

PennDOT.gov/SCAC

APPENDIX D

SAFETY ANALYSES

2014-2018 Existing Crash Data from PCIT

Roadway	PDO	Injury	Fatal	Total
SR 0045	72	70	1	143
SR 0144	68	39	4	111
SR 0192	0	1	0	1
SR 0322	69	39	0	108
Linden Hall Rd/ Cedar Hill Rd (SR 2004)	1	0	0	1
Brush Valley Rd/ Red Hill Rd (SR 2006)	3	3	0	6
Boalsburg Rd/ Warner Blvd (SR 3010)	3	10	0	13
Boal Ave (SR 3014)	5	6	0	11
Brush Valley Rd	2	0	0	2
Total	223	168	5	396

50	49	1	36	72 (50%)	70 (49%)	1 (1%)	143 (36%)
61	35	4	28	68 (61%)	39 (35%)	4 (4%)	111 (28%)
0	100	0	0	0 (0%)	1 (100%)	0 (0%)	1 (0%)
64	36	0	27	69 (64%)	39 (36%)	0 (0%)	108 (27%)
100	0	0	0	1 (100%)	0 (0%)	0 (0%)	1 (0%)
50	50	0	2	3 (50%)	3 (50%)	0 (0%)	6 (2%)
23	77	0	3	3 (23%)	10 (77%)	0 (0%)	13 (3%)
45	55	0	3	5 (45%)	6 (55%)	0 (0%)	11 (3%)
100	0	0	1	2 (100%)	0 (0%)	0 (0%)	2 (1%)
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
SR 0144	17	4	52		22	4	1	5	6	111
SR 0192			1							1
SR 0322	18	3	25		42	6	2	2	10	108
SR 2004			1							1
SR 2006			3			1		2		6
SR 3010	7		2		3				1	13
SR 3014	4		2		2		2		1	11
Brush Valley Rd			2							2
Total	95	13	131	1	97	12	8	13	26	396

Roadway	Passenger Vehicles			Heav	y Vehicles (Tr	ucks)	Bicycle	Unknown	Total
Koauway	Auto	SUV	MC	Large	Small	Bus	ысусіе	UIKIIOWII	TOLAI
SR 0045	76	32	2	3	29			1	143
SR 0144	53	30	3	3	19	1	1	1	111
SR 0192		1							1
SR 0322	57	25	1	8	16	1			108
SR 2004	1								1
SR 2006	4	1			1				6
SR 3010	7	4	1	1					13
SR 3014	4	3	1	1	1		1		11
Brush Valley Road	2								2
Total	204	96	8	16	66	2	2	2	396

53	22	1
48	27	3
0	100	0
53	23	1
100	0	0
67	17	0
54	31	8
36	27	9
100	0	0
52	24	2

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%)

							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%)

HSM Analyses

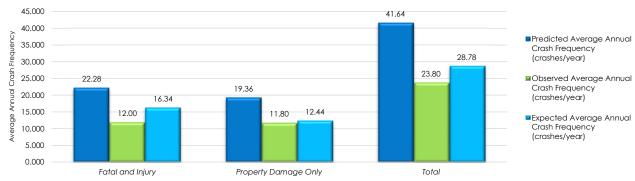
Existing Base Condition

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

Main Street to East of Pennsylvania Avenue (SR 0144)

Project Safety Performance Summary Report

Project DescriptionSCACDate8/3/2020Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials



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

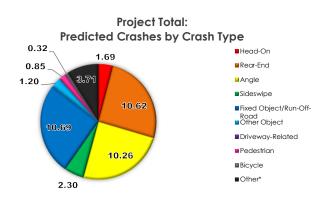
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	22.28	19.36	41.64
Observed Average Annual Crash Frequency	12.00	11.80	23.80
Expected Average Annual Crash Frequency	16.34	12.44	28.78
Potential for Safety Improvement (PSI)	-5.93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

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

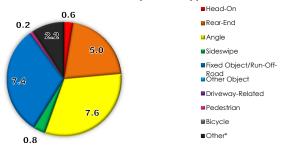
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	6.17	5.01	11.18
Observed Average Annual Crash Frequency (crashes/yr)	4.40	4.00	8.40
Expected Average Annual Crash Frequency (crashes/yr)	5.54	4.35	9.89

<u>Iotal</u>	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

Total Project Summary

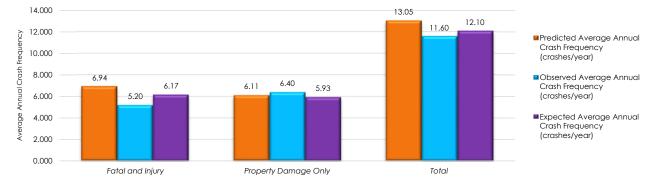


Project Total: Observed Crashes by Crash Type



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

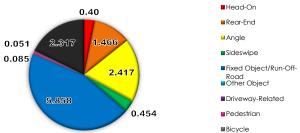
Rural Two-Lane Roads Summary

<u>Segments</u>	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

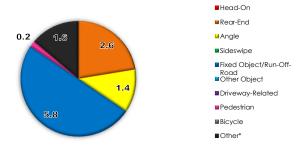
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.74	1.37	3.11
Observed Average Annual Crash Frequency (crashes/yr)	0.60	0.20	0.80
Expected Average Annual Crash Frequency (crashes/yr)	1.16	0.70	1.86

<u>Total</u>	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

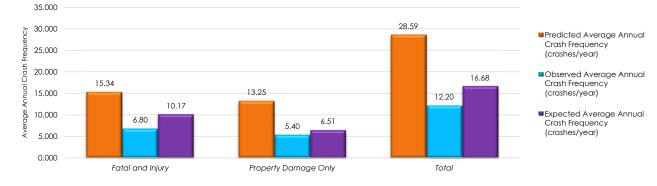


Rural Two-Lane Roads: Observed Crashes by Crash Type



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)

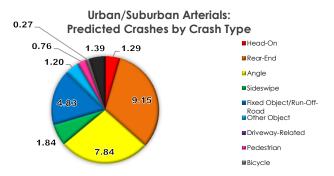
Urban/Suburban Arterial Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	15.34	13.25	28.59
Observed Average Annual Crash Frequency	6.80	5.40	12.20
Expected Average Annual Crash Frequency	10.17	6.51	16.68
Potential for Safety Improvement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

Urban/Suburban Arterials Summary

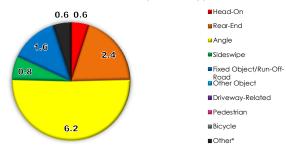
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	10.90	9.61	20.52
Observed Average Annual Crash Frequency (crashes/yr)	3.00	1.60	4.60
Expected Average Annual Crash Frequency (crashes/yr)	5.79	2.86	8.65

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

<u>Total</u>	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: Observed Crashes by Crash Type



Project Description SCAC Date 8/3/2020 Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials

		KUIGI IWC	o-Lane, Two-Way Roa	us. segments		
Segment Name	PennDOT Segment	PennDOT Offset	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safe Improvement
Segment 1	300	<mark>1757</mark>	(<mark>1.13</mark>)	1.20	1.16	0.03
Segment 2	320	<mark>147</mark>	6.30	7.40	<mark>6.72</mark>	0.42
Segment 3	<mark>410</mark>	2006	<mark>1.45</mark>	<mark>(1.60</mark>)	<mark>1.52</mark>	0.07
Segment 4	430	0	1.07	0.60	0.85	-0.22

Project Description SCAC Date 8/3/2020 Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials

		Rural Two-Lar	ne, Two-Way Roads	s: Intersections		
Intersection Name	Major Road	Minor Road	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safet Improvement
Intersection 1	SR 0045	Elks Club Road	1.04	0.40	0.70	-0.34
Intersection 2	SR 0045	nden 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 Description SCAC Date 8/3/2020 Analysis Year 2017 Site Level Analysis Analysis Type 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 Safet 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 Description SCAC 8/3/2020 Date Analysis Year2017Analysis TypeSite Level AnalysisFacility 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	alsburg 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)

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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

50.000 47.17 45 000 Annual Crash Frequency Predicted Average Annual 40.000 Crash Frequency 35.000 (crashes/year) 30.31 30.000 24.86 Observed Average Annual 23.60 22.31 25.000 Crash Frequency (crashes/year) 20.000 17.06 14.80 13.25 15.000 Expected Average Annual Average 8.80 Crash Frequency 10.000 (crashes/year) 5.000

Property Damage Only

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

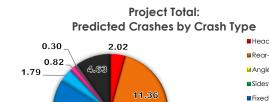
Total Project Summary

<u>Segments</u>	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

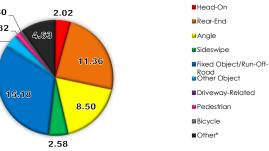
Fatal and Injury

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

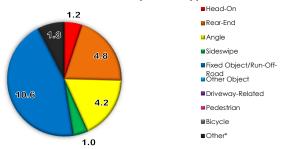
<u>Total</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	24.86	22.31	47.17
Observed Average Annual Crash Frequency (crashes/yr)	8.80	14.80	23.60
Expected Average Annual Crash Frequency (crashes/yr)	17.06	13.25	30.31



Total



Project Total: Observed Crashes by Crash Type

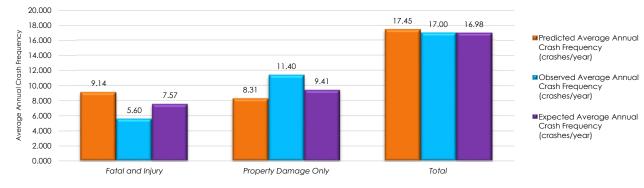


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

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

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

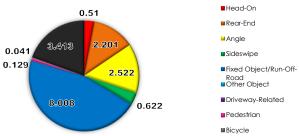
Rural Two-Lane Roads Summary

<u>Segments</u>	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

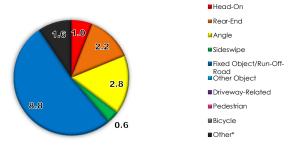
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.19	1.06	2.25
Observed Average Annual Crash Frequency (crashes/yr)	0.60	2.00	2.60
Expected Average Annual Crash Frequency (crashes/yr)	0.94	1.49	2.43

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

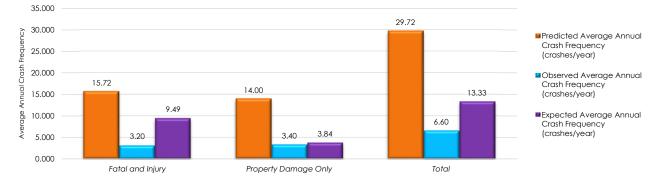


Rural Two-Lane Roads: Observed Crashes by Crash Type



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

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<u>Segments</u>	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

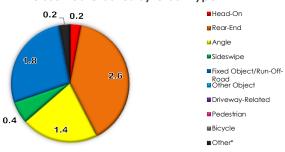
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	2.35	1.50	3.85
Observed Average Annual Crash Frequency (crashes/yr)	0.20	1.00	1.20
Expected Average Annual Crash Frequency (crashes/yr)	1.78	1.11	2.89

<u>Total</u>	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 0.26 Head-On 1.21 1.50 0.69 Rear-Fnd 1.79 Angle 🛛 Sideswipe 9.16 Fixed Object/Run-Off-Road Other Object Driveway-Related 5.98 Pedestrian

Bicycle

Urban/Suburban Arterials: Observed Crashes by Crash Type



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

		Rural Two	o-Lane, Two-Way Roa	ds: 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 Description SCAC Date 8/3/2020 Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials

		Rural Two-Lan	ie, Two-Way Roads	s: Intersections		
Intersection Name	Major Road	Minor Road	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safei Improvement
Intersection 1	SR 0144	g Creek Road/Airport	0.37	0.40	0.38	0.01
Intersection 2	<u>SR 0144</u>	urlystown Road (SR 004	<mark>1.89</mark>	2.20	2.05	0.16

Project Description SCAC 8/3/2020 Date Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials

		Urban c	and Suburban Arterial	s: Segments		
Segment Name	PennDOT Segment	PennDOT Offset	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safet 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

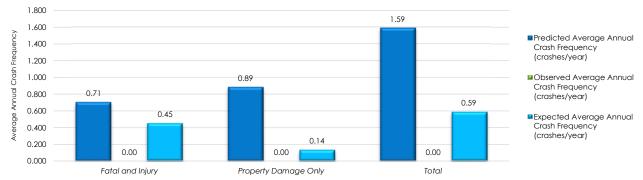
Project Description SCAC 8/3/2020 Date Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials

		Urban and S	uburban 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	<mark>0.44</mark>	0.60	<mark>0.46</mark>	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)

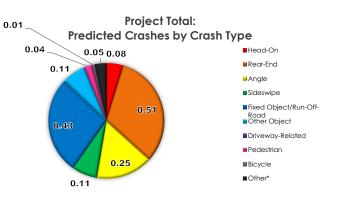
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	0.71	0.89	1.59
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	0.45	0.14	0.59
Potential for Safety Improvement (PSI)	-0.25	-0.75	-1.00

<u>Segments</u>	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

<u>Total</u>	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

Total Project Summary



Project Total: Observed Crashes by Crash Type



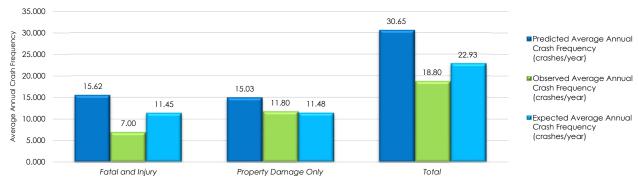
SCAC
8/3/2020
2017
Site Level Analysis
Urban/Suburban Arterials

	Urban and Suburban Arterials: Segments					
SegmentPennDOTPennDOTTotal PredictedTotal ObservedTotal ExpectedPotential factorNameSegmentOffsetCrashesCrashesImproved						
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

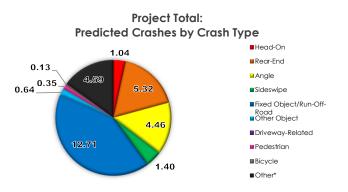
Segments	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	14.33	14.19	28.52
Observed Average Annual Crash Frequency (crashes/yr)	6.60	9.60	16.20
Expected Average Annual Crash	10.59	9.98	20.57

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

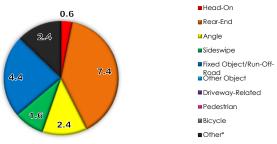
Frequency (crashes/yr)

<u>Total</u>	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

Total Project Summary

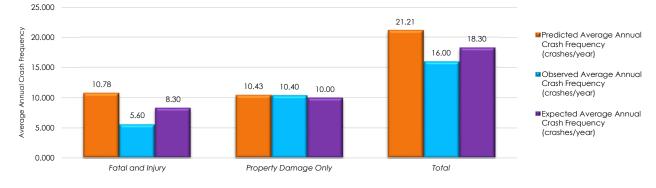


Project Total: Observed Crashes by Crash Type



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

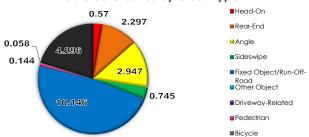
Rural Two-Lane Roads Summary

<u>Segments</u>	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

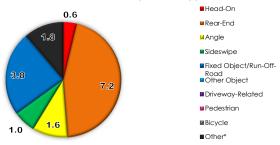
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.29	0.84	2.12
Observed Average Annual Crash Frequency (crashes/yr)	0.40	2.20	2.60
Expected Average Annual Crash Frequency (crashes/yr)	0.86	1.50	2.36

<u>Total</u>	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

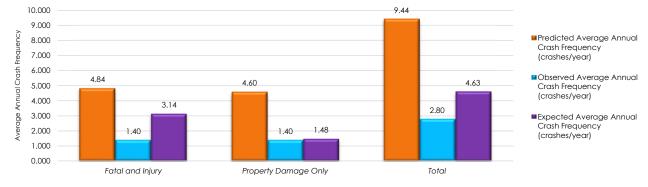


Rural Two-Lane Roads: Observed Crashes by Crash Type



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

Fatal and Injury	Property Damage Only	Total
4.84	4.60	9.44
1.40	1.40	2.80
3.14	1.48	4.63
	Injury 4.84 1.40	Fatal and InjuryDamage Only4.844.601.401.40

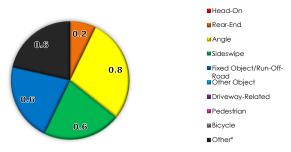
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00

<u>Total</u>	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 0.07 Head-On 0.29 0.47 0.64_ Rear-Fnd Angle 🛛 Sideswipe 3.02 Fixed Object/Run-Off-Road Other Object Driveway-Related 1.52 Pedestrian Bicycle

Urban/Suburban Arterials: Observed Crashes by Crash Type

0.66



Project Description SCAC Date 8/3/2020 Analysis Year2017Analysis TypeSite Level AnalysisFacility 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 Description SCAC Date 8/3/2020 Analysis Year2017Analysis TypeSite Level AnalysisFacility 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 Safet 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	(ill Road/Mountain Bac)	<mark>0.69</mark>	<mark>(1.00</mark>)	0.84	0.15	

Project Description SCAC 8/3/2020 Date Analysis Year2017Analysis TypeSite Level AnalysisFacility 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)

		0	utput Summ	ary				
General Informatio								
Project description:	State College /	Area Connector						
Analyst:	SMMcG	Date:	8/5/2020		Area type:		Urban	
First year of analysis	: 2017	· ·						
ast year of analysis								
Crash Data Descrip								
Freeway segments		n data available?		Yes	First year o	f crash data	a:	20
icoway ocyments	-	rash data available	-2	No	,	f crash data		20
Domp cogmonto		n data available?	5 !	Yes		of crash data		20
Ramp segments			- 0					
		rash data available	9 <i>?</i>	No		f crash data		20
Ramp terminals		n data available?	-	Yes		f crash data		20
	,	rash data available	e?	No	Last year o	f crash data	1:	20
Estimated Crash Si								
Crashes for Entire	Facility		Total	ĸ	A	В	С	PDO
Estimated number of cras	hes during Study Per	iod, crashes:	1.4	0.0	0.0	0.1	0.5	0
Estimated average crash	freq. during Study Pe	riod, crashes/yr:	1.4	0.0	0.0	0.1	0.5	0
Crashes by Facility		Nbr. Sites	Total	К	Α	В	С	PDO
Freeway segments,			0.0	0.0		0.0	0.0	0
Ramp segments, cra			0.0	0.0		0.0	0.0	C
Crossroad ramp tern			2 1.4	0.0		0.0	0.0	C
						-		-
Crashes for Entire	, ,	Year	Total	<u>K</u>	Α	B	C	PDO
Estimated number o	0	2017	1.4	0.0	0.0	0.1	0.5	C
the Study Period, cra	ashes:	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 Cras	shes for Entire F	acility						
		vpe Category			er of Crash			
Crash Type	(iraen IV		Total	K	A	В	С	PDO
Crash Type	Crash Ty		Total				0.0	
Crash Type Multiple vehicle	Head-on crash		0.0	0.0	0.0	0.0	0.0	C
	Head-on crash	ies:		0.0		0.0 0.0	0.0	0
	Head-on crash Right-angle cra	les: ashes:	0.0	0.0	0.0		0.2	
	Head-on crash Right-angle cra Rear-end crash	nes: hes:	0.0 0.4 0.7	0.0 0.0	0.0 0.0	0.0 0.1	0.2 0.3	(
	Head-on crash Right-angle cra Rear-end crash Sideswipe crash	es: ashes: hes: shes:	0.0 0.4 0.7 0.1	0.0 0.0 0.0	0.0 0.0 0.0	0.0 0.1 0.0	0.2 0.3 0.0	(
	Head-on crash Right-angle cra Rear-end crash Sideswipe crash Other multiple-	les: ashes: hes: shes: vehicle crashes:	0.0 0.4 0.7 0.1 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.1 0.0 0.0	0.2 0.3 0.0 0.0	((((
Multiple vehicle	Head-on crash Right-angle cra Rear-end crash Sideswipe crash Other multiple- Total multiple	es: ashes: hes: shes: vehicle crashes: e-vehicle crashes:	0.0 0.4 0.7 0.1 0.0 1.2	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.1 0.0 0.0 0.1	0.2 0.3 0.0 0.0 0.5	((((
Multiple vehicle	Head-on crash Right-angle cra Rear-end crash Sideswipe crash Other multiple- Total multiple Crashes with a	es: ashes: hes: shes: -vehicle crashes: e-vehicle crashes: animal:	0.0 0.4 0.7 0.1 0.0 1.2 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.1 0.0 0.0 0.1 0.1	0.2 0.3 0.0 0.0 0.5 0.0	
Multiple vehicle	Head-on crash Right-angle cra Rear-end crash Sideswipe crash Other multiple- Total multiple Crashes with a Crashes with fi	es: ashes: hes: shes: vehicle crashes: e-vehicle crashes: animal: ixed object:	0.0 0.4 0.7 0.1 0.0 1.2 0.0 0.1	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.1 0.0 0.0 0.1 0.0 0.0	0.2 0.3 0.0 0.0 0.5 0.0 0.0	
Multiple vehicle	Head-on crash Right-angle cra Rear-end crash Sideswipe crash Other multiple- Total multiple Crashes with a	es: ashes: hes: shes: vehicle crashes: e-vehicle crashes: animal: ixed object:	0.0 0.4 0.7 0.1 0.0 1.2 0.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.1 0.0 0.0 0.1 0.1	0.2 0.3 0.0 0.0 0.5 0.0	
Multiple vehicle	Head-on crash Right-angle cra Rear-end crash Sideswipe crash Other multiple- Total multiple Crashes with a Crashes with fi	es: ashes: hes: shes: -vehicle crashes: e-vehicle crashes: animal: ixed object: other object:	0.0 0.4 0.7 0.1 0.0 1.2 0.0 0.1	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.1 0.0 0.0 0.1 0.0 0.0	0.2 0.3 0.0 0.0 0.5 0.0 0.0	
Multiple vehicle	Head-on crash Right-angle cra Rear-end crash Sideswipe crash Other multiple- Total multiple- Total multiple Crashes with a Crashes with p Crashes with p	es: ashes: hes: shes: -vehicle crashes: e-vehicle crashes: animal: ixed object: other object: oarked vehicle:	0.0 0.4 0.7 0.1 0.0 1.2 0.0 0.1 0.1 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.1 0.0 0.0 0.1 0.0 0.0 0.0	0.2 0.3 0.0 0.0 0.5 0.0 0.0 0.0 0.0	
	Head-on crash Right-angle cra Rear-end crash Sideswipe crash Other multiple- Total multiple Crashes with a Crashes with fit Crashes with p Other single-ve	es: ashes: hes: shes: -vehicle crashes: e-vehicle crashes: animal: ixed object: other object: oarked vehicle:	0.0 0.4 0.7 0.1 0.0 1.2 0.0 0.1 0.1 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.1 0.0 0.0 0.1 0.0 0.0 0.0 0.0 0.0	0.2 0.3 0.0 0.0 0.5 0.0 0.0 0.0 0.0 0.0	(

Oak Hall Interchange (SR 0322/SR 3010) At Boalsburg Road (SR 3010)

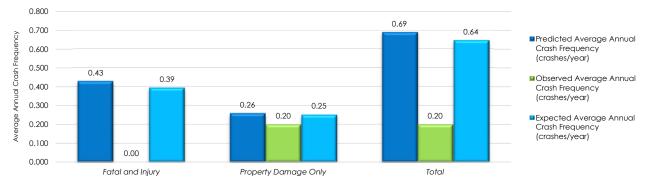
			Out	put Summa	ary				
General Information									
Project description:	State Colleg	ge Area Co	onnector						
Analyst:	SMMcG		Date:	8/5/2020		Area type:		Urban	
First year of analysis	: 2017					• •			
Last year of analysis	: 2017								
Crash Data Descrip									
Freeway segments	Segment cr	ash data a	vailable?		Yes	First year o	f crash data	a:	201
, ,	-		ta available?)	No	Last year o			20
Ramp segments	Segment cr				Yes	First year o			201
ramp oognonio	-		ta available?	>	No	Last year of			201
Ramp terminals	Segment cr				Yes	First year o			20
			ta available?)	No	Last year o			20
Estimated Crash St	J				NO	Last year o	i crasii date		20
Crashes for Entire			I	Total	ĸ	A	В	С	PDO
							_	-	-
Estimated number of cras	÷ ,			1.0	0.0		0.1	0.4	0
Estimated average crash		Period, cras		1.0	0.0		0.1	0.4	0
Crashes by Facility			Nbr. Sites	Total	K	A	В	С	PDO
Freeway segments,			0	0.0	0.0		0.0	0.0	0
Ramp segments, cra			0	0.0	0.0		0.0	0.0	0
Crossroad ramp tern	,		2	1.0	0.0	0.0	0.1	0.4	0
Crashes for Entire	Facility by Ye	ear	Year	Total	K	Α	В	С	PDO
Estimated number of	f crashes durir	ng	2017	1.0	0.0	0.0	0.1	0.4	0
the Study Period, cra		-	2018			-			
, ,			2019						
			2020						
			2021						
			2022						
			2022						
			2023						
			2024						
			2026						
			2027						
			2028						
			2029						
			2030						
			2031						
			2032						
			2033						
			2034						
			2035						
			2036						
			2037						
			2038						
			2039						
			2040						
Distribution of Cra	shes for Entir	e Facility	2040						
Distribution of Cras			· · ·	Fetima	ted Numb	er of Grash	es During	the Study	Period
Distribution of Cras Crash Type		e Facility Type Cat	· · ·			er of Crash			
Crash Type	Crash	Type Cat	· · ·	Total	K	Α	В	C	PDO
Crash Type	Crash Head-on cra	Type Cat	· · ·	Total 0.0	K 0.0	A 0.0	B 0.0	C	PDO C
Crash Type	Crash Head-on cra Right-angle	Type Cat ashes: crashes:	· · ·	Total 0.0 0.4	К 0.0 0.0	A 0.0 0.0	B 0.0 0.0	C 0.0 0.2	PDO 0
Crash Type	Crash Head-on cra Right-angle Rear-end cr	Type Cat ashes: crashes: rashes:	· · ·	Total 0.0 0.4 0.4	К 0.0 0.0 0.0	A 0.0 0.0 0.0	B 0.0 0.0 0.0	C 0.0 0.2 0.2	PDO 0 0
Crash Type	Crash Head-on cra Right-angle Rear-end cr Sideswipe c	Type Cat ashes: crashes: rashes: crashes:	egory	Total 0.0 0.4 0.4 0.0	K 0.0 0.0 0.0 0.0	A 0.0 0.0 0.0 0.0	B 0.0 0.0 0.0 0.0	C 0.0 0.2 0.2 0.0	PDO () () () () ()
Crash Type	Crash Head-on cra Right-angle Rear-end cr Sideswipe c Other multip	Type Cat ashes: crashes: rashes: crashes: crashes: ble-vehicle	egory crashes:	Total 0.0 0.4 0.4 0.0 0.0	К 0.0 0.0 0.0 0.0 0.0	A 0.0 0.0 0.0 0.0 0.0	B 0.0 0.0 0.0	C 0.0 0.2 0.2 0.0 0.0	PDO 0 0 0 0
Crash Type	Crash Head-on cra Right-angle Rear-end cr Sideswipe c Other multip	Type Cat ashes: crashes: rashes: crashes: crashes: ble-vehicle	egory	Total 0.0 0.4 0.4 0.0	K 0.0 0.0 0.0 0.0	A 0.0 0.0 0.0 0.0 0.0	B 0.0 0.0 0.0 0.0	C 0.0 0.2 0.2 0.0	PDO 0 0 0 0 0
Crash Type Multiple vehicle	Crash Head-on cra Right-angle Rear-end cr Sideswipe c Other multip	Type Cat ashes: crashes: rashes: crashes: crashes: ble-vehicle iple-vehicle	egory crashes:	Total 0.0 0.4 0.4 0.0 0.0	К 0.0 0.0 0.0 0.0 0.0	A 0.0 0.0 0.0 0.0 0.0	B 0.0 0.0 0.0 0.0 0.0	C 0.0 0.2 0.2 0.0 0.0	PDO 0 0 0 0 0 0 0 0 0 0 0 0 0
Crash Type Multiple vehicle	Crash Head-on cra Right-angle Rear-end cr Sideswipe c Other multip Total mult	Type Cat ashes: crashes: rashes: crashes: ole-vehicle iple-vehicle th animal:	egory crashes: e crashes:	Total 0.0 0.4 0.0 0.0 0.0 0.0 0.0	К 0.0 0.0 0.0 0.0 0.0 0.0	A 0.0 0.0 0.0 0.0 0.0 0.0 0.0	B 0.0 0.0 0.0 0.0 0.0 0.1	C 0.0 0.2 0.2 0.0 0.0 0.0 0.0	PDO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Crash Type Multiple vehicle	Crash Head-on cra Right-angle Rear-end cr Sideswipe c Other multip Total mult Crashes wit Crashes wit	Type Cat ashes: crashes: crashes: crashes: ole-vehicle iple-vehicle th animal: th fixed ob	egory crashes: e crashes: ject:	Total 0.0 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	К 0.0 0.0 0.0 0.0 0.0 0.0 0.0	A 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	B 0.0 0.0 0.0 0.0 0.0 0.1 0.1	C 0.0 0.2 0.2 0.0 0.0 0.0 0.4 0.0	PDO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Crash Type Multiple vehicle	Crash Head-on cra Right-angle Rear-end cr Sideswipe c Other multip Total mult Crashes wit Crashes wit Crashes wit	Type Cat ashes: crashes: crashes: ole-vehicle iple-vehicle h animal: h fixed ob h other ob	egory crashes: e crashes: e crashes: ject:	Total 0.0 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.0	К 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	A 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	B 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.0 0.0 0.0	C 0.0 0.2 0.2 0.0 0.0 0.0 0.4 0.0 0.0 0.0	PDO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	Crash Head-on cra Right-angle Rear-end cr Sideswipe c Other multip Total multi Crashes wit Crashes wit Crashes wit Crashes wit	Type Cat ashes: crashes: crashes: crashes: ble-vehicle tiple-vehicle thanimal: th fixed ob th other ob th parked of	egory crashes: e crashes: e crashes: ject: ject: /ehicle:	Total 0.0 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	К 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	A 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	B 0.0 0.0 0.0 0.0 0.0 0.1 0.0 0.0 0.0 0.0	C 0.0 0.2 0.2 0.0 0.0 0.0 0.0 0.0 0.0 0.0	PDO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Crash Type Multiple vehicle	Crash Head-on cra Right-angle Rear-end cr Sideswipe c Other multip Total multi Crashes wit Crashes wit Crashes wit Crashes wit Other single	Type Cat ashes: crashes: crashes: crashes: ble-vehicle tiple-vehicle thanimal: th fixed ob th other ob th parked of	egory crashes: e crashes: e crashes: ject: ject: /ehicle: rashes	Total 0.0 0.4 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.0	К 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	A 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	B 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.0 0.0 0.0	C 0.0 0.2 0.2 0.0 0.0 0.0 0.4 0.0 0.0 0.0	PDO 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

Linden Hall Road, Cedar Run Road (SR 2004)

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

Project Safety Performance Summary Report

Project DescriptionSCACDate8/3/2020Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads



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

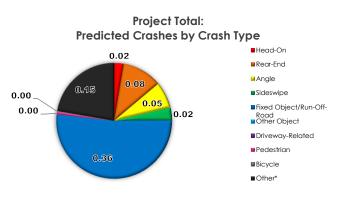
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	0.43	0.26	0.69
Observed Average Annual Crash Frequency	0.00	0.20	0.20
Expected Average Annual Crash Frequency	0.39	0.25	0.64
Potential for Safety Improvement (PSI)	-0.04	-0.01	-0.04

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

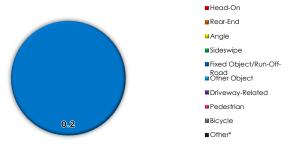
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00

<u>Total</u>	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

Total Project Summary



Project Total: Observed Crashes by Crash Type



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

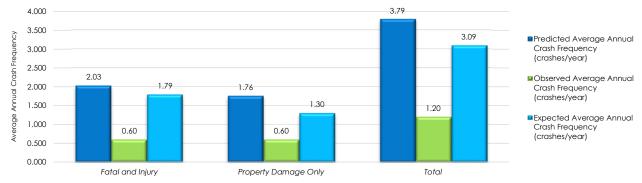
		Rural Two	o-Lane, Two-Way Roa	ds: Segments		
Segment Name	PennDOT Segment	PennDOT Offset	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safety Improvement
Segment 1	10	0	0.27	0.20	0.27	-0.01
Segment 2	30	1800	0.27	0.00	0.24	-0.02
Segment 3	50	952	0.03	0.00	0.03	0.00
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 DescriptionSCACDate8/3/2020Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials



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

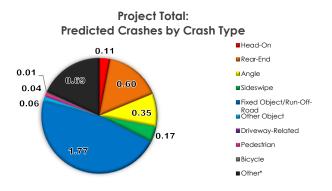
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	2.03	1.76	3.79
Observed Average Annual Crash Frequency	0.60	0.60	1.20
Expected Average Annual Crash Frequency	1.79	1.30	3.09
Potential for Safety Improvement (PSI)	-0.24	-0.46	-0.69

<u>Segments</u>	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

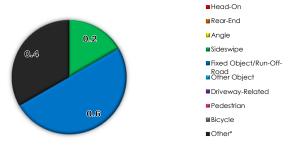
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00

<u>Total</u>	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

Total Project Summary

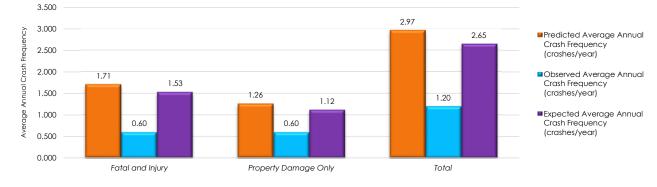


Project Total: Observed Crashes by Crash Type



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

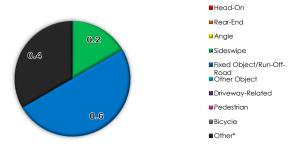
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.71	1.26	2.97
Observed Average Annual Crash Frequency (crashes/yr)	0.60	0.60	1.20
Expected Average Annual Crash Frequency (crashes/yr)	1.53	1.12	2.65

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

<u>Total</u>	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

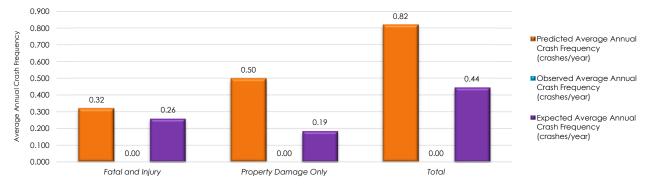
Rural Two-Lane Roads: Predicted Crashes by Crash Type Head-On 0.08 Rear-End Angle 0.336 0.662 0.220 0.006 ■Sideswipe 0.021 0.107 Fixed Object/Run-Off-Road Other Object Driveway-Related Pedestrian Bicycle

Rural Two-Lane Roads: Observed Crashes by Crash Type



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)

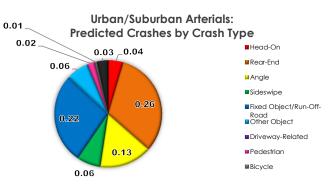
Urban/Suburban Arterial Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	0.32	0.50	0.82
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency	0.26	0.19	0.44
Potential for Safety Improvement (PSI)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

Urban/Suburban Arterials Summary

<u>Segments</u>	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

<u>Total</u>	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



Urban/Suburban Arterials: Observed Crashes by Crash Type



Project Description SCAC Date 8/3/2020 Analysis Year2017Analysis TypeSite Level AnalysisFacility 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

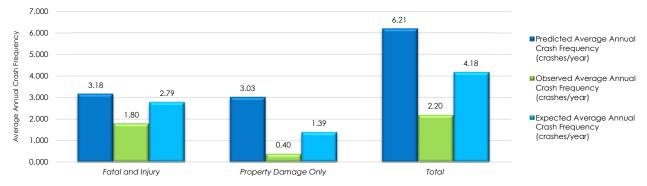
Project Description SCAC 8/3/2020 Date Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials

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)

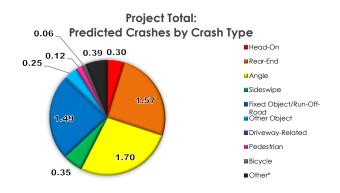
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	3.18	3.03	6.21
Observed Average Annual Crash Frequency	1.80	0.40	2.20
Expected Average Annual Crash Frequency	2.79	1.39	4.18
Potential for Safety Improvement (PSI)	-0.38	-1.64	-2.03

Total Project Summary

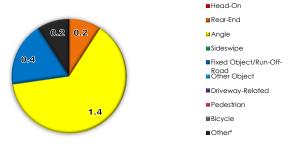
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	2.10	1.98	4.08
Observed Average Annual Crash Frequency (crashes/yr)	1.20	0.00	1.20
Expected Average Annual Crash Frequency (crashes/yr)	1.83	0.65	2.47

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

	Easter and	Property	
<u>Total</u>	Fatal and Injury	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

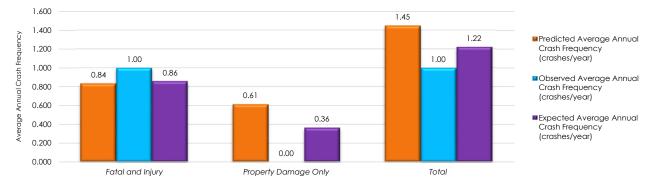


Project Total: Observed Crashes by Crash Type



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

<u>Segments</u>	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

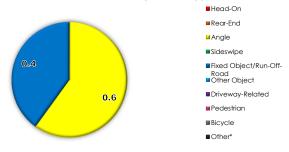
<u>Total</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.84	0.61	1.45
Observed Average Annual Crash Frequency (crashes/yr)	1.00	0.00	1.00
Expected Average Annual Crash Frequency (crashes/yr)	0.86	0.36	1.22

Rural Two-Lane Roads: Predicted Crashes by Crash Type Head-On Head-On Rear-End Angle Sideswipe Fixed Object/Run-Off-Road Driveway-Related Pedestrian

		I	Bicycle

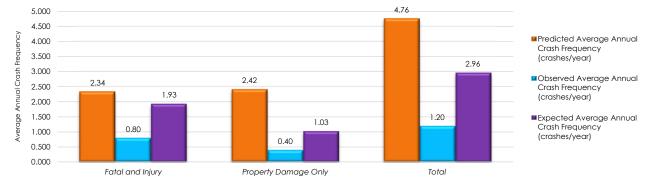
Rural Two-Lane Roads: Observed Crashes by Crash Type

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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

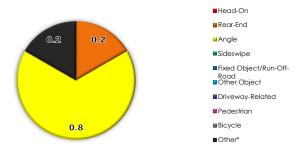
Fatal and Injury	Property Damage Only	Total
1.77	1.74	3.51
0.60	0.00	0.60
1.42	0.47	1.89
	Injury 1.77 0.60	Fafai and InjuryDamage Only1.771.740.600.00

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

<u>Total</u>	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 0.05 Head-On 0.23 0.24 0.11 Rear-Fnd 0.25 Angle 🛛 Sideswipe 1.41 Fixed Object/Run-Off-Road Other Object Driveway-Related Pedestrian 1.19 0.30 Bicycle

Urban/Suburban Arterials: Observed Crashes by Crash Type



Project Description SCAC Date 8/3/2020 Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials

		Rural Two	-Lane, Two-Way Roa	ds: 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 Description SCAC Date 8/3/2020 Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials

		Rural Two-Lar	ne, Two-Way Road	s: Intersections		
Intersection Name	Major Road	Minor Road	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safety Improvement
Intersection 1	SR 3010	nden Hall Road (SR 200	0.87	0.40	0.64	-0.23

Project Safety Performance Detailed Report Urban and Suburban Arterials

Project Description SCAC 8/3/2020 Date Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials

		Urban c	Ind Suburban Arterial	s: 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 8/3/2020 Date Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Rural Two-Lane Roads, and Urban/Suburban Arterials

		Urban and S	uburban 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	vine Drive/Mary Elizabe	1.25	0.60	1.07	-0.18

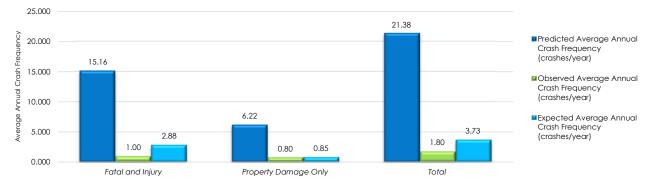
S. Atherton Street, Boal Avenue (SR 3014)

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

Project Safety Performance Summary Report

Project DescriptionSCACDate8/3/2020Analysis Year2017Analysis TypeSite Level AnalysisFacility Type(s)Urban/Suburban Arterials

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



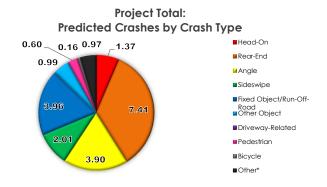
Project Totals	Fatal and Injury Crashes		Total Crashes
Predicted Average Annual Crash Frequency	15.16	6.22	21.38
Observed Average Annual Crash Frequency	1.00	0.80	1.80
Expected Average Annual Crash Frequency	2.88	0.85	3.73
Potential for Safety Improvement (PSI)	-12.28	-5.36	-17.65

Total Project Summary

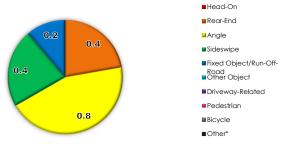
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	15.16	6.22	21.38
Observed Average Annual Crash Frequency (crashes/yr)	1.00	0.80	1.80
Expected Average Annual Crash Frequency (crashes/yr)	2.88	0.85	3.73

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

<u>Total</u>	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: Observed Crashes by Crash Type



Project Safety Performance Detailed Report Urban and Suburban Arterials

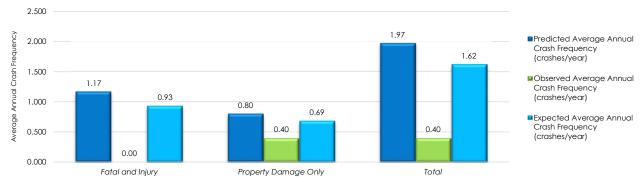
SCAC
8/3/2020
2017
Site Level Analysis
Urban/Suburban Arterials

	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

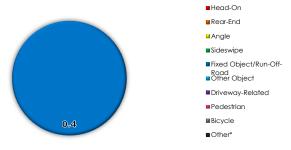
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.65	0.48	1.13
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.40	0.40
Expected Average Annual Crash Frequency (crashes/yr)	0.55	0.45	1.00

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

<u>Total</u>	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 Head-On 0.07 Rear-End 0.01 Angle 🛛 0.28 0.01 0.22 Sideswipe Fixed Object/Run-Off-Road Other Object 0.54 Driveway-Related Pedestrian Bicycle ■Other* 0.07

Project Total: Observed Crashes by Crash Type



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 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	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

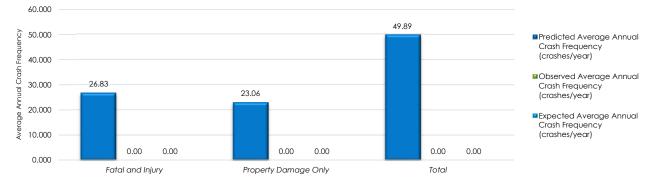
 Date
 8/3/2020

 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)			

Fatal and Injury	Property Damage Only	Total
19.16	16.88	36.04
N/A	N/A	N/A
N/A	N/A	N/A
	Injury 19.16 N/A	Fatal and Injury Damage Only 19.16 16.88 N/A N/A

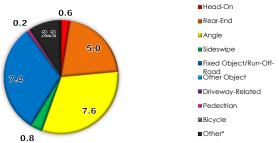
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	7.66	6.18	13.84
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Total</u>	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 0.38 Head-On 2.05 Rear-End 0.98 4.45 Angle 🛛 1.43 Sideswipe 12.54 Fixed Object/Run-Off-Road Other Object Driveway-Related Pedestrian <mark>12.43</mark> Bicycle ■Other*

Project Total: Observed Crashes by Crash Type

2.72

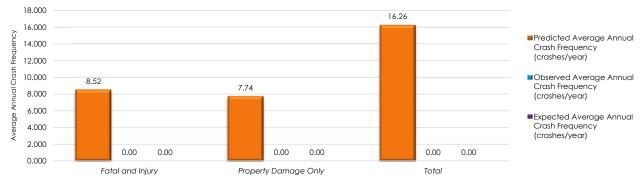


*Note: "Other Crashes" include animal, overturn, parked vehicle, noncollisions, and other single-/multiple-vehicle crashes

Total Project Summary

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)			

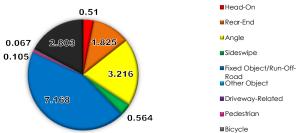
Rural Two-Lane Roads Summary

<u>Segments</u>	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)			

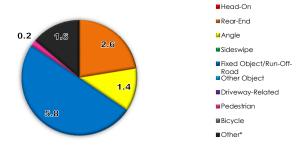
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	2.36	1.95	4.31
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

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

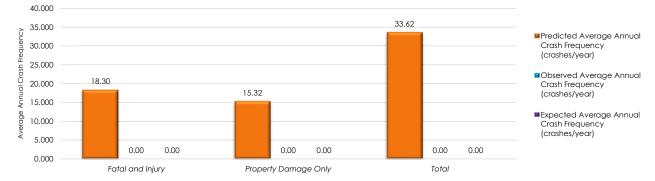


Rural Two-Lane Roads: Observed Crashes by Crash Type



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)

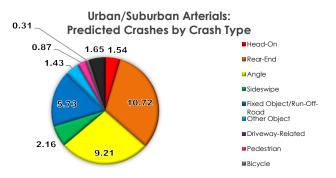
Urban/Suburban Arterial Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	18.30	15.32	33.62
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Urban/Suburban Arterials Summary

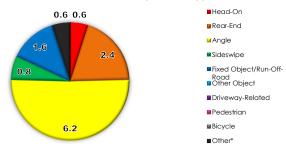
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	13.00	11.09	24.09
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

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

<u>Total</u>	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



Urban/Suburban Arterials: Observed Crashes by Crash Type



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 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	nden 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

Segment Name	PennDOT Segment	PennDOT Offset	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safet 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

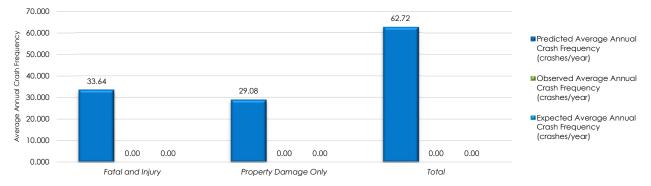
Urban and Suburban Arterials: Intersections						
Intersection Name	Major Road	Minor Road	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safety Improvement
Intersection 1	SR 0045	Atherton Street (SR 301	4.20	N/A	4.39	0.20
Intersection 2	SR 0045	alsburg Pike/Church 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) Rural Two-Lane Roads, and Urban/Suburban Arterials Facility Type(s)

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



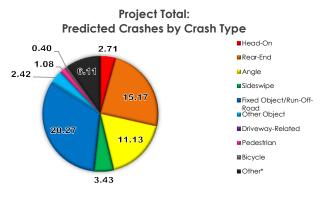
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	33.64	29.08	62.72
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

<u>Segments</u>	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

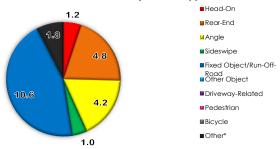
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	4.40	3.18	7.59
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Total</u>	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

Total Project Summary

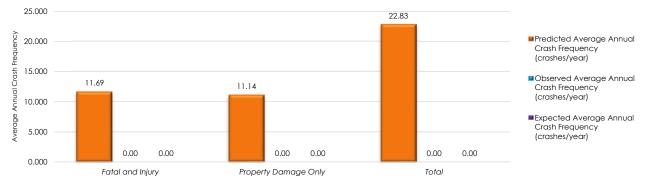


Project Total: Observed Crashes by Crash Type



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

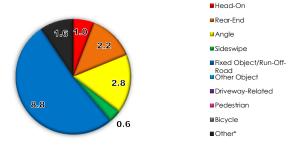
Segments	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	10.30	9.82	20.12
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

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)			

<u>Total</u>	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)			

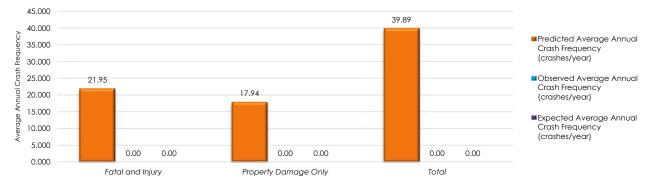
Rural Two-Lane Roads: Predicted Crashes by Crash Type Head-On 0.66 Rear-End Angle 4.516 2.838 0.054 ■Sideswipe 0.168 Fixed Object/Run-Off-3.193 Road Other Object Driveway-Related 0.814 Pedestrian Bicycle

Rural Two-Lane Roads: Observed Crashes by Crash Type



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)

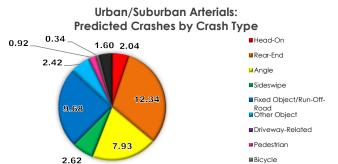
Urban/Suburban Arterial Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	21.95	17.94	39.89
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Urban/Suburban Arterials Summary

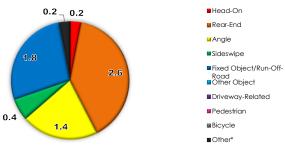
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	18.93	16.08	35.01
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

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	Property Damage	Total
	Injury	Only	
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: Observed Crashes by Crash Type



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 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-Lar	ne, Two-Way Road	s: Intersections		
Intersection Name	Major Road	Minor Road	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safet Improvement
Intersection 1	SR 0144	g Creek Road/Airport	0.53	N/A		
Intersection 2	SR 0144	rlystown 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 Safet 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

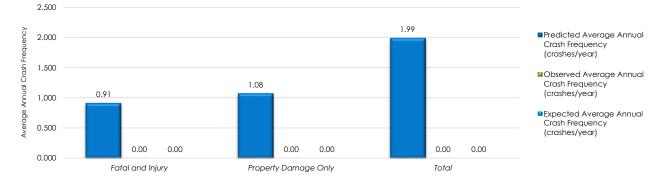
	Urban and Suburban Arterials: Intersections					
Intersection Name	Major Road	Minor Road	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safety Improvement
Intersection 1	SR 0144	rch Street (SR 2006/SR (1.84	N/A	1.22	-0.62
Intersection 2	SR 0144	Harrison Road	0.60	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)



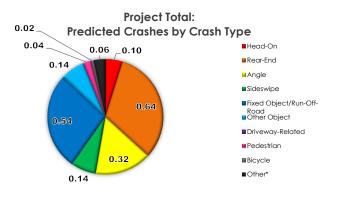
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	0.91	1.08	1.99
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Total Project Summary

<u>Segments</u>	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)			

<u>Total</u>	Fatal and Injury	Property Damage Only	Total
		Citty	
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: Observed Crashes by Crash Type



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

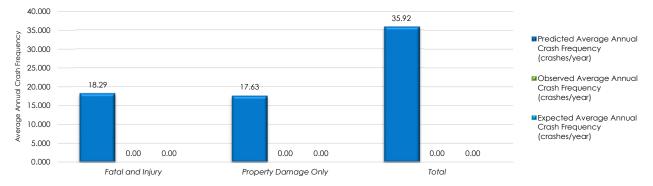
Urban and Suburban Arterials: Segments						
Segment Name	PennDOT Segment	PennDOT Offset	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safety Improvement
Segment 1	10	0	1.99	N/A		

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) Rural Two-Lane Roads, and Urban/Suburban Arterials Facility Type(s)

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



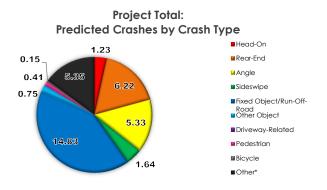
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	18.29	17.63	35.92
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

<u>Segments</u>	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

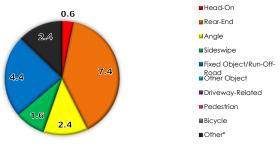
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.56	1.09	2.65
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Total</u>	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

Total Project Summary

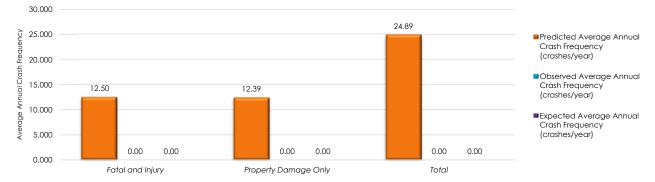


Project Total: Observed Crashes by Crash Type



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)

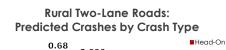
Rural Two-Lane Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	12.50	12.39	24.89
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

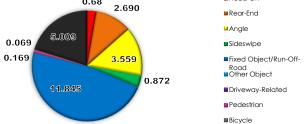
Rural Two-Lane Roads Summary

<u>Segments</u>	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)			

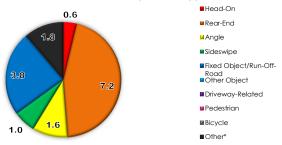
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.56	1.09	2.65
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Total</u>	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)			



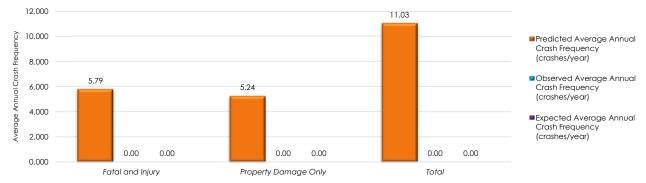


Rural Two-Lane Roads: Observed Crashes by Crash Type



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

<u>Segments</u>	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

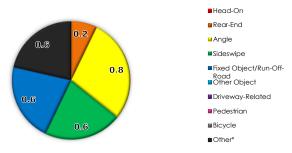
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Total</u>	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 0.09 Head-On 0.34 0.55 0.75_ Rear-Fnd Angle 🛛 Sideswipe 3.53 Fixed Object/Run-Off-Road Other Object Driveway-Related Pedestrian 1.77 Bicycle

Urban/Suburban Arterials: Observed Crashes by Crash Type

0.76



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 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)

		Out	tput Summa	ary				
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								
Crash Data Descrip								
Freeway segments	Segment crash da	ta available?		Yes	First year o	f crash dat	a:	201
reenay eegmente	Project-level crash		7	No	Last year o			201
Ramp segments	Segment crash da			Yes				20
Namp segments	Project-level crash	>	No	First year of crash data: Last year of crash data:			20	
Ramp terminals	Segment crash da		<u>'</u>	Yes	First year o			20
Ramp terminais	Project-level crash		2					
	,	data avaliable	ſ	No	Last year o	r crash data	a:	201
Estimated Crash St				1/	1			
Crashes for Entire			Total	K	A	В	C	PDO
	hes during Study Period, o		1.6	0.0	0.0	0.1	0.6	0
	freq. during Study Period,	crashes/yr:	1.6	0.0	0.0	0.1	0.6	0
Crashes by Facility	Nbr. Sites	Total	K	Α	В	С	PDO	
reeway segments, crashes:		0	0.0	0.0	0.0	0.0	0.0	0
Ramp segments, crashes:		0	0.0	0.0		0.0		0
Crossroad ramp tern		2	1.6	0.0		0.1	0.6	0
Crashes for Entire	1	Year	Total	K	A	B	C	PDO
Estimated number of		2017	1.6	0.0		0.1	0.6	0
	0	2017	1.0	0.0	0.0	0.1	0.0	0
the Study Period, cra	201165.							
		2019						
		2020						
		2021						
		2022						
		2023						
		2024						
		2025						
		2026						
		2027						
		2028						
		2029						
		2030						
		2031						
		2032						
		2033						
		2033						
		2034						
		2036						
		2037						
		2038						
		2039						
		2040						
Distribution of Cras	shes for Entire Faci	lity			-			
Crash Type	Crash Type	Category			er of Crash			
			Total	K	Α	В	С	PDO
Multiple vehicle	Head-on crashes:		0.0	0.0		0.0	0.0	0
	Right-angle crashe	es:	0.5	0.0	0.0	0.0	0.2	0
	Rear-end crashes:		0.8	0.0	0.0	0.1	0.4	0
	Sideswipe crashes:		0.1	0.0	0.0	0.0	0.0	0
	Other multiple-vehicle crashes:		0.0	0.0	0.0	0.0	0.0	C
	Total multiple-ve		1.4	0.0		0.1	0.6	0
Single vehicle	Crashes with anim		0.0	0.0		0.0	0.0	0
Single venicle	Crashes with fixed		0.0	0.0		0.0	0.0	0
			0.1			0.0		
	Crashes with other			0.0				0
	Crashes with parked vehicle:		0.0	0.0		0.0	0.0	0
	Other single-vehic		0.0	0.0		0.0	0.0	0
	Other single-vehic Total single-vehi Total ci	cle crashes:	0.0 0.1 1.6	0.0	0.0	0.0	0.0	0

Oak Hall Interchange (SR 0322/SR 3010) At Boalsburg Road (SR 3010)

		Out	tput Summa	ary				
General Information								
Project description:	State College Area	a Connector						
Analyst:	SMMcG	Date:	8/6/2020		Area type:		Urban	
First year of analysis	: 2017				•••			
Last year of analysis								
Crash Data Descrip								
Freeway segments	Segment crash da	ta available?		Yes	First year o	f crash dat	a:	201
reenay eegmente	Project-level crash		2	No	Last year o			201
Ramp segments	Segment crash da			Yes	First year o			20
Namp segments	Project-level crash		>	No	Last year o			20
Ramp terminals	Segment crash da		<u>'</u>	Yes	First year o			20
Ramp terminais	Project-level crash		2					
	,		<u> </u>	No	Last year o	i crasn data	d.	201
Estimated Crash St				17				
Crashes for Entire			Total	K	A	В	C	PDO
	hes during Study Period,		1.5	0.0	0.0	0.1	0.6	0
	freq. during Study Period,	crashes/yr:	1.5	0.0	0.0	0.1	0.6	0
Crashes by Facility	Component	Nbr. Sites	Total	K	Α	В	C	PDO
Freeway segments,		0	0.0	0.0	0.0	0.0	0.0	0
Ramp segments, cra		0	0.0	0.0		0.0		0
Crossroad ramp tern		2	1.5	0.0		0.1	0.6	0
Crashes for Entire	1	Year	Total	K	A	B	C	PDO
Estimated number of		2017	1.5	0.0		0.1	0.6	0
	0	2017	1.5	0.0	0.0	0.1	0.0	0
the Study Period, cra	131165.							
		2019						
		2020						
		2021						
		2022						
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		2037					├ ──── │	
		2038						
		2039						
		2040						
Distribution of Cras	shes for Entire Faci	lity	_					
Crash Type	Crash Type	Category			er of Crash			
21			Total	K	Α	В	C	PDO
Multiple vehicle	Head-on crashes:		0.0	0.0		0.0		0
	Right-angle crashe	es:	0.6	0.0	0.0	0.1	0.3	0
	Rear-end crashes		0.5	0.0	0.0	0.1	0.2	0
	Sideswipe crashes:		0.1	0.0		0.0		0
	Other multiple-vehicle crashes:		0.0	0.0		0.0		0
	Total multiple-ve		1.3	0.0		0.0	0.6	0
Single vehicle	Crashes with anim		0.0	0.0		0.0	0.0	0
Single venicle			0.0			0.0		
	Crashes with fixed			0.0				0
	Crashes with othe		0.0	0.0		0.0		0
	One al			0.0	0.0	0.0	0.0	0
	Crashes with park		0.0					
	Other single-vehic	le crashes	0.0	0.0	0.0	0.0	0.0	0
	Other single-vehic Total single-vehic	le crashes			0.0 0.0		0.0	

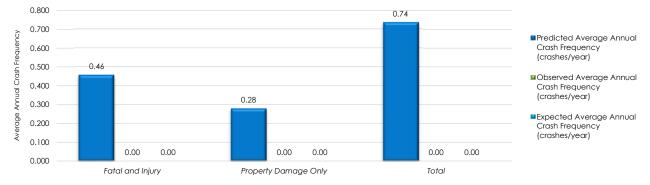
Linden Hall Road, Cedar Run Road (SR 2004)

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

Project Safety Performance Summary Report

Project DescriptionSCACDate8/3/2020Analysis Year2050Analysis TypePredicted Only (No Crash Data Analysis)Facility Type(s)Rural Two-Lane Roads

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



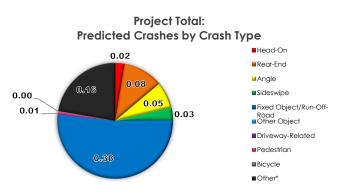
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	0.46	0.28	0.74
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

<u>Segments</u>	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)			

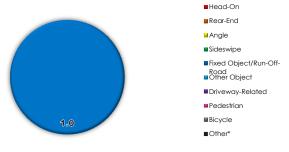
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Total</u>	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)			
			A

Total Project Summary



Project Total: Observed Crashes by Crash Type



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

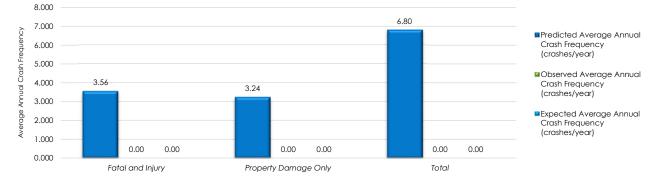
 Date
 8/3/2020

 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)



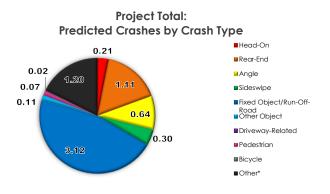
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	3.56	3.24	6.80
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

<u>Segments</u>	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

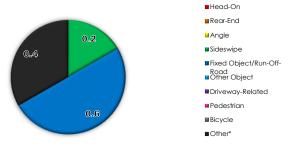
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Total</u>	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

Total Project Summary

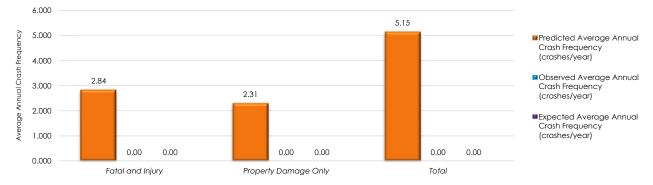


Project Total: Observed Crashes by Crash Type



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)

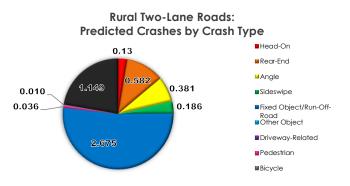
Rural Two-Lane Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	2.84	2.31	5.15
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Rural Two-Lane Roads Summary

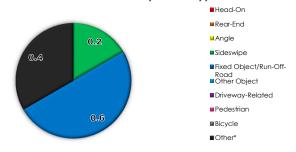
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	2.84	2.31	5.15
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

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)			

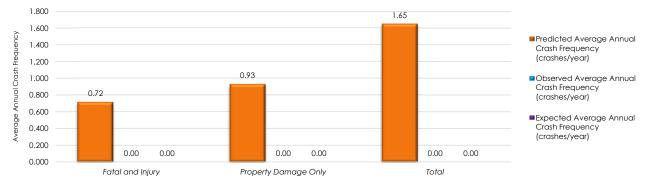


Rural Two-Lane Roads: Observed Crashes by Crash Type



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)

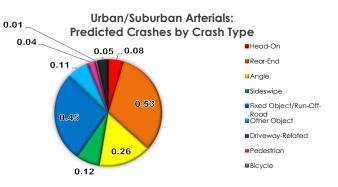
Urban/Suburban Arterial Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	0.72	0.93	1.65
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Urban/Suburban Arterials Summary

<u>Segments</u>	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

<u>Total</u>	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



Urban/Suburban Arterials: Observed Crashes by Crash Type



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 Safet 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)

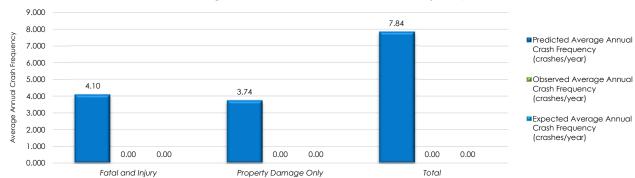
 Facility Type(s)
 Rural Two-Lane Roads, and Urban/Suburban Arterials

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
<u></u> _						

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) Rural Two-Lane Roads, and Urban/Suburban Arterials Facility Type(s)



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)			

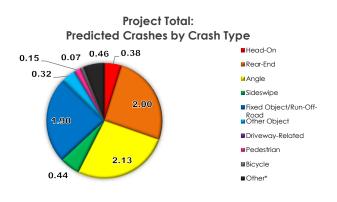
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	2.79	2.47	5.26
Observed Average Annual Crash	N/A	N/A	N/A

Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

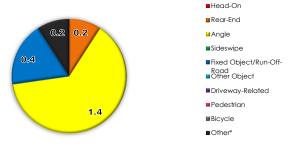
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.31	1.28	2.59
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Total</u>	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

Total Project Summary

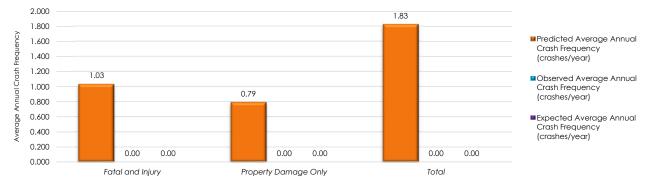


Project Total: Observed Crashes by Crash Type



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)

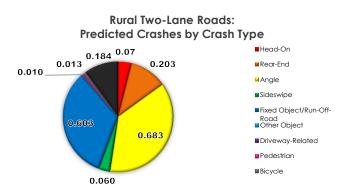
Rural Two-Lane Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	1.03	0.79	1.83
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Rural Two-Lane Roads Summary

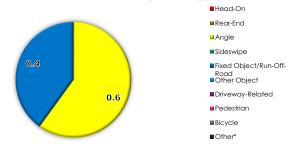
Segments	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.38	0.28	0.66
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

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)			

<u>Total</u>	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)			

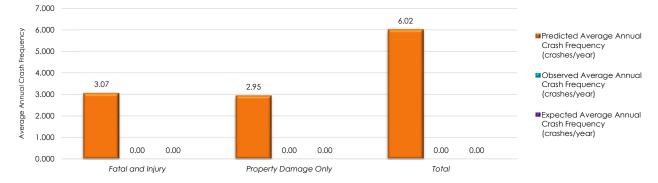


Rural Two-Lane Roads: Observed Crashes by Crash Type



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)

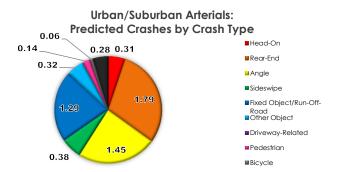
Urban/Suburban Arterial Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	3.07	2.95	6.02
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Urban/Suburban Arterials Summary

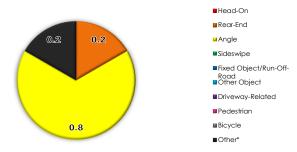
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	2.41	2.19	4.60
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

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

<u>Total</u>	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: Observed Crashes by Crash Type



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	nden 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	rine Drive/Mary Elizabe	1.42	N/A	1.17	-0.25

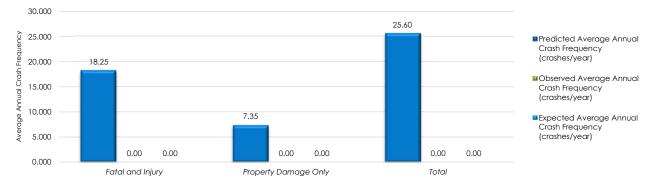
S. Atherton Street, Boal Avenue (SR 3014)

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

Project Safety Performance Summary Report

Project DescriptionSCACDate8/3/2020Analysis Year2050Analysis TypePredicted Only (No Crash Data Analysis)Facility Type(s)Urban/Suburban Arterials

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



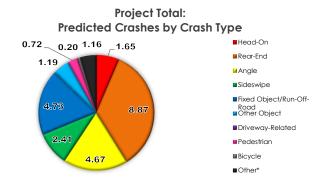
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	18.25	7.35	25.60
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Total Project Summary

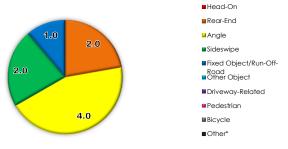
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	18.25	7.35	25.60
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

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)			

	Fatal and	Property		
<u>Total</u>	Injury	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: Observed Crashes by Crash Type



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

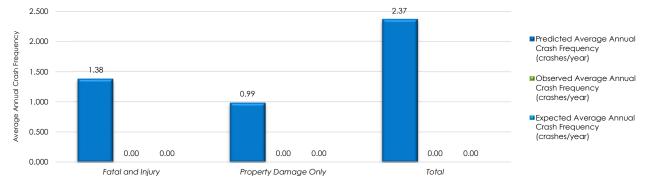
		Urban c	and Suburban Arterial	s: Segments		
Segment Name	PennDOT Segment	PennDOT Offset	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safety Improvement
Segment 1 Segment 2	180 200	0	22.02 3.58	N/A N/A		

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)



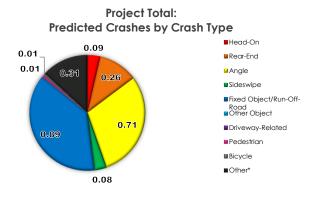
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	1.38	0.99	2.37
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Total Project Summary

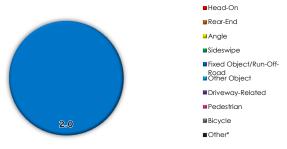
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.70	0.52	1.23
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

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: Observed Crashes by Crash Type



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

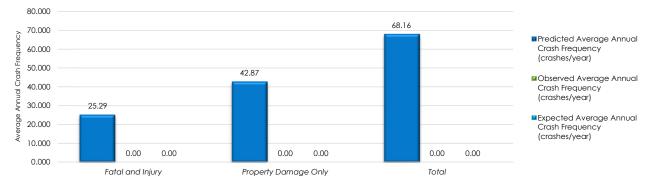
	Rural Two-Lane, Two-Way Roads: Intersections					
Intersection Name	Major Road	Minor Road	Total Predicted Crashes	Total Observed Crashes	Total Expected Crashes	Potential for Safety Improvement
Intersection 1	Brush Valley Road	Lenape Lane	0.19	N/A		
Intersection 2	Brush Valley Road	Hylbert Road	0.21	N/A		
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 DescriptionState College Area ConnectorDate3/15/2022Analysis Year2050Analysis TypePredicted 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)

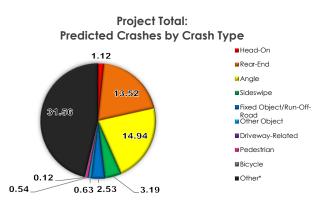
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	25.29	42.87	68.16
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

		Property	
<u>Segments</u>	Fatal and Injury	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)			

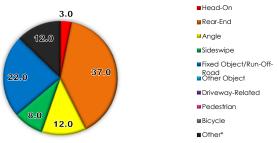
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	8.36	7.61	15.97
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Iotal</u>	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)			
			**

Total Project Summary



Project Total: Observed Crashes by Crash Type



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 A

Rural Two-Lane Roads: Observed Crashes by Crash Type

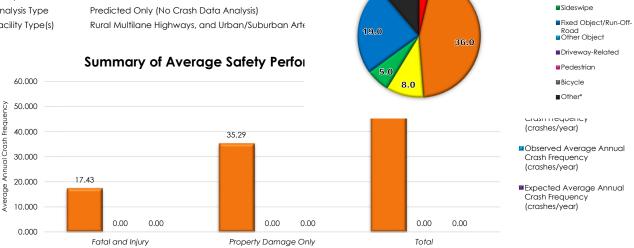
3.0

9.0

Head-On

Rear-End

Angle



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)			

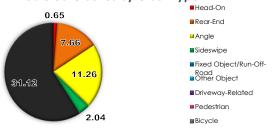
Rural Multilane Highways Summary

<u>Segments</u>	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)			

<u>Total</u>	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)			

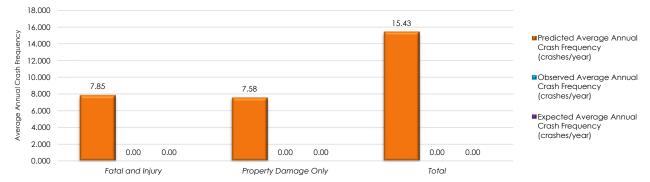
Rural Multilane Highways: Predicted Crashes by Crash Type



No Observed Crash Data Provided

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)			

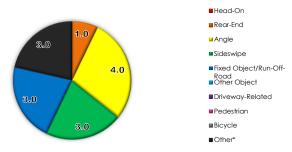
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.65	0.56	1.21
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Total</u>	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: 0.12 Predicted Crashes by Crash Type 0.54 0.44 0.48 Head-On Rear-End Angle Sideswipe Fixed Object/Run-Off-

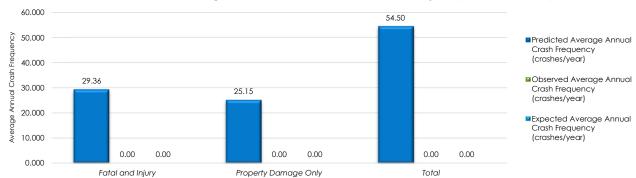


Urban/Suburban Arterials: Observed Crashes by Crash Type



Project Safety Performance Summary Report

Project DescriptionState College Area ConnectorDate3/15/2022Analysis Year2050Analysis TypePredicted 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)

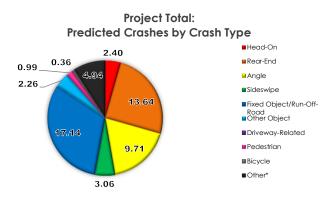
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	29.36	25.15	54.50
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

<u>Segments</u>	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

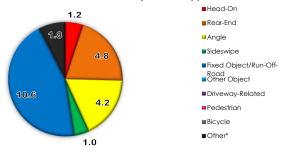
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	3.84	2.56	6.40
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Total</u>	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

Total Project Summary

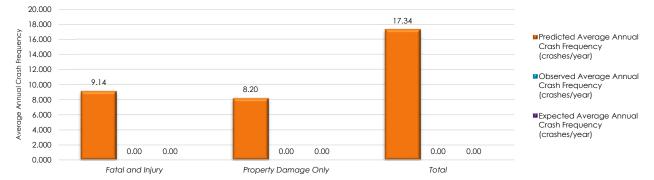


Project Total: Observed Crashes by Crash Type



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)			

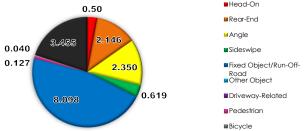
Rural Two-Lane Roads Summary

<u>Segments</u>	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)			

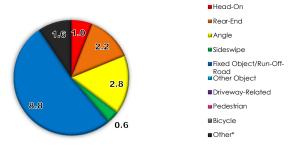
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.09	0.84	1.93
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Total</u>	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

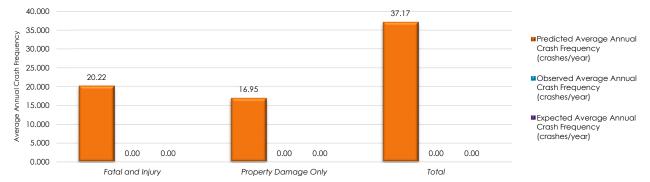


Rural Two-Lane Roads: Observed Crashes by Crash Type



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

2.44

<u>Segments</u>	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

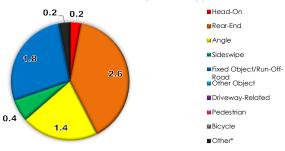
<u>Total</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	20.22	16.95	37.17
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	10.68	7.96	18.64

Urban/Suburban Arterials: Predicted Crashes by Crash Type 0.32 Head-On 0.86 1.48 1.90 Rear-Fnd 2.26 Angle 🛛 Sideswipe 11.50 Fixed Object/Run-Off-Road Other Object Driveway-Related 7.36

Pedestrian

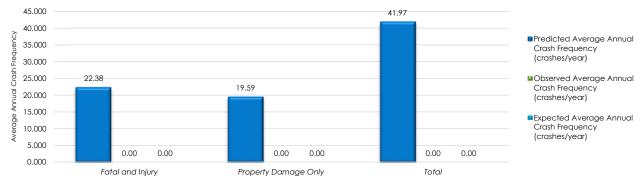
Bicycle

Urban/Suburban Arterials: Observed Crashes by Crash Type



Project Safety Performance Summary Report

Project DescriptionState College Area ConnectorDate3/15/2022Analysis Year2050Analysis TypePredicted 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)

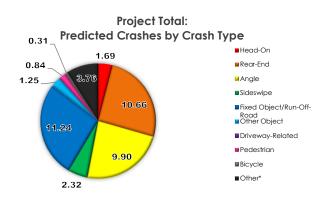
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	22.38	19.59	41.97
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

<u>Segments</u>	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

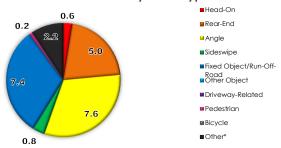
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	5.50	4.62	10.12
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Iotal</u>	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

Total Project Summary

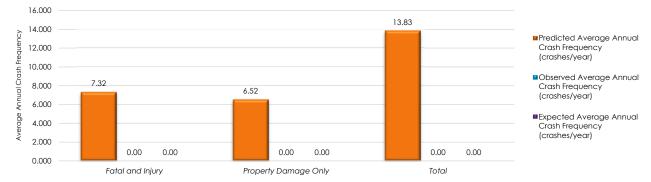


Project Total: Observed Crashes by Crash Type



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)			

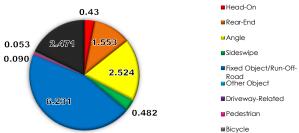
Rural Two-Lane Roads Summary

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)			

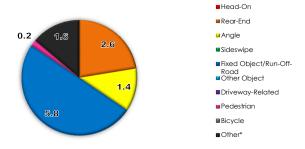
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.79	1.42	3.21
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Total</u>	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

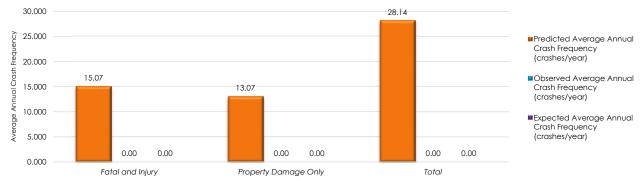


Rural Two-Lane Roads: Observed Crashes by Crash Type



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)

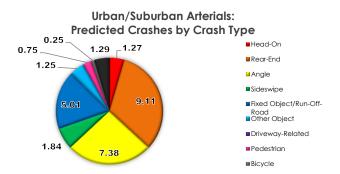
Urban/Suburban Arterial Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	15.07	13.07	28.14
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Urban/Suburban Arterials Summary

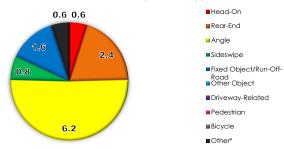
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	11.35	9.88	21.23
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

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

<u>Total</u>	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: Observed Crashes by Crash Type



HSM Analyses

Year 2050 Build Build Alternative 1 (US 322 Corridor)

		Out	tput Summa	ary				
General Information			•	-				
Project description:	State College Are	a Connector SR	0322 (ALT	1)				
Analyst:	HAK		3/15/2022	/	Area type:		Rural	
First year of analysis:	0	I						
Last year of analysis:	0							
Crash Data Descript	ion							
Freeway segments	Segment crash da	ata available?		No	First year o	f crash data	. I	
r reeway segments	Project-level crash		>	No	,	f crash data		
Down cogmonto	Segment crash da			No		of crash data		
Ramp segments	v							
.	Project-level crash		?	No		f crash data		
Ramp terminals	Segment crash da			No		f crash data		
	Project-level crash	n data available'	?	No	Last year o	f crash data	1:	
Estimated Crash Sta								
Crashes for Entire F	acility		Total	K	Α	В	С	PDO
Estimated number of crash	es during Study Period,	crashes:	29.2	0.5	1.3	5.1	5.9	16.5
Estimated average crash fro	eq. 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	Α	В	С	PDO
Freeway segments, c		8	26.9	0.5	1.2	4.7	5.1	15.4
Ramp segments, cras		4	0.4	0.0		0.1	0.1	0.2
Crossroad ramp termi		4	1.9	0.0		0.1	0.7	0.2
Crashes for Entire F		Year	Total	<u>K</u>	A	0.2 B	C 0.7	PDO
						_	-	
Estimated number of	0	0	29.2	0.5	1.3	5.1	5.9	16.5
the Study Period, cras	snes:	1						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		10						
		11						
		12						
		13						
		13						
		15						
		16						
		17						
		18						
		19						
		20						
		21						
		22						
		23						
Distribution of Crasl	hes for Entire Faci	ility						
		-	Estima	ted Numb	er of Crash	nes During	the Study I	Period
Crash Type	Crash Type	Category	Total	K	Α	B	C	PDO
Multiple vehicle	Head-on crashes:		0.1	0.0		0.0	0.0	0.0
iviuitipie venicie			0.1	0.0		0.0	0.0	0.0
	Right-angle crash	es:		0.0	0.0	5.2		0.0
	Right-angle crash			01	<u>∩</u> 2	1 1	1 /	21
	Rear-end crashes	:	5.0	0.1	0.3	1.1	1.4	
	Rear-end crashes Sideswipe crashes	s: s:	5.0 2.3	0.0	0.1	0.4	0.4	1.5
	Rear-end crashes Sideswipe crashe Other multiple-ver	:: s: nicle crashes:	5.0 2.3 0.5	0.0	0.1 0.0	0.4 0.1	0.4 0.1	1.5 0.2
0	Rear-end crashes Sideswipe crashe Other multiple-ver Total multiple-ver	: s: nicle crashes: ehicle crashes:	5.0 2.3 0.5 8.7	0.0 0.0 0.2	0.1 0.0 0.4	0.4 0.1 1.7	0.4 0.1 2.3	1.5 0.2 4.1
Single vehicle	Rear-end crashes Sideswipe crashes Other multiple-vel Total multiple-ve Crashes with anim	: s: hicle crashes: ehicle crashes: nal:	5.0 2.3 0.5 8.7 0.9	0.0 0.0 0.2 0.0	0.1 0.0 0.4 0.0	0.4 0.1 1.7 0.0	0.4 0.1 2.3 0.0	1.5 0.2 4.1 0.8
Single vehicle	Rear-end crashes Sideswipe crashe Other multiple-vel Total multiple-ve Crashes with anin Crashes with fixed	:: s: hicle crashes: ehicle crashes: nal: d object:	5.0 2.3 0.5 8.7 0.9 12.3	0.0 0.0 0.2 0.0 0.2	0.1 0.0 0.4 0.0 0.5	0.4 0.1 1.7 0.0 1.9	0.4 0.1 2.3 0.0 2.0	1.5 0.2 4.1 0.8 7.8
Single vehicle	Rear-end crashes Sideswipe crashe Other multiple-vel Total multiple-ve Crashes with anin Crashes with fixed Crashes with othe	:: s: nicle crashes: ehicle crashes: nal: d object: er object:	5.0 2.3 0.5 8.7 0.9 12.3 1.8	0.0 0.0 0.2 0.0 0.2 0.2 0.0	0.1 0.0 0.4 0.0 0.5 0.0	0.4 0.1 1.7 0.0 1.9 0.1	0.4 0.1 2.3 0.0 2.0 0.1	1.5 0.2 4.1 0.8 7.8 1.5
Single vehicle	Rear-end crashes Sideswipe crashes Other multiple-vel Total multiple-ve Crashes with anin Crashes with fixed Crashes with othe Crashes with park	:: s: hicle crashes: ehicle crashes: nal: d object: er object: red vehicle:	5.0 2.3 0.5 8.7 0.9 12.3 1.8 0.5	0.0 0.2 0.0 0.2 0.0 0.2 0.0 0.0	0.1 0.0 0.4 0.0 0.5 0.0 0.0	0.4 0.1 1.7 0.0 1.9 0.1 0.1	0.4 0.1 2.3 0.0 2.0 0.1 0.1	2.1 1.5 0.2 4.1 0.8 7.8 1.5 0.3
Single vehicle	Rear-end crashes Sideswipe crashes Other multiple-vel Total multiple-vel Crashes with anin Crashes with fixed Crashes with othe Crashes with othe Crashes with park Other single-vehic	:: s: hicle crashes: ehicle crashes: nal: d object: er object: er object: ked vehicle: cle crashes	5.0 2.3 0.5 8.7 0.9 12.3 1.8 0.5 5.1	0.0 0.0 0.2 0.0 0.2 0.2 0.0	0.1 0.0 0.4 0.0 0.5 0.0 0.0 0.0 0.3	0.4 0.1 1.7 0.0 1.9 0.1 0.1 1.3	0.4 0.1 2.3 0.0 2.0 0.1 0.1 1.4	1.5 0.2 4.1 0.8 7.8 1.5 0.3 2.1
Single vehicle	Rear-end crashes Sideswipe crashes Other multiple-vel Total multiple-vel Crashes with anin Crashes with fixed Crashes with othe Crashes with othe Crashes with park Other single-vehic Total single-vehic	:: s: hicle crashes: ehicle crashes: nal: d object: er object: er object: ked vehicle: cle crashes	5.0 2.3 0.5 8.7 0.9 12.3 1.8 0.5	0.0 0.2 0.0 0.2 0.0 0.2 0.0 0.0	0.1 0.0 0.4 0.0 0.5 0.0 0.0 0.0 0.3 0.8	0.4 0.1 1.7 0.0 1.9 0.1 0.1	0.4 0.1 2.3 0.0 2.0 0.1 0.1	1.5 0.2 4.1 0.8 7.8 1.5

Project Safety Performance Summary Report

Project DescriptionState College Area ConnectorDate7/7/2021Analysis Year2050Analysis TypePredicted Only (No Crash Data Analysis)Facility Type(s)Rural Two-Lane Roads

Summary of Average Safety Performance for the Project (crashes/year) 3.000 2.47 Average Annual Crash Frequency 2.500 Predicted Average Annual Crash Frequency (crashes/year) 2.000 1.73 Observed Average Annual 1.500 Crash Frequency (crashes/year) 1.000 0.74 Expected Average Annual Crash Frequency 0.500 (crashes/year) 0.00 0.00 0.00 0.00 0.00 0.00 0.000 Fatal and Injury Property Damage Only Total

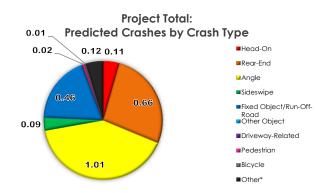
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	1.73	0.74	2.47
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Total Project Summary

<u>Segments</u>	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)			

<u>Total</u>	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)			

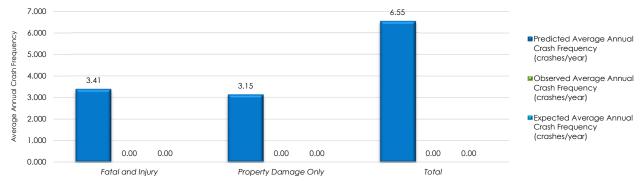


Project Total: Observed Crashes by Crash Type



Project Safety Performance Summary Report

Project DescriptionState College Area ConnectorDate3/15/2022Analysis Year2050Analysis TypePredicted 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)

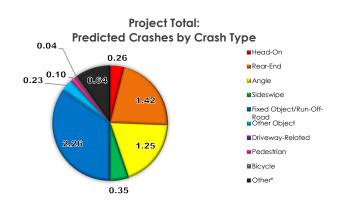
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	3.41	3.15	6.55
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

<u>Segments</u>	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)			

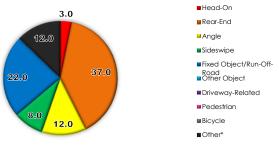
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.53	0.33	0.86
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Total</u>	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)			

Total Project Summary

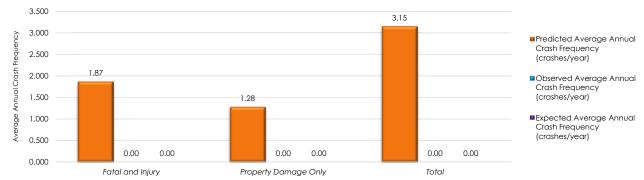


Project Total: Observed Crashes by Crash Type



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)			

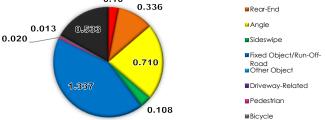
Rural Two-Lane Roads Summary

<u>Segments</u>	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)			

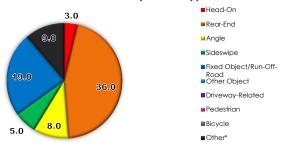
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.53	0.33	0.86
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Total</u>	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

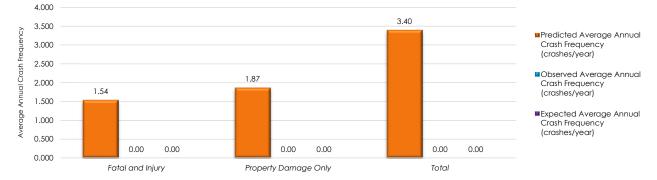


Rural Two-Lane Roads: Observed Crashes by Crash Type



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)			

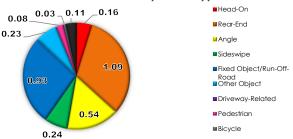
Urban/Suburban Arterials Summary

<u>Segments</u>	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)			

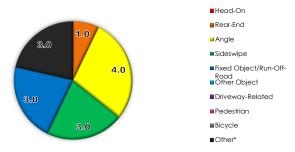
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Total</u>	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)			

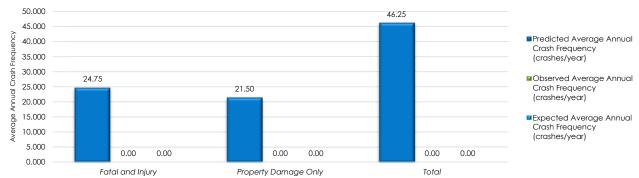
Urban/Suburban Arterials: Predicted Crashes by Crash Type



Urban/Suburban Arterials: Observed Crashes by Crash Type



Project DescriptionState College Area ConnectorDate3/15/2022Analysis Year2050Analysis TypePredicted 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)

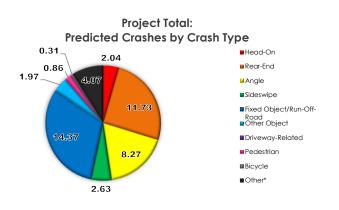
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	24.75	21.50	46.25
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

<u>Segments</u>	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

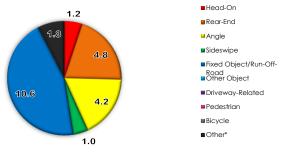
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	3.33	2.08	5.41
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Total</u>	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

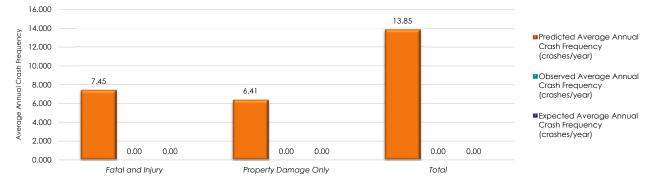
Total Project Summary



Project Total: Observed Crashes by Crash Type



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)

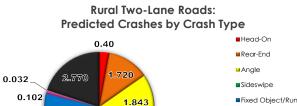
Rural Two-Lane Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	7.45	6.41	13.85
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Rural Two-Lane Roads Summary

<u>Segments</u>	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)			

<u>Total</u>	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)			



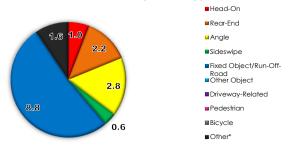
0.495

Fixed Object/Run-Off-

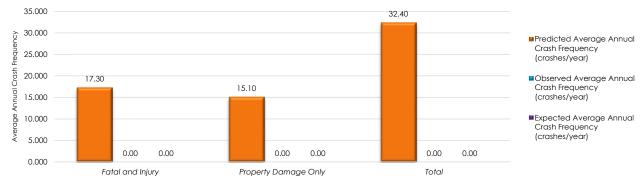
- Road Other Object
- Driveway-Related
- Pedestrian

Bicycle

Rural Two-Lane Roads: Observed Crashes by Crash Type



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

<u>Segments</u>	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

<u>Total</u>	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 0.76 0.28 1.30 1.64 • Head-On • Rear-End • Angle • Sideswipe • Fixed Object/Run-Off-Road • Other Object • Driveway-Related

∎ ∪riveway-Relate

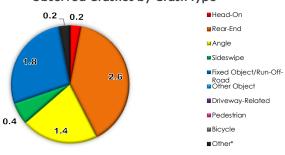
Pedestrian

■Bicycle

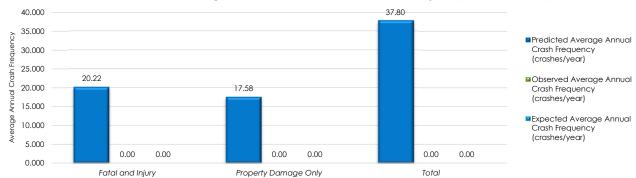
Urban/Suburban Arterials: Observed Crashes by Crash Type

6.42

2.14



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

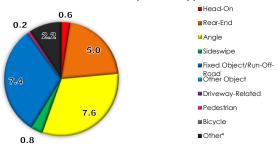
Segments	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	14.29	13.17	27.46
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

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

<u>Total</u>	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 0.26 Head-On 1.46 Rear-End 0.73 3.85 Angle 🛛 0.89 Sideswipe 9.39 Fixed Object/Run-Off-Road Other Object Driveway-Related Pedestrian 9.05 Bicycle ■Other*

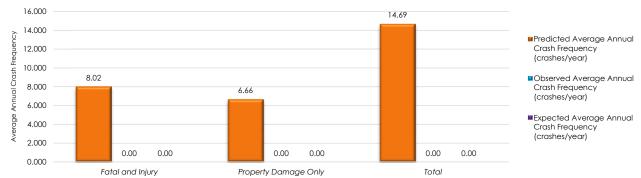
Project Total: Observed Crashes by Crash Type



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

2.00

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)			

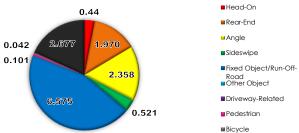
Rural Two-Lane Roads Summary

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)			

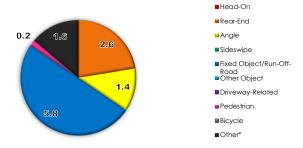
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.93	1.06	2.99
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Total</u>	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)			

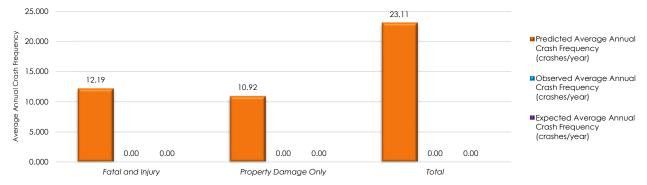
Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type



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)			

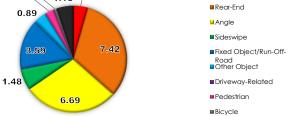
Urban/Suburban Arterials Summary

<u>Segments</u>	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

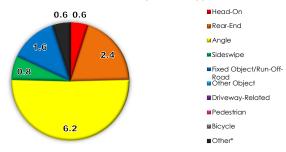
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	3.99	3.35	7.35
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Total</u>	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: 0.22 Predicted Crashes by Crash Type 0.63 1.18 1.01 Head-On The form



Urban/Suburban Arterials: Observed Crashes by Crash Type

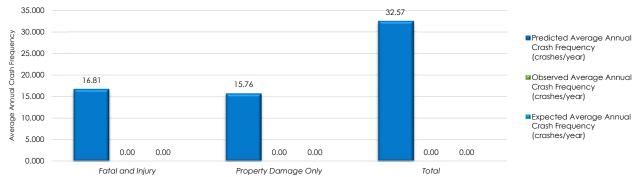


HSM Analyses

Year 2050 Build Build Alternative 2 (PA 144 Corridor)

		Out	put Summa	ary				
General Information				-				
Project description:	State College Area C	onnector SR	0144 (ALT	2)				
Analyst:	HAK		3/15/2022	/	Area type:		Rural	
First year of analysis:	0				, ,, ,,			
Last year of analysis:	0							
Crash Data Descript	÷							_
Freeway segments	Segment crash data	available?		No	First year o	f crash data	. I	
i ieeway seymenis	0		,	No	-			
<u> </u>	Project-level crash da		,			f crash data		
Ramp segments	Segment crash data			No		f crash data		
	Project-level crash da		,	No		f crash data		
Ramp terminals	Segment crash data			No		f crash data		
	Project-level crash da	ata available?)	No	Last year o	f crash data	1:	
Estimated Crash Sta	atistics							
Crashes for Entire F	acility		Total	K	Α	В	С	PDO
Estimated number of crash	es during Study Period, cras	shes:	23.5	0.4	1.0	4.2	5.2	12.7
	eq. during Study Period, cra		23.5	0.4	1.0	4.2	5.2	12.7
Crashes by Facility		Nbr. Sites	Total	K	Α	В	С	PDO
Freeway segments, c		7	20.1	0.4		3.6	3.9	11.2
Ramp segments, cras		4	0.4	0.4		0.1	0.1	0.2
Crossroad ramp termi		4	3.0	0.0		0.1	1.2	0.2 1.3
					-	-		
Crashes for Entire F		Year	Total	K	A	B	C	PDO
Estimated number of	5	0	23.5	0.4	1.0	4.2	5.2	12.
the Study Period, cras	shes:	1						
		2						
		3						
		4						
		5						
		6						
		7						
		8						
		9						
		10						
		11						
		12						
		13						
		14						
		15						
		16						
		17						
		18						
		19						
		20						
		20						
		22						
		22						
Distribution of Croo	hes for Entire Facility							
Lisuibulion of Crasi	nes ior Entire Facility	, 	Eatima	tod Numb	or of Crock		the Study "	Doriod
Crash Type	Crash Type Ca	tegory		K	er of Crash	B B	C C	
		-	Total		A	_	_	PDO
Nultiple vehicle	Head-on crashes:		0.1	0.0		0.0	0.0	0.0
	Right-angle crashes:		1.0	0.0		0.2	0.5	0.3
	Rear-end crashes:		4.2	0.1	0.2	0.9	1.4	1.
	Sideswipe crashes:		1.7	0.0	0.1	0.2	0.3	1.
	Other multiple-vehicle		0.3	0.0	0.0	0.1	0.1	0.2
	Total multiple-vehic		7.3	0.1	0.3	1.4	2.2	3.:
Single vehicle	Crashes with animal:		0.7	0.0		0.0	0.0	0.0
	Crashes with fixed of		9.7	0.0		1.5	1.7	5.
			1.4	0.2		0.1	0.1	
	Craches with other o		1.4	0.0	0.0		0.1	I.,
	Crashes with other of			<u>^</u>	~ ~	_ ^ ∠	∧ 4	~ ~ ~
	Crashes with parked	vehicle:	0.4	0.0		0.1	0.1	0.2
	Crashes with parked Other single-vehicle	vehicle: crashes	0.4 4.1	0.1	0.3	1.1	1.1	1.0
	Crashes with parked	vehicle: crashes crashes:	0.4		0.3 0.7			

Project DescriptionState College Area ConnectorDate3/15/2022Analysis Year2050Analysis TypePredicted 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)

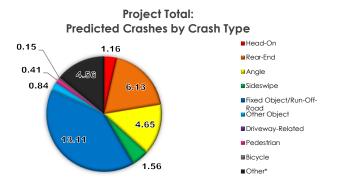
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	16.81	15.76	32.57
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Total Project	Summary
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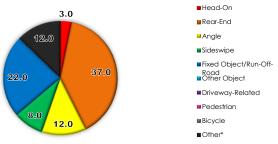
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	15.89	15.11	31.00
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

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)			

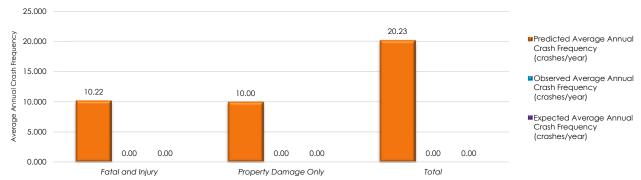
<u>Total</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	16.81	15.76	32.57
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)			
			*** .



Project Total: Observed Crashes by Crash Type



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

<u>Segments</u>	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)			

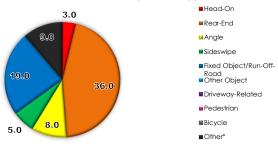
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	0.92	0.64	1.57
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Total</u>	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)			

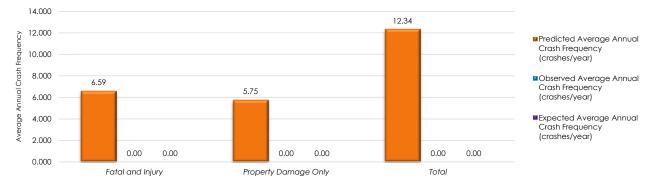
Rural Two-Lane Roads: Predicted Crashes by Crash Type 0.53 2.176 0.051 0.138 0.051 0.138 0.051 0.711 0.711 0.711 0.711 0.711 0.711

U.711 Driveway-Related Pedestrian Bicycle

Rural Two-Lane Roads: Observed Crashes by Crash Type



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

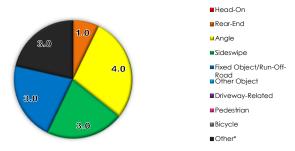
<u>Segments</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	6.59	5.75	12.34
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

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)			

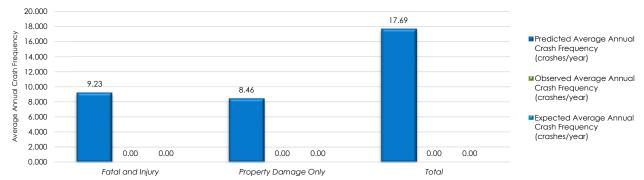
<u>Total</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	6.59	5.75	12.34
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)			

Urban/Suburban Arterials: Predicted Crashes by Crash Type 0.10 Head-On 0.38 _0.62 0.84_0.28 Rear-Fnd Angle 🛛 Sideswipe 3.95 Fixed Object/Run-Off-Road Other Object Driveway-Related 1.98 Pedestrian Bicycle 0.85

Urban/Suburban Arterials: Observed Crashes by Crash Type



Project DescriptionState College Area ConnectorDate3/15/2022Analysis Year2050Analysis TypePredicted 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)

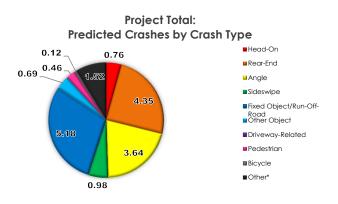
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	9.23	8.46	17.69
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

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

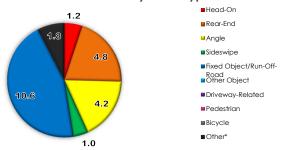
Intersections	Fatal and Injury	Property Damage Only	Total
Prodicted Average Appual Crash		2,	
Predicted Average Annual Crash Frequency (crashes/yr)	2.06	1.21	3.26
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Total</u>	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

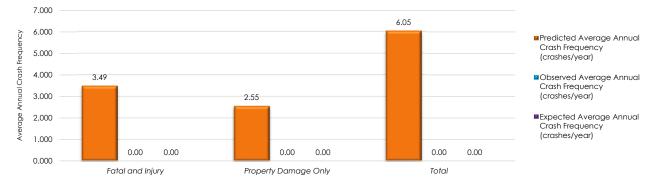
Total Project Summary



Project Total: Observed Crashes by Crash Type



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)

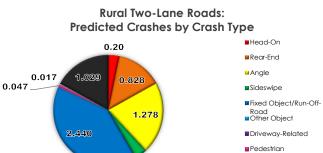
Rural Two-Lane Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	3.49	2.55	6.05
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

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)			

<u>Total</u>	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)			

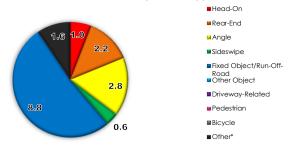


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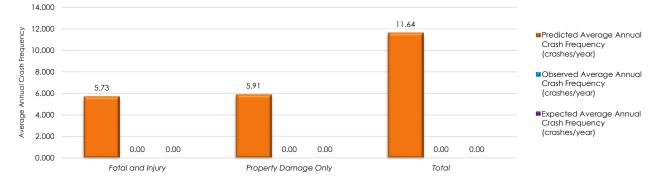
■Bicycle

Rural Two-Lane Roads: Observed Crashes by Crash Type

0.213



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)

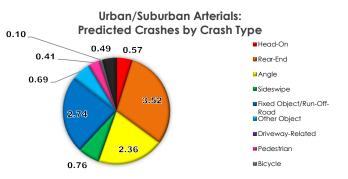
Urban/Suburban Arterial Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	5.73	5.91	11.64
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Urban/Suburban Arterials Summary

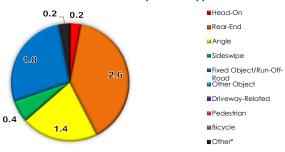
Segments	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	4.58	5.30	9.88
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

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

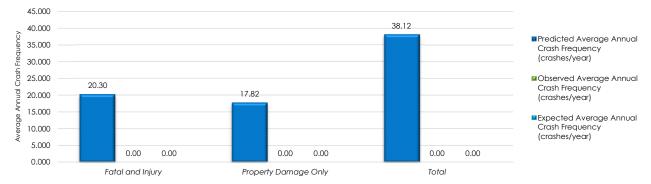
<u>Total</u>	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	5.73	5.91	11.64
Observed Average Annual Crash Frequency (crashes/yr)	0.00	0.00	0.00
Expected Average Annual Crash Frequency (crashes/yr)	3.34	2.92	6.26



Urban/Suburban Arterials: Observed Crashes by Crash Type



Project DescriptionState College Area ConnectorDate3/15/2022Analysis Year2050Analysis TypePredicted 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)

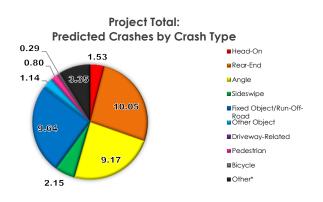
Project Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	20.30	17.82	38.12
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

<u>Segments</u>	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

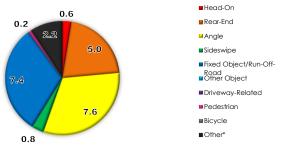
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	5.16	4.24	9.40
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A

<u>Total</u>	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

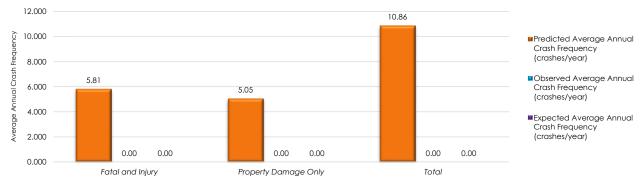
Total Project Summary



Project Total: Observed Crashes by Crash Type



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)			

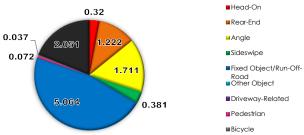
Rural Two-Lane Roads Summary

<u>Segments</u>	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)			

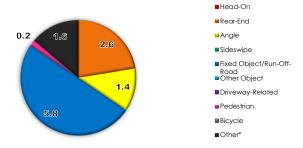
Intersections	Fatal and Injury	Property Damage Only	Total
Predicted Average Annual Crash Frequency (crashes/yr)	1.12	0.82	1.94
Observed Average Annual Crash Frequency (crashes/yr)	N/A	N/A	N/A
Expected Average Annual Crash Frequency (crashes/yr)			

<u>Total</u>	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)			

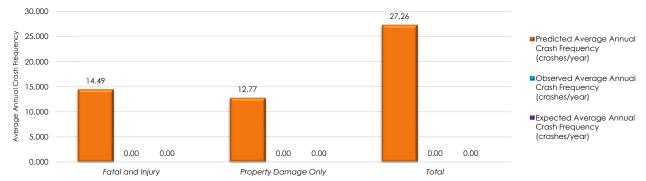
Rural Two-Lane Roads: Predicted Crashes by Crash Type



Rural Two-Lane Roads: Observed Crashes by Crash Type



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)

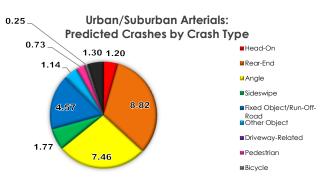
Urban/Suburban Arterial Totals	Fatal and Injury Crashes	Property Damage Only Crashes	Total Crashes
Predicted Average Annual Crash Frequency	14.49	12.77	27.26
Observed Average Annual Crash Frequency	0.00	0.00	0.00
Expected Average Annual Crash Frequency			
Potential for Safety Improvement (PSI)			

Urban/Suburban Arterials Summary

<u>Segments</u>	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

<u>Total</u>	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



Urban/Suburban Arterials: Observed Crashes by Crash Type

