City of Phoenix
STREET TRANSPORTATION DEPARTMENT

September 20, 2017

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:	
Agency:	City of Phoenix
Project Name:	Citywide Negative Offset Median Improvements
Project Location:	Citywide: Vineyard Rd/51st Ave, Peoria Ave/43rd Ave, Bell Rd/7th Ave, Greenway Pkwy/16th St, Greenway Rd/40th St, Greenway Rd/29th St

Dear Ms. Aglan-Swick:

The City of Phoenix is submitting herewith a project application for state Highway Safety Improvement Program (HSIP) funding. This road safety improvement project was identified through the MAG regional network crash data screening process and meets all requirements of Title 23. The proposed request is for citywide intersection improvements for raised median modifications to improve the negative offsets at left-turn lanes at the 6 intersections listed above and does not include any non-infrastructure funding request. Pulling back raised medians and restriping the left-turn lanes with a carrot to encourage left-turning vehicles to move to the left helps improve sight distance past oncoming left-turning vehicles, which in turn reduces the risk of left-turn crashes. Four of the intersection projects also include removing pedestal mounted left-turn signals from the modified medians and installing mast arm signals, which improves signal visibility (Bell/7th, Greenway/16th, Greenway/29th, Greenway/40th). Consultants and contractors will conduct the design and construction of this project. There will be ground disturbing activities, although utility relocations are not anticipated.

These 6 intersections experienced 5 fatal and 4 serious injury left-turn crashes during the most recent 5-year period (2011-2015). With a Crash Reduction Factor (CRF) of 38% obtained from the CMF Clearinghouse for left-turn crashes when improving negative offsets at left-turn lanes, and a CRF of 29% for converting signals from pedestal mounted to mast arm, giving a combined CRF of 52%, the City could see a 5-year reduction of 2.6 fatal and 2.1 serious injury crashes.

The City of Phoenix has determined that, in accordance with 23 USC 148(a)(4))(A), this project is consistent with MAG's STSP and the State's 2014 SHSP. It supports MAG's "Eliminate Death and Serious Injury Related to Intersections" action area and the State's "Reduce severity and frequency of intersection crashes through geometric improvements" emphasis area strategy.
B/C Ratio = 19.0
SHSP Score = 494.0

The City of Phoenix has estimated the total project cost of this project to be $1,504,712. Of that amount, we request ADOT determine if $961,181 is HSIP eligible, with $58,099 being local match and $485,432 being other funds. In accordance with Title 23, the Federal share for safety improvement items are eligible to be funded at 94.3% Federal share per 23 U.S.C. 120(c) as described in Code of Federal Register 23 CFR Part 924. Therefore, the City of Phoenix proposes committing the 5.7% local match in the amount of $58,099. Furthermore, the City is not requesting reimbursement for staff time for installation. Table x summarizes the anticipated cost estimate projected for this project.

200 West Washington Street, Fifth Floor, Phoenix, Arizona 85003-1611 • 602-262-6284 • Fax: 602-495-2016 • TTY: Use 7-1-1
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RE: Highway Safety Improvement Program (HSIP) Project Determination and Application
COG/MPO:
Agency: City of Phoenix

The City of Phoenix 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 provided or secured by the City as appropriate to cover the additional costs or the project will have to be withdrawn and resbumitted in the next call-for-projects.

The City 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 countermeasures on fatal and serious injury crashes.

The City of Phoenix 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 will maintain the countermeasure at or above the standard to which it was installed.

If you have any questions, please contact me at 602-262-4613 or email carl.langford@phoenix.gov.

Sincerely,

Carl Langford, PE
Safety and Neighborhood Traffic Engineer
City of Phoenix Street Transportation Department
200 W. Washington St
Phoenix, AZ 85003

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

ADOT HIGHWAY SAFETY IMPROVEMENT PROGRAM APPLICATION

Agency:	**City of Phoenix**	**Title of Project:**	**Citywide Negative Offset Median Improvements**
County:	**Maricopa**	**COG/MPO:**	**MAG**
District:	**Central**	**HSIP Funds:**	☑ STATE ☐ LOCAL

Contact:	**Phone:**	**E-Mail:**
Carl Langford	(602) 262-4613	carl.langford@phoenix.gov

Type of Safety Improvement:	**Spot:** ☑ YES ☐ NO	**Systemic:** ☐ YES ☐ NO
Mark all that apply to your project:	☑ Design ☑ Const. ☐ Procurement ☐ Non-Infrastructure	

Anticipated Total Cost Estimate:	**$1,504,712.00**	
Anticipated dollar amount of HSIP Funding:	**$961,181.00**	
Anticipated Dollar amount of Local Match (5.7%) (5.66%):	**$58,099.00**	
Anticipated Dollar amount of Other:	**$485,432.00**	
Funding Source: ☐ 100% HSIP ☑ 94.3% HSIP ☐ 94.34% HSIP	**Cost Estimate Tab:**	8. 94.3% Spot Improvement
Administration of Project: **Agency:** ☑ YES ☐ NO	**ADOT:** ☐ YES ☑ NO	
Name and Title of COG/MPO Representative:	Margaret Boone	

Basic Project Information

	Anticipated Design Year (Construction year cannot be the same):	☐ FY18 (Local) ☑ FY19
	If additional ROW is needed, what FY is purchase anticipated?:	☐ FY19 ☐ FY20
	Anticipated Construction Year:	☐ FY19* ☑ FY20
1.	**Have lower cost countermeasures been considered or implemented?**	☐ YES ☑ NO
1a.	**If "Yes", describe:** **If "No", explain why not:**	**Funding Issues**
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.	Improving sight distance for left-turning motorists by making raised median modifications to eliminate the negative offset in the left-turn lanes. Removing median signal poles and installing poles with mast arms.	
4.	**Describe the location of this safety project:**	

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	District:	**Central**	**HSIP Funds:**	☑ STATE ☐ LOCAL
4a.	Citywide: Vineyard Rd/51st Ave, Peoria Ave/43rd Ave, Bell Rd/7th Ave, Greenway Pkwy/16th St, Greenway Rd/40th St, Greenway Rd/29th St			
5.	**What crash data screening method was used to identify this project?**			
5a.	Analyzed left-turn crashes (2011-2015) in MAG region at signalized intersections			
6.	**What is the safety justification for the proposed project?**			
6a.	The CMF Clearinghouse assigns a crash reduction factor of 38% for left-turn crashes for improving left-turn lane offsets to a positive offset, which this median modification project will provide. Replacing pedestal mounted signals with signals on mast arms provides a 29% crash reduction. The combined crash reduction factor is 56%.			
7.	**Will there be ground disturbing activities?**		☑ YES	☐ NO
8.	**Is project within applicants permanent ROW?**		☑ YES	☐ NO
8a.	**If NO please explain:**			
9.	**Will any temporaty right-of-way acquisitions be required?**		☐ YES	☑ NO
10.	**Will there be any utility relocation needed?**		☐ YES	☑ NO
10a.	**If YES please explain:**			
11.	**Does Section 4(f) apply to any portion of this project?**		☐ YES	☑ NO
11a.	**If YES please explain:**			

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	District:	**Central**	**HSIP Funds:**	☑ STATE ☐ LOCAL	
12.	**Are there any other issues that may impact or delay development or construction of this project?**			☐ YES	☑ NO
12a.	**If YES please explain:**				
13.	**Is this project in compliance with revised ADA Standards?**			☑ YES	☐ NO
13a.	**If NO please explain:**				
14.	**Does the project support Arizona's Strategic Highway Safety Plan?**			☑ YES	☐ NO
15.	**Are there any Studies, RSA's or Other evaluations that support this project?**			☑ YES	☐ NO
16.	**HSIP Roadway Functional Classification:**		Urban Principal Arterial - Other		
17.	**Average Daily Traffic Volume and Year Collected:**		**ADT:**	**Year:**	
18.	**What is the source of ADT?:**				
19.	**What is the posted speed limit?**				
20.	**Detailed engineer's cost estimate attached:**			☑ YES	☐ NO

"Systemic" Safety Project

21.	**Completed B/C Ratio Tabulation Sheet Attached (Required):**		☐ YES	☐ NO
22.	**Most current 5 Years Crash Data from ADOT ALISS database sorted by year & severity (required):**		☐ YES	☐ 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)**		☐ YES	☐ NO
25.	**If purchasing equipment or materials, who will install?**	☐ Town/City ☐ County ☐ Contractor ☐ Tribe		
26.	**Does the project require proprietary Items (23CFR 635.411)?:**		☐ YES	☐ NO
27.	**Is a list of locations for systemic projects provided on the attached form?**		☐ YES	☐ NO
28.	**How are (will) the proposed locations be prioritized for replacement? (explain below)**			

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District:	**Central**	**HSIP Funds:**	☑ STATE ☐ LOCAL

28a.			
29.	**Are the supporting structures in good condition, meet local standards and have an anticipated service life longer than the countermeasure being installed?**		☐ YES ☐ NO

"Spot" Improvement Projects Only

30.	**Completed B/C Ratio Tabulation Sheet Attached (required):**		☑ YES ☐ NO
31.	**Is the most current 5 Years Crash Data from ADOT ALISS database sorted by year & severity attached and in correct format? (required):**		☑ YES ☐ NO
32.	**What are the inclusive dates of the crash data?**	**2011-2015**	
	Have all crashes that will not be influenced by this countermeasure been deleted from the crash list? (pedestrian, pedalcycle etc. as applicable)		☑ YES ☐ NO
33.	**Have any infrastructure changes occurred within the work limits of this project during the years the crash data covers?**		☐ YES ☑ NO
34.	**If YES please explain:**		
35.	**Project vicinity map is provided:**		☑ YES ☐ NO
36.	**Project work limits map is provided:**		☐ YES ☐ 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.:**		
37c.	**Which EA Strategy supports the second EA?**		

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	District:	**Central**	**HSIP Funds:**	☑ STATE ☐ LOCAL	
37d.	**Does this project support a third SHSP EA? If so, which EA.:**				
37e.	**Which EA Strategy supports the third EA?**				
38.	**Does this project support one of the nine FHWA proven countermeasures?:**			☐ YES	☑ NO
38a.	**If so, which countermeasure?:**				
39.	**Does this project support one of the three Arizona Focus Areas?:**			☑ YES	☐ NO
39a.	**If so, which focus area?:**	**Intersection**			
40.	**Which HSIP Improvement Category does this project support?:**	**Intersection_Geometry**			
40a.	**Which HSIP Improvement Sub-Category does this project support?:**	Auxiliary lanes – modify left-turn lane offset			
41.	**Does your COG/MPO have a Strategic Transportation Safety Plan (STSP)?:**			☑ YES	☐ NO
41a.	**If "YES", does this project support an Emphasis Area in the COG/MPO STSP?:**			☑ YES	☐ 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.**				
41d.	**Rational**				
42.	**Are any temporaty safety countermeasures needed prior to this permanent solution being installed?**			☐ YES	☑ NO
42a.	**If yes, please explain:**				

B/C Ratio and SHSP Score

43.	**The calculated B/C Ratio is:**	**19.00**	**The SHSP Score is:**	**494.00**

HIGHWAY SAFETY IMPROVEMENT PROGRAM
APPLICATION - COST ESTIMATE

Agency:	City of Phoenix		Name of Project:	Citywide Median Improvements	Spot Improvement with Non-HSIP construction included				

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%		
Design:			1	$165,000.00	$ 165,000.00			$165,000.00	$ 165,000.00
ROW Acquisition:			1		$ -			$ -	$ -
Environmental Clearance			1	$ 100,000.00	$ 100,000.00			$100,000.00	$ 100,000.00
ADOT Admin Costs:			1	$ 10,000.00	$ 10,000.00			$10,000.00	$ 10,000.00
Design Sub-Total					**$ 275,000.00**		**$ -**	**$ 275,000.00**	**$ 275,000.00**
Construction:	Median modifications	EA	11	$ 20,000.00	$ 220,000.00	$ 207,460.00	$ 12,540.00	$ -	$ 220,000.00
Construction:	Remove median signal poles and install new poles with longer mast arms	EA	8	$ 50,000.00	$ 400,000.00	$ 377,200.00	$ 22,800.00	$ -	$ 400,000.00
Construction:			0		$ -	$ -	$ -	$ -	$ -
HSIP Eligible Sub-Total			0		$ 620,000.00	$ 584,660.00	$ 35,340.00	$ -	$ 620,000.00
Construction:	ADA Ramps	EA	16	$ 8,000.00	$ 128,000.00			$ 128,000.00	$ 128,000.00
Construction:					$ -			$ -	$ -
Non-HSIP Eligible Sub-Total					$ 128,000.00			$ 128,000.00	$ 128,000.00
Construction Sub-Total					$ 748,000.00	$ 584,660.00	$ 35,340.00	$ 128,000.00	$ 748,000.00
Traffic Control:			**10.00%**		$ 74,800.00	$ 58,466.00	$ 3,534.00	$ 12,800.00	$ 74,800.00
Mobilization:			**10.00%**		$ 74,800.00	$ 58,466.00	$ 3,534.00	$ 12,800.00	$ 74,800.00
Construction Sub-Total					$ 897,600.00	$ 701,592.00	$ 42,408.00	$ 153,600.00	$ 897,600.00
Construction Admin :			**26.00%**		$ 233,376.00	$ 182,413.92	$ 11,026.08	$ 39,936.00	$ 233,376.00
Contingencies :			**5.00%**		$ 44,880.00	$ 35,079.60	$ 2,120.40	$ 7,680.00	$ 44,880.00
Post Design:			**1.00%**		$ 8,976.00	$ 7,015.92	$ 424.08	$ 1,536.00	$ 8,976.00
Communications:			**5.00%**		$ 44,880.00	$ 35,079.60	$ 2,120.40	$ 7,680.00	$ 44,880.00
					$ -	$ -	$ -	$ -	$ -
Post Sub-Total					$ 332,112.00	$ 259,589.04	$ 15,690.96	$ 56,832.00	$ 332,112.00
Post Const Sub-Total					**$ 1,229,712.00**	**$ 961,181.04**	**$ 58,098.96**	**$ 210,432.00**	**$ 1,229,712.00**
TOTAL REQUEST					**$ 1,504,712.00**	**$ 961,181.04**	**$ 58,098.96**	**$ 485,432.00**	**$ 1,504,712.00**

Comments:

Required for all HSIP Applications

Agency:	City of Phoenix	Title of Project:	Citywide Negative Offset Median Improvements

Benefit / Cost Ratio Tabulation

Annual Benefit Tabulation

Severity	Annual Average	Estimated **CRF*** Reduction	Total Reduction	Unit Cost	Annual Benefit
Fatal	**1.00**	**52%**	0.52	$5,800,000	$3,016,000
Incapacitating Injury	**0.80**	**51%**	0.41	$400,000	$163,200
				Total Annual Benefits	$3,179,200

Costs

Total Project Cost	$1,504,712
Project Life (years)	17
Interest Rate (%)	8%
Capital Recovery Factor	0.1096
Annual Construction Cost	$164,961
Annual Maintenance Cost	$1,800.00
Total Annual Costs	$166,761

Benefit / Cost

Annual Benefit	Annual cost	Benefit / Cost Ratio
$3,179,200	$166,761	19.0

***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**

USE THIS TABLE TO CALCULATE "SHSP SCORE" BY COMBINING B/C RATIO AND IDENTIFIED SHSP EMPHASIS AREAS INCLUDED IN PROJECT

SYSTEMIC AND SITE SPECIFIC

FHWA FOCUS AREAS

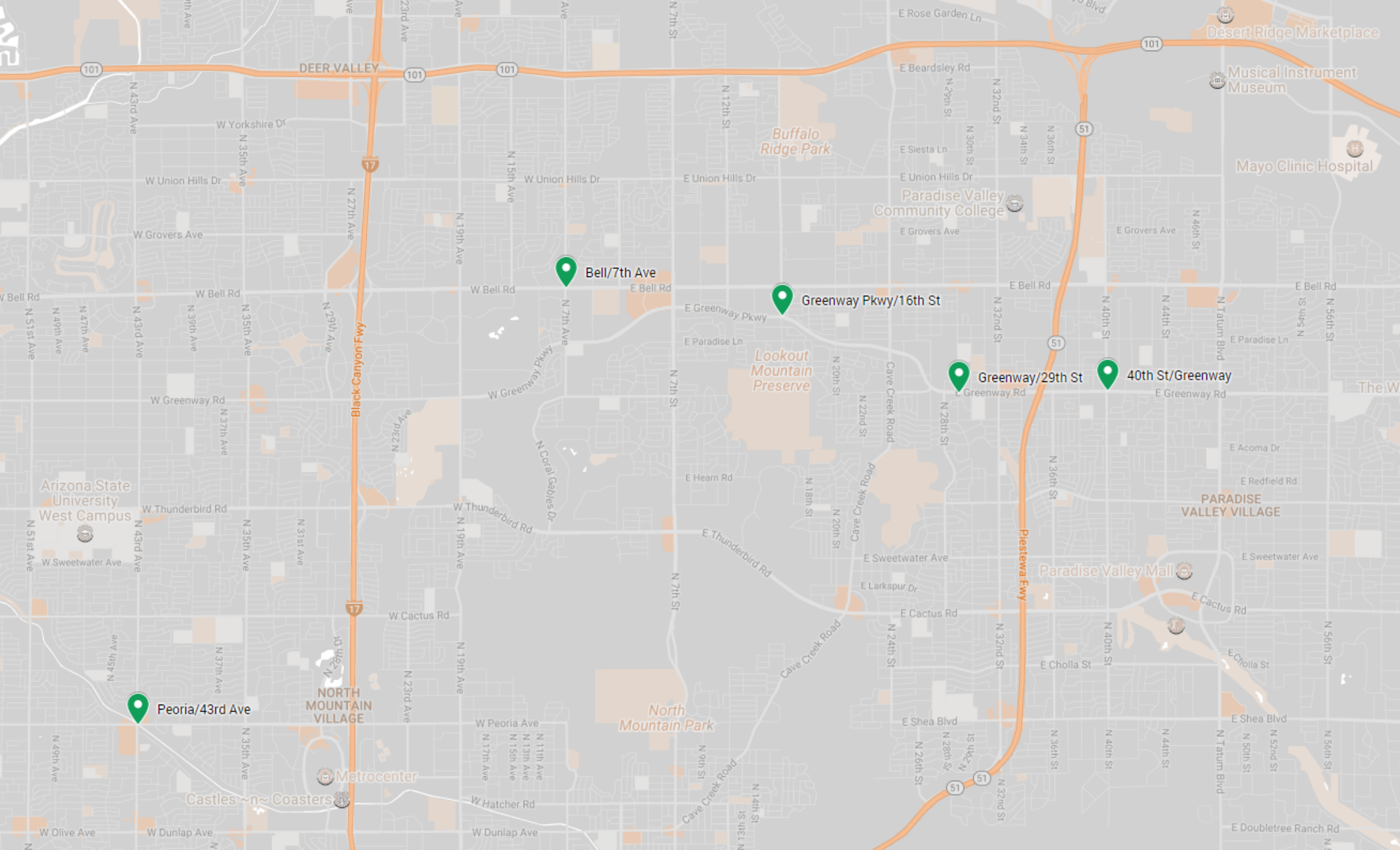
SHSP Top Focus Emphasis Areas					Road Departure	Intersection				Pedestrian				
Speed	**Impair ment**	**Un-restrained**	**MC**	**Distracted**	Lane Departure	Intersection	YOUNG Driver	OLD Driver	BIKES	PED	WEATHER	Work Zone	TRUCKS	ANIMAL
Speed Limits			HF	Rumble Strips	Rumble Strips	Signal Timing		Delineation	Bike Facilities	Mid-Block Crossings	Storm Detection	Include Bikes and Peds in WZTC	Rumble Strips	HF
Traffic Calming			Barrier Design		Delineation	Left Turn Phasing		Signing, Lighting	Traffic Calming	MUTCD Ped Timing	DMS Notices	4e TM Plans		Speed Enforcement
Variable Speed Limits			Shoulders		Signing	Clearance Times			Bike Friendly Rumble Strips	Countdown Signals	Signal Timing Plans	Temporary Rumble Strips		Crossings
Safety Corridors			Roundabouts		Shoulders	Dilemna Zone Detection			Bike Boulevards	Bus Stop Locations	HF			Active Warning Systems
			Left Turn Phasing		Speed Limits	Roundabouts			Signing Striping	ADA	Shoulders			Signage
					Flatten Side Slopes	R/R Preemption			Bike Ways	PHB (Hawk)	Pull Outs			Fencing
					Clear Zone	R/R Siging, Marking, Lighting			Crossing Treatments	Lighting	ITS detection			Cattle Guards
					Barrier					Speed Limits				
INDICATE SHSP EMPHASIS AREA with "x" (Max 3) →										Traffic Calming				
						X								
	0	0	0	0	0	0	26	0	0	0	0	0	0	0	0
K+A % from SHSP	24	24	20	13	2	30	26	22	13	3	9	2	1	9	1
K+A: 26	24.0	24.0	20.0	13.0	2.0	30.0	26.0	22.0	13.0	3.0	9.0	2.0	1.0	9.0	1.0

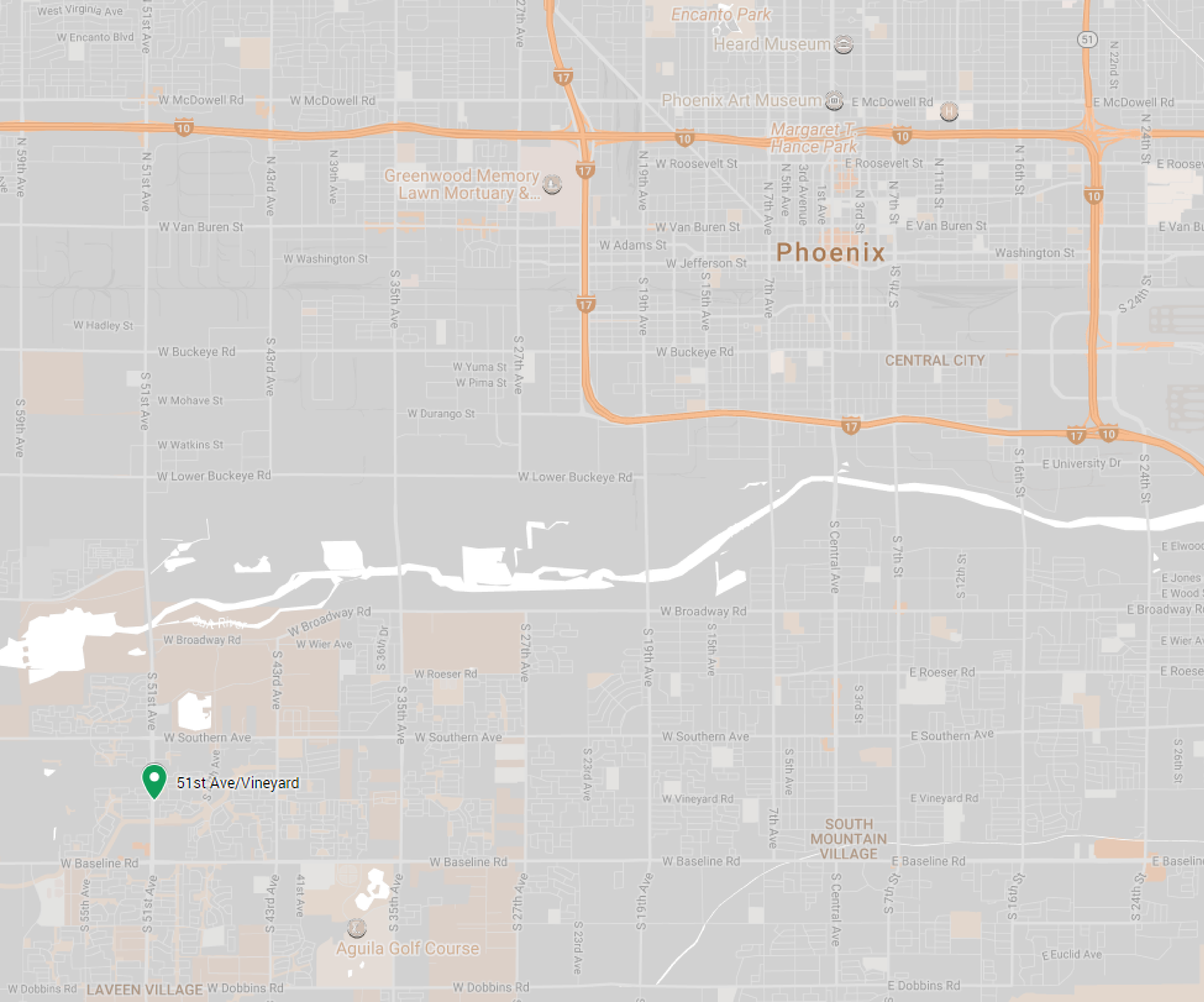
B/C Ratio:	**19.00**
SHSP Score:	**494.0**

Id	Date	Date	Time	Onroad	CrossingFeature	Offset	InjurySeverity	FirstHarmful	CollisionManner Desc	LightCondition	Weather	IntersectionTypeD esc	JunctionRelationD esc	TrafficWayType	UnitTravelDirecti onDesc
2930839	11/30/2014 8:28	11/30/2014	8:28:00 AM	BELL RD	7TH AVE	0.00000	FATAL	MOTOR_VEHICLE_IN_ TRANSPORT	LEFT_TURN	DAYLIGHT	CLEAR	FOUR_WAY_INTE RSECTION	INTERSECTION_N ON_INTERCHANG E	UNKNOWN	WEST
2610647	2/28/2012 10:13	2/28/2012	10:13:00 AM	7TH AVE	BELL RD	0.01458	INCAPACITATING _INJURY	Not Reported	LEFT_TURN	DAYLIGHT	CLEAR	FOUR_WAY_INTE RSECTION	INTERSECTION_R ELATED_NON_IN TERCHANGE	TWO_WAY_NOT_ DIVIDED_WITH_ CONTINUOUS_LE FT_TURN_LANE	NORTHEAST
2782718	12/7/2013 8:40	12/7/2013	8:40:00 AM	GREENWAY PKWY	16TH ST	0	FATAL	MOTOR_VEHICLE_IN_TRA NSPORT	LEFT_TURN	DAYLIGHT	CLEAR	FOUR_WAY_INTERS ECTION	INTERSECTION_NO N_INTERCHANGE	UNKNOWN	WEST
2795687	10/18/2013 15:52	10/18/2013	3:52:00 PM	GREENWAY PKWY	16TH ST	0	INCAPACITATING_IN JURY	MOTOR_VEHICLE_IN_TRA NSPORT	LEFT_TURN	DAYLIGHT	CLEAR	FOUR_WAY_INTERS ECTION	INTERSECTION_INT ERCHANGE	UNKNOWN	SOUTHWEST
2853486	12/30/2013 17:05	12/30/2013	5:05:00 PM	GREENWAY RD	29TH ST	0.00000	FATAL	MOTOR_VEHICLE_IN_ TRANSPORT	LEFT_TURN	DARK_LIGHTE D	CLEAR	FOUR_WAY_INTE RSECTION	INTERSECTION_N ON_INTERCHANG E	TWO_WAY_DIVI DED_POSITIVE_ MEDIAN_BARRIE R	WEST
2782139	12/3/2013 14:49	12/3/2013	2:49:00 PM	GREENWAY RD	40TH ST	0.00000	INCAPACITATING _INJURY	Not Reported	LEFT_TURN	DAYLIGHT	CLEAR	FOUR_WAY_INTE RSECTION	INTERSECTION_N ON_INTERCHANG E	TWO_WAY_DIVI DED_POSITIVE_ MEDIAN_BARRIE R	EAST
2699811	12/26/2012 16:52	12/26/2012	4:52:00 PM	40TH ST	GREENWAY RD	0.00000	FATAL	MOTOR_VEHICLE_IN_ TRANSPORT	LEFT_TURN	DAYLIGHT	UNKNOWN	FOUR_WAY_INTE RSECTION	INTERSECTION_N ON_INTERCHANG E	UNKNOWN	WEST
3025725	9/27/2015 16:34	9/27/2015	4:34:00 PM	43RD AVE	PEORIA AVE	0.00000	FATAL	MOTOR_VEHICLE_IN_ TRANSPORT	LEFT_TURN	DAYLIGHT	UNKNOWN	FOUR_WAY_INTE RSECTION	INTERSECTION_N ON_INTERCHANG E	UNKNOWN	SOUTH
3024438	12/14/2015 6:38	12/14/2015	6:38:00 AM	43RD AVE	PEORIA AVE	0.00000	INCAPACITATING _INJURY	Not Reported	LEFT_TURN	DAWN	RAIN	FOUR_WAY_INTE RSECTION	INTERSECTION_I NTERCHANGE	UNKNOWN	SOUTH
2646933	7/30/2012 8:29	7/30/2012	8:29:00 AM	43RD AVE	PEORIA AVE	0.00000	INCAPACITATING _INJURY	Not Reported	LEFT_TURN	DAYLIGHT	CLOUDY	FOUR_WAY_INTE RSECTION	INTERSECTION_R ELATED_NON_IN TERCHANGE	TWO_WAY_NOT_ DIVIDED	EAST
3045518	4/24/2015 15:21	4/24/2015	3:21:00 PM	51ST AVE	VINEYARD RD	0.00000	FATAL	MOTOR_VEHICLE_IN_ TRANSPORT	LEFT_TURN	DAYLIGHT	CLEAR	FOUR_WAY_INTE RSECTION	INTERSECTION_N ON_INTERCHANG E	TWO_WAY_DIVI DED_POSITIVE_ MEDIAN_BARRIE R	SOUTH

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.

UnitActionDesc	UnitRoadCondition Desc1	SurfaceCondition	EnvCondition	UnitDefect	UnitNumber	UnitEvent Sequence	UnitEvent Sequence	UnitEvent Sequence	UnitEvent Sequence	PersonSafety Device	PersonViolation	PersonPhysical	PersonPhysical
MAKING_LEFT_TURN	NR	DRY	NO_CONTRIBUTING_CIRCUMSTANCES	NO_CONTRIBUTING_CIRCUMSTANCES	1	MOTOR_VEHICLE_IN_TRANSPORT	NA	NA	NA	Shoulder And Lap Belt	INATTENTION_DISTRACTION	NO_APPARENT_INFLUENCE	NA
MAKING_LEFT_TURN	NR	DRY	NO_CONTRIBUTING_CIRCUMSTANCES	NO_CONTRIBUTING_CIRCUMSTANCES	1	NR	NA	NA	NA	Shoulder And Lap Belt	FAILED_TO_YIELD_RIGHT_OF_WAY	NO_APPARENT_INFLUENCE	NA
MAKING_LEFT_TURN	NR	DRY	NO_CONTRIBUTING_CIRCUMSTANCES	NO_CONTRIBUTING_CIRCUMSTANCES	1	MOTOR_VEHICLE_IN_TRANSPORT	NA	NA	NA	Unknown	FAILED_TO_YIELD_RIGHT_OF_WAY	NO_APPARENT_INFLUENCE	NA
MAKING_LEFT_TURN	NR	DRY	NO_CONTRIBUTING_CIRCUMSTANCES	NO_CONTRIBUTING_CIRCUMSTANCES	1	MOTOR_VEHICLE_IN_TRANSPORT	NA	NA	NA	Shoulder And Lap Belt/Air Bag Deployed/Shoulder-Lap Belt	OTHER	NO_APPARENT_INFLUENCE	NA
MAKING_LEFT_TURN	NR	DRY	NO_CONTRIBUTING_CIRCUMSTANCES	NO_CONTRIBUTING_CIRCUMSTANCES	1	MOTOR_VEHICLE_IN_TRANSPORT	NA	NA	NA	Shoulder And Lap Belt	MADE_IMPROPER_TURN	NO_APPARENT_INFLUENCE	NA
MAKING_LEFT_TURN	NR	DRY	NO_CONTRIBUTING_CIRCUMSTANCES	NO_CONTRIBUTING_CIRCUMSTANCES	1	MOTOR_VEHICLE_IN_TRANSPORT	NA	NA	NA	Air Bag Deployed/Shoulder-Lap Belt	FAILED_TO_YIELD_RIGHT_OF_WAY	NO_APPARENT_INFLUENCE	NA
MAKING_LEFT_TURN	NR	UNKNOWN	UNKNOWN	UNKNOWN	1	MOTOR_VEHICLE_IN_TRANSPORT	NA	NA	NA	Helmet Used	UNKNOWN	NO_APPARENT_INFLUENCE	NA
MAKING_LEFT_TURN	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN	1	MOTOR_VEHICLE_IN_TRANSPORT	NA	NA	NA	Air Bag Deployed/Shoulder-Lap Belt	FAILED_TO_YIELD_RIGHT_OF_WAY	NO_APPARENT_INFLUENCE	NA
MAKING_LEFT_TURN	NR	WET	NO_CONTRIBUTING_CIRCUMSTANCES	NO_CONTRIBUTING_CIRCUMSTANCES	1	MOTOR_VEHICLE_IN_TRANSPORT	NA	NA	NA	Shoulder And Lap Belt	FAILED_TO_YIELD_RIGHT_OF_WAY	NO_APPARENT_INFLUENCE	NA
GOING_STRAIGHT_AHEAD	NR	DRY	NO_CONTRIBUTING_CIRCUMSTANCES	NO_CONTRIBUTING_CIRCUMSTANCES	1	MOTOR_VEHICLE_IN_TRANSPORT	NA	NA	NA	Air Bag Deployed/Shoulder-Lap Belt	UNKNOWN	NO_APPARENT_INFLUENCE	NA
GOING_STRAIGHT_AHEAD	NR	DRY	NO_CONTRIBUTING_CIRCUMSTANCES	NO_CONTRIBUTING_CIRCUMSTANCES	1	MOTOR_VEHICLE_IN_TRANSPORT	NA	NA	NA	None Used	SPEED_TOO_FAST_FOR_CONDITIONS/DISREGARDED_TRAFFIC_SIGNAL	ALCOHOL	NA


Bell/7th Ave
Greenway Pkwy/16th St
Greenway/29th St
40th St/Greenway
Peoria/43rd Ave
DEER VALLEY
Black Canyon Fwy
Piestewa Fwy
Buffalo Ridge Park
Lookout Mountain Preserve
North Mountain Park
Paradise Valley Community College
Mayo Clinic Hospital
Desert Ridge Marketplace
Musical Instrument Museum
Arizona State University West Campus
NORTH MOUNTAIN VILLAGE
PARADISE VALLEY VILLAGE
Paradise Valley Mall
Metrocenter
Castles ~n~ Coasters
W Union Hills Dr
E Union Hills Dr
W Grovers Ave
E Grovers Ave
W Bell Rd
E Bell Rd
E Greenway Pkwy
W Greenway Rd
E Greenway Rd
E Paradise Ln
E Beardsley Rd
E Siesta Ln
E Rose Garden Ln
E Hearn Rd
W Thunderbird Rd
E Thunderbird Rd
W Sweetwater Ave
E Sweetwater Ave
E Larkspur Dr
W Cactus Rd
E Cactus Rd
E Acoma Dr
E Redfield Rd
E Cholla St
W Peoria Ave
E Shea Blvd
W Hatcher Rd
W Olive Ave
W Dunlap Ave
E Doubletree Ranch Rd
Cave Creek Road
N Coral Gables Dr
N 7th St
N 19th Ave
N 23rd Ave
N 27th Ave
N 35th Ave
N 43rd Ave
N 51st Ave
N 12th St
N 15th Ave
N 20th St
N 22nd St
N 24th St
N 28th St
N 32nd St
N 36th St
N 40th St
N 44th St
N Tatum Blvd
N 56th St
101
17
51



Encanto Park
Heard Museum
Phoenix Art Museum
Margaret T. Hance Park
Greenwood Memory Lawn Mortuary &...
Phoenix
CENTRAL CITY
SOUTH MOUNTAIN VILLAGE
LAVEEN VILLAGE
Aguila Golf Course
51st Ave/Vineyard
W McDowell Rd
E McDowell Rd
W Roosevelt St
E Roosevelt St
W Van Buren St
E Van Buren St
W Adams St
W Jefferson St
W Washington St
Washington St
W Hadley St
W Buckeye Rd
W Yuma St
W Pima St
W Mohave St
W Durango St
W Watkins St
W Lower Buckeye Rd
E University Dr
W Broadway Rd
E Broadway Rd
W Wier Ave
W Roeser Rd
E Roeser Rd
W Southern Ave
E Southern Ave
W Vineyard Rd
E Vineyard Rd
W Baseline Rd
E Baseline Rd
E Euclid Ave
W Dobbins Rd
E Dobbins Rd
W Encanto Blvd
West Virginia Ave
N 59th Ave
S 59th Ave
N 51st Ave
S 51st Ave
S 55th Ave
N 43rd Ave
S 43rd Ave
41st Ave
N 39th Ave
S 35th Ave
S 36th Dr
27th Ave
S 27th Ave
S 23rd Ave
N 19th Ave
S 19th Ave
S 15th Ave
N 7th Ave
7th Ave
N 5th Ave
S 5th Ave
3rd Avenue
1st Ave
S Central Ave
N 3rd St
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N 7th St
S 7th St
N 11th St
S 12th St
N 16th St
S 16th St
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N 24th St
S 24th St
S 26th St
10
17
51