left Turn Lane	4 - West	Going Straight Ahead	No Contributing Circumstances	Dry	No Contributing Circumstances	No Contributing Circumstances			Motor Vehicle In Transport				Driver	Shoulder And Lap Belt	Failed To Yield Right Of Way	0 - No Apparent Influence											

