APPENDIX D

SAFETY ANALYSES

2014-2018 Existing Crash Data from PCIT

Roadway	PDO	Injury	Fatal	Total								
SR 0045	72	70	1	**143**	50	49	1	36	72 (50%)	70 (49%)	1 (1%)	143 (36%)
SR 0144	68	39	4	**111**	61	35	4	28	68 (61%)	39 (35%)	4 (4%)	111 (28%)
SR 0192	0	1	0	**1**	0	100	0	0	0 (0%)	1 (100%)	0 (0%)	1 (0%)
SR 0322	69	39	0	**108**	64	36	0	27	69 (64%)	39 (36%)	0 (0%)	108 (27%)
Linden Hall Rd/ Cedar Hill Rd (SR 2004)	1	0	0	**1**	100	0	0	0	1 (100%)	0 (0%)	0 (0%)	1 (0%)
Brush Valley Rd/ Red Hill Rd (SR 2006)	3	3	0	**6**	50	50	0	2	3 (50%)	3 (50%)	0 (0%)	6 (2%)
Boalsburg Rd/ Warner Blvd (SR 3010)	3	10	0	**13**	23	77	0	3	3 (23%)	10 (77%)	0 (0%)	13 (3%)
Boal Ave (SR 3014)	5	6	0	**11**	45	55	0	3	5 (45%)	6 (55%)	0 (0%)	11 (3%)
Brush Valley Rd	2	0	0	**2**	100	0	0	1	2 (100%)	0 (0%)	0 (0%)	2 (1%)
Total	**223**	**168**	**5**	**396**	56	42	1	100	223 (56%)	168 (42%)	5 (1%)	396 (100%)

Roadway	Angle	Head-On	Hit Fixed Object	Hit Ped	Rear-end	Sides-wipe (Opp.)	Side-swipe (Same)	Non-Collision	Other	Total			
SR 0045	49	6	43	1	28	1	3	4	8	**143**	34	4	30
SR 0144	17	4	52		22	4	1	5	6	**111**	15	4	47
SR 0192			1							**1**	0	0	100
SR 0322	18	3	25		42	6	2	2	10	**108**	17	3	23
SR 2004			1							**1**	0	0	100
SR 2006			3			1		2		**6**	0	0	50
SR 3010	7		2		3				1	**13**	54	0	15
SR 3014	4		2		2		2		1	**11**	36	0	18
Brush Valley Rd			2							**2**	0	0	100
Total	**95**	**13**	**131**	**1**	**97**	**12**	**8**	**13**	**26**	**396**	24	3	33

Roadway	Passenger Vehicles			Heavy Vehicles (Trucks)			Bicycle	Unknown	Total			
	Auto	SUV	MC	Large	Small	Bus						
SR 0045	76	32	2	3	29			1	**143**	53	22	1
SR 0144	53	30	3	3	19	1	1	1	**111**	48	27	3
SR 0192		1							**1**	0	100	0
SR 0322	57	25	1	8	16	1			**108**	53	23	1
SR 2004	1								**1**	100	0	0
SR 2006	4	1			1				**6**	67	17	0
SR 3010	7	4	1	1					**13**	54	31	8
SR 3014	4	3	1	1	1		1		**11**	36	27	9
Brush Valley Road	2								**2**	100	0	0
Total	**204**	**96**	**8**	**16**	**66**	**2**	**2**	**2**	**396**	52	24	2

							Angle	Head-On	Hit Fixed C	Hit Ped	Rear-end	Sides-wipe	Side-swipe	Non-Collis	Other	Total
1	20	1	2	3	6	36	49 (34%)	6 (4%)	43 (30%)	1 (1%)	28 (20%)	1 (1%)	3 (2%)	4 (3%)	8 (6%)	143 (36%)
0	20	4	1	5	5	28	17 (15%)	4 (4%)	52 (47%)	(0%)	22 (20%)	4 (4%)	1 (1%)	5 (5%)	6 (5%)	111 (28%)
0	0	0	0	0	0	0	(0%)	(0%)	1 (100%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	1 (0%)
0	39	6	2	2	9	27	18 (17%)	3 (3%)	25 (23%)	(0%)	42 (39%)	6 (6%)	2 (2%)	2 (2%)	10 (9%)	108 (27%)
0	0	0	0	0	0	0	(0%)	(0%)	1 (100%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	1 (0%)
0	0	17	0	33	0	2	(0%)	(0%)	3 (50%)	(0%)	(0%)	1 (17%)	(0%)	2 (33%)	(0%)	6 (2%)
0	23	0	0	0	8	3	7 (54%)	(0%)	2 (15%)	(0%)	3 (23%)	(0%)	(0%)	(0%)	1 (8%)	13 (3%)
0	18	0	18	0	9	3	4 (36%)	(0%)	2 (18%)	(0%)	2 (18%)	(0%)	2 (18%)	(0%)	1 (9%)	11 (3%)
0	0	0	0	0	0	1	(0%)	(0%)	2 (100%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	2 (1%)
0	24	3	2	3	7	100	95 (24%)	13 (3%)	131 (33%)	1 (0%)	97 (24%)	12 (3%)	8 (2%)	13 (3%)	26 (7%)	396 (100%)

2	20	0	0	1	36	76 (53%)	32 (22%)	2 (1%)	3 (2%)	29 (20%)	(0%)	(0%)	1 (1%)	143 (36%)	
3	17	1	1	1	28	53 (48%)	30 (27%)	3 (3%)	3 (3%)	19 (17%)	1 (1%)	1 (1%)	1 (1%)	111 (28%)	
0	0	0	0	0	0	(0%)	1 (100%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	1 (0%)	
7	15	1	0	0	27	57 (53%)	25 (23%)	1 (1%)	8 (7%)	16 (15%)	1 (1%)	(0%)	(0%)	108 (27%)	
0	0	0	0	0	0	1 (100%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	1 (0%)	
0	17	0	0	0	2	4 (67%)	1 (17%)	(0%)	(0%)	1 (17%)	(0%)	(0%)	(0%)	6 (2%)	
8	0	0	0	0	3	7 (54%)	4 (31%)	1 (8%)	1 (8%)	(0%)	(0%)	(0%)	(0%)	13 (3%)	
9	9	0	9	0	3	4 (36%)	3 (27%)	1 (9%)	1 (9%)	1 (9%)	(0%)	1 (9%)	(0%)	11 (3%)	
0	0	0	0	0	1	2 (100%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	(0%)	2 (1%)	
4	17	1	1	1	100	204 (52%)	96 (24%)	8 (2%)	16 (4%)	66 (17%)	2 (1%)	2 (1%)	2 (1%)	396 (100%)	

HSM Analyses

Existing Base Condition

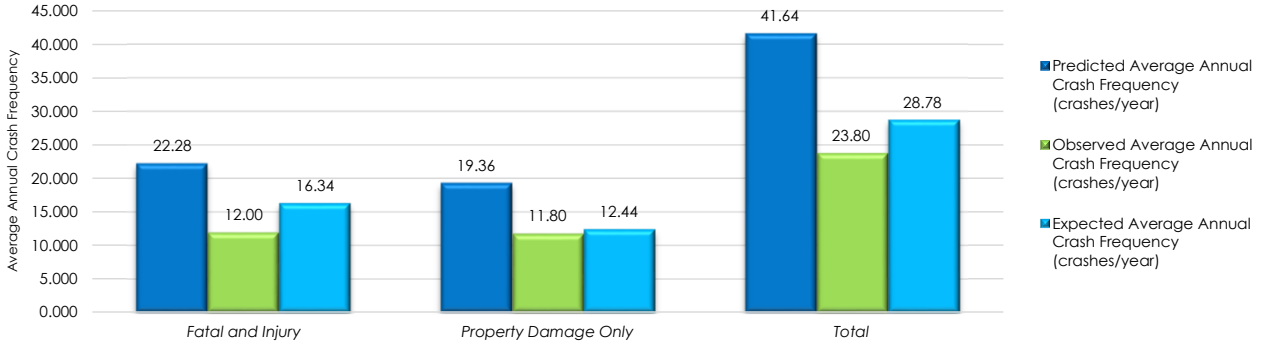
Shingletown Road, Boal Avenue, Earlystown Road (SR 0045)

Main Street to East of Pennsylvania Avenue (SR 0144)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	22.28	19.36	41.64
Observed Average Annual Crash Frequency	12.00	11.80	23.80
Expected Average Annual Crash Frequency	16.34	12.44	28.78
Potential for Safety Improvement (PSI)	-5.93	-6.92	-12.86

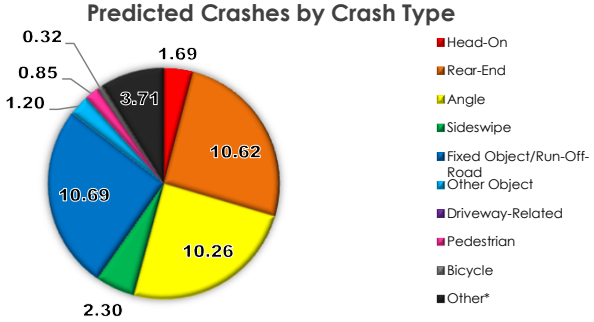
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	16.11	14.36	30.46
Observed Average Annual Crash Frequency (crashes/yr)	7.60	7.80	15.40
Expected Average Annual Crash Frequency (crashes/yr)	10.80	8.10	18.90

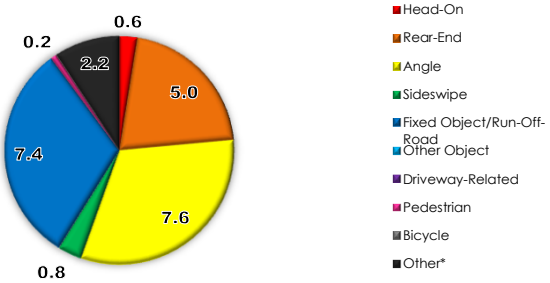
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	6.17	5.01	11.18
Observed Average Annual Crash Frequency (crashes/yr)	4.40	4.00	8.40
Expected Average Annual Crash Frequency (crashes/yr)	5.54	4.35	9.89

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	22.28	19.36	41.64
Observed Average Annual Crash Frequency (crashes/yr)	12.00	11.80	23.80
Expected Average Annual Crash Frequency (crashes/yr)	16.34	12.44	28.78

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

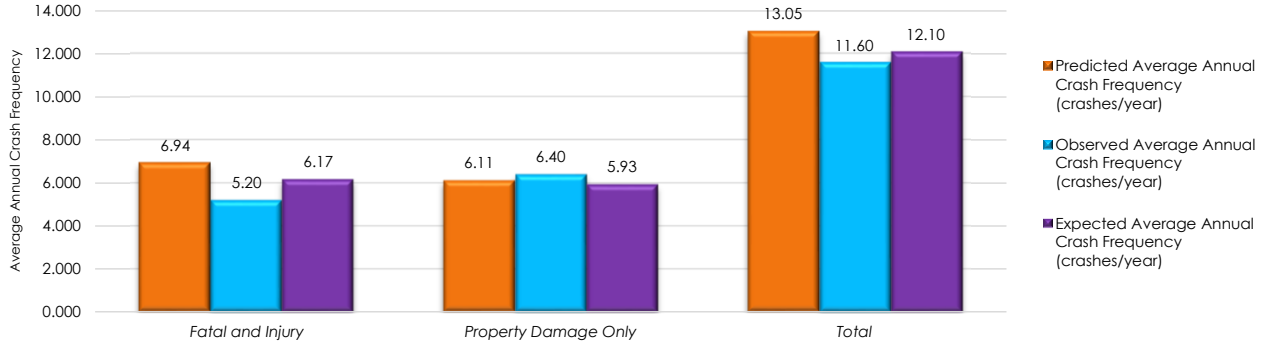


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	6.94	6.11	13.05
Observed Average Annual Crash Frequency	5.20	6.40	11.60
Expected Average Annual Crash Frequency	6.17	5.93	12.10
Potential for Safety Improvement (PSI)	-0.77	-0.18	-0.95

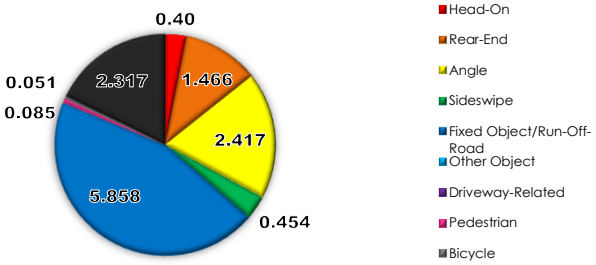
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	5.20	4.74	9.95
Observed Average Annual Crash Frequency (crashes/yr)	4.60	6.20	10.80
Expected Average Annual Crash Frequency (crashes/yr)	5.01	5.23	10.24

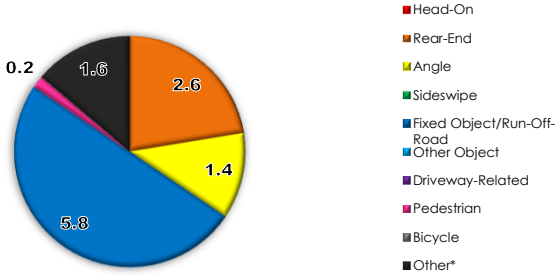
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.74	1.37	3.11
Observed Average Annual Crash Frequency (crashes/yr)	0.60	0.20	0.80
Expected Average Annual Crash Frequency (crashes/yr)	1.16	0.70	1.86

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	6.94	6.11	13.05
Observed Average Annual Crash Frequency (crashes/yr)	5.20	6.40	11.60
Expected Average Annual Crash Frequency (crashes/yr)	6.17	5.93	12.10

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

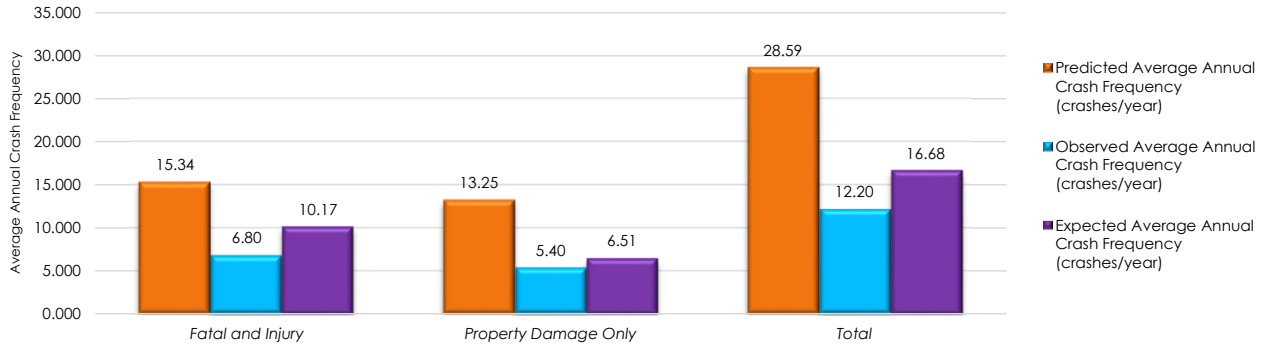


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	15.34	13.25	28.59
Observed Average Annual Crash Frequency	6.80	5.40	12.20
Expected Average Annual Crash Frequency	10.17	6.51	16.68
Potential for Safety Improvement (PSI)	-5.16	-6.74	-11.91

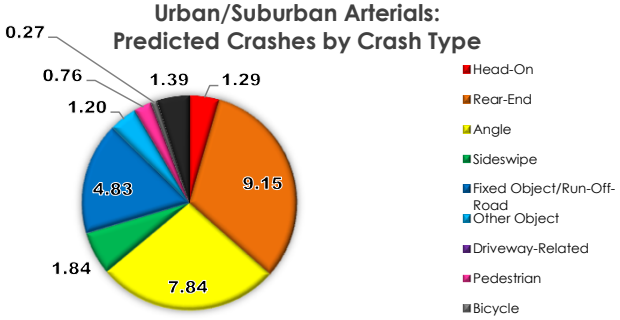
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	10.90	9.61	20.52
Observed Average Annual Crash Frequency (crashes/yr)	3.00	1.60	4.60
Expected Average Annual Crash Frequency (crashes/yr)	5.79	2.86	8.65

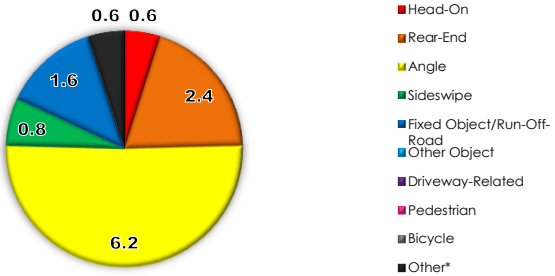
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	4.43	3.64	8.07
Observed Average Annual Crash Frequency (crashes/yr)	3.80	3.80	7.60
Expected Average Annual Crash Frequency (crashes/yr)	4.38	3.64	8.03

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	15.34	13.25	28.59
Observed Average Annual Crash Frequency (crashes/yr)	6.80	5.40	12.20
Expected Average Annual Crash Frequency (crashes/yr)	10.17	6.51	16.68

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	300	1757	1.13	1.20	1.16	0.03
Segment 2	320	147	6.30	7.40	6.72	0.42
Segment 3	410	2006	1.45	1.60	1.52	0.07
Segment 4	430	0	1.07	0.60	0.85	-0.22

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 0045	Elks Club Road	1.04	0.40	0.70	-0.34
Intersection 2	SR 0045	ıden Hall Road (SR 200	1.21	0.20	0.63	-0.58
Intersection 3	SR 0045	edar Run Road (SR 200	0.86	0.20	0.54	-0.32

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	220	0	3.03	1.20	2.00	-1.03
Segment 2	240	0	9.86	1.40	2.42	-7.44
Segment 3	272	0	0.67	0.40	0.56	-0.11
Segment 4	272	1568	1.70	0.40	1.04	-0.66
Segment 5	292	630	5.25	1.20	2.63	-2.62

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 0045	Atherton Street (SR 301	3.55	4.40	4.08	0.53
Intersection 2	SR 0045	ılsburg Pike/Church Str	1.53	1.40	1.51	-0.03
Intersection 3	SR 0045	Boal Avenue (SR 3014)	2.98	1.80	2.44	-0.54

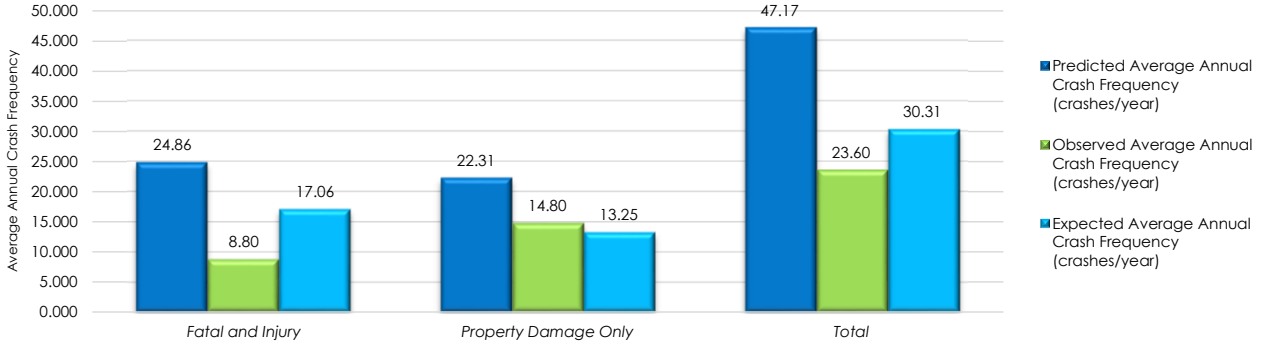
Old Forte Road, Pennsylvania Avenue, Main Street (SR 0144)

General Potter Highway (SR 0322) to North of College Avenue (SR 0026)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	24.86	22.31	47.17
Observed Average Annual Crash Frequency	8.80	14.80	23.60
Expected Average Annual Crash Frequency	17.06	13.25	30.31
Potential for Safety Improvement (PSI)	-7.80	-9.06	-16.86

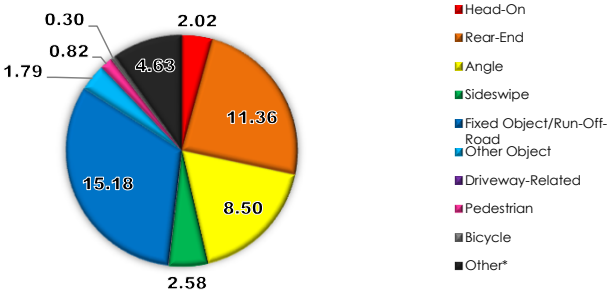
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	21.31	19.76	41.07
Observed Average Annual Crash Frequency (crashes/yr)	8.00	11.80	19.80
Expected Average Annual Crash Frequency (crashes/yr)	14.34	10.65	24.99

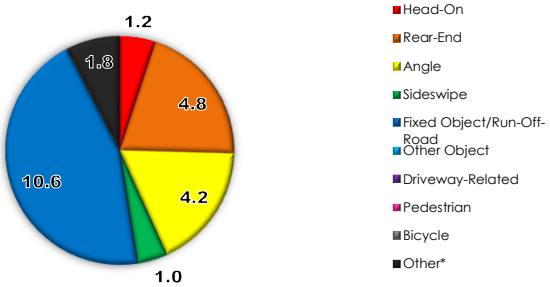
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	3.55	2.56	6.10
Observed Average Annual Crash Frequency (crashes/yr)	0.80	3.00	3.80
Expected Average Annual Crash Frequency (crashes/yr)	2.72	2.60	5.32

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	24.86	22.31	47.17
Observed Average Annual Crash Frequency (crashes/yr)	8.80	14.80	23.60
Expected Average Annual Crash Frequency (crashes/yr)	17.06	13.25	30.31

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

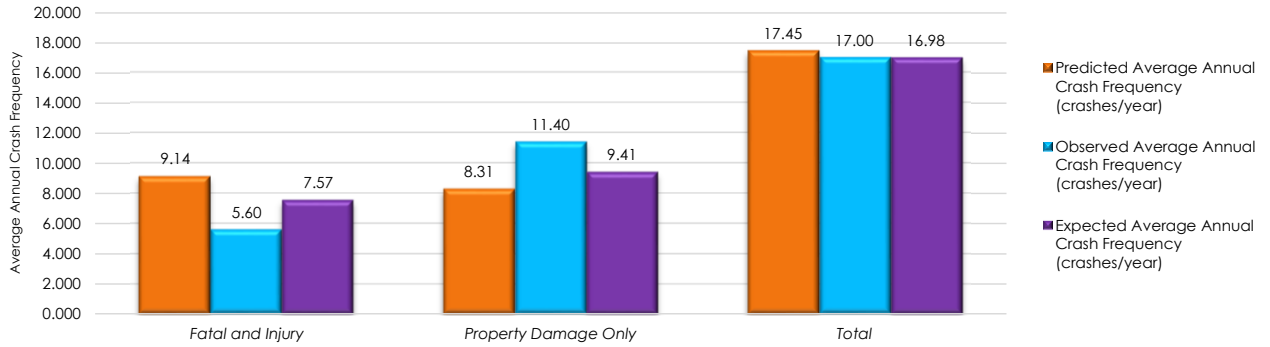


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	9.14	8.31	17.45
Observed Average Annual Crash Frequency	5.60	11.40	17.00
Expected Average Annual Crash Frequency	7.57	9.41	16.98
Potential for Safety Improvement (PSI)	-1.57	1.10	-0.47

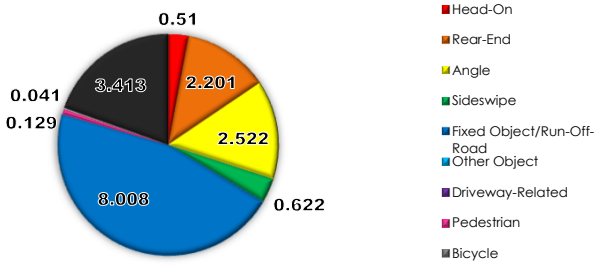
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	7.95	7.25	15.20
Observed Average Annual Crash Frequency (crashes/yr)	5.00	9.40	14.40
Expected Average Annual Crash Frequency (crashes/yr)	6.63	7.92	14.55

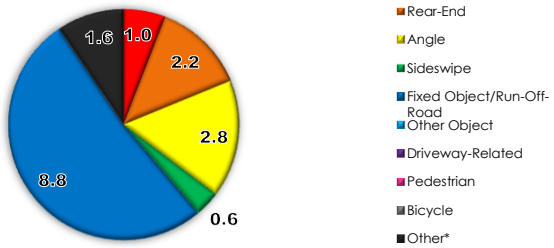
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.19	1.06	2.25
Observed Average Annual Crash Frequency (crashes/yr)	0.60	2.00	2.60
Expected Average Annual Crash Frequency (crashes/yr)	0.94	1.49	2.43

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	9.14	8.31	17.45
Observed Average Annual Crash Frequency (crashes/yr)	5.60	11.40	17.00
Expected Average Annual Crash Frequency (crashes/yr)	7.57	9.41	16.98

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

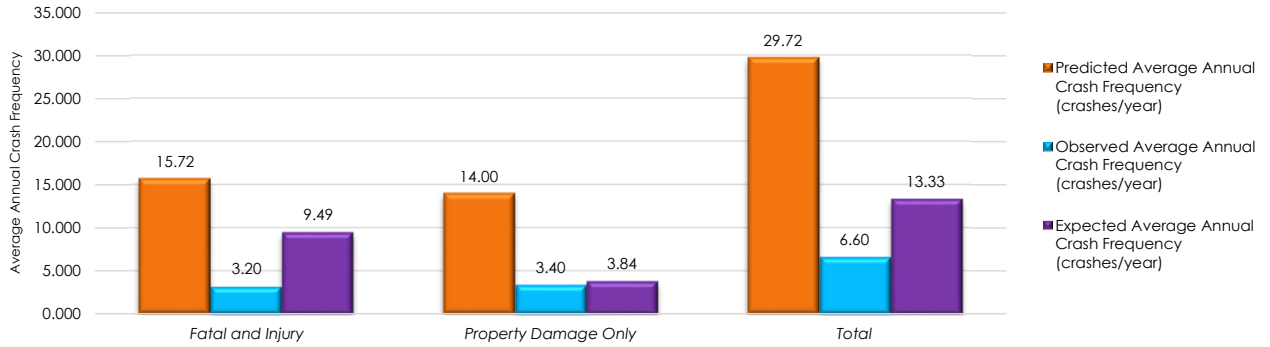


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	15.72	14.00	29.72
Observed Average Annual Crash Frequency	3.20	3.40	6.60
Expected Average Annual Crash Frequency	9.49	3.84	13.33
Potential for Safety Improvement (PSI)	-6.23	-10.16	-16.39

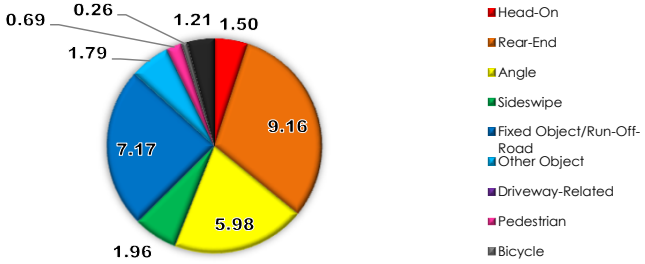
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	13.37	12.50	25.87
Observed Average Annual Crash Frequency (crashes/yr)	3.00	2.40	5.40
Expected Average Annual Crash Frequency (crashes/yr)	7.71	2.73	10.44

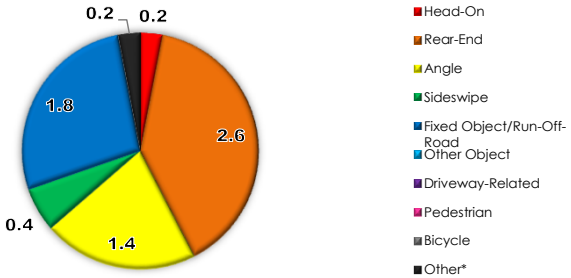
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.35	1.50	3.85
Observed Average Annual Crash Frequency (crashes/yr)	0.20	1.00	1.20
Expected Average Annual Crash Frequency (crashes/yr)	1.78	1.11	2.89

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	15.72	14.00	29.72
Observed Average Annual Crash Frequency (crashes/yr)	3.20	3.40	6.60
Expected Average Annual Crash Frequency (crashes/yr)	9.49	3.84	13.33

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	10	0	4.12	3.80	3.98	-0.14
Segment 2	50	852	2.06	1.60	1.91	-0.15
Segment 3	90	0	1.45	0.40	0.85	-0.60
Segment 4	120	962	2.27	1.60	1.90	-0.37
Segment 5	140	0	1.03	1.00	1.01	-0.01
Segment 6	140	2094	2.88	5.80	4.24	1.36
Segment 7	170	686	1.40	0.20	0.67	-0.73

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 0144	g Creek Road/Airport	0.37	0.40	0.38	0.01
Intersection 2	SR 0144	arlystown Road (SR 004	1.89	2.20	2.05	0.16

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	90	2387	8.66	2.00	3.40	-5.26
Segment 2	110	588	1.66	0.60	0.87	-0.79
Segment 3	110	1449	4.45	1.40	2.12	-2.33
Segment 4	180	234	7.91	1.20	2.95	-4.96
Segment 5	200	0	3.20	0.20	1.10	-2.09

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Intersections

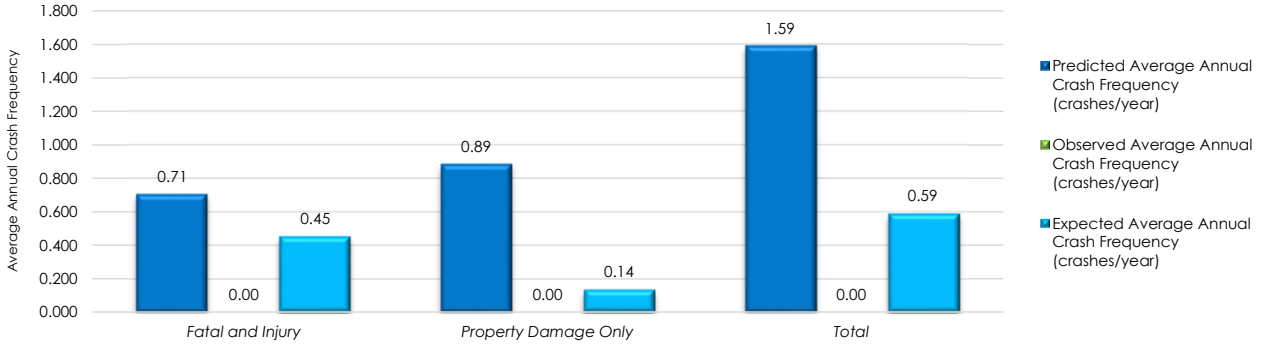
Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 0144	rch Street (SR 2006/SR (	1.51	0.20	1.07	-0.44
Intersection 2	SR 0144	Harrison Road	0.44	0.60	0.46	0.02
Intersection 3	SR 0026	SR 0144	1.90	0.40	1.36	-0.54

Church Street (SR 0192)
East of Pennsylvania Avenue (SR 0144)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



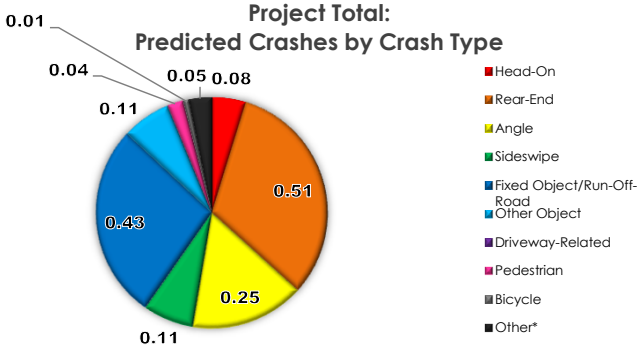
Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	0.71	0.89	1.59
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	0.45	0.14	0.59
Potential for Safety Improvement (PSI)	-0.25	-0.75	-1.00

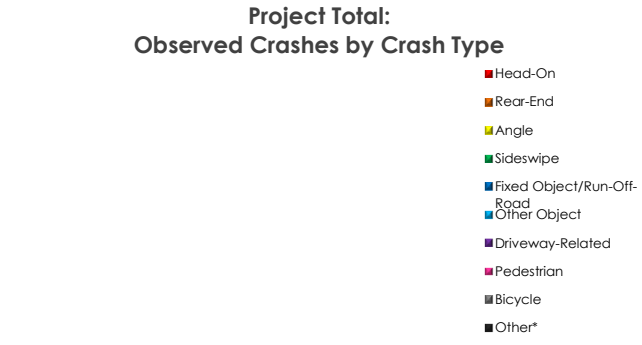
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.71	0.89	1.59
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.45	0.14	0.59

Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.71	0.89	1.59
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.45	0.14	0.59





*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	10	0	1.59	0.00	0.59	-1.00

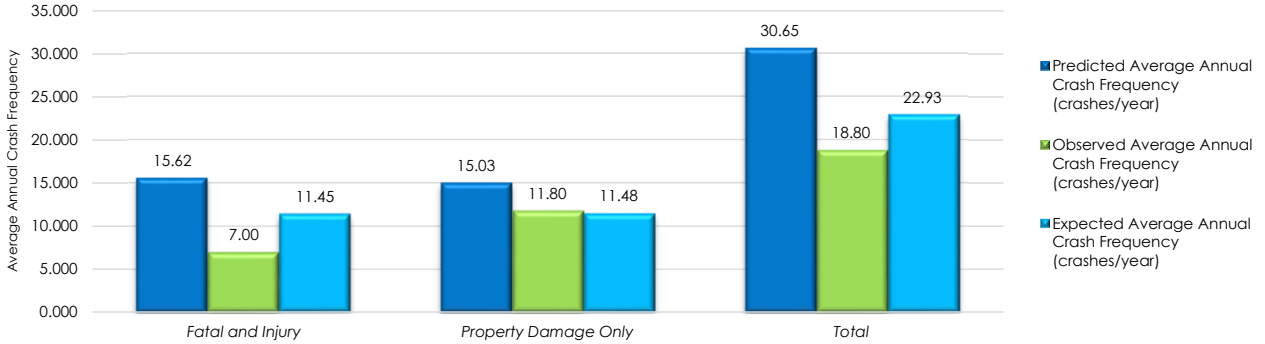
Mt. Nittany Expressway, Boal Avenue, General Potter Highway (SR 0322)

Old Forte Interchange (SR 0045) to Red Mill Road/Mountain Back Road

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	15.62	15.03	30.65
Observed Average Annual Crash Frequency	7.00	11.80	18.80
Expected Average Annual Crash Frequency	11.45	11.48	22.93
Potential for Safety Improvement (PSI)	-4.17	-3.55	-7.72

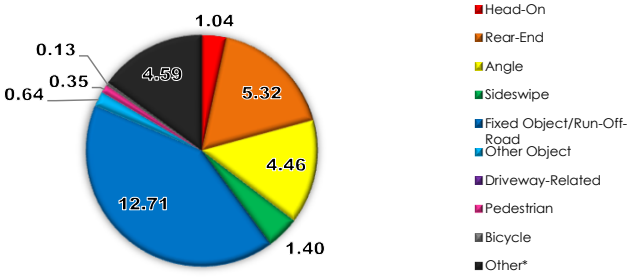
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	14.33	14.19	28.52
Observed Average Annual Crash Frequency (crashes/yr)	6.60	9.60	16.20
Expected Average Annual Crash Frequency (crashes/yr)	10.59	9.98	20.57

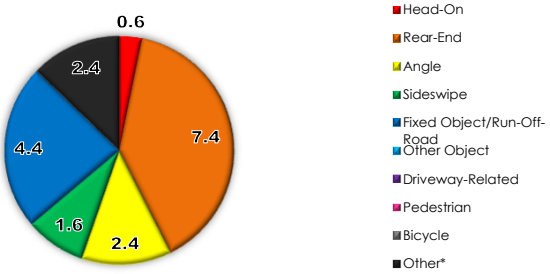
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.29	0.84	2.12
Observed Average Annual Crash Frequency (crashes/yr)	0.40	2.20	2.60
Expected Average Annual Crash Frequency (crashes/yr)	0.86	1.50	2.36

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	15.62	15.03	30.65
Observed Average Annual Crash Frequency (crashes/yr)	7.00	11.80	18.80
Expected Average Annual Crash Frequency (crashes/yr)	11.45	11.48	22.93

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

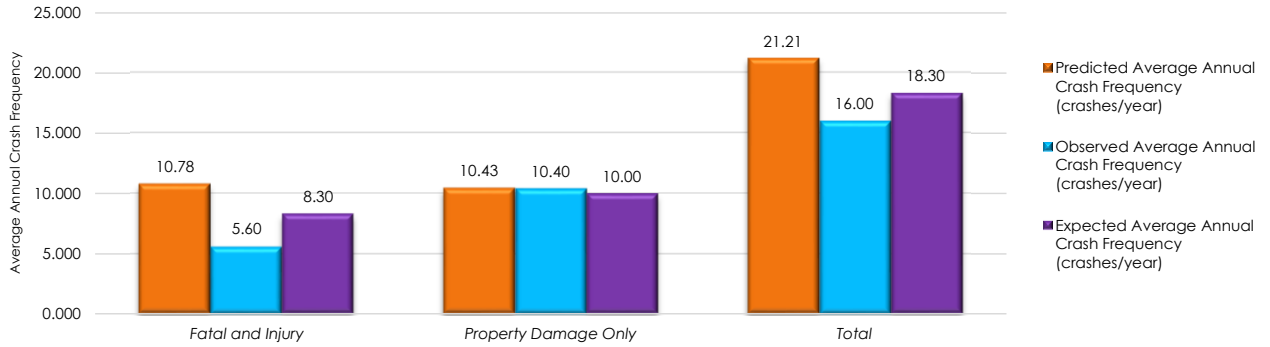


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	10.78	10.43	21.21
Observed Average Annual Crash Frequency	5.60	10.40	16.00
Expected Average Annual Crash Frequency	8.30	10.00	18.30
Potential for Safety Improvement (PSI)	-2.48	-0.43	-2.91

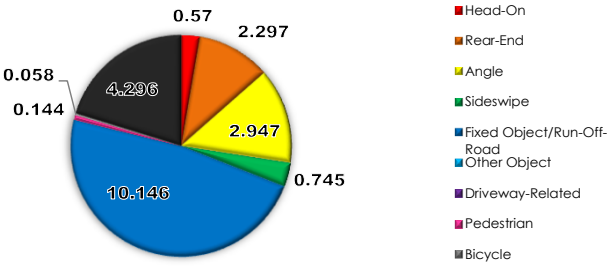
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	9.49	9.59	19.08
Observed Average Annual Crash Frequency (crashes/yr)	5.20	8.20	13.40
Expected Average Annual Crash Frequency (crashes/yr)	7.45	8.49	15.94

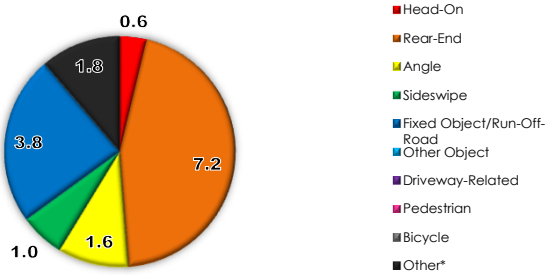
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.29	0.84	2.12
Observed Average Annual Crash Frequency (crashes/yr)	0.40	2.20	2.60
Expected Average Annual Crash Frequency (crashes/yr)	0.86	1.50	2.36

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	10.78	10.43	21.21
Observed Average Annual Crash Frequency (crashes/yr)	5.60	10.40	16.00
Expected Average Annual Crash Frequency (crashes/yr)	8.30	10.00	18.30

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

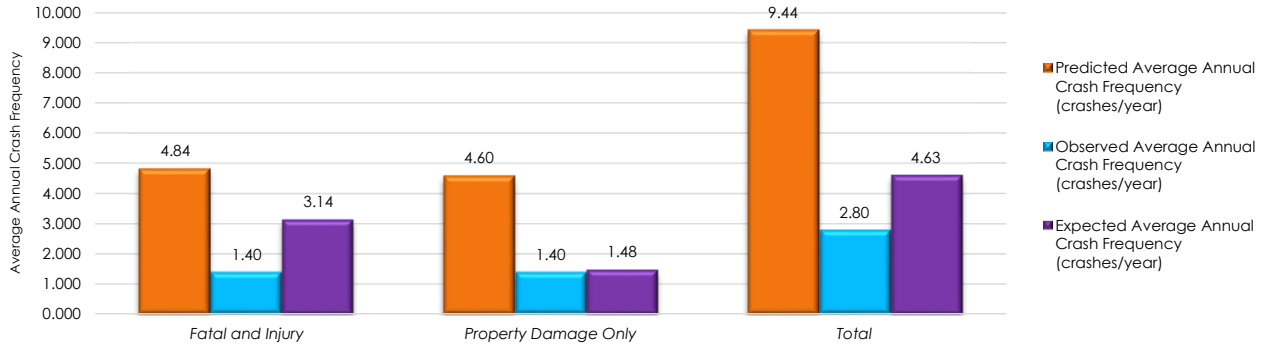


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	4.84	4.60	9.44
Observed Average Annual Crash Frequency	1.40	1.40	2.80
Expected Average Annual Crash Frequency	3.14	1.48	4.63
Potential for Safety Improvement (PSI)	-1.69	-3.12	-4.81

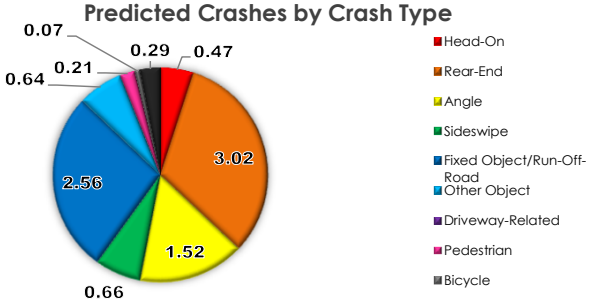
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	4.84	4.60	9.44
Observed Average Annual Crash Frequency (crashes/yr)	1.40	1.40	2.80
Expected Average Annual Crash Frequency (crashes/yr)	3.14	1.48	4.63

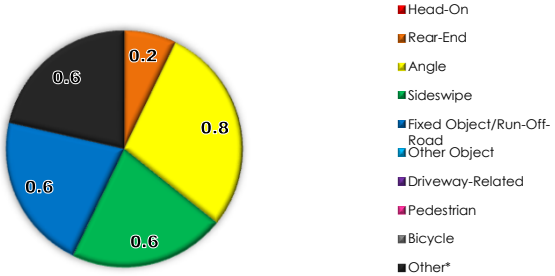
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	4.84	4.60	9.44
Observed Average Annual Crash Frequency (crashes/yr)	1.40	1.40	2.80
Expected Average Annual Crash Frequency (crashes/yr)	3.14	1.48	4.63

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	610	427	7.91	6.40	7.06	-0.85
Segment 2	660	979	2.47	1.40	1.87	-0.60
Segment 3	680	426	8.71	5.60	7.02	-1.69

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 0322	b Road/Bear Meadow	0.70	1.00	0.84	0.15
Intersection 2	SR 0322	Neff Road	0.74	0.60	0.68	-0.06
Intersection 3	SR 0322	ll Road/Mountain Bac	0.69	1.00	0.84	0.15

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	590	0	2.81	1.80	2.22	-0.59
Segment 2	590	2927	2.39	0.60	1.04	-1.35
Segment 3	600	1053	4.24	0.40	1.36	-2.87

Old Forte Interchange (SR 0322/SR 0045)

At Earlystown Road (SR 0045)

Output Summary

General Information

Project description:	State College Area Connector				
Analyst:	SMMcG	Date:	8/5/2020	Area type:	Urban
First year of analysis:	2017				
Last year of analysis:	2017				

Crash Data Description

Freeway segments	Segment crash data available?	Yes	First year of crash data:	2017
	Project-level crash data available?	No	Last year of crash data:	2017
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2017
	Project-level crash data available?	No	Last year of crash data:	2017
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2014
	Project-level crash data available?	No	Last year of crash data:	2017

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	1.4	0.0	0.0	0.1	0.5	0.7
Estimated average crash freq. during Study Period, crashes/yr:	1.4	0.0	0.0	0.1	0.5	0.7

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Crossroad ramp terminals, crashes:	2	1.4	0.0	0.0	0.1	0.5	0.7

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2017	1.4	0.0	0.0	0.1	0.5	0.7
	2018						
	2019						
	2020						
	2021						
	2022						
	2023						
	2024						
	2025						
	2026						
	2027						
	2028						
	2029						
	2030						
	2031						
	2032						
	2033						
	2034						
	2035						
	2036						
	2037						
	2038						
	2039						
	2040						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	0.4	0.0	0.0	0.0	0.2	0.2
	Rear-end crashes:	0.7	0.0	0.0	0.1	0.3	0.3
	Sideswipe crashes:	0.1	0.0	0.0	0.0	0.0	0.1
	Other multiple-vehicle crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Total multiple-vehicle crashes:	1.2	0.0	0.0	0.1	0.5	0.6
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with fixed object:	0.1	0.0	0.0	0.0	0.0	0.1
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with parked vehicle:	0.0	0.0	0.0	0.0	0.0	0.0
	Other single-vehicle crashes	0.0	0.0	0.0	0.0	0.0	0.0
	Total single-vehicle crashes:	0.1	0.0	0.0	0.0	0.0	0.1
	Total crashes:	1.4	0.0	0.0	0.1	0.5	0.7

Oak Hall Interchange (SR 0322/SR 3010)

At Boalsburg Road (SR 3010)

Output Summary

General Information

Project description:	State College Area Connector				
Analyst:	SMMcG	Date:	8/5/2020	Area type:	Urban
First year of analysis:	2017				
Last year of analysis:	2017				

Crash Data Description

Freeway segments	Segment crash data available?	Yes	First year of crash data:	2017
	Project-level crash data available?	No	Last year of crash data:	2017
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2017
	Project-level crash data available?	No	Last year of crash data:	2017
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2014
	Project-level crash data available?	No	Last year of crash data:	2017

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	1.0	0.0	0.0	0.1	0.4	0.4
Estimated average crash freq. during Study Period, crashes/yr:	1.0	0.0	0.0	0.1	0.4	0.4

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Crossroad ramp terminals, crashes:	2	1.0	0.0	0.0	0.1	0.4	0.4

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2017	1.0	0.0	0.0	0.1	0.4	0.4
	2018						
	2019						
	2020						
	2021						
	2022						
	2023						
	2024						
	2025						
	2026						
	2027						
	2028						
	2029						
	2030						
	2031						
	2032						
	2033						
	2034						
	2035						
	2036						
	2037						
	2038						
	2039						
	2040						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	0.4	0.0	0.0	0.0	0.2	0.2
	Rear-end crashes:	0.4	0.0	0.0	0.0	0.2	0.2
	Sideswipe crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Other multiple-vehicle crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Total multiple-vehicle crashes:	0.9	0.0	0.0	0.1	0.4	0.4
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with fixed object:	0.1	0.0	0.0	0.0	0.0	0.0
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with parked vehicle:	0.0	0.0	0.0	0.0	0.0	0.0
	Other single-vehicle crashes	0.0	0.0	0.0	0.0	0.0	0.0
	Total single-vehicle crashes:	0.1	0.0	0.0	0.0	0.0	0.1
	Total crashes:	1.0	0.0	0.0	0.1	0.4	0.4

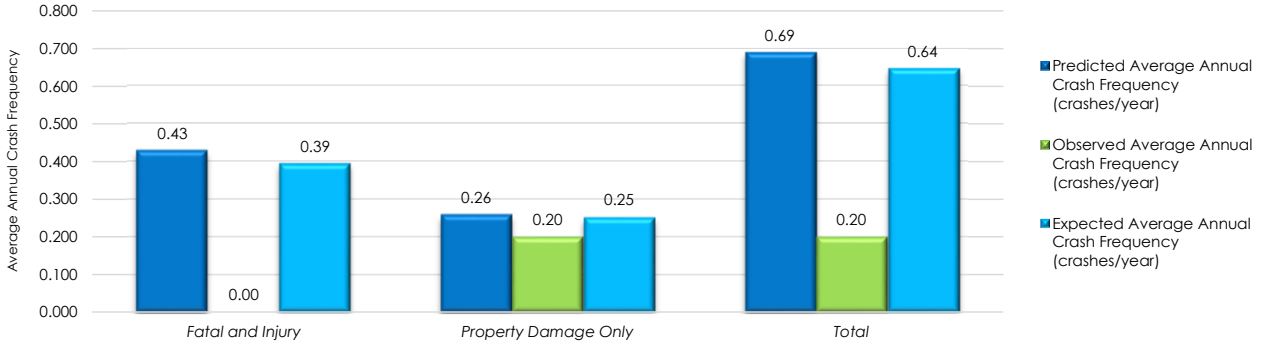
Linden Hall Road, Cedar Run Road (SR 2004)

Boalsburg Road (SR 3010) to Earlystown Road (SR 0045)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	0.43	0.26	0.69
Observed Average Annual Crash Frequency	0.00	0.20	0.20
Expected Average Annual Crash Frequency	0.39	0.25	0.64
Potential for Safety Improvement (PSI)	-0.04	-0.01	-0.04

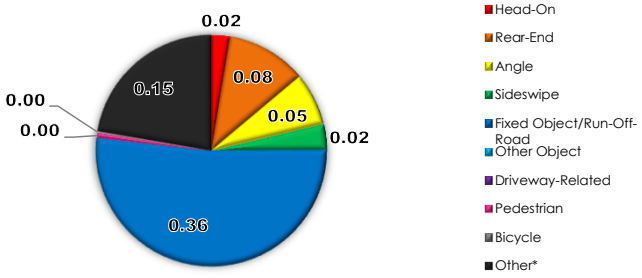
Total Project Summary

Segments	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.43	0.26	0.69
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.20	0.20
Expected Average Annual Crash Frequency (crashes/yr)	0.39	0.25	0.64

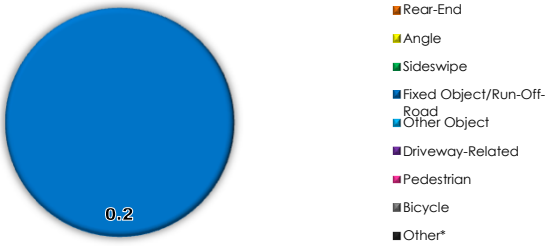
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00

Total	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.43	0.26	0.69
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.20	0.20
Expected Average Annual Crash Frequency (crashes/yr)	0.39	0.25	0.64

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	10	0	0.27	0.20	0.27	-0.01
Segment 2	30	1800	0.27	0.00	0.24	-0.02
Segment 3	50	952	0.03	0.00	0.03	0.00
Segment 4	60	0	0.11	0.00	0.11	-0.01

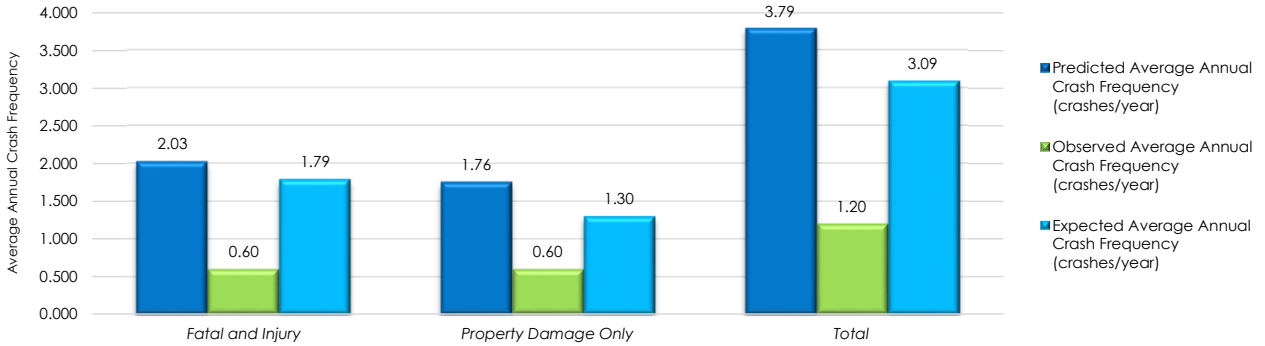
Linden Hall Road, Rock Hill Road, Brush Valley Road (SR 2006)

Earlystown Road (SR 0045) to Pennsylvania Avenue (SR 0144)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	2.03	1.76	3.79
Observed Average Annual Crash Frequency	0.60	0.60	1.20
Expected Average Annual Crash Frequency	1.79	1.30	3.09
Potential for Safety Improvement (PSI)	-0.24	-0.46	-0.69

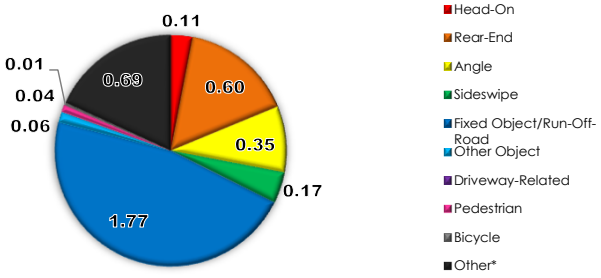
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.03	1.76	3.79
Observed Average Annual Crash Frequency (crashes/yr)	0.60	0.60	1.20
Expected Average Annual Crash Frequency (crashes/yr)	1.79	1.30	3.09

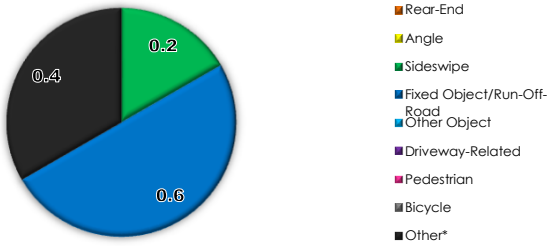
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.03	1.76	3.79
Observed Average Annual Crash Frequency (crashes/yr)	0.60	0.60	1.20
Expected Average Annual Crash Frequency (crashes/yr)	1.79	1.30	3.09

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

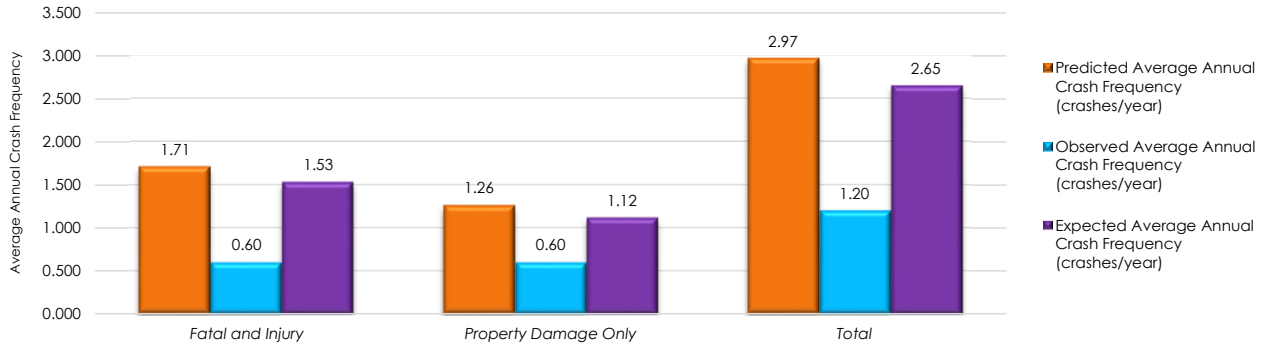


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	1.71	1.26	2.97
Observed Average Annual Crash Frequency	0.60	0.60	1.20
Expected Average Annual Crash Frequency	1.53	1.12	2.65
Potential for Safety Improvement (PSI)	-0.18	-0.14	-0.32

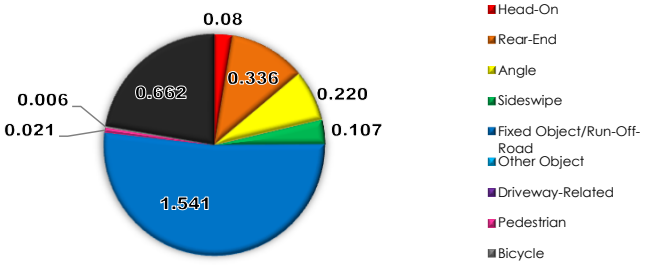
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.71	1.26	2.97
Observed Average Annual Crash Frequency (crashes/yr)	0.60	0.60	1.20
Expected Average Annual Crash Frequency (crashes/yr)	1.53	1.12	2.65

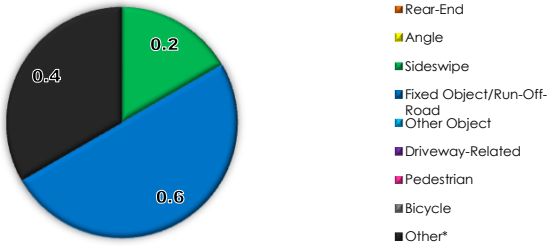
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.71	1.26	2.97
Observed Average Annual Crash Frequency (crashes/yr)	0.60	0.60	1.20
Expected Average Annual Crash Frequency (crashes/yr)	1.53	1.12	2.65

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

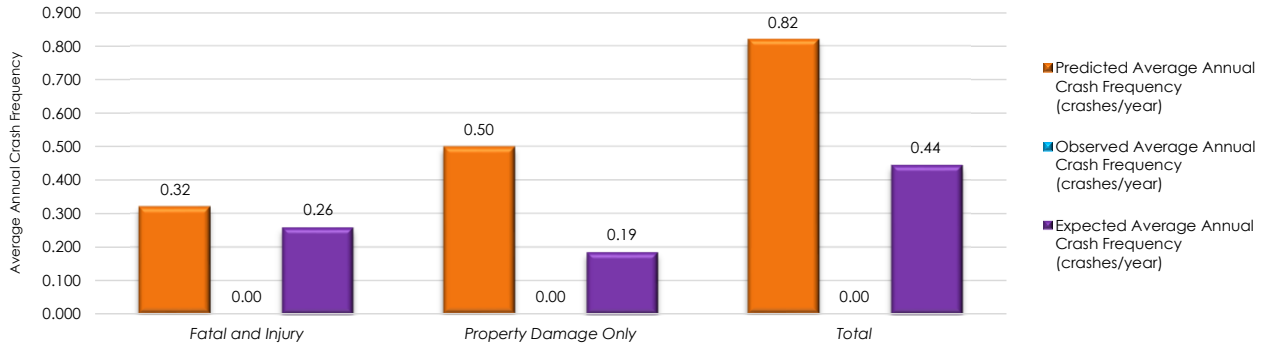


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



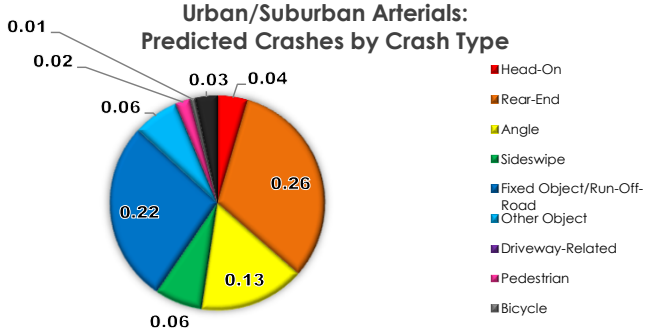
Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	0.32	0.50	0.82
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	0.26	0.19	0.44
Potential for Safety Improvement (PSI)	-0.06	-0.31	-0.37

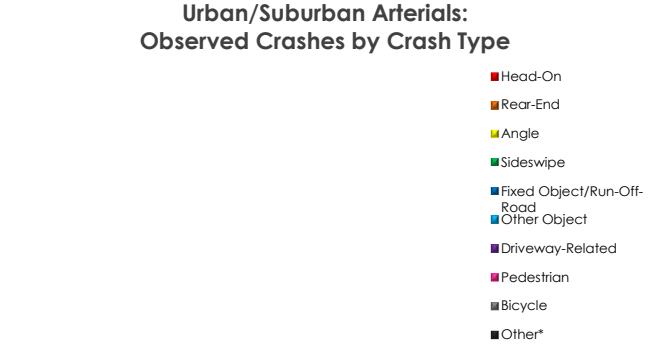
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.32	0.50	0.82
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.26	0.19	0.44

Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.32	0.50	0.82
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.26	0.19	0.44





*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	10	0	0.16	0.00	0.14	-0.02
Segment 2	20	0	1.02	0.20	0.86	-0.16
Segment 3	60	0	1.79	1.00	1.65	-0.13

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	130	1280	0.82	0.00	0.44	-0.37

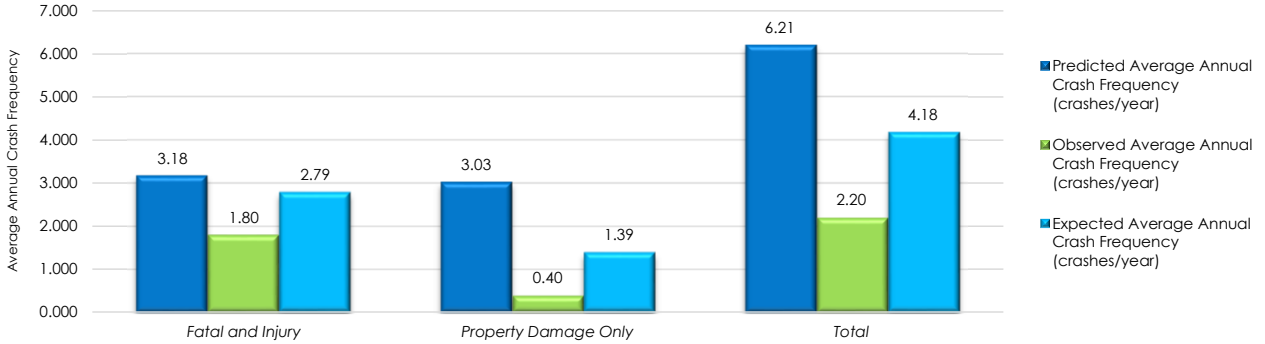
Boalsburg Road, Warner Boulevard (SR 3010)

North of Linden Hall Road (SR 2004) to Boal Avenue (SR 0045/SR 3014)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	3.18	3.03	6.21
Observed Average Annual Crash Frequency	1.80	0.40	2.20
Expected Average Annual Crash Frequency	2.79	1.39	4.18
Potential for Safety Improvement (PSI)	-0.38	-1.64	-2.03

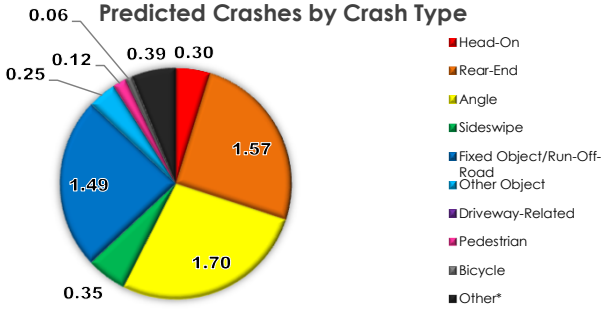
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.10	1.98	4.08
Observed Average Annual Crash Frequency (crashes/yr)	1.20	0.00	1.20
Expected Average Annual Crash Frequency (crashes/yr)	1.83	0.65	2.47

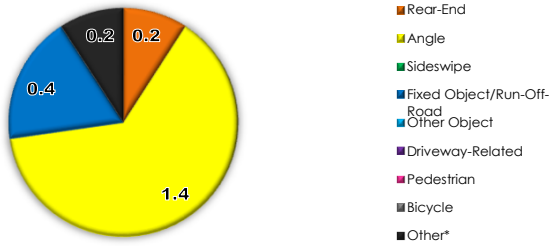
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.08	1.05	2.13
Observed Average Annual Crash Frequency (crashes/yr)	0.60	0.40	1.00
Expected Average Annual Crash Frequency (crashes/yr)	0.97	0.74	1.71

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	3.18	3.03	6.21
Observed Average Annual Crash Frequency (crashes/yr)	1.80	0.40	2.20
Expected Average Annual Crash Frequency (crashes/yr)	2.79	1.39	4.18

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

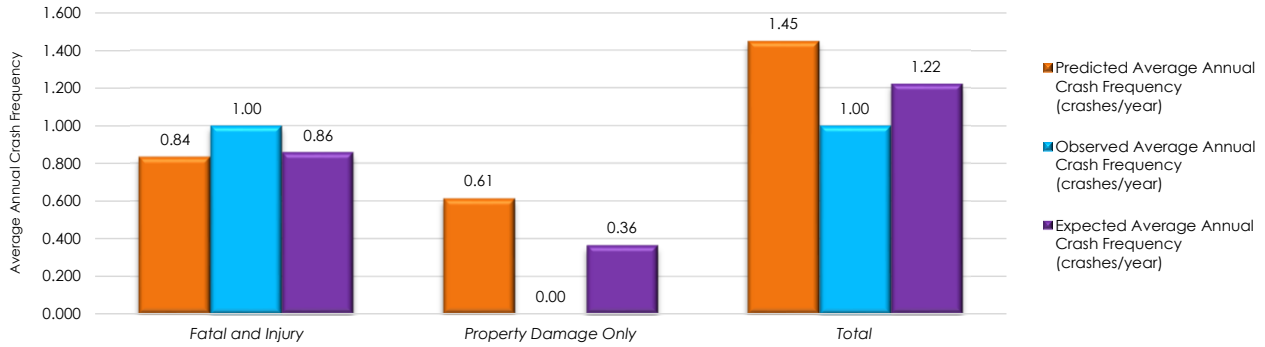


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	0.84	0.61	1.45
Observed Average Annual Crash Frequency	1.00	0.00	1.00
Expected Average Annual Crash Frequency	0.86	0.36	1.22
Potential for Safety Improvement (PSI)	0.02	-0.25	-0.23

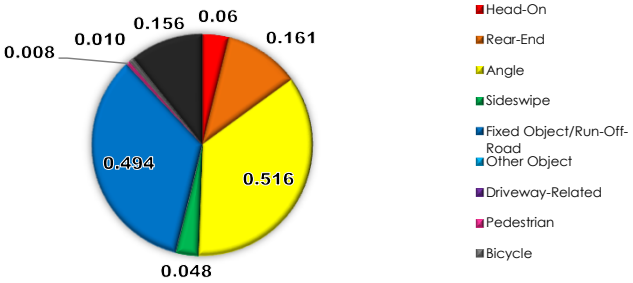
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.33	0.24	0.57
Observed Average Annual Crash Frequency (crashes/yr)	0.60	0.00	0.60
Expected Average Annual Crash Frequency (crashes/yr)	0.40	0.18	0.58

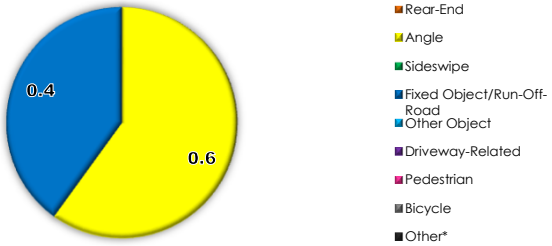
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.50	0.37	0.87
Observed Average Annual Crash Frequency (crashes/yr)	0.40	0.00	0.40
Expected Average Annual Crash Frequency (crashes/yr)	0.45	0.19	0.64

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.84	0.61	1.45
Observed Average Annual Crash Frequency (crashes/yr)	1.00	0.00	1.00
Expected Average Annual Crash Frequency (crashes/yr)	0.86	0.36	1.22

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

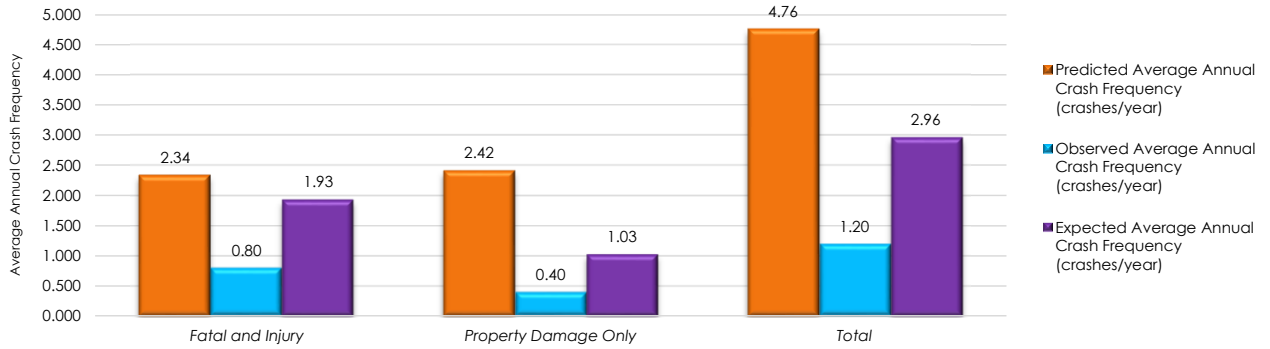


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	2.34	2.42	4.76
Observed Average Annual Crash Frequency	0.80	0.40	1.20
Expected Average Annual Crash Frequency	1.93	1.03	2.96
Potential for Safety Improvement (PSI)	-0.41	-1.39	-1.80

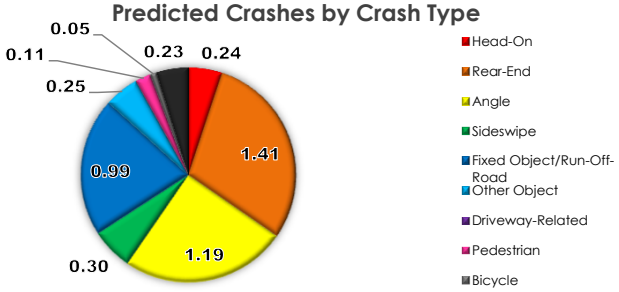
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.77	1.74	3.51
Observed Average Annual Crash Frequency (crashes/yr)	0.60	0.00	0.60
Expected Average Annual Crash Frequency (crashes/yr)	1.42	0.47	1.89

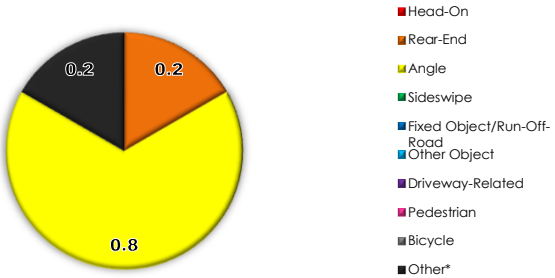
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.57	0.68	1.25
Observed Average Annual Crash Frequency (crashes/yr)	0.20	0.40	0.60
Expected Average Annual Crash Frequency (crashes/yr)	0.51	0.56	1.07

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.34	2.42	4.76
Observed Average Annual Crash Frequency (crashes/yr)	0.80	0.40	1.20
Expected Average Annual Crash Frequency (crashes/yr)	1.93	1.03	2.96

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	50	0	0.57	0.60	0.58	0.01

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 3010	ıden Hall Road (SR 200	0.87	0.40	0.64	-0.23

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	60	142	1.87	0.00	0.89	-0.99
Segment 2	70	0	1.64	0.60	1.00	-0.63

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 3010	ine Drive/Mary Elizabe	1.25	0.60	1.07	-0.18

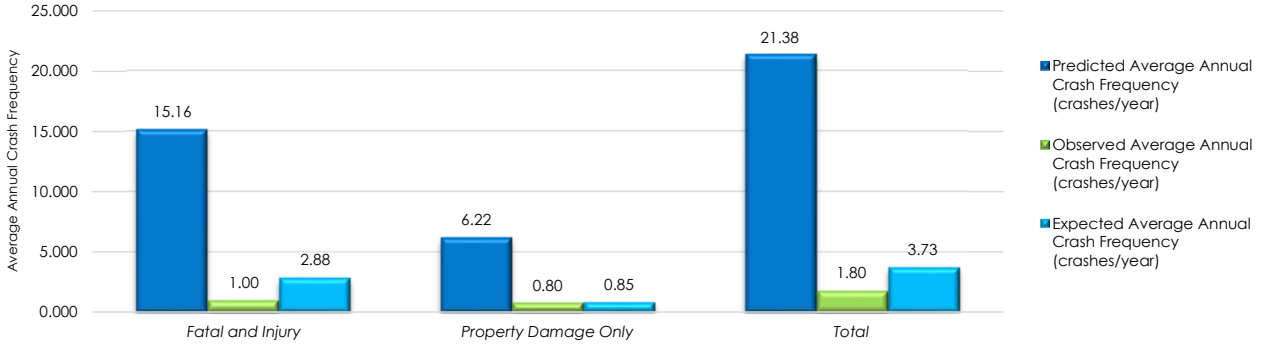
S. Atherton Street, Boal Avenue (SR 3014)

Villa Chrest Drive to Mt. Nittany Expressway (SR 0322)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	15.16	6.22	21.38
Observed Average Annual Crash Frequency	1.00	0.80	1.80
Expected Average Annual Crash Frequency	2.88	0.85	3.73
Potential for Safety Improvement (PSI)	-12.28	-5.36	-17.65

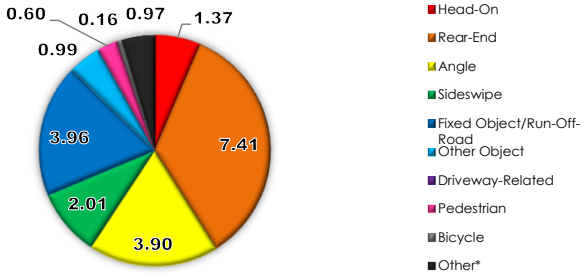
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	15.16	6.22	21.38
Observed Average Annual Crash Frequency (crashes/yr)	1.00	0.80	1.80
Expected Average Annual Crash Frequency (crashes/yr)	2.88	0.85	3.73

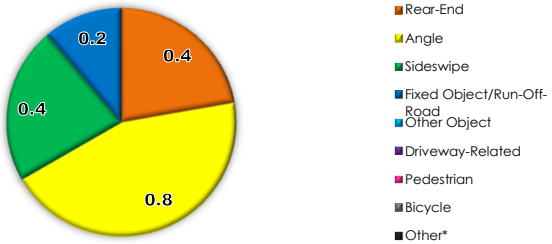
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	15.16	6.22	21.38
Observed Average Annual Crash Frequency (crashes/yr)	1.00	0.80	1.80
Expected Average Annual Crash Frequency (crashes/yr)	2.88	0.85	3.73

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	180	0	18.31	1.00	2.07	-16.23
Segment 2	200	0	3.07	0.80	1.66	-1.41

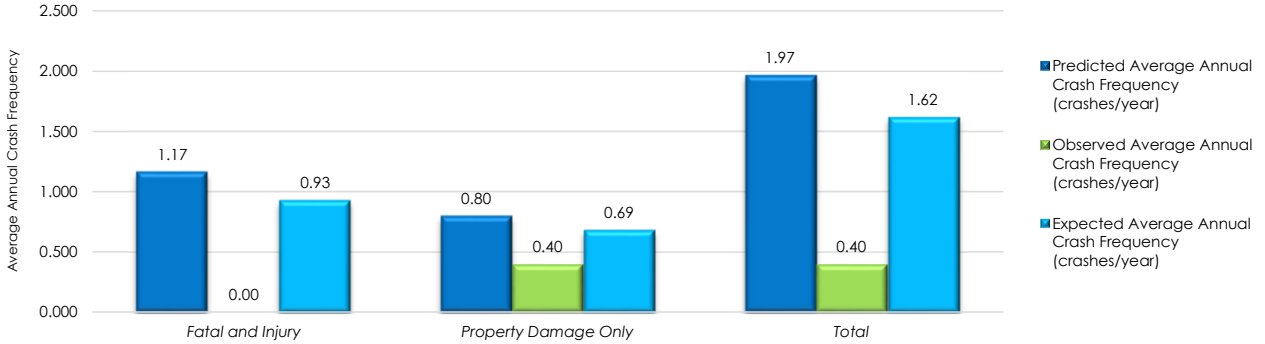
Brush Valley Road (local)

Boalsburg Road (SR 3010) to Rock Hill Road (SR 2006)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2017
Analysis Type	Site Level Analysis
Facility Type(s)	Rural Two-Lane Roads

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	1.17	0.80	1.97
Observed Average Annual Crash Frequency	0.00	0.40	0.40
Expected Average Annual Crash Frequency	0.93	0.69	1.62
Potential for Safety Improvement (PSI)	-0.23	-0.12	-0.35

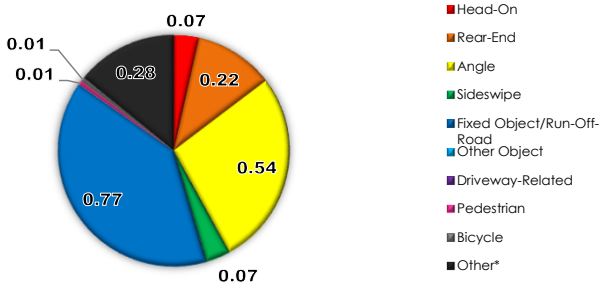
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.65	0.48	1.13
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.40	0.40
Expected Average Annual Crash Frequency (crashes/yr)	0.55	0.45	1.00

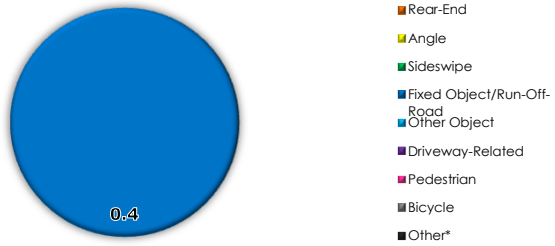
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.52	0.32	0.84
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.38	0.24	0.62

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.17	0.80	1.97
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.40	0.40
Expected Average Annual Crash Frequency (crashes/yr)	0.93	0.69	1.62

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	--	--	0.15	0.00	0.12	-0.03
Segment 2	--	--	0.63	0.40	0.59	-0.04
Segment 3	--	--	0.35	0.00	0.29	-0.06

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2017
Analysis Type Site Level Analysis
Facility Type(s) Rural Two-Lane Roads

Rural Two-Lane, Two-Way Roads: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	Brush Valley Road	Lenape Lane	0.18	0.00	0.15	-0.03
Intersection 2	Brush Valley Road	Hylbert Road	0.20	0.00	0.16	-0.04
Intersection 3	Brush Valley Road	Rock Hill Road (SR 2006	0.47	0.00	0.31	-0.16

HSM Analyses

Year 2050 No Build

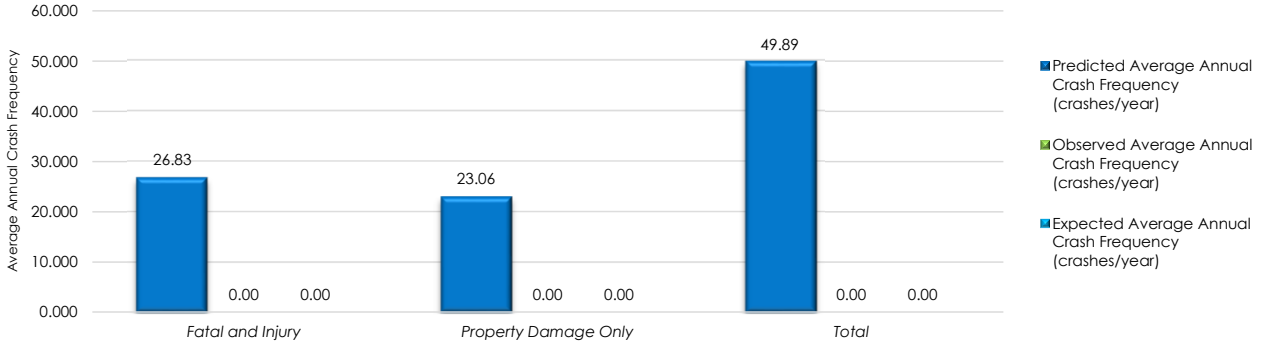
Shingletown Road, Boal Avenue, Earlystown Road (SR 0045)

Main Street to East of Pennsylvania Avenue (SR 0144)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	26.83	23.06	49.89
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

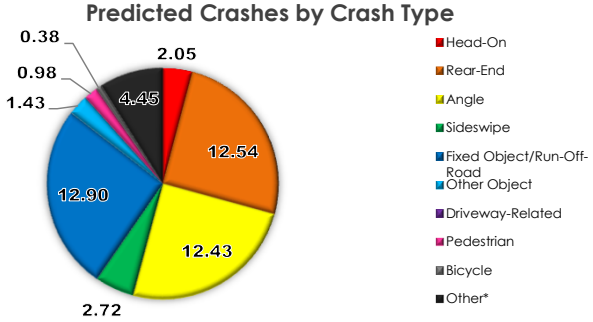
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	19.16	16.88	36.04
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

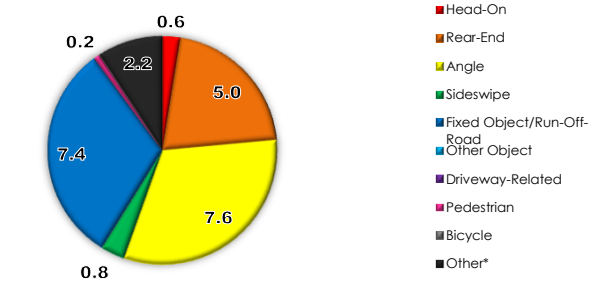
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	7.66	6.18	13.84
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	26.83	23.06	49.89
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	9.36	6.84	16.21

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

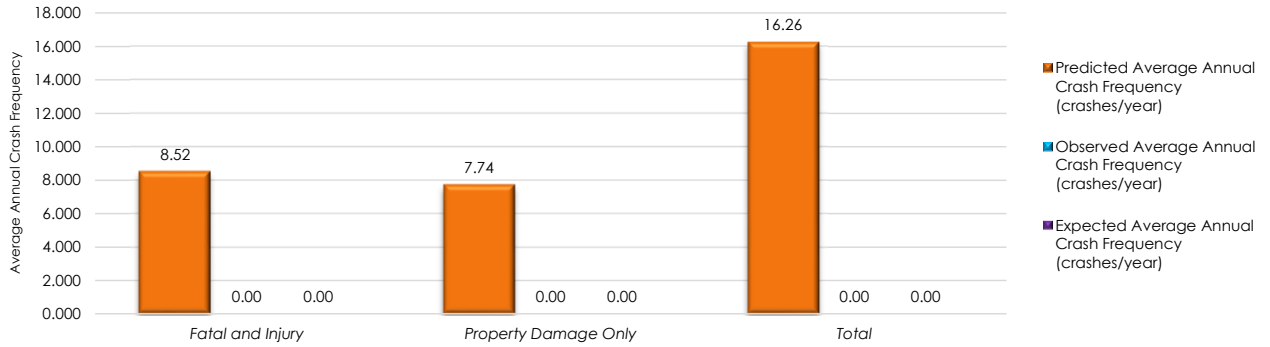


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	8.52	7.74	16.26
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

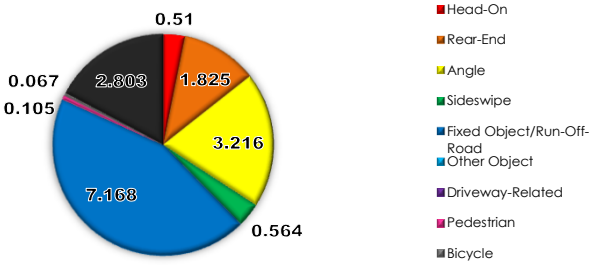
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	6.16	5.79	11.95
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

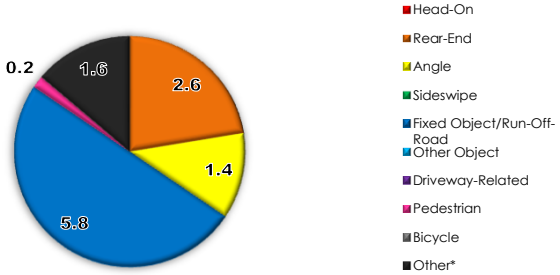
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.36	1.95	4.31
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	8.52	7.74	16.26
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

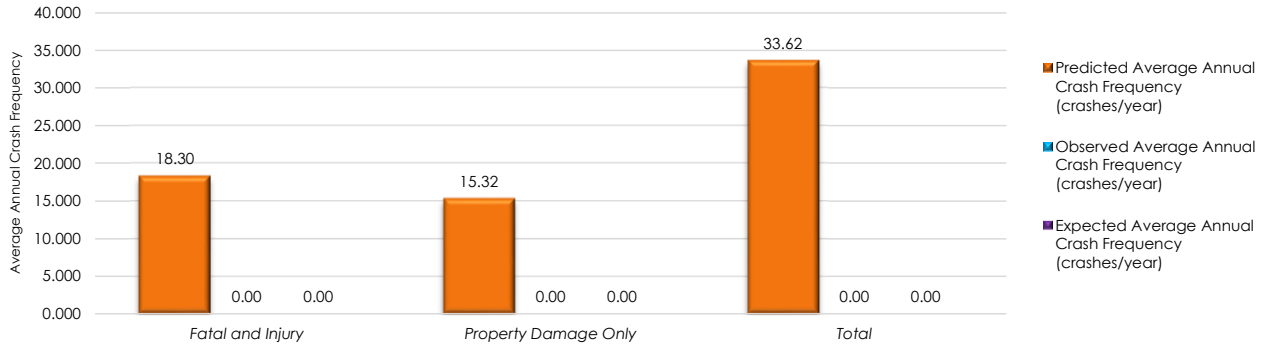


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



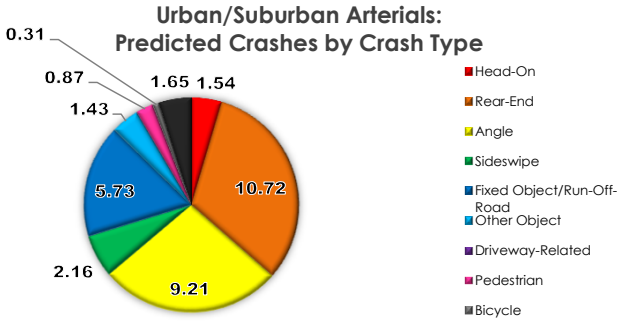
Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	18.30	15.32	33.62
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

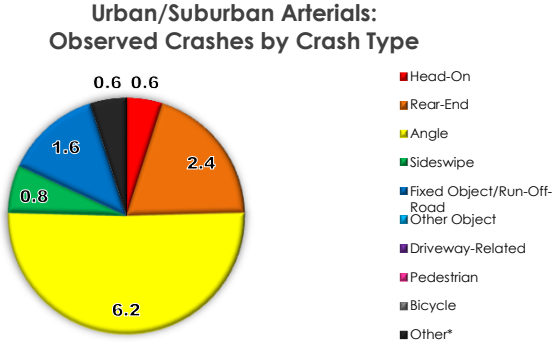
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	13.00	11.09	24.09
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	5.30	4.23	9.53
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	18.30	15.32	33.62
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	9.36	6.84	16.21





*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	300	1757	1.37	N/A	--	--
Segment 2	320	147	7.59	N/A	--	--
Segment 3	410	2006	1.66	N/A	--	--
Segment 4	430	0	1.33	N/A	--	--

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 0045	Elks Club Road	1.33	N/A	--	--
Intersection 2	SR 0045	ıden Hall Road (SR 200	1.72	N/A	--	--
Intersection 3	SR 0045	edar Run Road (SR 200	1.26	N/A	--	--

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	220	0	3.52	N/A	2.13	-1.39
Segment 2	240	0	10.98	N/A	2.48	-8.50
Segment 3	272	0	0.81	N/A	0.62	-0.19
Segment 4	272	1568	2.11	N/A	1.15	-0.95
Segment 5	292	630	6.67	N/A	2.86	-3.81

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 0045	Atherton Street (SR 301	4.20	N/A	4.39	0.20
Intersection 2	SR 0045	alsburg Pike/Church Str	1.70	N/A	1.61	-0.09
Intersection 3	SR 0045	Boal Avenue (SR 3014)	3.64	N/A	2.69	-0.95

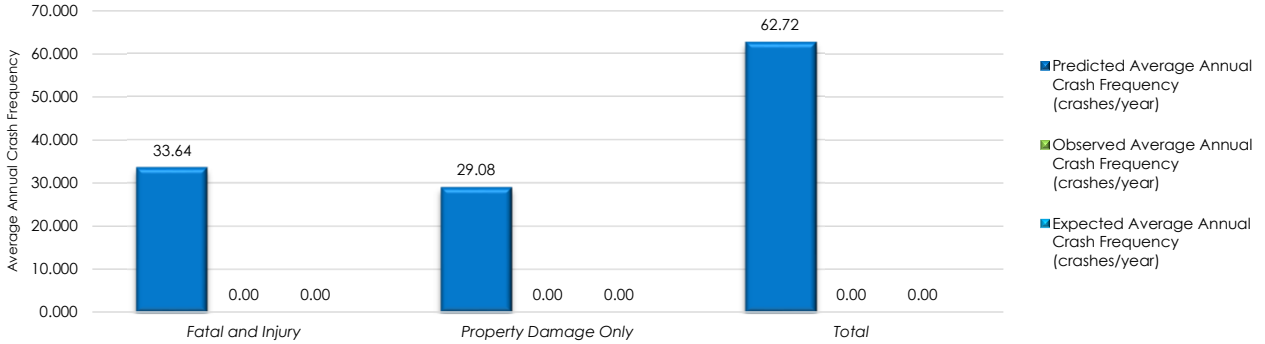
Old Forte Road, Pennsylvania Avenue, Main Street (SR 0144)

General Potter Highway (SR 0322) to North of College Avenue (SR 0026)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	33.64	29.08	62.72
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

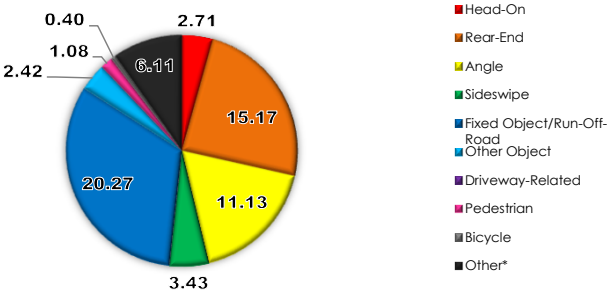
Total Project Summary

Segments	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	29.24	25.90	55.14
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

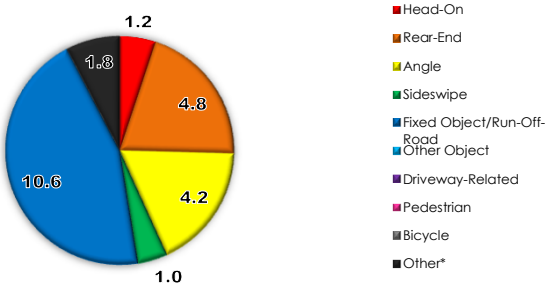
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	4.40	3.18	7.59
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	33.64	29.08	62.72
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	11.56	8.42	19.97

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

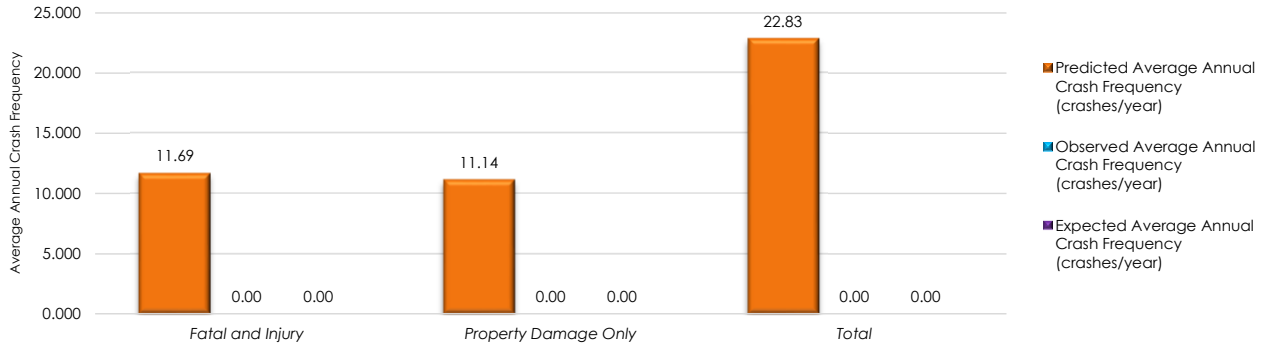


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	11.69	11.14	22.83
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

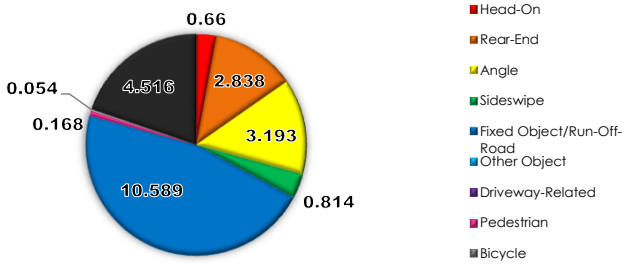
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	10.30	9.82	20.12
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

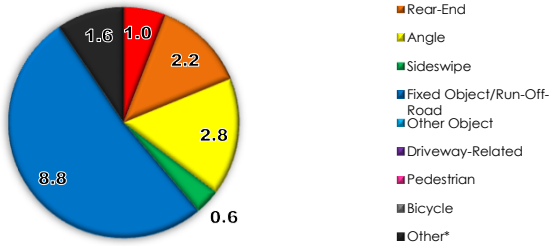
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.39	1.32	2.71
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	11.69	11.14	22.83
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

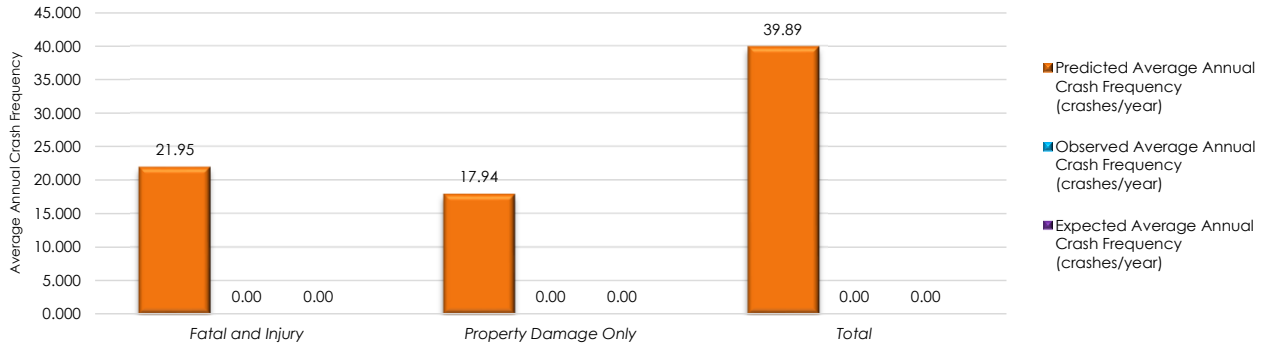


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	21.95	17.94	39.89
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

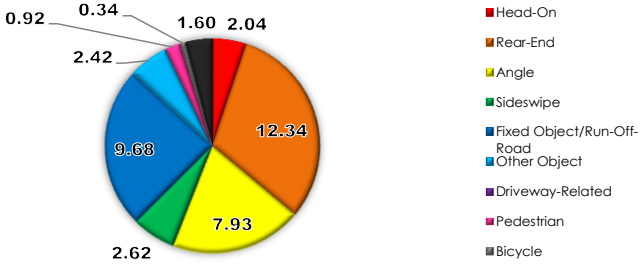
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	18.93	16.08	35.01
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

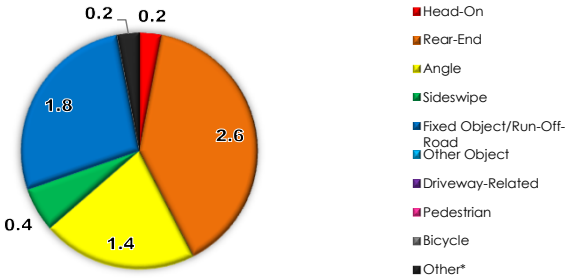
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	3.01	1.86	4.88
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	21.95	17.94	39.89
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	11.56	8.42	19.97

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	10	0	5.53	N/A	--	--
Segment 2	50	852	2.76	N/A	--	--
Segment 3	90	0	1.73	N/A	--	--
Segment 4	120	962	3.03	N/A	--	--
Segment 5	140	0	1.37	N/A	--	--
Segment 6	140	2094	3.84	N/A	--	--
Segment 7	170	686	1.86	N/A	--	--

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 0144	g Creek Road/Airport	0.53	N/A	--	--
Intersection 2	SR 0144	arlystown Road (SR 004	2.18	N/A	--	--

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	90	2387	10.82	N/A	3.58	-7.24
Segment 2	110	588	2.08	N/A	0.92	-1.16
Segment 3	110	1449	6.36	N/A	2.31	-4.06
Segment 4	180	234	11.60	N/A	3.28	-8.33
Segment 5	200	0	4.15	N/A	1.20	-2.95

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Intersections

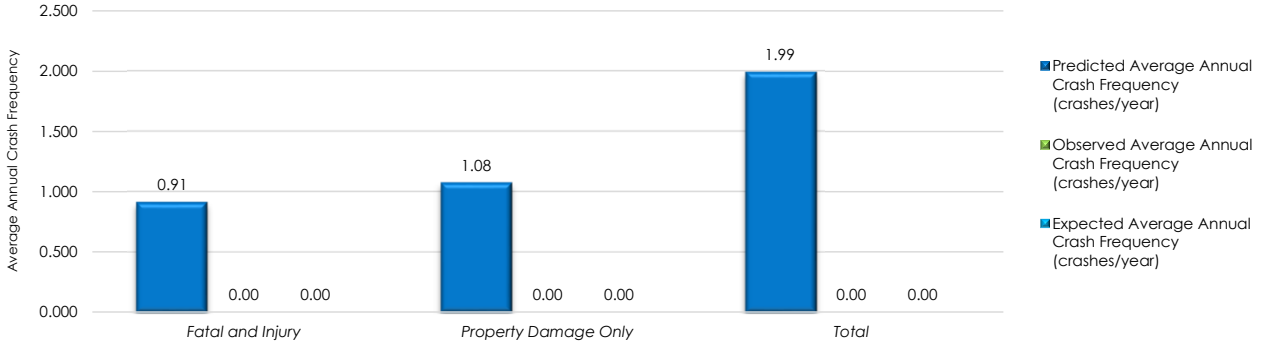
Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 0144	rch Street (SR 2006/SR (	1.84	N/A	1.22	-0.62
Intersection 2	SR 0144	Harrison Road	0.60	N/A	0.61	0.00
Intersection 3	SR 0026	SR 0144	2.43	N/A	1.58	-0.85

Church Street (SR 0192)
East of Pennsylvania Avenue (SR 0144)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	0.91	1.08	1.99
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

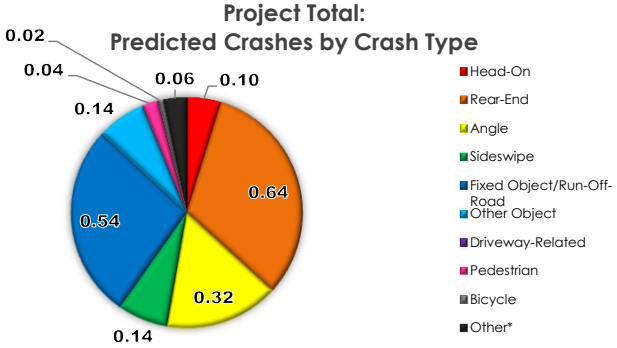
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.91	1.08	1.99
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.91	1.08	1.99
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	10	0	1.99	N/A	--	--

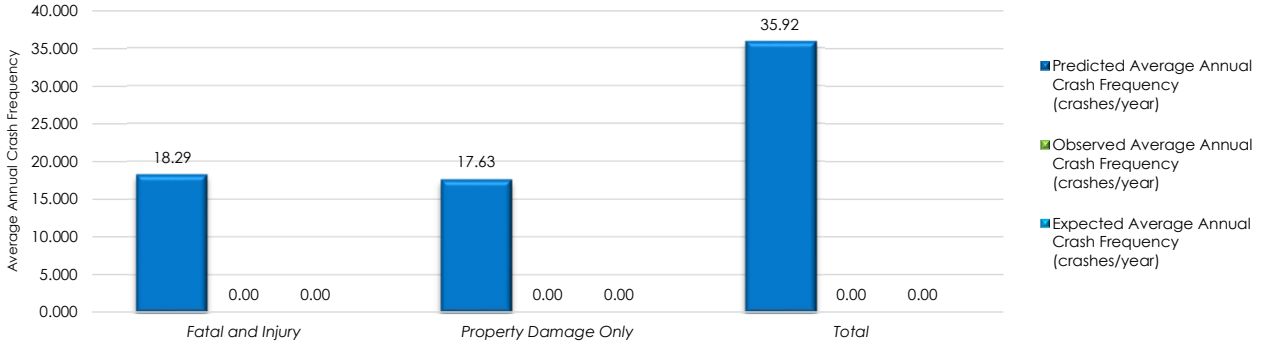
Mt. Nittany Expressway, Boal Avenue, General Potter Highway (SR 0322)

Old Forte Interchange (SR 0045) to Red Mill Road/Mountain Back Road

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	18.29	17.63	35.92
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

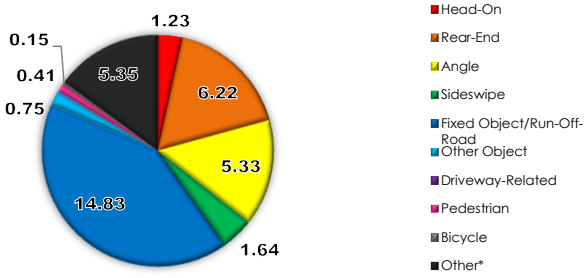
Total Project Summary

Segments	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	16.72	16.54	33.26
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

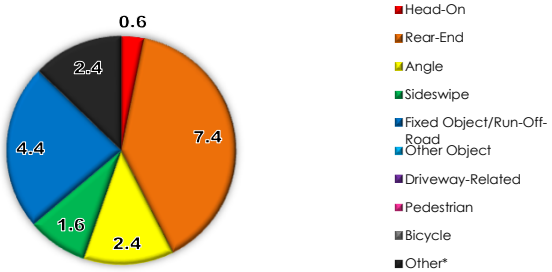
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.56	1.09	2.65
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	18.29	17.63	35.92
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	2.92	2.35	5.27

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

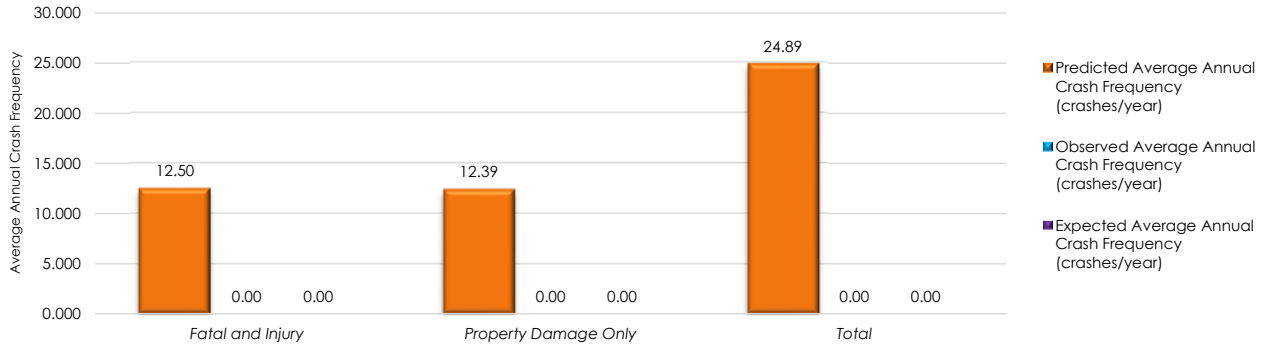


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	12.50	12.39	24.89
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

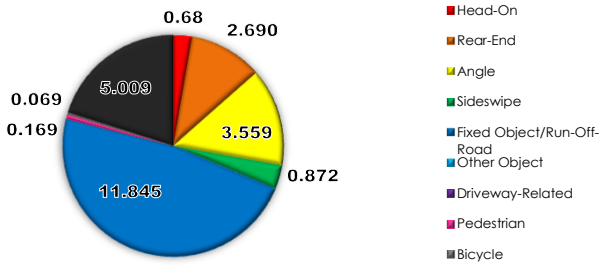
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	10.94	11.30	22.23
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

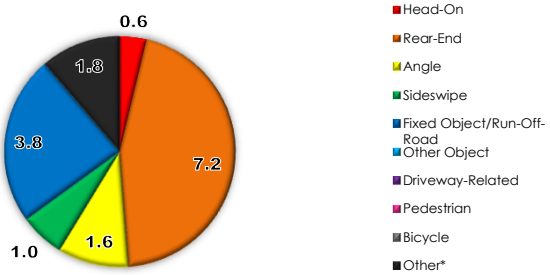
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.56	1.09	2.65
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	12.50	12.39	24.89
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

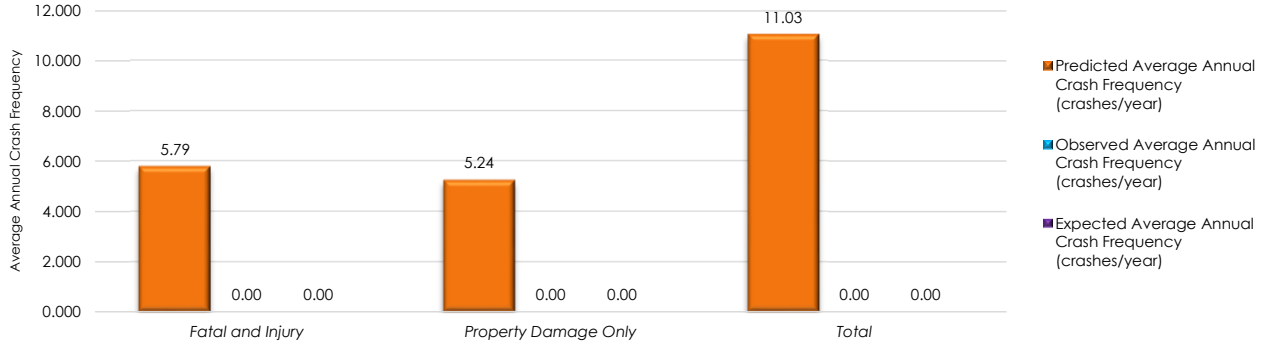


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	5.79	5.24	11.03
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

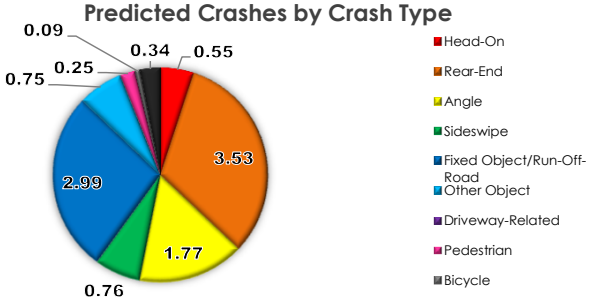
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	5.79	5.24	11.03
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

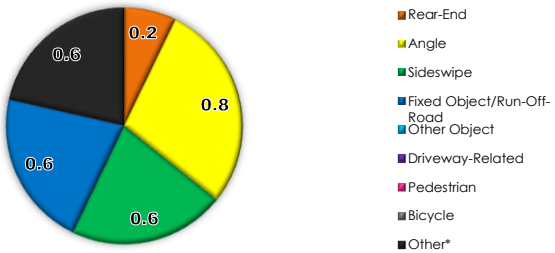
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	5.79	5.24	11.03
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	2.92	2.35	5.27

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	610	427	8.94	N/A	--	--
Segment 2	660	979	2.79	N/A	--	--
Segment 3	680	426	10.51	N/A	--	--

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 0322	b Road/Bear Meadow	0.84	N/A	--	--
Intersection 2	SR 0322	Neff Road	0.94	N/A	--	--
Intersection 3	SR 0322	ill Road/Mountain Bac	0.87	N/A	--	--

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	590	0	3.31	N/A	2.35	-0.95
Segment 2	590	2927	2.78	N/A	1.09	-1.70
Segment 3	600	1053	4.94	N/A	1.43	-3.51

Old Forte Interchange (SR 0322/SR 0045)

At Earlystown Road (SR 0045)

Output Summary

General Information

Project description:	State College Area Connector				
Analyst:	SMMcG	Date:	8/6/2020	Area type:	Urban
First year of analysis:	2017				
Last year of analysis:	2017				

Crash Data Description

Freeway segments	Segment crash data available?	Yes	First year of crash data:	2017
	Project-level crash data available?	No	Last year of crash data:	2017
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2017
	Project-level crash data available?	No	Last year of crash data:	2017
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2014
	Project-level crash data available?	No	Last year of crash data:	2017

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	1.6	0.0	0.0	0.1	0.6	0.8
Estimated average crash freq. during Study Period, crashes/yr:	1.6	0.0	0.0	0.1	0.6	0.8

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Crossroad ramp terminals, crashes:	2	1.6	0.0	0.0	0.1	0.6	0.8

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2017	1.6	0.0	0.0	0.1	0.6	0.8
	2018						
	2019						
	2020						
	2021						
	2022						
	2023						
	2024						
	2025						
	2026						
	2027						
	2028						
	2029						
	2030						
	2031						
	2032						
	2033						
	2034						
	2035						
	2036						
	2037						
	2038						
	2039						
	2040						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	0.5	0.0	0.0	0.0	0.2	0.2
	Rear-end crashes:	0.8	0.0	0.0	0.1	0.4	0.3
	Sideswipe crashes:	0.1	0.0	0.0	0.0	0.0	0.1
	Other multiple-vehicle crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Total multiple-vehicle crashes:	1.4	0.0	0.0	0.1	0.6	0.7
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with fixed object:	0.1	0.0	0.0	0.0	0.0	0.1
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with parked vehicle:	0.0	0.0	0.0	0.0	0.0	0.0
	Other single-vehicle crashes	0.0	0.0	0.0	0.0	0.0	0.0
	Total single-vehicle crashes:	0.1	0.0	0.0	0.0	0.0	0.1
	Total crashes:	1.6	0.0	0.0	0.1	0.6	0.8

Oak Hall Interchange (SR 0322/SR 3010)

At Boalsburg Road (SR 3010)

Output Summary

General Information

Project description:	State College Area Connector				
Analyst:	SMMcG	Date:	8/6/2020	Area type:	Urban
First year of analysis:	2017				
Last year of analysis:	2017				

Crash Data Description

Freeway segments	Segment crash data available?	Yes	First year of crash data:	2017
	Project-level crash data available?	No	Last year of crash data:	2017
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2017
	Project-level crash data available?	No	Last year of crash data:	2017
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2014
	Project-level crash data available?	No	Last year of crash data:	2017

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	1.5	0.0	0.0	0.1	0.6	0.7
Estimated average crash freq. during Study Period, crashes/yr:	1.5	0.0	0.0	0.1	0.6	0.7

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Ramp segments, crashes:	0	0.0	0.0	0.0	0.0	0.0	0.0
Crossroad ramp terminals, crashes:	2	1.5	0.0	0.0	0.1	0.6	0.7

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2017	1.5	0.0	0.0	0.1	0.6	0.7
	2018						
	2019						
	2020						
	2021						
	2022						
	2023						
	2024						
	2025						
	2026						
	2027						
	2028						
	2029						
	2030						
	2031						
	2032						
	2033						
	2034						
	2035						
	2036						
	2037						
	2038						
	2039						
	2040						

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	0.6	0.0	0.0	0.1	0.3	0.3
	Rear-end crashes:	0.5	0.0	0.0	0.1	0.2	0.2
	Sideswipe crashes:	0.1	0.0	0.0	0.0	0.0	0.1
	Other multiple-vehicle crashes:	0.0	0.0	0.0	0.0	0.0	0.0
	Total multiple-vehicle crashes:	1.3	0.0	0.0	0.1	0.6	0.6
Single vehicle	Crashes with animal:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with fixed object:	0.1	0.0	0.0	0.0	0.1	0.1
	Crashes with other object:	0.0	0.0	0.0	0.0	0.0	0.0
	Crashes with parked vehicle:	0.0	0.0	0.0	0.0	0.0	0.0
	Other single-vehicle crashes	0.0	0.0	0.0	0.0	0.0	0.0
	Total single-vehicle crashes:	0.2	0.0	0.0	0.0	0.1	0.1
	Total crashes:	1.5	0.0	0.0	0.1	0.6	0.7

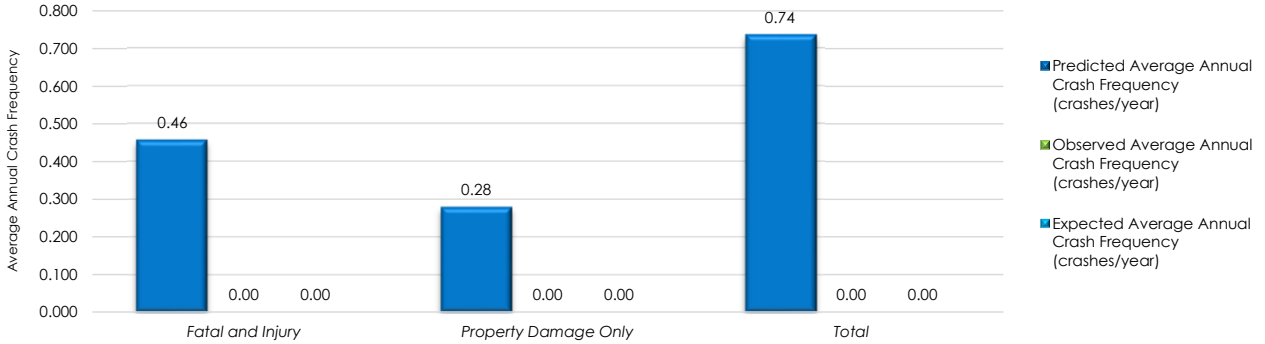
Linden Hall Road, Cedar Run Road (SR 2004)

Boalsburg Road (SR 3010) to Earlystown Road (SR 0045)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	0.46	0.28	0.74
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

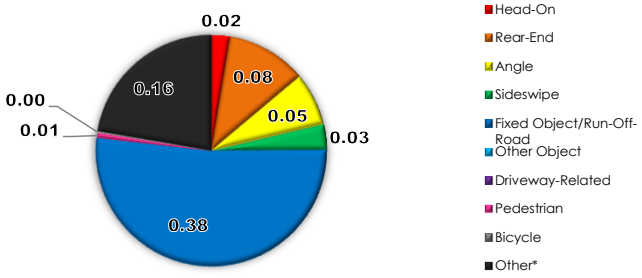
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.46	0.28	0.74
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

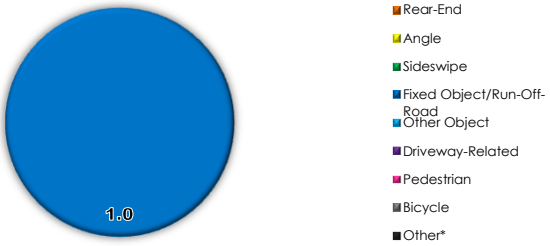
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.46	0.28	0.74
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	10	0	0.27	N/A	--	--
Segment 2	30	1800	0.27	N/A	--	--
Segment 3	50	952	0.05	N/A	--	--
Segment 4	60	0	0.15	N/A	--	--

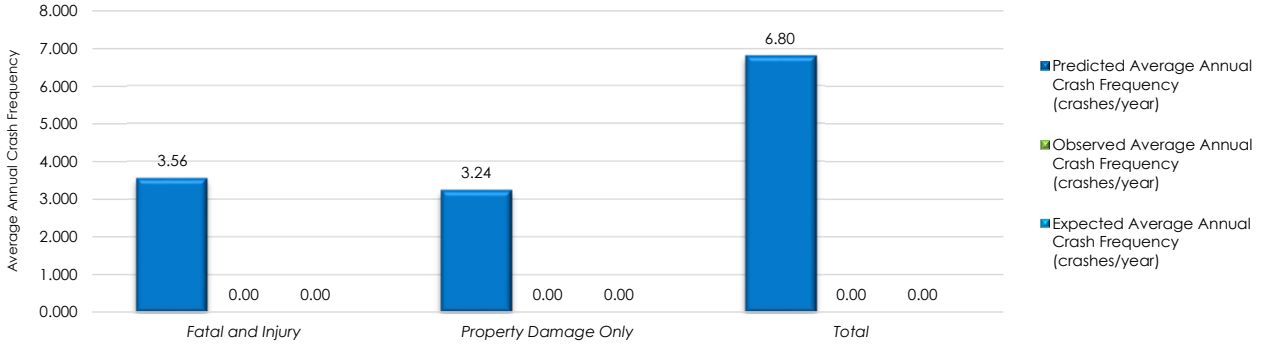
Linden Hall Road, Rock Hill Road, Brush Valley Road (SR 2006)

Earlystown Road (SR 0045) to Pennsylvania Avenue (SR 0144)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	3.56	3.24	6.80
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

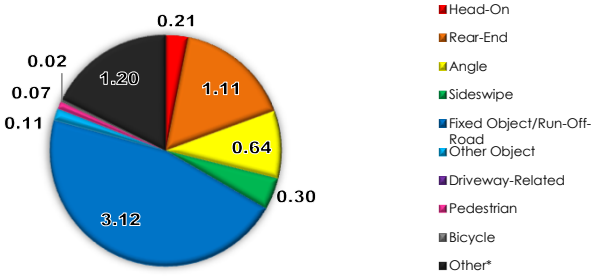
Total Project Summary

Segments	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	3.56	3.24	6.80
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

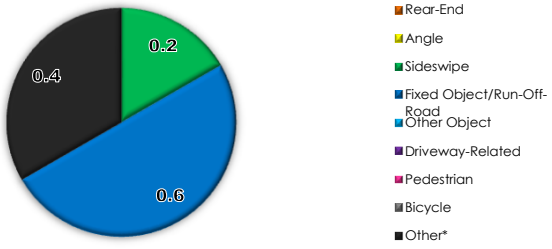
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	3.56	3.24	6.80
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.38	0.43	0.80

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

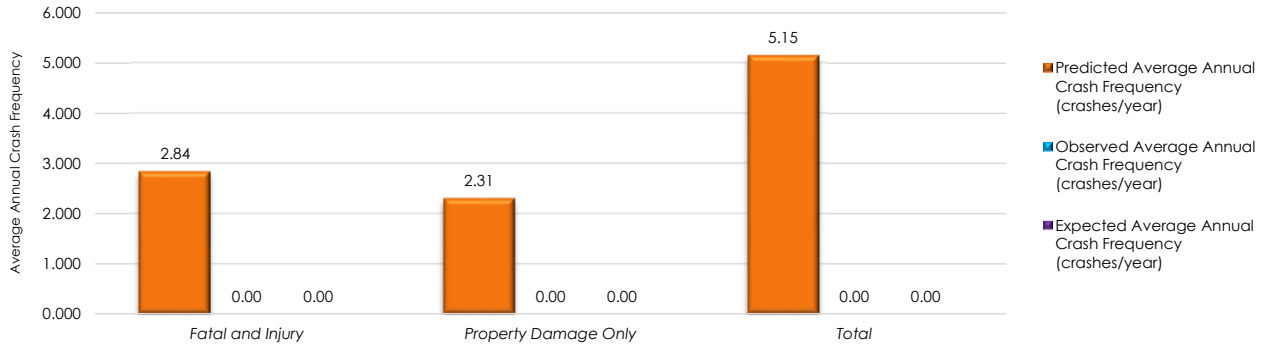


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	2.84	2.31	5.15
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

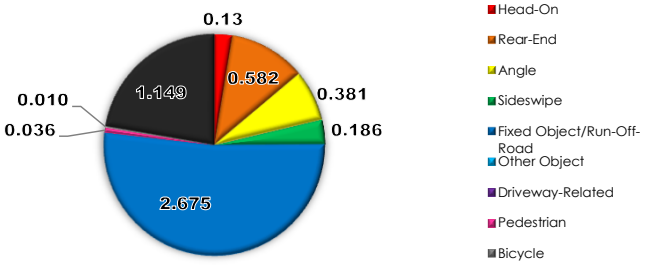
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.84	2.31	5.15
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

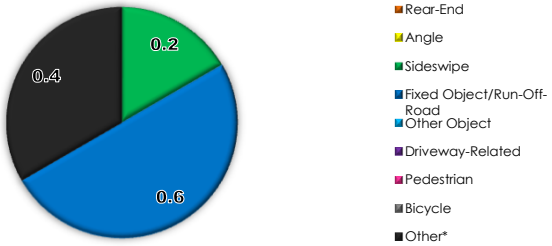
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.84	2.31	5.15
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

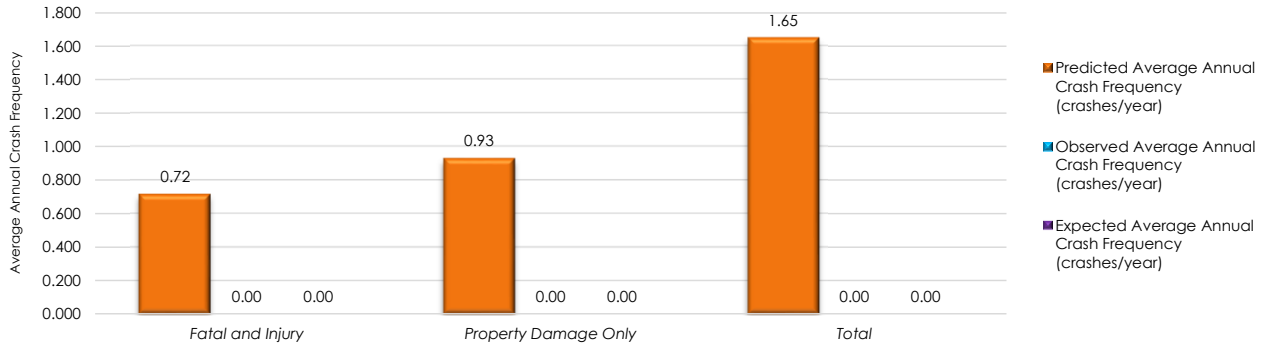


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



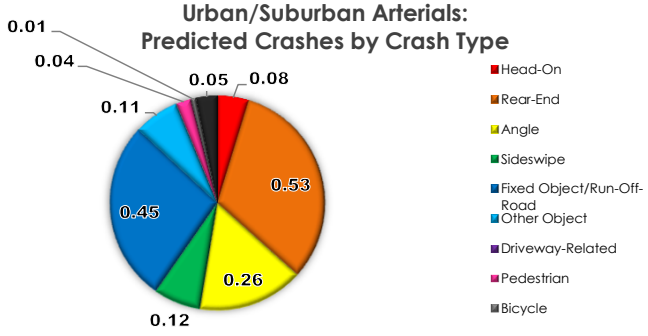
Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	0.72	0.93	1.65
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

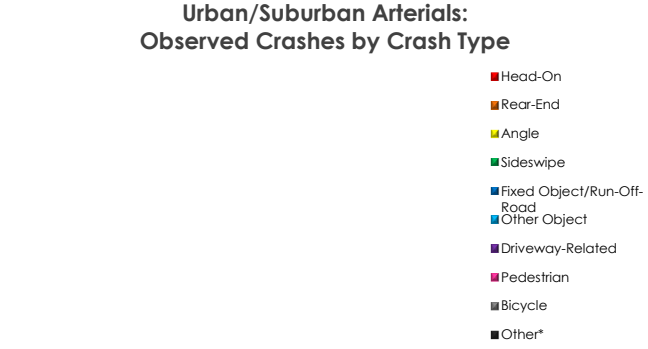
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.72	0.93	1.65
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.72	0.93	1.65
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.38	0.43	0.80





*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	10	0	0.24	N/A	--	--
Segment 2	20	0	1.78	N/A	--	--
Segment 3	60	0	3.13	N/A	--	--

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	130	1280	1.65	N/A	0.62	-1.03

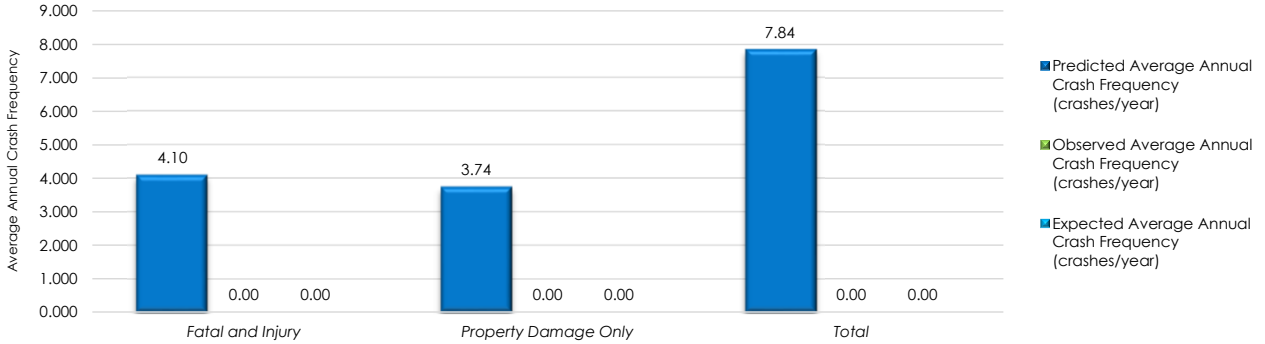
Boalsburg Road, Warner Boulevard (SR 3010)

North of Linden Hall Road (SR 2004) to Boal Avenue (SR 0045/SR 3014)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	4.10	3.74	7.84
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

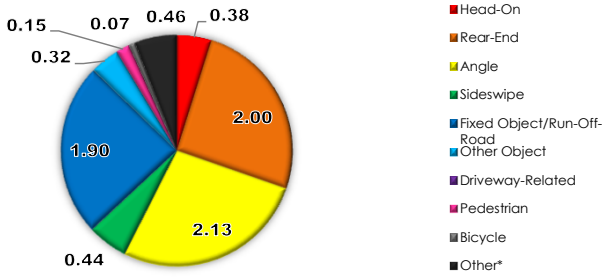
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.79	2.47	5.26
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

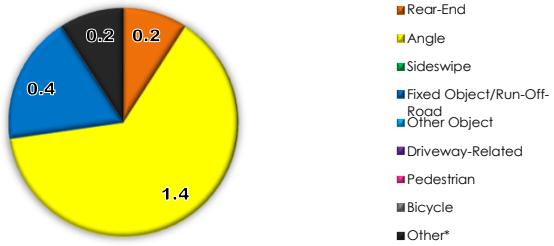
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.31	1.28	2.59
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	4.10	3.74	7.84
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	1.79	1.53	3.32

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

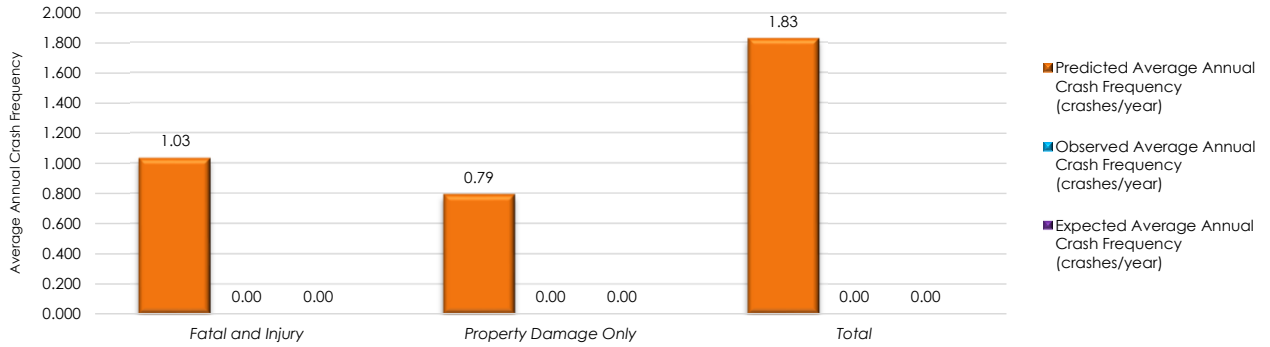


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	1.03	0.79	1.83
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

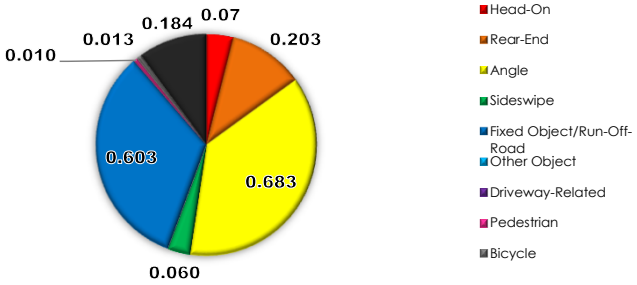
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.38	0.28	0.66
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

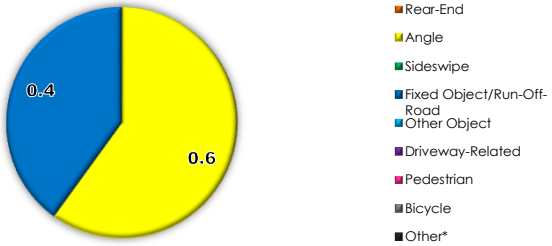
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.66	0.51	1.17
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.03	0.79	1.83
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

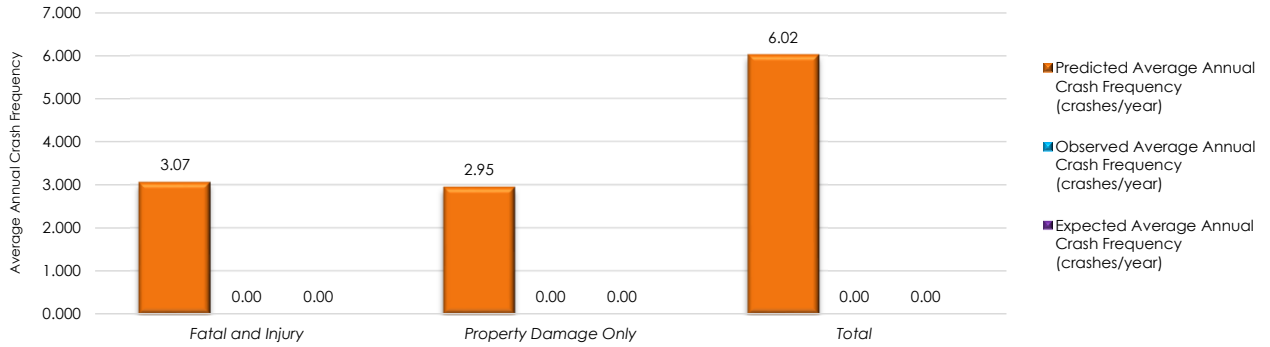


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	3.07	2.95	6.02
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

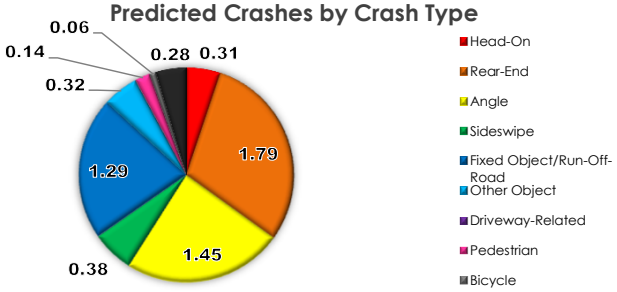
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.41	2.19	4.60
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

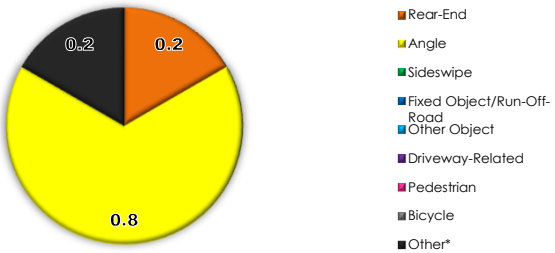
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.65	0.76	1.42
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	3.07	2.95	6.02
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	1.79	1.53	3.32

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	50	0	0.66	N/A	--	--

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Rural Two-Lane, Two-Way Roads: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 3010	ıden Hall Road (SR 200	1.17	N/A	--	--

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	60	142	2.73	N/A	1.05	-1.68
Segment 2	70	0	1.87	N/A	1.06	-0.82

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads, and Urban/Suburban Arterials

Urban and Suburban Arterials: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	SR 3010	ine Drive/Mary Elizabe	1.42	N/A	1.17	-0.25

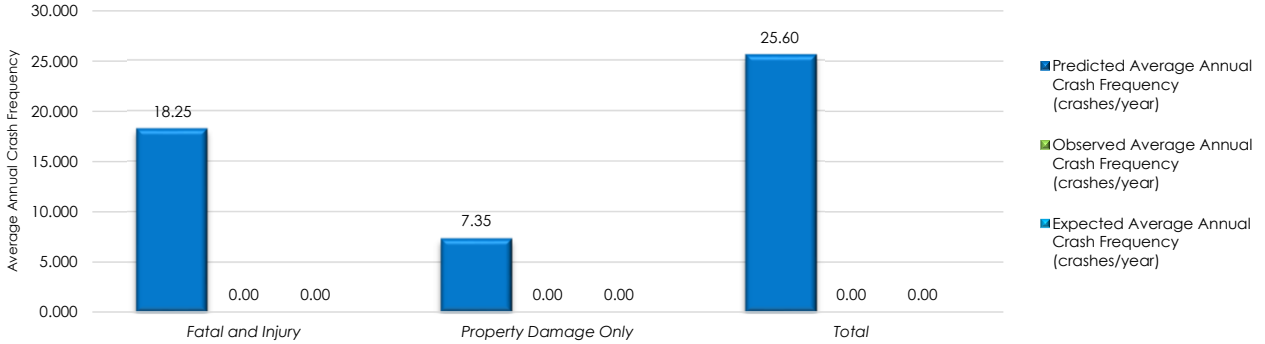
S. Atherton Street, Boal Avenue (SR 3014)

Villa Crest Drive to Mt. Nittany Expressway (SR 0322)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	18.25	7.35	25.60
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

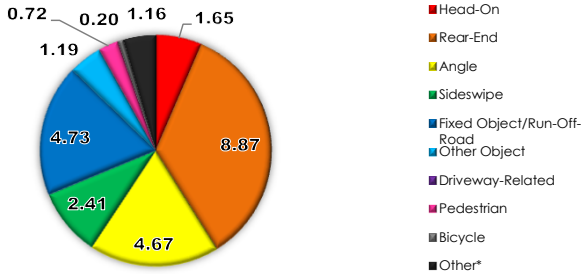
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	18.25	7.35	25.60
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

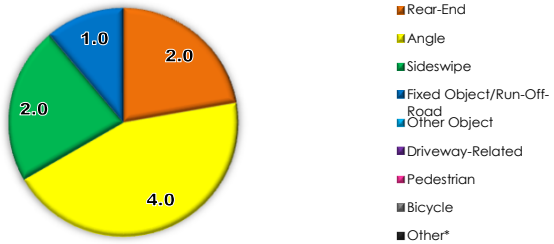
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	18.25	7.35	25.60
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Urban and Suburban Arterials

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Urban/Suburban Arterials

Urban and Suburban Arterials: Segments

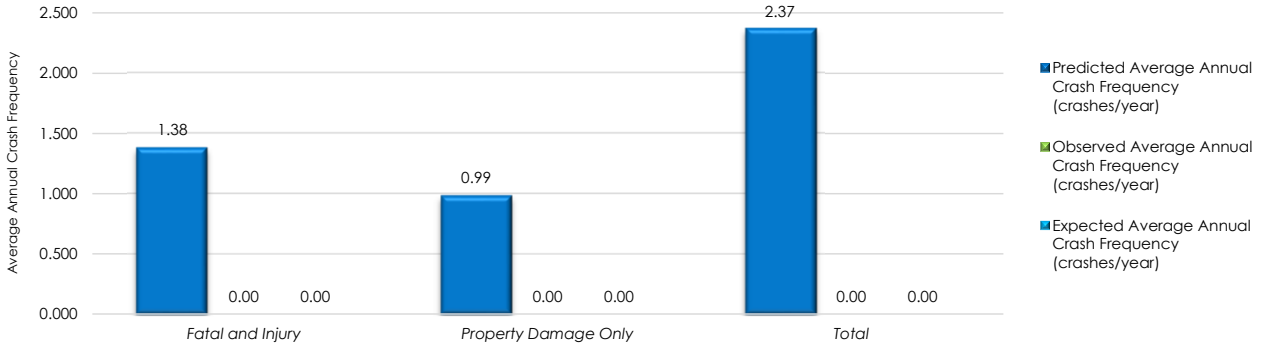
Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	180	0	22.02	N/A	--	--
Segment 2	200	0	3.58	N/A	--	--

Brush Valley Road (local)
Boalsburg Road (SR 3010) to Rock Hill Road (SR 2006)

Project Safety Performance Summary Report

Project Description	SCAC
Date	8/3/2020
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	1.38	0.99	2.37
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

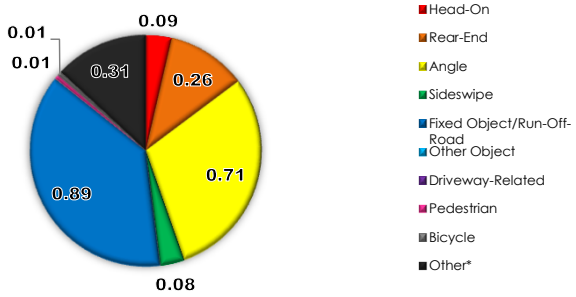
Total Project Summary

Segments	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.70	0.52	1.23
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

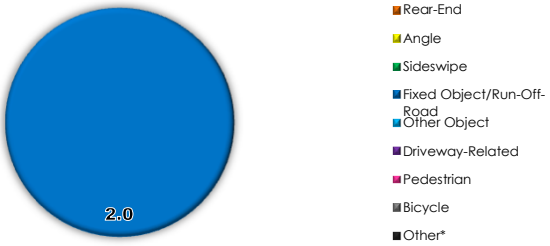
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.68	0.46	1.14
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.38	0.99	2.37
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads

Rural Two-Lane, Two-Way Roads: Segments

Segment Name	*PennDOT Segment*	*PennDOT Offset*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Segment 1	--	--	0.16	N/A	--	--
Segment 2	--	--	0.69	N/A	--	--
Segment 3	--	--	0.38	N/A	--	--

Project Safety Performance Detailed Report

Rural Two-Lane, Two-Way Roads

Project Description SCAC
Date 8/3/2020
Analysis Year 2050
Analysis Type Predicted Only (No Crash Data Analysis)
Facility Type(s) Rural Two-Lane Roads

Rural Two-Lane, Two-Way Roads: Intersections

Intersection Name	*Major Road*	*Minor Road*	*Total Predicted Crashes*	*Total Observed Crashes*	*Total Expected Crashes*	*Potential for Safety Improvement*
Intersection 1	Brush Valley Road	Lenape Lane	0.19	N/A	--	--
Intersection 2	Brush Valley Road	Hylbert Road	0.21	N/A	--	--
Intersection 3	Brush Valley Road	Rock Hill Road (SR 2006	0.74	N/A	--	--

HSM Analyses

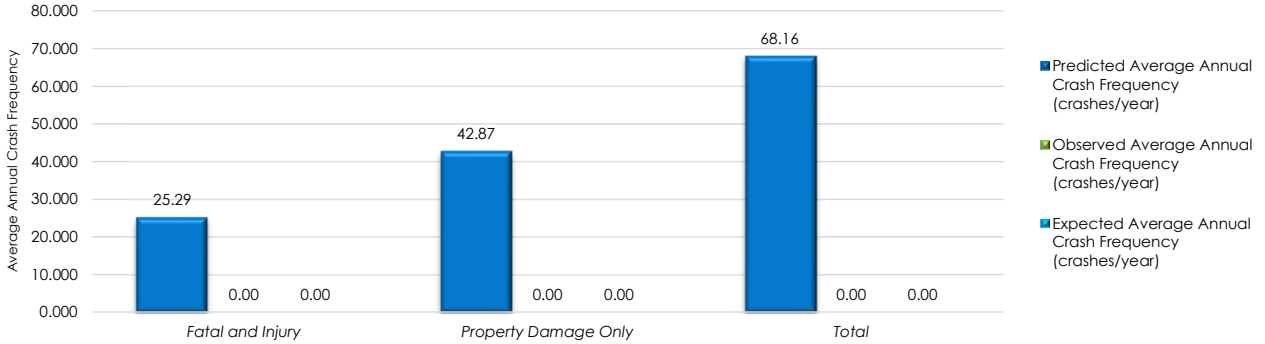
Year 2050 Build

Upgrade Existing US 322 Alternative

Project Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Multilane Highways, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	25.29	42.87	68.16
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

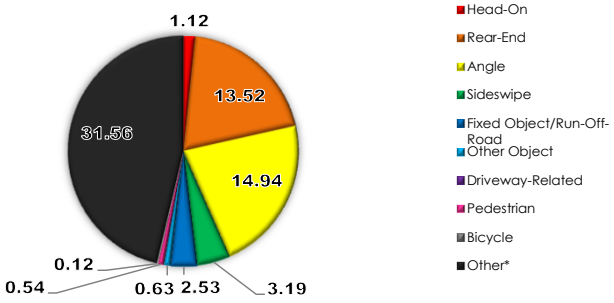
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	16.93	35.26	52.19
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

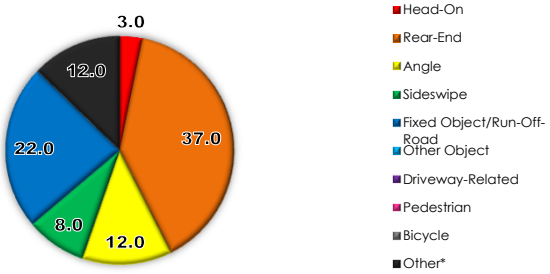
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	8.36	7.61	15.97
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	25.29	42.87	68.16
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

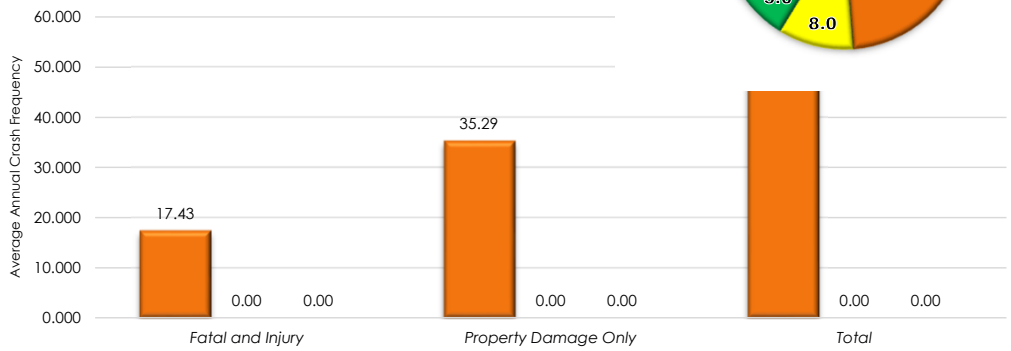


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

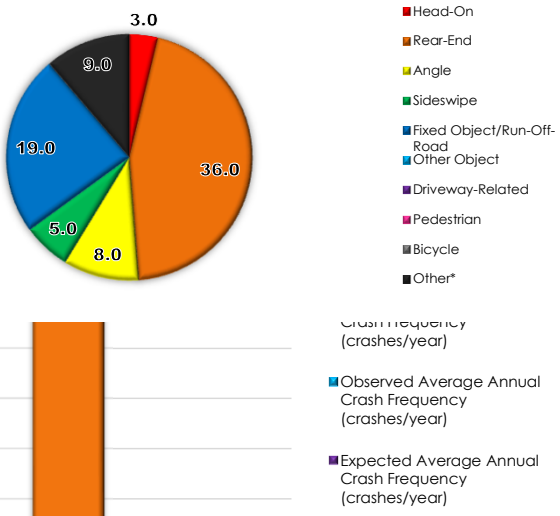
Rural Multilane Highways Safety Perfo

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Multilane Highways, and Urban/Suburban Arte

Summary of Average Safety Perfo



Rural Two-Lane Roads: Observed Crashes by Crash Type



Rural Multilane Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	17.43	35.29	52.73
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

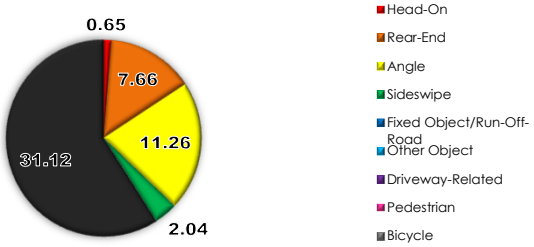
Rural Multilane Highways Summary

Segments	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	9.73	28.24	37.97
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	7.70	7.06	14.76
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	17.43	35.29	52.73
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Multilane Highways: Predicted Crashes by Crash Type



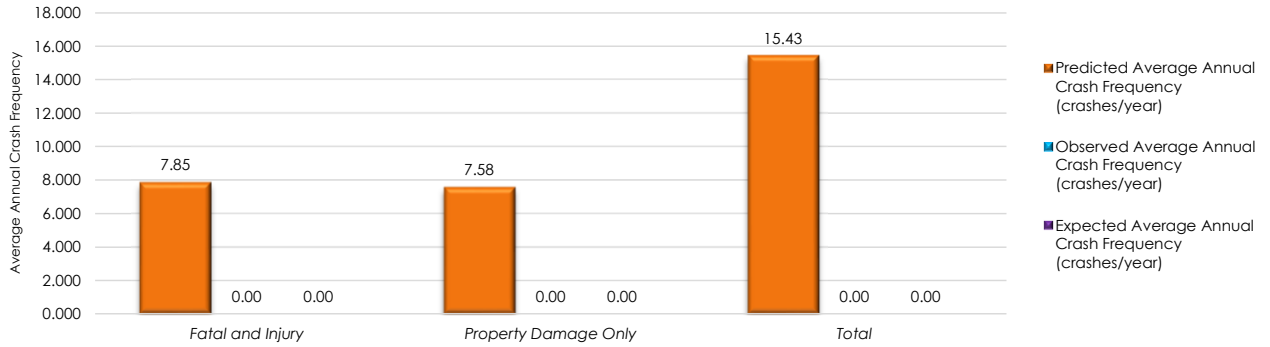
No Observed Crash Data Provided

*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Multilane Highways, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	7.85	7.58	15.43
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

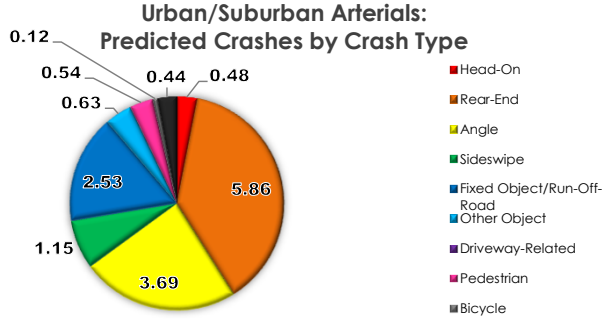
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	7.20	7.02	14.22
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

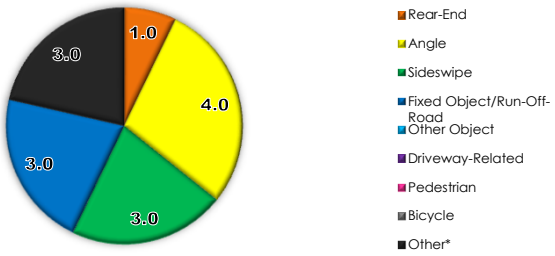
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.65	0.56	1.21
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	7.85	7.58	15.43
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type

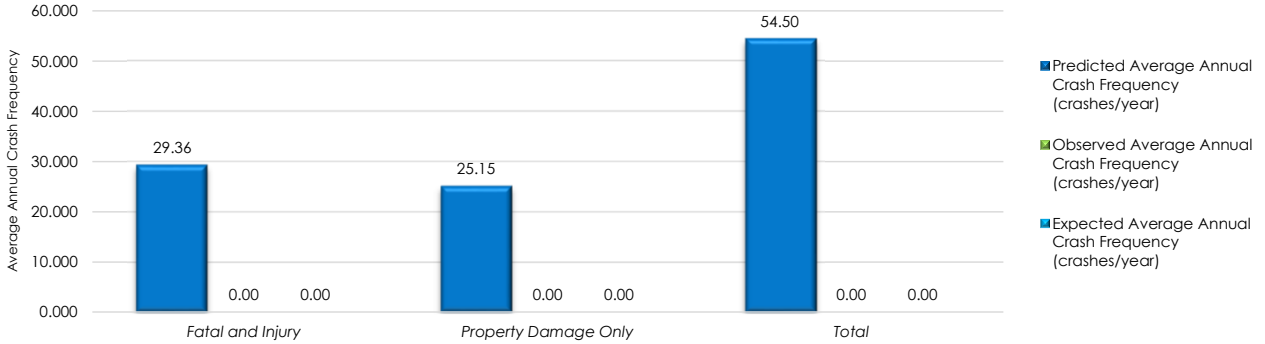


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	29.36	25.15	54.50
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

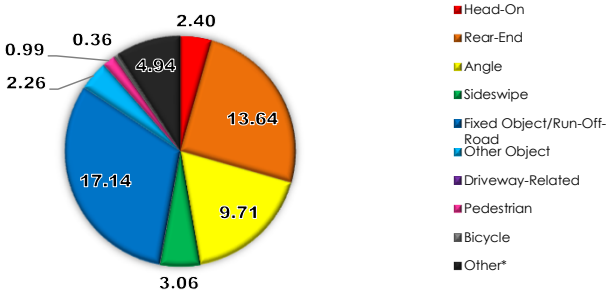
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	25.51	22.59	48.10
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

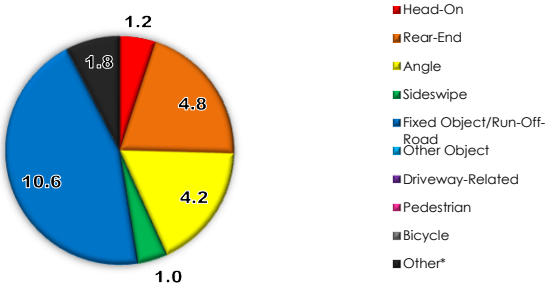
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	3.84	2.56	6.40
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	29.36	25.15	54.50
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	10.68	7.96	18.64

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

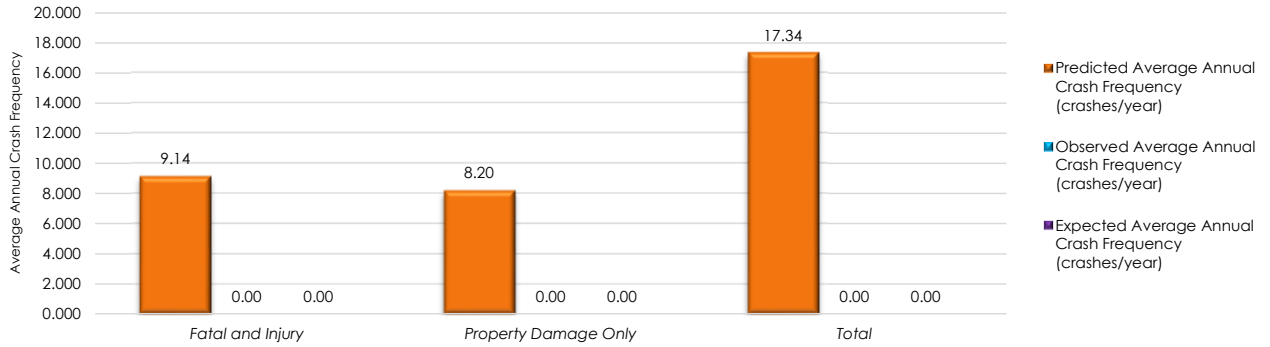


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	9.14	8.20	17.34
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

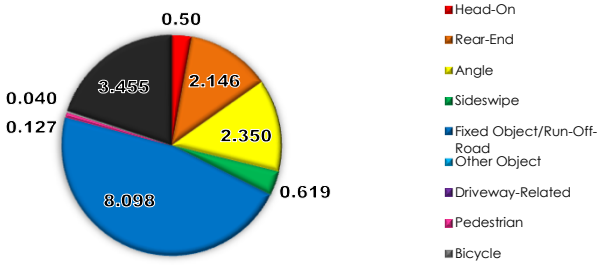
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	8.04	7.36	15.40
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

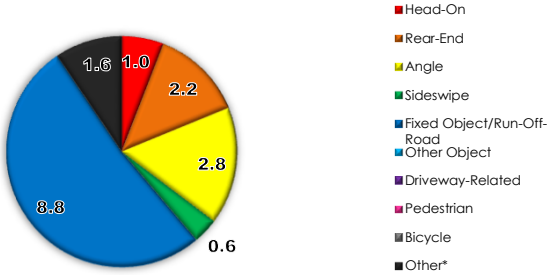
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.09	0.84	1.93
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	9.14	8.20	17.34
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

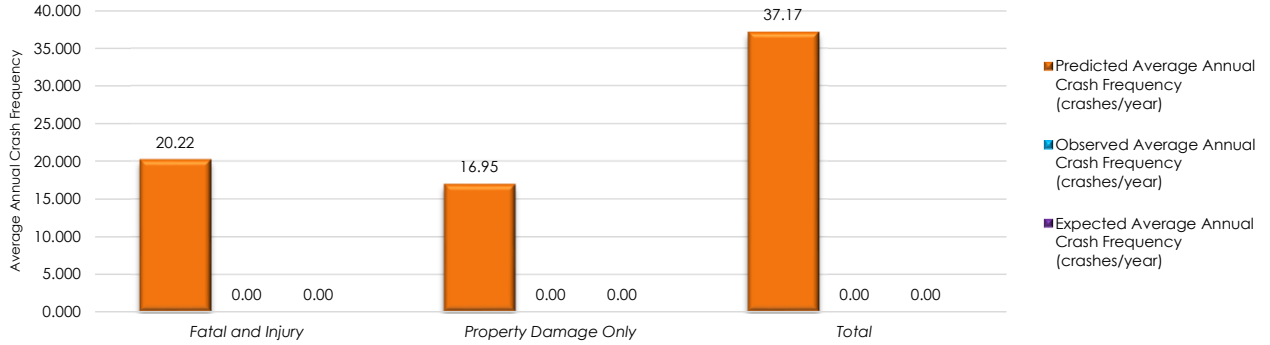


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	20.22	16.95	37.17
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

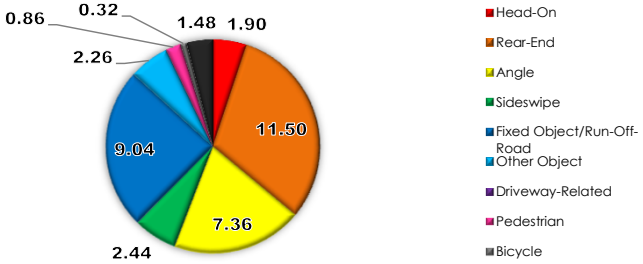
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	17.47	15.23	32.70
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

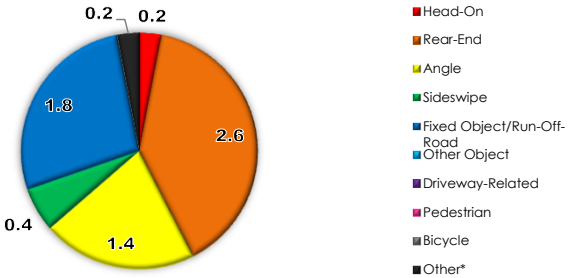
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.75	1.72	4.47
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	20.22	16.95	37.17
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	10.68	7.96	18.64

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type

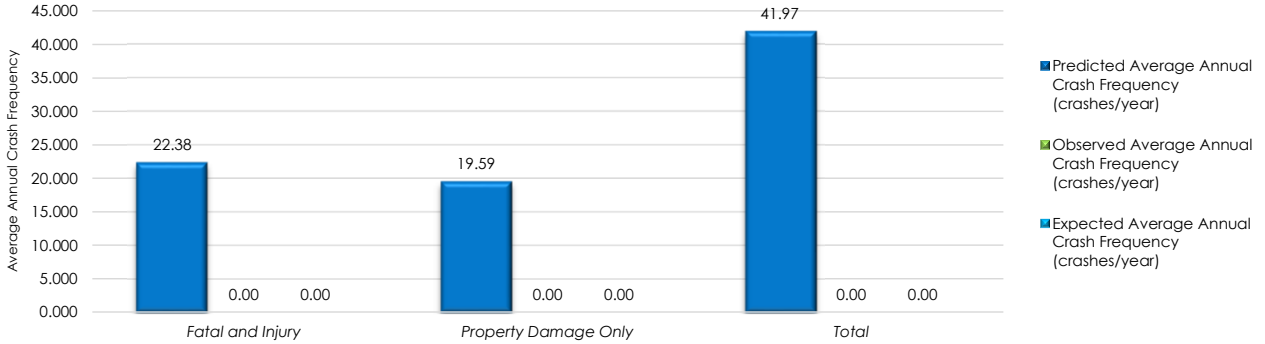


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	22.38	19.59	41.97
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

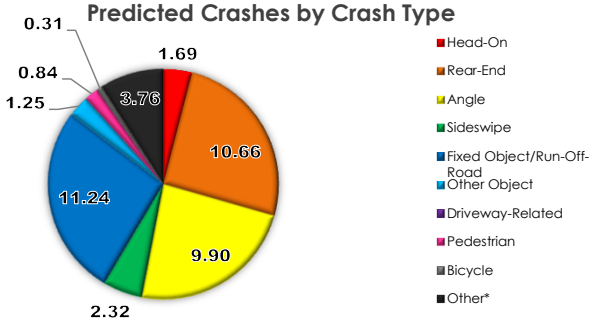
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	16.88	14.97	31.85
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

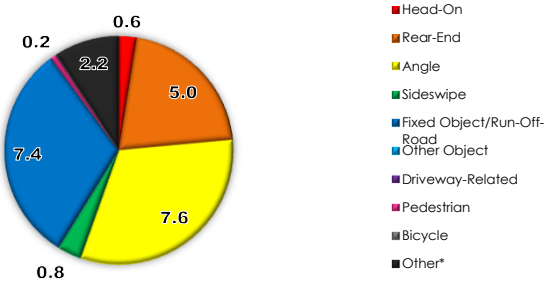
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	5.50	4.62	10.12
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	22.38	19.59	41.97
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	7.69	5.80	13.49

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

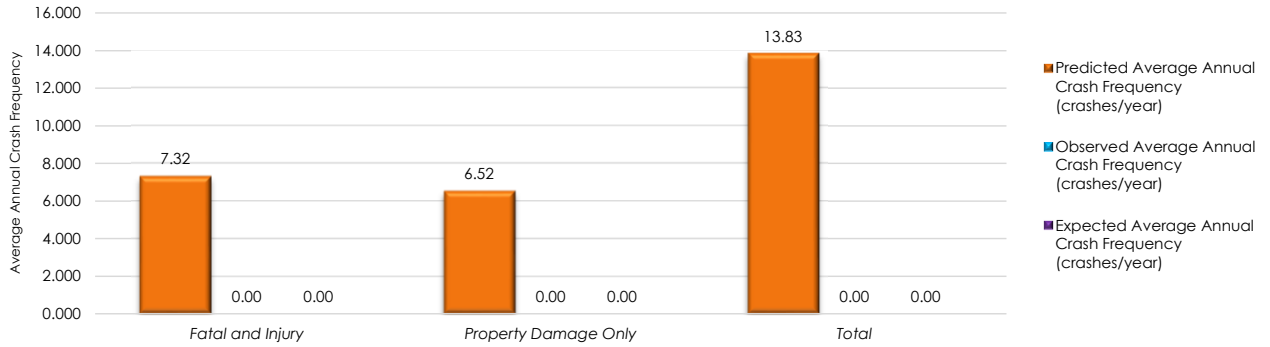


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	7.32	6.52	13.83
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

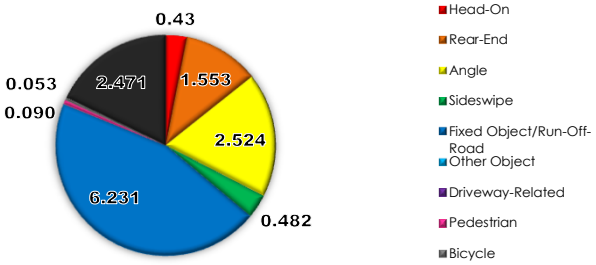
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	5.53	5.09	10.62
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

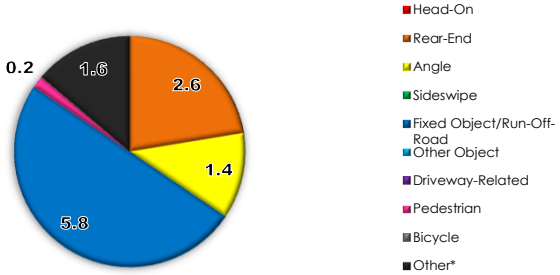
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.79	1.42	3.21
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	7.32	6.52	13.83
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

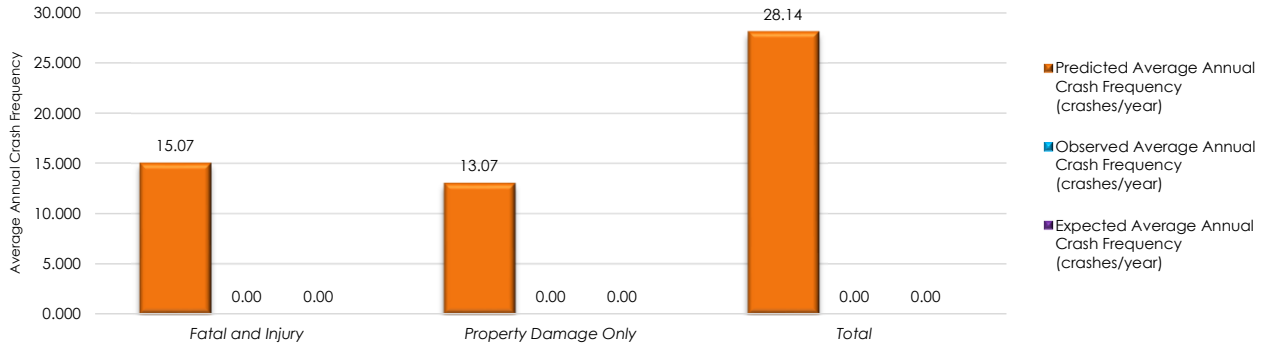


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	15.07	13.07	28.14
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

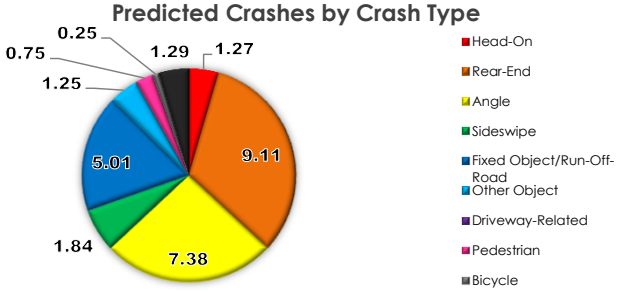
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	11.35	9.88	21.23
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

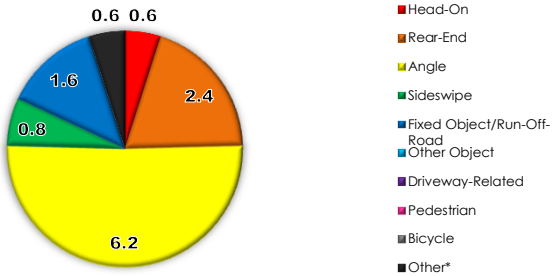
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	3.71	3.19	6.91
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	15.07	13.07	28.14
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	7.69	5.80	13.49

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

HSM Analyses

Year 2050 Build
Build Alternative 1
(US 322 Corridor)

Output Summary

General Information

Project description:	State College Area Connector SR 0322 (ALT 1)				
Analyst:	HAK	Date:	3/15/2022	Area type:	Rural
First year of analysis:	0				
Last year of analysis:	0				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	29.2	0.5	1.3	5.1	5.9	16.5
Estimated average crash freq. during Study Period, crashes/yr:	29.2	0.5	1.3	5.1	5.9	16.5

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	8	26.9	0.5	1.2	4.7	5.1	15.4
Ramp segments, crashes:	4	0.4	0.0	0.0	0.1	0.1	0.2
Crossroad ramp terminals, crashes:	4	1.9	0.0	0.0	0.2	0.7	0.9

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	0	29.2	0.5	1.3	5.1	5.9	16.5
	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						
	21						
	22						
	23						

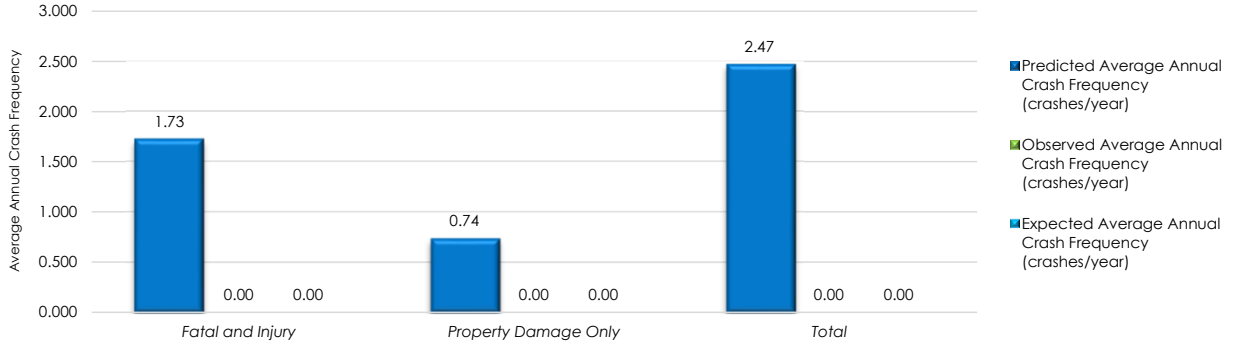
Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.1	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	0.8	0.0	0.0	0.2	0.3	0.3
	Rear-end crashes:	5.0	0.1	0.3	1.1	1.4	2.1
	Sideswipe crashes:	2.3	0.0	0.1	0.4	0.4	1.5
	Other multiple-vehicle crashes:	0.5	0.0	0.0	0.1	0.1	0.2
	Total multiple-vehicle crashes:	8.7	0.2	0.4	1.7	2.3	4.1
Single vehicle	Crashes with animal:	0.9	0.0	0.0	0.0	0.0	0.8
	Crashes with fixed object:	12.3	0.2	0.5	1.9	2.0	7.8
	Crashes with other object:	1.8	0.0	0.0	0.1	0.1	1.5
	Crashes with parked vehicle:	0.5	0.0	0.0	0.1	0.1	0.3
	Other single-vehicle crashes	5.1	0.1	0.3	1.3	1.4	2.1
	Total single-vehicle crashes:	20.6	0.3	0.8	3.3	3.6	12.5
	Total crashes:	29.2	0.5	1.3	5.1	5.9	16.5

Project Safety Performance Summary Report

Project Description	State College Area Connector
Date	7/7/2021
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	1.73	0.74	2.47
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

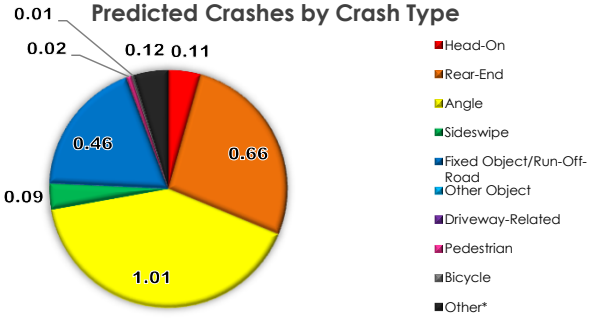
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.20	0.16	0.36
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.53	0.58	2.10
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.73	0.74	2.47
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Project Total: Predicted Crashes by Crash Type



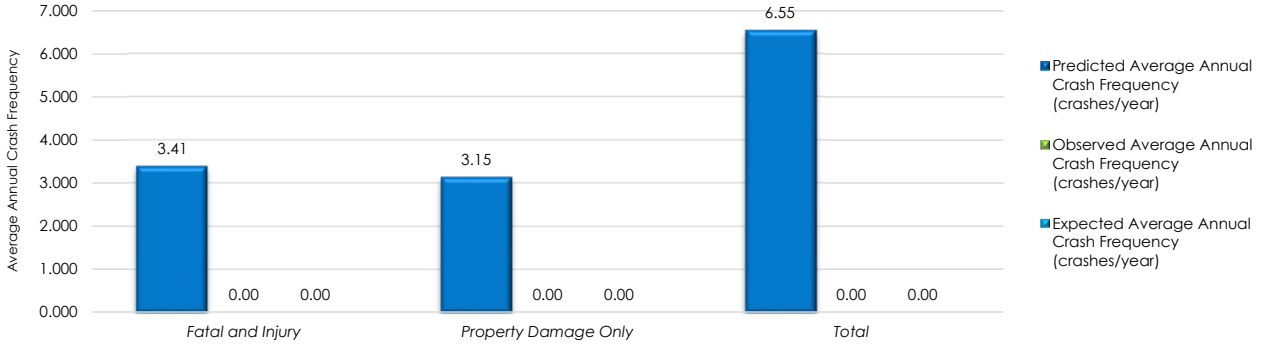
Project Total: Observed Crashes by Crash Type

*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	3.41	3.15	6.55
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

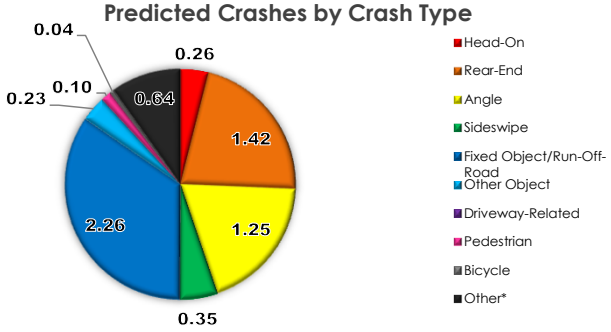
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.87	2.82	5.69
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

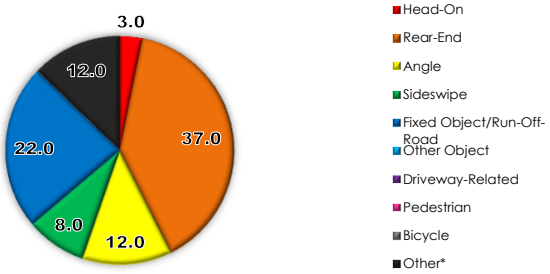
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.53	0.33	0.86
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	3.41	3.15	6.55
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

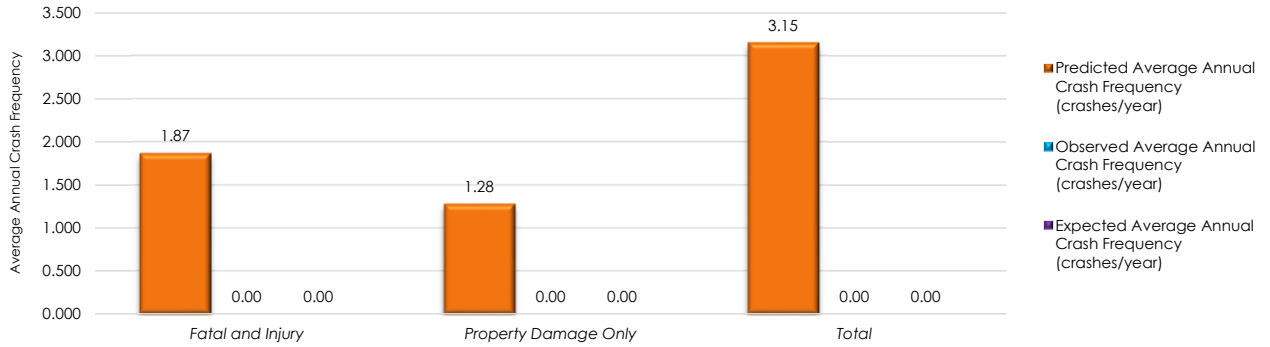


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	1.87	1.28	3.15
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

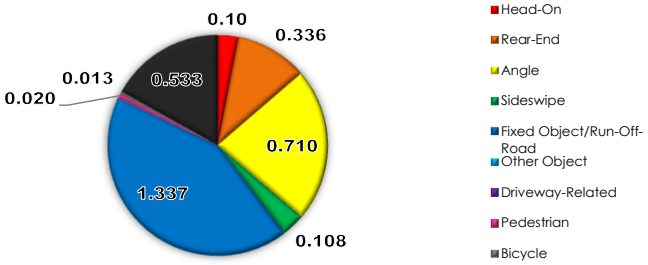
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.34	0.95	2.29
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

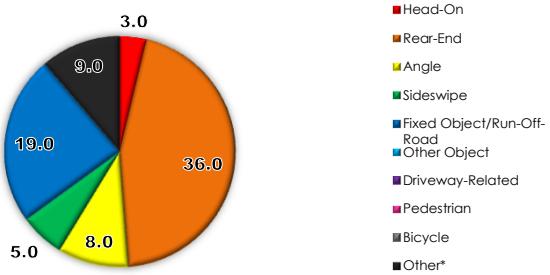
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.53	0.33	0.86
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.87	1.28	3.15
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

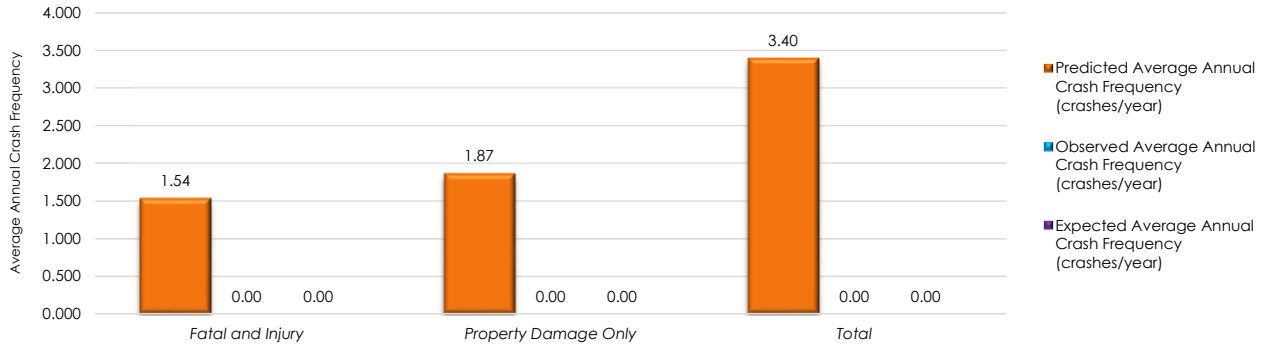


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	1.54	1.87	3.40
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

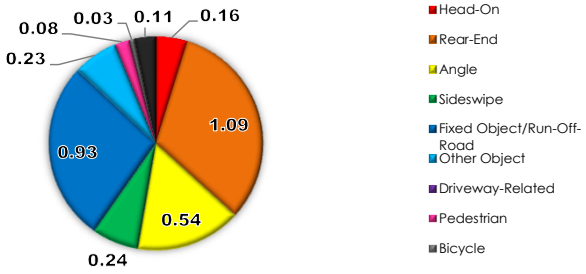
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.54	1.87	3.40
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

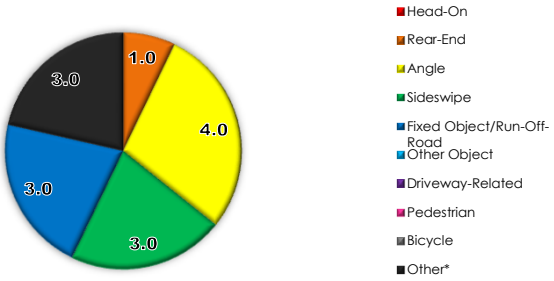
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.54	1.87	3.40
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type

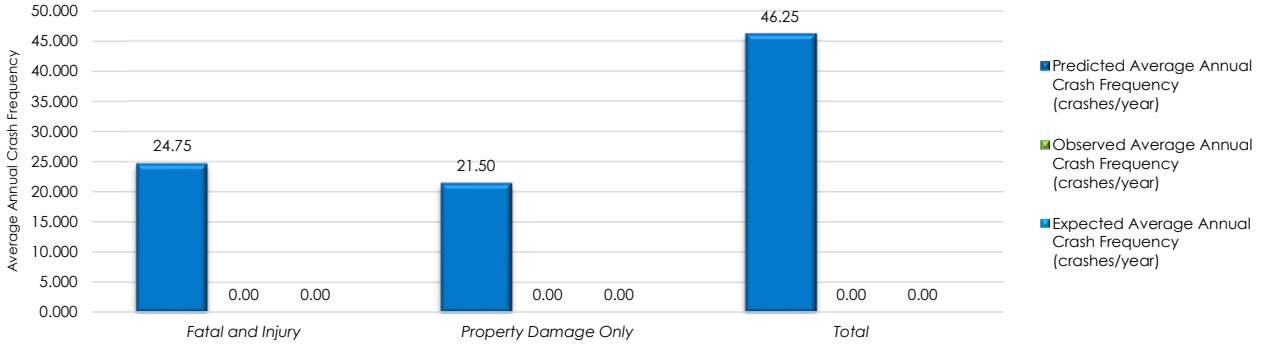


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	24.75	21.50	46.25
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

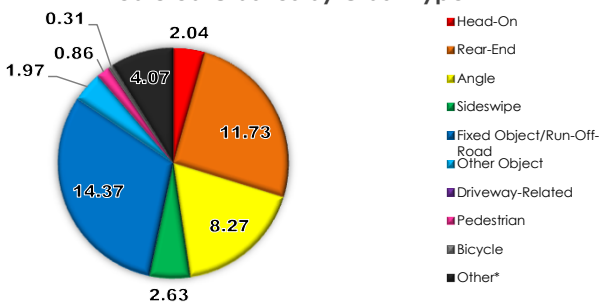
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	21.42	19.42	40.84
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

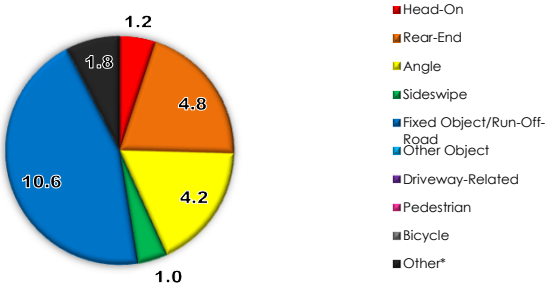
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	3.33	2.08	5.41
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	24.75	21.50	46.25
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	9.25	7.17	16.42

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

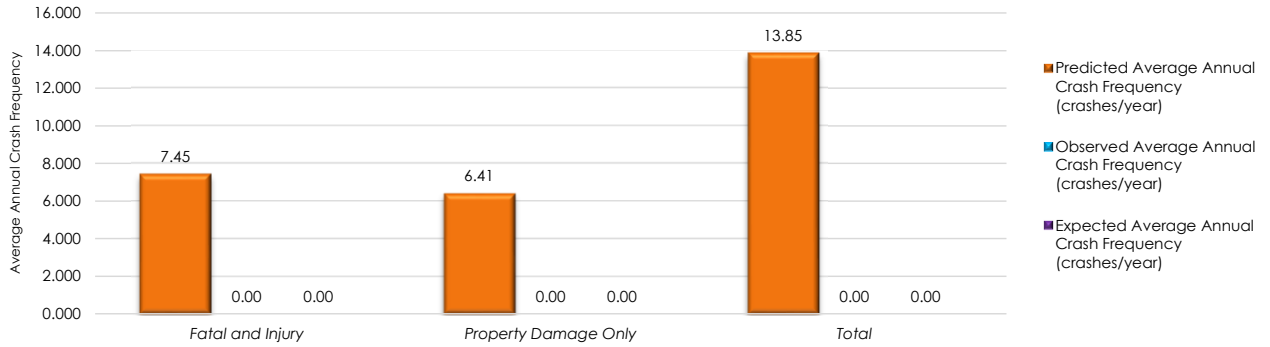


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	7.45	6.41	13.85
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

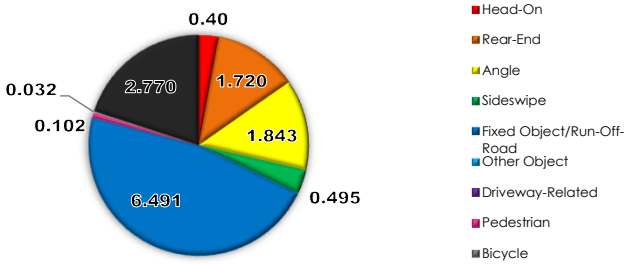
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	6.54	5.81	12.35
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

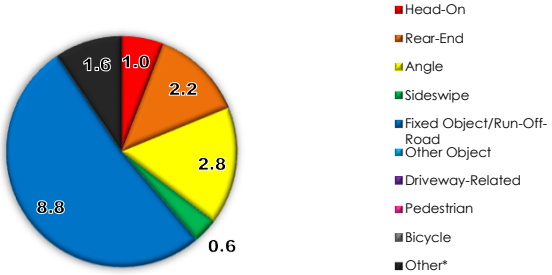
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.90	0.60	1.50
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	7.45	6.41	13.85
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

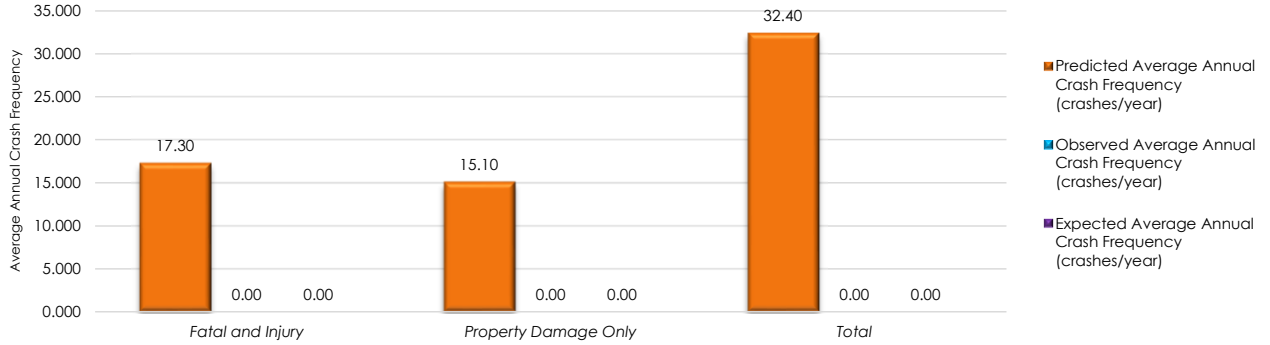


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	17.30	15.10	32.40
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

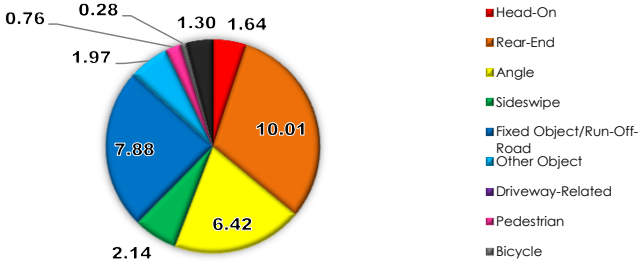
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	14.87	13.61	28.49
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

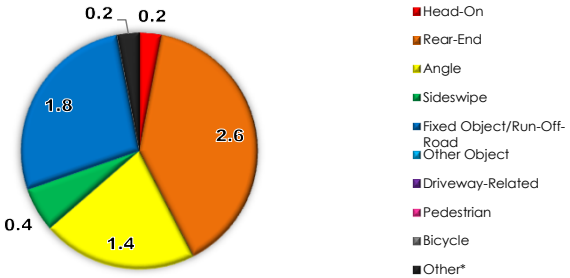
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.43	1.48	3.91
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	17.30	15.10	32.40
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	9.25	7.17	16.42

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type

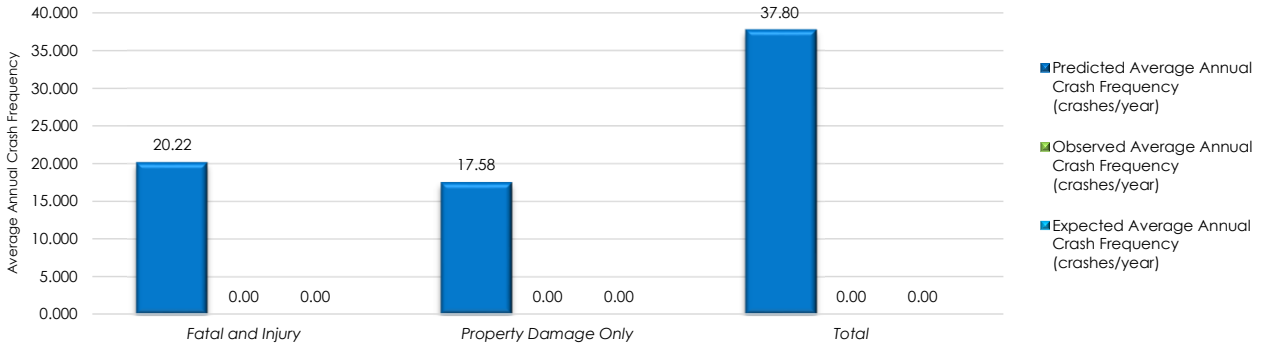


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	20.22	17.58	37.80
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

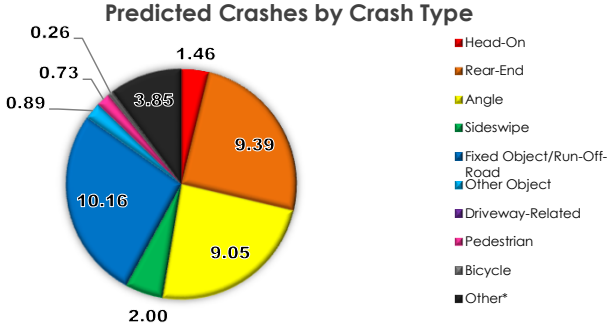
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	14.29	13.17	27.46
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

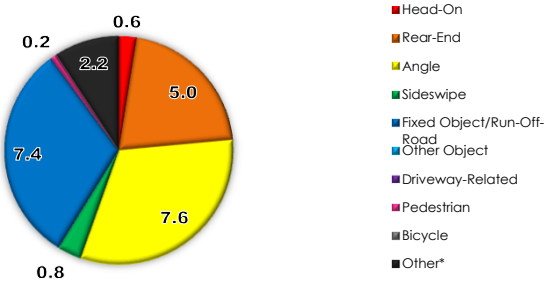
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	5.93	4.41	10.34
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	20.22	17.58	37.80
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	6.15	4.74	10.89

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

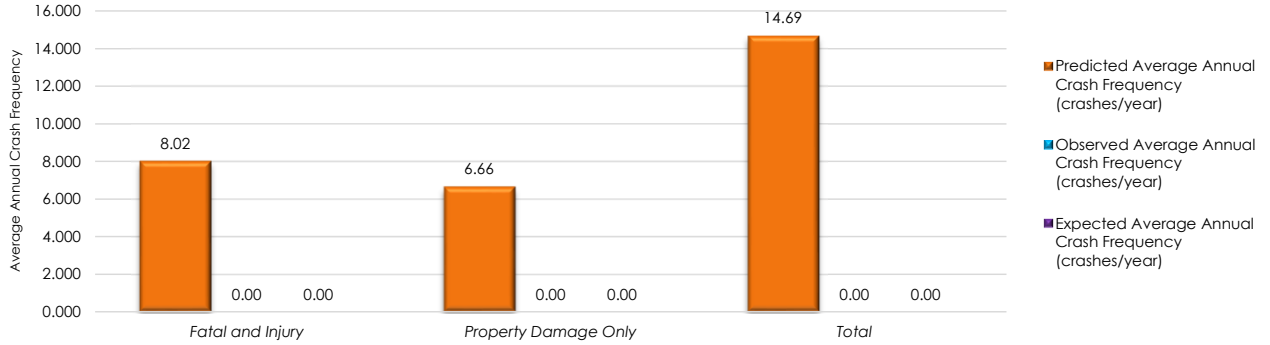


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	8.02	6.66	14.69
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

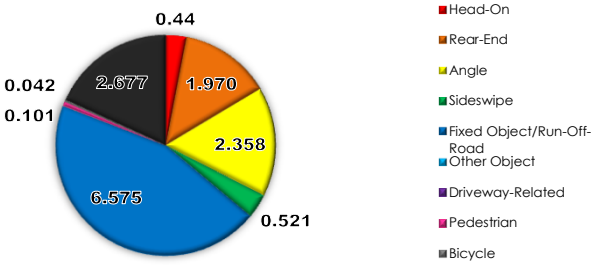
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	6.09	5.60	11.70
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

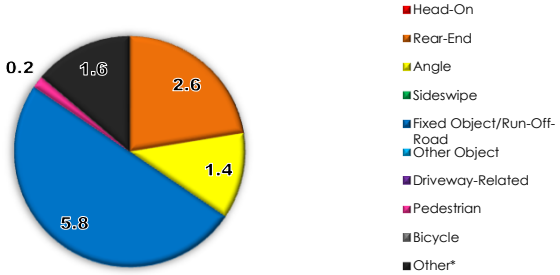
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.93	1.06	2.99
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	8.02	6.66	14.69
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

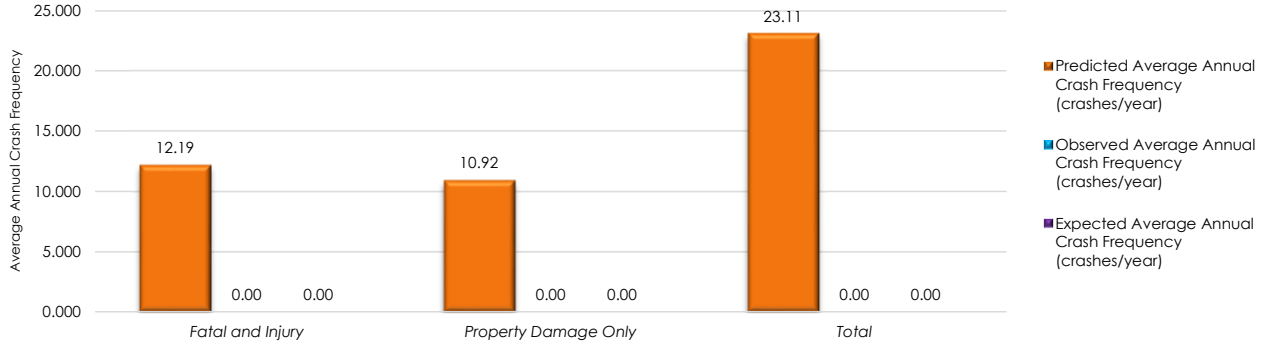


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	12.19	10.92	23.11
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

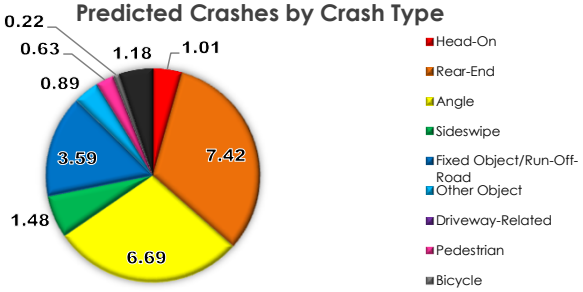
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	8.20	7.56	15.76
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

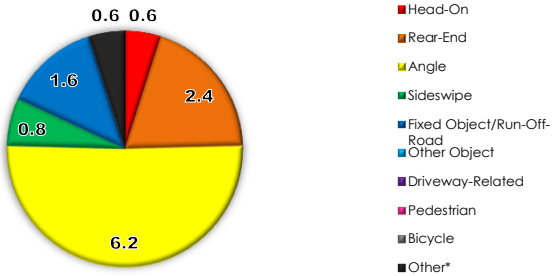
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	3.99	3.35	7.35
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	12.19	10.92	23.11
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	6.15	4.74	10.89

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type



*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

HSM Analyses

Year 2050 Build
Build Alternative 2
(PA 144 Corridor)

Output Summary

General Information

Project description:	State College Area Connector SR 0144 (ALT 2)				
Analyst:	HAK	Date:	3/15/2022	Area type:	Rural
First year of analysis:	0				
Last year of analysis:	0				

Crash Data Description

Freeway segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp segments	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	
Ramp terminals	Segment crash data available?	No	First year of crash data:	
	Project-level crash data available?	No	Last year of crash data:	

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	23.5	0.4	1.0	4.2	5.2	12.7
Estimated average crash freq. during Study Period, crashes/yr:	23.5	0.4	1.0	4.2	5.2	12.7

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	7	20.1	0.4	0.9	3.6	3.9	11.2
Ramp segments, crashes:	4	0.4	0.0	0.0	0.1	0.1	0.2
Crossroad ramp terminals, crashes:	4	3.0	0.0	0.1	0.4	1.2	1.3

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	0	23.5	0.4	1.0	4.2	5.2	12.7
	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						
	21						
	22						
	23						

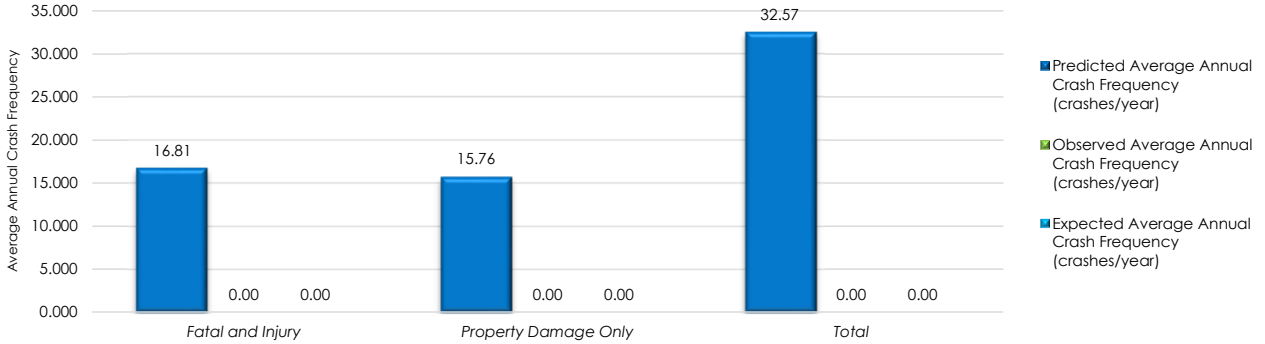
Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	0.1	0.0	0.0	0.0	0.0	0.0
	Right-angle crashes:	1.0	0.0	0.0	0.2	0.5	0.3
	Rear-end crashes:	4.2	0.1	0.2	0.9	1.4	1.7
	Sideswipe crashes:	1.7	0.0	0.1	0.2	0.3	1.1
	Other multiple-vehicle crashes:	0.3	0.0	0.0	0.1	0.1	0.2
	Total multiple-vehicle crashes:	7.3	0.1	0.3	1.4	2.2	3.2
Single vehicle	Crashes with animal:	0.7	0.0	0.0	0.0	0.0	0.6
	Crashes with fixed object:	9.7	0.2	0.4	1.5	1.7	5.9
	Crashes with other object:	1.4	0.0	0.0	0.1	0.1	1.2
	Crashes with parked vehicle:	0.4	0.0	0.0	0.1	0.1	0.2
	Other single-vehicle crashes	4.1	0.1	0.3	1.1	1.1	1.6
	Total single-vehicle crashes:	16.2	0.3	0.7	2.8	3.0	9.5
	Total crashes:	23.5	0.4	1.0	4.2	5.2	12.7

Project Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	16.81	15.76	32.57
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

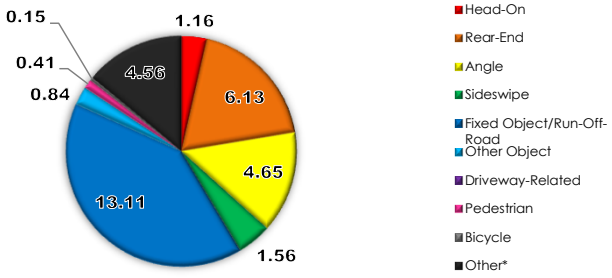
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	15.89	15.11	31.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

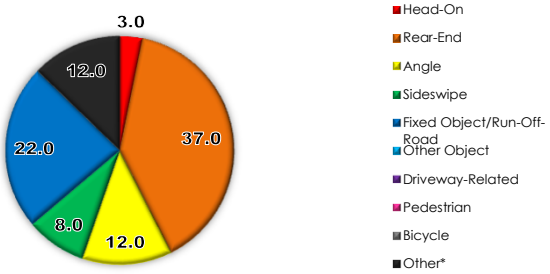
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.92	0.64	1.57
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	16.81	15.76	32.57
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

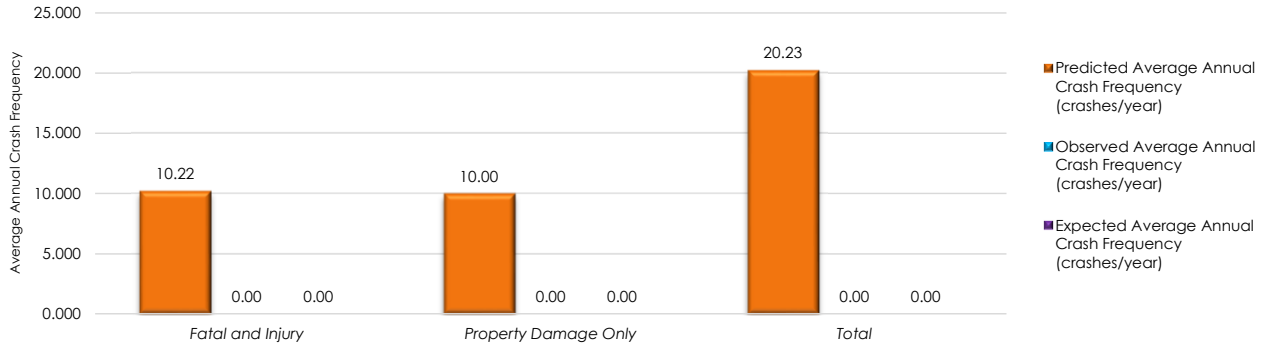


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	10.22	10.00	20.23
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

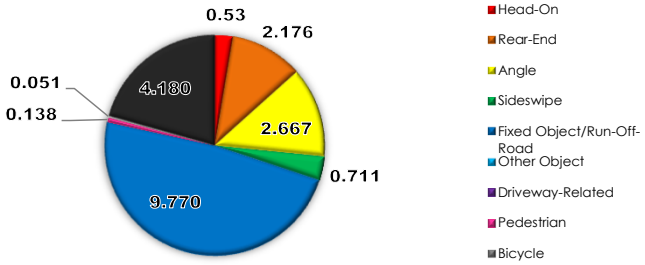
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	9.30	9.36	18.66
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

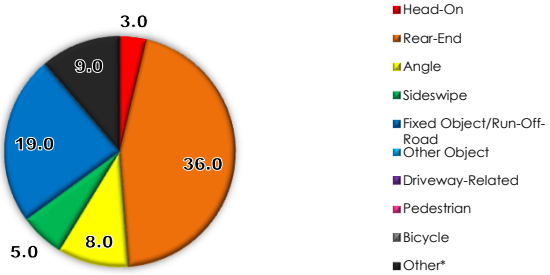
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.92	0.64	1.57
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	10.22	10.00	20.23
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

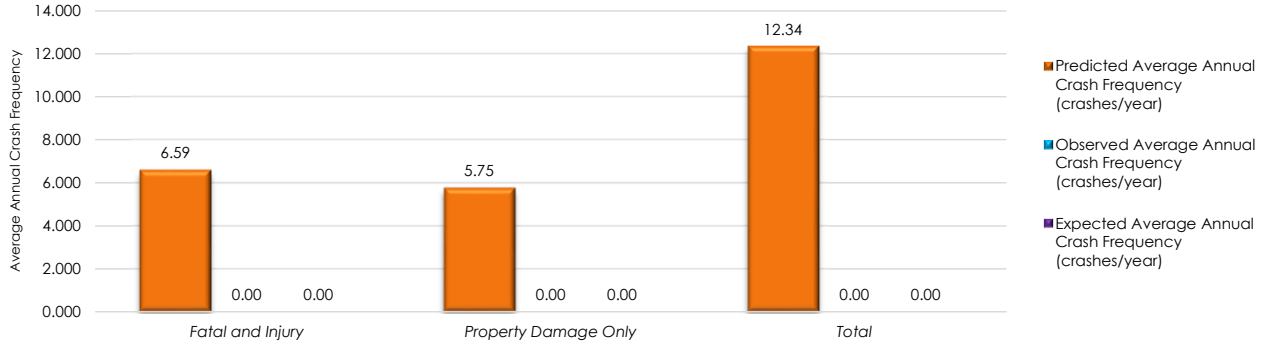


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	6.59	5.75	12.34
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

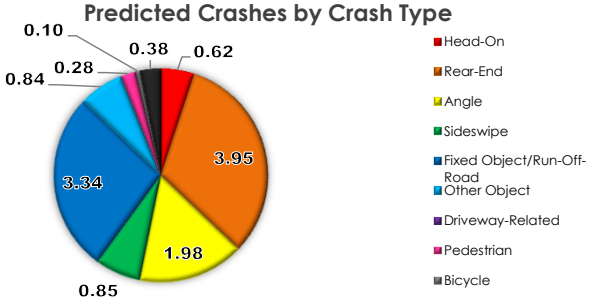
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	6.59	5.75	12.34
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

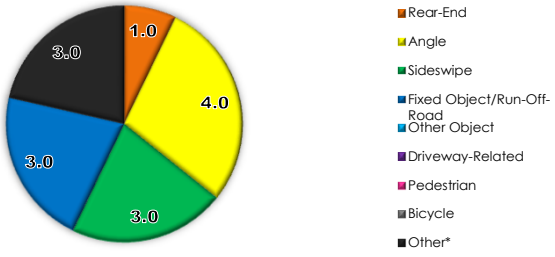
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	6.59	5.75	12.34
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type

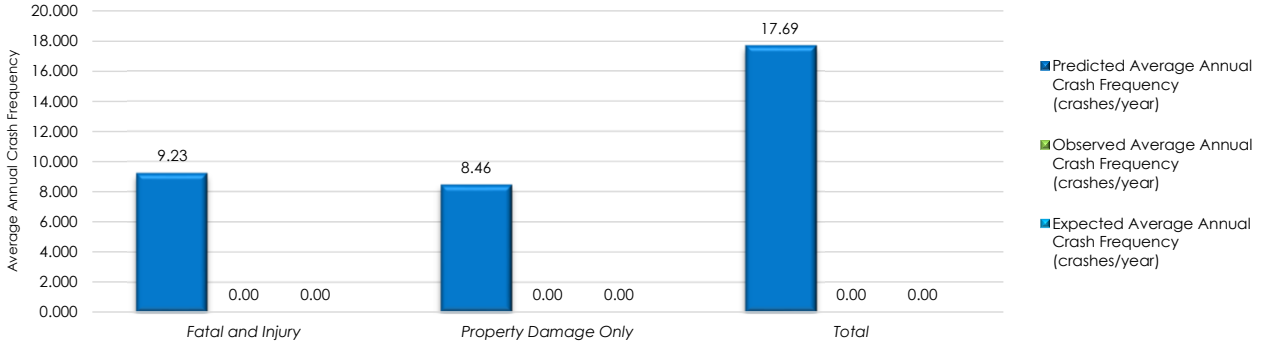


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	9.23	8.46	17.69
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

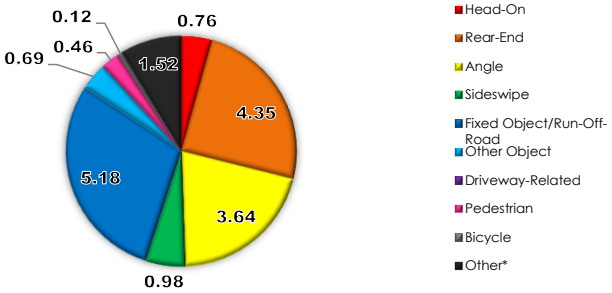
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	7.17	7.26	14.42
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

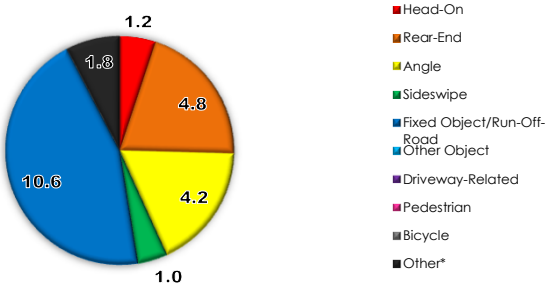
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.06	1.21	3.26
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	9.23	8.46	17.69
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	3.34	2.92	6.26

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

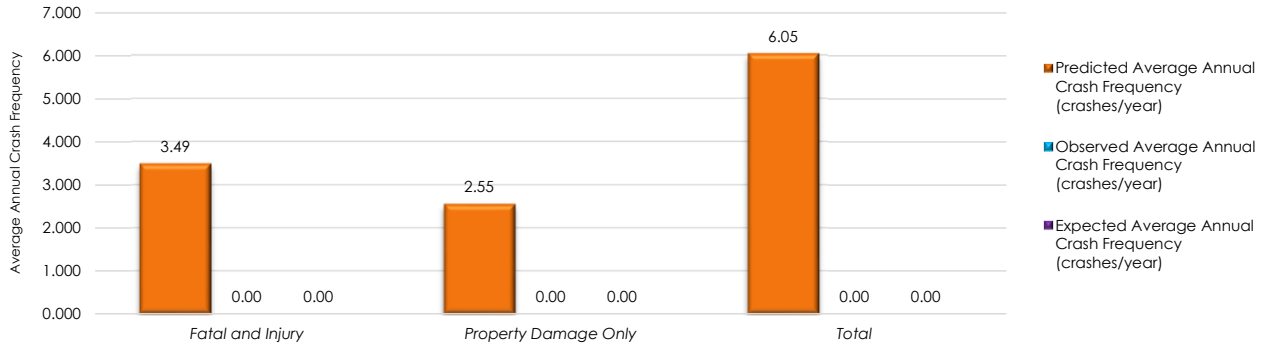


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	3.49	2.55	6.05
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

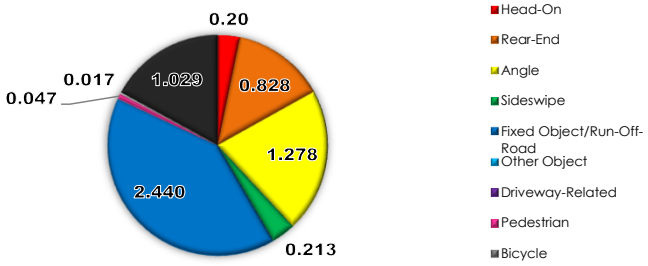
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	2.59	1.96	4.55
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

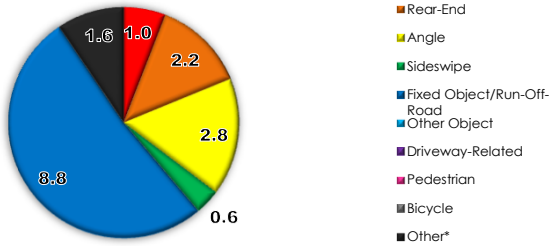
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	0.91	0.59	1.50
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	3.49	2.55	6.05
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

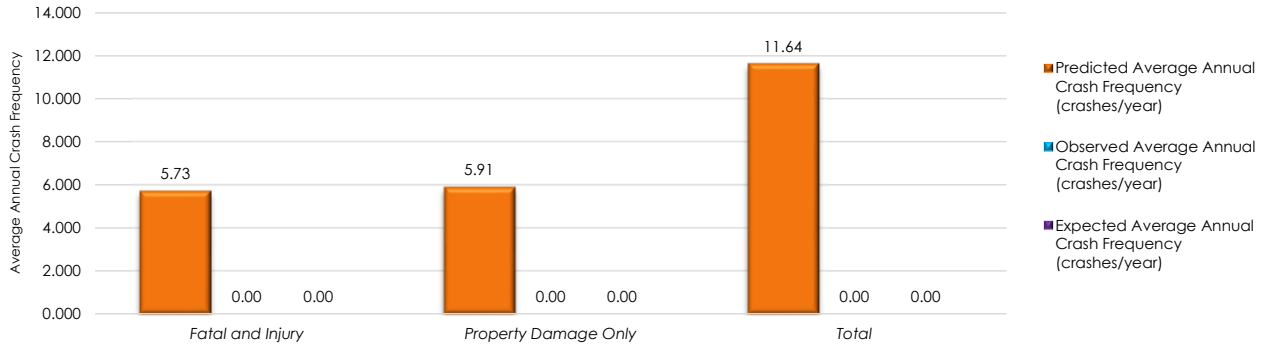


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	5.73	5.91	11.64
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

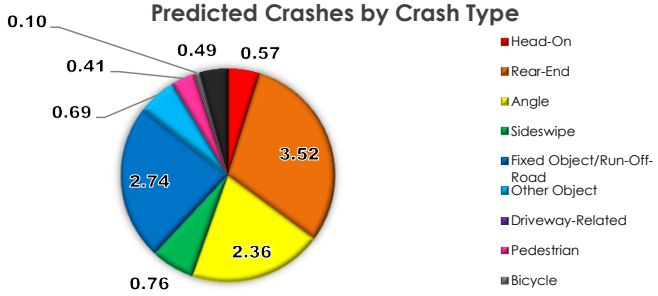
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	4.58	5.30	9.88
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

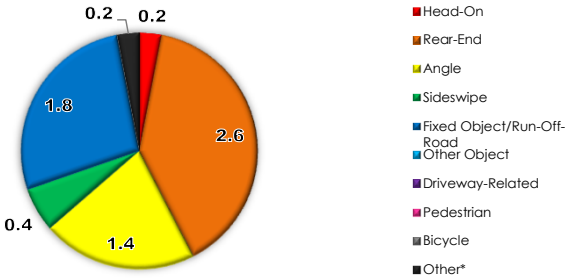
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.15	0.61	1.76
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	5.73	5.91	11.64
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	3.34	2.92	6.26

Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type

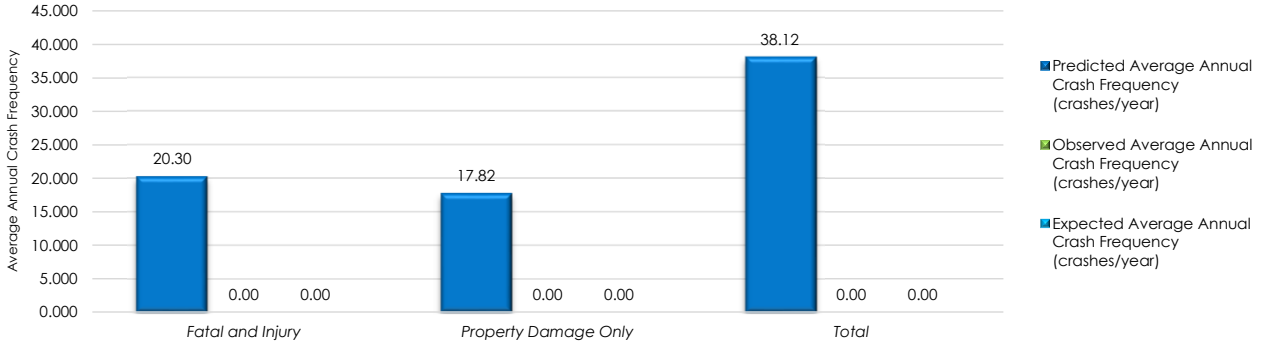


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Project Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Project Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	20.30	17.82	38.12
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

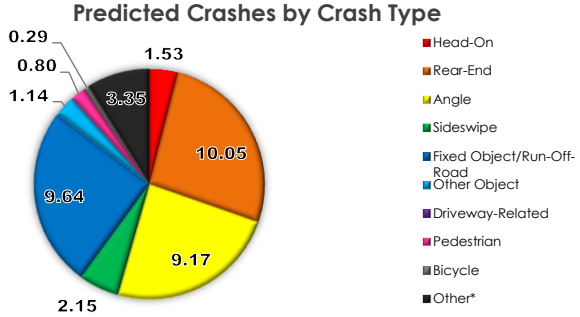
Total Project Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	15.14	13.58	28.72
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

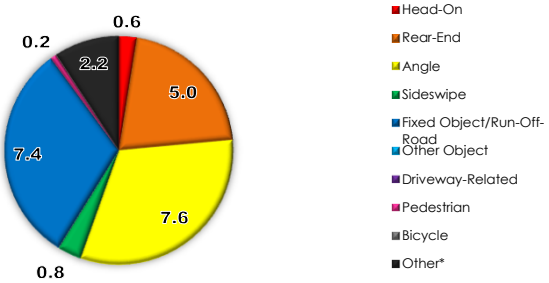
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	5.16	4.24	9.40
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	20.30	17.82	38.12
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	7.29	5.56	12.86

Project Total: Predicted Crashes by Crash Type



Project Total: Observed Crashes by Crash Type

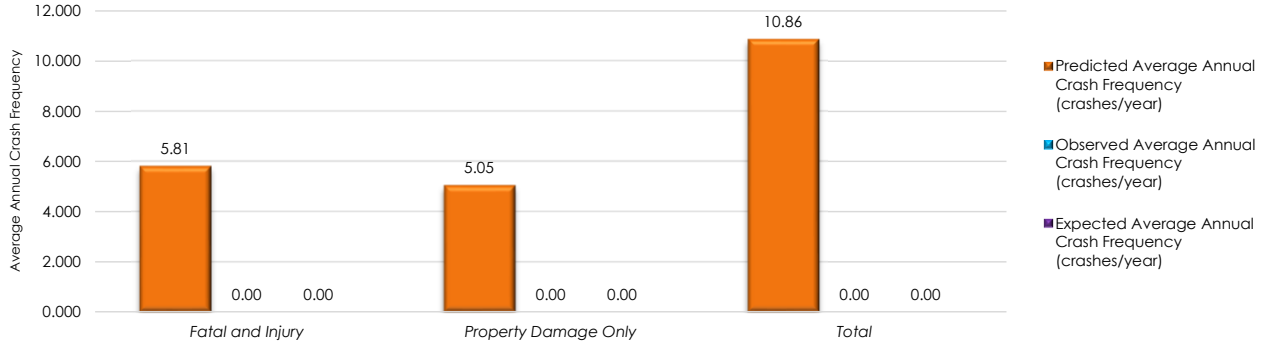


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Rural Two-Lane Roads Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



Rural Two-Lane Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	5.81	5.05	10.86
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

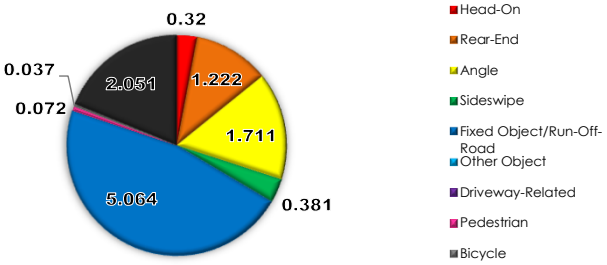
Rural Two-Lane Roads Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	4.69	4.23	8.92
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

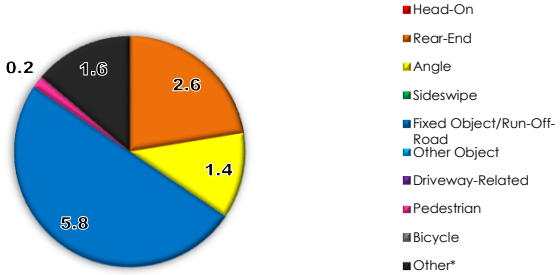
Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	1.12	0.82	1.94
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	5.81	5.05	10.86
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	--	--	--

Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type

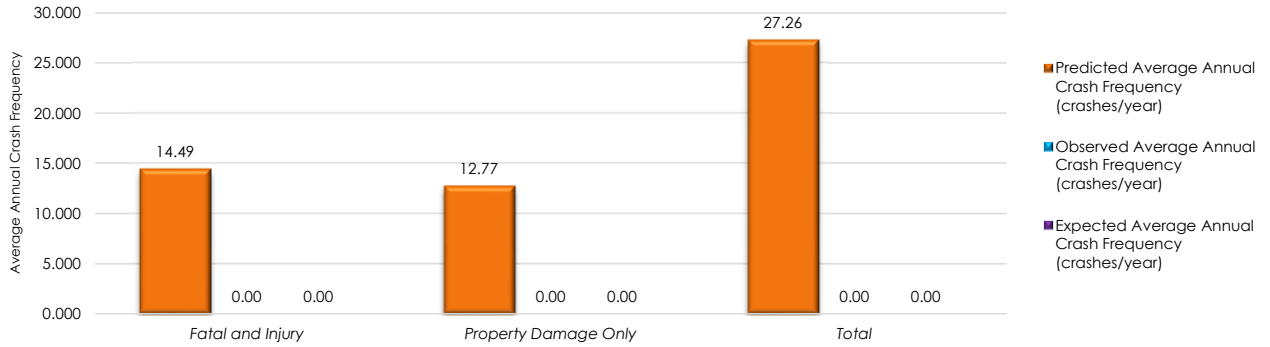


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Urban/Suburban Arterials Safety Performance Summary Report

Project Description	State College Area Connector
Date	3/15/2022
Analysis Year	2050
Analysis Type	Predicted Only (No Crash Data Analysis)
Facility Type(s)	Rural Two-Lane Roads, and Urban/Suburban Arterials

Summary of Average Safety Performance for the Project (crashes/year)



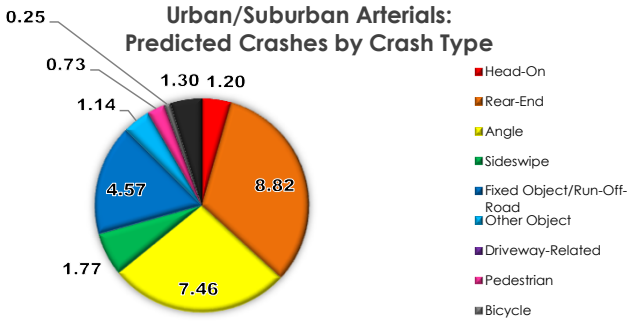
Urban/Suburban Arterial Totals	*Fatal and Injury Crashes*	*Property Damage Only Crashes*	*Total Crashes*
Predicted Average Annual Crash Frequency	14.49	12.77	27.26
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	--	--	--
Potential for Safety Improvement (PSI)	--	--	--

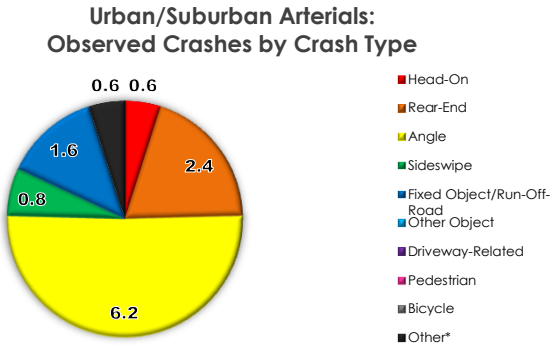
Urban/Suburban Arterials Summary

Segments	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	10.45	9.35	19.80
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Intersections	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	4.04	3.42	7.46
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

Total	*Fatal and Injury*	*Property Damage Only*	*Total*
Predicted Average Annual Crash Frequency (crashes/yr)	14.49	12.77	27.26
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	7.29	5.56	12.86





*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes