Appendix $

Supporting Documents

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Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	CR 1000 S
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4ST
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 78,300 (veh/day)	--	15,535
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 7,400 (veh/day)	--	2,870
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	0
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	1
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	1.00	1.00	0.86	0.90	0.77
Fatal and Injury (FI)	1.00	1.00	0.77	0.90	0.69

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-10.008	0.848	0.448	5.714	0.494	0.77	1.00	4.404
Fatal and Injury (FI)	-11.554	0.888	0.525	3.307	0.742	0.69	1.00	2.282
Fatal and Injury[a] (FI[a])	-10.734	0.828	0.412	1.711	0.655	0.69	1.00	1.181
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 2.122

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$** from Table 11-9	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)** $(7)_{TOTAL}$ from Worksheet 2C; $(2)*(3)_{TOTAL}$	**Proportion of Collision Type$_{(FI)}$** from Table 11-9	**$N_{predicted\ int\ (FI)}$ (crashes/year)** $(7)_{FI}$ from Worksheet 2C; $(4)x(5)_{FI}$	**Proportion of Collision Type (FI[a])** from Table 11-9	**N *predicted int* (FI[a]) (crashes/year)** $(7)_{FI}$[a] from Worksheet 2C; $(6)*(7)_{FI}$[a]	**Proportion of Collision Type (PDO)** from Table 11-9	**$N_{predicted\ int\ (PDO)}$ (crashes/year)** $(7)_{PDO}$ from Worksheet 2C; $(8)*(9)_{PDO}$
Total	1.000	4.404	1.000	2.282	1.000	1.181	1.000	2.122
Head-on collision	0.016	0.070	0.018	0.041	0.023	0.027	0.015	0.032
Sideswipe collision	0.107	0.471	0.042	0.096	0.040	0.047	0.156	0.331
Rear-end collision	0.228	1.004	0.213	0.486	0.108	0.128	0.240	0.509
Angle collision	0.395	1.740	0.534	1.219	0.571	0.674	0.292	0.620
Single-vehicle collision	0.202	0.890	0.148	0.338	0.199	0.235	0.243	0.516
Other collision	0.052	0.229	0.045	0.103	0.059	0.070	0.054	0.115

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	4.4
Fatal and Injury (FI)	2.3
Fatal and Injury[a] (FI[a])	1.2
Property Damage Only (PDO)	2.1

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	Koger Street
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	17,960
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	2,500
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	12.520	0.277	1.00	1.00	12.520
Fatal and Injury (FI)	-6.393	0.638	0.232	5.323	0.218	1.00	1.00	5.323
Fatal and Injury[a] (FI^a)	-12.011	--	1.279	1.983	0.566	1.00	1.00	1.983
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 7.198

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type(TOTAL)** from Table 11-9	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)** $(7)_{TOTAL}$ from Worksheet 2C	**Proportion of Collision Type(FI)** from Table 11-9	**$N_{predicted\ int\ (FI)}$ (crashes/year)** $(7)_{FI}$ from Worksheet 2C	**Proportion of Collision Type (FI^a)** from Table 11-9	**N *predicted int* (FI^a) (crashes/year)** $(7)_{FI}^a$ from Worksheet 2C	**Proportion of Collision Type (PDO)** from Table 11-9	**$N_{predicted\ int\ (PDO)}$ (crashes/year)** $(7)_{PDO}$ from Worksheet 2C
Total	1.000	12.520	1.000	5.323	1.000	1.983	1.000	7.198
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}^a$		(8)*$(9)_{PDO}$
Head-on collision	0.054	0.676	0.083	0.442	0.093	0.184	0.034	0.245
Sideswipe collision	0.106	1.327	0.047	0.250	0.039	0.077	0.147	1.058
Rear-end collision	0.492	6.160	0.472	2.512	0.314	0.623	0.505	3.635
Angle collision	0.256	3.205	0.315	1.677	0.407	0.807	0.215	1.547
Single-vehicle collision	0.062	0.776	0.041	0.218	0.078	0.155	0.077	0.554
Other collision	0.030	0.376	0.042	0.224	0.069	0.137	0.022	0.158

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	12.5
Fatal and Injury (FI)	5.3
Fatal and Injury[a] (FI[a])	2.0
Property Damage Only (PDO)	7.2

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Intersection	SR 39
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	14,605
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	6,505
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Not Present
Calibration Factor, C_i		1.00	0.66

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	14.884	0.277	1.00	0.66	9.853
Fatal and Injury (FI)	-6.393	0.638	0.232	5.823	0.218	1.00	0.66	3.855
Fatal and Injury[a] (FI[a])	-12.011	--	1.279	2.064	0.566	1.00	0.66	1.366
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 5.998

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$** from Table 11-9	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)** $(7)_{TOTAL}$ from Worksheet 2C	**Proportion of Collision Type$_{(FI)}$** from Table 11-9	**$N_{predicted\ int\ (FI)}$ (crashes/year)** $(7)_{FI}$ from Worksheet 2C	**Proportion of Collision Type (FI[a])** from Table 11-9	**N *predicted int* (FI[a]) (crashes/year)** $(7)_{FI}{}^{a}$ from Worksheet 2C	**Proportion of Collision Type (PDO)** from Table 11-9	**$N_{predicted\ int\ (PDO)}$ (crashes/year)** $(7)_{PDO}$ from Worksheet 2C
Total	1.000	9.853	1.000	3.855	1.000	1.366	1.000	5.998
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}{}^{a}$		(8)*$(9)_{PDO}$
Head-on collision	0.054	0.532	0.083	0.320	0.093	0.127	0.034	0.204
Sideswipe collision	0.106	1.044	0.047	0.181	0.039	0.053	0.147	0.882
Rear-end collision	0.492	4.848	0.472	1.820	0.314	0.429	0.505	3.029
Angle collision	0.256	2.522	0.315	1.214	0.407	0.556	0.215	1.290
Single-vehicle collision	0.062	0.611	0.041	0.158	0.078	0.107	0.077	0.462
Other collision	0.030	0.296	0.042	0.162	0.069	0.094	0.022	0.132

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	9.9
Fatal and Injury (FI)	3.9
Fatal and Injury[a] (FI[a])	1.4
Property Damage Only (PDO)	6.0

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 4A -- Predicted and Observed Crashes by Severity and Site Type Using the Project-Level EB Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,**	**Overdispersion Parameter, k**	**N_{w0}**	**N_{w1}**	**W_0**	**N_0**	**w_1**	**N_1**	**$N_{p/comb}$**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)	$N_{observed}$ (crashes/year)		Equation A-8 $(6)*(2)^2$	Equation A-9 sqrt((6)*(2))	Equation A-10	Equation A-11	Equation A-12	Equation A-13	Equation A-14
ROADWAY SEGMENTS												
Segment 1 (Divided)	0.000	0.000	0.000	--	21.246	0.000	0.005	--	--	--	--	--
Segment 2 (Undivided)	0.000	0.000	0.000	--	18.731	0.000	0.004	--	--	--	--	--
Segment 3				--				--	--	--	--	--
Segment 4				--				--	--	--	--	--
Segment 5				--				--	--	--	--	--
Segment 6				--				--	--	--	--	--
Segment 7				--				--	--	--	--	--
Segment 8				--				--	--	--	--	--
INTERSECTIONS												
Intersection 1	4.404	2.282	2.122	--	0.494	9.583	1.475	--	--	--	--	--
Intersection 2	12.520	5.323	7.198	--	0.277	43.421	1.862	--	--	--	--	--
Intersection 3	9.853	3.855	5.998	--	0.277	26.894	1.652	--	--	--	--	--
Intersection 4				--				--	--	--	--	--
Intersection 5				--				--	--	--	--	--
Intersection 6				--				--	--	--	--	--
Intersection 7				--				--	--	--	--	--
Intersection 8				--				--	--	--	--	--
COMBINED (sum of column)	26.778	11.460	15.318		--	79.898	4.998	0.251	6.722	0.843	22.566	14.644

Worksheet 4B -- Project-Level EB Method Summary Results

(1)	(2)	(3)
Crash severity level	**$N_{predicted}$**	**$N_{expected}$**
Total	$(2)_{COMB}$ from Worksheet 4A	$(13)_{COMB}$ from Worksheet 4A
	26.8	14.6
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$
	11.5	6.3
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$
	15.3	8.4

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Moon Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 750 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	3.1
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	25,610
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	2
Minor commercial driveways (number)		--	9
Major industrial / institutional driveways (number)		--	2
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	5
Minor residential driveways (number)		--	36
Other driveways (number)		--	2
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	15
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	3.20

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.10	1.00	0.93	1.00	1.03

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	0.00	0.00	0.000	1.000	0.000	1.03	3.20	0.000
Fatal and Injury (FI)	-16.22	1.66	0.65	5.822	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.288	0.000	1.03	3.20	0.000
Property Damage Only (PDO)	-15.62	1.69	0.87	14.384	$(5)_{TOTAL}-(5)_{FI}$ = 0.712	0.000	1.03	3.20	0.000

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.000	1.000	0.000	0.000
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.000	0.778	0.000	0.000
Head-on collision	0.068	0.000	0.004	0.000	0.000
Angle collision	0.085	0.000	0.079	0.000	0.000
Sideswipe, same direction	0.015	0.000	0.031	0.000	0.000
Sideswipe, opposite direction	0.073	0.000	0.055	0.000	0.000
Other multiple-vehicle collision	0.029	0.000	0.053	0.000	0.000

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	3.841	1.000	3.841	1.03	3.20	12.616
Fatal and Injury (FI)	-3.96	0.23	0.50	0.610	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.166	0.639	1.03	3.20	2.099
Property Damage Only (PDO)	-6.51	0.64	0.87	3.058	$(5)_{TOTAL}-(5)_{FI}$ = 0.834	3.202	1.03	3.20	10.517

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	2.099	1.000	10.517	12.616
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.055	0.066	0.694	0.749
Collision with fixed object	0.723	1.517	0.759	7.983	9.500
Collision with other object	0.010	0.021	0.013	0.137	0.158
Other single-vehicle collision	0.241	0.506	0.162	1.704	2.210

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	2	0.158	1.000	0.540	
Minor commercial	9	0.050	1.000	0.768	
Major industrial/institutional	2	0.172	1.000	0.587	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	5	0.083	1.000	0.709	
Minor residential	36	0.016	1.000	0.983	
Other	2	0.025	1.000	0.085	
Total	--	--	--	3.672	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	3.672	1.000	3.672	1.03	3.20	12.061
Fatal and injury (FI)	--	0.323	1.186	1.03	3.20	3.896
Property damage only (PDO)	--	0.677	2.486	1.03	3.20	8.166

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.000	12.616	12.061	24.677	0.005	3.20	0.395
Fatal and injury (FI)	--	--	--	--	--	3.20	0.395

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.000	12.616	12.061	24.677	0.004	3.20	0.316
Fatal and injury (FI)	--	--	--	--	--	3.20	0.316

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)** (3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	**Property damage only (PDO)** (5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	**Total** (6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.000	0.000	0.000
Head-on collisions (from Worksheet 1D)	0.000	0.000	0.000
Angle collisions (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, same direction (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, opposite direction (from Worksheet 1D)	0.000	0.000	0.000
Driveway-related collisions (from Worksheet 1H)	3.896	8.166	12.061
Other multiple-vehicle collision (from Worksheet 1D)	0.000	0.000	0.000
Subtotal	3.896	8.166	12.061
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.055	0.694	0.749
Collision with fixed object (from Worksheet 1F)	1.517	7.983	9.500
Collision with other object (from Worksheet 1F)	0.021	0.137	0.158
Other single-vehicle collision (from Worksheet 1F)	0.506	1.704	2.210
Collision with pedestrian (from Worksheet 1I)	0.395	0.000	0.395
Collision with bicycle (from Worksheet 1J)	0.316	0.000	0.316
Subtotal	2.809	10.517	13.327
Total	6.705	18.683	25.388

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	25.4	3.10	8.2
Fatal and injury (FI)	6.7	3.10	2.2
Property damage only (PDO)	18.7	3.10	6.0

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Miles Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 600 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	1.1
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	7,330
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	4
Other driveways (number)		--	1
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	2.40

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	0.00	0.00	0.000	1.000	0.000	1.00	2.40	0.000
Fatal and Injury (FI)	-16.22	1.66	0.65	0.259	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.296	0.000	1.00	2.40	0.000
Property Damage Only (PDO)	-15.62	1.69	0.87	0.616	$(5)_{TOTAL}-(5)_{FI}$ = 0.704	0.000	1.00	2.40	0.000

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.000	1.000	0.000	0.000
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.000	0.778	0.000	0.000
Head-on collision	0.068	0.000	0.004	0.000	0.000
Angle collision	0.085	0.000	0.079	0.000	0.000
Sideswipe, same direction	0.015	0.000	0.031	0.000	0.000
Sideswipe, opposite direction	0.073	0.000	0.055	0.000	0.000
Other multiple-vehicle collision	0.029	0.000	0.053	0.000	0.000

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	0.676	1.000	0.676	1.00	2.40	1.624
Fatal and Injury (FI)	-3.96	0.23	0.50	0.162	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.250	0.169	1.00	2.40	0.406
Property Damage Only (PDO)	-6.51	0.64	0.87	0.487	$(5)_{TOTAL}-(5)_{FI}$ = 0.750	0.507	1.00	2.40	1.218

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.406	1.000	1.218	1.624
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.011	0.066	0.080	0.091
Collision with fixed object	0.723	0.293	0.759	0.924	1.218
Collision with other object	0.010	0.004	0.013	0.016	0.020
Other single-vehicle collision	0.241	0.098	0.162	0.197	0.295

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	4	0.016	1.000	0.031	
Other	1	0.025	1.000	0.012	
Total	--	--	--	0.043	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.043	1.000	0.043	1.00	2.40	0.104
Fatal and injury (FI)	--	0.323	0.014	1.00	2.40	0.034
Property damage only (PDO)	--	0.677	0.029	1.00	2.40	0.071

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.000	1.624	0.104	1.728	0.005	2.40	0.021
Fatal and injury (FI)	--	--	--	--	--	2.40	0.021

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.000	1.624	0.104	1.728	0.004	2.40	0.017
Fatal and injury (FI)	--	--	--	--	--	2.40	0.017

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.000	0.000	0.000
Head-on collisions (from Worksheet 1D)	0.000	0.000	0.000
Angle collisions (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, same direction (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, opposite direction (from Worksheet 1D)	0.000	0.000	0.000
Driveway-related collisions (from Worksheet 1H)	0.034	0.071	0.104
Other multiple-vehicle collision (from Worksheet 1D)	0.000	0.000	0.000
Subtotal	0.034	0.071	0.104
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.011	0.080	0.091
Collision with fixed object (from Worksheet 1F)	0.293	0.924	1.218
Collision with other object (from Worksheet 1F)	0.004	0.016	0.020
Other single-vehicle collision (from Worksheet 1F)	0.098	0.197	0.295
Collision with pedestrian (from Worksheet 1I)	0.021	0.000	0.021
Collision with bicycle (from Worksheet 1J)	0.017	0.000	0.017
Subtotal	0.443	1.218	1.661
Total	0.477	1.288	1.765

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	1.8	1.10	1.6
Fatal and injury (FI)	0.5	1.10	0.4
Property damage only (PDO)	1.3	1.10	1.2

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	S CR 525 E
Agency or Company	CMT	Roadway Section	E CR 700 S to E CR 875 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	2
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	2,080
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	32
Other driveways (number)		--	2
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	20
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	0.00	0.00	0.000	1.000	0.000	1.00	1.00	0.000
Fatal and Injury (FI)	-16.22	1.66	0.65	0.058	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.304	0.000	1.00	1.00	0.000
Property Damage Only (PDO)	-15.62	1.69	0.87	0.133	$(5)_{TOTAL}-(5)_{FI}$ = 0.696	0.000	1.00	1.00	0.000

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.000	1.000	0.000	0.000
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.000	0.778	0.000	0.000
Head-on collision	0.068	0.000	0.004	0.000	0.000
Angle collision	0.085	0.000	0.079	0.000	0.000
Sideswipe, same direction	0.015	0.000	0.031	0.000	0.000
Sideswipe, opposite direction	0.073	0.000	0.055	0.000	0.000
Other multiple-vehicle collision	0.029	0.000	0.053	0.000	0.000

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	0.608	1.000	0.608	1.00	1.00	0.608
Fatal and Injury (FI)	-3.96	0.23	0.50	0.221	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.358	0.218	1.00	1.00	0.218
Property Damage Only (PDO)	-6.51	0.64	0.87	0.396	$(5)_{TOTAL}-(5)_{FI}$ = 0.642	0.390	1.00	1.00	0.390

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.218	1.000	0.390	0.608
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.006	0.066	0.026	0.031
Collision with fixed object	0.723	0.157	0.759	0.296	0.453
Collision with other object	0.010	0.002	0.013	0.005	0.007
Other single-vehicle collision	0.241	0.052	0.162	0.063	0.116

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	32	0.016	1.000	0.071	
Other	2	0.025	1.000	0.007	
Total	--	--	--	0.078	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.078	1.000	0.078	1.00	1.00	0.078
Fatal and injury (FI)	--	0.323	0.025	1.00	1.00	0.025
Property damage only (PDO)	--	0.677	0.053	1.00	1.00	0.053

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.000	0.608	0.078	0.685	0.005	1.00	0.003
Fatal and injury (FI)	--	--	--	--	--	1.00	0.003

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.000	0.608	0.078	0.685	0.004	1.00	0.003
Fatal and injury (FI)	--	--	--	--	--	1.00	0.003

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)** (3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	**Property damage only (PDO)** (5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	**Total** (6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.000	0.000	0.000
Head-on collisions (from Worksheet 1D)	0.000	0.000	0.000
Angle collisions (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, same direction (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, opposite direction (from Worksheet 1D)	0.000	0.000	0.000
Driveway-related collisions (from Worksheet 1H)	0.025	0.053	0.078
Other multiple-vehicle collision (from Worksheet 1D)	0.000	0.000	0.000
Subtotal	0.025	0.053	0.078
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.006	0.026	0.031
Collision with fixed object (from Worksheet 1F)	0.157	0.296	0.453
Collision with other object (from Worksheet 1F)	0.002	0.005	0.007
Other single-vehicle collision (from Worksheet 1F)	0.052	0.063	0.116
Collision with pedestrian (from Worksheet 1I)	0.003	0.000	0.003
Collision with bicycle (from Worksheet 1J)	0.003	0.000	0.003
Subtotal	0.224	0.390	0.614
Total	0.249	0.443	0.692

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)** (Total) from Worksheet 1K	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)** (2) / (3)
Total	0.7	2.00	0.3
Fatal and injury (FI)	0.2	2.00	0.1
Property damage only (PDO)	0.4	2.00	0.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267/ Center Street
Agency or Company	CMT	Roadway Section	Black Rock Rd
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data				Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)				--	3ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ =	45,700	(veh/day)	--	30,050
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ =	9,300	(veh/day)	--	9,300
Intersection lighting (present/not present)				Not Present	Not Present
Calibration factor, C_i				1.00	3.50
Data for unsignalized intersections only:				--	--
Number of major-road approaches with left-turn lanes (0,1,2)				0	0
Number of major-road approaches with right-turn lanes (0,1,2)				0	0
Data for signalized intersections only:				--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]				0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]				0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]				--	4
Type of left-turn signal phasing for Leg #1				Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2				--	Protected / Permissive
Type of left-turn signal phasing for Leg #3				--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)				--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]				0	0
Intersection red light cameras (present/not present)				Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only					2
Maximum number of lanes crossed by a pedestrian (n_{lanesx})				--	2
Number of bus stops within 300 m (1,000 ft) of the intersection				0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)				Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection				0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Workshe		(6)*(7)*(8)
	a	b	c							
Total	-13.36	1.11	0.41	0.80	6.242	1.000	6.242	1.00	3.50	21.846
Fatal and Injury (FI)	-14.01	1.16	0.30	0.69	1.997	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.277	1.727	1.00	3.50	6.043
Property Damage Only (PDO)	-15.38	1.20	0.51	0.77	5.223	$(5)_{TOTAL}-(5)_{FI}$ = 0.723	4.515	1.00	3.50	15.804

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	6.043	1.000	15.804	21.846
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.421	2.544	0.440	6.954	9.498
Head-on collision	0.045	0.272	0.023	0.363	0.635
Angle collision	0.343	2.073	0.262	4.141	6.213
Sideswipe	0.126	0.761	0.040	0.632	1.394
Other multiple-vehicle collision	0.065	0.393	0.235	3.714	4.107

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Workshe		(6)*(7)*(8)
	a	b	c							
Total	-6.81	0.16	0.51	1.14	0.607	1.000	0.607	1.00	3.50	2.123
Fatal and Injury (FI)	--	--	--	--	0.188	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.286	0.173	1.00	3.50	0.607
Property Damage Only (PDO)	-8.36	0.25	0.55	1.29	0.469	$(5)_{TOTAL}-(5)_{FI}$ = 0.714	0.433	1.00	3.50	1.516

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.607	1.000	1.516	2.123
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.001	0.003	0.005	0.005
Collision with animal	0.003	0.002	0.018	0.027	0.029
Collision with fixed object	0.762	0.463	0.834	1.264	1.727
Collision with other object	0.090	0.055	0.092	0.139	0.194
Other single-vehicle collision	0.039	0.024	0.023	0.035	0.059
Single-vehicle noncollision	0.105	0.064	0.030	0.045	0.109

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	21.846	2.123	23.969	0.021	3.50	1.762
Fatal and injury (FI)	--	--	--	--	3.50	1.762

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	3.50	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	21.846	2.123	23.969	0.016	3.50	1.342
Fatal and injury (FI)	--	--	--	--	3.50	1.342

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	2.544	6.954	9.498
Head-on collisions (from Worksheet 2D)	0.272	0.363	0.635
Angle collisions (from Worksheet 2D)	2.073	4.141	6.213
Sideswipe (from Worksheet 2D)	0.761	0.632	1.394
Other multiple-vehicle collision (from Worksheet 2D)	0.393	3.714	4.107
Subtotal	6.043	15.804	21.846
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.001	0.005	0.005
Collision with animal (from Worksheet 2F)	0.002	0.027	0.029
Collision with fixed object (from Worksheet 2F)	0.463	1.264	1.727
Collision with other object (from Worksheet 2F)	0.055	0.139	0.194
Other single-vehicle collision (from Worksheet 2F)	0.024	0.035	0.059
Single-vehicle noncollision (from Worksheet 2F)	0.064	0.045	0.109
Collision with pedestrian (from Worksheet 2G or 2I)	1.762	0.000	1.762
Collision with bicycle (from Worksheet 2J)	1.342	0.000	1.342
Subtotal	3.711	1.516	5.227
Total	9.754	17.319	27.073

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	27.1
Fatal and injury (FI)	9.8
Property damage only (PDO)	17.3

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Miles Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	3ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 45,700 (veh/day)	--	24,000
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 9,300 (veh/day)	--	7,330
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	1

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-13.36	1.11	0.41	0.80	4.411	1.000	4.411	1.00	3.50	15.439
Fatal and Injury (FI)	-14.01	1.16	0.30	0.69	1.433	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.289	1.273	1.00	3.50	4.455
Property Damage Only (PDO)	-15.38	1.20	0.51	0.77	3.532	$(5)_{TOTAL}-(5)_{FI}$ = 0.711	3.138	1.00	3.50	10.984

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	4.455	1.000	10.984	15.439
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.421	1.876	0.440	4.833	6.709
Head-on collision	0.045	0.200	0.023	0.253	0.453
Angle collision	0.343	1.528	0.262	2.878	4.406
Sideswipe	0.126	0.561	0.040	0.439	1.001
Other multiple-vehicle collision	0.065	0.290	0.235	2.581	2.871

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-6.81	0.16	0.51	1.14	0.518	1.000	0.518	1.00	3.50	1.814
Fatal and Injury (FI)	--	--	--	--	0.161	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.292	0.151	1.00	3.50	0.530
Property Damage Only (PDO)	-8.36	0.25	0.55	1.29	0.389	$(5)_{TOTAL}-(5)_{FI}$ = 0.708	0.367	1.00	3.50	1.284

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.530	1.000	1.284	1.814
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.001	0.003	0.004	0.004
Collision with animal	0.003	0.002	0.018	0.023	0.025
Collision with fixed object	0.762	0.404	0.834	1.071	1.475
Collision with other object	0.090	0.048	0.092	0.118	0.166
Other single-vehicle collision	0.039	0.021	0.023	0.030	0.050
Single-vehicle noncollision	0.105	0.056	0.030	0.039	0.094

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	15.439	1.814	17.253	0.021	3.50	1.268
Fatal and injury (FI)	--	--	--	--	3.50	1.268

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	3.50	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	15.439	1.814	17.253	0.016	3.50	0.966
Fatal and injury (FI)	--	--	--	--	3.50	0.966

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.876	4.833	6.709
Head-on collisions (from Worksheet 2D)	0.200	0.253	0.453
Angle collisions (from Worksheet 2D)	1.528	2.878	4.406
Sideswipe (from Worksheet 2D)	0.561	0.439	1.001
Other multiple-vehicle collision (from Worksheet 2D)	0.290	2.581	2.871
Subtotal	4.455	10.984	15.439
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.001	0.004	0.004
Collision with animal (from Worksheet 2F)	0.002	0.023	0.025
Collision with fixed object (from Worksheet 2F)	0.404	1.071	1.475
Collision with other object (from Worksheet 2F)	0.048	0.118	0.166
Other single-vehicle collision (from Worksheet 2F)	0.021	0.030	0.050
Single-vehicle noncollision (from Worksheet 2F)	0.056	0.039	0.094
Collision with pedestrian (from Worksheet 2G or 2I)	1.268	0.000	1.268
Collision with bicycle (from Worksheet 2J)	0.966	0.000	0.966
Subtotal	2.764	1.284	4.048
Total	7.219	12.268	19.487

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	19.5
Fatal and injury (FI)	7.2
Property damage only (PDO)	12.3

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Moon Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	34,910
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	25,610
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	4

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	12.647	1.000	12.647	0.44	4.50	25.162
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	4.206	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.343	4.340	0.44	4.50	8.634
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	8.052	$(5)_{TOTAL}-(5)_{FI}$ = 0.657	8.307	0.44	4.50	16.528

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	8.634	1.000	16.528	25.162
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	3.885	0.483	7.983	11.868
Head-on collision	0.049	0.423	0.030	0.496	0.919
Angle collision	0.347	2.996	0.244	4.033	7.029
Sideswipe	0.099	0.855	0.032	0.529	1.384
Other multiple-vehicle collision	0.055	0.475	0.211	3.487	3.962

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.700	1.000	0.700	0.44	4.50	1.393
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.164	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.238	0.167	0.44	4.50	0.331
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.526	$(5)_{TOTAL}-(5)_{FI}$ = 0.762	0.534	0.44	4.50	1.062

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.331	1.000	1.062	1.393
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.001	0.002	0.002	0.003
Collision with fixed object	0.744	0.246	0.870	0.924	1.171
Collision with other object	0.072	0.024	0.070	0.074	0.098
Other single-vehicle collision	0.040	0.013	0.023	0.024	0.038
Single-vehicle noncollision	0.141	0.047	0.034	0.036	0.083

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.007	1.12	4.50	0.035
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.035

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	25.162	1.393	26.555	0.015	4.50	1.792
Fatal and injury (FI)	--	--	--	--	4.50	1.792

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	3.885	7.983	11.868
Head-on collisions (from Worksheet 2D)	0.423	0.496	0.919
Angle collisions (from Worksheet 2D)	2.996	4.033	7.029
Sideswipe (from Worksheet 2D)	0.855	0.529	1.384
Other multiple-vehicle collision (from Worksheet 2D)	0.475	3.487	3.962
Subtotal	8.634	16.528	25.162
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.001	0.002	0.003
Collision with fixed object (from Worksheet 2F)	0.246	0.924	1.171
Collision with other object (from Worksheet 2F)	0.024	0.074	0.098
Other single-vehicle collision (from Worksheet 2F)	0.013	0.024	0.038
Single-vehicle noncollision (from Worksheet 2F)	0.047	0.036	0.083
Collision with pedestrian (from Worksheet 2G or 2I)	0.035	0.000	0.035
Collision with bicycle (from Worksheet 2J)	1.792	0.000	1.792
Subtotal	2.159	1.062	3.221
Total	10.793	17.590	28.382

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	28.4
Fatal and injury (FI)	10.8
Property damage only (PDO)	17.6

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	19,920
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	4,380
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			35
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	3

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	0.91	1.00	0.58

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	4.623	1.000	4.623	0.58	4.50	12.010
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.471	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.331	1.530	0.58	4.50	3.975
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	2.974	$(5)_{TOTAL}-(5)_{FI}$ = 0.669	3.093	0.58	4.50	8.035

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	3.975	1.000	8.035	12.010
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	1.789	0.483	3.881	5.670
Head-on collision	0.049	0.195	0.030	0.241	0.436
Angle collision	0.347	1.379	0.244	1.961	3.340
Sideswipe	0.099	0.394	0.032	0.257	0.651
Other multiple-vehicle collision	0.055	0.219	0.211	1.695	1.914

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.297	1.000	0.297	0.58	4.50	0.771
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.077	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.261	0.078	0.58	4.50	0.202
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.218	$(5)_{TOTAL}-(5)_{FI}$ = 0.739	0.219	0.58	4.50	0.570

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.202	1.000	0.570	0.771
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.000	0.002	0.001	0.002
Collision with fixed object	0.744	0.150	0.870	0.496	0.646
Collision with other object	0.072	0.015	0.070	0.040	0.054
Other single-vehicle collision	0.040	0.008	0.023	0.013	0.021
Single-vehicle noncollision	0.141	0.028	0.034	0.019	0.048

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.017	1.12	4.50	0.085
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.085

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	12.010	0.771	12.782	0.015	4.50	0.863
Fatal and injury (FI)	--	--	--	--	4.50	0.863

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.789	3.881	5.670
Head-on collisions (from Worksheet 2D)	0.195	0.241	0.436
Angle collisions (from Worksheet 2D)	1.379	1.961	3.340
Sideswipe (from Worksheet 2D)	0.394	0.257	0.651
Other multiple-vehicle collision (from Worksheet 2D)	0.219	1.695	1.914
Subtotal	3.975	8.035	12.010
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.000	0.001	0.002
Collision with fixed object (from Worksheet 2F)	0.150	0.496	0.646
Collision with other object (from Worksheet 2F)	0.015	0.040	0.054
Other single-vehicle collision (from Worksheet 2F)	0.008	0.013	0.021
Single-vehicle noncollision (from Worksheet 2F)	0.028	0.019	0.048
Collision with pedestrian (from Worksheet 2G or 2I)	0.085	0.000	0.085
Collision with bicycle (from Worksheet 2J)	0.863	0.000	0.863
Subtotal	1.149	0.570	1.719
Total	5.124	8.605	13.729

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	13.7
Fatal and injury (FI)	5.1
Property damage only (PDO)	8.6

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	SR 267
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	40,940
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	**35,000**
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			10
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	4
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	5

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	16.115	1.000	16.115	0.44	4.50	32.061
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	5.438	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.347	5.600	0.44	4.50	11.141
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	10.210	$(5)_{TOTAL}-(5)_{FI}$ = 0.653	10.515	0.44	4.50	20.920

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	11.141	1.000	20.920	32.061
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	5.013	0.483	10.104	15.118
Head-on collision	0.049	0.546	0.030	0.628	1.174
Angle collision	0.347	3.866	0.244	5.105	8.970
Sideswipe	0.099	1.103	0.032	0.669	1.772
Other multiple-vehicle collision	0.055	0.613	0.211	4.414	5.027

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.849	1.000	0.849	0.44	4.50	1.689
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.192	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.230	0.195	0.44	4.50	0.389
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.644	$(5)_{TOTAL}-(5)_{FI}$ = 0.770	0.654	0.44	4.50	1.301

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.389	1.000	1.301	1.689
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.003
Collision with fixed object	0.744	0.289	0.870	1.132	1.421
Collision with other object	0.072	0.028	0.070	0.091	0.119
Other single-vehicle collision	0.040	0.016	0.023	0.030	0.045
Single-vehicle noncollision	0.141	0.055	0.034	0.044	0.099

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.021	1.12	4.50	0.104
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.104

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	32.061	1.689	33.751	0.015	4.50	2.278
Fatal and injury (FI)	--	--	--	--	4.50	2.278

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	5.013	10.104	15.118
Head-on collisions (from Worksheet 2D)	0.546	0.628	1.174
Angle collisions (from Worksheet 2D)	3.866	5.105	8.970
Sideswipe (from Worksheet 2D)	1.103	0.669	1.772
Other multiple-vehicle collision (from Worksheet 2D)	0.613	4.414	5.027
Subtotal	11.141	20.920	32.061
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.003
Collision with fixed object (from Worksheet 2F)	0.289	1.132	1.421
Collision with other object (from Worksheet 2F)	0.028	0.091	0.119
Other single-vehicle collision (from Worksheet 2F)	0.016	0.030	0.045
Single-vehicle noncollision (from Worksheet 2F)	0.055	0.044	0.099
Collision with pedestrian (from Worksheet 2G or 2I)	0.104	0.000	0.104
Collision with bicycle (from Worksheet 2J)	2.278	0.000	2.278
Subtotal	2.771	1.301	4.072
Total	13.912	22.221	36.133

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	36.1
Fatal and injury (FI)	13.9
Property damage only (PDO)	22.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hadley
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	**68,120**
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	30,500
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	2

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.78	0.85	1.00	0.91	1.00	0.40

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	26.921	1.000	26.921	0.40	4.50	48.286
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	9.620	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.367	9.875	0.40	4.50	17.713
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	16.605	$(5)_{TOTAL}-(5)_{FI}$ = 0.633	17.046	0.40	4.50	30.574

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	17.713	1.000	30.574	48.286
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	7.971	0.483	14.767	22.738
Head-on collision	0.049	0.868	0.030	0.917	1.785
Angle collision	0.347	6.146	0.244	7.460	13.606
Sideswipe	0.099	1.754	0.032	0.978	2.732
Other multiple-vehicle collision	0.055	0.974	0.211	6.451	7.425

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.157	1.000	1.157	0.40	4.50	2.075
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.230	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.199	0.230	0.40	4.50	0.413
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.925	$(5)_{TOTAL}-(5)_{FI}$ = 0.801	0.926	0.40	4.50	1.662

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.413	1.000	1.662	2.075
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.002	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.004
Collision with fixed object	0.744	0.307	0.870	1.446	1.753
Collision with other object	0.072	0.030	0.070	0.116	0.146
Other single-vehicle collision	0.040	0.017	0.023	0.038	0.055
Single-vehicle noncollision	0.141	0.058	0.034	0.056	0.115

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.007	1.12	4.50	0.038
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.038

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	48.286	2.075	50.361	0.015	4.50	3.399
Fatal and injury (FI)	--	--	--	--	4.50	3.399

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	7.971	14.767	22.738
Head-on collisions (from Worksheet 2D)	0.868	0.917	1.785
Angle collisions (from Worksheet 2D)	6.146	7.460	13.606
Sideswipe (from Worksheet 2D)	1.754	0.978	2.732
Other multiple-vehicle collision (from Worksheet 2D)	0.974	6.451	7.425
Subtotal	17.713	30.574	48.286
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.002	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.004
Collision with fixed object (from Worksheet 2F)	0.307	1.446	1.753
Collision with other object (from Worksheet 2F)	0.030	0.116	0.146
Other single-vehicle collision (from Worksheet 2F)	0.017	0.038	0.055
Single-vehicle noncollision (from Worksheet 2F)	0.058	0.056	0.115
Collision with pedestrian (from Worksheet 2G or 2I)	0.038	0.000	0.038
Collision with bicycle (from Worksheet 2J)	3.399	0.000	3.399
Subtotal	3.850	1.662	5.512
Total	21.563	32.236	53.798

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	53.8
Fatal and injury (FI)	21.6
Property damage only (PDO)	32.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Camby
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 46,800 (veh/day)	--	**66,490**
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 5,900 (veh/day)	--	**14,500**
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	2
Number of major-road approaches with right-turn lanes (0,1,2)		0	1
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.53	1.00	0.86	1.00	1.00	1.00	0.46

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-8.90	0.82	0.25	0.40	13.483	1.000	13.483	0.46	3.50	21.509
Fatal and Injury (FI)	-11.13	0.93	0.28	0.48	6.556	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.467	6.290	0.46	3.50	10.034
Property Damage Only (PDO)	-8.74	0.77	0.23	0.40	7.497	$(5)_{TOTAL}-(5)_{FI}$ = 0.533	7.193	0.46	3.50	11.475

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	10.034	1.000	11.475	21.509
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.338	3.392	0.374	4.292	7.683
Head-on collision	0.041	0.411	0.030	0.344	0.756
Angle collision	0.440	4.415	0.335	3.844	8.259
Sideswipe	0.121	1.214	0.044	0.505	1.719
Other multiple-vehicle collision	0.060	0.602	0.217	2.490	3.092

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-5.33	0.33	0.12	0.65	0.597	1.000	0.597	0.46	3.50	0.953
Fatal and Injury (FI)	--	--	--	--	0.167	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.242	0.145	0.46	3.50	0.231
Property Damage Only (PDO)	-7.04	0.36	0.25	0.54	0.524	$(5)_{TOTAL}-(5)_{FI}$ = 0.758	0.453	0.46	3.50	0.722

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.231	1.000	0.722	0.953
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.001	0.000	0.026	0.019	0.019
Collision with fixed object	0.679	0.157	0.847	0.612	0.768
Collision with other object	0.089	0.021	0.070	0.051	0.071
Other single-vehicle collision	0.051	0.012	0.007	0.005	0.017
Single-vehicle noncollision	0.179	0.041	0.049	0.035	0.077

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	21.509	0.953	22.462	0.022	3.50	1.730
Fatal and injury (FI)	--	--	--	--	3.50	1.730

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	3.50	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	21.509	0.953	22.462	0.018	3.50	1.415
Fatal and injury (FI)	--	--	--	--	3.50	1.415

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	3.392	4.292	7.683
Head-on collisions (from Worksheet 2D)	0.411	0.344	0.756
Angle collisions (from Worksheet 2D)	4.415	3.844	8.259
Sideswipe (from Worksheet 2D)	1.214	0.505	1.719
Other multiple-vehicle collision (from Worksheet 2D)	0.602	2.490	3.092
Subtotal	10.034	11.475	21.509
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.000	0.019	0.019
Collision with fixed object (from Worksheet 2F)	0.157	0.612	0.768
Collision with other object (from Worksheet 2F)	0.021	0.051	0.071
Other single-vehicle collision (from Worksheet 2F)	0.012	0.005	0.017
Single-vehicle noncollision (from Worksheet 2F)	0.041	0.035	0.077
Collision with pedestrian (from Worksheet 2G or 2I)	1.730	0.000	1.730
Collision with bicycle (from Worksheet 2J)	1.415	0.000	1.415
Subtotal	3.375	0.722	4.097
Total	13.410	12.197	25.606

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	25.6
Fatal and injury (FI)	13.4
Property damage only (PDO)	12.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	Hadley Road
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	23,480
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	13,830
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	2
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	2
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			5
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Multi-Lane Rdbt	Combine
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF 7i*	*CMF*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	CMF 4194	(1)*(2)*(3)*(
0.81	0.87	1.00	1.00	0.91	1.00	0.81	0.5

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	7.180	1.000	7.180	0.52	1.00	3.753
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	2.300	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.332	2.382	0.52	1.00	1.245
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	4.634	$(5)_{TOTAL}-(5)_{FI}$ = 0.668	4.799	0.52	1.00	2.508

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	1.245	1.000	2.508	3.753
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.560	0.483	1.211	1.772
Head-on collision	0.049	0.061	0.030	0.075	0.136
Angle collision	0.347	0.432	0.244	0.612	1.044
Sideswipe	0.099	0.123	0.032	0.080	0.204
Other multiple-vehicle collision	0.055	0.068	0.211	0.529	0.598

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.453	1.000	0.453	0.52	1.00	0.237
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.116	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.259	0.117	0.52	1.00	0.061
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.331	$(5)_{TOTAL}-(5)_{FI}$ = 0.741	0.336	0.52	1.00	0.175

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.061	1.000	0.175	0.237
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.046	0.870	0.153	0.198
Collision with other object	0.072	0.004	0.070	0.012	0.017
Other single-vehicle collision	0.040	0.002	0.023	0.004	0.006
Single-vehicle noncollision	0.141	0.009	0.034	0.006	0.015

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.010	1.00	1.00	0.010
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.010

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	3.753	0.237	3.990	0.015	1.00	0.060
Fatal and injury (FI)	--	--	--	--	1.00	0.060

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.560	1.211	1.772
Head-on collisions (from Worksheet 2D)	0.061	0.075	0.136
Angle collisions (from Worksheet 2D)	0.432	0.612	1.044
Sideswipe (from Worksheet 2D)	0.123	0.080	0.204
Other multiple-vehicle collision (from Worksheet 2D)	0.068	0.529	0.598
Subtotal	1.245	2.508	3.753
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.046	0.153	0.198
Collision with other object (from Worksheet 2F)	0.004	0.012	0.017
Other single-vehicle collision (from Worksheet 2F)	0.002	0.004	0.006
Single-vehicle noncollision (from Worksheet 2F)	0.009	0.006	0.015
Collision with pedestrian (from Worksheet 2G or 2I)	0.010	0.000	0.010
Collision with bicycle (from Worksheet 2J)	0.060	0.000	0.060
Subtotal	0.131	0.175	0.306
Total	1.376	2.683	4.059

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	4.1
Fatal and injury (FI)	1.4
Property damage only (PDO)	2.7

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hendricks County Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 46,800 (veh/day)	--	13,060
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 5,900 (veh/day)	--	**15,010**
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-8.90	0.82	0.25	0.40	3.581	1.000	3.581	1.00	3.50	12.532
Fatal and Injury (FI)	-11.13	0.93	0.28	0.48	1.457	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.403	1.443	1.00	3.50	5.051
Property Damage Only (PDO)	-8.74	0.77	0.23	0.40	2.158	$(5)_{TOTAL}-(5)_{FI}$ = 0.597	2.137	1.00	3.50	7.481

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	5.051	1.000	7.481	12.532
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.338	1.707	0.374	2.798	4.505
Head-on collision	0.041	0.207	0.030	0.224	0.432
Angle collision	0.440	2.222	0.335	2.506	4.729
Sideswipe	0.121	0.611	0.044	0.329	0.940
Other multiple-vehicle collision	0.060	0.303	0.217	1.623	1.926

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-5.33	0.33	0.12	0.65	0.350	1.000	0.350	1.00	3.50	1.227
Fatal and Injury (FI)	--	--	--	--	0.098	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.250	0.088	1.00	3.50	0.307
Property Damage Only (PDO)	-7.04	0.36	0.25	0.54	0.294	$(5)_{TOTAL}-(5)_{FI}$ = 0.750	0.263	1.00	3.50	0.920

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.307	1.000	0.920	1.227
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.001	0.000	0.026	0.024	0.024
Collision with fixed object	0.679	0.208	0.847	0.779	0.987
Collision with other object	0.089	0.027	0.070	0.064	0.092
Other single-vehicle collision	0.051	0.016	0.007	0.006	0.022
Single-vehicle noncollision	0.179	0.055	0.049	0.045	0.100

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	12.532	1.227	13.758	0.022	3.50	1.059
Fatal and injury (FI)	--	--	--	--	3.50	1.059

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	3.50	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	12.532	1.227	13.758	0.018	3.50	0.867
Fatal and injury (FI)	--	--	--	--	3.50	0.867

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.707	2.798	4.505
Head-on collisions (from Worksheet 2D)	0.207	0.224	0.432
Angle collisions (from Worksheet 2D)	2.222	2.506	4.729
Sideswipe (from Worksheet 2D)	0.611	0.329	0.940
Other multiple-vehicle collision (from Worksheet 2D)	0.303	1.623	1.926
Subtotal	5.051	7.481	12.532
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.000	0.024	0.024
Collision with fixed object (from Worksheet 2F)	0.208	0.779	0.987
Collision with other object (from Worksheet 2F)	0.027	0.064	0.092
Other single-vehicle collision (from Worksheet 2F)	0.016	0.006	0.022
Single-vehicle noncollision (from Worksheet 2F)	0.055	0.045	0.100
Collision with pedestrian (from Worksheet 2G or 2I)	1.059	0.000	1.059
Collision with bicycle (from Worksheet 2J)	0.867	0.000	0.867
Subtotal	2.233	0.920	3.153
Total	7.284	8.401	15.685

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	15.7
Fatal and injury (FI)	7.3
Property damage only (PDO)	8.4

Worksheet 3A -- Predicted Crashes by Severity and Site Type and Observed Crashes Using the Site-Specific EB Method for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Collision type / Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,** $N_{observed}$ (crashes/year)	**Overdispersion Parameter, k**	**Weighted adjustment, w**	**Expected average crash frequency,**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)			Equation A-5 from Part C Appendix	Equation A-4 from Part C Appendix
ROADWAY SEGMENTS							
Multiple-vehicle nondriveway							
Segment 1	0.000	0.000	0.000	14.900	0.000	1.000	0.000
Segment 2	0.000	0.000	0.000	1.000	0.000	1.000	0.000
Segment 3	0.000	0.000	0.000	2.900	0.000	1.000	0.000
Single-vehicle							
Segment 1	12.616	2.099	10.517		0.810	0.089	1.125
Segment 2	1.624	0.406	1.218		0.810	0.432	0.701
Segment 3	0.608	0.218	0.390		0.810	0.670	0.407
Multiple-vehicle driveway-related							
Segment 1	12.061	3.896	8.166		0.810	0.093	1.120
Segment 2	0.104	0.034	0.071		0.810	0.922	0.096
Segment 3	0.078	0.025	0.053		0.810	0.941	0.073
INTERSECTIONS							
Multiple-vehicle							
Intersection 1	21.846	6.043	15.804	8.100	0.800	0.054	8.844
Intersection 2	15.439	4.455	10.984	3.900	0.800	0.075	4.764
Intersection 3	25.162	8.634	16.528	1.000	0.390	0.092	3.234
Intersection 4	12.010	3.975	8.035	7.000	0.390	0.176	7.881
Intersection 5	32.061	11.141	20.920	40.300	0.390	0.074	39.690
Intersection 6	48.286	17.713	30.574	19.500	0.390	0.050	20.952
Intersection 7	21.509	10.034	11.475	0.300	0.400	0.104	2.508
Intersection 8	3.753	1.245	2.508		0.390	0.406	1.523
Intersection 9	12.532	5.051	7.481		0.400	0.166	2.084
Single-vehicle							
Intersection 1	2.123	0.607	1.516	2.900	1.140	0.292	2.673
Intersection 2	1.814	0.530	1.284	2.000	1.140	0.326	1.939
Intersection 3	1.393	0.331	1.062	0.500	0.360	0.666	1.095
Intersection 4	0.771	0.202	0.570	0.500	0.360	0.783	0.712
Intersection 5	1.689	0.389	1.301	3.700	0.360	0.622	2.450
Intersection 6	2.075	0.413	1.662	1.300	0.360	0.572	1.744
Intersection 7	0.953	0.231	0.722	0.000	0.650	0.618	0.588
Intersection 8	0.237	0.061	0.175		0.360	0.921	0.218
Intersection 9	1.227	0.307	0.920		0.650	0.556	0.682
COMBINED (sum of column)	231.971	78.038	153.933	110	--	--	106.423

Worksheet 3B -- Predicted Pedestrian and Bicycle Crashes for

Urban and Suburban Arterials

(1)	(2)	(3)
Site Type	**N_{ped}**	**N_{bike}**
ROADWAY SEGMENTS		
Segment 1	0.395	0.316
Segment 2	0.021	0.017
Segment 3	0.003	0.003
INTERSECTIONS		
Intersection 1	1.762	1.342
Intersection 2	1.268	0.966
Intersection 3	0.035	1.792
Intersection 4	0.085	0.863
Intersection 5	0.104	2.278
Intersection 6	0.038	3.399
Intersection 7	1.730	1.415
Intersection 8	0.010	0.060
Intersection 9	1.059	0.867
COMBINED (sum of column)	6.509	13.318

Worksheet 3C -- Site-Specific EB Method Summary Results for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)
Crash severity level	**$N_{predicted}$**	**N_{ped}**	**N_{bike}**	$N_{expected\ (VEHICLE)}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(8)_{COMB}$ Worksheet 3A	(3)+(4)+(5)
	231.97	6.5	13.3	106.4	126.3
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(5)_{TOTAL}$ * $(2)_{FI}$ / $(2)_{TOTAL}$	(3)+(4)+(5)
	78.04	6.5	13.3	35.8	55.6
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 3A	--	--	$(5)_{TOTAL}$ * $(2)_{PDO}$ / $(2)_{TOTAL}$	(3)+(4)+(5)
	153.9	0.0	0.0	70.6	70.6

2045 Build

HSM

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	CR 1000 S
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4ST
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 78,300 (veh/day)	--	22,355
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 7,400 (veh/day)	--	4,135
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	0
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	1
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	1.00	1.00	0.86	0.90	0.77
Fatal and Injury (FI)	1.00	1.00	0.77	0.90	0.69

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$**	**Overdispersion Parameter, k**	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$**
	a	b	c or d (4SG)	from Equation 11-11 or 11-12	from Table 11-7 or 11-8			(3)*(5)*(6)
Total	-10.008	0.848	0.448	9.163	0.494	0.77	1.00	7.063
Fatal and Injury (FI)	-11.554	0.888	0.525	5.534	0.742	0.69	1.00	3.819
Fatal and Injury[a] (FI[a])	-10.734	0.828	0.412	2.689	0.655	0.69	1.00	1.856
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 3.243

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$**	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)**	**Proportion of Collision Type$_{(FI)}$**	**$N_{predicted\ int\ (FI)}$ (crashes/year)**	**Proportion of Collision Type (FI[a])**	**N *predicted int* (FI[a]) (crashes/year)**	**Proportion of Collision Type (PDO)**	**$N_{predicted\ int\ (PDO)}$ (crashes/year)**
	from Table 11-9	$(7)_{TOTAL}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$[a] from Worksheet 2C	from Table 11-9	$(7)_{PDO}$ from Worksheet 2C
Total	1.000	7.063	1.000	3.819	1.000	1.856	1.000	3.243
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}$[a]		(8)*$(9)_{PDO}$
Head-on collision	0.016	0.113	0.018	0.069	0.023	0.043	0.015	0.049
Sideswipe collision	0.107	0.756	0.042	0.160	0.040	0.074	0.156	0.506
Rear-end collision	0.228	1.610	0.213	0.814	0.108	0.200	0.240	0.778
Angle collision	0.395	2.790	0.534	2.039	0.571	1.060	0.292	0.947
Single-vehicle collision	0.202	1.427	0.148	0.565	0.199	0.369	0.243	0.788
Other collision	0.052	0.367	0.045	0.172	0.059	0.109	0.054	0.175

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	7.1
Fatal and Injury (FI)	3.8
Fatal and Injury[a] (FI[a])	1.9
Property Damage Only (PDO)	3.2

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	Koger Street
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	19,545
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	2,550
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	13.398	0.277	1.00	1.00	13.398
Fatal and Injury (FI)	-6.393	0.638	0.232	5.644	0.218	1.00	1.00	5.644
Fatal and Injury[a] (FI^a)	-12.011	--	1.279	2.188	0.566	1.00	1.00	2.188
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 7.754

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$** from Table 11-9	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)** $(7)_{TOTAL}$ from Worksheet 2C	**Proportion of Collision Type$_{(FI)}$** from Table 11-9	**$N_{predicted\ int\ (FI)}$ (crashes/year)** $(7)_{FI}$ from Worksheet 2C	**Proportion of Collision Type (FI^a)** from Table 11-9	**N *predicted int* (FI^a) (crashes/year)** $(7)_{FI}{}^a$ from Worksheet 2C	**Proportion of Collision Type (PDO)** from Table 11-9	**$N_{predicted\ int\ (PDO)}$ (crashes/year)** $(7)_{PDO}$ from Worksheet 2C
Total	1.000	13.398	1.000	5.644	1.000	2.188	1.000	7.754
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}{}^a$		(8)*$(9)_{PDO}$
Head-on collision	0.054	0.723	0.083	0.468	0.093	0.203	0.034	0.264
Sideswipe collision	0.106	1.420	0.047	0.265	0.039	0.085	0.147	1.140
Rear-end collision	0.492	6.592	0.472	2.664	0.314	0.687	0.505	3.916
Angle collision	0.256	3.430	0.315	1.778	0.407	0.891	0.215	1.667
Single-vehicle collision	0.062	0.831	0.041	0.231	0.078	0.171	0.077	0.597
Other collision	0.030	0.402	0.042	0.237	0.069	0.151	0.022	0.171

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	13.4
Fatal and Injury (FI)	5.6
Fatal and Injury[a] (FI[a])	2.2
Property Damage Only (PDO)	7.8

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Intersection	SR 39
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	23,435
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	9,550
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Not Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	23.834	0.277	1.00	1.00	23.834
Fatal and Injury (FI)	-6.393	0.638	0.232	8.608	0.218	1.00	1.00	8.608
Fatal and Injury[a] (FI[a])	-12.011	--	1.279	3.653	0.566	1.00	1.00	3.653
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 15.226

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$** from Table 11-9	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)** $(7)_{TOTAL}$ from Worksheet 2C	**Proportion of Collision Type$_{(FI)}$** from Table 11-9	**$N_{predicted\ int\ (FI)}$ (crashes/year)** $(7)_{FI}$ from Worksheet 2C	**Proportion of Collision Type (FI[a])** from Table 11-9	**N *predicted int* (FI[a]) (crashes/year)** $(7)_{FI}{}^{a}$ from Worksheet 2C	**Proportion of Collision Type (PDO)** from Table 11-9	**$N_{predicted\ int\ (PDO)}$ (crashes/year)** $(7)_{PDO}$ from Worksheet 2C
Total	1.000	23.834	1.000	8.608	1.000	3.653	1.000	15.226
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}{}^{a}$		(8)*$(9)_{PDO}$
Head-on collision	0.054	1.287	0.083	0.714	0.093	0.340	0.034	0.518
Sideswipe collision	0.106	2.526	0.047	0.405	0.039	0.142	0.147	2.238
Rear-end collision	0.492	11.726	0.472	4.063	0.314	1.147	0.505	7.689
Angle collision	0.256	6.102	0.315	2.711	0.407	1.487	0.215	3.274
Single-vehicle collision	0.062	1.478	0.041	0.353	0.078	0.285	0.077	1.172
Other collision	0.030	0.715	0.042	0.362	0.069	0.252	0.022	0.335

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	23.8
Fatal and Injury (FI)	8.6
Fatal and Injury[a] (FI[a])	3.7
Property Damage Only (PDO)	15.2

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 4A -- Predicted and Observed Crashes by Severity and Site Type Using the Project-Level EB Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,**	**Overdispersion Parameter, k**	**N_{w0}**	**N_{w1}**	**W_0**	**N_0**	**w_1**	**N_1**	**$N_{p/comb}$**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)	$N_{observed}$ (crashes/year)		Equation A-8 (6)*(2)^2	Equation A-9 sqrt((6)*(2))	Equation A-10	Equation A-11	Equation A-12	Equation A-13	Equation A-14
ROADWAY SEGMENTS												
Segment 1 (Divided)	0.000	0.000	0.000	--	21.246	0.000	0.005	--	--	--	--	--
Segment 2 (Undivided)	0.000	0.000	0.000	--	18.731	0.000	0.004	--	--	--	--	--
Segment 3				--				--	--	--	--	--
Segment 4				--				--	--	--	--	--
Segment 5				--				--	--	--	--	--
Segment 6				--				--	--	--	--	--
Segment 7				--				--	--	--	--	--
Segment 8				--				--	--	--	--	--
INTERSECTIONS												
Intersection 1	7.063	3.819	3.243	--	0.494	24.641	1.868	--	--	--	--	--
Intersection 2	13.398	5.644	7.754	--	0.277	49.721	1.926	--	--	--	--	--
Intersection 3	23.834	8.608	15.226	--	0.277	157.355	2.569	--	--	--	--	--
Intersection 4				--				--	--	--	--	--
Intersection 5				--				--	--	--	--	--
Intersection 6				--				--	--	--	--	--
Intersection 7				--				--	--	--	--	--
Intersection 8				--				--	--	--	--	--
COMBINED (sum of column)	44.294	18.071	26.224		--	231.717	6.373	0.160	7.108	0.874	38.723	22.916

Worksheet 4B -- Project-Level EB Method Summary Results

(1)	(2)	(3)
Crash severity level	$N_{predicted}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 4A	$(13)_{COMB}$ from Worksheet 4A
	44.3	22.9
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL}$ * $(2)_{FI}$ / $(2)_{TOTAL}$
	18.1	9.3
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL}$ * $(2)_{PDO}$ / $(2)_{TOTAL}$
	26.2	13.6

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Moon Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 750 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	3.1
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	29,380
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	2
Minor commercial driveways (number)		--	9
Major industrial / institutional driveways (number)		--	2
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	5
Minor residential driveways (number)		--	36
Other driveways (number)		--	2
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	15
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	3.20

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.06	1.00	0.91	1.00	0.97

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	0.00	0.00	0.000	1.000	0.000	0.97	3.20	0.000
Fatal and Injury (FI)	-12.76	1.28	1.31	4.665	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.273	0.000	0.97	3.20	0.000
Property Damage Only (PDO)	-12.81	1.38	1.34	12.415	$(5)_{TOTAL}-(5)_{FI}$ = 0.727	0.000	0.97	3.20	0.000

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.000	1.000	0.000	0.000
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.832	0.000	0.662	0.000	0.000
Head-on collision	0.020	0.000	0.007	0.000	0.000
Angle collision	0.040	0.000	0.036	0.000	0.000
Sideswipe, same direction	0.050	0.000	0.223	0.000	0.000
Sideswipe, opposite direction	0.010	0.000	0.001	0.000	0.000
Other multiple-vehicle collision	0.048	0.000	0.071	0.000	0.000

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	2.501	1.000	2.501	0.97	3.20	7.769
Fatal and Injury (FI)	-8.71	0.66	0.28	0.455	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.181	0.453	0.97	3.20	1.406
Property Damage Only (PDO)	-5.04	0.45	1.06	2.057	$(5)_{TOTAL}-(5)_{FI}$ = 0.819	2.049	0.97	3.20	6.363

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	1.406	1.000	6.363	7.769
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.001	0.001	0.063	0.401	0.402
Collision with fixed object	0.500	0.703	0.813	5.173	5.876
Collision with other object	0.028	0.039	0.016	0.102	0.141
Other single-vehicle collision	0.471	0.662	0.108	0.687	1.350

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	2	0.033	1.106	0.139	
Minor commercial	9	0.011	1.106	0.208	
Major industrial/institutional	2	0.036	1.106	0.151	
Minor industrial/institutional	0	0.005	1.106	0.000	--
Major residential	5	0.018	1.106	0.189	
Minor residential	36	0.003	1.106	0.227	
Other	2	0.005	1.106	0.021	
Total	--	--	--	0.936	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.936	1.000	0.936	0.97	3.20	2.907
Fatal and injury (FI)	--	0.284	0.266	0.97	3.20	0.826
Property damage only (PDO)	--	0.716	0.670	0.97	3.20	2.082

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.000	7.769	2.907	10.676	0.019	3.20	0.649
Fatal and injury (FI)	--	--	--	--	--	3.20	0.649

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.000	7.769	2.907	10.676	0.005	3.20	0.171
Fatal and injury (FI)	--	--	--	--	--	3.20	0.171

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.000	0.000	0.000
Head-on collisions (from Worksheet 1D)	0.000	0.000	0.000
Angle collisions (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, same direction (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, opposite direction (from Worksheet 1D)	0.000	0.000	0.000
Driveway-related collisions (from Worksheet 1H)	0.826	2.082	2.907
Other multiple-vehicle collision (from Worksheet 1D)	0.000	0.000	0.000
Subtotal	0.826	2.082	2.907
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.001	0.401	0.402
Collision with fixed object (from Worksheet 1F)	0.703	5.173	5.876
Collision with other object (from Worksheet 1F)	0.039	0.102	0.141
Other single-vehicle collision (from Worksheet 1F)	0.662	0.687	1.350
Collision with pedestrian (from Worksheet 1I)	0.649	0.000	0.649
Collision with bicycle (from Worksheet 1J)	0.171	0.000	0.171
Subtotal	2.226	6.363	8.589
Total	3.052	8.444	11.496

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	11.5	3.10	3.7
Fatal and injury (FI)	3.1	3.10	1.0
Property damage only (PDO)	8.4	3.10	2.7

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Miles Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 600 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	1.1
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	3,550
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	4
Other driveways (number)		--	1
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	2.40

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	0.00	0.00	0.000	1.000	0.000	1.00	2.40	0.000
Fatal and Injury (FI)	-16.22	1.66	0.65	0.078	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.300	0.000	1.00	2.40	0.000
Property Damage Only (PDO)	-15.62	1.69	0.87	0.181	$(5)_{TOTAL}-(5)_{FI}$ = 0.700	0.000	1.00	2.40	0.000

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.000	1.000	0.000	0.000
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.000	0.778	0.000	0.000
Head-on collision	0.068	0.000	0.004	0.000	0.000
Angle collision	0.085	0.000	0.079	0.000	0.000
Sideswipe, same direction	0.015	0.000	0.031	0.000	0.000
Sideswipe, opposite direction	0.073	0.000	0.055	0.000	0.000
Other multiple-vehicle collision	0.029	0.000	0.053	0.000	0.000

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	0.451	1.000	0.451	1.00	2.40	1.082
Fatal and Injury (FI)	-3.96	0.23	0.50	0.137	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.310	0.140	1.00	2.40	0.335
Property Damage Only (PDO)	-6.51	0.64	0.87	0.306	$(5)_{TOTAL}-(5)_{FI}$ = 0.690	0.311	1.00	2.40	0.747

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.335	1.000	0.747	1.082
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.009	0.066	0.049	0.058
Collision with fixed object	0.723	0.242	0.759	0.567	0.809
Collision with other object	0.010	0.003	0.013	0.010	0.013
Other single-vehicle collision	0.241	0.081	0.162	0.121	0.202

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	4	0.016	1.000	0.015	
Other	1	0.025	1.000	0.006	
Total	--	--	--	0.021	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL} * (3)$	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.021	1.000	0.021	1.00	2.40	0.051
Fatal and injury (FI)	--	0.323	0.007	1.00	2.40	0.016
Property damage only (PDO)	--	0.677	0.014	1.00	2.40	0.034

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.000	1.082	0.051	1.132	0.005	2.40	0.014
Fatal and injury (FI)	--	--	--	--	--	2.40	0.014

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.000	1.082	0.051	1.132	0.004	2.40	0.011
Fatal and injury (FI)	--	--	--	--	--	2.40	0.011

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.000	0.000	0.000
Head-on collisions (from Worksheet 1D)	0.000	0.000	0.000
Angle collisions (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, same direction (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, opposite direction (from Worksheet 1D)	0.000	0.000	0.000
Driveway-related collisions (from Worksheet 1H)	0.016	0.034	0.051
Other multiple-vehicle collision (from Worksheet 1D)	0.000	0.000	0.000
Subtotal	0.016	0.034	0.051
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.009	0.049	0.058
Collision with fixed object (from Worksheet 1F)	0.242	0.567	0.809
Collision with other object (from Worksheet 1F)	0.003	0.010	0.013
Other single-vehicle collision (from Worksheet 1F)	0.081	0.121	0.202
Collision with pedestrian (from Worksheet 1I)	0.014	0.000	0.014
Collision with bicycle (from Worksheet 1J)	0.011	0.000	0.011
Subtotal	0.359	0.747	1.106
Total	0.376	0.781	1.157

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	1.2	1.10	1.1
Fatal and injury (FI)	0.4	1.10	0.3
Property damage only (PDO)	0.8	1.10	0.7

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	S CR 525 E
Agency or Company	CMT	Roadway Section	E CR 700 S to E CR 875 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	2
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	1,790
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	32
Other driveways (number)		--	2
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	20
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	0.00	0.00	0.000	1.000	0.000	1.00	1.00	0.000
Fatal and Injury (FI)	-16.22	1.66	0.65	0.045	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.305	0.000	1.00	1.00	0.000
Property Damage Only (PDO)	-15.62	1.69	0.87	0.103	$(5)_{TOTAL}-(5)_{FI}$ = 0.695	0.000	1.00	1.00	0.000

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.000	1.000	0.000	0.000
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.000	0.778	0.000	0.000
Head-on collision	0.068	0.000	0.004	0.000	0.000
Angle collision	0.085	0.000	0.079	0.000	0.000
Sideswipe, same direction	0.015	0.000	0.031	0.000	0.000
Sideswipe, opposite direction	0.073	0.000	0.055	0.000	0.000
Other multiple-vehicle collision	0.029	0.000	0.053	0.000	0.000

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	0.559	1.000	0.559	1.00	1.00	0.559
Fatal and Injury (FI)	-3.96	0.23	0.50	0.213	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.373	0.208	1.00	1.00	0.208
Property Damage Only (PDO)	-6.51	0.64	0.87	0.359	$(5)_{TOTAL}-(5)_{FI}$ = 0.627	0.350	1.00	1.00	0.350

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.208	1.000	0.350	0.559
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.005	0.066	0.023	0.029
Collision with fixed object	0.723	0.150	0.759	0.266	0.416
Collision with other object	0.010	0.002	0.013	0.005	0.007
Other single-vehicle collision	0.241	0.050	0.162	0.057	0.107

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	32	0.016	1.000	0.061	
Other	2	0.025	1.000	0.006	
Total	--	--	--	0.067	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.067	1.000	0.067	1.00	1.00	0.067
Fatal and injury (FI)	--	0.323	0.022	1.00	1.00	0.022
Property damage only (PDO)	--	0.677	0.045	1.00	1.00	0.045

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.000	0.559	0.067	0.626	0.005	1.00	0.003
Fatal and injury (FI)	--	--	--	--	--	1.00	0.003

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.000	0.559	0.067	0.626	0.004	1.00	0.003
Fatal and injury (FI)	--	--	--	--	--	1.00	0.003

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.000	0.000	0.000
Head-on collisions (from Worksheet 1D)	0.000	0.000	0.000
Angle collisions (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, same direction (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, opposite direction (from Worksheet 1D)	0.000	0.000	0.000
Driveway-related collisions (from Worksheet 1H)	0.022	0.045	0.067
Other multiple-vehicle collision (from Worksheet 1D)	0.000	0.000	0.000
Subtotal	0.022	0.045	0.067
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.005	0.023	0.029
Collision with fixed object (from Worksheet 1F)	0.150	0.266	0.416
Collision with other object (from Worksheet 1F)	0.002	0.005	0.007
Other single-vehicle collision (from Worksheet 1F)	0.050	0.057	0.107
Collision with pedestrian (from Worksheet 1I)	0.003	0.000	0.003
Collision with bicycle (from Worksheet 1J)	0.003	0.000	0.003
Subtotal	0.214	0.350	0.564
Total	0.235	0.396	0.631

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	0.6	2.00	0.3
Fatal and injury (FI)	0.2	2.00	0.1
Property damage only (PDO)	0.4	2.00	0.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267/ Center Street
Agency or Company	CMT	Roadway Section	Black Rock Rd
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	22,070
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	21,060
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			2
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	1.00	1.00	0.63

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	7.402	1.000	7.402	0.63	3.50	16.426
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	2.345	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.328	2.425	0.63	3.50	5.382
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	4.813	$(5)_{TOTAL}-(5)_{FI}$ = 0.672	4.977	0.63	3.50	11.044

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	5.382	1.000	11.044	16.426
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	2.422	0.483	5.334	7.756
Head-on collision	0.049	0.264	0.030	0.331	0.595
Angle collision	0.347	1.868	0.244	2.695	4.562
Sideswipe	0.099	0.533	0.032	0.353	0.886
Other multiple-vehicle collision	0.055	0.296	0.211	2.330	2.626

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.486	1.000	0.486	0.63	3.50	1.079
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.127	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.266	0.130	0.63	3.50	0.288
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.350	$(5)_{TOTAL}-(5)_{FI}$ = 0.734	0.357	0.63	3.50	0.792

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.288	1.000	0.792	1.079
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.001	0.002	0.002	0.002
Collision with fixed object	0.744	0.214	0.870	0.689	0.903
Collision with other object	0.072	0.021	0.070	0.055	0.076
Other single-vehicle collision	0.040	0.012	0.023	0.018	0.030
Single-vehicle noncollision	0.141	0.041	0.034	0.027	0.067

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.008	1.00	3.50	0.028
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.028

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	16.426	1.079	17.505	0.015	3.50	0.919
Fatal and injury (FI)	--	--	--	--	3.50	0.919

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	2.422	5.334	7.756
Head-on collisions (from Worksheet 2D)	0.264	0.331	0.595
Angle collisions (from Worksheet 2D)	1.868	2.695	4.562
Sideswipe (from Worksheet 2D)	0.533	0.353	0.886
Other multiple-vehicle collision (from Worksheet 2D)	0.296	2.330	2.626
Subtotal	5.382	11.044	16.426
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.001	0.002	0.002
Collision with fixed object (from Worksheet 2F)	0.214	0.689	0.903
Collision with other object (from Worksheet 2F)	0.021	0.055	0.076
Other single-vehicle collision (from Worksheet 2F)	0.012	0.018	0.030
Single-vehicle noncollision (from Worksheet 2F)	0.041	0.027	0.067
Collision with pedestrian (from Worksheet 2G or 2I)	0.028	0.000	0.028
Collision with bicycle (from Worksheet 2J)	0.919	0.000	0.919
Subtotal	1.234	0.792	2.026
Total	6.616	11.835	18.451

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	18.5
Fatal and injury (FI)	6.6
Property damage only (PDO)	11.8

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Miles Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	3ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 45,700 (veh/day)	--	34,680
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 9,300 (veh/day)	--	3,550
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	1
Number of major-road approaches with right-turn lanes (0,1,2)		0	1
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	1

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.67	1.00	0.86	1.00	1.00	1.00	0.58

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-13.36	1.11	0.41	0.80	4.931	1.000	4.931	0.58	3.50	9.944
Fatal and Injury (FI)	-14.01	1.16	0.30	0.69	1.766	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.318	1.566	0.58	3.50	3.158
Property Damage Only (PDO)	-15.38	1.20	0.51	0.77	3.795	$(5)_{TOTAL}-(5)_{FI}$ = 0.682	3.365	0.58	3.50	6.786

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type$_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	3.158	1.000	6.786	9.944
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.421	1.330	0.440	2.986	4.315
Head-on collision	0.045	0.142	0.023	0.156	0.298
Angle collision	0.343	1.083	0.262	1.778	2.861
Sideswipe	0.126	0.398	0.040	0.271	0.669
Other multiple-vehicle collision	0.065	0.205	0.235	1.595	1.800

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-6.81	0.16	0.51	1.14	0.380	1.000	0.380	0.58	3.50	0.766
Fatal and Injury (FI)	--	--	--	--	0.118	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.291	0.111	0.58	3.50	0.223
Property Damage Only (PDO)	-8.36	0.25	0.55	1.29	0.286	$(5)_{TOTAL}-(5)_{FI}$ = 0.709	0.269	0.58	3.50	0.543

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.223	1.000	0.543	0.766
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.003	0.002	0.002
Collision with animal	0.003	0.001	0.018	0.010	0.010
Collision with fixed object	0.762	0.170	0.834	0.453	0.623
Collision with other object	0.090	0.020	0.092	0.050	0.070
Other single-vehicle collision	0.039	0.009	0.023	0.012	0.021
Single-vehicle noncollision	0.105	0.023	0.030	0.016	0.040

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	9.944	0.766	10.710	0.021	3.50	0.787
Fatal and injury (FI)	--	--	--	--	3.50	0.787

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	3.50	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	9.944	0.766	10.710	0.016	3.50	0.600
Fatal and injury (FI)	--	--	--	--	3.50	0.600

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.330	2.986	4.315
Head-on collisions (from Worksheet 2D)	0.142	0.156	0.298
Angle collisions (from Worksheet 2D)	1.083	1.778	2.861
Sideswipe (from Worksheet 2D)	0.398	0.271	0.669
Other multiple-vehicle collision (from Worksheet 2D)	0.205	1.595	1.800
Subtotal	3.158	6.786	9.944
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.002	0.002
Collision with animal (from Worksheet 2F)	0.001	0.010	0.010
Collision with fixed object (from Worksheet 2F)	0.170	0.453	0.623
Collision with other object (from Worksheet 2F)	0.020	0.050	0.070
Other single-vehicle collision (from Worksheet 2F)	0.009	0.012	0.021
Single-vehicle noncollision (from Worksheet 2F)	0.023	0.016	0.040
Collision with pedestrian (from Worksheet 2G or 2I)	0.787	0.000	0.787
Collision with bicycle (from Worksheet 2J)	0.600	0.000	0.600
Subtotal	1.610	0.543	2.153
Total	4.768	7.328	12.096

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	12.1
Fatal and injury (FI)	4.8
Property damage only (PDO)	7.3

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Moon Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	61,750
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	29,380
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	4

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	24.029	1.000	24.029	0.44	4.50	47.806
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	8.498	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.363	8.731	0.44	4.50	17.371
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	14.889	$(5)_{TOTAL}-(5)_{FI}$ = 0.637	15.298	0.44	4.50	30.435

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	17.371	1.000	30.435	47.806
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	7.817	0.483	14.700	22.517
Head-on collision	0.049	0.851	0.030	0.913	1.764
Angle collision	0.347	6.028	0.244	7.426	13.454
Sideswipe	0.099	1.720	0.032	0.974	2.694
Other multiple-vehicle collision	0.055	0.955	0.211	6.422	7.377

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.071	1.000	1.071	0.44	4.50	2.131
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.218	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.204	0.219	0.44	4.50	0.436
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.849	$(5)_{TOTAL}-(5)_{FI}$ = 0.796	0.852	0.44	4.50	1.696

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.436	1.000	1.696	2.131
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.002	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.004
Collision with fixed object	0.744	0.324	0.870	1.475	1.799
Collision with other object	0.072	0.031	0.070	0.119	0.150
Other single-vehicle collision	0.040	0.017	0.023	0.039	0.056
Single-vehicle noncollision	0.141	0.061	0.034	0.058	0.119

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.007	1.12	4.50	0.037
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.037

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	47.806	2.131	49.937	0.015	4.50	3.371
Fatal and injury (FI)	--	--	--	--	4.50	3.371

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	7.817	14.700	22.517
Head-on collisions (from Worksheet 2D)	0.851	0.913	1.764
Angle collisions (from Worksheet 2D)	6.028	7.426	13.454
Sideswipe (from Worksheet 2D)	1.720	0.974	2.694
Other multiple-vehicle collision (from Worksheet 2D)	0.955	6.422	7.377
Subtotal	17.371	30.435	47.806
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.002	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.004
Collision with fixed object (from Worksheet 2F)	0.324	1.475	1.799
Collision with other object (from Worksheet 2F)	0.031	0.119	0.150
Other single-vehicle collision (from Worksheet 2F)	0.017	0.039	0.056
Single-vehicle noncollision (from Worksheet 2F)	0.061	0.058	0.119
Collision with pedestrian (from Worksheet 2G or 2I)	0.037	0.000	0.037
Collision with bicycle (from Worksheet 2J)	3.371	0.000	3.371
Subtotal	3.843	1.696	5.539
Total	21.214	32.131	53.345

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	53.3
Fatal and injury (FI)	21.2
Property damage only (PDO)	32.1

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	61,820
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	30,600
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			35
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	3

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	0.91	1.00	0.58

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	24.284	1.000	24.284	0.58	4.50	63.096
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	8.585	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.363	8.820	0.58	4.50	22.917
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	15.052	$(5)_{TOTAL}-(5)_{FI}$ = 0.637	15.464	0.58	4.50	40.179

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	22.917	1.000	40.179	63.096
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	10.313	0.483	19.406	29.719
Head-on collision	0.049	1.123	0.030	1.205	2.328
Angle collision	0.347	7.952	0.244	9.804	17.756
Sideswipe	0.099	2.269	0.032	1.286	3.555
Other multiple-vehicle collision	0.055	1.260	0.211	8.478	9.738

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.084	1.000	1.084	0.58	4.50	2.816
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.221	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.205	0.222	0.58	4.50	0.576
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.858	$(5)_{TOTAL}-(5)_{FI}$ = 0.795	0.862	0.58	4.50	2.240

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.576	1.000	2.240	2.816
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.001	0.001	0.002	0.003
Collision with animal	0.002	0.001	0.002	0.004	0.006
Collision with fixed object	0.744	0.429	0.870	1.949	2.377
Collision with other object	0.072	0.041	0.070	0.157	0.198
Other single-vehicle collision	0.040	0.023	0.023	0.052	0.075
Single-vehicle noncollision	0.141	0.081	0.034	0.076	0.157

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.035	1.12	4.50	0.179
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.179

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	63.096	2.816	65.912	0.015	4.50	4.449
Fatal and injury (FI)	--	--	--	--	4.50	4.449

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	10.313	19.406	29.719
Head-on collisions (from Worksheet 2D)	1.123	1.205	2.328
Angle collisions (from Worksheet 2D)	7.952	9.804	17.756
Sideswipe (from Worksheet 2D)	2.269	1.286	3.555
Other multiple-vehicle collision (from Worksheet 2D)	1.260	8.478	9.738
Subtotal	22.917	40.179	63.096
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.001	0.002	0.003
Collision with animal (from Worksheet 2F)	0.001	0.004	0.006
Collision with fixed object (from Worksheet 2F)	0.429	1.949	2.377
Collision with other object (from Worksheet 2F)	0.041	0.157	0.198
Other single-vehicle collision (from Worksheet 2F)	0.023	0.052	0.075
Single-vehicle noncollision (from Worksheet 2F)	0.081	0.076	0.157
Collision with pedestrian (from Worksheet 2G or 2I)	0.179	0.000	0.179
Collision with bicycle (from Worksheet 2J)	4.449	0.000	4.449
Subtotal	5.204	2.240	7.444
Total	28.121	42.419	70.540

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	70.5
Fatal and injury (FI)	28.1
Property damage only (PDO)	42.4

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	SR 267
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	**74,840**
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	**46,050**
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			10
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	4
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	5

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	32.732	1.000	32.732	0.44	4.50	65.120
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	11.770	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.368	12.059	0.44	4.50	23.991
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	20.177	$(5)_{TOTAL}-(5)_{FI}$ = 0.632	20.673	0.44	4.50	41.129

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	23.991	1.000	41.129	65.120
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	10.796	0.483	19.865	30.661
Head-on collision	0.049	1.176	0.030	1.234	2.409
Angle collision	0.347	8.325	0.244	10.035	18.360
Sideswipe	0.099	2.375	0.032	1.316	3.691
Other multiple-vehicle collision	0.055	1.319	0.211	8.678	9.998

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.378	1.000	1.378	0.44	4.50	2.742
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.270	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.196	0.271	0.44	4.50	0.539
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	1.103	$(5)_{TOTAL}-(5)_{FI}$ = 0.804	1.108	0.44	4.50	2.203

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.539	1.000	2.203	2.742
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.001	0.001	0.002	0.003
Collision with animal	0.002	0.001	0.002	0.004	0.005
Collision with fixed object	0.744	0.401	0.870	1.917	2.318
Collision with other object	0.072	0.039	0.070	0.154	0.193
Other single-vehicle collision	0.040	0.022	0.023	0.051	0.072
Single-vehicle noncollision	0.141	0.076	0.034	0.075	0.151

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.023	1.12	4.50	0.115
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.115

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	65.120	2.742	67.862	0.015	4.50	4.581
Fatal and injury (FI)	--	--	--	--	4.50	4.581

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	10.796	19.865	30.661
Head-on collisions (from Worksheet 2D)	1.176	1.234	2.409
Angle collisions (from Worksheet 2D)	8.325	10.035	18.360
Sideswipe (from Worksheet 2D)	2.375	1.316	3.691
Other multiple-vehicle collision (from Worksheet 2D)	1.319	8.678	9.998
Subtotal	23.991	41.129	65.120
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.001	0.002	0.003
Collision with animal (from Worksheet 2F)	0.001	0.004	0.005
Collision with fixed object (from Worksheet 2F)	0.401	1.917	2.318
Collision with other object (from Worksheet 2F)	0.039	0.154	0.193
Other single-vehicle collision (from Worksheet 2F)	0.022	0.051	0.072
Single-vehicle noncollision (from Worksheet 2F)	0.076	0.075	0.151
Collision with pedestrian (from Worksheet 2G or 2I)	0.115	0.000	0.115
Collision with bicycle (from Worksheet 2J)	4.581	0.000	4.581
Subtotal	5.235	2.203	7.438
Total	29.225	43.332	72.558

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	72.6
Fatal and injury (FI)	29.2
Property damage only (PDO)	43.3

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hadley
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	64,850
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	**36,600**
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	2

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.78	0.85	1.00	0.91	1.00	0.40

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	26.635	1.000	26.635	0.40	4.50	47.772
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	9.449	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.364	9.699	0.40	4.50	17.396
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	16.499	$(5)_{TOTAL}-(5)_{FI}$ = 0.636	16.936	0.40	4.50	30.376

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	17.396	1.000	30.376	47.772
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	7.828	0.483	14.672	22.500
Head-on collision	0.049	0.852	0.030	0.911	1.764
Angle collision	0.347	6.037	0.244	7.412	13.448
Sideswipe	0.099	1.722	0.032	0.972	2.694
Other multiple-vehicle collision	0.055	0.957	0.211	6.409	7.366

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.175	1.000	1.175	0.40	4.50	2.108
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.237	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.203	0.239	0.40	4.50	0.428
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.932	$(5)_{TOTAL}-(5)_{FI}$ = 0.797	0.937	0.40	4.50	1.680

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.428	1.000	1.680	2.108
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.002	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.004
Collision with fixed object	0.744	0.318	0.870	1.461	1.780
Collision with other object	0.072	0.031	0.070	0.118	0.148
Other single-vehicle collision	0.040	0.017	0.023	0.039	0.056
Single-vehicle noncollision	0.141	0.060	0.034	0.057	0.117

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.008	1.12	4.50	0.040
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.040

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	47.772	2.108	49.880	0.015	4.50	3.367
Fatal and injury (FI)	--	--	--	--	4.50	3.367

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	7.828	14.672	22.500
Head-on collisions (from Worksheet 2D)	0.852	0.911	1.764
Angle collisions (from Worksheet 2D)	6.037	7.412	13.448
Sideswipe (from Worksheet 2D)	1.722	0.972	2.694
Other multiple-vehicle collision (from Worksheet 2D)	0.957	6.409	7.366
Subtotal	17.396	30.376	47.772
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.002	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.004
Collision with fixed object (from Worksheet 2F)	0.318	1.461	1.780
Collision with other object (from Worksheet 2F)	0.031	0.118	0.148
Other single-vehicle collision (from Worksheet 2F)	0.017	0.039	0.056
Single-vehicle noncollision (from Worksheet 2F)	0.060	0.057	0.117
Collision with pedestrian (from Worksheet 2G or 2I)	0.040	0.000	0.040
Collision with bicycle (from Worksheet 2J)	3.367	0.000	3.367
Subtotal	3.835	1.680	5.515
Total	21.232	32.056	53.287

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	53.3
Fatal and injury (FI)	21.2
Property damage only (PDO)	32.1

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Camby
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	**68,120**
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	14,680
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	2
Number of major-road approaches with right-turn lanes (0,1,2)		0	1
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	1.00	1.00	1.00	1.00	0.57

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	22.754	1.000	22.754	0.57	3.50	45.519
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	8.191	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.370	8.424	0.57	3.50	16.852
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	13.933	$(5)_{TOTAL}-(5)_{FI}$ = 0.630	14.330	0.57	3.50	28.667

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	16.852	1.000	28.667	45.519
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	7.584	0.483	13.846	21.430
Head-on collision	0.049	0.826	0.030	0.860	1.686
Angle collision	0.347	5.848	0.244	6.995	12.842
Sideswipe	0.099	1.668	0.032	0.917	2.586
Other multiple-vehicle collision	0.055	0.927	0.211	6.049	6.976

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.950	1.000	0.950	0.57	3.50	1.899
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.186	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.194	0.185	0.57	3.50	0.369
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.770	$(5)_{TOTAL}-(5)_{FI}$ = 0.806	0.765	0.57	3.50	1.530

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.369	1.000	1.530	1.899
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.002	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.004
Collision with fixed object	0.744	0.275	0.870	1.331	1.606
Collision with other object	0.072	0.027	0.070	0.107	0.134
Other single-vehicle collision	0.040	0.015	0.023	0.035	0.050
Single-vehicle noncollision	0.141	0.052	0.034	0.052	0.104

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.006	1.00	3.50	0.019
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.019

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	45.519	1.899	47.418	0.015	3.50	2.489
Fatal and injury (FI)	--	--	--	--	3.50	2.489

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	7.584	13.846	21.430
Head-on collisions (from Worksheet 2D)	0.826	0.860	1.686
Angle collisions (from Worksheet 2D)	5.848	6.995	12.842
Sideswipe (from Worksheet 2D)	1.668	0.917	2.586
Other multiple-vehicle collision (from Worksheet 2D)	0.927	6.049	6.976
Subtotal	16.852	28.667	45.519
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.002	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.004
Collision with fixed object (from Worksheet 2F)	0.275	1.331	1.606
Collision with other object (from Worksheet 2F)	0.027	0.107	0.134
Other single-vehicle collision (from Worksheet 2F)	0.015	0.035	0.050
Single-vehicle noncollision (from Worksheet 2F)	0.052	0.052	0.104
Collision with pedestrian (from Worksheet 2G or 2I)	0.019	0.000	0.019
Collision with bicycle (from Worksheet 2J)	2.489	0.000	2.489
Subtotal	2.878	1.530	4.408
Total	19.731	30.197	49.927

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	49.9
Fatal and injury (FI)	19.7
Property damage only (PDO)	30.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	Hadley Road
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	18,770
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	9,920
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	2
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	2
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			5
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Multi-Lane Rdbt	Combine
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF 7i*	*CMF*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	CMF 4194	(1)*(2)*(3)*(
0.81	0.87	1.00	1.00	0.91	1.00	0.81	0.5

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	5.235	1.000	5.235	0.52	1.00	2.736
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.642	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.325	1.703	0.52	1.00	0.890
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.405	$(5)_{TOTAL}-(5)_{FI}$ = 0.675	3.532	0.52	1.00	1.846

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.890	1.000	1.846	2.736
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.401	0.483	0.892	1.292
Head-on collision	0.049	0.044	0.030	0.055	0.099
Angle collision	0.347	0.309	0.244	0.450	0.759
Sideswipe	0.099	0.088	0.032	0.059	0.147
Other multiple-vehicle collision	0.055	0.049	0.211	0.390	0.438

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.356	1.000	0.356	0.52	1.00	0.186
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.095	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.272	0.097	0.52	1.00	0.050
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.256	$(5)_{TOTAL}-(5)_{FI}$ = 0.728	0.259	0.52	1.00	0.135

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.050	1.000	0.135	0.186
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.038	0.870	0.118	0.155
Collision with other object	0.072	0.004	0.070	0.009	0.013
Other single-vehicle collision	0.040	0.002	0.023	0.003	0.005
Single-vehicle noncollision	0.141	0.007	0.034	0.005	0.012

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.009	1.00	1.00	0.009
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.009

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	2.736	0.186	2.922	0.015	1.00	0.044
Fatal and injury (FI)	--	--	--	--	1.00	0.044

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.401	0.892	1.292
Head-on collisions (from Worksheet 2D)	0.044	0.055	0.099
Angle collisions (from Worksheet 2D)	0.309	0.450	0.759
Sideswipe (from Worksheet 2D)	0.088	0.059	0.147
Other multiple-vehicle collision (from Worksheet 2D)	0.049	0.390	0.438
Subtotal	0.890	1.846	2.736
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.038	0.118	0.155
Collision with other object (from Worksheet 2F)	0.004	0.009	0.013
Other single-vehicle collision (from Worksheet 2F)	0.002	0.003	0.005
Single-vehicle noncollision (from Worksheet 2F)	0.007	0.005	0.012
Collision with pedestrian (from Worksheet 2G or 2I)	0.009	0.000	0.009
Collision with bicycle (from Worksheet 2J)	0.044	0.000	0.044
Subtotal	0.103	0.135	0.238
Total	0.993	1.982	2.975

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	3.0
Fatal and injury (FI)	1.0
Property damage only (PDO)	2.0

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hendricks County Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	18,390
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	7,550
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	1.00	1.00	0.63

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**0**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	4.810	1.000	4.810	0.63	3.50	10.673
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.509	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.326	1.567	0.63	3.50	3.477
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.124	$(5)_{TOTAL}-(5)_{FI}$ = 0.674	3.243	0.63	3.50	7.196

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	3.477	1.000	7.196	10.673
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	1.565	0.483	3.476	5.040
Head-on collision	0.049	0.170	0.030	0.216	0.386
Angle collision	0.347	1.206	0.244	1.756	2.962
Sideswipe	0.099	0.344	0.032	0.230	0.574
Other multiple-vehicle collision	0.055	0.191	0.211	1.518	1.710

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.326	1.000	0.326	0.63	3.50	0.723
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.087	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.271	0.088	0.63	3.50	0.196
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.235	$(5)_{TOTAL}-(5)_{FI}$ = 0.729	0.237	0.63	3.50	0.527

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.196	1.000	0.527	0.723
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.000	0.002	0.001	0.001
Collision with fixed object	0.744	0.146	0.870	0.458	0.604
Collision with other object	0.072	0.014	0.070	0.037	0.051
Other single-vehicle collision	0.040	0.008	0.023	0.012	0.020
Single-vehicle noncollision	0.141	0.028	0.034	0.018	0.046

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.004	1.00	3.50	0.013
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.013

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	10.673	0.723	11.396	0.015	3.50	0.598
Fatal and injury (FI)	--	--	--	--	3.50	0.598

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.565	3.476	5.040
Head-on collisions (from Worksheet 2D)	0.170	0.216	0.386
Angle collisions (from Worksheet 2D)	1.206	1.756	2.962
Sideswipe (from Worksheet 2D)	0.344	0.230	0.574
Other multiple-vehicle collision (from Worksheet 2D)	0.191	1.518	1.710
Subtotal	3.477	7.196	10.673
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.000	0.001	0.001
Collision with fixed object (from Worksheet 2F)	0.146	0.458	0.604
Collision with other object (from Worksheet 2F)	0.014	0.037	0.051
Other single-vehicle collision (from Worksheet 2F)	0.008	0.012	0.020
Single-vehicle noncollision (from Worksheet 2F)	0.028	0.018	0.046
Collision with pedestrian (from Worksheet 2G or 2I)	0.013	0.000	0.013
Collision with bicycle (from Worksheet 2J)	0.598	0.000	0.598
Subtotal	0.807	0.527	1.334
Total	4.284	7.723	12.007

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	12.0
Fatal and injury (FI)	4.3
Property damage only (PDO)	7.7

Worksheet 3A -- Predicted Crashes by Severity and Site Type and Observed Crashes Using the Site-Specific EB Method for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Collision type / Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,** $N_{observed}$ (crashes/year)	**Overdispersion Parameter, k**	**Weighted adjustment, w**	**Expected average crash frequency,**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)			Equation A-5 from Part C Appendix	Equation A-4 from Part C Appendix
ROADWAY SEGMENTS							
Multiple-vehicle nondriveway							
Segment 1	0.000	0.000	0.000		0.000	1.000	0.000
Segment 2	0.000	0.000	0.000		0.000	1.000	0.000
Segment 3	0.000	0.000	0.000		0.000	1.000	0.000
Single-vehicle							
Segment 1	7.769	1.406	6.363		0.860	0.130	1.011
Segment 2	1.082	0.335	0.747		0.810	0.533	0.577
Segment 3	0.559	0.208	0.350		0.810	0.689	0.385
Multiple-vehicle driveway-related							
Segment 1	2.907	0.826	2.082		1.390	0.198	0.577
Segment 2	0.051	0.016	0.034		0.810	0.961	0.049
Segment 3	0.067	0.022	0.045		0.810	0.948	0.064
INTERSECTIONS							
Multiple-vehicle							
Intersection 1	16.426	5.382	11.044		0.390	0.135	2.218
Intersection 2	9.944	3.158	6.786		0.800	0.112	1.110
Intersection 3	47.806	17.371	30.435		0.390	0.051	2.434
Intersection 4	63.096	22.917	40.179		0.390	0.039	2.464
Intersection 5	65.120	23.991	41.129		0.390	0.038	2.467
Intersection 6	47.772	17.396	30.376		0.390	0.051	2.433
Intersection 7	45.519	16.852	28.667		0.390	0.053	2.427
Intersection 8	2.736	0.890	1.846		0.390	0.484	1.324
Intersection 9	10.673	3.477	7.196		0.390	0.194	2.067
Single-vehicle							
Intersection 1	1.079	0.288	0.792		0.360	0.720	0.777
Intersection 2	0.766	0.223	0.543		1.140	0.534	0.409
Intersection 3	2.131	0.436	1.696		0.360	0.566	1.206
Intersection 4	2.816	0.576	2.240		0.360	0.497	1.398
Intersection 5	2.742	0.539	2.203		0.360	0.503	1.380
Intersection 6	2.108	0.428	1.680		0.360	0.569	1.198
Intersection 7	1.899	0.369	1.530		0.360	0.594	1.128
Intersection 8	0.186	0.050	0.135		0.360	0.937	0.174
Intersection 9	0.723	0.196	0.527		0.360	0.794	0.574
COMBINED (sum of column)	335.975	117.351	218.624	0	--	--	29.277

Worksheet 3B -- Predicted Pedestrian and Bicycle Crashes for

Urban and Suburban Arterials

(1)	(2)	(3)
Site Type	**N_{ped}**	**N_{bike}**
ROADWAY SEGMENTS		
Segment 1	0.649	0.171
Segment 2	0.014	0.011
Segment 3	0.003	0.003
INTERSECTIONS		
Intersection 1	0.028	0.919
Intersection 2	0.787	0.600
Intersection 3	0.037	3.371
Intersection 4	0.179	4.449
Intersection 5	0.115	4.581
Intersection 6	0.040	3.367
Intersection 7	0.019	2.489
Intersection 8	0.009	0.044
Intersection 9	0.013	0.598
COMBINED (sum of column)	1.893	20.602

Worksheet 3C -- Site-Specific EB Method Summary Results for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)
Crash severity level	**$N_{predicted}$**	**N_{ped}**	**N_{bike}**	$N_{expected\ (VEHICLE)}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(8)_{COMB}$ Worksheet 3A	(3)+(4)+(5)
	335.98	1.9	20.6	29.3	51.8
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(5)_{TOTAL}$ * $(2)_{FI}$ / $(2)_{TOTAL}$	(3)+(4)+(5)
	117.35	1.9	20.6	10.2	32.7
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 3A	--	--	$(5)_{TOTAL}$ * $(2)_{PDO}$ / $(2)_{TOTAL}$	(3)+(4)+(5)
	218.6	0.0	0.0	19.1	19.1

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	CR 1000 S
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4ST
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 78,300 (veh/day)	--	23,700
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 7,400 (veh/day)	--	2,365
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	0
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	1
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	1.00	1.00	0.86	0.90	0.77
Fatal and Injury (FI)	1.00	1.00	0.77	0.90	0.69

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$**	**Overdispersion Parameter, k**	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$**
	a	b	c or d (4SG)	from Equation 11-11 or 11-12	from Table 11-7 or 11-8			(3)*(5)*(6)
Total	-10.008	0.848	0.448	7.496	0.494	0.77	1.00	5.778
Fatal and Injury (FI)	-11.554	0.888	0.525	4.347	0.742	0.69	1.00	3.000
Fatal and Injury[a] (FI[a])	-10.734	0.828	0.412	2.242	0.655	0.69	1.00	1.547
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 2.778

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$**	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)**	**Proportion of Collision Type$_{(FI)}$**	**$N_{predicted\ int\ (FI)}$ (crashes/year)**	**Proportion of Collision Type (FI[a])**	**$N_{predicted\ int}$ (FI[a]) (crashes/year)**	**Proportion of Collision Type (PDO)**	**$N_{predicted\ int\ (PDO)}$ (crashes/year)**
	from Table 11-9	$(7)_{TOTAL}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$[a] from Worksheet 2C	from Table 11-9	$(7)_{PDO}$ from Worksheet 2C
Total	1.000	5.778	1.000	3.000	1.000	1.547	1.000	2.778
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}$[a]		(8)*$(9)_{PDO}$
Head-on collision	0.016	0.092	0.018	0.054	0.023	0.036	0.015	0.042
Sideswipe collision	0.107	0.618	0.042	0.126	0.040	0.062	0.156	0.433
Rear-end collision	0.228	1.317	0.213	0.639	0.108	0.167	0.240	0.667
Angle collision	0.395	2.282	0.534	1.602	0.571	0.883	0.292	0.811
Single-vehicle collision	0.202	1.167	0.148	0.444	0.199	0.308	0.243	0.675
Other collision	0.052	0.300	0.045	0.135	0.059	0.091	0.054	0.150

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	5.8
Fatal and Injury (FI)	3.0
Fatal and Injury[a] (FI[a])	1.5
Property Damage Only (PDO)	2.8

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	Koger Street
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	16,085
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	2,655
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	11.799	0.277	1.00	1.00	11.799
Fatal and Injury (FI)	-6.393	0.638	0.232	5.031	0.218	1.00	1.00	5.031
Fatal and Injury[a] (FI[a])	-12.011	--	1.279	1.772	0.566	1.00	1.00	1.772
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 6.768

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$** from Table 11-9	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)** $(7)_{TOTAL}$ from Worksheet 2C	**Proportion of Collision Type$_{(FI)}$** from Table 11-9	**$N_{predicted\ int\ (FI)}$ (crashes/year)** $(7)_{FI}$ from Worksheet 2C	**Proportion of Collision Type (FI[a])** from Table 11-9	**N *predicted int* (FI[a]) (crashes/year)** $(7)_{FI}{}^{a}$ from Worksheet 2C	**Proportion of Collision Type (PDO)** from Table 11-9	**$N_{predicted\ int\ (PDO)}$ (crashes/year)** $(7)_{PDO}$ from Worksheet 2C
Total	1.000	11.799	1.000	5.031	1.000	1.772	1.000	6.768
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}{}^{a}$		(8)*$(9)_{PDO}$
Head-on collision	0.054	0.637	0.083	0.418	0.093	0.165	0.034	0.230
Sideswipe collision	0.106	1.251	0.047	0.236	0.039	0.069	0.147	0.995
Rear-end collision	0.492	5.805	0.472	2.375	0.314	0.557	0.505	3.418
Angle collision	0.256	3.021	0.315	1.585	0.407	0.721	0.215	1.455
Single-vehicle collision	0.062	0.732	0.041	0.206	0.078	0.138	0.077	0.521
Other collision	0.030	0.354	0.042	0.211	0.069	0.122	0.022	0.149

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	11.8
Fatal and Injury (FI)	5.0
Fatal and Injury[a] (FI[a])	1.8
Property Damage Only (PDO)	6.8

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Intersection	SR 39
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	23,170
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	7,545
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Not Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	21.835	0.277	1.00	1.00	21.835
Fatal and Injury (FI)	-6.393	0.638	0.232	8.091	0.218	1.00	1.00	8.091
Fatal and Injury[a] (FI[a])	-12.011	--	1.279	3.334	0.566	1.00	1.00	3.334
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 13.744

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$** from Table 11-9	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)** $(7)_{TOTAL}$ from Worksheet 2C	**Proportion of Collision Type$_{(FI)}$** from Table 11-9	**$N_{predicted\ int\ (FI)}$ (crashes/year)** $(7)_{FI}$ from Worksheet 2C	**Proportion of Collision Type (FI[a])** from Table 11-9	**N *predicted int* (FI[a]) (crashes/year)** $(7)_{FI}{}^{a}$ from Worksheet 2C	**Proportion of Collision Type (PDO)** from Table 11-9	**$N_{predicted\ int\ (PDO)}$ (crashes/year)** $(7)_{PDO}$ from Worksheet 2C
Total	1.000	21.835	1.000	8.091	1.000	3.334	1.000	13.744
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}{}^{a}$		(8)*$(9)_{PDO}$
Head-on collision	0.054	1.179	0.083	0.672	0.093	0.310	0.034	0.467
Sideswipe collision	0.106	2.314	0.047	0.380	0.039	0.130	0.147	2.020
Rear-end collision	0.492	10.743	0.472	3.819	0.314	1.047	0.505	6.941
Angle collision	0.256	5.590	0.315	2.549	0.407	1.357	0.215	2.955
Single-vehicle collision	0.062	1.354	0.041	0.332	0.078	0.260	0.077	1.058
Other collision	0.030	0.655	0.042	0.340	0.069	0.230	0.022	0.302

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	21.8
Fatal and Injury (FI)	8.1
Fatal and Injury[a] (FI[a])	3.3
Property Damage Only (PDO)	13.7

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 4A -- Predicted and Observed Crashes by Severity and Site Type Using the Project-Level EB Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,**	**Overdispersion Parameter, k**	**N_{w0}**	**N_{w1}**	**W_0**	**N_0**	**w_1**	**N_1**	**$N_{p/comb}$**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)	$N_{observed}$ (crashes/year)		Equation A-8 $(6)*(2)^2$	Equation A-9 sqrt((6)*(2))	Equation A-10	Equation A-11	Equation A-12	Equation A-13	Equation A-14
ROADWAY SEGMENTS												
Segment 1 (Divided)	0.000	0.000	0.000	--	21.246	0.000	0.005	--	--	--	--	--
Segment 2 (Undivided)	0.000	0.000	0.000	--	18.731	0.000	0.004	--	--	--	--	--
Segment 3				--				--	--	--	--	--
Segment 4				--				--	--	--	--	--
Segment 5				--				--	--	--	--	--
Segment 6				--				--	--	--	--	--
Segment 7				--				--	--	--	--	--
Segment 8				--				--	--	--	--	--
INTERSECTIONS												
Intersection 1	5.778	3.000	2.778	--	0.494	16.492	1.689	--	--	--	--	--
Intersection 2	11.799	5.031	6.768	--	0.277	38.563	1.808	--	--	--	--	--
Intersection 3	21.835	8.091	13.744	--	0.277	132.059	2.459	--	--	--	--	--
Intersection 4				--				--	--	--	--	--
Intersection 5				--				--	--	--	--	--
Intersection 6				--				--	--	--	--	--
Intersection 7				--				--	--	--	--	--
Intersection 8				--				--	--	--	--	--
COMBINED (sum of column)	39.411	16.122	23.290		--	187.114	5.966	0.174	6.857	0.869	34.230	20.544

Worksheet 4B -- Project-Level EB Method Summary Results

(1)	(2)	(3)
Crash severity level	$N_{predicted}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 4A	$(13)_{COMB}$ from Worksheet 4A
	39.4	20.5
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$
	16.1	8.4
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$
	23.3	12.1

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Moon Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 750 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	3.1
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	18,500
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	2
Minor commercial driveways (number)		--	9
Major industrial / institutional driveways (number)		--	2
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	5
Minor residential driveways (number)		--	36
Other driveways (number)		--	2
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	15
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	3.20

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.06	1.00	0.91	1.00	0.97

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	1.36	1.32	8.620	1.000	8.620	0.97	3.20	26.775
Fatal and Injury (FI)	-12.76	1.28	1.31	2.581	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.282	2.434	0.97	3.20	7.561
Property Damage Only (PDO)	-12.81	1.38	1.34	6.558	$(5)_{TOTAL}-(5)_{FI}$ = 0.718	6.186	0.97	3.20	19.213

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	7.561	1.000	19.213	26.775
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.832	6.291	0.662	12.719	19.010
Head-on collision	0.020	0.151	0.007	0.134	0.286
Angle collision	0.040	0.302	0.036	0.692	0.994
Sideswipe, same direction	0.050	0.378	0.223	4.285	4.663
Sideswipe, opposite direction	0.010	0.076	0.001	0.019	0.095
Other multiple-vehicle collision	0.048	0.363	0.071	1.364	1.727

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	2.013	1.000	2.013	0.97	3.20	6.251
Fatal and Injury (FI)	-8.71	0.66	0.28	0.335	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.167	0.336	0.97	3.20	1.044
Property Damage Only (PDO)	-5.04	0.45	1.06	1.670	$(5)_{TOTAL}-(5)_{FI}$ = 0.833	1.676	0.97	3.20	5.207

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	1.044	1.000	5.207	6.251
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.001	0.001	0.063	0.328	0.329
Collision with fixed object	0.500	0.522	0.813	4.233	4.755
Collision with other object	0.028	0.029	0.016	0.083	0.113
Other single-vehicle collision	0.471	0.492	0.108	0.562	1.054

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	2	0.033	1.106	0.083	
Minor commercial	9	0.011	1.106	0.125	
Major industrial/institutional	2	0.036	1.106	0.091	
Minor industrial/institutional	0	0.005	1.106	0.000	--
Major residential	5	0.018	1.106	0.113	
Minor residential	36	0.003	1.106	0.136	
Other	2	0.005	1.106	0.013	
Total	--	--	--	0.561	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.561	1.000	0.561	0.97	3.20	1.743
Fatal and injury (FI)	--	0.284	0.159	0.97	3.20	0.495
Property damage only (PDO)	--	0.716	0.402	0.97	3.20	1.248

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	26.775	6.251	1.743	34.769	0.019	3.20	2.114
Fatal and injury (FI)	--	--	--	--	--	3.20	2.114

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	26.775	6.251	1.743	34.769	0.005	3.20	0.556
Fatal and injury (FI)	--	--	--	--	--	3.20	0.556

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	6.291	12.719	19.010
Head-on collisions (from Worksheet 1D)	0.151	0.134	0.286
Angle collisions (from Worksheet 1D)	0.302	0.692	0.994
Sideswipe, same direction (from Worksheet 1D)	0.378	4.285	4.663
Sideswipe, opposite direction (from Worksheet 1D)	0.076	0.019	0.095
Driveway-related collisions (from Worksheet 1H)	0.495	1.248	1.743
Other multiple-vehicle collision (from Worksheet 1D)	0.363	1.364	1.727
Subtotal	8.056	20.461	28.518
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.001	0.328	0.329
Collision with fixed object (from Worksheet 1F)	0.522	4.233	4.755
Collision with other object (from Worksheet 1F)	0.029	0.083	0.113
Other single-vehicle collision (from Worksheet 1F)	0.492	0.562	1.054
Collision with pedestrian (from Worksheet 1I)	2.114	0.000	2.114
Collision with bicycle (from Worksheet 1J)	0.556	0.000	0.556
Subtotal	3.714	5.207	8.921
Total	11.771	25.668	37.439

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	37.4	3.10	12.1
Fatal and injury (FI)	11.8	3.10	3.8
Property damage only (PDO)	25.7	3.10	8.3

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Miles Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 600 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	0.01
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	1
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	4
Other driveways (number)		--	1
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	1.68	0.84	0.000	1.000	0.000	1.00	1.00	0.000
Fatal and Injury (FI)	-16.22	1.66	0.65	0.000	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.354	0.000	1.00	1.00	0.000
Property Damage Only (PDO)	-15.62	1.69	0.87	0.000	$(5)_{TOTAL}-(5)_{FI}$ = 0.646	0.000	1.00	1.00	0.000

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.000	1.000	0.000	0.000
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.000	0.778	0.000	0.000
Head-on collision	0.068	0.000	0.004	0.000	0.000
Angle collision	0.085	0.000	0.079	0.000	0.000
Sideswipe, same direction	0.015	0.000	0.031	0.000	0.000
Sideswipe, opposite direction	0.073	0.000	0.055	0.000	0.000
Other multiple-vehicle collision	0.029	0.000	0.053	0.000	0.000

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	0.000	1.000	0.000	1.00	1.00	0.000
Fatal and Injury (FI)	-3.96	0.23	0.50	0.000	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.928	0.000	1.00	1.00	0.000
Property Damage Only (PDO)	-6.51	0.64	0.87	0.000	$(5)_{TOTAL}-(5)_{FI}$ = 0.072	0.000	1.00	1.00	0.000

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.000	1.000	0.000	0.000
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.000	0.066	0.000	0.000
Collision with fixed object	0.723	0.000	0.759	0.000	0.000
Collision with other object	0.010	0.000	0.013	0.000	0.000
Other single-vehicle collision	0.241	0.000	0.162	0.000	0.000

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	4	0.016	1.000	0.000	
Other	1	0.025	1.000	0.000	
Total	--	--	--	0.000	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.000	1.000	0.000	1.00	1.00	0.000
Fatal and injury (FI)	--	0.323	0.000	1.00	1.00	0.000
Property damage only (PDO)	--	0.677	0.000	1.00	1.00	0.000

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.000	0.000	0.000	0.000	0.005	1.00	0.000
Fatal and injury (FI)	--	--	--	--	--	1.00	0.000

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.000	0.000	0.000	0.000	0.004	1.00	0.000
Fatal and injury (FI)	--	--	--	--	--	1.00	0.000

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.000	0.000	0.000
Head-on collisions (from Worksheet 1D)	0.000	0.000	0.000
Angle collisions (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, same direction (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, opposite direction (from Worksheet 1D)	0.000	0.000	0.000
Driveway-related collisions (from Worksheet 1H)	0.000	0.000	0.000
Other multiple-vehicle collision (from Worksheet 1D)	0.000	0.000	0.000
Subtotal	0.000	0.000	0.000
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 1F)	0.000	0.000	0.000
Collision with other object (from Worksheet 1F)	0.000	0.000	0.000
Other single-vehicle collision (from Worksheet 1F)	0.000	0.000	0.000
Collision with pedestrian (from Worksheet 1I)	0.000	0.000	0.000
Collision with bicycle (from Worksheet 1J)	0.000	0.000	0.000
Subtotal	0.000	0.000	0.000
Total	0.000	0.000	0.000

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	0.0	0.01	0.0
Fatal and injury (FI)	0.0	0.01	0.0
Property damage only (PDO)	0.0	0.01	0.0

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	S CR 525 E
Agency or Company	CMT	Roadway Section	E CR 700 S to E CR 875 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	0.01
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	1
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	32
Other driveways (number)		--	2
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	20
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	1.68	0.84	0.000	1.000	0.000	1.00	1.00	0.000
Fatal and Injury (FI)	-16.22	1.66	0.65	0.000	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.354	0.000	1.00	1.00	0.000
Property Damage Only (PDO)	-15.62	1.69	0.87	0.000	$(5)_{TOTAL}-(5)_{FI}$ = 0.646	0.000	1.00	1.00	0.000

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.000	1.000	0.000	0.000
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.000	0.778	0.000	0.000
Head-on collision	0.068	0.000	0.004	0.000	0.000
Angle collision	0.085	0.000	0.079	0.000	0.000
Sideswipe, same direction	0.015	0.000	0.031	0.000	0.000
Sideswipe, opposite direction	0.073	0.000	0.055	0.000	0.000
Other multiple-vehicle collision	0.029	0.000	0.053	0.000	0.000

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	0.000	1.000	0.000	1.00	1.00	0.000
Fatal and Injury (FI)	-3.96	0.23	0.50	0.000	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.928	0.000	1.00	1.00	0.000
Property Damage Only (PDO)	-6.51	0.64	0.87	0.000	$(5)_{TOTAL}-(5)_{FI}$ = 0.072	0.000	1.00	1.00	0.000

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.000	1.000	0.000	0.000
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.000	0.066	0.000	0.000
Collision with fixed object	0.723	0.000	0.759	0.000	0.000
Collision with other object	0.010	0.000	0.013	0.000	0.000
Other single-vehicle collision	0.241	0.000	0.162	0.000	0.000

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	32	0.016	1.000	0.000	
Other	2	0.025	1.000	0.000	
Total	--	--	--	0.000	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.000	1.000	0.000	1.00	1.00	0.000
Fatal and injury (FI)	--	0.323	0.000	1.00	1.00	0.000
Property damage only (PDO)	--	0.677	0.000	1.00	1.00	0.000

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.000	0.000	0.000	0.000	0.005	1.00	0.000
Fatal and injury (FI)	--	--	--	--	--	1.00	0.000

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.000	0.000	0.000	0.000	0.004	1.00	0.000
Fatal and injury (FI)	--	--	--	--	--	1.00	0.000

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)** (3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	**Property damage only (PDO)** (5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	**Total** (6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.000	0.000	0.000
Head-on collisions (from Worksheet 1D)	0.000	0.000	0.000
Angle collisions (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, same direction (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, opposite direction (from Worksheet 1D)	0.000	0.000	0.000
Driveway-related collisions (from Worksheet 1H)	0.000	0.000	0.000
Other multiple-vehicle collision (from Worksheet 1D)	0.000	0.000	0.000
Subtotal	0.000	0.000	0.000
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 1F)	0.000	0.000	0.000
Collision with other object (from Worksheet 1F)	0.000	0.000	0.000
Other single-vehicle collision (from Worksheet 1F)	0.000	0.000	0.000
Collision with pedestrian (from Worksheet 1I)	0.000	0.000	0.000
Collision with bicycle (from Worksheet 1J)	0.000	0.000	0.000
Subtotal	0.000	0.000	0.000
Total	0.000	0.000	0.000

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	0.0	0.01	0.0
Fatal and injury (FI)	0.0	0.01	0.0
Property damage only (PDO)	0.0	0.01	0.0

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	New Connector Corridor
Agency or Company	CMT	Roadway Section	I-70 to CR 600/Hadley Rd
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	2.5
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	32,800
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	20
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	0
Other driveways (number)		--	0
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	2
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	25
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	1.36	1.32	15.147	1.000	15.147	0.99	1.00	14.996
Fatal and Injury (FI)	-12.76	1.28	1.31	4.332	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.271	4.104	0.99	1.00	4.063
Property Damage Only (PDO)	-12.81	1.38	1.34	11.656	$(5)_{TOTAL}-(5)_{FI}$ = 0.729	11.043	0.99	1.00	10.933

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	4.063	1.000	10.933	14.996
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.832	3.380	0.662	7.237	10.618
Head-on collision	0.020	0.081	0.007	0.077	0.158
Angle collision	0.040	0.163	0.036	0.394	0.556
Sideswipe, same direction	0.050	0.203	0.223	2.438	2.641
Sideswipe, opposite direction	0.010	0.041	0.001	0.011	0.052
Other multiple-vehicle collision	0.048	0.195	0.071	0.776	0.971

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	2.124	1.000	2.124	0.99	1.00	2.103
Fatal and Injury (FI)	-8.71	0.66	0.28	0.394	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.184	0.392	0.99	1.00	0.388
Property Damage Only (PDO)	-5.04	0.45	1.06	1.743	$(5)_{TOTAL}-(5)_{FI}$ = 0.816	1.732	0.99	1.00	1.715

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.388	1.000	1.715	2.103
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.001	0.000	0.063	0.108	0.108
Collision with fixed object	0.500	0.194	0.813	1.394	1.588
Collision with other object	0.028	0.011	0.016	0.027	0.038
Other single-vehicle collision	0.471	0.183	0.108	0.185	0.368

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.033	1.106	0.000	
Minor commercial	0	0.011	1.106	0.000	
Major industrial/institutional	0	0.036	1.106	0.000	
Minor industrial/institutional	0	0.005	1.106	0.000	--
Major residential	0	0.018	1.106	0.000	
Minor residential	0	0.003	1.106	0.000	
Other	0	0.005	1.106	0.000	
Total	--	--	--	0.000	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.000	1.000	0.000	0.99	1.00	0.000
Fatal and injury (FI)	--	0.284	0.000	0.99	1.00	0.000
Property damage only (PDO)	--	0.716	0.000	0.99	1.00	0.000

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	14.996	2.103	0.000	17.099	0.019	1.00	0.325
Fatal and injury (FI)	--	--	--	--	--	1.00	0.325

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	14.996	2.103	0.000	17.099	0.005	1.00	0.085
Fatal and injury (FI)	--	--	--	--	--	1.00	0.085

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)** (3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	**Property damage only (PDO)** (5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	**Total** (6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	3.380	7.237	10.618
Head-on collisions (from Worksheet 1D)	0.081	0.077	0.158
Angle collisions (from Worksheet 1D)	0.163	0.394	0.556
Sideswipe, same direction (from Worksheet 1D)	0.203	2.438	2.641
Sideswipe, opposite direction (from Worksheet 1D)	0.041	0.011	0.052
Driveway-related collisions (from Worksheet 1H)	0.000	0.000	0.000
Other multiple-vehicle collision (from Worksheet 1D)	0.195	0.776	0.971
Subtotal	4.063	10.933	14.996
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.000	0.108	0.108
Collision with fixed object (from Worksheet 1F)	0.194	1.394	1.588
Collision with other object (from Worksheet 1F)	0.011	0.027	0.038
Other single-vehicle collision (from Worksheet 1F)	0.183	0.185	0.368
Collision with pedestrian (from Worksheet 1I)	0.325	0.000	0.325
Collision with bicycle (from Worksheet 1J)	0.085	0.000	0.085
Subtotal	0.798	1.715	2.513
Total	4.861	12.648	17.509

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)** (Total) from Worksheet 1K	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)** (2) / (3)
Total	17.5	2.50	7.0
Fatal and injury (FI)	4.9	2.50	1.9
Property damage only (PDO)	12.6	2.50	5.1

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	New Connector Corridor
Agency or Company	CMT	Roadway Section	CR 600/Hadley Rd to US 40
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	1
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	35,820
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	20
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	0
Other driveways (number)		--	0
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	2
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	25
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	1.36	1.32	6.830	1.000	6.830	0.99	1.00	6.762
Fatal and Injury (FI)	-12.76	1.28	1.31	1.939	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.269	1.839	0.99	1.00	1.820
Property Damage Only (PDO)	-12.81	1.38	1.34	5.265	$(5)_{TOTAL}-(5)_{FI}$ = 0.731	4.991	0.99	1.00	4.941

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	1.820	1.000	4.941	6.762
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.832	1.514	0.662	3.271	4.786
Head-on collision	0.020	0.036	0.007	0.035	0.071
Angle collision	0.040	0.073	0.036	0.178	0.251
Sideswipe, same direction	0.050	0.091	0.223	1.102	1.193
Sideswipe, opposite direction	0.010	0.018	0.001	0.005	0.023
Other multiple-vehicle collision	0.048	0.087	0.071	0.351	0.438

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	0.886	1.000	0.886	0.99	1.00	0.877
Fatal and Injury (FI)	-8.71	0.66	0.28	0.167	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.187	0.166	0.99	1.00	0.164
Property Damage Only (PDO)	-5.04	0.45	1.06	0.725	$(5)_{TOTAL}-(5)_{FI}$ = 0.813	0.720	0.99	1.00	0.713

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.164	1.000	0.713	0.877
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.001	0.000	0.063	0.045	0.045
Collision with fixed object	0.500	0.082	0.813	0.579	0.661
Collision with other object	0.028	0.005	0.016	0.011	0.016
Other single-vehicle collision	0.471	0.077	0.108	0.077	0.154

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.033	1.106	0.000	
Minor commercial	0	0.011	1.106	0.000	
Major industrial/institutional	0	0.036	1.106	0.000	
Minor industrial/institutional	0	0.005	1.106	0.000	--
Major residential	0	0.018	1.106	0.000	
Minor residential	0	0.003	1.106	0.000	
Other	0	0.005	1.106	0.000	
Total	--	--	--	0.000	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.000	1.000	0.000	0.99	1.00	0.000
Fatal and injury (FI)	--	0.284	0.000	0.99	1.00	0.000
Property damage only (PDO)	--	0.716	0.000	0.99	1.00	0.000

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	6.762	0.877	0.000	7.638	0.019	1.00	0.145
Fatal and injury (FI)	--	--	--	--	--	1.00	0.145

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	6.762	0.877	0.000	7.638	0.005	1.00	0.038
Fatal and injury (FI)	--	--	--	--	--	1.00	0.038

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	1.514	3.271	4.786
Head-on collisions (from Worksheet 1D)	0.036	0.035	0.071
Angle collisions (from Worksheet 1D)	0.073	0.178	0.251
Sideswipe, same direction (from Worksheet 1D)	0.091	1.102	1.193
Sideswipe, opposite direction (from Worksheet 1D)	0.018	0.005	0.023
Driveway-related collisions (from Worksheet 1H)	0.000	0.000	0.000
Other multiple-vehicle collision (from Worksheet 1D)	0.087	0.351	0.438
Subtotal	1.820	4.941	6.762
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.000	0.045	0.045
Collision with fixed object (from Worksheet 1F)	0.082	0.579	0.661
Collision with other object (from Worksheet 1F)	0.005	0.011	0.016
Other single-vehicle collision (from Worksheet 1F)	0.077	0.077	0.154
Collision with pedestrian (from Worksheet 1I)	0.145	0.000	0.145
Collision with bicycle (from Worksheet 1J)	0.038	0.000	0.038
Subtotal	0.348	0.713	1.060
Total	2.168	5.654	7.822

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	7.8	1.00	7.8
Fatal and injury (FI)	2.2	1.00	2.2
Property damage only (PDO)	5.7	1.00	5.7

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267/ Center Street
Agency or Company	CMT	Roadway Section	Black Rock Rd
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	20,880
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	19,590
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			2
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	1.00	1.00	0.63

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	6.861	1.000	6.861	0.63	3.50	15.224
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	2.162	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.326	2.237	0.63	3.50	4.964
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	4.470	$(5)_{TOTAL}-(5)_{FI}$ = 0.674	4.624	0.63	3.50	10.261

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	4.964	1.000	10.261	15.224
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	2.234	0.483	4.956	7.190
Head-on collision	0.049	0.243	0.030	0.308	0.551
Angle collision	0.347	1.722	0.244	2.504	4.226
Sideswipe	0.099	0.491	0.032	0.328	0.820
Other multiple-vehicle collision	0.055	0.273	0.211	2.165	2.438

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.459	1.000	0.459	0.63	3.50	1.019
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.122	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.270	0.124	0.63	3.50	0.275
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.329	$(5)_{TOTAL}-(5)_{FI}$ = 0.730	0.335	0.63	3.50	0.744

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.275	1.000	0.744	1.019
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.001	0.002	0.001	0.002
Collision with fixed object	0.744	0.205	0.870	0.648	0.852
Collision with other object	0.072	0.020	0.070	0.052	0.072
Other single-vehicle collision	0.040	0.011	0.023	0.017	0.028
Single-vehicle noncollision	0.141	0.039	0.034	0.025	0.064

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.008	1.00	3.50	0.027
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.027

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	15.224	1.019	16.243	0.015	3.50	0.853
Fatal and injury (FI)	--	--	--	--	3.50	0.853

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	2.234	4.956	7.190
Head-on collisions (from Worksheet 2D)	0.243	0.308	0.551
Angle collisions (from Worksheet 2D)	1.722	2.504	4.226
Sideswipe (from Worksheet 2D)	0.491	0.328	0.820
Other multiple-vehicle collision (from Worksheet 2D)	0.273	2.165	2.438
Subtotal	4.964	10.261	15.224
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.001	0.001	0.002
Collision with fixed object (from Worksheet 2F)	0.205	0.648	0.852
Collision with other object (from Worksheet 2F)	0.020	0.052	0.072
Other single-vehicle collision (from Worksheet 2F)	0.011	0.017	0.028
Single-vehicle noncollision (from Worksheet 2F)	0.039	0.025	0.064
Collision with pedestrian (from Worksheet 2G or 2I)	0.027	0.000	0.027
Collision with bicycle (from Worksheet 2J)	0.853	0.000	0.853
Subtotal	1.155	0.744	1.899
Total	6.118	11.005	17.123

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	17.1
Fatal and injury (FI)	6.1
Property damage only (PDO)	11.0

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Miles Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	32,670
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	25,820
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	1
Number of major-road approaches with right-turn lanes (0,1,2)		0	1
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	1

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	0.99	1.00	1.00	1.00	1.00	0.99

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	11.803	1.000	11.803	0.99	1.00	11.685
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	3.897	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.341	4.021	0.99	1.00	3.981
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	7.540	$(5)_{TOTAL}-(5)_{FI}$ = 0.659	7.782	0.99	1.00	7.704

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	3.981	1.000	7.704	11.685
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	1.792	0.483	3.721	5.512
Head-on collision	0.049	0.195	0.030	0.231	0.426
Angle collision	0.347	1.381	0.244	1.880	3.261
Sideswipe	0.099	0.394	0.032	0.247	0.641
Other multiple-vehicle collision	0.055	0.219	0.211	1.625	1.844

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.671	1.000	0.671	0.99	1.00	0.664
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.160	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.242	0.162	0.99	1.00	0.161
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.500	$(5)_{TOTAL}-(5)_{FI}$ = 0.758	0.509	0.99	1.00	0.503

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.161	1.000	0.503	0.664
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.000	0.002	0.001	0.001
Collision with fixed object	0.744	0.120	0.870	0.438	0.558
Collision with other object	0.072	0.012	0.070	0.035	0.047
Other single-vehicle collision	0.040	0.006	0.023	0.012	0.018
Single-vehicle noncollision	0.141	0.023	0.034	0.017	0.040

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	#NUM!	1.12	1.00	#NUM!
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	#NUM!

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	11.685	0.664	12.349	0.015	1.00	0.185
Fatal and injury (FI)	--	--	--	--	1.00	0.185

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.792	3.721	5.512
Head-on collisions (from Worksheet 2D)	0.195	0.231	0.426
Angle collisions (from Worksheet 2D)	1.381	1.880	3.261
Sideswipe (from Worksheet 2D)	0.394	0.247	0.641
Other multiple-vehicle collision (from Worksheet 2D)	0.219	1.625	1.844
Subtotal	3.981	7.704	11.685
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.000	0.001	0.001
Collision with fixed object (from Worksheet 2F)	0.120	0.438	0.558
Collision with other object (from Worksheet 2F)	0.012	0.035	0.047
Other single-vehicle collision (from Worksheet 2F)	0.006	0.012	0.018
Single-vehicle noncollision (from Worksheet 2F)	0.023	0.017	0.040
Collision with pedestrian (from Worksheet 2G or 2I)	#NUM!	0.000	#NUM!
Collision with bicycle (from Worksheet 2J)	0.185	0.000	0.185
Subtotal	#NUM!	0.503	#NUM!
Total	#NUM!	8.207	#NUM!

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	#NUM!
Fatal and injury (FI)	#NUM!
Property damage only (PDO)	8.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Moon Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	56,270
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	18,500
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	4

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	19.559	1.000	19.559	0.44	4.50	38.913
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	6.878	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.362	7.082	0.44	4.50	14.089
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	12.119	$(5)_{TOTAL}-(5)_{FI}$ = 0.638	12.478	0.44	4.50	24.824

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	14.089	1.000	24.824	38.913
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	6.340	0.483	11.990	18.330
Head-on collision	0.049	0.690	0.030	0.745	1.435
Angle collision	0.347	4.889	0.244	6.057	10.946
Sideswipe	0.099	1.395	0.032	0.794	2.189
Other multiple-vehicle collision	0.055	0.775	0.211	5.238	6.013

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.888	1.000	0.888	0.44	4.50	1.766
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.183	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.207	0.183	0.44	4.50	0.365
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.703	$(5)_{TOTAL}-(5)_{FI}$ = 0.793	0.704	0.44	4.50	1.401

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.365	1.000	1.401	1.766
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.004
Collision with fixed object	0.744	0.271	0.870	1.219	1.490
Collision with other object	0.072	0.026	0.070	0.098	0.124
Other single-vehicle collision	0.040	0.015	0.023	0.032	0.047
Single-vehicle noncollision	0.141	0.051	0.034	0.048	0.099

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.006	1.12	4.50	0.031
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.031

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	38.913	1.766	40.678	0.015	4.50	2.746
Fatal and injury (FI)	--	--	--	--	4.50	2.746

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	6.340	11.990	18.330
Head-on collisions (from Worksheet 2D)	0.690	0.745	1.435
Angle collisions (from Worksheet 2D)	4.889	6.057	10.946
Sideswipe (from Worksheet 2D)	1.395	0.794	2.189
Other multiple-vehicle collision (from Worksheet 2D)	0.775	5.238	6.013
Subtotal	14.089	24.824	38.913
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.004
Collision with fixed object (from Worksheet 2F)	0.271	1.219	1.490
Collision with other object (from Worksheet 2F)	0.026	0.098	0.124
Other single-vehicle collision (from Worksheet 2F)	0.015	0.032	0.047
Single-vehicle noncollision (from Worksheet 2F)	0.051	0.048	0.099
Collision with pedestrian (from Worksheet 2G or 2I)	0.031	0.000	0.031
Collision with bicycle (from Worksheet 2J)	2.746	0.000	2.746
Subtotal	3.142	1.401	4.543
Total	17.230	26.225	43.455

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	43.5
Fatal and injury (FI)	17.2
Property damage only (PDO)	26.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	59,040
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	29,280
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			35
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	3

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	0.91	1.00	0.58

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	22.885	1.000	22.885	0.58	4.50	59.459
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	8.053	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.362	8.278	0.58	4.50	21.507
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	14.211	$(5)_{TOTAL}-(5)_{FI}$ = 0.638	14.607	0.58	4.50	37.952

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	21.507	1.000	37.952	59.459
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	9.678	0.483	18.331	28.009
Head-on collision	0.049	1.054	0.030	1.139	2.192
Angle collision	0.347	7.463	0.244	9.260	16.723
Sideswipe	0.099	2.129	0.032	1.214	3.344
Other multiple-vehicle collision	0.055	1.183	0.211	8.008	9.191

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.038	1.000	1.038	0.58	4.50	2.697
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.214	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.207	0.215	0.58	4.50	0.558
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.819	$(5)_{TOTAL}-(5)_{FI}$ = 0.793	0.823	0.58	4.50	2.139

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.558	1.000	2.139	2.697
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.001	0.001	0.002	0.003
Collision with animal	0.002	0.001	0.002	0.004	0.005
Collision with fixed object	0.744	0.415	0.870	1.861	2.276
Collision with other object	0.072	0.040	0.070	0.150	0.190
Other single-vehicle collision	0.040	0.022	0.023	0.049	0.072
Single-vehicle noncollision	0.141	0.079	0.034	0.073	0.151

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.035	1.12	4.50	0.176
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.176

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	59.459	2.697	62.156	0.015	4.50	4.195
Fatal and injury (FI)	--	--	--	--	4.50	4.195

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	9.678	18.331	28.009
Head-on collisions (from Worksheet 2D)	1.054	1.139	2.192
Angle collisions (from Worksheet 2D)	7.463	9.260	16.723
Sideswipe (from Worksheet 2D)	2.129	1.214	3.344
Other multiple-vehicle collision (from Worksheet 2D)	1.183	8.008	9.191
Subtotal	21.507	37.952	59.459
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.001	0.002	0.003
Collision with animal (from Worksheet 2F)	0.001	0.004	0.005
Collision with fixed object (from Worksheet 2F)	0.415	1.861	2.276
Collision with other object (from Worksheet 2F)	0.040	0.150	0.190
Other single-vehicle collision (from Worksheet 2F)	0.022	0.049	0.072
Single-vehicle noncollision (from Worksheet 2F)	0.079	0.073	0.151
Collision with pedestrian (from Worksheet 2G or 2I)	0.176	0.000	0.176
Collision with bicycle (from Worksheet 2J)	4.195	0.000	4.195
Subtotal	4.929	2.139	7.068
Total	26.436	40.091	66.527

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	66.5
Fatal and injury (FI)	26.4
Property damage only (PDO)	40.1

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	SR 267
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	**73,010**
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	**46,620**
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			10
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	4
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	5

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	31.966	1.000	31.966	0.44	4.50	63.597
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	11.462	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.367	11.745	0.44	4.50	23.367
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	19.733	$(5)_{TOTAL}-(5)_{FI}$ = 0.633	20.221	0.44	4.50	40.230

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	23.367	1.000	40.230	63.597
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	10.515	0.483	19.431	29.946
Head-on collision	0.049	1.145	0.030	1.207	2.352
Angle collision	0.347	8.109	0.244	9.816	17.925
Sideswipe	0.099	2.313	0.032	1.287	3.601
Other multiple-vehicle collision	0.055	1.285	0.211	8.488	9.774

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.360	1.000	1.360	0.44	4.50	2.705
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.268	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.198	0.269	0.44	4.50	0.535
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	1.086	$(5)_{TOTAL}-(5)_{FI}$ = 0.802	1.091	0.44	4.50	2.170

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.535	1.000	2.170	2.705
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.001	0.001	0.002	0.003
Collision with animal	0.002	0.001	0.002	0.004	0.005
Collision with fixed object	0.744	0.398	0.870	1.888	2.286
Collision with other object	0.072	0.039	0.070	0.152	0.190
Other single-vehicle collision	0.040	0.021	0.023	0.050	0.071
Single-vehicle noncollision	0.141	0.075	0.034	0.074	0.149

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.023	1.12	4.50	0.116
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.116

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	63.597	2.705	66.302	0.015	4.50	4.475
Fatal and injury (FI)	--	--	--	--	4.50	4.475

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	10.515	19.431	29.946
Head-on collisions (from Worksheet 2D)	1.145	1.207	2.352
Angle collisions (from Worksheet 2D)	8.109	9.816	17.925
Sideswipe (from Worksheet 2D)	2.313	1.287	3.601
Other multiple-vehicle collision (from Worksheet 2D)	1.285	8.488	9.774
Subtotal	23.367	40.230	63.597
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.001	0.002	0.003
Collision with animal (from Worksheet 2F)	0.001	0.004	0.005
Collision with fixed object (from Worksheet 2F)	0.398	1.888	2.286
Collision with other object (from Worksheet 2F)	0.039	0.152	0.190
Other single-vehicle collision (from Worksheet 2F)	0.021	0.050	0.071
Single-vehicle noncollision (from Worksheet 2F)	0.075	0.074	0.149
Collision with pedestrian (from Worksheet 2G or 2I)	0.116	0.000	0.116
Collision with bicycle (from Worksheet 2J)	4.475	0.000	4.475
Subtotal	5.127	2.170	7.296
Total	28.494	42.400	70.894

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	70.9
Fatal and injury (FI)	28.5
Property damage only (PDO)	42.4

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hadley Rd
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	**71,650**
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	24,900
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	2

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.78	0.85	1.00	0.91	1.00	0.40

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	27.121	1.000	27.121	0.40	4.50	48.645
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	9.765	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.370	10.025	0.40	4.50	17.982
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	16.653	$(5)_{TOTAL}-(5)_{FI}$ = 0.630	17.096	0.40	4.50	30.663

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	17.982	1.000	30.663	48.645
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	8.092	0.483	14.810	22.902
Head-on collision	0.049	0.881	0.030	0.920	1.801
Angle collision	0.347	6.240	0.244	7.482	13.722
Sideswipe	0.099	1.780	0.032	0.981	2.761
Other multiple-vehicle collision	0.055	0.989	0.211	6.470	7.459

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.133	1.000	1.133	0.40	4.50	2.033
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.222	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.195	0.221	0.40	4.50	0.396
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.915	$(5)_{TOTAL}-(5)_{FI}$ = 0.805	0.912	0.40	4.50	1.636

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.396	1.000	1.636	2.033
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.002	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.004
Collision with fixed object	0.744	0.295	0.870	1.424	1.719
Collision with other object	0.072	0.029	0.070	0.115	0.143
Other single-vehicle collision	0.040	0.016	0.023	0.038	0.053
Single-vehicle noncollision	0.141	0.056	0.034	0.056	0.112

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.007	1.12	4.50	0.035
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.035

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	48.645	2.033	50.678	0.015	4.50	3.421
Fatal and injury (FI)	--	--	--	--	4.50	3.421

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	8.092	14.810	22.902
Head-on collisions (from Worksheet 2D)	0.881	0.920	1.801
Angle collisions (from Worksheet 2D)	6.240	7.482	13.722
Sideswipe (from Worksheet 2D)	1.780	0.981	2.761
Other multiple-vehicle collision (from Worksheet 2D)	0.989	6.470	7.459
Subtotal	17.982	30.663	48.645
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.002	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.004
Collision with fixed object (from Worksheet 2F)	0.295	1.424	1.719
Collision with other object (from Worksheet 2F)	0.029	0.115	0.143
Other single-vehicle collision (from Worksheet 2F)	0.016	0.038	0.053
Single-vehicle noncollision (from Worksheet 2F)	0.056	0.056	0.112
Collision with pedestrian (from Worksheet 2G or 2I)	0.035	0.000	0.035
Collision with bicycle (from Worksheet 2J)	3.421	0.000	3.421
Subtotal	3.852	1.636	5.488
Total	21.834	32.300	54.134

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	54.1
Fatal and injury (FI)	21.8
Property damage only (PDO)	32.3

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Camby
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	64,320
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	14,020
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	2
Number of major-road approaches with right-turn lanes (0,1,2)		0	1
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	1.00	1.00	1.00	1.00	0.57

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	21.173	1.000	21.173	0.57	3.50	42.357
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	7.577	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.368	7.798	0.57	3.50	15.600
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	12.996	$(5)_{TOTAL}-(5)_{FI}$ = 0.632	13.375	0.57	3.50	26.757

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	15.600	1.000	26.757	42.357
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	7.020	0.483	12.923	19.944
Head-on collision	0.049	0.764	0.030	0.803	1.567
Angle collision	0.347	5.413	0.244	6.529	11.942
Sideswipe	0.099	1.544	0.032	0.856	2.401
Other multiple-vehicle collision	0.055	0.858	0.211	5.646	6.504

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.902	1.000	0.902	0.57	3.50	1.804
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.179	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.197	0.178	0.57	3.50	0.356
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.728	$(5)_{TOTAL}-(5)_{FI}$ = 0.803	0.724	0.57	3.50	1.448

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.356	1.000	1.448	1.804
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.004
Collision with fixed object	0.744	0.265	0.870	1.260	1.525
Collision with other object	0.072	0.026	0.070	0.101	0.127
Other single-vehicle collision	0.040	0.014	0.023	0.033	0.048
Single-vehicle noncollision	0.141	0.050	0.034	0.049	0.099

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.005	1.00	3.50	0.019
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.019

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	42.357	1.804	44.161	0.015	3.50	2.318
Fatal and injury (FI)	--	--	--	--	3.50	2.318

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	7.020	12.923	19.944
Head-on collisions (from Worksheet 2D)	0.764	0.803	1.567
Angle collisions (from Worksheet 2D)	5.413	6.529	11.942
Sideswipe (from Worksheet 2D)	1.544	0.856	2.401
Other multiple-vehicle collision (from Worksheet 2D)	0.858	5.646	6.504
Subtotal	15.600	26.757	42.357
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.004
Collision with fixed object (from Worksheet 2F)	0.265	1.260	1.525
Collision with other object (from Worksheet 2F)	0.026	0.101	0.127
Other single-vehicle collision (from Worksheet 2F)	0.014	0.033	0.048
Single-vehicle noncollision (from Worksheet 2F)	0.050	0.049	0.099
Collision with pedestrian (from Worksheet 2G or 2I)	0.019	0.000	0.019
Collision with bicycle (from Worksheet 2J)	2.318	0.000	2.318
Subtotal	2.693	1.448	4.142
Total	18.294	28.205	46.499

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	46.5
Fatal and injury (FI)	18.3
Property damage only (PDO)	28.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	Hadley Road
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	17,990
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	9,400
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	2
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	2
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			5
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Multi-Lane Rdbt	Combine
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF 7i*	*CMF* $_i$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	CMF 4194	(1)*(2)*(3)*(
0.81	0.87	1.00	1.00	0.91	1.00	0.81	0.5

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	4.941	1.000	4.941	0.52	1.00	2.583
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.543	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.324	1.601	0.52	1.00	0.837
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.219	$(5)_{TOTAL}-(5)_{FI}$ = 0.676	3.340	0.52	1.00	1.746

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.837	1.000	1.746	2.583
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.377	0.483	0.843	1.220
Head-on collision	0.049	0.041	0.030	0.052	0.093
Angle collision	0.347	0.290	0.244	0.426	0.716
Sideswipe	0.099	0.083	0.032	0.056	0.139
Other multiple-vehicle collision	0.055	0.046	0.211	0.368	0.414

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.340	1.000	0.340	0.52	1.00	0.178
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.092	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.274	0.093	0.52	1.00	0.049
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.244	$(5)_{TOTAL}-(5)_{FI}$ = 0.726	0.247	0.52	1.00	0.129

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.049	1.000	0.129	0.178
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.036	0.870	0.112	0.149
Collision with other object	0.072	0.004	0.070	0.009	0.013
Other single-vehicle collision	0.040	0.002	0.023	0.003	0.005
Single-vehicle noncollision	0.141	0.007	0.034	0.004	0.011

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.009	1.00	1.00	0.009
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.009

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	2.583	0.178	2.760	0.015	1.00	0.041
Fatal and injury (FI)	--	--	--	--	1.00	0.041

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.377	0.843	1.220
Head-on collisions (from Worksheet 2D)	0.041	0.052	0.093
Angle collisions (from Worksheet 2D)	0.290	0.426	0.716
Sideswipe (from Worksheet 2D)	0.083	0.056	0.139
Other multiple-vehicle collision (from Worksheet 2D)	0.046	0.368	0.414
Subtotal	0.837	1.746	2.583
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.036	0.112	0.149
Collision with other object (from Worksheet 2F)	0.004	0.009	0.013
Other single-vehicle collision (from Worksheet 2F)	0.002	0.003	0.005
Single-vehicle noncollision (from Worksheet 2F)	0.007	0.004	0.011
Collision with pedestrian (from Worksheet 2G or 2I)	0.009	0.000	0.009
Collision with bicycle (from Worksheet 2J)	0.041	0.000	0.041
Subtotal	0.099	0.129	0.228
Total	0.935	1.875	2.810

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	2.8
Fatal and injury (FI)	0.9
Property damage only (PDO)	1.9

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hendricks County Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	17,050
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	9,490
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	1.00	1.00	0.63

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	4.675	1.000	4.675	0.63	3.50	10.375
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.451	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.322	1.506	0.63	3.50	3.342
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.055	$(5)_{TOTAL}-(5)_{FI}$ = 0.678	3.169	0.63	3.50	7.033

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	3.342	1.000	7.033	10.375
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	1.504	0.483	3.397	4.901
Head-on collision	0.049	0.164	0.030	0.211	0.375
Angle collision	0.347	1.160	0.244	1.716	2.876
Sideswipe	0.099	0.331	0.032	0.225	0.556
Other multiple-vehicle collision	0.055	0.184	0.211	1.484	1.668

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.329	1.000	0.329	0.63	3.50	0.730
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.090	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.278	0.092	0.63	3.50	0.203
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.235	$(5)_{TOTAL}-(5)_{FI}$ = 0.722	0.238	0.63	3.50	0.527

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.203	1.000	0.527	0.730
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.000	0.002	0.001	0.001
Collision with fixed object	0.744	0.151	0.870	0.459	0.610
Collision with other object	0.072	0.015	0.070	0.037	0.052
Other single-vehicle collision	0.040	0.008	0.023	0.012	0.020
Single-vehicle noncollision	0.141	0.029	0.034	0.018	0.047

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.004	1.00	3.50	0.014
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.014

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	10.375	0.730	11.105	0.015	3.50	0.583
Fatal and injury (FI)	--	--	--	--	3.50	0.583

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.504	3.397	4.901
Head-on collisions (from Worksheet 2D)	0.164	0.211	0.375
Angle collisions (from Worksheet 2D)	1.160	1.716	2.876
Sideswipe (from Worksheet 2D)	0.331	0.225	0.556
Other multiple-vehicle collision (from Worksheet 2D)	0.184	1.484	1.668
Subtotal	3.342	7.033	10.375
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.000	0.001	0.001
Collision with fixed object (from Worksheet 2F)	0.151	0.459	0.610
Collision with other object (from Worksheet 2F)	0.015	0.037	0.052
Other single-vehicle collision (from Worksheet 2F)	0.008	0.012	0.020
Single-vehicle noncollision (from Worksheet 2F)	0.029	0.018	0.047
Collision with pedestrian (from Worksheet 2G or 2I)	0.014	0.000	0.014
Collision with bicycle (from Worksheet 2J)	0.583	0.000	0.583
Subtotal	0.801	0.527	1.328
Total	4.142	7.560	11.702

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	11.7
Fatal and injury (FI)	4.1
Property damage only (PDO)	7.6

Worksheet 3A -- Predicted Crashes by Severity and Site Type and Observed Crashes Using the Site-Specific EB Method for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Collision type / Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes, $N_{observed}$ (crashes/year)**	**Overdispersion Parameter, k**	**Weighted adjustment, w**	**Expected average crash frequency,**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)			Equation A-5 from Part C Appendix	Equation A-4 from Part C Appendix
ROADWAY SEGMENTS							
Multiple-vehicle nondriveway							
Segment 1	26.775	7.561	19.213		1.320	0.028	0.737
Segment 2	0.000	0.000	0.000		0.840	1.000	0.000
Segment 3	0.000	0.000	0.000		0.840	1.000	0.000
Segment 4	14.996	4.063	10.933		1.320	0.048	0.721
Segment 5	14.996	4.063	10.933		1.320	0.048	0.721
Single-vehicle							
Segment 1	6.251	1.044	5.207		0.860	0.157	0.980
Segment 2	0.000	0.000	0.000		0.810	1.000	0.000
Segment 3	0.000	0.000	0.000		0.810	1.000	0.000
Segment 4	2.103	0.388	1.715		0.860	0.356	0.749
Segment 5	2.103	0.388	1.715		0.860	0.356	0.749
Multiple-vehicle driveway-related							
Segment 1	1.743	0.495	1.248		1.390	0.292	0.509
Segment 2	0.000	0.000	0.000		0.810	1.000	0.000
Segment 3	0.000	0.000	0.000		0.810	1.000	0.000
Segment 4	0.000	0.000	0.000		1.390	1.000	0.000
Segment 5	0.000	0.000	0.000		1.390	1.000	0.000
INTERSECTIONS							
Multiple-vehicle							
Intersection 1	15.224	4.964	10.261		0.390	0.144	2.194
Intersection 2	11.685	3.981	7.704		0.390	0.180	2.103
Intersection 3	38.913	14.089	24.824		0.390	0.062	2.406
Intersection 4	59.459	21.507	37.952		0.390	0.041	2.458
Intersection 5	63.597	23.367	40.230		0.390	0.039	2.465
Intersection 6	48.645	17.982	30.663		0.390	0.050	2.436
Intersection 7	42.357	15.600	26.757		0.390	0.057	2.418
Intersection 8	2.583	0.837	1.746		0.390	0.498	1.287
Intersection 9	10.375	3.342	7.033		0.390	0.198	2.056
Single-vehicle							
Intersection 1	1.019	0.275	0.744		0.360	0.732	0.746
Intersection 2	0.664	0.161	0.503		0.360	0.807	0.536
Intersection 3	1.766	0.365	1.401		0.360	0.611	1.080
Intersection 4	2.697	0.558	2.139		0.360	0.507	1.368
Intersection 5	2.705	0.535	2.170		0.360	0.507	1.371
Intersection 6	2.033	0.396	1.636		0.360	0.577	1.174
Intersection 7	1.804	0.356	1.448		0.360	0.606	1.094
Intersection 8	0.178	0.049	0.129		0.360	0.940	0.167
Intersection 9	0.730	0.203	0.527		0.360	0.792	0.578

COMBINED (sum of column)	375.400	126.569	248.831	0	--	--	32.523

Worksheet 3B -- Predicted Pedestrian and Bicycle Crashes for

Urban and Suburban Arterials

(1)	(2)	(3)
Site Type	**N_{ped}**	**N_{bike}**
ROADWAY SEGMENTS		
Segment 1	2.114	0.556
Segment 2	0.000	0.000
Segment 3	0.000	0.000
INTERSECTIONS		
Intersection 1	0.027	0.853
Intersection 2	#NUM!	0.185
Intersection 3	0.031	2.746
Intersection 4	0.176	4.195
Intersection 5	0.116	4.475
Intersection 6	0.035	3.421
Intersection 7	0.019	2.318
Intersection 8	0.009	0.041
Intersection 9	0.014	0.583
COMBINED (sum of column)	#NUM!	19.375

Worksheet 3C -- Site-Specific EB Method Summary Results for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)
Crash severity level	**$N_{predicted}$**	**N_{ped}**	**N_{bike}**	$N_{expected\ (VEHICLE)}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(8)_{COMB}$ Worksheet 3A	(3)+(4)+(5)
	375.40	#NUM!	19.4	32.5	#NUM!
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(5)_{TOTAL}$ * $(2)_{FI}$ / $(2)_{TOTAL}$	(3)+(4)+(5)
	126.57	#NUM!	19.4	11.0	#NUM!
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 3A	--	--	$(5)_{TOTAL}$ * $(2)_{PDO}$ / $(2)_{TOTAL}$	(3)+(4)+(5)
	248.8	0.0	0.0	21.6	21.6

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	CR 1000 S
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4ST
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 78,300 (veh/day)	--	18,275
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 7,400 (veh/day)	--	3,940
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	0
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	1
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	1.00	1.00	0.86	0.90	0.77
Fatal and Injury (FI)	1.00	1.00	0.77	0.90	0.69

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$**	**Overdispersion Parameter, k**	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$**
	a	b	c or d (4SG)	from Equation 11-11 or 11-12	from Table 11-7 or 11-8			(3)*(5)*(6)
Total	-10.008	0.848	0.448	7.558	0.494	0.77	1.00	5.826
Fatal and Injury (FI)	-11.554	0.888	0.525	4.512	0.742	0.69	1.00	3.114
Fatal and Injury[a] (FI[a])	-10.734	0.828	0.412	2.231	0.655	0.69	1.00	1.539
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 2.712

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$**	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)**	**Proportion of Collision Type$_{(FI)}$**	**$N_{predicted\ int\ (FI)}$ (crashes/year)**	**Proportion of Collision Type (FI[a])**	**$N_{predicted\ int}$ (FI[a]) (crashes/year)**	**Proportion of Collision Type (PDO)**	**$N_{predicted\ int\ (PDO)}$ (crashes/year)**
	from Table 11-9	$(7)_{TOTAL}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$[a] from Worksheet 2C	from Table 11-9	$(7)_{PDO}$ from Worksheet 2C
Total	1.000	5.826	1.000	3.114	1.000	1.539	1.000	2.712
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}$[a]		(8)*$(9)_{PDO}$
Head-on collision	0.016	0.093	0.018	0.056	0.023	0.035	0.015	0.041
Sideswipe collision	0.107	0.623	0.042	0.131	0.040	0.062	0.156	0.423
Rear-end collision	0.228	1.328	0.213	0.663	0.108	0.166	0.240	0.651
Angle collision	0.395	2.301	0.534	1.663	0.571	0.879	0.292	0.792
Single-vehicle collision	0.202	1.177	0.148	0.461	0.199	0.306	0.243	0.659
Other collision	0.052	0.303	0.045	0.140	0.059	0.091	0.054	0.146

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	5.8
Fatal and Injury (FI)	3.1
Fatal and Injury[a] (FI[a])	1.5
Property Damage Only (PDO)	2.7

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	Koger Street
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	15,730
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	2,560
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$**	**Overdispersion Parameter, k**	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$**
	a	b	c or d (4SG)	from Equation 11-11 or 11-12	from Table 11-7 or 11-8			(3)*(5)*(6)
Total	-7.182	0.722	0.337	11.469	0.277	1.00	1.00	11.469
Fatal and Injury (FI)	-6.393	0.638	0.232	4.918	0.218	1.00	1.00	4.918
Fatal and Injury[a] (FI[a])	-12.011	--	1.279	1.718	0.566	1.00	1.00	1.718
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 6.551

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$**	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)**	**Proportion of Collision Type$_{(FI)}$**	**$N_{predicted\ int\ (FI)}$ (crashes/year)**	**Proportion of Collision Type (FI[a])**	**$N_{predicted\ int}$ (FI[a]) (crashes/year)**	**Proportion of Collision Type (PDO)**	**$N_{predicted\ int\ (PDO)}$ (crashes/year)**
	from Table 11-9	$(7)_{TOTAL}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$[a] from Worksheet 2C	from Table 11-9	$(7)_{PDO}$ from Worksheet 2C
Total	1.000	11.469	1.000	4.918	1.000	1.718	1.000	6.551
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}$[a]		(8)*$(9)_{PDO}$
Head-on collision	0.054	0.619	0.083	0.408	0.093	0.160	0.034	0.223
Sideswipe collision	0.106	1.216	0.047	0.231	0.039	0.067	0.147	0.963
Rear-end collision	0.492	5.643	0.472	2.321	0.314	0.539	0.505	3.308
Angle collision	0.256	2.936	0.315	1.549	0.407	0.699	0.215	1.408
Single-vehicle collision	0.062	0.711	0.041	0.202	0.078	0.134	0.077	0.504
Other collision	0.030	0.344	0.042	0.207	0.069	0.119	0.022	0.144

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	11.5
Fatal and Injury (FI)	4.9
Fatal and Injury[a] (FI[a])	1.7
Property Damage Only (PDO)	6.6

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Intersection	SR 39
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	23,950
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	7,820
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Not Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	22.634	0.277	1.00	1.00	22.634
Fatal and Injury (FI)	-6.393	0.638	0.232	8.333	0.218	1.00	1.00	8.333
Fatal and Injury[a] (FI[a])	-12.011	--	1.279	3.482	0.566	1.00	1.00	3.482
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 14.302

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$** from Table 11-9	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)** $(7)_{TOTAL}$ from Worksheet 2C	**Proportion of Collision Type$_{(FI)}$** from Table 11-9	**$N_{predicted\ int\ (FI)}$ (crashes/year)** $(7)_{FI}$ from Worksheet 2C	**Proportion of Collision Type (FI[a])** from Table 11-9	**N *predicted int* (FI[a]) (crashes/year)** $(7)_{FI}{}^{a}$ from Worksheet 2C	**Proportion of Collision Type (PDO)** from Table 11-9	**$N_{predicted\ int\ (PDO)}$ (crashes/year)** $(7)_{PDO}$ from Worksheet 2C
Total	1.000	22.634	1.000	8.333	1.000	3.482	1.000	14.302
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}{}^{a}$		(8)*$(9)_{PDO}$
Head-on collision	0.054	1.222	0.083	0.692	0.093	0.324	0.034	0.486
Sideswipe collision	0.106	2.399	0.047	0.392	0.039	0.136	0.147	2.102
Rear-end collision	0.492	11.136	0.472	3.933	0.314	1.093	0.505	7.222
Angle collision	0.256	5.794	0.315	2.625	0.407	1.417	0.215	3.075
Single-vehicle collision	0.062	1.403	0.041	0.342	0.078	0.272	0.077	1.101
Other collision	0.030	0.679	0.042	0.350	0.069	0.240	0.022	0.315

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	22.6
Fatal and Injury (FI)	8.3
Fatal and Injury[a] (FI[a])	3.5
Property Damage Only (PDO)	14.3

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 4A -- Predicted and Observed Crashes by Severity and Site Type Using the Project-Level EB Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,**	**Overdispersion Parameter, k**	**N_{w0}**	**N_{w1}**	**W_0**	**N_0**	**w_1**	**N_1**	**$N_{p/comb}$**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)	$N_{observed}$ (crashes/year)		Equation A-8 $(6)*(2)^2$	Equation A-9 sqrt((6)*(2))	Equation A-10	Equation A-11	Equation A-12	Equation A-13	Equation A-14
ROADWAY SEGMENTS												
Segment 1 (Divided)	0.000	0.000	0.000	--	21.246	0.000	0.005	--	--	--	--	--
Segment 2 (Undivided)	0.000	0.000	0.000	--	18.731	0.000	0.004	--	--	--	--	--
Segment 3				--				--	--	--	--	--
Segment 4				--				--	--	--	--	--
Segment 5				--				--	--	--	--	--
Segment 6				--				--	--	--	--	--
Segment 7				--				--	--	--	--	--
Segment 8				--				--	--	--	--	--
INTERSECTIONS												
Intersection 1	5.826	3.114	2.712	--	0.494	16.766	1.696	--	--	--	--	--
Intersection 2	11.469	4.918	6.551	--	0.277	36.434	1.782	--	--	--	--	--
Intersection 3	22.634	8.333	14.302	--	0.277	141.910	2.504	--	--	--	--	--
Intersection 4				--				--	--	--	--	--
Intersection 5				--				--	--	--	--	--
Intersection 6				--				--	--	--	--	--
Intersection 7				--				--	--	--	--	--
Intersection 8				--				--	--	--	--	--
COMBINED (sum of column)	39.929	16.364	23.565		--	195.109	5.992	0.170	6.783	0.870	34.719	20.751

Worksheet 4B -- Project-Level EB Method Summary Results

(1)	(2)	(3)
Crash severity level	**$N_{predicted}$**	**$N_{expected}$**
Total	$(2)_{COMB}$ from Worksheet 4A	$(13)_{COMB}$ from Worksheet 4A
	39.9	20.8
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$
	16.4	8.5
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$
	23.6	12.2

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Moon Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 750 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	3.1
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	21,150
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	2
Minor commercial driveways (number)		--	9
Major industrial / institutional driveways (number)		--	2
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	5
Minor residential driveways (number)		--	36
Other driveways (number)		--	2
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	15
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	3.20

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.06	1.00	0.91	1.00	0.97

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	1.36	1.32	10.342	1.000	10.342	0.97	3.20	32.121
Fatal and Injury (FI)	-12.76	1.28	1.31	3.063	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.280	2.893	0.97	3.20	8.984
Property Damage Only (PDO)	-12.81	1.38	1.34	7.888	$(5)_{TOTAL}-(5)_{FI}$ = 0.720	7.449	0.97	3.20	23.137

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	8.984	1.000	23.137	32.121
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.832	7.475	0.662	15.317	22.792
Head-on collision	0.020	0.180	0.007	0.162	0.342
Angle collision	0.040	0.359	0.036	0.833	1.192
Sideswipe, same direction	0.050	0.449	0.223	5.160	5.609
Sideswipe, opposite direction	0.010	0.090	0.001	0.023	0.113
Other multiple-vehicle collision	0.048	0.431	0.071	1.643	2.074

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	2.143	1.000	2.143	0.97	3.20	6.657
Fatal and Injury (FI)	-8.71	0.66	0.28	0.366	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.171	0.367	0.97	3.20	1.138
Property Damage Only (PDO)	-5.04	0.45	1.06	1.774	$(5)_{TOTAL}-(5)_{FI}$ = 0.829	1.777	0.97	3.20	5.519

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	1.138	1.000	5.519	6.657
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.001	0.001	0.063	0.348	0.349
Collision with fixed object	0.500	0.569	0.813	4.487	5.056
Collision with other object	0.028	0.032	0.016	0.088	0.120
Other single-vehicle collision	0.471	0.536	0.108	0.596	1.132

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	2	0.033	1.106	0.097	
Minor commercial	9	0.011	1.106	0.145	
Major industrial/institutional	2	0.036	1.106	0.105	
Minor industrial/institutional	0	0.005	1.106	0.000	--
Major residential	5	0.018	1.106	0.132	
Minor residential	36	0.003	1.106	0.158	
Other	2	0.005	1.106	0.015	
Total	--	--	--	0.651	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.651	1.000	0.651	0.97	3.20	2.021
Fatal and injury (FI)	--	0.284	0.185	0.97	3.20	0.574
Property damage only (PDO)	--	0.716	0.466	0.97	3.20	1.447

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	32.121	6.657	2.021	40.799	0.019	3.20	2.481
Fatal and injury (FI)	--	--	--	--	--	3.20	2.481

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	32.121	6.657	2.021	40.799	0.005	3.20	0.653
Fatal and injury (FI)	--	--	--	--	--	3.20	0.653

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)** (3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	**Property damage only (PDO)** (5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	**Total** (6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	7.475	15.317	22.792
Head-on collisions (from Worksheet 1D)	0.180	0.162	0.342
Angle collisions (from Worksheet 1D)	0.359	0.833	1.192
Sideswipe, same direction (from Worksheet 1D)	0.449	5.160	5.609
Sideswipe, opposite direction (from Worksheet 1D)	0.090	0.023	0.113
Driveway-related collisions (from Worksheet 1H)	0.574	1.447	2.021
Other multiple-vehicle collision (from Worksheet 1D)	0.431	1.643	2.074
Subtotal	9.558	24.584	34.142
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.001	0.348	0.349
Collision with fixed object (from Worksheet 1F)	0.569	4.487	5.056
Collision with other object (from Worksheet 1F)	0.032	0.088	0.120
Other single-vehicle collision (from Worksheet 1F)	0.536	0.596	1.132
Collision with pedestrian (from Worksheet 1I)	2.481	0.000	2.481
Collision with bicycle (from Worksheet 1J)	0.653	0.000	0.653
Subtotal	4.272	5.519	9.790
Total	13.830	30.103	43.933

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	43.9	3.10	14.2
Fatal and injury (FI)	13.8	3.10	4.5
Property damage only (PDO)	30.1	3.10	9.7

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Miles Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 600 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	1.1
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	3,400
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	4
Other driveways (number)		--	1
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	1.68	0.84	0.231	1.000	0.231	1.00	1.00	0.231
Fatal and Injury (FI)	-16.22	1.66	0.65	0.072	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.301	0.070	1.00	1.00	0.070
Property Damage Only (PDO)	-15.62	1.69	0.87	0.168	$(5)_{TOTAL}-(5)_{FI}$ = 0.699	0.162	1.00	1.00	0.162

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.070	1.000	0.162	0.231
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.051	0.778	0.126	0.177
Head-on collision	0.068	0.005	0.004	0.001	0.005
Angle collision	0.085	0.006	0.079	0.013	0.019
Sideswipe, same direction	0.015	0.001	0.031	0.005	0.006
Sideswipe, opposite direction	0.073	0.005	0.055	0.009	0.014
Other multiple-vehicle collision	0.029	0.002	0.053	0.009	0.011

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	0.440	1.000	0.440	1.00	1.00	0.440
Fatal and Injury (FI)	-3.96	0.23	0.50	0.136	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.313	0.138	1.00	1.00	0.138
Property Damage Only (PDO)	-6.51	0.64	0.87	0.298	$(5)_{TOTAL}-(5)_{FI}$ = 0.687	0.302	1.00	1.00	0.302

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.138	1.000	0.302	0.440
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.004	0.066	0.020	0.024
Collision with fixed object	0.723	0.100	0.759	0.229	0.329
Collision with other object	0.010	0.001	0.013	0.004	0.005
Other single-vehicle collision	0.241	0.033	0.162	0.049	0.082

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	4	0.016	1.000	0.015	
Other	1	0.025	1.000	0.006	
Total	--	--	--	0.020	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.020	1.000	0.020	1.00	1.00	0.020
Fatal and injury (FI)	--	0.323	0.007	1.00	1.00	0.007
Property damage only (PDO)	--	0.677	0.014	1.00	1.00	0.014

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.231	0.440	0.020	0.692	0.005	1.00	0.003
Fatal and injury (FI)	--	--	--	--	--	1.00	0.003

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.231	0.440	0.020	0.692	0.004	1.00	0.003
Fatal and injury (FI)	--	--	--	--	--	1.00	0.003

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.051	0.126	0.177
Head-on collisions (from Worksheet 1D)	0.005	0.001	0.005
Angle collisions (from Worksheet 1D)	0.006	0.013	0.019
Sideswipe, same direction (from Worksheet 1D)	0.001	0.005	0.006
Sideswipe, opposite direction (from Worksheet 1D)	0.005	0.009	0.014
Driveway-related collisions (from Worksheet 1H)	0.007	0.014	0.020
Other multiple-vehicle collision (from Worksheet 1D)	0.002	0.009	0.011
Subtotal	0.076	0.175	0.252
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.004	0.020	0.024
Collision with fixed object (from Worksheet 1F)	0.100	0.229	0.329
Collision with other object (from Worksheet 1F)	0.001	0.004	0.005
Other single-vehicle collision (from Worksheet 1F)	0.033	0.049	0.082
Collision with pedestrian (from Worksheet 1I)	0.003	0.000	0.003
Collision with bicycle (from Worksheet 1J)	0.003	0.000	0.003
Subtotal	0.144	0.302	0.446
Total	0.220	0.478	0.698

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	0.7	1.10	0.6
Fatal and injury (FI)	0.2	1.10	0.2
Property damage only (PDO)	0.5	1.10	0.4

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	S CR 525 E
Agency or Company	CMT	Roadway Section	E CR 700 S to E CR 875 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	2
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	10,300
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	32
Other driveways (number)		--	2
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	20
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	1.68	0.84	2.708	1.000	2.708	1.00	1.00	2.708
Fatal and Injury (FI)	-16.22	1.66	0.65	0.828	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.294	0.795	1.00	1.00	0.795
Property Damage Only (PDO)	-15.62	1.69	0.87	1.991	$(5)_{TOTAL}-(5)_{FI}$ = 0.706	1.912	1.00	1.00	1.912

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.795	1.000	1.912	2.708
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.581	0.778	1.488	2.069
Head-on collision	0.068	0.054	0.004	0.008	0.062
Angle collision	0.085	0.068	0.079	0.151	0.219
Sideswipe, same direction	0.015	0.012	0.031	0.059	0.071
Sideswipe, opposite direction	0.073	0.058	0.055	0.105	0.163
Other multiple-vehicle collision	0.029	0.023	0.053	0.101	0.124

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	1.488	1.000	1.488	1.00	1.00	1.488
Fatal and Injury (FI)	-3.96	0.23	0.50	0.319	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.225	0.334	1.00	1.00	0.334
Property Damage Only (PDO)	-6.51	0.64	0.87	1.102	$(5)_{TOTAL}-(5)_{FI}$ = 0.775	1.154	1.00	1.00	1.154

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.334	1.000	1.154	1.488
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.009	0.066	0.076	0.085
Collision with fixed object	0.723	0.242	0.759	0.876	1.117
Collision with other object	0.010	0.003	0.013	0.015	0.018
Other single-vehicle collision	0.241	0.081	0.162	0.187	0.267

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	32	0.016	1.000	0.352	
Other	2	0.025	1.000	0.034	
Total	--	--	--	0.386	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.386	1.000	0.386	1.00	1.00	0.386
Fatal and injury (FI)	--	0.323	0.125	1.00	1.00	0.125
Property damage only (PDO)	--	0.677	0.261	1.00	1.00	0.261

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	2.708	1.488	0.386	4.582	0.005	1.00	0.023
Fatal and injury (FI)	--	--	--	--	--	1.00	0.023

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	2.708	1.488	0.386	4.582	0.004	1.00	0.018
Fatal and injury (FI)	--	--	--	--	--	1.00	0.018

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)** (3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	**Property damage only (PDO)** (5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	**Total** (6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.581	1.488	2.069
Head-on collisions (from Worksheet 1D)	0.054	0.008	0.062
Angle collisions (from Worksheet 1D)	0.068	0.151	0.219
Sideswipe, same direction (from Worksheet 1D)	0.012	0.059	0.071
Sideswipe, opposite direction (from Worksheet 1D)	0.058	0.105	0.163
Driveway-related collisions (from Worksheet 1H)	0.125	0.261	0.386
Other multiple-vehicle collision (from Worksheet 1D)	0.023	0.101	0.124
Subtotal	0.920	2.174	3.094
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.009	0.076	0.085
Collision with fixed object (from Worksheet 1F)	0.242	0.876	1.117
Collision with other object (from Worksheet 1F)	0.003	0.015	0.018
Other single-vehicle collision (from Worksheet 1F)	0.081	0.187	0.267
Collision with pedestrian (from Worksheet 1I)	0.023	0.000	0.023
Collision with bicycle (from Worksheet 1J)	0.018	0.000	0.018
Subtotal	0.376	1.154	1.529
Total	1.296	3.327	4.623

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	4.6	2.00	2.3
Fatal and injury (FI)	1.3	2.00	0.6
Property damage only (PDO)	3.3	2.00	1.7

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	New Connector Corridor
Agency or Company	CMT	Roadway Section	I-70 to CR 600/Hadley Rd
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	3.2
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	48,890
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	20
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	0
Other driveways (number)		--	0
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	2
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	25
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	1.36	1.32	33.365	1.000	33.365	0.99	1.00	33.032
Fatal and Injury (FI)	-12.76	1.28	1.31	9.242	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.263	8.780	0.99	1.00	8.692
Property Damage Only (PDO)	-12.81	1.38	1.34	25.880	$(5)_{TOTAL}-(5)_{FI}$ = 0.737	24.586	0.99	1.00	24.340

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	8.692	1.000	24.340	33.032
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.832	7.232	0.662	16.113	23.345
Head-on collision	0.020	0.174	0.007	0.170	0.344
Angle collision	0.040	0.348	0.036	0.876	1.224
Sideswipe, same direction	0.050	0.435	0.223	5.428	5.862
Sideswipe, opposite direction	0.010	0.087	0.001	0.024	0.111
Other multiple-vehicle collision	0.048	0.417	0.071	1.728	2.145

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	3.280	1.000	3.280	0.99	1.00	3.247
Fatal and Injury (FI)	-8.71	0.66	0.28	0.657	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.197	0.648	0.99	1.00	0.641
Property Damage Only (PDO)	-5.04	0.45	1.06	2.670	$(5)_{TOTAL}-(5)_{FI}$ = 0.803	2.633	0.99	1.00	2.606

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.641	1.000	2.606	3.247
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.001	0.001	0.063	0.164	0.165
Collision with fixed object	0.500	0.321	0.813	2.119	2.439
Collision with other object	0.028	0.018	0.016	0.042	0.060
Other single-vehicle collision	0.471	0.302	0.108	0.281	0.583

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.033	1.106	0.000	
Minor commercial	0	0.011	1.106	0.000	
Major industrial/institutional	0	0.036	1.106	0.000	
Minor industrial/institutional	0	0.005	1.106	0.000	--
Major residential	0	0.018	1.106	0.000	
Minor residential	0	0.003	1.106	0.000	
Other	0	0.005	1.106	0.000	
Total	--	--	--	0.000	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.000	1.000	0.000	0.99	1.00	0.000
Fatal and injury (FI)	--	0.284	0.000	0.99	1.00	0.000
Property damage only (PDO)	--	0.716	0.000	0.99	1.00	0.000

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	33.032	3.247	0.000	36.279	0.019	1.00	0.689
Fatal and injury (FI)	--	--	--	--	--	1.00	0.689

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	33.032	3.247	0.000	36.279	0.005	1.00	0.181
Fatal and injury (FI)	--	--	--	--	--	1.00	0.181

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	7.232	16.113	23.345
Head-on collisions (from Worksheet 1D)	0.174	0.170	0.344
Angle collisions (from Worksheet 1D)	0.348	0.876	1.224
Sideswipe, same direction (from Worksheet 1D)	0.435	5.428	5.862
Sideswipe, opposite direction (from Worksheet 1D)	0.087	0.024	0.111
Driveway-related collisions (from Worksheet 1H)	0.000	0.000	0.000
Other multiple-vehicle collision (from Worksheet 1D)	0.417	1.728	2.145
Subtotal	8.692	24.340	33.032
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.001	0.164	0.165
Collision with fixed object (from Worksheet 1F)	0.321	2.119	2.439
Collision with other object (from Worksheet 1F)	0.018	0.042	0.060
Other single-vehicle collision (from Worksheet 1F)	0.302	0.281	0.583
Collision with pedestrian (from Worksheet 1I)	0.689	0.000	0.689
Collision with bicycle (from Worksheet 1J)	0.181	0.000	0.181
Subtotal	1.512	2.606	4.118
Total	10.204	26.946	37.150

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	37.1	3.20	11.6
Fatal and injury (FI)	10.2	3.20	3.2
Property damage only (PDO)	26.9	3.20	8.4

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	New Connector Corridor
Agency or Company	CMT	Roadway Section	CR 600/Hadley Rd to US 40
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	1.1
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	23,640
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	20
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	0
Other driveways (number)		--	0
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	2
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	25
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	1.36	1.32	4.269	1.000	4.269	0.99	1.00	4.227
Fatal and Injury (FI)	-12.76	1.28	1.31	1.253	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.277	1.185	0.99	1.00	1.173
Property Damage Only (PDO)	-12.81	1.38	1.34	3.264	$(5)_{TOTAL}-(5)_{FI}$ = 0.723	3.085	0.99	1.00	3.054

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	1.173	1.000	3.054	4.227
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.832	0.976	0.662	2.022	2.997
Head-on collision	0.020	0.023	0.007	0.021	0.045
Angle collision	0.040	0.047	0.036	0.110	0.157
Sideswipe, same direction	0.050	0.059	0.223	0.681	0.740
Sideswipe, opposite direction	0.010	0.012	0.001	0.003	0.015
Other multiple-vehicle collision	0.048	0.056	0.071	0.217	0.273

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	0.801	1.000	0.801	0.99	1.00	0.793
Fatal and Injury (FI)	-8.71	0.66	0.28	0.140	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.174	0.140	0.99	1.00	0.138
Property Damage Only (PDO)	-5.04	0.45	1.06	0.662	$(5)_{TOTAL}-(5)_{FI}$ = 0.826	0.662	0.99	1.00	0.655

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.138	1.000	0.655	0.793
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.001	0.000	0.063	0.041	0.041
Collision with fixed object	0.500	0.069	0.813	0.533	0.602
Collision with other object	0.028	0.004	0.016	0.010	0.014
Other single-vehicle collision	0.471	0.065	0.108	0.071	0.136

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.033	1.106	0.000	
Minor commercial	0	0.011	1.106	0.000	
Major industrial/institutional	0	0.036	1.106	0.000	
Minor industrial/institutional	0	0.005	1.106	0.000	--
Major residential	0	0.018	1.106	0.000	
Minor residential	0	0.003	1.106	0.000	
Other	0	0.005	1.106	0.000	
Total	--	--	--	0.000	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.000	1.000	0.000	0.99	1.00	0.000
Fatal and injury (FI)	--	0.284	0.000	0.99	1.00	0.000
Property damage only (PDO)	--	0.716	0.000	0.99	1.00	0.000

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	4.227	0.793	0.000	5.020	0.019	1.00	0.095
Fatal and injury (FI)	--	--	--	--	--	1.00	0.095

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	4.227	0.793	0.000	5.020	0.005	1.00	0.025
Fatal and injury (FI)	--	--	--	--	--	1.00	0.025

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.976	2.022	2.997
Head-on collisions (from Worksheet 1D)	0.023	0.021	0.045
Angle collisions (from Worksheet 1D)	0.047	0.110	0.157
Sideswipe, same direction (from Worksheet 1D)	0.059	0.681	0.740
Sideswipe, opposite direction (from Worksheet 1D)	0.012	0.003	0.015
Driveway-related collisions (from Worksheet 1H)	0.000	0.000	0.000
Other multiple-vehicle collision (from Worksheet 1D)	0.056	0.217	0.273
Subtotal	1.173	3.054	4.227
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.000	0.041	0.041
Collision with fixed object (from Worksheet 1F)	0.069	0.533	0.602
Collision with other object (from Worksheet 1F)	0.004	0.010	0.014
Other single-vehicle collision (from Worksheet 1F)	0.065	0.071	0.136
Collision with pedestrian (from Worksheet 1I)	0.095	0.000	0.095
Collision with bicycle (from Worksheet 1J)	0.025	0.000	0.025
Subtotal	0.259	0.655	0.914
Total	1.432	3.709	5.140

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	5.1	1.10	4.7
Fatal and injury (FI)	1.4	1.10	1.3
Property damage only (PDO)	3.7	1.10	3.4

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267/ Center Street
Agency or Company	CMT	Roadway Section	Black Rock Rd
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	22,590
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	19,550
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			2
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	1.00	1.00	0.63

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	7.460	1.000	7.460	0.63	3.50	16.554
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	2.372	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.329	2.453	0.63	3.50	5.443
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	4.841	$(5)_{TOTAL}-(5)_{FI}$ = 0.671	5.007	0.63	3.50	11.111

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	5.443	1.000	11.111	16.554
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	2.449	0.483	5.367	7.816
Head-on collision	0.049	0.267	0.030	0.333	0.600
Angle collision	0.347	1.889	0.244	2.711	4.600
Sideswipe	0.099	0.539	0.032	0.356	0.894
Other multiple-vehicle collision	0.055	0.299	0.211	2.344	2.644

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.484	1.000	0.484	0.63	3.50	1.075
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.126	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.264	0.128	0.63	3.50	0.284
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.350	$(5)_{TOTAL}-(5)_{FI}$ = 0.736	0.356	0.63	3.50	0.791

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.284	1.000	0.791	1.075
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.001	0.002	0.002	0.002
Collision with fixed object	0.744	0.211	0.870	0.688	0.899
Collision with other object	0.072	0.020	0.070	0.055	0.076
Other single-vehicle collision	0.040	0.011	0.023	0.018	0.030
Single-vehicle noncollision	0.141	0.040	0.034	0.027	0.067

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.008	1.00	3.50	0.027
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.027

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	16.554	1.075	17.629	0.015	3.50	0.926
Fatal and injury (FI)	--	--	--	--	3.50	0.926

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	2.449	5.367	7.816
Head-on collisions (from Worksheet 2D)	0.267	0.333	0.600
Angle collisions (from Worksheet 2D)	1.889	2.711	4.600
Sideswipe (from Worksheet 2D)	0.539	0.356	0.894
Other multiple-vehicle collision (from Worksheet 2D)	0.299	2.344	2.644
Subtotal	5.443	11.111	16.554
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.001	0.002	0.002
Collision with fixed object (from Worksheet 2F)	0.211	0.688	0.899
Collision with other object (from Worksheet 2F)	0.020	0.055	0.076
Other single-vehicle collision (from Worksheet 2F)	0.011	0.018	0.030
Single-vehicle noncollision (from Worksheet 2F)	0.040	0.027	0.067
Collision with pedestrian (from Worksheet 2G or 2I)	0.027	0.000	0.027
Collision with bicycle (from Worksheet 2J)	0.926	0.000	0.926
Subtotal	1.236	0.791	2.027
Total	6.679	11.902	18.581

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	18.6
Fatal and injury (FI)	6.7
Property damage only (PDO)	11.9

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Miles Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	28,550
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	23,640
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	1
Number of major-road approaches with right-turn lanes (0,1,2)		0	1
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	1

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	0.99	1.00	1.00	1.00	1.00	0.99

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	10.012	1.000	10.012	0.99	1.00	9.912
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	3.260	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.336	3.367	0.99	1.00	3.333
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	6.434	$(5)_{TOTAL}-(5)_{FI}$ = 0.664	6.645	0.99	1.00	6.579

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	3.333	1.000	6.579	9.912
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	1.500	0.483	3.178	4.678
Head-on collision	0.049	0.163	0.030	0.197	0.361
Angle collision	0.347	1.157	0.244	1.605	2.762
Sideswipe	0.099	0.330	0.032	0.211	0.541
Other multiple-vehicle collision	0.055	0.183	0.211	1.388	1.572

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.598	1.000	0.598	0.99	1.00	0.592
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.147	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.250	0.150	0.99	1.00	0.148
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.440	$(5)_{TOTAL}-(5)_{FI}$ = 0.750	0.448	0.99	1.00	0.444

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.148	1.000	0.444	0.592
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.001
Collision with animal	0.002	0.000	0.002	0.001	0.001
Collision with fixed object	0.744	0.110	0.870	0.386	0.496
Collision with other object	0.072	0.011	0.070	0.031	0.042
Other single-vehicle collision	0.040	0.006	0.023	0.010	0.016
Single-vehicle noncollision	0.141	0.021	0.034	0.015	0.036

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	#NUM!	1.12	1.00	#NUM!
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	#NUM!

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	9.912	0.592	10.504	0.015	1.00	0.158
Fatal and injury (FI)	--	--	--	--	1.00	0.158

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.500	3.178	4.678
Head-on collisions (from Worksheet 2D)	0.163	0.197	0.361
Angle collisions (from Worksheet 2D)	1.157	1.605	2.762
Sideswipe (from Worksheet 2D)	0.330	0.211	0.541
Other multiple-vehicle collision (from Worksheet 2D)	0.183	1.388	1.572
Subtotal	3.333	6.579	9.912
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.001
Collision with animal (from Worksheet 2F)	0.000	0.001	0.001
Collision with fixed object (from Worksheet 2F)	0.110	0.386	0.496
Collision with other object (from Worksheet 2F)	0.011	0.031	0.042
Other single-vehicle collision (from Worksheet 2F)	0.006	0.010	0.016
Single-vehicle noncollision (from Worksheet 2F)	0.021	0.015	0.036
Collision with pedestrian (from Worksheet 2G or 2I)	#NUM!	0.000	#NUM!
Collision with bicycle (from Worksheet 2J)	0.158	0.000	0.158
Subtotal	#NUM!	0.444	#NUM!
Total	#NUM!	7.023	#NUM!

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	#NUM!
Fatal and injury (FI)	#NUM!
Property damage only (PDO)	7.0

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Moon Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	54,180
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	21,150
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	4

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	19.370	1.000	19.370	0.44	4.50	38.537
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	6.774	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.360	6.974	0.44	4.50	13.875
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	12.041	$(5)_{TOTAL}-(5)_{FI}$ = 0.640	12.396	0.44	4.50	24.662

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	13.875	1.000	24.662	38.537
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	6.244	0.483	11.912	18.155
Head-on collision	0.049	0.680	0.030	0.740	1.420
Angle collision	0.347	4.815	0.244	6.018	10.832
Sideswipe	0.099	1.374	0.032	0.789	2.163
Other multiple-vehicle collision	0.055	0.763	0.211	5.204	5.967

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.897	1.000	0.897	0.44	4.50	1.784
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.187	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.210	0.188	0.44	4.50	0.374
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.706	$(5)_{TOTAL}-(5)_{FI}$ = 0.790	0.709	0.44	4.50	1.410

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.374	1.000	1.410	1.784
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.004
Collision with fixed object	0.744	0.278	0.870	1.227	1.505
Collision with other object	0.072	0.027	0.070	0.099	0.126
Other single-vehicle collision	0.040	0.015	0.023	0.032	0.047
Single-vehicle noncollision	0.141	0.053	0.034	0.048	0.101

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.006	1.12	4.50	0.033
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.033

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	38.537	1.784	40.321	0.015	4.50	2.722
Fatal and injury (FI)	--	--	--	--	4.50	2.722

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	6.244	11.912	18.155
Head-on collisions (from Worksheet 2D)	0.680	0.740	1.420
Angle collisions (from Worksheet 2D)	4.815	6.018	10.832
Sideswipe (from Worksheet 2D)	1.374	0.789	2.163
Other multiple-vehicle collision (from Worksheet 2D)	0.763	5.204	5.967
Subtotal	13.875	24.662	38.537
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.004
Collision with fixed object (from Worksheet 2F)	0.278	1.227	1.505
Collision with other object (from Worksheet 2F)	0.027	0.099	0.126
Other single-vehicle collision (from Worksheet 2F)	0.015	0.032	0.047
Single-vehicle noncollision (from Worksheet 2F)	0.053	0.048	0.101
Collision with pedestrian (from Worksheet 2G or 2I)	0.033	0.000	0.033
Collision with bicycle (from Worksheet 2J)	2.722	0.000	2.722
Subtotal	3.128	1.410	4.538
Total	17.003	26.072	43.075

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	43.1
Fatal and injury (FI)	17.0
Property damage only (PDO)	26.1

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	56,040
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	27,710
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			35
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	3

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	0.91	1.00	0.58

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	21.370	1.000	21.370	0.58	4.50	55.523
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	7.481	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.360	7.694	0.58	4.50	19.991
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	13.298	$(5)_{TOTAL}-(5)_{FI}$ = 0.640	13.676	0.58	4.50	35.533

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	19.991	1.000	35.533	55.523
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	8.996	0.483	17.162	26.158
Head-on collision	0.049	0.980	0.030	1.066	2.046
Angle collision	0.347	6.937	0.244	8.670	15.607
Sideswipe	0.099	1.979	0.032	1.137	3.116
Other multiple-vehicle collision	0.055	1.099	0.211	7.497	8.597

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.987	1.000	0.987	0.58	4.50	2.565
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.206	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.210	0.207	0.58	4.50	0.537
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.776	$(5)_{TOTAL}-(5)_{FI}$ = 0.790	0.780	0.58	4.50	2.027

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.537	1.000	2.027	2.565
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.001	0.001	0.002	0.003
Collision with animal	0.002	0.001	0.002	0.004	0.005
Collision with fixed object	0.744	0.400	0.870	1.764	2.163
Collision with other object	0.072	0.039	0.070	0.142	0.181
Other single-vehicle collision	0.040	0.021	0.023	0.047	0.068
Single-vehicle noncollision	0.141	0.076	0.034	0.069	0.145

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.034	1.12	4.50	0.172
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.172

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	55.523	2.565	58.088	0.015	4.50	3.921
Fatal and injury (FI)	--	--	--	--	4.50	3.921

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	8.996	17.162	26.158
Head-on collisions (from Worksheet 2D)	0.980	1.066	2.046
Angle collisions (from Worksheet 2D)	6.937	8.670	15.607
Sideswipe (from Worksheet 2D)	1.979	1.137	3.116
Other multiple-vehicle collision (from Worksheet 2D)	1.099	7.497	8.597
Subtotal	19.991	35.533	55.523
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.001	0.002	0.003
Collision with animal (from Worksheet 2F)	0.001	0.004	0.005
Collision with fixed object (from Worksheet 2F)	0.400	1.764	2.163
Collision with other object (from Worksheet 2F)	0.039	0.142	0.181
Other single-vehicle collision (from Worksheet 2F)	0.021	0.047	0.068
Single-vehicle noncollision (from Worksheet 2F)	0.076	0.069	0.145
Collision with pedestrian (from Worksheet 2G or 2I)	0.172	0.000	0.172
Collision with bicycle (from Worksheet 2J)	3.921	0.000	3.921
Subtotal	4.630	2.027	6.657
Total	24.621	37.560	62.181

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	62.2
Fatal and injury (FI)	24.6
Property damage only (PDO)	37.6

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	SR 267
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	**71,880**
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	**45,750**
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			10
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	4
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	5

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	31.301	1.000	31.301	0.44	4.50	62.274
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	11.206	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.367	11.486	0.44	4.50	22.851
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	19.333	$(5)_{TOTAL}-(5)_{FI}$ = 0.633	19.816	0.44	4.50	39.423

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	22.851	1.000	39.423	62.274
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	10.283	0.483	19.041	29.324
Head-on collision	0.049	1.120	0.030	1.183	2.302
Angle collision	0.347	7.929	0.244	9.619	17.548
Sideswipe	0.099	2.262	0.032	1.262	3.524
Other multiple-vehicle collision	0.055	1.257	0.211	8.318	9.575

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.339	1.000	1.339	0.44	4.50	2.663
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.265	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.199	0.266	0.44	4.50	0.529
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	1.067	$(5)_{TOTAL}-(5)_{FI}$ = 0.801	1.073	0.44	4.50	2.134

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.529	1.000	2.134	2.663
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.001	0.001	0.002	0.003
Collision with animal	0.002	0.001	0.002	0.004	0.005
Collision with fixed object	0.744	0.394	0.870	1.857	2.250
Collision with other object	0.072	0.038	0.070	0.149	0.187
Other single-vehicle collision	0.040	0.021	0.023	0.049	0.070
Single-vehicle noncollision	0.141	0.075	0.034	0.073	0.147

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.023	1.12	4.50	0.115
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.115

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	62.274	2.663	64.937	0.015	4.50	4.383
Fatal and injury (FI)	--	--	--	--	4.50	4.383

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	10.283	19.041	29.324
Head-on collisions (from Worksheet 2D)	1.120	1.183	2.302
Angle collisions (from Worksheet 2D)	7.929	9.619	17.548
Sideswipe (from Worksheet 2D)	2.262	1.262	3.524
Other multiple-vehicle collision (from Worksheet 2D)	1.257	8.318	9.575
Subtotal	22.851	39.423	62.274
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.001	0.002	0.003
Collision with animal (from Worksheet 2F)	0.001	0.004	0.005
Collision with fixed object (from Worksheet 2F)	0.394	1.857	2.250
Collision with other object (from Worksheet 2F)	0.038	0.149	0.187
Other single-vehicle collision (from Worksheet 2F)	0.021	0.049	0.070
Single-vehicle noncollision (from Worksheet 2F)	0.075	0.073	0.147
Collision with pedestrian (from Worksheet 2G or 2I)	0.115	0.000	0.115
Collision with bicycle (from Worksheet 2J)	4.383	0.000	4.383
Subtotal	5.027	2.134	7.161
Total	27.878	41.557	69.435

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	69.4
Fatal and injury (FI)	27.9
Property damage only (PDO)	41.6

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hadley Rd
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	**74,920**
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	**40,050**
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	2

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.78	0.85	1.00	0.91	1.00	0.40

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	31.734	1.000	31.734	0.40	4.50	56.918
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	11.428	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.369	11.713	0.40	4.50	21.008
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	19.534	$(5)_{TOTAL}-(5)_{FI}$ = 0.631	20.021	0.40	4.50	35.910

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	21.008	1.000	35.910	56.918
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	9.454	0.483	17.344	26.798
Head-on collision	0.049	1.029	0.030	1.077	2.107
Angle collision	0.347	7.290	0.244	8.762	16.052
Sideswipe	0.099	2.080	0.032	1.149	3.229
Other multiple-vehicle collision	0.055	1.155	0.211	7.577	8.732

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.328	1.000	1.328	0.40	4.50	2.382
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.259	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.196	0.260	0.40	4.50	0.466
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	1.066	$(5)_{TOTAL}-(5)_{FI}$ = 0.804	1.069	0.40	4.50	1.917

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.466	1.000	1.917	2.382
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.002	0.002
Collision with animal	0.002	0.001	0.002	0.004	0.005
Collision with fixed object	0.744	0.347	0.870	1.667	2.014
Collision with other object	0.072	0.034	0.070	0.134	0.168
Other single-vehicle collision	0.040	0.019	0.023	0.044	0.063
Single-vehicle noncollision	0.141	0.066	0.034	0.065	0.131

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.008	1.12	4.50	0.042
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.042

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	56.918	2.382	59.300	0.015	4.50	4.003
Fatal and injury (FI)	--	--	--	--	4.50	4.003

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	9.454	17.344	26.798
Head-on collisions (from Worksheet 2D)	1.029	1.077	2.107
Angle collisions (from Worksheet 2D)	7.290	8.762	16.052
Sideswipe (from Worksheet 2D)	2.080	1.149	3.229
Other multiple-vehicle collision (from Worksheet 2D)	1.155	7.577	8.732
Subtotal	21.008	35.910	56.918
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.002	0.002
Collision with animal (from Worksheet 2F)	0.001	0.004	0.005
Collision with fixed object (from Worksheet 2F)	0.347	1.667	2.014
Collision with other object (from Worksheet 2F)	0.034	0.134	0.168
Other single-vehicle collision (from Worksheet 2F)	0.019	0.044	0.063
Single-vehicle noncollision (from Worksheet 2F)	0.066	0.065	0.131
Collision with pedestrian (from Worksheet 2G or 2I)	0.042	0.000	0.042
Collision with bicycle (from Worksheet 2J)	4.003	0.000	4.003
Subtotal	4.510	1.917	6.427
Total	25.519	37.826	63.345

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	63.3
Fatal and injury (FI)	25.5
Property damage only (PDO)	37.8

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Camby
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	59,140
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	13,200
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	2
Number of major-road approaches with right-turn lanes (0,1,2)		0	1
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	1.00	1.00	1.00	1.00	0.57

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	19.087	1.000	19.087	0.57	3.50	38.184
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	6.772	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.365	6.976	0.57	3.50	13.955
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	11.758	$(5)_{TOTAL}-(5)_{FI}$ = 0.635	12.112	0.57	3.50	24.229

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	13.955	1.000	24.229	38.184
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	6.280	0.483	11.703	17.983
Head-on collision	0.049	0.684	0.030	0.727	1.411
Angle collision	0.347	4.842	0.244	5.912	10.754
Sideswipe	0.099	1.382	0.032	0.775	2.157
Other multiple-vehicle collision	0.055	0.768	0.211	5.112	5.880

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.838	1.000	0.838	0.57	3.50	1.677
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.170	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.202	0.169	0.57	3.50	0.338
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.672	$(5)_{TOTAL}-(5)_{FI}$ = 0.798	0.669	0.57	3.50	1.339

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.338	1.000	1.339	1.677
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.003
Collision with fixed object	0.744	0.252	0.870	1.165	1.416
Collision with other object	0.072	0.024	0.070	0.094	0.118
Other single-vehicle collision	0.040	0.014	0.023	0.031	0.044
Single-vehicle noncollision	0.141	0.048	0.034	0.046	0.093

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.005	1.00	3.50	0.018
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.018

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	38.184	1.677	39.861	0.015	3.50	2.093
Fatal and injury (FI)	--	--	--	--	3.50	2.093

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	6.280	11.703	17.983
Head-on collisions (from Worksheet 2D)	0.684	0.727	1.411
Angle collisions (from Worksheet 2D)	4.842	5.912	10.754
Sideswipe (from Worksheet 2D)	1.382	0.775	2.157
Other multiple-vehicle collision (from Worksheet 2D)	0.768	5.112	5.880
Subtotal	13.955	24.229	38.184
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.003
Collision with fixed object (from Worksheet 2F)	0.252	1.165	1.416
Collision with other object (from Worksheet 2F)	0.024	0.094	0.118
Other single-vehicle collision (from Worksheet 2F)	0.014	0.031	0.044
Single-vehicle noncollision (from Worksheet 2F)	0.048	0.046	0.093
Collision with pedestrian (from Worksheet 2G or 2I)	0.018	0.000	0.018
Collision with bicycle (from Worksheet 2J)	2.093	0.000	2.093
Subtotal	2.449	1.339	3.788
Total	16.404	25.568	41.972

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	42.0
Fatal and injury (FI)	16.4
Property damage only (PDO)	25.6

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	Hadley Road
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	19,140
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	7,010
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	2
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	2
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			5
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Multi-Lane Rdbt	Combine
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF 7i*	*CMF* $_i$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	CMF 4194	(1)*(2)*(3)*(
0.81	0.87	1.00	1.00	0.91	1.00	0.81	0.5

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	4.935	1.000	4.935	0.52	1.00	2.579
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.556	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.327	1.616	0.52	1.00	0.845
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.196	$(5)_{TOTAL}-(5)_{FI}$ = 0.673	3.319	0.52	1.00	1.735

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.845	1.000	1.735	2.579
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.380	0.483	0.838	1.218
Head-on collision	0.049	0.041	0.030	0.052	0.093
Angle collision	0.347	0.293	0.244	0.423	0.716
Sideswipe	0.099	0.084	0.032	0.056	0.139
Other multiple-vehicle collision	0.055	0.046	0.211	0.366	0.412

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.328	1.000	0.328	0.52	1.00	0.171
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.087	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.268	0.088	0.52	1.00	0.046
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.238	$(5)_{TOTAL}-(5)_{FI}$ = 0.732	0.240	0.52	1.00	0.126

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.046	1.000	0.126	0.171
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.034	0.870	0.109	0.143
Collision with other object	0.072	0.003	0.070	0.009	0.012
Other single-vehicle collision	0.040	0.002	0.023	0.003	0.005
Single-vehicle noncollision	0.141	0.006	0.034	0.004	0.011

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.008	1.00	1.00	0.008
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.008

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	2.579	0.171	2.751	0.015	1.00	0.041
Fatal and injury (FI)	--	--	--	--	1.00	0.041

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.380	0.838	1.218
Head-on collisions (from Worksheet 2D)	0.041	0.052	0.093
Angle collisions (from Worksheet 2D)	0.293	0.423	0.716
Sideswipe (from Worksheet 2D)	0.084	0.056	0.139
Other multiple-vehicle collision (from Worksheet 2D)	0.046	0.366	0.412
Subtotal	0.845	1.735	2.579
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.034	0.109	0.143
Collision with other object (from Worksheet 2F)	0.003	0.009	0.012
Other single-vehicle collision (from Worksheet 2F)	0.002	0.003	0.005
Single-vehicle noncollision (from Worksheet 2F)	0.006	0.004	0.011
Collision with pedestrian (from Worksheet 2G or 2I)	0.008	0.000	0.008
Collision with bicycle (from Worksheet 2J)	0.041	0.000	0.041
Subtotal	0.095	0.126	0.220
Total	0.940	1.860	2.800

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	2.8
Fatal and injury (FI)	0.9
Property damage only (PDO)	1.9

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hendricks County Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	20,030
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	9,270
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	1.00	1.00	0.63

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	5.525	1.000	5.525	0.63	3.50	12.260
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.746	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.328	1.811	0.63	3.50	4.019
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.580	$(5)_{TOTAL}-(5)_{FI}$ = 0.672	3.714	0.63	3.50	8.240

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	4.019	1.000	8.240	12.260
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	1.809	0.483	3.980	5.789
Head-on collision	0.049	0.197	0.030	0.247	0.444
Angle collision	0.347	1.395	0.244	2.011	3.405
Sideswipe	0.099	0.398	0.032	0.264	0.662
Other multiple-vehicle collision	0.055	0.221	0.211	1.739	1.960

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.365	1.000	0.365	0.63	3.50	0.810
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.096	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.267	0.097	0.63	3.50	0.216
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.264	$(5)_{TOTAL}-(5)_{FI}$ = 0.733	0.268	0.63	3.50	0.594

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.216	1.000	0.594	0.810
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.000	0.002	0.001	0.002
Collision with fixed object	0.744	0.161	0.870	0.516	0.677
Collision with other object	0.072	0.016	0.070	0.042	0.057
Other single-vehicle collision	0.040	0.009	0.023	0.014	0.022
Single-vehicle noncollision	0.141	0.030	0.034	0.020	0.051

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.004	1.00	3.50	0.014
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.014

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	12.260	0.810	13.069	0.015	3.50	0.686
Fatal and injury (FI)	--	--	--	--	3.50	0.686

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.809	3.980	5.789
Head-on collisions (from Worksheet 2D)	0.197	0.247	0.444
Angle collisions (from Worksheet 2D)	1.395	2.011	3.405
Sideswipe (from Worksheet 2D)	0.398	0.264	0.662
Other multiple-vehicle collision (from Worksheet 2D)	0.221	1.739	1.960
Subtotal	4.019	8.240	12.260
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.000	0.001	0.002
Collision with fixed object (from Worksheet 2F)	0.161	0.516	0.677
Collision with other object (from Worksheet 2F)	0.016	0.042	0.057
Other single-vehicle collision (from Worksheet 2F)	0.009	0.014	0.022
Single-vehicle noncollision (from Worksheet 2F)	0.030	0.020	0.051
Collision with pedestrian (from Worksheet 2G or 2I)	0.014	0.000	0.014
Collision with bicycle (from Worksheet 2J)	0.686	0.000	0.686
Subtotal	0.916	0.594	1.510
Total	4.936	8.834	13.770

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	13.8
Fatal and injury (FI)	4.9
Property damage only (PDO)	8.8

Worksheet 3A -- Predicted Crashes by Severity and Site Type and Observed Crashes Using the Site-Specific EB Method for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Collision type / Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes, $N_{observed}$** (crashes/year)	**Overdispersion Parameter, k**	**Weighted adjustment, w**	**Expected average crash frequency,**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)			Equation A-5 from Part C Appendix	Equation A-4 from Part C Appendix
ROADWAY SEGMENTS							
Multiple-vehicle nondriveway							
Segment 1	32.121	8.984	23.137		1.320	0.023	0.740
Segment 2	0.231	0.070	0.162		0.840	0.837	0.194
Segment 3	2.708	0.795	1.912		0.840	0.305	0.827
Segment 4	33.032	8.692	24.340		1.320	0.022	0.741
Segment 5	33.032	8.692	24.340		1.320	0.022	0.741
Single-vehicle							
Segment 1	6.657	1.138	5.519		0.860	0.149	0.990
Segment 2	0.440	0.138	0.302		0.810	0.737	0.324
Segment 3	1.488	0.334	1.154		0.810	0.453	0.675
Segment 4	3.247	0.641	2.606		0.860	0.264	0.856
Segment 5	3.247	0.641	2.606		0.860	0.264	0.856
Multiple-vehicle driveway-related							
Segment 1	2.021	0.574	1.447		1.390	0.263	0.531
Segment 2	0.020	0.007	0.014		0.810	0.984	0.020
Segment 3	0.386	0.125	0.261		0.810	0.762	0.294
Segment 4	0.000	0.000	0.000		1.390	1.000	0.000
Segment 5	0.000	0.000	0.000		1.390	1.000	0.000
INTERSECTIONS							
Multiple-vehicle							
Intersection 1	16.554	5.443	11.111		0.390	0.134	2.220
Intersection 2	9.912	3.333	6.579		0.390	0.206	2.037
Intersection 3	38.537	13.875	24.662		0.390	0.062	2.404
Intersection 4	55.523	19.991	35.533		0.390	0.044	2.451
Intersection 5	62.274	22.851	39.423		0.390	0.040	2.463
Intersection 6	56.918	21.008	35.910		0.390	0.043	2.454
Intersection 7	38.184	13.955	24.229		0.390	0.063	2.403
Intersection 8	2.579	0.845	1.735		0.390	0.499	1.286
Intersection 9	12.260	4.019	8.240		0.390	0.173	2.121
Single-vehicle							
Intersection 1	1.075	0.284	0.791		0.360	0.721	0.775
Intersection 2	0.592	0.148	0.444		0.360	0.824	0.488
Intersection 3	1.784	0.374	1.410		0.360	0.609	1.086
Intersection 4	2.565	0.537	2.027		0.360	0.520	1.333
Intersection 5	2.663	0.529	2.134		0.360	0.511	1.360
Intersection 6	2.382	0.466	1.917		0.360	0.538	1.282
Intersection 7	1.677	0.338	1.339		0.360	0.624	1.046
Intersection 8	0.171	0.046	0.126		0.360	0.942	0.161
Intersection 9	0.810	0.216	0.594		0.360	0.774	0.627

COMBINED (sum of column)	425.092	139.090	286.002	0	--	--	35.157

Worksheet 3B -- Predicted Pedestrian and Bicycle Crashes for

Urban and Suburban Arterials

(1)	(2)	(3)
Site Type	**N_{ped}**	**N_{bike}**
ROADWAY SEGMENTS		
Segment 1	2.481	0.653
Segment 2	0.003	0.003
Segment 3	0.023	0.018
INTERSECTIONS		
Intersection 1	0.027	0.926
Intersection 2	#NUM!	0.158
Intersection 3	0.033	2.722
Intersection 4	0.172	3.921
Intersection 5	0.115	4.383
Intersection 6	0.042	4.003
Intersection 7	0.018	2.093
Intersection 8	0.008	0.041
Intersection 9	0.014	0.686
COMBINED (sum of column)	#NUM!	19.606

Worksheet 3C -- Site-Specific EB Method Summary Results for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)
Crash severity level	**$N_{predicted}$**	**N_{ped}**	**N_{bike}**	$N_{expected\ (VEHICLE)}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(8)_{COMB}$ Worksheet 3A	(3)+(4)+(5)
	425.09	#NUM!	19.6	35.2	#NUM!
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(5)_{TOTAL}$ * $(2)_{FI}$ / $(2)_{TOTAL}$	(3)+(4)+(5)
	139.09	#NUM!	19.6	11.5	#NUM!
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 3A	--	--	$(5)_{TOTAL}$ * $(2)_{PDO}$ / $(2)_{TOTAL}$	(3)+(4)+(5)
	286.0	0.0	0.0	23.7	23.7

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	CR 1000 S
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4ST
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 78,300 (veh/day)	--	23,800
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 7,400 (veh/day)	--	2,980
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	0
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	1
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	1.00	1.00	0.86	0.90	0.77
Fatal and Injury (FI)	1.00	1.00	0.77	0.90	0.69

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$**	**Overdispersion Parameter, k**	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$**
	a	b	c or d (4SG)	from Equation 11-11 or 11-12	from Table 11-7 or 11-8			(3)*(5)*(6)
Total	-10.008	0.848	0.448	8.344	0.494	0.77	1.00	6.431
Fatal and Injury (FI)	-11.554	0.888	0.525	4.926	0.742	0.69	1.00	3.400
Fatal and Injury[a] (FI[a])	-10.734	0.828	0.412	2.474	0.655	0.69	1.00	1.708
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 3.032

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$**	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)**	**Proportion of Collision Type$_{(FI)}$**	**$N_{predicted\ int\ (FI)}$ (crashes/year)**	**Proportion of Collision Type (FI[a])**	**$N_{predicted\ int}$ (FI[a]) (crashes/year)**	**Proportion of Collision Type (PDO)**	**$N_{predicted\ int\ (PDO)}$ (crashes/year)**
	from Table 11-9	$(7)_{TOTAL}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$[a] from Worksheet 2C	from Table 11-9	$(7)_{PDO}$ from Worksheet 2C
Total	1.000	6.431	1.000	3.400	1.000	1.708	1.000	3.032
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}$[a]		(8)*$(9)_{PDO}$
Head-on collision	0.016	0.103	0.018	0.061	0.023	0.039	0.015	0.045
Sideswipe collision	0.107	0.688	0.042	0.143	0.040	0.068	0.156	0.473
Rear-end collision	0.228	1.466	0.213	0.724	0.108	0.184	0.240	0.728
Angle collision	0.395	2.540	0.534	1.815	0.571	0.975	0.292	0.885
Single-vehicle collision	0.202	1.299	0.148	0.503	0.199	0.340	0.243	0.737
Other collision	0.052	0.334	0.045	0.153	0.059	0.101	0.054	0.164

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	6.4
Fatal and Injury (FI)	3.4
Fatal and Injury[a] (FI[a])	1.7
Property Damage Only (PDO)	3.0

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	Koger Street
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	16,350
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	2,635
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$**	**Overdispersion Parameter, k**	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$**
	a	b	c or d (4SG)	from Equation 11-11 or 11-12	from Table 11-7 or 11-8			(3)*(5)*(6)
Total	-7.182	0.722	0.337	11.909	0.277	1.00	1.00	11.909
Fatal and Injury (FI)	-6.393	0.638	0.232	5.075	0.218	1.00	1.00	5.075
Fatal and Injury[a] (FI[a])	-12.011	--	1.279	1.802	0.566	1.00	1.00	1.802
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 6.834

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$**	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)**	**Proportion of Collision Type$_{(FI)}$**	**$N_{predicted\ int\ (FI)}$ (crashes/year)**	**Proportion of Collision Type (FI[a])**	**N *predicted int* (FI[a]) (crashes/year)**	**Proportion of Collision Type (PDO)**	**$N_{predicted\ int\ (PDO)}$ (crashes/year)**
	from Table 11-9	$(7)_{TOTAL}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$[a] from Worksheet 2C	from Table 11-9	$(7)_{PDO}$ from Worksheet 2C
Total	1.000	11.909	1.000	5.075	1.000	1.802	1.000	6.834
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}$[a]		(8)*$(9)_{PDO}$
Head-on collision	0.054	0.643	0.083	0.421	0.093	0.168	0.034	0.232
Sideswipe collision	0.106	1.262	0.047	0.239	0.039	0.070	0.147	1.005
Rear-end collision	0.492	5.859	0.472	2.395	0.314	0.566	0.505	3.451
Angle collision	0.256	3.049	0.315	1.598	0.407	0.733	0.215	1.469
Single-vehicle collision	0.062	0.738	0.041	0.208	0.078	0.141	0.077	0.526
Other collision	0.030	0.357	0.042	0.213	0.069	0.124	0.022	0.150

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	11.9
Fatal and Injury (FI)	5.1
Fatal and Injury[a] (FI[a])	1.8
Property Damage Only (PDO)	6.8

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Intersection	SR 39
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2045

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	25,275
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	7,475
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Not Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	23.176	0.277	1.00	1.00	23.176
Fatal and Injury (FI)	-6.393	0.638	0.232	8.534	0.218	1.00	1.00	8.534
Fatal and Injury[a] (FI[a])	-12.011	--	1.279	3.619	0.566	1.00	1.00	3.619
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 14.643

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$** from Table 11-9	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)** $(7)_{TOTAL}$ from Worksheet 2C	**Proportion of Collision Type$_{(FI)}$** from Table 11-9	**$N_{predicted\ int\ (FI)}$ (crashes/year)** $(7)_{FI}$ from Worksheet 2C	**Proportion of Collision Type (FI[a])** from Table 11-9	**N *predicted int* (FI[a]) (crashes/year)** $(7)_{FI}{}^{a}$ from Worksheet 2C	**Proportion of Collision Type (PDO)** from Table 11-9	**$N_{predicted\ int\ (PDO)}$ (crashes/year)** $(7)_{PDO}$ from Worksheet 2C
Total	1.000	23.176	1.000	8.534	1.000	3.619	1.000	14.643
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}{}^{a}$		(8)*$(9)_{PDO}$
Head-on collision	0.054	1.252	0.083	0.708	0.093	0.337	0.034	0.498
Sideswipe collision	0.106	2.457	0.047	0.401	0.039	0.141	0.147	2.152
Rear-end collision	0.492	11.403	0.472	4.028	0.314	1.137	0.505	7.394
Angle collision	0.256	5.933	0.315	2.688	0.407	1.473	0.215	3.148
Single-vehicle collision	0.062	1.437	0.041	0.350	0.078	0.282	0.077	1.127
Other collision	0.030	0.695	0.042	0.358	0.069	0.250	0.022	0.322

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	23.2
Fatal and Injury (FI)	8.5
Fatal and Injury[a] (FI[a])	3.6
Property Damage Only (PDO)	14.6

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 4A -- Predicted and Observed Crashes by Severity and Site Type Using the Project-Level EB Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,**	**Overdispersion Parameter, k**	**N_{w0}**	**N_{w1}**	**W_0**	**N_0**	**w_1**	**N_1**	**$N_{p/comb}$**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)	$N_{observed}$ (crashes/year)		Equation A-8 $(6)*(2)^2$	Equation A-9 sqrt((6)*(2))	Equation A-10	Equation A-11	Equation A-12	Equation A-13	Equation A-14
ROADWAY SEGMENTS												
Segment 1 (Divided)	0.000	0.000	0.000	--	21.246	0.000	0.005	--	--	--	--	--
Segment 2 (Undivided)	0.000	0.000	0.000	--	18.731	0.000	0.004	--	--	--	--	--
Segment 3				--				--	--	--	--	--
Segment 4				--				--	--	--	--	--
Segment 5				--				--	--	--	--	--
Segment 6				--				--	--	--	--	--
Segment 7				--				--	--	--	--	--
Segment 8				--				--	--	--	--	--
INTERSECTIONS												
Intersection 1	6.431	3.400	3.032	--	0.494	20.433	1.782	--	--	--	--	--
Intersection 2	11.909	5.075	6.834	--	0.277	39.283	1.816	--	--	--	--	--
Intersection 3	23.176	8.534	14.643	--	0.277	148.790	2.534	--	--	--	--	--
Intersection 4				--				--	--	--	--	--
Intersection 5				--				--	--	--	--	--
Intersection 6				--				--	--	--	--	--
Intersection 7				--				--	--	--	--	--
Intersection 8				--				--	--	--	--	--
COMBINED (sum of column)	41.516	17.008	24.508		--	208.505	6.141	0.166	6.894	0.871	36.166	21.530

Worksheet 4B -- Project-Level EB Method Summary Results

(1)	(2)	(3)
Crash severity level	**$N_{predicted}$**	**$N_{expected}$**
Total	$(2)_{COMB}$ from Worksheet 4A	$(13)_{COMB}$ from Worksheet 4A
	41.5	21.5
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$
	17.0	8.8
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$
	24.5	12.7

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Moon Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 750 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	1.6
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	16,330
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	2
Minor commercial driveways (number)		--	9
Major industrial / institutional driveways (number)		--	2
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	5
Minor residential driveways (number)		--	5
Other driveways (number)		--	1
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	15
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	3.20

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.06	1.00	0.91	1.00	0.97

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	1.36	1.32	3.755	1.000	3.755	0.97	3.20	11.662
Fatal and Injury (FI)	-12.76	1.28	1.31	1.135	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.285	1.070	0.97	3.20	3.323
Property Damage Only (PDO)	-12.81	1.38	1.34	2.849	$(5)_{TOTAL}-(5)_{FI}$ = 0.715	2.685	0.97	3.20	8.339

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	3.323	1.000	8.339	11.662
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.832	2.765	0.662	5.521	8.285
Head-on collision	0.020	0.066	0.007	0.058	0.125
Angle collision	0.040	0.133	0.036	0.300	0.433
Sideswipe, same direction	0.050	0.166	0.223	1.860	2.026
Sideswipe, opposite direction	0.010	0.033	0.001	0.008	0.042
Other multiple-vehicle collision	0.048	0.160	0.071	0.592	0.752

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	0.980	1.000	0.980	0.97	3.20	3.043
Fatal and Injury (FI)	-8.71	0.66	0.28	0.159	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.163	0.160	0.97	3.20	0.497
Property Damage Only (PDO)	-5.04	0.45	1.06	0.815	$(5)_{TOTAL}-(5)_{FI}$ = 0.837	0.819	0.97	3.20	2.545

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.497	1.000	2.545	3.043
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.001	0.000	0.063	0.160	0.161
Collision with fixed object	0.500	0.249	0.813	2.069	2.318
Collision with other object	0.028	0.014	0.016	0.041	0.055
Other single-vehicle collision	0.471	0.234	0.108	0.275	0.509

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	2	0.033	1.106	0.073	
Minor commercial	9	0.011	1.106	0.109	
Major industrial/institutional	2	0.036	1.106	0.079	
Minor industrial/institutional	0	0.005	1.106	0.000	--
Major residential	5	0.018	1.106	0.099	
Minor residential	5	0.003	1.106	0.016	
Other	1	0.005	1.106	0.005	
Total	--	--	--	0.381	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.381	1.000	0.381	0.97	3.20	1.184
Fatal and injury (FI)	--	0.284	0.108	0.97	3.20	0.336
Property damage only (PDO)	--	0.716	0.273	0.97	3.20	0.848

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	11.662	3.043	1.184	15.889	0.019	3.20	0.966
Fatal and injury (FI)	--	--	--	--	--	3.20	0.966

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	11.662	3.043	1.184	15.889	0.005	3.20	0.254
Fatal and injury (FI)	--	--	--	--	--	3.20	0.254

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)** (3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	**Property damage only (PDO)** (5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	**Total** (6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	2.765	5.521	8.285
Head-on collisions (from Worksheet 1D)	0.066	0.058	0.125
Angle collisions (from Worksheet 1D)	0.133	0.300	0.433
Sideswipe, same direction (from Worksheet 1D)	0.166	1.860	2.026
Sideswipe, opposite direction (from Worksheet 1D)	0.033	0.008	0.042
Driveway-related collisions (from Worksheet 1H)	0.336	0.848	1.184
Other multiple-vehicle collision (from Worksheet 1D)	0.160	0.592	0.752
Subtotal	3.659	9.187	12.846
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.000	0.160	0.161
Collision with fixed object (from Worksheet 1F)	0.249	2.069	2.318
Collision with other object (from Worksheet 1F)	0.014	0.041	0.055
Other single-vehicle collision (from Worksheet 1F)	0.234	0.275	0.509
Collision with pedestrian (from Worksheet 1I)	0.966	0.000	0.966
Collision with bicycle (from Worksheet 1J)	0.254	0.000	0.254
Subtotal	1.718	2.545	4.263
Total	5.377	11.732	17.109

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	17.1	1.60	10.7
Fatal and injury (FI)	5.4	1.60	3.4
Property damage only (PDO)	11.7	1.60	7.3

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Miles Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 600 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	1.1
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	280
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	4
Other driveways (number)		--	1
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	1.68	0.84	0.003	1.000	0.003	1.00	1.00	0.003
Fatal and Injury (FI)	-16.22	1.66	0.65	0.001	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.317	0.001	1.00	1.00	0.001
Property Damage Only (PDO)	-15.62	1.69	0.87	0.002	$(5)_{TOTAL}-(5)_{FI}$ = 0.683	0.002	1.00	1.00	0.002

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.001	1.000	0.002	0.003
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.001	0.778	0.002	0.003
Head-on collision	0.068	0.000	0.004	0.000	0.000
Angle collision	0.085	0.000	0.079	0.000	0.000
Sideswipe, same direction	0.015	0.000	0.031	0.000	0.000
Sideswipe, opposite direction	0.073	0.000	0.055	0.000	0.000
Other multiple-vehicle collision	0.029	0.000	0.053	0.000	0.000

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	0.109	1.000	0.109	1.00	1.00	0.109
Fatal and Injury (FI)	-3.96	0.23	0.50	0.077	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.560	0.061	1.00	1.00	0.061
Property Damage Only (PDO)	-6.51	0.64	0.87	0.060	$(5)_{TOTAL}-(5)_{FI}$ = 0.440	0.048	1.00	1.00	0.048

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.061	1.000	0.048	0.109
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.002	0.066	0.003	0.005
Collision with fixed object	0.723	0.044	0.759	0.036	0.080
Collision with other object	0.010	0.001	0.013	0.001	0.001
Other single-vehicle collision	0.241	0.015	0.162	0.008	0.022

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	4	0.016	1.000	0.001	
Other	1	0.025	1.000	0.000	
Total	--	--	--	0.002	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.002	1.000	0.002	1.00	1.00	0.002
Fatal and injury (FI)	--	0.323	0.001	1.00	1.00	0.001
Property damage only (PDO)	--	0.677	0.001	1.00	1.00	0.001

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.003	0.109	0.002	0.114	0.005	1.00	0.001
Fatal and injury (FI)	--	--	--	--	--	1.00	0.001

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.003	0.109	0.002	0.114	0.004	1.00	0.000
Fatal and injury (FI)	--	--	--	--	--	1.00	0.000

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.001	0.002	0.003
Head-on collisions (from Worksheet 1D)	0.000	0.000	0.000
Angle collisions (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, same direction (from Worksheet 1D)	0.000	0.000	0.000
Sideswipe, opposite direction (from Worksheet 1D)	0.000	0.000	0.000
Driveway-related collisions (from Worksheet 1H)	0.001	0.001	0.002
Other multiple-vehicle collision (from Worksheet 1D)	0.000	0.000	0.000
Subtotal	0.002	0.004	0.005
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.002	0.003	0.005
Collision with fixed object (from Worksheet 1F)	0.044	0.036	0.080
Collision with other object (from Worksheet 1F)	0.001	0.001	0.001
Other single-vehicle collision (from Worksheet 1F)	0.015	0.008	0.022
Collision with pedestrian (from Worksheet 1I)	0.001	0.000	0.001
Collision with bicycle (from Worksheet 1J)	0.000	0.000	0.000
Subtotal	0.062	0.048	0.110
Total	0.063	0.051	0.115

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	0.1	1.10	0.1
Fatal and injury (FI)	0.1	1.10	0.1
Property damage only (PDO)	0.1	1.10	0.0

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	S CR 525 E
Agency or Company	CMT	Roadway Section	E CR 700 S to E CR 875 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	2
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	11,180
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	32
Other driveways (number)		--	2
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	20
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	1.68	0.84	3.108	1.000	3.108	1.00	1.00	3.108
Fatal and Injury (FI)	-16.22	1.66	0.65	0.949	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.293	0.911	1.00	1.00	0.911
Property Damage Only (PDO)	-15.62	1.69	0.87	2.287	$(5)_{TOTAL}-(5)_{FI}$ = 0.707	2.196	1.00	1.00	2.196

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.911	1.000	2.196	3.108
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.665	0.778	1.709	2.374
Head-on collision	0.068	0.062	0.004	0.009	0.071
Angle collision	0.085	0.077	0.079	0.174	0.251
Sideswipe, same direction	0.015	0.014	0.031	0.068	0.082
Sideswipe, opposite direction	0.073	0.067	0.055	0.121	0.187
Other multiple-vehicle collision	0.029	0.026	0.053	0.116	0.143

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	1.558	1.000	1.558	1.00	1.00	1.558
Fatal and Injury (FI)	-3.96	0.23	0.50	0.325	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.219	0.341	1.00	1.00	0.341
Property Damage Only (PDO)	-6.51	0.64	0.87	1.161	$(5)_{TOTAL}-(5)_{FI}$ = 0.781	1.217	1.00	1.00	1.217

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.341	1.000	1.217	1.558
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.009	0.066	0.080	0.089
Collision with fixed object	0.723	0.247	0.759	0.924	1.170
Collision with other object	0.010	0.003	0.013	0.016	0.019
Other single-vehicle collision	0.241	0.082	0.162	0.197	0.279

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	32	0.016	1.000	0.382	
Other	2	0.025	1.000	0.037	
Total	--	--	--	0.419	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.419	1.000	0.419	1.00	1.00	0.419
Fatal and injury (FI)	--	0.323	0.135	1.00	1.00	0.135
Property damage only (PDO)	--	0.677	0.284	1.00	1.00	0.284

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	3.108	1.558	0.419	5.085	0.005	1.00	0.025
Fatal and injury (FI)	--	--	--	--	--	1.00	0.025

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	3.108	1.558	0.419	5.085	0.004	1.00	0.020
Fatal and injury (FI)	--	--	--	--	--	1.00	0.020

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.665	1.709	2.374
Head-on collisions (from Worksheet 1D)	0.062	0.009	0.071
Angle collisions (from Worksheet 1D)	0.077	0.174	0.251
Sideswipe, same direction (from Worksheet 1D)	0.014	0.068	0.082
Sideswipe, opposite direction (from Worksheet 1D)	0.067	0.121	0.187
Driveway-related collisions (from Worksheet 1H)	0.135	0.284	0.419
Other multiple-vehicle collision (from Worksheet 1D)	0.026	0.116	0.143
Subtotal	1.047	2.480	3.527
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.009	0.080	0.089
Collision with fixed object (from Worksheet 1F)	0.247	0.924	1.170
Collision with other object (from Worksheet 1F)	0.003	0.016	0.019
Other single-vehicle collision (from Worksheet 1F)	0.082	0.197	0.279
Collision with pedestrian (from Worksheet 1I)	0.025	0.000	0.025
Collision with bicycle (from Worksheet 1J)	0.020	0.000	0.020
Subtotal	0.387	1.217	1.604
Total	1.433	3.697	5.130

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	5.1	2.00	2.6
Fatal and injury (FI)	1.4	2.00	0.7
Property damage only (PDO)	3.7	2.00	1.8

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	New Connector Corridor
Agency or Company	CMT	Roadway Section	I-70 to CR 600/Hadley Rd
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	2
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	33,390
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	20
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	0
Other driveways (number)		--	0
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	2
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	25
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	1.36	1.32	12.415	1.000	12.415	0.99	1.00	12.291
Fatal and Injury (FI)	-12.76	1.28	1.31	3.545	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.271	3.360	0.99	1.00	3.326
Property Damage Only (PDO)	-12.81	1.38	1.34	9.557	$(5)_{TOTAL}-(5)_{FI}$ = 0.729	9.056	0.99	1.00	8.965

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	3.326	1.000	8.965	12.291
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.832	2.767	0.662	5.935	8.702
Head-on collision	0.020	0.067	0.007	0.063	0.129
Angle collision	0.040	0.133	0.036	0.323	0.456
Sideswipe, same direction	0.050	0.166	0.223	1.999	2.166
Sideswipe, opposite direction	0.010	0.033	0.001	0.009	0.042
Other multiple-vehicle collision	0.048	0.160	0.071	0.637	0.796

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	1.714	1.000	1.714	0.99	1.00	1.697
Fatal and Injury (FI)	-8.71	0.66	0.28	0.319	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.185	0.317	0.99	1.00	0.314
Property Damage Only (PDO)	-5.04	0.45	1.06	1.405	$(5)_{TOTAL}-(5)_{FI}$ = 0.815	1.397	0.99	1.00	1.383

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.314	1.000	1.383	1.697
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.001	0.000	0.063	0.087	0.087
Collision with fixed object	0.500	0.157	0.813	1.124	1.281
Collision with other object	0.028	0.009	0.016	0.022	0.031
Other single-vehicle collision	0.471	0.148	0.108	0.149	0.297

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.033	1.106	0.000	
Minor commercial	0	0.011	1.106	0.000	
Major industrial/institutional	0	0.036	1.106	0.000	
Minor industrial/institutional	0	0.005	1.106	0.000	--
Major residential	0	0.018	1.106	0.000	
Minor residential	0	0.003	1.106	0.000	
Other	0	0.005	1.106	0.000	
Total	--	--	--	0.000	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.000	1.000	0.000	0.99	1.00	0.000
Fatal and injury (FI)	--	0.284	0.000	0.99	1.00	0.000
Property damage only (PDO)	--	0.716	0.000	0.99	1.00	0.000

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	12.291	1.697	0.000	13.988	0.019	1.00	0.266
Fatal and injury (FI)	--	--	--	--	--	1.00	0.266

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	12.291	1.697	0.000	13.988	0.005	1.00	0.070
Fatal and injury (FI)	--	--	--	--	--	1.00	0.070

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)** (3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	**Property damage only (PDO)** (5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	**Total** (6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	2.767	5.935	8.702
Head-on collisions (from Worksheet 1D)	0.067	0.063	0.129
Angle collisions (from Worksheet 1D)	0.133	0.323	0.456
Sideswipe, same direction (from Worksheet 1D)	0.166	1.999	2.166
Sideswipe, opposite direction (from Worksheet 1D)	0.033	0.009	0.042
Driveway-related collisions (from Worksheet 1H)	0.000	0.000	0.000
Other multiple-vehicle collision (from Worksheet 1D)	0.160	0.637	0.796
Subtotal	3.326	8.965	12.291
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.000	0.087	0.087
Collision with fixed object (from Worksheet 1F)	0.157	1.124	1.281
Collision with other object (from Worksheet 1F)	0.009	0.022	0.031
Other single-vehicle collision (from Worksheet 1F)	0.148	0.149	0.297
Collision with pedestrian (from Worksheet 1I)	0.266	0.000	0.266
Collision with bicycle (from Worksheet 1J)	0.070	0.000	0.070
Subtotal	0.650	1.383	2.032
Total	3.976	10.348	14.323

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)** (Total) from Worksheet 1K	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)** (2) / (3)
Total	14.3	2.00	7.2
Fatal and injury (FI)	4.0	2.00	2.0
Property damage only (PDO)	10.3	2.00	5.2

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	New Connector Corridor
Agency or Company	CMT	Roadway Section	CR 600/Hadley Rd to US 40
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	4D
Length of segment, L (mi)		--	1.2
AADT (veh/day)	$AADT_{MAX}$ = 66,000 (veh/day)	--	27,450
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	20
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	0
Other driveways (number)		--	0
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	2
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	25
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	0.99	1.00	1.00	0.99

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-12.34	1.36	1.32	5.707	1.000	5.707	0.99	1.00	5.650
Fatal and Injury (FI)	-12.76	1.28	1.31	1.655	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.274	1.566	0.99	1.00	1.551
Property Damage Only (PDO)	-12.81	1.38	1.34	4.376	$(5)_{TOTAL}-(5)_{FI}$ = 0.726	4.141	0.99	1.00	4.099

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	1.551	1.000	4.099	5.650
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.832	1.290	0.662	2.714	4.004
Head-on collision	0.020	0.031	0.007	0.029	0.060
Angle collision	0.040	0.062	0.036	0.148	0.210
Sideswipe, same direction	0.050	0.078	0.223	0.914	0.992
Sideswipe, opposite direction	0.010	0.016	0.001	0.004	0.020
Other multiple-vehicle collision	0.048	0.074	0.071	0.291	0.365

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.05	0.47	0.86	0.938	1.000	0.938	0.99	1.00	0.928
Fatal and Injury (FI)	-8.71	0.66	0.28	0.168	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.179	0.168	0.99	1.00	0.166
Property Damage Only (PDO)	-5.04	0.45	1.06	0.772	$(5)_{TOTAL}-(5)_{FI}$ = 0.821	0.770	0.99	1.00	0.762

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.166	1.000	0.762	0.928
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.001	0.000	0.063	0.048	0.048
Collision with fixed object	0.500	0.083	0.813	0.620	0.703
Collision with other object	0.028	0.005	0.016	0.012	0.017
Other single-vehicle collision	0.471	0.078	0.108	0.082	0.161

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.033	1.106	0.000	
Minor commercial	0	0.011	1.106	0.000	
Major industrial/institutional	0	0.036	1.106	0.000	
Minor industrial/institutional	0	0.005	1.106	0.000	--
Major residential	0	0.018	1.106	0.000	
Minor residential	0	0.003	1.106	0.000	
Other	0	0.005	1.106	0.000	
Total	--	--	--	0.000	1.39

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.000	1.000	0.000	0.99	1.00	0.000
Fatal and injury (FI)	--	0.284	0.000	0.99	1.00	0.000
Property damage only (PDO)	--	0.716	0.000	0.99	1.00	0.000

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	5.650	0.928	0.000	6.578	0.019	1.00	0.125
Fatal and injury (FI)	--	--	--	--	--	1.00	0.125

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	5.650	0.928	0.000	6.578	0.005	1.00	0.033
Fatal and injury (FI)	--	--	--	--	--	1.00	0.033

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)** (3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	**Property damage only (PDO)** (5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	**Total** (6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	1.290	2.714	4.004
Head-on collisions (from Worksheet 1D)	0.031	0.029	0.060
Angle collisions (from Worksheet 1D)	0.062	0.148	0.210
Sideswipe, same direction (from Worksheet 1D)	0.078	0.914	0.992
Sideswipe, opposite direction (from Worksheet 1D)	0.016	0.004	0.020
Driveway-related collisions (from Worksheet 1H)	0.000	0.000	0.000
Other multiple-vehicle collision (from Worksheet 1D)	0.074	0.291	0.365
Subtotal	1.551	4.099	5.650
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.000	0.048	0.048
Collision with fixed object (from Worksheet 1F)	0.083	0.620	0.703
Collision with other object (from Worksheet 1F)	0.005	0.012	0.017
Other single-vehicle collision (from Worksheet 1F)	0.078	0.082	0.161
Collision with pedestrian (from Worksheet 1I)	0.125	0.000	0.125
Collision with bicycle (from Worksheet 1J)	0.033	0.000	0.033
Subtotal	0.324	0.762	1.086
Total	1.875	4.861	6.736

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	6.7	1.20	5.6
Fatal and injury (FI)	1.9	1.20	1.6
Property damage only (PDO)	4.9	1.20	4.1

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267/ Center Street
Agency or Company	CMT	Roadway Section	Black Rock Rd
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	19,290
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	18,430
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			2
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	1.00	1.00	0.63

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	6.216	1.000	6.216	0.63	3.50	13.792
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.943	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.324	2.011	0.63	3.50	4.462
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	4.063	$(5)_{TOTAL}-(5)_{FI}$ = 0.676	4.205	0.63	3.50	9.330

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	4.462	1.000	9.330	13.792
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	2.008	0.483	4.506	6.514
Head-on collision	0.049	0.219	0.030	0.280	0.499
Angle collision	0.347	1.548	0.244	2.277	3.825
Sideswipe	0.099	0.442	0.032	0.299	0.740
Other multiple-vehicle collision	0.055	0.245	0.211	1.969	2.214

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.428	1.000	0.428	0.63	3.50	0.950
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.115	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.275	0.118	0.63	3.50	0.261
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.305	$(5)_{TOTAL}-(5)_{FI}$ = 0.725	0.311	0.63	3.50	0.689

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.261	1.000	0.689	0.950
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.001	0.002	0.001	0.002
Collision with fixed object	0.744	0.194	0.870	0.599	0.794
Collision with other object	0.072	0.019	0.070	0.048	0.067
Other single-vehicle collision	0.040	0.010	0.023	0.016	0.026
Single-vehicle noncollision	0.141	0.037	0.034	0.023	0.060

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.007	1.00	3.50	0.026
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.026

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	13.792	0.950	14.742	0.015	3.50	0.774
Fatal and injury (FI)	--	--	--	--	3.50	0.774

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	2.008	4.506	6.514
Head-on collisions (from Worksheet 2D)	0.219	0.280	0.499
Angle collisions (from Worksheet 2D)	1.548	2.277	3.825
Sideswipe (from Worksheet 2D)	0.442	0.299	0.740
Other multiple-vehicle collision (from Worksheet 2D)	0.245	1.969	2.214
Subtotal	4.462	9.330	13.792
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.001	0.001	0.002
Collision with fixed object (from Worksheet 2F)	0.194	0.599	0.794
Collision with other object (from Worksheet 2F)	0.019	0.048	0.067
Other single-vehicle collision (from Worksheet 2F)	0.010	0.016	0.026
Single-vehicle noncollision (from Worksheet 2F)	0.037	0.023	0.060
Collision with pedestrian (from Worksheet 2G or 2I)	0.026	0.000	0.026
Collision with bicycle (from Worksheet 2J)	0.774	0.000	0.774
Subtotal	1.061	0.689	1.750
Total	5.523	10.019	15.542

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	15.5
Fatal and injury (FI)	5.5
Property damage only (PDO)	10.0

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Miles Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	32,360
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	300
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	1
Number of major-road approaches with right-turn lanes (0,1,2)		0	1
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	1

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	0.99	1.00	1.00	1.00	1.00	0.99

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	4.193	1.000	4.193	0.99	1.00	4.151
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.446	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.361	1.512	0.99	1.00	1.497
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	2.563	$(5)_{TOTAL}-(5)_{FI}$ = 0.639	2.681	0.99	1.00	2.654

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	1.497	1.000	2.654	4.151
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.674	0.483	1.282	1.956
Head-on collision	0.049	0.073	0.030	0.080	0.153
Angle collision	0.347	0.520	0.244	0.648	1.167
Sideswipe	0.099	0.148	0.032	0.085	0.233
Other multiple-vehicle collision	0.055	0.082	0.211	0.560	0.642

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.200	1.000	0.200	0.99	1.00	0.198
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.044	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.211	0.042	0.99	1.00	0.042
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.163	$(5)_{TOTAL}-(5)_{FI}$ = 0.789	0.158	0.99	1.00	0.156

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.042	1.000	0.156	0.198
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.031	0.870	0.136	0.167
Collision with other object	0.072	0.003	0.070	0.011	0.014
Other single-vehicle collision	0.040	0.002	0.023	0.004	0.005
Single-vehicle noncollision	0.141	0.006	0.034	0.005	0.011

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	#NUM!	1.12	1.00	#NUM!
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	#NUM!

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	4.151	0.198	4.350	0.015	1.00	0.065
Fatal and injury (FI)	--	--	--	--	1.00	0.065

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.674	1.282	1.956
Head-on collisions (from Worksheet 2D)	0.073	0.080	0.153
Angle collisions (from Worksheet 2D)	0.520	0.648	1.167
Sideswipe (from Worksheet 2D)	0.148	0.085	0.233
Other multiple-vehicle collision (from Worksheet 2D)	0.082	0.560	0.642
Subtotal	1.497	2.654	4.151
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.031	0.136	0.167
Collision with other object (from Worksheet 2F)	0.003	0.011	0.014
Other single-vehicle collision (from Worksheet 2F)	0.002	0.004	0.005
Single-vehicle noncollision (from Worksheet 2F)	0.006	0.005	0.011
Collision with pedestrian (from Worksheet 2G or 2I)	#NUM!	0.000	#NUM!
Collision with bicycle (from Worksheet 2J)	0.065	0.000	0.065
Subtotal	#NUM!	0.156	#NUM!
Total	#NUM!	2.810	#NUM!

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	#NUM!
Fatal and injury (FI)	#NUM!
Property damage only (PDO)	2.8

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Moon Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	57,140
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	16,330
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	4

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	19.320	1.000	19.320	0.44	4.50	38.438
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	6.814	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.363	7.017	0.44	4.50	13.961
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	11.947	$(5)_{TOTAL}-(5)_{FI}$ = 0.637	12.303	0.44	4.50	24.477

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	13.961	1.000	24.477	38.438
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	6.282	0.483	11.822	18.105
Head-on collision	0.049	0.684	0.030	0.734	1.418
Angle collision	0.347	4.844	0.244	5.972	10.817
Sideswipe	0.099	1.382	0.032	0.783	2.165
Other multiple-vehicle collision	0.055	0.768	0.211	5.165	5.933

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.867	1.000	0.867	0.44	4.50	1.725
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.178	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.205	0.178	0.44	4.50	0.354
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.690	$(5)_{TOTAL}-(5)_{FI}$ = 0.795	0.689	0.44	4.50	1.372

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.354	1.000	1.372	1.725
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.003
Collision with fixed object	0.744	0.263	0.870	1.193	1.456
Collision with other object	0.072	0.025	0.070	0.096	0.121
Other single-vehicle collision	0.040	0.014	0.023	0.032	0.046
Single-vehicle noncollision	0.141	0.050	0.034	0.047	0.096

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.006	1.12	4.50	0.030
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.030

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	38.438	1.725	40.163	0.015	4.50	2.711
Fatal and injury (FI)	--	--	--	--	4.50	2.711

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	6.282	11.822	18.105
Head-on collisions (from Worksheet 2D)	0.684	0.734	1.418
Angle collisions (from Worksheet 2D)	4.844	5.972	10.817
Sideswipe (from Worksheet 2D)	1.382	0.783	2.165
Other multiple-vehicle collision (from Worksheet 2D)	0.768	5.165	5.933
Subtotal	13.961	24.477	38.438
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.003
Collision with fixed object (from Worksheet 2F)	0.263	1.193	1.456
Collision with other object (from Worksheet 2F)	0.025	0.096	0.121
Other single-vehicle collision (from Worksheet 2F)	0.014	0.032	0.046
Single-vehicle noncollision (from Worksheet 2F)	0.050	0.047	0.096
Collision with pedestrian (from Worksheet 2G or 2I)	0.030	0.000	0.030
Collision with bicycle (from Worksheet 2J)	2.711	0.000	2.711
Subtotal	3.094	1.372	4.466
Total	17.055	25.849	42.904

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	42.9
Fatal and injury (FI)	17.1
Property damage only (PDO)	25.8

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	59,090
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	28,500
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			35
Maximum number of lanes crossed by a pedestrian (n_{anesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	3

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	0.91	1.00	0.58

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	22.763	1.000	22.763	0.58	4.50	59.144
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	8.014	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.362	8.237	0.58	4.50	21.402
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	14.131	$(5)_{TOTAL}-(5)_{FI}$ = 0.638	14.526	0.58	4.50	37.742

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	21.402	1.000	37.742	59.144
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	9.631	0.483	18.229	27.860
Head-on collision	0.049	1.049	0.030	1.132	2.181
Angle collision	0.347	7.427	0.244	9.209	16.636
Sideswipe	0.099	2.119	0.032	1.208	3.327
Other multiple-vehicle collision	0.055	1.177	0.211	7.963	9.141

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.031	1.000	1.031	0.58	4.50	2.679
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.212	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.207	0.213	0.58	4.50	0.554
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.814	$(5)_{TOTAL}-(5)_{FI}$ = 0.793	0.818	0.58	4.50	2.125

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.554	1.000	2.125	2.679
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.001	0.001	0.002	0.003
Collision with animal	0.002	0.001	0.002	0.004	0.005
Collision with fixed object	0.744	0.412	0.870	1.849	2.261
Collision with other object	0.072	0.040	0.070	0.149	0.189
Other single-vehicle collision	0.040	0.022	0.023	0.049	0.071
Single-vehicle noncollision	0.141	0.078	0.034	0.072	0.150

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.034	1.12	4.50	0.174
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.174

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	59.144	2.679	61.823	0.015	4.50	4.173
Fatal and injury (FI)	--	--	--	--	4.50	4.173

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	9.631	18.229	27.860
Head-on collisions (from Worksheet 2D)	1.049	1.132	2.181
Angle collisions (from Worksheet 2D)	7.427	9.209	16.636
Sideswipe (from Worksheet 2D)	2.119	1.208	3.327
Other multiple-vehicle collision (from Worksheet 2D)	1.177	7.963	9.141
Subtotal	21.402	37.742	59.144
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.001	0.002	0.003
Collision with animal (from Worksheet 2F)	0.001	0.004	0.005
Collision with fixed object (from Worksheet 2F)	0.412	1.849	2.261
Collision with other object (from Worksheet 2F)	0.040	0.149	0.189
Other single-vehicle collision (from Worksheet 2F)	0.022	0.049	0.071
Single-vehicle noncollision (from Worksheet 2F)	0.078	0.072	0.150
Collision with pedestrian (from Worksheet 2G or 2I)	0.174	0.000	0.174
Collision with bicycle (from Worksheet 2J)	4.173	0.000	4.173
Subtotal	4.900	2.125	7.026
Total	26.303	39.867	66.170

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	66.2
Fatal and injury (FI)	26.3
Property damage only (PDO)	39.9

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	SR 267
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	**73,120**
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	**46,870**
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			10
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	4
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	5

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	32.057	1.000	32.057	0.44	4.50	63.778
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	11.496	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.367	11.780	0.44	4.50	23.436
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	19.788	$(5)_{TOTAL}-(5)_{FI}$ = 0.633	20.278	0.44	4.50	40.342

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	23.436	1.000	40.342	63.778
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	10.546	0.483	19.485	30.031
Head-on collision	0.049	1.148	0.030	1.210	2.359
Angle collision	0.347	8.132	0.244	9.843	17.976
Sideswipe	0.099	2.320	0.032	1.291	3.611
Other multiple-vehicle collision	0.055	1.289	0.211	8.512	9.801

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.363	1.000	1.363	0.44	4.50	2.712
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.268	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.198	0.270	0.44	4.50	0.537
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	1.088	$(5)_{TOTAL}-(5)_{FI}$ = 0.802	1.093	0.44	4.50	2.175

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.537	1.000	2.175	2.712
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.001	0.001	0.002	0.003
Collision with animal	0.002	0.001	0.002	0.004	0.005
Collision with fixed object	0.744	0.399	0.870	1.893	2.292
Collision with other object	0.072	0.039	0.070	0.152	0.191
Other single-vehicle collision	0.040	0.021	0.023	0.050	0.071
Single-vehicle noncollision	0.141	0.076	0.034	0.074	0.150

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.023	1.12	4.50	0.116
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.116

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	63.778	2.712	66.490	0.015	4.50	4.488
Fatal and injury (FI)	--	--	--	--	4.50	4.488

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	10.546	19.485	30.031
Head-on collisions (from Worksheet 2D)	1.148	1.210	2.359
Angle collisions (from Worksheet 2D)	8.132	9.843	17.976
Sideswipe (from Worksheet 2D)	2.320	1.291	3.611
Other multiple-vehicle collision (from Worksheet 2D)	1.289	8.512	9.801
Subtotal	23.436	40.342	63.778
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.001	0.002	0.003
Collision with animal (from Worksheet 2F)	0.001	0.004	0.005
Collision with fixed object (from Worksheet 2F)	0.399	1.893	2.292
Collision with other object (from Worksheet 2F)	0.039	0.152	0.191
Other single-vehicle collision (from Worksheet 2F)	0.021	0.050	0.071
Single-vehicle noncollision (from Worksheet 2F)	0.076	0.074	0.150
Collision with pedestrian (from Worksheet 2G or 2I)	0.116	0.000	0.116
Collision with bicycle (from Worksheet 2J)	4.488	0.000	4.488
Subtotal	5.141	2.175	7.316
Total	28.577	42.517	71.094

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	71.1
Fatal and injury (FI)	28.6
Property damage only (PDO)	42.5

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hadley Rd
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	**71,660**
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	**40,346**
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{anesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	2

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.78	0.85	1.00	0.91	1.00	0.40

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	30.310	1.000	30.310	0.40	4.50	54.364
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	10.861	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.367	11.136	0.40	4.50	19.974
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	18.700	$(5)_{TOTAL}-(5)_{FI}$ = 0.633	19.174	0.40	4.50	34.390

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	19.974	1.000	34.390	54.364
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	8.988	0.483	16.611	25.599
Head-on collision	0.049	0.979	0.030	1.032	2.010
Angle collision	0.347	6.931	0.244	8.391	15.322
Sideswipe	0.099	1.977	0.032	1.100	3.078
Other multiple-vehicle collision	0.055	1.099	0.211	7.256	8.355

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	1.291	1.000	1.291	0.40	4.50	2.316
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.255	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.198	0.256	0.40	4.50	0.459
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	1.032	$(5)_{TOTAL}-(5)_{FI}$ = 0.802	1.036	0.40	4.50	1.857

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.459	1.000	1.857	2.316
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.002	0.002
Collision with animal	0.002	0.001	0.002	0.004	0.005
Collision with fixed object	0.744	0.341	0.870	1.616	1.957
Collision with other object	0.072	0.033	0.070	0.130	0.163
Other single-vehicle collision	0.040	0.018	0.023	0.043	0.061
Single-vehicle noncollision	0.141	0.065	0.034	0.063	0.128

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.008	1.12	4.50	0.042
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.042

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	54.364	2.316	56.680	0.015	4.50	3.826
Fatal and injury (FI)	--	--	--	--	4.50	3.826

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	8.988	16.611	25.599
Head-on collisions (from Worksheet 2D)	0.979	1.032	2.010
Angle collisions (from Worksheet 2D)	6.931	8.391	15.322
Sideswipe (from Worksheet 2D)	1.977	1.100	3.078
Other multiple-vehicle collision (from Worksheet 2D)	1.099	7.256	8.355
Subtotal	19.974	34.390	54.364
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.002	0.002
Collision with animal (from Worksheet 2F)	0.001	0.004	0.005
Collision with fixed object (from Worksheet 2F)	0.341	1.616	1.957
Collision with other object (from Worksheet 2F)	0.033	0.130	0.163
Other single-vehicle collision (from Worksheet 2F)	0.018	0.043	0.061
Single-vehicle noncollision (from Worksheet 2F)	0.065	0.063	0.128
Collision with pedestrian (from Worksheet 2G or 2I)	0.042	0.000	0.042
Collision with bicycle (from Worksheet 2J)	3.826	0.000	3.826
Subtotal	4.326	1.857	6.184
Total	24.300	36.248	60.548

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	60.5
Fatal and injury (FI)	24.3
Property damage only (PDO)	36.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Camby
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	62,000
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	13,960
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	2
Number of major-road approaches with right-turn lanes (0,1,2)		0	1
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	1.00	1.00	1.00	1.00	0.57

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	20.337	1.000	20.337	0.57	3.50	40.684
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	7.249	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.367	7.463	0.57	3.50	14.929
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	12.505	$(5)_{TOTAL}-(5)_{FI}$ = 0.633	12.874	0.57	3.50	25.755

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	14.929	1.000	25.755	40.684
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	6.718	0.483	12.440	19.158
Head-on collision	0.049	0.732	0.030	0.773	1.504
Angle collision	0.347	5.180	0.244	6.284	11.465
Sideswipe	0.099	1.478	0.032	0.824	2.302
Other multiple-vehicle collision	0.055	0.821	0.211	5.434	6.255

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.879	1.000	0.879	0.57	3.50	1.758
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.176	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.199	0.175	0.57	3.50	0.350
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.707	$(5)_{TOTAL}-(5)_{FI}$ = 0.801	0.703	0.57	3.50	1.407

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.350	1.000	1.407	1.758
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.002
Collision with animal	0.002	0.001	0.002	0.003	0.004
Collision with fixed object	0.744	0.261	0.870	1.224	1.485
Collision with other object	0.072	0.025	0.070	0.099	0.124
Other single-vehicle collision	0.040	0.014	0.023	0.032	0.046
Single-vehicle noncollision	0.141	0.049	0.034	0.048	0.097

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.005	1.00	3.50	0.019
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.019

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	40.684	1.758	42.442	0.015	3.50	2.228
Fatal and injury (FI)	--	--	--	--	3.50	2.228

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	6.718	12.440	19.158
Head-on collisions (from Worksheet 2D)	0.732	0.773	1.504
Angle collisions (from Worksheet 2D)	5.180	6.284	11.465
Sideswipe (from Worksheet 2D)	1.478	0.824	2.302
Other multiple-vehicle collision (from Worksheet 2D)	0.821	5.434	6.255
Subtotal	14.929	25.755	40.684
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.002
Collision with animal (from Worksheet 2F)	0.001	0.003	0.004
Collision with fixed object (from Worksheet 2F)	0.261	1.224	1.485
Collision with other object (from Worksheet 2F)	0.025	0.099	0.124
Other single-vehicle collision (from Worksheet 2F)	0.014	0.032	0.046
Single-vehicle noncollision (from Worksheet 2F)	0.049	0.048	0.097
Collision with pedestrian (from Worksheet 2G or 2I)	0.019	0.000	0.019
Collision with bicycle (from Worksheet 2J)	2.228	0.000	2.228
Subtotal	2.597	1.407	4.005
Total	17.527	27.162	44.689

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	44.7
Fatal and injury (FI)	17.5
Property damage only (PDO)	27.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	Hadley Road
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	18,950
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	8,660
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	2
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	2
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			5
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Multi-Lane Rdbt	Combine
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF 7i*	*CMF*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	CMF 4194	(1)*(2)*(3)*(
0.81	0.87	1.00	1.00	0.91	1.00	0.81	0.5

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	5.126	1.000	5.126	0.52	1.00	2.679
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.611	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.326	1.672	0.52	1.00	0.874
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.328	$(5)_{TOTAL}-(5)_{FI}$ = 0.674	3.454	0.52	1.00	1.805

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.874	1.000	1.805	2.679
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.393	0.483	0.872	1.265
Head-on collision	0.049	0.043	0.030	0.054	0.097
Angle collision	0.347	0.303	0.244	0.440	0.744
Sideswipe	0.099	0.087	0.032	0.058	0.144
Other multiple-vehicle collision	0.055	0.048	0.211	0.381	0.429

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.345	1.000	0.345	0.52	1.00	0.180
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.092	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.270	0.093	0.52	1.00	0.049
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.249	$(5)_{TOTAL}-(5)_{FI}$ = 0.730	0.252	0.52	1.00	0.132

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.049	1.000	0.132	0.180
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.036	0.870	0.115	0.151
Collision with other object	0.072	0.004	0.070	0.009	0.013
Other single-vehicle collision	0.040	0.002	0.023	0.003	0.005
Single-vehicle noncollision	0.141	0.007	0.034	0.004	0.011

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.008	1.00	1.00	0.008
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.008

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	2.679	0.180	2.860	0.015	1.00	0.043
Fatal and injury (FI)	--	--	--	--	1.00	0.043

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.393	0.872	1.265
Head-on collisions (from Worksheet 2D)	0.043	0.054	0.097
Angle collisions (from Worksheet 2D)	0.303	0.440	0.744
Sideswipe (from Worksheet 2D)	0.087	0.058	0.144
Other multiple-vehicle collision (from Worksheet 2D)	0.048	0.381	0.429
Subtotal	0.874	1.805	2.679
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.036	0.115	0.151
Collision with other object (from Worksheet 2F)	0.004	0.009	0.013
Other single-vehicle collision (from Worksheet 2F)	0.002	0.003	0.005
Single-vehicle noncollision (from Worksheet 2F)	0.007	0.004	0.011
Collision with pedestrian (from Worksheet 2G or 2I)	0.008	0.000	0.008
Collision with bicycle (from Worksheet 2J)	0.043	0.000	0.043
Subtotal	0.100	0.132	0.231
Total	0.974	1.937	2.911

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	2.9
Fatal and injury (FI)	1.0
Property damage only (PDO)	1.9

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hendricks County Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	16,950
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	9,560
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	1.00	1.00	0.63

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	4.654	1.000	4.654	0.63	3.50	10.327
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.444	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.322	1.498	0.63	3.50	3.324
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.042	$(5)_{TOTAL}-(5)_{FI}$ = 0.678	3.156	0.63	3.50	7.003

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	3.324	1.000	7.003	10.327
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	1.496	0.483	3.383	4.878
Head-on collision	0.049	0.163	0.030	0.210	0.373
Angle collision	0.347	1.153	0.244	1.709	2.862
Sideswipe	0.099	0.329	0.032	0.224	0.553
Other multiple-vehicle collision	0.055	0.183	0.211	1.478	1.660

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.328	1.000	0.328	0.63	3.50	0.729
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.090	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.279	0.091	0.63	3.50	0.203
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.234	$(5)_{TOTAL}-(5)_{FI}$ = 0.721	0.237	0.63	3.50	0.526

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.203	1.000	0.526	0.729
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.000	0.002	0.001	0.001
Collision with fixed object	0.744	0.151	0.870	0.457	0.608
Collision with other object	0.072	0.015	0.070	0.037	0.051
Other single-vehicle collision	0.040	0.008	0.023	0.012	0.020
Single-vehicle noncollision	0.141	0.029	0.034	0.018	0.046

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	3.50	--
Fatal and injury (FI)	--	--	--	--	3.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.004	1.00	3.50	0.015
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	0.015

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	10.327	0.729	11.056	0.015	3.50	0.580
Fatal and injury (FI)	--	--	--	--	3.50	0.580

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.496	3.383	4.878
Head-on collisions (from Worksheet 2D)	0.163	0.210	0.373
Angle collisions (from Worksheet 2D)	1.153	1.709	2.862
Sideswipe (from Worksheet 2D)	0.329	0.224	0.553
Other multiple-vehicle collision (from Worksheet 2D)	0.183	1.478	1.660
Subtotal	3.324	7.003	10.327
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.000	0.001	0.001
Collision with fixed object (from Worksheet 2F)	0.151	0.457	0.608
Collision with other object (from Worksheet 2F)	0.015	0.037	0.051
Other single-vehicle collision (from Worksheet 2F)	0.008	0.012	0.020
Single-vehicle noncollision (from Worksheet 2F)	0.029	0.018	0.046
Collision with pedestrian (from Worksheet 2G or 2I)	0.015	0.000	0.015
Collision with bicycle (from Worksheet 2J)	0.580	0.000	0.580
Subtotal	0.798	0.526	1.324
Total	4.122	7.529	11.651

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	11.7
Fatal and injury (FI)	4.1
Property damage only (PDO)	7.5

Worksheet 3A -- Predicted Crashes by Severity and Site Type and Observed Crashes Using the Site-Specific EB Method for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Collision type / Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes, $N_{observed}$** (crashes/year)	**Overdispersion Parameter, k**	**Weighted adjustment, w**	**Expected average crash frequency,**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)			Equation A-5 from Part C Appendix	Equation A-4 from Part C Appendix
ROADWAY SEGMENTS							
Multiple-vehicle nondriveway							
Segment 1	11.662	3.323	8.339		1.320	0.061	0.711
Segment 2	0.003	0.001	0.002		0.840	0.997	0.003
Segment 3	3.108	0.911	2.196		0.840	0.277	0.861
Segment 4	12.291	3.326	8.965		1.320	0.058	0.714
Segment 5	12.291	3.326	8.965		1.320	0.058	0.714
Single-vehicle							
Segment 1	3.043	0.497	2.545		0.860	0.277	0.841
Segment 2	0.109	0.061	0.048		0.810	0.919	0.100
Segment 3	1.558	0.341	1.217		0.810	0.442	0.689
Segment 4	1.697	0.314	1.383		0.860	0.407	0.690
Segment 5	1.697	0.314	1.383		0.860	0.407	0.690
Multiple-vehicle driveway-related							
Segment 1	1.184	0.336	0.848		1.390	0.378	0.448
Segment 2	0.002	0.001	0.001		0.810	0.999	0.002
Segment 3	0.419	0.135	0.284		0.810	0.747	0.313
Segment 4	0.000	0.000	0.000		1.390	1.000	0.000
Segment 5	0.000	0.000	0.000		1.390	1.000	0.000
INTERSECTIONS							
Multiple-vehicle							
Intersection 1	13.792	4.462	9.330		0.390	0.157	2.162
Intersection 2	4.151	1.497	2.654		0.390	0.382	1.585
Intersection 3	38.438	13.961	24.477		0.390	0.063	2.404
Intersection 4	59.144	21.402	37.742		0.390	0.042	2.458
Intersection 5	63.778	23.436	40.342		0.390	0.039	2.465
Intersection 6	54.364	19.974	34.390		0.390	0.045	2.449
Intersection 7	40.684	14.929	25.755		0.390	0.059	2.412
Intersection 8	2.679	0.874	1.805		0.390	0.489	1.310
Intersection 9	10.327	3.324	7.003		0.390	0.199	2.054
Single-vehicle							
Intersection 1	0.950	0.261	0.689		0.360	0.745	0.708
Intersection 2	0.198	0.042	0.156		0.360	0.933	0.185
Intersection 3	1.725	0.354	1.372		0.360	0.617	1.064
Intersection 4	2.679	0.554	2.125		0.360	0.509	1.364
Intersection 5	2.712	0.537	2.175		0.360	0.506	1.372
Intersection 6	2.316	0.459	1.857		0.360	0.545	1.263
Intersection 7	1.758	0.350	1.407		0.360	0.612	1.077
Intersection 8	0.180	0.049	0.132		0.360	0.939	0.169
Intersection 9	0.729	0.203	0.526		0.360	0.792	0.577

COMBINED (sum of column)	349.667	119.553	230.114	0	--	--	33.275

Worksheet 3B -- Predicted Pedestrian and Bicycle Crashes for

Urban and Suburban Arterials

(1)	(2)	(3)
Site Type	**N_{ped}**	**N_{bike}**
ROADWAY SEGMENTS		
Segment 1	0.966	0.254
Segment 2	0.001	0.000
Segment 3	0.025	0.020
INTERSECTIONS		
Intersection 1	0.026	0.774
Intersection 2	#NUM!	0.065
Intersection 3	0.030	2.711
Intersection 4	0.174	4.173
Intersection 5	0.116	4.488
Intersection 6	0.042	3.826
Intersection 7	0.019	2.228
Intersection 8	0.008	0.043
Intersection 9	0.015	0.580
COMBINED (sum of column)	#NUM!	19.164

Worksheet 3C -- Site-Specific EB Method Summary Results for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)
Crash severity level	**$N_{predicted}$**	**N_{ped}**	**N_{bike}**	$N_{expected\ (VEHICLE)}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(8)_{COMB}$ Worksheet 3A	(3)+(4)+(5)
	349.67	#NUM!	19.2	33.3	#NUM!
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(5)_{TOTAL}$ * $(2)_{FI}$ / $(2)_{TOTAL}$	(3)+(4)+(5)
	119.55	#NUM!	19.2	11.4	#NUM!
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 3A	--	--	$(5)_{TOTAL}$ * $(2)_{PDO}$ / $(2)_{TOTAL}$	(3)+(4)+(5)
	230.1	0.0	0.0	21.9	21.9

2019 Existing

HSM

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	CR 1000 S
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2019

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4ST
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 78,300 (veh/day)	--	11,710
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 7,400 (veh/day)	--	1,790
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	0
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	1
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	1.00	1.00	0.86	0.90	0.77
Fatal and Injury (FI)	1.00	1.00	0.77	0.90	0.69

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$**	**Overdispersion Parameter, k**	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$**
	a	b	c or d (4SG)	from Equation 11-11 or 11-12	from Table 11-7 or 11-8			(3)*(5)*(6)
Total	-10.008	0.848	0.448	3.639	0.494	0.77	1.00	2.805
Fatal and Injury (FI)	-11.554	0.888	0.525	2.008	0.742	0.69	1.00	1.386
Fatal and Injury[a] (FI[a])	-10.734	0.828	0.412	1.115	0.655	0.69	1.00	0.769
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 1.419

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$**	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)**	**Proportion of Collision Type$_{(FI)}$**	**$N_{predicted\ int\ (FI)}$ (crashes/year)**	**Proportion of Collision Type (FI[a])**	**$N_{predicted\ int}$ (FI[a]) (crashes/year)**	**Proportion of Collision Type (PDO)**	**$N_{predicted\ int\ (PDO)}$ (crashes/year)**
	from Table 11-9	$(7)_{TOTAL}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$[a] from Worksheet 2C	from Table 11-9	$(7)_{PDO}$ from Worksheet 2C
Total	1.000	2.805	1.000	1.386	1.000	0.769	1.000	1.419
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}$[a]		(8)*$(9)_{PDO}$
Head-on collision	0.016	0.045	0.018	0.025	0.023	0.018	0.015	0.021
Sideswipe collision	0.107	0.300	0.042	0.058	0.040	0.031	0.156	0.221
Rear-end collision	0.228	0.640	0.213	0.295	0.108	0.083	0.240	0.341
Angle collision	0.395	1.108	0.534	0.740	0.571	0.439	0.292	0.414
Single-vehicle collision	0.202	0.567	0.148	0.205	0.199	0.153	0.243	0.345
Other collision	0.052	0.146	0.045	0.062	0.059	0.045	0.054	0.077

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	2.8
Fatal and Injury (FI)	1.4
Fatal and Injury[a] (FI[a])	0.8
Property Damage Only (PDO)	1.4

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	Koger Street
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2019

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	15,770
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	2,140
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	10.816	0.277	1.00	1.00	10.816
Fatal and Injury (FI)	-6.393	0.638	0.232	4.725	0.218	1.00	1.00	4.725
Fatal and Injury[a] (FI[a])	-12.011	--	1.279	1.673	0.566	1.00	1.00	1.673
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 6.091

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$**	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)**	**Proportion of Collision Type$_{(FI)}$**	**$N_{predicted\ int\ (FI)}$ (crashes/year)**	**Proportion of Collision Type (FI[a])**	**$N_{predicted\ int}$ (FI[a]) (crashes/year)**	**Proportion of Collision Type (PDO)**	**$N_{predicted\ int\ (PDO)}$ (crashes/year)**
	from Table 11-9	$(7)_{TOTAL}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$[a] from Worksheet 2C	from Table 11-9	$(7)_{PDO}$ from Worksheet 2C
Total	1.000	10.816	1.000	4.725	1.000	1.673	1.000	6.091
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}$[a]		(8)*$(9)_{PDO}$
Head-on collision	0.054	0.584	0.083	0.392	0.093	0.156	0.034	0.207
Sideswipe collision	0.106	1.147	0.047	0.222	0.039	0.065	0.147	0.895
Rear-end collision	0.492	5.322	0.472	2.230	0.314	0.525	0.505	3.076
Angle collision	0.256	2.769	0.315	1.488	0.407	0.681	0.215	1.310
Single-vehicle collision	0.062	0.671	0.041	0.194	0.078	0.130	0.077	0.469
Other collision	0.030	0.324	0.042	0.198	0.069	0.115	0.022	0.134

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	10.8
Fatal and Injury (FI)	4.7
Fatal and Injury[a] (FI[a])	1.7
Property Damage Only (PDO)	6.1

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Intersection	SR 39
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2019

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	14,240
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	5,705
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Not Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	13.983	0.277	1.00	1.00	13.983
Fatal and Injury (FI)	-6.393	0.638	0.232	5.558	0.218	1.00	1.00	5.558
Fatal and Injury[a] (FI[a])	-12.011	--	1.279	1.919	0.566	1.00	1.00	1.919
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 8.424

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$** from Table 11-9	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)** $(7)_{TOTAL}$ from Worksheet 2C	**Proportion of Collision Type$_{(FI)}$** from Table 11-9	**$N_{predicted\ int\ (FI)}$ (crashes/year)** $(7)_{FI}$ from Worksheet 2C	**Proportion of Collision Type (FI[a])** from Table 11-9	**N *predicted int* (FI[a]) (crashes/year)** $(7)_{FI}{}^{a}$ from Worksheet 2C	**Proportion of Collision Type (PDO)** from Table 11-9	**$N_{predicted\ int\ (PDO)}$ (crashes/year)** $(7)_{PDO}$ from Worksheet 2C
Total	1.000	13.983	1.000	5.558	1.000	1.919	1.000	8.424
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}{}^{a}$		(8)*$(9)_{PDO}$
Head-on collision	0.054	0.755	0.083	0.461	0.093	0.179	0.034	0.286
Sideswipe collision	0.106	1.482	0.047	0.261	0.039	0.075	0.147	1.238
Rear-end collision	0.492	6.879	0.472	2.624	0.314	0.603	0.505	4.254
Angle collision	0.256	3.580	0.315	1.751	0.407	0.781	0.215	1.811
Single-vehicle collision	0.062	0.867	0.041	0.228	0.078	0.150	0.077	0.649
Other collision	0.030	0.419	0.042	0.233	0.069	0.132	0.022	0.185

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	14.0
Fatal and Injury (FI)	5.6
Fatal and Injury[a] (FI[a])	1.9
Property Damage Only (PDO)	8.4

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 4A -- Predicted and Observed Crashes by Severity and Site Type Using the Project-Level EB Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,**	**Overdispersion Parameter, k**	**N_{w0}**	**N_{w1}**	**W_0**	**N_0**	**w_1**	**N_1**	**$N_{p/comb}$**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)	$N_{observed}$ (crashes/year)		Equation A-8 $(6)*(2)^2$	Equation A-9 sqrt((6)*(2))	Equation A-10	Equation A-11	Equation A-12	Equation A-13	Equation A-14
ROADWAY SEGMENTS												
Segment 1 (Divided)	0.000	0.000	0.000	--	21.246	0.000	0.005	--	--	--	--	--
Segment 2 (Undivided)	0.000	0.000	0.000	--	18.731	0.000	0.004	--	--	--	--	--
Segment 3				--				--	--	--	--	--
Segment 4				--				--	--	--	--	--
Segment 5				--				--	--	--	--	--
Segment 6				--				--	--	--	--	--
Segment 7				--				--	--	--	--	--
Segment 8				--				--	--	--	--	--
INTERSECTIONS												
Intersection 1	2.805	1.386	1.419	--	0.494	3.887	1.177	--	--	--	--	--
Intersection 2	10.816	4.725	6.091	--	0.277	32.407	1.731	--	--	--	--	--
Intersection 3	13.983	5.558	8.424	--	0.277	54.157	1.968	--	--	--	--	--
Intersection 4				--				--	--	--	--	--
Intersection 5				--				--	--	--	--	--
Intersection 6				--				--	--	--	--	--
Intersection 7				--				--	--	--	--	--
Intersection 8				--				--	--	--	--	--
COMBINED (sum of column)	27.604	11.669	15.934		--	90.451	4.885	0.234	6.454	0.850	23.453	14.954

Worksheet 4B -- Project-Level EB Method Summary Results

(1)	(2)	(3)
Crash severity level	$N_{predicted}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 4A	$(13)_{COMB}$ from Worksheet 4A
	27.6	15.0
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$
	11.7	6.3
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$
	15.9	8.6

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	CR 1000 S
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2019

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4ST
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 78,300 (veh/day)	--	11,710
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 7,400 (veh/day)	--	1,790
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	0
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	1
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	1.00	1.00	0.86	0.90	0.77
Fatal and Injury (FI)	1.00	1.00	0.77	0.90	0.69

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$**	**Overdispersion Parameter, k**	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$**
	a	b	c or d (4SG)	from Equation 11-11 or 11-12	from Table 11-7 or 11-8			(3)*(5)*(6)
Total	-10.008	0.848	0.448	3.639	0.494	0.77	1.00	2.805
Fatal and Injury (FI)	-11.554	0.888	0.525	2.008	0.742	0.69	1.00	1.386
Fatal and Injury[a] (FI[a])	-10.734	0.828	0.412	1.115	0.655	0.69	1.00	0.769
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 1.419

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$**	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)**	**Proportion of Collision Type$_{(FI)}$**	**$N_{predicted\ int\ (FI)}$ (crashes/year)**	**Proportion of Collision Type (FI[a])**	**$N_{predicted\ int}$ (FI[a]) (crashes/year)**	**Proportion of Collision Type (PDO)**	**$N_{predicted\ int\ (PDO)}$ (crashes/year)**
	from Table 11-9	$(7)_{TOTAL}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$[a] from Worksheet 2C	from Table 11-9	$(7)_{PDO}$ from Worksheet 2C
Total	1.000	2.805	1.000	1.386	1.000	0.769	1.000	1.419
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}$[a]		(8)*$(9)_{PDO}$
Head-on collision	0.016	0.045	0.018	0.025	0.023	0.018	0.015	0.021
Sideswipe collision	0.107	0.300	0.042	0.058	0.040	0.031	0.156	0.221
Rear-end collision	0.228	0.640	0.213	0.295	0.108	0.083	0.240	0.341
Angle collision	0.395	1.108	0.534	0.740	0.571	0.439	0.292	0.414
Single-vehicle collision	0.202	0.567	0.148	0.205	0.199	0.153	0.243	0.345
Other collision	0.052	0.146	0.045	0.062	0.059	0.045	0.054	0.077

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	2.8
Fatal and Injury (FI)	1.4
Fatal and Injury[a] (FI[a])	0.8
Property Damage Only (PDO)	1.4

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 39
Agency or Company	CMT	Intersection	Koger Street
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2019

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	15,770
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	2,140
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Present
Calibration Factor, C_i		1.00	1.00

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	10.816	0.277	1.00	1.00	10.816
Fatal and Injury (FI)	-6.393	0.638	0.232	4.725	0.218	1.00	1.00	4.725
Fatal and Injury[a] (FI[a])	-12.011	--	1.279	1.673	0.566	1.00	1.00	1.673
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 6.091

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$**	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)**	**Proportion of Collision Type$_{(FI)}$**	**$N_{predicted\ int\ (FI)}$ (crashes/year)**	**Proportion of Collision Type (FI[a])**	**$N_{predicted\ int}$ (FI[a]) (crashes/year)**	**Proportion of Collision Type (PDO)**	**$N_{predicted\ int\ (PDO)}$ (crashes/year)**
	from Table 11-9	$(7)_{TOTAL}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$ from Worksheet 2C	from Table 11-9	$(7)_{FI}$[a] from Worksheet 2C	from Table 11-9	$(7)_{PDO}$ from Worksheet 2C
Total	1.000	10.816	1.000	4.725	1.000	1.673	1.000	6.091
		(2)*$(3)_{TOTAL}$		(4)x$(5)_{FI}$		(6)*$(7)_{FI}$[a]		(8)*$(9)_{PDO}$
Head-on collision	0.054	0.584	0.083	0.392	0.093	0.156	0.034	0.207
Sideswipe collision	0.106	1.147	0.047	0.222	0.039	0.065	0.147	0.895
Rear-end collision	0.492	5.322	0.472	2.230	0.314	0.525	0.505	3.076
Angle collision	0.256	2.769	0.315	1.488	0.407	0.681	0.215	1.310
Single-vehicle collision	0.062	0.671	0.041	0.194	0.078	0.130	0.077	0.469
Other collision	0.030	0.324	0.042	0.198	0.069	0.115	0.022	0.134

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	10.8
Fatal and Injury (FI)	4.7
Fatal and Injury[a] (FI[a])	1.7
Property Damage Only (PDO)	6.1

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2A -- General Information and Input Data for Rural Multilane Highway Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Intersection	SR 39
Date Performed	03/24/20	Jurisdiction	INDOT
		Analysis Year	2019

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 4ST, 4SG)		--	4SG
$AADT_{major}$ (veh/day)	$AADT_{MAX}$ = 43,500 (veh/day)	--	14,240
$AADT_{minor}$ (veh/day)	$AADT_{MAX}$ = 18,500 (veh/day)	--	5,705
Intersection skew angle (degrees)		0	0
Number of non-STOP-controlled approaches with left-turn lanes (0, 1, 2)		0	1
Number of non-STOP-controlled approaches with right-turn lanes (0, 1, 2, 3, or 4)		0	0
Intersection lighting (present/not present)		Not Present	Not Present
Calibration Factor, C_i		1.00	0.66

Worksheet 2B -- Crash Modification Factors for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Crash Severity Level	CMF for Intersection Skew Angle (CMF_{1i}) from Equations 11-18 or 11-20 and 11-19 or 11-21	CMF for Left-Turn Lanes (CMF_{2i}) from Table 11-22	CMF for Right-Turn Lanes (CMF_{3i}) from Table 11-23	CMF for Lighting (CMF_{4i}) from Equation 11-22	Combined CMF (CMF_{COMB}) (2)*(3)*(4)*(5)
Total	--	--	--	--	1.00
Fatal and Injury (FI)	--	--	--	--	1.00

Note: The 4-leg Signalized Intersection (4SG) models do not have base conditions and so can only be used for estimation purposes. As a result, there are not CMFs provided for the 4SG condition.

Worksheet 2C -- Intersection Crashes for Rural Multilane Highway Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients** from Table 11-7 or 11-8			**$N_{spf\ int}$** from Equation 11-11 or 11-12	**Overdispersion Parameter, k** from Table 11-7 or 11-8	**Combined CMFs** from (6) of Worksheet 2B	**Calibration Factor, C_i**	**Predicted average crash frequency, $N_{predicted\ int}$** (3)*(5)*(6)
	a	b	c or d (4SG)					
Total	-7.182	0.722	0.337	13.983	0.277	1.00	0.66	9.257
Fatal and Injury (FI)	-6.393	0.638	0.232	5.558	0.218	1.00	0.66	3.680
Fatal and Injury[a] (FI^a)	-12.011	--	1.279	1.919	0.566	1.00	0.66	1.271
Property Damage Only (PDO)	--	--	--	--	--	--	--	$(7)_{TOTAL}$ - $(7)_{FI}$ 5.577

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2D -- Crashes by Severity Level and Collision Type for Rural Multilane Highway Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Collision Type	**Proportion of Collision Type$_{(TOTAL)}$** from Table 11-9	**$N_{predicted\ int\ (TOTAL)}$ (crashes/year)** $(7)_{TOTAL}$ from Worksheet 2C	**Proportion of Collision Type$_{(FI)}$** from Table 11-9	**$N_{predicted\ int\ (FI)}$ (crashes/year)** $(7)_{FI}$ from Worksheet 2C	**Proportion of Collision Type (FI^a)** from Table 11-9	**N *predicted int* (FI^a) (crashes/year)** $(7)_{FI}{}^a$ from Worksheet 2C	**Proportion of Collision Type (PDO)** from Table 11-9	**$N_{predicted\ int\ (PDO)}$ (crashes/year)** $(7)_{PDO}$ from Worksheet 2C
Total	1.000	9.257	1.000	3.680	1.000	1.271	1.000	5.577
		(2)*(3)$_{TOTAL}$		(4)x(5)$_{FI}$		(6)*(7) $_{FI}{}^a$		(8)*(9) $_{PDO}$
Head-on collision	0.054	0.500	0.083	0.305	0.093	0.118	0.034	0.190
Sideswipe collision	0.106	0.981	0.047	0.173	0.039	0.050	0.147	0.820
Rear-end collision	0.492	4.554	0.472	1.737	0.314	0.399	0.505	2.816
Angle collision	0.256	2.370	0.315	1.159	0.407	0.517	0.215	1.199
Single-vehicle collision	0.062	0.574	0.041	0.151	0.078	0.099	0.077	0.429
Other collision	0.030	0.278	0.042	0.155	0.069	0.088	0.022	0.123

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 2E -- Summary Results for Rural Multilane Highway Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency (crashes / year)**
	(7) from Worksheet 2C
Total	9.3
Fatal and Injury (FI)	3.7
Fatal and Injury[a] (FI[a])	1.3
Property Damage Only (PDO)	5.6

NOTE: [a] Using the KABCO scale, these include only KAB crashes. Crashes with severity level C (possible injury) are not included.

Worksheet 4A -- Predicted and Observed Crashes by Severity and Site Type Using the Project-Level EB Method

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,**	**Overdispersion Parameter, k**	**N_{w0}**	**N_{w1}**	**W_0**	**N_0**	**w_1**	**N_1**	**$N_{p/comb}$**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)	$N_{observed}$ (crashes/year)		Equation A-8 $(6)*(2)^2$	Equation A-9 sqrt((6)*(2))	Equation A-10	Equation A-11	Equation A-12	Equation A-13	Equation A-14
ROADWAY SEGMENTS												
Segment 1 (Divided)	0.000	0.000	0.000	--	21.246	0.000	0.005	--	--	--	--	--
Segment 2 (Undivided)	0.000	0.000	0.000	--	18.731	0.000	0.004	--	--	--	--	--
Segment 3				--				--	--	--	--	--
Segment 4				--				--	--	--	--	--
Segment 5				--				--	--	--	--	--
Segment 6				--				--	--	--	--	--
Segment 7				--				--	--	--	--	--
Segment 8				--				--	--	--	--	--
INTERSECTIONS												
Intersection 1	2.805	1.386	1.419	--	0.494	3.887	1.177	--	--	--	--	--
Intersection 2	10.816	4.725	6.091	--	0.277	32.407	1.731	--	--	--	--	--
Intersection 3	9.257	3.680	5.577	--	0.277	23.734	1.601	--	--	--	--	--
Intersection 4				--				--	--	--	--	--
Intersection 5				--				--	--	--	--	--
Intersection 6				--				--	--	--	--	--
Intersection 7				--				--	--	--	--	--
Intersection 8				--				--	--	--	--	--
COMBINED (sum of column)	22.878	9.791	13.087		--	60.028	4.518	0.276	6.313	0.835	19.105	12.709

Worksheet 4B -- Project-Level EB Method Summary Results

(1)	(2)	(3)
Crash severity level	**$N_{predicted}$**	**$N_{expected}$**
Total	$(2)_{COMB}$ from Worksheet 4A	$(13)_{COMB}$ from Worksheet 4A
	22.9	12.7
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$
	9.8	5.4
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 4A	$(3)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$
	13.1	7.3

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267/ Center Street
Agency or Company	CMT	Roadway Section	Black Rock Rd
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	3ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 45,700 (veh/day)	--	10,300
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 9,300 (veh/day)	--	4,480
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			2
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	2
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Workshe		(6)*(7)*(8)
	a	b	c							
Total	-13.36	1.11	0.41	0.80	1.410	1.000	1.410	1.00	1.00	1.410
Fatal and Injury (FI)	-14.01	1.16	0.30	0.69	0.463	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.318	0.448	1.00	1.00	0.448
Property Damage Only (PDO)	-15.38	1.20	0.51	0.77	0.996	$(5)_{TOTAL}-(5)_{FI}$ = 0.682	0.962	1.00	1.00	0.962

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.448	1.000	0.962	1.410
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.421	0.188	0.440	0.423	0.612
Head-on collision	0.045	0.020	0.023	0.022	0.042
Angle collision	0.343	0.154	0.262	0.252	0.406
Sideswipe	0.126	0.056	0.040	0.038	0.095
Other multiple-vehicle collision	0.065	0.029	0.235	0.226	0.255

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Workshe		(6)*(7)*(8)
	a	b	c							
Total	-6.81	0.16	0.51	1.14	0.352	1.000	0.352	1.00	1.00	0.352
Fatal and Injury (FI)	--	--	--	--	0.109	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.312	0.110	1.00	1.00	0.110
Property Damage Only (PDO)	-8.36	0.25	0.55	1.29	0.240	$(5)_{TOTAL}-(5)_{FI}$ = 0.688	0.242	1.00	1.00	0.242

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv}$ $_{(FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv}$ $_{(PDO)}$ (crashes/year)**	**Predicted N $_{bisv}$ $_{(TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.110	1.000	0.242	0.352
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.003	0.001	0.001
Collision with animal	0.003	0.000	0.018	0.004	0.005
Collision with fixed object	0.762	0.084	0.834	0.202	0.286
Collision with other object	0.090	0.010	0.092	0.022	0.032
Other single-vehicle collision	0.039	0.004	0.023	0.006	0.010
Single-vehicle noncollision	0.105	0.012	0.030	0.007	0.019

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	1.410	0.352	1.762	0.021	1.00	0.037
Fatal and injury (FI)	--	--	--	--	1.00	0.037

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	1.00	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	1.410	0.352	1.762	0.016	1.00	0.028
Fatal and injury (FI)	--	--	--	--	1.00	0.028

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.188	0.423	0.612
Head-on collisions (from Worksheet 2D)	0.020	0.022	0.042
Angle collisions (from Worksheet 2D)	0.154	0.252	0.406
Sideswipe (from Worksheet 2D)	0.056	0.038	0.095
Other multiple-vehicle collision (from Worksheet 2D)	0.029	0.226	0.255
Subtotal	0.448	0.962	1.410
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.000	0.004	0.005
Collision with fixed object (from Worksheet 2F)	0.084	0.202	0.286
Collision with other object (from Worksheet 2F)	0.010	0.022	0.032
Other single-vehicle collision (from Worksheet 2F)	0.004	0.006	0.010
Single-vehicle noncollision (from Worksheet 2F)	0.012	0.007	0.019
Collision with pedestrian (from Worksheet 2G or 2I)	0.037	0.000	0.037
Collision with bicycle (from Worksheet 2J)	0.028	0.000	0.028
Subtotal	0.175	0.242	0.417
Total	0.623	1.204	1.827

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	1.8
Fatal and injury (FI)	0.6
Property damage only (PDO)	1.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Miles Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	3ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 45,700 (veh/day)	--	13,170
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 9,300 (veh/day)	--	1,970
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	1

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-13.36	1.11	0.41	0.80	1.322	1.000	1.322	1.00	1.00	1.322
Fatal and Injury (FI)	-14.01	1.16	0.30	0.69	0.481	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.354	0.468	1.00	1.00	0.468
Property Damage Only (PDO)	-15.38	1.20	0.51	0.77	0.879	$(5)_{TOTAL}-(5)_{FI}$ = 0.646	0.854	1.00	1.00	0.854

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.468	1.000	0.854	1.322
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.421	0.197	0.440	0.376	0.573
Head-on collision	0.045	0.021	0.023	0.020	0.041
Angle collision	0.343	0.160	0.262	0.224	0.384
Sideswipe	0.126	0.059	0.040	0.034	0.093
Other multiple-vehicle collision	0.065	0.030	0.235	0.201	0.231

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-6.81	0.16	0.51	1.14	0.241	1.000	0.241	1.00	1.00	0.241
Fatal and Injury (FI)	--	--	--	--	0.075	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.315	0.076	1.00	1.00	0.076
Property Damage Only (PDO)	-8.36	0.25	0.55	1.29	0.163	$(5)_{TOTAL}-(5)_{FI}$ = 0.685	0.165	1.00	1.00	0.165

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.076	1.000	0.165	0.241
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.003	0.000	0.001
Collision with animal	0.003	0.000	0.018	0.003	0.003
Collision with fixed object	0.762	0.058	0.834	0.138	0.195
Collision with other object	0.090	0.007	0.092	0.015	0.022
Other single-vehicle collision	0.039	0.003	0.023	0.004	0.007
Single-vehicle noncollision	0.105	0.008	0.030	0.005	0.013

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	1.322	0.241	1.563	0.021	1.00	0.033
Fatal and injury (FI)	--	--	--	--	1.00	0.033

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	1.00	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections						
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	1.322	0.241	1.563	0.016	1.00	0.025
Fatal and injury (FI)	--	--	--	--	1.00	0.025

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections			
(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.197	0.376	0.573
Head-on collisions (from Worksheet 2D)	0.021	0.020	0.041
Angle collisions (from Worksheet 2D)	0.160	0.224	0.384
Sideswipe (from Worksheet 2D)	0.059	0.034	0.093
Other multiple-vehicle collision (from Worksheet 2D)	0.030	0.201	0.231
Subtotal	0.468	0.854	1.322
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.001
Collision with animal (from Worksheet 2F)	0.000	0.003	0.003
Collision with fixed object (from Worksheet 2F)	0.058	0.138	0.195
Collision with other object (from Worksheet 2F)	0.007	0.015	0.022
Other single-vehicle collision (from Worksheet 2F)	0.003	0.004	0.007
Single-vehicle noncollision (from Worksheet 2F)	0.008	0.005	0.013
Collision with pedestrian (from Worksheet 2G or 2I)	0.033	0.000	0.033
Collision with bicycle (from Worksheet 2J)	0.025	0.000	0.025
Subtotal	0.134	0.165	0.299
Total	0.601	1.020	1.621

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections	
(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	1.6
Fatal and injury (FI)	0.6
Property damage only (PDO)	1.0

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Moon Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	18,880
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	6,200
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	4

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	4.728	1.000	4.728	0.44	1.00	2.090
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.491	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.328	1.549	0.44	1.00	0.685
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.060	$(5)_{TOTAL}-(5)_{FI}$ = 0.672	3.179	0.44	1.00	1.406

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.685	1.000	1.406	2.090
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.308	0.483	0.679	0.987
Head-on collision	0.049	0.034	0.030	0.042	0.076
Angle collision	0.347	0.238	0.244	0.343	0.581
Sideswipe	0.099	0.068	0.032	0.045	0.113
Other multiple-vehicle collision	0.055	0.038	0.211	0.297	0.334

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.314	1.000	0.314	0.44	1.00	0.139
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.083	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.268	0.084	0.44	1.00	0.037
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.228	$(5)_{TOTAL}-(5)_{FI}$ = 0.732	0.230	0.44	1.00	0.102

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.037	1.000	0.102	0.139
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.028	0.870	0.089	0.116
Collision with other object	0.072	0.003	0.070	0.007	0.010
Other single-vehicle collision	0.040	0.001	0.023	0.002	0.004
Single-vehicle noncollision	0.141	0.005	0.034	0.003	0.009

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.004	1.12	1.00	0.004
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.004

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	2.090	0.139	2.229	0.015	1.00	0.033
Fatal and injury (FI)	--	--	--	--	1.00	0.033

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.308	0.679	0.987
Head-on collisions (from Worksheet 2D)	0.034	0.042	0.076
Angle collisions (from Worksheet 2D)	0.238	0.343	0.581
Sideswipe (from Worksheet 2D)	0.068	0.045	0.113
Other multiple-vehicle collision (from Worksheet 2D)	0.038	0.297	0.334
Subtotal	0.685	1.406	2.090
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.028	0.089	0.116
Collision with other object (from Worksheet 2F)	0.003	0.007	0.010
Other single-vehicle collision (from Worksheet 2F)	0.001	0.002	0.004
Single-vehicle noncollision (from Worksheet 2F)	0.005	0.003	0.009
Collision with pedestrian (from Worksheet 2G or 2I)	0.004	0.000	0.004
Collision with bicycle (from Worksheet 2J)	0.033	0.000	0.033
Subtotal	0.075	0.102	0.177
Total	0.760	1.507	2.267

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	2.3
Fatal and injury (FI)	0.8
Property damage only (PDO)	1.5

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	21,540
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	10,140
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			35
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	3

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	0.91	1.00	0.58

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	6.096	1.000	6.096	0.58	1.00	3.520
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.941	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.330	2.012	0.58	1.00	1.162
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.939	$(5)_{TOTAL}-(5)_{FI}$ = 0.670	4.084	0.58	1.00	2.358

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	1.162	1.000	2.358	3.520
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.523	0.483	1.139	1.662
Head-on collision	0.049	0.057	0.030	0.071	0.128
Angle collision	0.347	0.403	0.244	0.575	0.978
Sideswipe	0.099	0.115	0.032	0.075	0.190
Other multiple-vehicle collision	0.055	0.064	0.211	0.498	0.561

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.393	1.000	0.393	0.58	1.00	0.227
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.102	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.262	0.103	0.58	1.00	0.060
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.286	$(5)_{TOTAL}-(5)_{FI}$ = 0.738	0.290	0.58	1.00	0.167

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.060	1.000	0.167	0.227
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.044	0.870	0.145	0.190
Collision with other object	0.072	0.004	0.070	0.012	0.016
Other single-vehicle collision	0.040	0.002	0.023	0.004	0.006
Single-vehicle noncollision	0.141	0.008	0.034	0.006	0.014

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.023	1.12	1.00	0.026
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.026

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	3.520	0.227	3.747	0.015	1.00	0.056
Fatal and injury (FI)	--	--	--	--	1.00	0.056

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.523	1.139	1.662
Head-on collisions (from Worksheet 2D)	0.057	0.071	0.128
Angle collisions (from Worksheet 2D)	0.403	0.575	0.978
Sideswipe (from Worksheet 2D)	0.115	0.075	0.190
Other multiple-vehicle collision (from Worksheet 2D)	0.064	0.498	0.561
Subtotal	1.162	2.358	3.520
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.044	0.145	0.190
Collision with other object (from Worksheet 2F)	0.004	0.012	0.016
Other single-vehicle collision (from Worksheet 2F)	0.002	0.004	0.006
Single-vehicle noncollision (from Worksheet 2F)	0.008	0.006	0.014
Collision with pedestrian (from Worksheet 2G or 2I)	0.026	0.000	0.026
Collision with bicycle (from Worksheet 2J)	0.056	0.000	0.056
Subtotal	0.141	0.167	0.308
Total	1.303	2.525	3.828

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	3.8
Fatal and injury (FI)	1.3
Property damage only (PDO)	2.5

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	SR 267
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	23,720
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	22,040
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			10
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	4
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	5

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	8.080	1.000	8.080	0.44	1.00	3.572
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	2.579	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.330	2.666	0.44	1.00	1.179
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	5.237	$(5)_{TOTAL}-(5)_{FI}$ = 0.670	5.414	0.44	1.00	2.393

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	1.179	1.000	2.393	3.572
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.530	0.483	1.156	1.687
Head-on collision	0.049	0.058	0.030	0.072	0.130
Angle collision	0.347	0.409	0.244	0.584	0.993
Sideswipe	0.099	0.117	0.032	0.077	0.193
Other multiple-vehicle collision	0.055	0.065	0.211	0.505	0.570

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.517	1.000	0.517	0.44	1.00	0.229
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.133	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.262	0.135	0.44	1.00	0.060
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.375	$(5)_{TOTAL}-(5)_{FI}$ = 0.738	0.382	0.44	1.00	0.169

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.060	1.000	0.169	0.229
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.045	0.870	0.147	0.191
Collision with other object	0.072	0.004	0.070	0.012	0.016
Other single-vehicle collision	0.040	0.002	0.023	0.004	0.006
Single-vehicle noncollision	0.141	0.008	0.034	0.006	0.014

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.017	1.12	1.00	0.019
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.019

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	3.572	0.229	3.801	0.015	1.00	0.057
Fatal and injury (FI)	--	--	--	--	1.00	0.057

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
	MULTIPLE-VEHICLE		
Rear-end collisions (from Worksheet 2D)	0.530	1.156	1.687
Head-on collisions (from Worksheet 2D)	0.058	0.072	0.130
Angle collisions (from Worksheet 2D)	0.409	0.584	0.993
Sideswipe (from Worksheet 2D)	0.117	0.077	0.193
Other multiple-vehicle collision (from Worksheet 2D)	0.065	0.505	0.570
Subtotal	1.179	2.393	3.572
	SINGLE-VEHICLE		
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.045	0.147	0.191
Collision with other object (from Worksheet 2F)	0.004	0.012	0.016
Other single-vehicle collision (from Worksheet 2F)	0.002	0.004	0.006
Single-vehicle noncollision (from Worksheet 2F)	0.008	0.006	0.014
Collision with pedestrian (from Worksheet 2G or 2I)	0.019	0.000	0.019
Collision with bicycle (from Worksheet 2J)	0.057	0.000	0.057
Subtotal	0.136	0.169	0.305
Total	1.315	2.562	3.877

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	3.9
Fatal and injury (FI)	1.3
Property damage only (PDO)	2.6

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hadley
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	45,360
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	20,200
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	2

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.78	0.85	1.00	0.91	1.00	0.40

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	15.848	1.000	15.848	0.40	1.00	6.317
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	5.438	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.354	5.606	0.40	1.00	2.234
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	9.935	$(5)_{TOTAL}-(5)_{FI}$ = 0.646	10.242	0.40	1.00	4.082

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	2.234	1.000	4.082	6.317
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	1.005	0.483	1.972	2.977
Head-on collision	0.049	0.109	0.030	0.122	0.232
Angle collision	0.347	0.775	0.244	0.996	1.771
Sideswipe	0.099	0.221	0.032	0.131	0.352
Other multiple-vehicle collision	0.055	0.123	0.211	0.861	0.984

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.785	1.000	0.785	0.40	1.00	0.313
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.171	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.220	0.173	0.40	1.00	0.069
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.608	$(5)_{TOTAL}-(5)_{FI}$ = 0.780	0.612	0.40	1.00	0.244

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.069	1.000	0.244	0.313
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.001
Collision with fixed object	0.744	0.051	0.870	0.212	0.264
Collision with other object	0.072	0.005	0.070	0.017	0.022
Other single-vehicle collision	0.040	0.003	0.023	0.006	0.008
Single-vehicle noncollision	0.141	0.010	0.034	0.008	0.018

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.006	1.12	1.00	0.007
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.007

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	6.317	0.313	6.630	0.015	1.00	0.099
Fatal and injury (FI)	--	--	--	--	1.00	0.099

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.005	1.972	2.977
Head-on collisions (from Worksheet 2D)	0.109	0.122	0.232
Angle collisions (from Worksheet 2D)	0.775	0.996	1.771
Sideswipe (from Worksheet 2D)	0.221	0.131	0.352
Other multiple-vehicle collision (from Worksheet 2D)	0.123	0.861	0.984
Subtotal	2.234	4.082	6.317
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.001
Collision with fixed object (from Worksheet 2F)	0.051	0.212	0.264
Collision with other object (from Worksheet 2F)	0.005	0.017	0.022
Other single-vehicle collision (from Worksheet 2F)	0.003	0.006	0.008
Single-vehicle noncollision (from Worksheet 2F)	0.010	0.008	0.018
Collision with pedestrian (from Worksheet 2G or 2I)	0.007	0.000	0.007
Collision with bicycle (from Worksheet 2J)	0.099	0.000	0.099
Subtotal	0.175	0.244	0.419
Total	2.410	4.326	6.736

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	6.7
Fatal and injury (FI)	2.4
Property damage only (PDO)	4.3

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Camby
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 46,800 (veh/day)	--	16,200
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 5,900 (veh/day)	--	4,310
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	2
Number of major-road approaches with right-turn lanes (0,1,2)		0	1
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.53	1.00	0.86	1.00	1.00	1.00	0.46

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-8.90	0.82	0.25	0.40	3.128	1.000	3.128	0.46	1.00	1.426
Fatal and Injury (FI)	-11.13	0.93	0.28	0.48	1.255	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.396	1.240	0.46	1.00	0.565
Property Damage Only (PDO)	-8.74	0.77	0.23	0.40	1.912	$(5)_{TOTAL}-(5)_{FI}$ = 0.604	1.888	0.46	1.00	0.861

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.565	1.000	0.861	1.426
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.338	0.191	0.374	0.322	0.513
Head-on collision	0.041	0.023	0.030	0.026	0.049
Angle collision	0.440	0.249	0.335	0.288	0.537
Sideswipe	0.121	0.068	0.044	0.038	0.106
Other multiple-vehicle collision	0.060	0.034	0.217	0.187	0.221

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-5.33	0.33	0.12	0.65	0.324	1.000	0.324	0.46	1.00	0.148
Fatal and Injury (FI)	--	--	--	--	0.091	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.281	0.091	0.46	1.00	0.041
Property Damage Only (PDO)	-7.04	0.36	0.25	0.54	0.233	$(5)_{TOTAL}-(5)_{FI}$ = 0.719	0.233	0.46	1.00	0.106

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.041	1.000	0.106	0.148
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.001	0.000	0.026	0.003	0.003
Collision with fixed object	0.679	0.028	0.847	0.090	0.118
Collision with other object	0.089	0.004	0.070	0.007	0.011
Other single-vehicle collision	0.051	0.002	0.007	0.001	0.003
Single-vehicle noncollision	0.179	0.007	0.049	0.005	0.013

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	1.426	0.148	1.573	0.022	1.00	0.035
Fatal and injury (FI)	--	--	--	--	1.00	0.035

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	1.00	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	1.426	0.148	1.573	0.018	1.00	0.028
Fatal and injury (FI)	--	--	--	--	1.00	0.028

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
	MULTIPLE-VEHICLE		
Rear-end collisions (from Worksheet 2D)	0.191	0.322	0.513
Head-on collisions (from Worksheet 2D)	0.023	0.026	0.049
Angle collisions (from Worksheet 2D)	0.249	0.288	0.537
Sideswipe (from Worksheet 2D)	0.068	0.038	0.106
Other multiple-vehicle collision (from Worksheet 2D)	0.034	0.187	0.221
Subtotal	0.565	0.861	1.426
	SINGLE-VEHICLE		
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.003	0.003
Collision with fixed object (from Worksheet 2F)	0.028	0.090	0.118
Collision with other object (from Worksheet 2F)	0.004	0.007	0.011
Other single-vehicle collision (from Worksheet 2F)	0.002	0.001	0.003
Single-vehicle noncollision (from Worksheet 2F)	0.007	0.005	0.013
Collision with pedestrian (from Worksheet 2G or 2I)	0.035	0.000	0.035
Collision with bicycle (from Worksheet 2J)	0.028	0.000	0.028
Subtotal	0.104	0.106	0.211
Total	0.669	0.967	1.636

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	1.6
Fatal and injury (FI)	0.7
Property damage only (PDO)	1.0

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	Hadley Road
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	6,060
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	9,150
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	2
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	2
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			5
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Multi-Lane Rdbt	Combine
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF 7i*	*CMF* $_{c}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	CMF 4194	(1)*(2)*(3)*(
0.81	0.87	1.00	1.00	0.91	1.00	0.81	0.5

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	1.533	1.000	1.533	0.52	1.00	0.801
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	0.425	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.287	0.440	0.52	1.00	0.230
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	1.054	$(5)_{TOTAL}-(5)_{FI}$ = 0.713	1.093	0.52	1.00	0.571

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.230	1.000	0.571	0.801
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.104	0.483	0.276	0.379
Head-on collision	0.049	0.011	0.030	0.017	0.028
Angle collision	0.347	0.080	0.244	0.139	0.219
Sideswipe	0.099	0.023	0.032	0.018	0.041
Other multiple-vehicle collision	0.055	0.013	0.211	0.120	0.133

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.161	1.000	0.161	0.52	1.00	0.084
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.057	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.356	0.057	0.52	1.00	0.030
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.104	$(5)_{TOTAL}-(5)_{FI}$ = 0.644	0.104	0.52	1.00	0.054

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.030	1.000	0.054	0.084
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.022	0.870	0.047	0.070
Collision with other object	0.072	0.002	0.070	0.004	0.006
Other single-vehicle collision	0.040	0.001	0.023	0.001	0.002
Single-vehicle noncollision	0.141	0.004	0.034	0.002	0.006

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.009	1.00	1.00	0.009
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.009

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	0.801	0.084	0.885	0.015	1.00	0.013
Fatal and injury (FI)	--	--	--	--	1.00	0.013

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
	MULTIPLE-VEHICLE		
Rear-end collisions (from Worksheet 2D)	0.104	0.276	0.379
Head-on collisions (from Worksheet 2D)	0.011	0.017	0.028
Angle collisions (from Worksheet 2D)	0.080	0.139	0.219
Sideswipe (from Worksheet 2D)	0.023	0.018	0.041
Other multiple-vehicle collision (from Worksheet 2D)	0.013	0.120	0.133
Subtotal	0.230	0.571	0.801
	SINGLE-VEHICLE		
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.022	0.047	0.070
Collision with other object (from Worksheet 2F)	0.002	0.004	0.006
Other single-vehicle collision (from Worksheet 2F)	0.001	0.001	0.002
Single-vehicle noncollision (from Worksheet 2F)	0.004	0.002	0.006
Collision with pedestrian (from Worksheet 2G or 2I)	0.009	0.000	0.009
Collision with bicycle (from Worksheet 2J)	0.013	0.000	0.013
Subtotal	0.052	0.054	0.106
Total	0.282	0.625	0.908

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	0.9
Fatal and injury (FI)	0.3
Property damage only (PDO)	0.6

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hendricks County Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 46,800 (veh/day)	--	10,540
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 5,900 (veh/day)	--	4,520
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-8.90	0.82	0.25	0.40	2.225	1.000	2.225	1.00	1.00	2.225
Fatal and Injury (FI)	-11.13	0.93	0.28	0.48	0.853	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.381	0.847	1.00	1.00	0.847
Property Damage Only (PDO)	-8.74	0.77	0.23	0.40	1.388	$(5)_{TOTAL}-(5)_{FI}$ = 0.619	1.378	1.00	1.00	1.378

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type(FI)**	**Predicted N *bimv* (FI) (crashes/year)**	**Proportion of Collision Type (PDO)**	**Predicted N *bimv* (PDO) (crashes/year)**	**Predicted N *bimv* (TOTAL) (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.847	1.000	1.378	2.225
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.338	0.286	0.374	0.515	0.802
Head-on collision	0.041	0.035	0.030	0.041	0.076
Angle collision	0.440	0.373	0.335	0.462	0.834
Sideswipe	0.121	0.102	0.044	0.061	0.163
Other multiple-vehicle collision	0.060	0.051	0.217	0.299	0.350

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-5.33	0.33	0.12	0.65	0.283	1.000	0.283	1.00	1.00	0.283
Fatal and Injury (FI)	--	--	--	--	0.079	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.282	0.080	1.00	1.00	0.080
Property Damage Only (PDO)	-7.04	0.36	0.25	0.54	0.202	$(5)_{TOTAL}-(5)_{FI}$ = 0.718	0.203	1.00	1.00	0.203

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.080	1.000	0.203	0.283
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.001	0.000	0.026	0.005	0.005
Collision with fixed object	0.679	0.054	0.847	0.172	0.226
Collision with other object	0.089	0.007	0.070	0.014	0.021
Other single-vehicle collision	0.051	0.004	0.007	0.001	0.005
Single-vehicle noncollision	0.179	0.014	0.049	0.010	0.024

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	2.225	0.283	2.508	0.022	1.00	0.055
Fatal and injury (FI)	--	--	--	--	1.00	0.055

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	1.00	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	2.225	0.283	2.508	0.018	1.00	0.045
Fatal and injury (FI)	--	--	--	--	1.00	0.045

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
	MULTIPLE-VEHICLE		
Rear-end collisions (from Worksheet 2D)	0.286	0.515	0.802
Head-on collisions (from Worksheet 2D)	0.035	0.041	0.076
Angle collisions (from Worksheet 2D)	0.373	0.462	0.834
Sideswipe (from Worksheet 2D)	0.102	0.061	0.163
Other multiple-vehicle collision (from Worksheet 2D)	0.051	0.299	0.350
Subtotal	0.847	1.378	2.225
	SINGLE-VEHICLE		
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.005	0.005
Collision with fixed object (from Worksheet 2F)	0.054	0.172	0.226
Collision with other object (from Worksheet 2F)	0.007	0.014	0.021
Other single-vehicle collision (from Worksheet 2F)	0.004	0.001	0.005
Single-vehicle noncollision (from Worksheet 2F)	0.014	0.010	0.024
Collision with pedestrian (from Worksheet 2G or 2I)	0.055	0.000	0.055
Collision with bicycle (from Worksheet 2J)	0.045	0.000	0.045
Subtotal	0.180	0.203	0.383
Total	1.027	1.581	2.608

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	2.6
Fatal and injury (FI)	1.0
Property damage only (PDO)	1.6

Tables Affiliated with SPF Computation:

Table 12-10: SPF Coefficients for Multiple-Vehicle Collisions at Intersections

Intersection type	Coefficients use in Eqn. 12-21 Intercept (a)	$AADT_{maj}$ (b)	$AADT_{min}$ (c)	Overdispersion parameter (k)
Total crashes				
3ST	-13.36	1.11	0.41	0.80
3SG	-12.13	1.11	0.26	0.33
4ST	-8.90	0.82	0.25	0.40
4SG	-10.99	1.07	0.23	0.39
Fatal-and-injury crashes				
3ST	-14.01	1.16	0.30	0.69
3SG	-11.58	1.02	0.17	0.30
4ST	-11.13	0.93	0.28	0.48
4SG	-13.14	1.18	0.22	0.33
Property-damage-only crashes				
3ST	-15.38	1.20	0.51	0.77
3SG	-13.24	1.14	0.30	0.36
4ST	-8.74	0.77	0.23	0.40
4SG	-11.02	1.02	0.24	0.44

Table 12-12: SPF Coefficients for Single-Vehicle Crashes at Intersections

Intersection type	Coefficients use in Eqn. 12-24 Intercept (a)	$AADT_{maj}$ (b)	$AADT_{min}$ (c)	Overdispersion parameter (k)
Total crashes				
3ST	-6.81	0.16	0.51	1.14
3SG	-9.02	0.42	0.40	0.36
4ST	-5.33	0.33	0.12	0.65
4SG	-10.21	0.68	0.27	0.36
Fatal-and-injury crashes				
3ST	--	--	--	--
3SG	-9.75	0.27	0.51	0.24
4ST	--	--	--	--
4SG	-9.25	0.43	0.29	0.09
Property-damage-only crashes				
3ST	-8.36	0.25	0.55	1.29
3SG	-9.08	0.45	0.33	0.53
4ST	-7.04	0.36	0.25	0.54
4SG	-11.34	0.78	0.25	0.44

Note: Where no models are available, Equations 12-27 is used.

Equation 12-27:

$$N_{bisv(FI)} = N_{bisv(TOTAL)} \times f_{bisv}$$

Table 12-14: SPF for Vehicle-Pedestrian Collisions at Signalized Intersections

Intersection type	Coefficients use in Eqn. 12-29 Intercept (a)	$AADT_{maj}$ (b)	$AADT_{min}/AADT_{maj}$ (c)	PedVol (d)	$n_{lanes/x}$ (e)	Overdispersion parameter (k)
Total crashes						
3SG	-6.60	0.05	0.24	0.41	0.09	0.52
4SG	-9.53	0.40	0.26	0.45	0.04	0.24

Tables Affiliated with Crash Statistics:

Table 12-11: Distribution of Multiple-Vehicle Collisions for Intersections by Collision Type

Locally-Derived Values? No — Proportion of crashes by severity level for specific intersection types — HSM-Provided Values

Collision type	3ST FI	3ST PDO	3SG FI	3SG PDO	4ST FI	4ST PDO	4SG FI	4SG PDO
Rear-end collision	0.421	0.440	0.549	0.546	0.338	0.374	0.450	0.483
Head-on collision	0.045	0.023	0.038	0.020	0.041	0.030	0.049	0.030
Angle collision	0.343	0.262	0.280	0.204	0.440	0.335	0.347	0.244
Sideswipe	0.126	0.040	0.076	0.032	0.121	0.044	0.099	0.032
Other multiple-vehicle collision	0.065	0.235	0.057	0.198	0.060	0.217	0.055	0.211

Source: HSIS data for Washington (2002-2006)

Locally-Derived Values

Collision type	3ST FI	3ST PDO	3SG FI	3SG PDO	4ST FI	4ST PDO	4SG FI	4SG PDO
Rear-end collision	0.500	0.100			0.750			
Head-on collision	0.510	0.110			0.650			
Angle collision	0.520	0.120			0.550			
Sideswipe	0.530	0.130			0.450			
Other multiple-vehicle collision	0.550	0.150			0.250			

Note: HSM-Provided values based on HSIS data for California (2002-2006)

Table 12-13: Distribution of Single-Vehicle Crashes for Intersections by Collision Type

Locally-Derived Values? No — Proportion of crashes by severity level for specific intersection types — HSM-Provided Values

Collision type	3ST FI	3ST PDO	3SG FI	3SG PDO	4ST FI	4ST PDO	4SG FI	4SG PDO
Collision with parked vehicle	0.001	0.003	0.001	0.001	0.001	0.001	0.001	0.001
Collision with animal	0.003	0.018	0.001	0.003	0.001	0.026	0.002	0.002
Collision with fixed object	0.762	0.834	0.653	0.895	0.679	0.847	0.744	0.870
Collision with other object	0.090	0.092	0.091	0.069	0.089	0.070	0.072	0.070
Other single-vehicle collision	0.039	0.023	0.045	0.018	0.051	0.007	0.040	0.023
Noncollision	0.105	0.030	0.209	0.014	0.179	0.049	0.141	0.034

Source: HSM-Provided values base on HSIS data for California (2002-2006)

Locally-Derived Values

Collision type	3ST FI	3ST PDO	3SG FI	3SG PDO	4ST FI	4ST PDO	4SG FI	4SG PDO
Collision with parked vehicle	0.500	0.100			0.750			
Collision with animal	0.510	0.110			0.650			
Collision with fixed object	0.520	0.120			0.550			
Collision with other object	0.530	0.130			0.450			
Other single-vehicle collision	0.540	0.140			0.350			
Noncollision	0.550	0.150			0.250			

Table 12-27: Nighttime Crash Proportions for Unlighted Intersections

Locally-Derived Values? No — Proportion of crashes that occur at night, p_{nit}

Intersection Type	HSM-Provided Values	Locally-Derived Values
3ST	0.236	0.300
4ST	0.229	0.310
3SG	0.235	0.320
4SG	0.235	0.330

Tables Affiliated with Crash Modification Factors:

Table 12-24: Crash Modification Factor (CMF_{1r}) for Installation of Left-Turn Lanes on Intersection Approaches

Intersection Type	Intersection traffic control	Number of approaches with left-turn lanes [a] One approach	Two approaches	Three approaches	Four approaches
3ST	Minor-road STOP control[b]	0.67	0.45	--	--
3SG	Traffic signal	0.93	0.86	0.80	0.80
4ST	Minor-road STOP control[b]	0.73	0.53	--	--
4SG	Traffic signal	0.90	0.81	0.73	0.66

[a] STOP-controlled approaches are not considered in determining the number of approaches with left-turn lanes.

[b] Stop signs present on minor-road approaches only.

Table 12-26: Crash Modification Factor (CMF_{3r}) for Installation of Right-Turn Lanes on Intersection Approaches

Intersection Type	Intersection traffic control	Number of approaches with right-turn lanes [a] One approach	Two approaches	Three approaches	Four approaches
3ST	Minor-road STOP control[b]	0.86	0.74	--	--
3SG	Traffic signal	0.96	0.92	--	--
4ST	Minor-road STOP control[b]	0.86	0.74	--	--
4SG	Traffic signal	0.96	0.92	0.88	0.85

[a] STOP-controlled approaches are not considered in determining the number of approaches with right-turn lanes.

[b] Stop signs present on minor-road approaches only.

Worksheet 3A -- Predicted Crashes by Severity and Site Type and Observed Crashes Using the Site-Specific EB Method for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Collision type / Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,** $N_{observed}$ (crashes/year)	**Overdispersion Parameter, k**	**Weighted adjustment, w**	**Expected average crash frequency,**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)			Equation A-5 from Part C Appendix	Equation A-4 from Part C Appendix
ROADWAY SEGMENTS							
Multiple-vehicle nondriveway							
Segment 1	1.738	0.516	1.221		0.840	0.407	0.706
Segment 2	0.095	0.029	0.066		0.840	0.926	0.088
Segment 3	1.519	0.449	1.069		0.840	0.439	0.667
Single-vehicle							
Segment 1	1.749	0.465	1.284		0.810	0.414	0.724
Segment 2	0.327	0.118	0.209		0.810	0.791	0.258
Segment 3	1.227	0.307	0.920		0.810	0.502	0.615
Multiple-vehicle driveway-related							
Segment 1	0.883	0.285	0.598		0.810	0.583	0.515
Segment 2	0.012	0.004	0.008		0.810	0.990	0.012
Segment 3	0.274	0.088	0.185		0.810	0.819	0.224
INTERSECTIONS							
Multiple-vehicle							
Intersection 1	1.410	0.448	0.962	8.100	0.800	0.470	4.956
Intersection 2	1.322	0.468	0.854	3.900	0.800	0.486	2.647
Intersection 3	2.090	0.685	1.406	1.000	0.390	0.551	1.601
Intersection 4	3.520	1.162	2.358	7.000	0.390	0.421	5.533
Intersection 5	3.572	1.179	2.393	40.300	0.390	0.418	24.953
Intersection 6	6.317	2.234	4.082	19.500	0.390	0.289	15.694
Intersection 7	1.426	0.565	0.861	0.300	0.400	0.637	1.017
Intersection 8	0.801	0.230	0.571		0.390	0.762	0.610
Intersection 9	2.225	0.847	1.378		0.400	0.529	1.177
Single-vehicle							
Intersection 1	0.352	0.110	0.242	2.900	1.140	0.714	1.082
Intersection 2	0.241	0.076	0.165	2.000	1.140	0.785	0.620
Intersection 3	0.139	0.037	0.102	0.500	0.360	0.952	0.156
Intersection 4	0.227	0.060	0.167	0.500	0.360	0.925	0.247
Intersection 5	0.229	0.060	0.169	3.700	0.360	0.924	0.493
Intersection 6	0.313	0.069	0.244	1.300	0.360	0.899	0.413
Intersection 7	0.148	0.041	0.106	0.000	0.650	0.912	0.135
Intersection 8	0.084	0.030	0.054		0.360	0.971	0.082
Intersection 9	0.283	0.080	0.203		0.650	0.845	0.239
COMBINED (sum of column)	32.237	10.561	21.676	91	--	--	65.225

Worksheet 3B -- Predicted Pedestrian and Bicycle Crashes for

Urban and Suburban Arterials

(1) Site Type	(2) N_{ped}	(3) N_{bike}
ROADWAY SEGMENTS		
Segment 1	0.022	0.017
Segment 2	0.002	0.002
Segment 3	0.015	0.012
INTERSECTIONS		
Intersection 1	0.037	0.028
Intersection 2	0.033	0.025
Intersection 3	0.004	0.033
Intersection 4	0.026	0.056
Intersection 5	0.019	0.057
Intersection 6	0.007	0.099
Intersection 7	0.035	0.028
Intersection 8	0.009	0.013
Intersection 9	0.055	0.045
COMBINED (sum of column)	0.264	0.417

Worksheet 3C -- Site-Specific EB Method Summary Results for Urban and Suburban Arterials

(1) Crash severity level	(2) $N_{predicted}$	(3) N_{ped}	(4) N_{bike}	(5) $N_{expected\ (VEHICLE)}$	(6) $N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(8)_{COMB}$ Worksheet 3A	(3)+(4)+(5)
	32.24	0.3	0.4	65.2	65.9
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(5)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$	(3)+(4)+(5)
	10.56	0.3	0.4	21.4	22.0
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 3A	--	--	$(5)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$	(3)+(4)+(5)
	21.7	0.0	0.0	43.9	43.9

Calibration Factors

	Observed (crashes/yr)	Predicted (crashes/yr)	Factor
State System Signalized Intersections	73.8	16.40637	4.5
State System Unsignalized Intersections	17.2	4.897952	3.5
Local System Intersections			#DIV/0!

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Moon Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 750 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	3.1
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	6,000
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	2
Minor commercial driveways (number)		--	9
Major industrial / institutional driveways (number)		--	2
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	5
Minor residential driveways (number)		--	36
Other driveways (number)		--	2
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	15
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	3.20

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.10	1.00	0.93	1.00	1.03

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	1.68	0.84	1.693	1.000	1.693	1.03	3.20	5.561
Fatal and Injury (FI)	-16.22	1.66	0.65	0.523	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.297	0.503	1.03	3.20	1.652
Property Damage Only (PDO)	-15.62	1.69	0.87	1.238	$(5)_{TOTAL}-(5)_{FI}$ = 0.703	1.190	1.03	3.20	3.908

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	1.652	1.000	3.908	5.561
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	1.206	0.778	3.041	4.247
Head-on collision	0.068	0.112	0.004	0.016	0.128
Angle collision	0.085	0.140	0.079	0.309	0.449
Sideswipe, same direction	0.015	0.025	0.031	0.121	0.146
Sideswipe, opposite direction	0.073	0.121	0.055	0.215	0.336
Other multiple-vehicle collision	0.029	0.048	0.053	0.207	0.255

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	1.704	1.000	1.704	1.03	3.20	5.597
Fatal and Injury (FI)	-3.96	0.23	0.50	0.437	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.266	0.453	1.03	3.20	1.487
Property Damage Only (PDO)	-6.51	0.64	0.87	1.208	$(5)_{TOTAL}-(5)_{FI}$ = 0.734	1.252	1.03	3.20	4.110

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	1.487	1.000	4.110	5.597
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.039	0.066	0.271	0.310
Collision with fixed object	0.723	1.075	0.759	3.120	4.195
Collision with other object	0.010	0.015	0.013	0.053	0.068
Other single-vehicle collision	0.241	0.358	0.162	0.666	1.024

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	2	0.158	1.000	0.126	
Minor commercial	9	0.050	1.000	0.180	
Major industrial/institutional	2	0.172	1.000	0.138	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	5	0.083	1.000	0.166	
Minor residential	36	0.016	1.000	0.230	
Other	2	0.025	1.000	0.020	
Total	--	--	--	0.860	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.860	1.000	0.860	1.03	3.20	2.826
Fatal and injury (FI)	--	0.323	0.278	1.03	3.20	0.913
Property damage only (PDO)	--	0.677	0.582	1.03	3.20	1.913

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	5.561	5.597	2.826	13.984	0.005	3.20	0.224
Fatal and injury (FI)	--	--	--	--	--	3.20	0.224

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	5.561	5.597	2.826	13.984	0.004	3.20	0.179
Fatal and injury (FI)	--	--	--	--	--	3.20	0.179

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	1.206	3.041	4.247
Head-on collisions (from Worksheet 1D)	0.112	0.016	0.128
Angle collisions (from Worksheet 1D)	0.140	0.309	0.449
Sideswipe, same direction (from Worksheet 1D)	0.025	0.121	0.146
Sideswipe, opposite direction (from Worksheet 1D)	0.121	0.215	0.336
Driveway-related collisions (from Worksheet 1H)	0.913	1.913	2.826
Other multiple-vehicle collision (from Worksheet 1D)	0.048	0.207	0.255
Subtotal	2.565	5.822	8.387
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.039	0.271	0.310
Collision with fixed object (from Worksheet 1F)	1.075	3.120	4.195
Collision with other object (from Worksheet 1F)	0.015	0.053	0.068
Other single-vehicle collision (from Worksheet 1F)	0.358	0.666	1.024
Collision with pedestrian (from Worksheet 1I)	0.224	0.000	0.224
Collision with bicycle (from Worksheet 1J)	0.179	0.000	0.179
Subtotal	1.890	4.110	6.000
Total	4.455	9.932	14.386

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	14.4	3.10	4.6
Fatal and injury (FI)	4.5	3.10	1.4
Property damage only (PDO)	9.9	3.10	3.2

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	Miles Road
Agency or Company	CMT	Roadway Section	US 40 to E County Road 600 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	1.1
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	1,970
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	4
Other driveways (number)		--	1
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	3
Calibration Factor, Cr		1.00	2.40

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	1.68	0.84	0.092	1.000	0.092	1.00	2.40	0.222
Fatal and Injury (FI)	-16.22	1.66	0.65	0.029	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.304	0.028	1.00	2.40	0.068
Property Damage Only (PDO)	-15.62	1.69	0.87	0.067	$(5)_{TOTAL}-(5)_{FI}$ = 0.696	0.064	1.00	2.40	0.154

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.068	1.000	0.154	0.222
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.049	0.778	0.120	0.169
Head-on collision	0.068	0.005	0.004	0.001	0.005
Angle collision	0.085	0.006	0.079	0.012	0.018
Sideswipe, same direction	0.015	0.001	0.031	0.005	0.006
Sideswipe, opposite direction	0.073	0.005	0.055	0.008	0.013
Other multiple-vehicle collision	0.029	0.002	0.053	0.008	0.010

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	0.324	1.000	0.324	1.00	2.40	0.778
Fatal and Injury (FI)	-3.96	0.23	0.50	0.120	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.364	0.118	1.00	2.40	0.283
Property Damage Only (PDO)	-6.51	0.64	0.87	0.210	$(5)_{TOTAL}-(5)_{FI}$ = 0.636	0.206	1.00	2.40	0.495

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.283	1.000	0.495	0.778
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.007	0.066	0.033	0.040
Collision with fixed object	0.723	0.204	0.759	0.376	0.580
Collision with other object	0.010	0.003	0.013	0.006	0.009
Other single-vehicle collision	0.241	0.068	0.162	0.080	0.148

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	4	0.016	1.000	0.008	
Other	1	0.025	1.000	0.003	
Total	--	--	--	0.012	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.012	1.000	0.012	1.00	2.40	0.028
Fatal and injury (FI)	--	0.323	0.004	1.00	2.40	0.009
Property damage only (PDO)	--	0.677	0.008	1.00	2.40	0.019

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.222	0.778	0.028	1.028	0.005	2.40	0.012
Fatal and injury (FI)	--	--	--	--	--	2.40	0.012

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.222	0.778	0.028	1.028	0.004	2.40	0.010
Fatal and injury (FI)	--	--	--	--	--	2.40	0.010

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	(5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	(6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.049	0.120	0.169
Head-on collisions (from Worksheet 1D)	0.005	0.001	0.005
Angle collisions (from Worksheet 1D)	0.006	0.012	0.018
Sideswipe, same direction (from Worksheet 1D)	0.001	0.005	0.006
Sideswipe, opposite direction (from Worksheet 1D)	0.005	0.008	0.013
Driveway-related collisions (from Worksheet 1H)	0.009	0.019	0.028
Other multiple-vehicle collision (from Worksheet 1D)	0.002	0.008	0.010
Subtotal	0.077	0.173	0.250
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.007	0.033	0.040
Collision with fixed object (from Worksheet 1F)	0.204	0.376	0.580
Collision with other object (from Worksheet 1F)	0.003	0.006	0.009
Other single-vehicle collision (from Worksheet 1F)	0.068	0.080	0.148
Collision with pedestrian (from Worksheet 1I)	0.012	0.000	0.012
Collision with bicycle (from Worksheet 1J)	0.010	0.000	0.010
Subtotal	0.305	0.495	0.800
Total	0.382	0.669	1.050

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)**	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)**
	(Total) from Worksheet 1K		(2) / (3)
Total	1.1	1.10	1.0
Fatal and injury (FI)	0.4	1.10	0.3
Property damage only (PDO)	0.7	1.10	0.6

Worksheet 1A -- General Information and Input Data for Urban and Suburban Roadway Segments

General Information		Location Information	
Analyst	STM	Roadway	S CR 525 E
Agency or Company	CMT	Roadway Section	E CR 700 S to E CR 875 S
Date Performed	03/24/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Roadway type (2U, 3T, 4U, 4D, ST)		--	2U
Length of segment, L (mi)		--	2
AADT (veh/day)	$AADT_{MAX}$ = 32,600 (veh/day)	--	900
Type of on-street parking (none/parallel/angle)		None	None
Proportion of curb length with on-street parking		--	0
Median width (ft) - for divided only		15	Not Present
Lighting (present / not present)		Not Present	Not Present
Auto speed enforcement (present / not present)		Not Present	Not Present
Major commercial driveways (number)		--	0
Minor commercial driveways (number)		--	0
Major industrial / institutional driveways (number)		--	0
Minor industrial / institutional driveways (number)		--	0
Major residential driveways (number)		--	0
Minor residential driveways (number)		--	32
Other driveways (number)		--	2
Speed Category		--	Posted Speed Greater than 30 mph
Roadside fixed object density (fixed objects / mi)		0	5
Offset to roadside fixed objects (ft) [If greater than 30 or Not Present, input 30]		30	20
Calibration Factor, Cr		1.00	1.00

Worksheet 1B -- Crash Modification Factors for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
CMF for On-Street Parking	CMF for Roadside Fixed Objects	CMF for Median Width	CMF for Lighting	CMF for Automated Speed Enforcement	Combined CMF
CMF 1r	*CMF 2r*	*CMF 3r*	*CMF 4r*	*CMF 5r*	*CMF comb*
from Equation 12-32	from Equation 12-33	from Table 12-22	from Equation 12-34	from Section 12.7.1	(1)*(2)*(3)*(4)*(5)
1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 1C -- Multiple-Vehicle Nondriveway Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brmv}**	**Proportion of Total Crashes**	**Adjusted N_{brmv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brmv}**
	from Table 12-3		from Table 12-3	from Equation 12-10		$(4)_{TOTAL}$*(5)	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-15.22	1.68	0.84	0.045	1.000	0.045	1.00	1.00	0.045
Fatal and Injury (FI)	-16.22	1.66	0.65	0.014	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.309	0.014	1.00	1.00	0.014
Property Damage Only (PDO)	-15.62	1.69	0.87	0.032	$(5)_{TOTAL}-(5)_{FI}$ = 0.691	0.031	1.00	1.00	0.031

Worksheet 1D -- Multiple-Vehicle Nondriveway Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brmv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brmv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brmv\ (TOTAL)}$ (crashes/year)**
	from Table 12-4	$(9)_{FI}$ from Worksheet 1C	from Table 12-4	$(9)_{PDO}$ from Worksheet 1C	$(9)_{TOTAL}$ from Worksheet 1C
Total	1.000	0.014	1.000	0.031	0.045
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Rear-end collision	0.730	0.010	0.778	0.024	0.034
Head-on collision	0.068	0.001	0.004	0.000	0.001
Angle collision	0.085	0.001	0.079	0.002	0.004
Sideswipe, same direction	0.015	0.000	0.031	0.001	0.001
Sideswipe, opposite direction	0.073	0.001	0.055	0.002	0.003
Other multiple-vehicle collision	0.029	0.000	0.053	0.002	0.002

Worksheet 1E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)		(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**		**Overdispersion Parameter, k**	**Initial N_{brsv}**	**Proportion of Total Crashes**	**Adjusted N_{brsv}**	**Combined CMFs**	**Calibration Factor, Cr**	**Predicted N_{brsv}**
	from Table 12-5		from Table 12-5	from Equation 12-13		$(4)_{TOTAL}*(5)$	(6) from Worksheet 1B		(6)*(7)*(8)
	a	b							
Total	-5.47	0.56	0.81	0.380	1.000	0.380	1.00	1.00	0.380
Fatal and Injury (FI)	-3.96	0.23	0.50	0.182	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.441	0.167	1.00	1.00	0.167
Property Damage Only (PDO)	-6.51	0.64	0.87	0.231	$(5)_{TOTAL}-(5)_{FI}$ = 0.559	0.213	1.00	1.00	0.213

Worksheet 1F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{brsv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{brsv\ (PDO)}$ (crashes/year)**	**Predicted N $_{brsv\ (TOTAL)}$ (crashes/year)**
	from Table 12-6	$(9)_{FI}$ from Worksheet 1E	from Table 12-6	$(9)_{PDO}$ from Worksheet 1E	$(9)_{TOTAL}$ from Worksheet 1E
Total	1.000	0.167	1.000	0.213	0.380
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with animal	0.026	0.004	0.066	0.014	0.018
Collision with fixed object	0.723	0.121	0.759	0.161	0.282
Collision with other object	0.010	0.002	0.013	0.003	0.004
Other single-vehicle collision	0.241	0.040	0.162	0.034	0.075

Worksheet 1G -- Multiple-Vehicle Driveway-Related Collisions by Driveway Type for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)
Driveway Type	**Number of driveways, n_j**	**Crashes per driveway per year, N_j**	**Coefficient for traffic adjustment, t**	**Initial N_{brdwy}**	**Overdispersion parameter, k**
		from Table 12-7	from Table 12-7	Equation 12-16 $n_j * N_j * (AADT/15,000)^t$	from Table 12-7
Major commercial	0	0.158	1.000	0.000	
Minor commercial	0	0.050	1.000	0.000	
Major industrial/institutional	0	0.172	1.000	0.000	
Minor industrial/institutional	0	0.023	1.000	0.000	--
Major residential	0	0.083	1.000	0.000	
Minor residential	32	0.016	1.000	0.031	
Other	2	0.025	1.000	0.003	
Total	--	--	--	0.034	0.81

Worksheet 1H -- Multiple-Vehicle Driveway-Related Collisions by Severity Level for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Initial N_{brdwy}**	**Proportion of total crashes (f_{dwy})**	**Adjusted N_{brdwy}**	**Combined CMFs**	**Calibration factor, C_r**	**Predicted N_{brdwy}**
	$(5)_{TOTAL}$ from Worksheet 1G	from Table 12-7	$(2)_{TOTAL}$ * (3)	(6) from Worksheet 1B		(4)*(5)*(6)
Total	0.034	1.000	0.034	1.00	1.00	0.034
Fatal and injury (FI)	--	0.323	0.011	1.00	1.00	0.011
Property damage only (PDO)	--	0.677	0.023	1.00	1.00	0.023

Worksheet 1I -- Vehicle-Pedestrian Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{pedr}**	**Calibration factor, C_r**	**Predicted N_{pedr}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-8		(5)*(6)*(7)
Total	0.045	0.380	0.034	0.459	0.005	1.00	0.002
Fatal and injury (FI)	--	--	--	--	--	1.00	0.002

Worksheet 1J -- Vehicle-Bicycle Collisions for Urban and Suburban Roadway Segments

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Crash Severity Level	**Predicted N_{brmv}**	**Predicted N_{brsv}**	**Predicted N_{brdwy}**	**Predicted N_{br}**	**f_{biker}**	**Calibration factor, C_r**	**Predicted N_{biker}**
	(9) from Worksheet 1C	(9) from Worksheet 1E	(7) from Worksheet 1H	(2)+(3)+(4)	from Table 12-9		(5)*(6)*(7)
Total	0.045	0.380	0.034	0.459	0.004	1.00	0.002
Fatal and injury (FI)	--	--	--	--	--	1.00	0.002

Worksheet 1K -- Crash Severity Distribution for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)** (3) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J	**Property damage only (PDO)** (5) from Worksheet 1D and 1F; and (7) from Worksheet 1H	**Total** (6) from Worksheet 1D and 1F; (7) from Worksheet 1H; and (8) from Worksheet 1I and 1J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 1D)	0.010	0.024	0.034
Head-on collisions (from Worksheet 1D)	0.001	0.000	0.001
Angle collisions (from Worksheet 1D)	0.001	0.002	0.004
Sideswipe, same direction (from Worksheet 1D)	0.000	0.001	0.001
Sideswipe, opposite direction (from Worksheet 1D)	0.001	0.002	0.003
Driveway-related collisions (from Worksheet 1H)	0.011	0.023	0.034
Other multiple-vehicle collision (from Worksheet 1D)	0.000	0.002	0.002
Subtotal	0.025	0.054	0.079
SINGLE-VEHICLE			
Collision with animal (from Worksheet 1F)	0.004	0.014	0.018
Collision with fixed object (from Worksheet 1F)	0.121	0.161	0.282
Collision with other object (from Worksheet 1F)	0.002	0.003	0.004
Other single-vehicle collision (from Worksheet 1F)	0.040	0.034	0.075
Collision with pedestrian (from Worksheet 1I)	0.002	0.000	0.002
Collision with bicycle (from Worksheet 1J)	0.002	0.000	0.002
Subtotal	0.172	0.213	0.384
Total	0.196	0.267	0.463

Worksheet 1L -- Summary Results for Urban and Suburban Roadway Segments			
(1)	(2)	(3)	(4)
Crash Severity Level	**Predicted average crash frequency, $N_{predicted\ rs}$ (crashes/year)** (Total) from Worksheet 1K	**Roadway segment length, L (mi)**	**Crash rate (crashes/mi/year)** (2) / (3)
Total	0.5	2.00	0.2
Fatal and injury (FI)	0.2	2.00	0.1
Property damage only (PDO)	0.3	2.00	0.1

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267/ Center Street
Agency or Company	CMT	Roadway Section	Black Rock Rd
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data				Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)				--	3ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ =	45,700	(veh/day)	--	10,300
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ =	9,300	(veh/day)	--	4,480
Intersection lighting (present/not present)				Not Present	Not Present
Calibration factor, C_i				1.00	3.50
Data for unsignalized intersections only:				--	--
Number of major-road approaches with left-turn lanes (0,1,2)				0	0
Number of major-road approaches with right-turn lanes (0,1,2)				0	0
Data for signalized intersections only:				--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]				0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]				0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]				--	4
Type of left-turn signal phasing for Leg #1				Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2				--	Protected / Permissive
Type of left-turn signal phasing for Leg #3				--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)				--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]				0	0
Intersection red light cameras (present/not present)				Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only					2
Maximum number of lanes crossed by a pedestrian (n_{lanesx})				--	2
Number of bus stops within 300 m (1,000 ft) of the intersection				0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)				Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection				0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Workshe		(6)*(7)*(8)
	a	b	c							
Total	-13.36	1.11	0.41	0.80	1.410	1.000	1.410	1.00	3.50	4.934
Fatal and Injury (FI)	-14.01	1.16	0.30	0.69	0.463	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.318	0.448	1.00	3.50	1.567
Property Damage Only (PDO)	-15.38	1.20	0.51	0.77	0.996	$(5)_{TOTAL}-(5)_{FI}$ = 0.682	0.962	1.00	3.50	3.367

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	1.567	1.000	3.367	4.934
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.421	0.660	0.440	1.482	2.141
Head-on collision	0.045	0.070	0.023	0.077	0.148
Angle collision	0.343	0.537	0.262	0.882	1.420
Sideswipe	0.126	0.197	0.040	0.135	0.332
Other multiple-vehicle collision	0.065	0.102	0.235	0.791	0.893

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Workshe		(6)*(7)*(8)
	a	b	c							
Total	-6.81	0.16	0.51	1.14	0.352	1.000	0.352	1.00	3.50	1.232
Fatal and Injury (FI)	--	--	--	--	0.109	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.312	0.110	1.00	3.50	0.385
Property Damage Only (PDO)	-8.36	0.25	0.55	1.29	0.240	$(5)_{TOTAL}-(5)_{FI}$ = 0.688	0.242	1.00	3.50	0.847

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.385	1.000	0.847	1.232
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.003	0.003	0.003
Collision with animal	0.003	0.001	0.018	0.015	0.016
Collision with fixed object	0.762	0.293	0.834	0.707	1.000
Collision with other object	0.090	0.035	0.092	0.078	0.113
Other single-vehicle collision	0.039	0.015	0.023	0.019	0.035
Single-vehicle noncollision	0.105	0.040	0.030	0.025	0.066

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	4.934	1.232	6.166	0.021	3.50	0.453
Fatal and injury (FI)	--	--	--	--	3.50	0.453

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	3.50	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	4.934	1.232	6.166	0.016	3.50	0.345
Fatal and injury (FI)	--	--	--	--	3.50	0.345

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.660	1.482	2.141
Head-on collisions (from Worksheet 2D)	0.070	0.077	0.148
Angle collisions (from Worksheet 2D)	0.537	0.882	1.420
Sideswipe (from Worksheet 2D)	0.197	0.135	0.332
Other multiple-vehicle collision (from Worksheet 2D)	0.102	0.791	0.893
Subtotal	1.567	3.367	4.934
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.003	0.003
Collision with animal (from Worksheet 2F)	0.001	0.015	0.016
Collision with fixed object (from Worksheet 2F)	0.293	0.707	1.000
Collision with other object (from Worksheet 2F)	0.035	0.078	0.113
Other single-vehicle collision (from Worksheet 2F)	0.015	0.019	0.035
Single-vehicle noncollision (from Worksheet 2F)	0.040	0.025	0.066
Collision with pedestrian (from Worksheet 2G or 2I)	0.453	0.000	0.453
Collision with bicycle (from Worksheet 2J)	0.345	0.000	0.345
Subtotal	1.183	0.847	2.031
Total	2.750	4.215	6.965

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	7.0
Fatal and injury (FI)	2.8
Property damage only (PDO)	4.2

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Miles Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	3ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 45,700 (veh/day)	--	13,170
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 9,300 (veh/day)	--	1,970
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	1

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-13.36	1.11	0.41	0.80	1.322	1.000	1.322	1.00	3.50	4.628
Fatal and Injury (FI)	-14.01	1.16	0.30	0.69	0.481	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.354	0.468	1.00	3.50	1.637
Property Damage Only (PDO)	-15.38	1.20	0.51	0.77	0.879	$(5)_{TOTAL}-(5)_{FI}$ = 0.646	0.854	1.00	3.50	2.990

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	1.637	1.000	2.990	4.628
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.421	0.689	0.440	1.316	2.005
Head-on collision	0.045	0.074	0.023	0.069	0.142
Angle collision	0.343	0.562	0.262	0.784	1.345
Sideswipe	0.126	0.206	0.040	0.120	0.326
Other multiple-vehicle collision	0.065	0.106	0.235	0.703	0.809

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-6.81	0.16	0.51	1.14	0.241	1.000	0.241	1.00	3.50	0.843
Fatal and Injury (FI)	--	--	--	--	0.075	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.315	0.076	1.00	3.50	0.265
Property Damage Only (PDO)	-8.36	0.25	0.55	1.29	0.163	$(5)_{TOTAL}-(5)_{FI}$ = 0.685	0.165	1.00	3.50	0.578

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.265	1.000	0.578	0.843
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.003	0.002	0.002
Collision with animal	0.003	0.001	0.018	0.010	0.011
Collision with fixed object	0.762	0.202	0.834	0.482	0.684
Collision with other object	0.090	0.024	0.092	0.053	0.077
Other single-vehicle collision	0.039	0.010	0.023	0.013	0.024
Single-vehicle noncollision	0.105	0.028	0.030	0.017	0.045

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	4.628	0.843	5.471	0.021	3.50	0.402
Fatal and injury (FI)	--	--	--	--	3.50	0.402

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	3.50	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	4.628	0.843	5.471	0.016	3.50	0.306
Fatal and injury (FI)	--	--	--	--	3.50	0.306

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.689	1.316	2.005
Head-on collisions (from Worksheet 2D)	0.074	0.069	0.142
Angle collisions (from Worksheet 2D)	0.562	0.784	1.345
Sideswipe (from Worksheet 2D)	0.206	0.120	0.326
Other multiple-vehicle collision (from Worksheet 2D)	0.106	0.703	0.809
Subtotal	1.637	2.990	4.628
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.002	0.002
Collision with animal (from Worksheet 2F)	0.001	0.010	0.011
Collision with fixed object (from Worksheet 2F)	0.202	0.482	0.684
Collision with other object (from Worksheet 2F)	0.024	0.053	0.077
Other single-vehicle collision (from Worksheet 2F)	0.010	0.013	0.024
Single-vehicle noncollision (from Worksheet 2F)	0.028	0.017	0.045
Collision with pedestrian (from Worksheet 2G or 2I)	0.402	0.000	0.402
Collision with bicycle (from Worksheet 2J)	0.306	0.000	0.306
Subtotal	0.974	0.578	1.552
Total	2.611	3.568	6.179

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	6.2
Fatal and injury (FI)	2.6
Property damage only (PDO)	3.6

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Moon Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	18,880
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	6,200
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	4

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	4.728	1.000	4.728	0.44	4.50	9.406
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.491	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.328	1.549	0.44	4.50	3.081
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.060	$(5)_{TOTAL}-(5)_{FI}$ = 0.672	3.179	0.44	4.50	6.325

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	3.081	1.000	6.325	9.406
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	1.386	0.483	3.055	4.442
Head-on collision	0.049	0.151	0.030	0.190	0.341
Angle collision	0.347	1.069	0.244	1.543	2.612
Sideswipe	0.099	0.305	0.032	0.202	0.507
Other multiple-vehicle collision	0.055	0.169	0.211	1.335	1.504

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.314	1.000	0.314	0.44	4.50	0.625
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.083	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.268	0.084	0.44	4.50	0.167
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.228	$(5)_{TOTAL}-(5)_{FI}$ = 0.732	0.230	0.44	4.50	0.458

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.167	1.000	0.458	0.625
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.001
Collision with animal	0.002	0.000	0.002	0.001	0.001
Collision with fixed object	0.744	0.125	0.870	0.399	0.523
Collision with other object	0.072	0.012	0.070	0.032	0.044
Other single-vehicle collision	0.040	0.007	0.023	0.011	0.017
Single-vehicle noncollision	0.141	0.024	0.034	0.016	0.039

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.004	1.12	4.50	0.020
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.020

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	9.406	0.625	10.032	0.015	4.50	0.677
Fatal and injury (FI)	--	--	--	--	4.50	0.677

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.386	3.055	4.442
Head-on collisions (from Worksheet 2D)	0.151	0.190	0.341
Angle collisions (from Worksheet 2D)	1.069	1.543	2.612
Sideswipe (from Worksheet 2D)	0.305	0.202	0.507
Other multiple-vehicle collision (from Worksheet 2D)	0.169	1.335	1.504
Subtotal	3.081	6.325	9.406
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.001
Collision with animal (from Worksheet 2F)	0.000	0.001	0.001
Collision with fixed object (from Worksheet 2F)	0.125	0.399	0.523
Collision with other object (from Worksheet 2F)	0.012	0.032	0.044
Other single-vehicle collision (from Worksheet 2F)	0.007	0.011	0.017
Single-vehicle noncollision (from Worksheet 2F)	0.024	0.016	0.039
Collision with pedestrian (from Worksheet 2G or 2I)	0.020	0.000	0.020
Collision with bicycle (from Worksheet 2J)	0.677	0.000	0.677
Subtotal	0.865	0.458	1.323
Total	3.946	6.783	10.729

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	10.7
Fatal and injury (FI)	3.9
Property damage only (PDO)	6.8

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	21,540
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	10,140
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected / Permissive
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected / Permissive
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			35
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	5
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	3

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.96	1.00	1.00	0.91	1.00	0.58

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	6.096	1.000	6.096	0.58	4.50	15.839
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	1.941	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.330	2.012	0.58	4.50	5.227
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	3.939	$(5)_{TOTAL}-(5)_{FI}$ = 0.670	4.084	0.58	4.50	10.612

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	5.227	1.000	10.612	15.839
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	2.352	0.483	5.126	7.478
Head-on collision	0.049	0.256	0.030	0.318	0.575
Angle collision	0.347	1.814	0.244	2.589	4.403
Sideswipe	0.099	0.518	0.032	0.340	0.857
Other multiple-vehicle collision	0.055	0.288	0.211	2.239	2.527

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.393	1.000	0.393	0.58	4.50	1.020
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.102	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.262	0.103	0.58	4.50	0.268
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.286	$(5)_{TOTAL}-(5)_{FI}$ = 0.738	0.290	0.58	4.50	0.753

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	$(9)_{FI}$ from Worksheet 2E	from Table 12-13	$(9)_{PDO}$ from Worksheet 2E	$(9)_{PDO}$ from Worksheet 2E
Total	1.000	0.268	1.000	0.753	1.020
		$(2)*(3)_{FI}$		$(4)*(5)_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.001	0.002	0.002	0.002
Collision with fixed object	0.744	0.199	0.870	0.655	0.854
Collision with other object	0.072	0.019	0.070	0.053	0.072
Other single-vehicle collision	0.040	0.011	0.023	0.017	0.028
Single-vehicle noncollision	0.141	0.038	0.034	0.026	0.063

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.023	1.12	4.50	0.115
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.115

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	15.839	1.020	16.860	0.015	4.50	1.138
Fatal and injury (FI)	--	--	--	--	4.50	1.138

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	2.352	5.126	7.478
Head-on collisions (from Worksheet 2D)	0.256	0.318	0.575
Angle collisions (from Worksheet 2D)	1.814	2.589	4.403
Sideswipe (from Worksheet 2D)	0.518	0.340	0.857
Other multiple-vehicle collision (from Worksheet 2D)	0.288	2.239	2.527
Subtotal	5.227	10.612	15.839
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.001	0.002	0.002
Collision with fixed object (from Worksheet 2F)	0.199	0.655	0.854
Collision with other object (from Worksheet 2F)	0.019	0.053	0.072
Other single-vehicle collision (from Worksheet 2F)	0.011	0.017	0.028
Single-vehicle noncollision (from Worksheet 2F)	0.038	0.026	0.063
Collision with pedestrian (from Worksheet 2G or 2I)	0.115	0.000	0.115
Collision with bicycle (from Worksheet 2J)	1.138	0.000	1.138
Subtotal	1.521	0.753	2.273
Total	6.748	11.365	18.113

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	18.1
Fatal and injury (FI)	6.7
Property damage only (PDO)	11.4

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	US 40
Agency or Company	CMT	Roadway Section	SR 267
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	23,720
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	22,040
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected / Permissive
Type of left-turn signal phasing for Leg #2		--	Protected / Permissive
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			10
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	4
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	5

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.87	0.85	1.00	0.91	1.00	0.44

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	8.080	1.000	8.080	0.44	4.50	16.075
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	2.579	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.330	2.666	0.44	4.50	5.305
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	5.237	$(5)_{TOTAL}-(5)_{FI}$ = 0.670	5.414	0.44	4.50	10.770

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	5.305	1.000	10.770	16.075
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	2.387	0.483	5.202	7.589
Head-on collision	0.049	0.260	0.030	0.323	0.583
Angle collision	0.347	1.841	0.244	2.628	4.469
Sideswipe	0.099	0.525	0.032	0.345	0.870
Other multiple-vehicle collision	0.055	0.292	0.211	2.273	2.564

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.517	1.000	0.517	0.44	4.50	1.029
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.133	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.262	0.135	0.44	4.50	0.269
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.375	$(5)_{TOTAL}-(5)_{FI}$ = 0.738	0.382	0.44	4.50	0.759

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.269	1.000	0.759	1.029
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.001	0.002	0.002	0.002
Collision with fixed object	0.744	0.201	0.870	0.661	0.861
Collision with other object	0.072	0.019	0.070	0.053	0.073
Other single-vehicle collision	0.040	0.011	0.023	0.017	0.028
Single-vehicle noncollision	0.141	0.038	0.034	0.026	0.064

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.017	1.12	4.50	0.087
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.087

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	16.075	1.029	17.104	0.015	4.50	1.155
Fatal and injury (FI)	--	--	--	--	4.50	1.155

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	2.387	5.202	7.589
Head-on collisions (from Worksheet 2D)	0.260	0.323	0.583
Angle collisions (from Worksheet 2D)	1.841	2.628	4.469
Sideswipe (from Worksheet 2D)	0.525	0.345	0.870
Other multiple-vehicle collision (from Worksheet 2D)	0.292	2.273	2.564
Subtotal	5.305	10.770	16.075
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.001	0.002	0.002
Collision with fixed object (from Worksheet 2F)	0.201	0.661	0.861
Collision with other object (from Worksheet 2F)	0.019	0.053	0.073
Other single-vehicle collision (from Worksheet 2F)	0.011	0.017	0.028
Single-vehicle noncollision (from Worksheet 2F)	0.038	0.026	0.064
Collision with pedestrian (from Worksheet 2G or 2I)	0.087	0.000	0.087
Collision with bicycle (from Worksheet 2J)	1.155	0.000	1.155
Subtotal	1.511	0.759	2.270
Total	6.816	11.530	18.345

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	18.3
Fatal and injury (FI)	6.8
Property damage only (PDO)	11.5

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hadley
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	45,360
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	20,200
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	4.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	4
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	4
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Protected
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Protected
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			1
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	6
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	2

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.66	0.78	0.85	1.00	0.91	1.00	0.40

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	15.848	1.000	15.848	0.40	4.50	28.425
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	5.438	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.354	5.606	0.40	4.50	10.055
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	9.935	$(5)_{TOTAL}-(5)_{FI}$ = 0.646	10.242	0.40	4.50	18.370

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	10.055	1.000	18.370	28.425
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	4.525	0.483	8.873	13.398
Head-on collision	0.049	0.493	0.030	0.551	1.044
Angle collision	0.347	3.489	0.244	4.482	7.971
Sideswipe	0.099	0.995	0.032	0.588	1.583
Other multiple-vehicle collision	0.055	0.553	0.211	3.876	4.429

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.785	1.000	0.785	0.40	4.50	1.408
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.171	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.220	0.173	0.40	4.50	0.310
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.608	$(5)_{TOTAL}-(5)_{FI}$ = 0.780	0.612	0.40	4.50	1.098

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.310	1.000	1.098	1.408
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.002	0.001	0.002	0.002	0.003
Collision with fixed object	0.744	0.230	0.870	0.956	1.186
Collision with other object	0.072	0.022	0.070	0.077	0.099
Other single-vehicle collision	0.040	0.012	0.023	0.025	0.038
Single-vehicle noncollision	0.141	0.044	0.034	0.037	0.081

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	4.50	--
Fatal and injury (FI)	--	--	--	--	4.50	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.12	1.12

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.006	1.12	4.50	0.032
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	4.50	0.032

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	28.425	1.408	29.833	0.015	4.50	2.014
Fatal and injury (FI)	--	--	--	--	4.50	2.014

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	4.525	8.873	13.398
Head-on collisions (from Worksheet 2D)	0.493	0.551	1.044
Angle collisions (from Worksheet 2D)	3.489	4.482	7.971
Sideswipe (from Worksheet 2D)	0.995	0.588	1.583
Other multiple-vehicle collision (from Worksheet 2D)	0.553	3.876	4.429
Subtotal	10.055	18.370	28.425
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.001	0.002	0.003
Collision with fixed object (from Worksheet 2F)	0.230	0.956	1.186
Collision with other object (from Worksheet 2F)	0.022	0.077	0.099
Other single-vehicle collision (from Worksheet 2F)	0.012	0.025	0.038
Single-vehicle noncollision (from Worksheet 2F)	0.044	0.037	0.081
Collision with pedestrian (from Worksheet 2G or 2I)	0.032	0.000	0.032
Collision with bicycle (from Worksheet 2J)	2.014	0.000	2.014
Subtotal	2.355	1.098	3.453
Total	12.410	19.469	31.879

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	31.9
Fatal and injury (FI)	12.4
Property damage only (PDO)	19.5

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Camby
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 46,800 (veh/day)	--	16,200
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 5,900 (veh/day)	--	4,310
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	2
Number of major-road approaches with right-turn lanes (0,1,2)		0	1
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF $_{COMB}$*
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
0.53	1.00	0.86	1.00	1.00	1.00	0.46

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-8.90	0.82	0.25	0.40	3.128	1.000	3.128	0.46	3.50	4.989
Fatal and Injury (FI)	-11.13	0.93	0.28	0.48	1.255	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.396	1.240	0.46	3.50	1.977
Property Damage Only (PDO)	-8.74	0.77	0.23	0.40	1.912	$(5)_{TOTAL}-(5)_{FI}$ = 0.604	1.888	0.46	3.50	3.012

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	1.977	1.000	3.012	4.989
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.338	0.668	0.374	1.126	1.795
Head-on collision	0.041	0.081	0.030	0.090	0.171
Angle collision	0.440	0.870	0.335	1.009	1.879
Sideswipe	0.121	0.239	0.044	0.133	0.372
Other multiple-vehicle collision	0.060	0.119	0.217	0.654	0.772

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-5.33	0.33	0.12	0.65	0.324	1.000	0.324	0.46	3.50	0.517
Fatal and Injury (FI)	--	--	--	--	0.091	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.281	0.091	0.46	3.50	0.145
Property Damage Only (PDO)	-7.04	0.36	0.25	0.54	0.233	$(5)_{TOTAL}-(5)_{FI}$ = 0.719	0.233	0.46	3.50	0.372

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.145	1.000	0.372	0.517
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.001
Collision with animal	0.001	0.000	0.026	0.010	0.010
Collision with fixed object	0.679	0.098	0.847	0.315	0.413
Collision with other object	0.089	0.013	0.070	0.026	0.039
Other single-vehicle collision	0.051	0.007	0.007	0.003	0.010
Single-vehicle noncollision	0.179	0.026	0.049	0.018	0.044

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	4.989	0.517	5.506	0.022	3.50	0.424
Fatal and injury (FI)	--	--	--	--	3.50	0.424

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	3.50	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	4.989	0.517	5.506	0.018	3.50	0.347
Fatal and injury (FI)	--	--	--	--	3.50	0.347

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.668	1.126	1.795
Head-on collisions (from Worksheet 2D)	0.081	0.090	0.171
Angle collisions (from Worksheet 2D)	0.870	1.009	1.879
Sideswipe (from Worksheet 2D)	0.239	0.133	0.372
Other multiple-vehicle collision (from Worksheet 2D)	0.119	0.654	0.772
Subtotal	1.977	3.012	4.989
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.001
Collision with animal (from Worksheet 2F)	0.000	0.010	0.010
Collision with fixed object (from Worksheet 2F)	0.098	0.315	0.413
Collision with other object (from Worksheet 2F)	0.013	0.026	0.039
Other single-vehicle collision (from Worksheet 2F)	0.007	0.003	0.010
Single-vehicle noncollision (from Worksheet 2F)	0.026	0.018	0.044
Collision with pedestrian (from Worksheet 2G or 2I)	0.424	0.000	0.424
Collision with bicycle (from Worksheet 2J)	0.347	0.000	0.347
Subtotal	0.916	0.372	1.288
Total	2.893	3.384	6.277

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	6.3
Fatal and injury (FI)	2.9
Property damage only (PDO)	3.4

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	Hadley Road
Agency or Company	CMT	Roadway Section	Center Street
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4SG
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 67,700 (veh/day)	--	6,060
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 33,400 (veh/day)	--	9,150
Intersection lighting (present/not present)		Not Present	Present
Calibration factor, C_i		1.00	1.00
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	2
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	2
Type of left-turn signal phasing for Leg #1		Permissive	Protected
Type of left-turn signal phasing for Leg #2		--	Protected
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			5
Maximum number of lanes crossed by a pedestrian (n_{lanesx})		--	3
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Multi-Lane Rdbt	Combine
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF 7i*	*CMF* $_i$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	CMF 4194	(1)*(2)*(3)*(
0.81	0.87	1.00	1.00	0.91	1.00	0.81	0.5

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.99	1.07	0.23	0.39	1.533	1.000	1.533	0.52	1.00	0.801
Fatal and Injury (FI)	-13.14	1.18	0.22	0.33	0.425	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.287	0.440	0.52	1.00	0.230
Property Damage Only (PDO)	-11.02	1.02	0.24	0.44	1.054	$(5)_{TOTAL}-(5)_{FI}$ = 0.713	1.093	0.52	1.00	0.571

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	0.230	1.000	0.571	0.801
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.450	0.104	0.483	0.276	0.379
Head-on collision	0.049	0.011	0.030	0.017	0.028
Angle collision	0.347	0.080	0.244	0.139	0.219
Sideswipe	0.099	0.023	0.032	0.018	0.041
Other multiple-vehicle collision	0.055	0.013	0.211	0.120	0.133

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-10.21	0.68	0.27	0.36	0.161	1.000	0.161	0.52	1.00	0.084
Fatal and Injury (FI)	-9.25	0.43	0.29	0.09	0.057	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.356	0.057	0.52	1.00	0.030
Property Damage Only (PDO)	-11.34	0.78	0.25	0.44	0.104	$(5)_{TOTAL}-(5)_{FI}$ = 0.644	0.104	0.52	1.00	0.054

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.030	1.000	0.054	0.084
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.000	0.000
Collision with animal	0.002	0.000	0.002	0.000	0.000
Collision with fixed object	0.744	0.022	0.870	0.047	0.070
Collision with other object	0.072	0.002	0.070	0.004	0.006
Other single-vehicle collision	0.040	0.001	0.023	0.001	0.002
Single-vehicle noncollision	0.141	0.004	0.034	0.002	0.006

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	--	--	--	--	1.00	--
Fatal and injury (FI)	--	--	--	--	1.00	--

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
1.00	1.00	1.00	1.00

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	-9.53	0.40	0.26	0.45	0.04	0.24	0.009	1.00	1.00	0.009
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	1.00	0.009

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	0.801	0.084	0.885	0.015	1.00	0.013
Fatal and injury (FI)	--	--	--	--	1.00	0.013

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
Collision type	**Fatal and injury (FI)**	**Property damage only (PDO)**	**Total**
	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	0.104	0.276	0.379
Head-on collisions (from Worksheet 2D)	0.011	0.017	0.028
Angle collisions (from Worksheet 2D)	0.080	0.139	0.219
Sideswipe (from Worksheet 2D)	0.023	0.018	0.041
Other multiple-vehicle collision (from Worksheet 2D)	0.013	0.120	0.133
Subtotal	0.230	0.571	0.801
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.000	0.000
Collision with animal (from Worksheet 2F)	0.000	0.000	0.000
Collision with fixed object (from Worksheet 2F)	0.022	0.047	0.070
Collision with other object (from Worksheet 2F)	0.002	0.004	0.006
Other single-vehicle collision (from Worksheet 2F)	0.001	0.001	0.002
Single-vehicle noncollision (from Worksheet 2F)	0.004	0.002	0.006
Collision with pedestrian (from Worksheet 2G or 2I)	0.009	0.000	0.009
Collision with bicycle (from Worksheet 2J)	0.013	0.000	0.013
Subtotal	0.052	0.054	0.106
Total	0.282	0.625	0.908

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	0.9
Fatal and injury (FI)	0.3
Property damage only (PDO)	0.6

Worksheet 2A -- General Information and Input Data for Urban and Suburban Arterial Intersections

General Information		Location Information	
Analyst	STM	Roadway	SR 267
Agency or Company	CMT	Roadway Section	Hendricks County Road
Date Performed	03/23/20	Jurisdiction	INDOT Plainfield, IN
		Analysis Year	2020

Input Data		Base Conditions	Site Conditions
Intersection type (3ST, 3SG, 4ST, 4SG)		--	4ST
AADT $_{major}$ (veh/day)	$AADT_{MAX}$ = 46,800 (veh/day)	--	10,540
AADT $_{minor}$ (veh/day)	$AADT_{MAX}$ = 5,900 (veh/day)	--	4,520
Intersection lighting (present/not present)		Not Present	Not Present
Calibration factor, C_i		1.00	3.50
Data for unsignalized intersections only:		--	--
Number of major-road approaches with left-turn lanes (0,1,2)		0	0
Number of major-road approaches with right-turn lanes (0,1,2)		0	0
Data for signalized intersections only:		--	--
Number of approaches with left-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with right-turn lanes (0,1,2,3,4) [for 3SG, use maximum value of 3]		0	0
Number of approaches with left-turn signal phasing [for 3SG, use maximum value of 3]		--	0
Type of left-turn signal phasing for Leg #1		Permissive	Not Applicable
Type of left-turn signal phasing for Leg #2		--	Not Applicable
Type of left-turn signal phasing for Leg #3		--	Not Applicable
Type of left-turn signal phasing for Leg #4 (if applicable)		--	Not Applicable
Number of approaches with right-turn-on-red prohibited [for 3SG, use maximum value of 3]		0	0
Intersection red light cameras (present/not present)		Not Present	Not Present
Sum of all pedestrian crossing volumes (PedVol) -- Signalized intersections only			0
Maximum number of lanes crossed by a pedestrian (n_{anesx})		--	0
Number of bus stops within 300 m (1,000 ft) of the intersection		0	0
Schools within 300 m (1,000 ft) of the intersection (present/not present)		Not Present	Not Present
Number of alcohol sales establishments within 300 m (1,000 ft) of the intersection		0	0

Worksheet 2B -- Crash Modification Factors for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
CMF for Left-Turn Lanes	CMF for Left-Turn Signal Phasing	CMF for Right-Turn Lanes	CMF for Right Turn on Red	CMF for Lighting	CMF for Red Light Cameras	Combined CMF
CMF 1i	*CMF 2i*	*CMF 3i*	*CMF 4i*	*CMF 5i*	*CMF 6i*	*CMF* $_{COMB}$
from Table 12-24	from Table 12-25	from Table 12-26	from Equation 12-35	from Equation 12-36	from Equation 12-37	(1)*(2)*(3)*(4)*(5)*(6)
1.00	1.00	1.00	1.00	1.00	1.00	1.00

Worksheet 2C -- Multiple-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bimv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bimv}**
	from Table 12-10			from Table 12-10	from Equation 12-21		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-8.90	0.82	0.25	0.40	2.225	1.000	2.225	1.00	3.50	7.787
Fatal and Injury (FI)	-11.13	0.93	0.28	0.48	0.853	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.381	0.847	1.00	3.50	2.963
Property Damage Only (PDO)	-8.74	0.77	0.23	0.40	1.388	$(5)_{TOTAL}-(5)_{FI}$ = 0.619	1.378	1.00	3.50	4.823

Worksheet 2D -- Multiple-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bimv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bimv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bimv\ (TOTAL)}$ (crashes/year)**
	from Table 12-11	$(9)_{FI}$ from Worksheet 2C	from Table 12-11	$(9)_{PDO}$ from Worksheet 2C	$(9)_{PDO}$ from Worksheet 2C
Total	1.000	2.963	1.000	4.823	7.787
		(2)*$(3)_{FI}$		(4)*$(5)_{PDO}$	(3)+(5)
Rear-end collision	0.338	1.002	0.374	1.804	2.806
Head-on collision	0.041	0.122	0.030	0.145	0.266
Angle collision	0.440	1.304	0.335	1.616	2.920
Sideswipe	0.121	0.359	0.044	0.212	0.571
Other multiple-vehicle collision	0.060	0.178	0.217	1.047	1.224

Worksheet 2E -- Single-Vehicle Collisions by Severity Level for Urban and Suburban Arterial Intersections

(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)
Crash Severity Level	**SPF Coefficients**			**Overdispersion Parameter, k**	**Initial N_{bisv}**	**Proportion of Total Crashes**	**Adjusted N_{bimv}**	**Combined CMFs**	**Calibration Factor, C_i**	**Predicted N_{bisv}**
	from Table 12-12			from Table 12-12	from Eqn. 12-24; (FI) from Eqn. 12-24 or 12-27		$(4)_{TOTAL}$*(5)	(7) from Worksheet 2B		(6)*(7)*(8)
	a	b	c							
Total	-5.33	0.33	0.12	0.65	0.283	1.000	0.283	1.00	3.50	0.990
Fatal and Injury (FI)	--	--	--	--	0.079	$(4)_{FI}/((4)_{FI}+(4)_{PDO})$ = 0.282	0.080	1.00	3.50	0.279
Property Damage Only (PDO)	-7.04	0.36	0.25	0.54	0.202	$(5)_{TOTAL}-(5)_{FI}$ = 0.718	0.203	1.00	3.50	0.711

Worksheet 2F -- Single-Vehicle Collisions by Collision Type for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)
Collision Type	**Proportion of Collision Type$_{(FI)}$**	**Predicted N $_{bisv\ (FI)}$ (crashes/year)**	**Proportion of Collision Type $_{(PDO)}$**	**Predicted N $_{bisv\ (PDO)}$ (crashes/year)**	**Predicted N $_{bisv\ (TOTAL)}$ (crashes/year)**
	from Table 12-13	(9)$_{FI}$ from Worksheet 2E	from Table 12-13	(9)$_{PDO}$ from Worksheet 2E	(9)$_{PDO}$ from Worksheet 2E
Total	1.000	0.279	1.000	0.711	0.990
		(2)*(3)$_{FI}$		(4)*(5)$_{PDO}$	(3)+(5)
Collision with parked vehicle	0.001	0.000	0.001	0.001	0.001
Collision with animal	0.001	0.000	0.026	0.018	0.019
Collision with fixed object	0.679	0.189	0.847	0.602	0.791
Collision with other object	0.089	0.025	0.070	0.050	0.075
Other single-vehicle collision	0.051	0.014	0.007	0.005	0.019
Single-vehicle noncollision	0.179	0.050	0.049	0.035	0.085

Worksheet 2G -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Stop-Controlled Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{pedi}**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-16		(4)*(5)*(6)
Total	7.787	0.990	8.776	0.022	3.50	0.676
Fatal and injury (FI)	--	--	--	--	3.50	0.676

Worksheet 2H -- Crash Modification Factors for Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)	(3)	(4)
CMF for Bus Stops	CMF for Schools	CMF for Alcohol Sales Establishments	Combined CMF
CMF_{1p}	CMF_{2p}	CMF_{3p}	
from Table 12-28	from Table 12-29	from Table 12-30	(1)*(2)*(3)
--	--	--	--

Worksheet 2I -- Vehicle-Pedestrian Collisions for Urban and Suburban Arterial Signalized Intersections

(1)	(2)					(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**SPF Coefficients**					**Overdispersion Parameter, k**	**$N_{pedbase}$**	**Combined CMF**	**Calibration factor, C_i**	**Predicted N_{pedi}**
	from Table 12-14						from Equation 12-29	(4) from Worksheet 2H		(4)*(5)*(6)
	a	b	c	d	e					
Total	--	--	--	--	--	--	--	--	3.50	--
Fatal and Injury (FI)	--	--	--	--	--	--	--	--	3.50	--

Worksheet 2J -- Vehicle-Bicycle Collisions for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Crash Severity Level	**Predicted N_{bimv}**	**Predicted N_{bisv}**	**Predicted N_{bi}**	**f_{bikei}**	**Calibration factor, C_i**	**Predicted N_{bikei}**
	(9) from Worksheet 2C	(9) from Worksheet 2E	(2) + (3)	from Table 12-17		(4)*(5)*(6)
Total	7.787	0.990	8.776	0.018	3.50	0.553
Fatal and injury (FI)	--	--	--	--	3.50	0.553

Worksheet 2K -- Crash Severity Distribution for Urban and Suburban Arterial Intersections

(1)	(2)	(3)	(4)
	Fatal and injury (FI)	**Property damage only (PDO)**	**Total**
Collision type	(3) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J	(5) from Worksheet 2D and 2F	(6) from Worksheet 2D and 2F; (7) from 2G or 2I and 2J
MULTIPLE-VEHICLE			
Rear-end collisions (from Worksheet 2D)	1.002	1.804	2.806
Head-on collisions (from Worksheet 2D)	0.122	0.145	0.266
Angle collisions (from Worksheet 2D)	1.304	1.616	2.920
Sideswipe (from Worksheet 2D)	0.359	0.212	0.571
Other multiple-vehicle collision (from Worksheet 2D)	0.178	1.047	1.224
Subtotal	2.963	4.823	7.787
SINGLE-VEHICLE			
Collision with parked vehicle (from Worksheet 2F)	0.000	0.001	0.001
Collision with animal (from Worksheet 2F)	0.000	0.018	0.019
Collision with fixed object (from Worksheet 2F)	0.189	0.602	0.791
Collision with other object (from Worksheet 2F)	0.025	0.050	0.075
Other single-vehicle collision (from Worksheet 2F)	0.014	0.005	0.019
Single-vehicle noncollision (from Worksheet 2F)	0.050	0.035	0.085
Collision with pedestrian (from Worksheet 2G or 2I)	0.676	0.000	0.676
Collision with bicycle (from Worksheet 2J)	0.553	0.000	0.553
Subtotal	1.508	0.711	2.218
Total	4.471	5.534	10.005

Worksheet 2L -- Summary Results for Urban and Suburban Arterial Intersections

(1)	(2)
Crash severity level	**Predicted average crash frequency, $N_{predicted\ int}$ (crashes/year)**
	(Total) from Worksheet 2K
Total	10.0
Fatal and injury (FI)	4.5
Property damage only (PDO)	5.5

Worksheet 3A -- Predicted Crashes by Severity and Site Type and Observed Crashes Using the Site-Specific EB Method for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Collision type / Site type	**Predicted average crash frequency (crashes/year)**			**Observed crashes,** $N_{observed}$ (crashes/year)	**Overdispersion Parameter, k**	**Weighted adjustment, w**	**Expected average crash frequency,**
	$N_{predicted}$ (TOTAL)	$N_{predicted}$ (FI)	$N_{predicted}$ (PDO)			Equation A-5 from Part C Appendix	Equation A-4 from Part C Appendix
ROADWAY SEGMENTS							
Multiple-vehicle nondriveway							
Segment 1	5.561	1.652	3.908	14.900	0.840	0.176	13.253
Segment 2	0.222	0.068	0.154	1.000	0.840	0.843	0.344
Segment 3	0.045	0.014	0.031	2.900	0.840	0.963	0.149
Single-vehicle							
Segment 1	5.597	1.487	4.110		0.810	0.181	1.011
Segment 2	0.778	0.283	0.495		0.810	0.613	0.477
Segment 3	0.380	0.167	0.213		0.810	0.765	0.291
Multiple-vehicle driveway-related							
Segment 1	2.826	0.913	1.913		0.810	0.304	0.859
Segment 2	0.028	0.009	0.019		0.810	0.978	0.027
Segment 3	0.034	0.011	0.023		0.810	0.973	0.033
INTERSECTIONS							
Multiple-vehicle							
Intersection 1	4.934	1.567	3.367	8.100	0.800	0.202	7.460
Intersection 2	4.628	1.637	2.990	3.900	0.800	0.213	4.055
Intersection 3	9.406	3.081	6.325	1.000	0.390	0.214	2.801
Intersection 4	15.839	5.227	10.612	7.000	0.390	0.139	8.232
Intersection 5	16.075	5.305	10.770	40.300	0.390	0.138	36.968
Intersection 6	28.425	10.055	18.370	19.500	0.390	0.083	20.238
Intersection 7	4.989	1.977	3.012	0.300	0.400	0.334	1.865
Intersection 8	0.801	0.230	0.571		0.390	0.762	0.610
Intersection 9	7.787	2.963	4.823		0.400	0.243	1.892
Single-vehicle							
Intersection 1	1.232	0.385	0.847	2.900	1.140	0.416	2.207
Intersection 2	0.843	0.265	0.578	2.000	1.140	0.510	1.410
Intersection 3	0.625	0.167	0.458	0.500	0.360	0.816	0.602
Intersection 4	1.020	0.268	0.753	0.500	0.360	0.731	0.881
Intersection 5	1.029	0.269	0.759	3.700	0.360	0.730	1.751
Intersection 6	1.408	0.310	1.098	1.300	0.360	0.664	1.372
Intersection 7	0.517	0.145	0.372	0.000	0.650	0.749	0.387
Intersection 8	0.084	0.030	0.054		0.360	0.971	0.082
Intersection 9	0.990	0.279	0.711		0.650	0.609	0.602
COMBINED (sum of column)	115.114	38.486	76.628	110	--	--	109.257

Worksheet 3B -- Predicted Pedestrian and Bicycle Crashes for

Urban and Suburban Arterials

(1)	(2)	(3)
Site Type	**N_{ped}**	**N_{bike}**
ROADWAY SEGMENTS		
Segment 1	0.224	0.179
Segment 2	0.012	0.010
Segment 3	0.002	0.002
INTERSECTIONS		
Intersection 1	0.453	0.345
Intersection 2	0.402	0.306
Intersection 3	0.020	0.677
Intersection 4	0.115	1.138
Intersection 5	0.087	1.155
Intersection 6	0.032	2.014
Intersection 7	0.424	0.347
Intersection 8	0.009	0.013
Intersection 9	0.676	0.553
COMBINED (sum of column)	2.456	6.739

Worksheet 3C -- Site-Specific EB Method Summary Results for Urban and Suburban Arterials

(1)	(2)	(3)	(4)	(5)	(6)
Crash severity level	**$N_{predicted}$**	**N_{ped}**	**N_{bike}**	$N_{expected\ (VEHICLE)}$	$N_{expected}$
Total	$(2)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(8)_{COMB}$ Worksheet 3A	(3)+(4)+(5)
	115.11	2.5	6.7	109.3	118.5
Fatal and injury (FI)	$(3)_{COMB}$ from Worksheet 3A	$(2)_{COMB}$ from Worksheet 3B	$(3)_{COMB}$ from Worksheet 3B	$(5)_{TOTAL} * (2)_{FI} / (2)_{TOTAL}$	(3)+(4)+(5)
	38.49	2.5	6.7	36.5	45.7
Property damage only (PDO)	$(4)_{COMB}$ from Worksheet 3A	--	--	$(5)_{TOTAL} * (2)_{PDO} / (2)_{TOTAL}$	(3)+(4)+(5)
	76.6	0.0	0.0	72.7	72.7

CMT
Engineers and Consultants

2045 No Build

iSATe Analysis

Output Summary

General Information

Project description:	I-70 to US 40 Corridor and New Interchange Study				
Analyst:	GTB	Date:	9/17/2020	Area type:	Rural
First year of analysis:	2005				
Last year of analysis:	2028				

Crash Data Description

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

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	3160.6	24.5	78.3	340.5	635.4	2081.9
Estimated average crash freq. during Study Period, crashes/yr:	131.7	1.0	3.3	14.2	26.5	86.7

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	6	1963.4	21.5	52.4	217.1	279.6	1392.7
Ramp segments, crashes:	12	99.8	1.3	4.0	21.0	12.9	60.6
Crossroad ramp terminals, crashes:	4	1097.5	1.7	21.9	102.4	342.9	628.6

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2005	100.1	0.8	2.6	11.1	19.4	66.2
	2006	102.8	0.9	2.6	11.4	20.0	68.0
	2007	105.5	0.9	2.7	11.6	20.6	69.7
	2008	108.2	0.9	2.7	11.9	21.2	71.5
	2009	110.9	0.9	2.8	12.1	21.8	73.3
	2010	113.6	0.9	2.9	12.4	22.4	75.1
	2011	116.3	0.9	2.9	12.7	23.0	76.8
	2012	119.1	0.9	3.0	12.9	23.6	78.6
	2013	121.8	1.0	3.0	13.2	24.2	80.4
	2014	124.5	1.0	3.1	13.5	24.8	82.2
	2015	127.3	1.0	3.2	13.7	25.4	83.9
	2016	130.1	1.0	3.2	14.0	26.1	85.7
	2017	132.8	1.0	3.3	14.3	26.7	87.5
	2018	135.6	1.0	3.3	14.6	27.3	89.3
	2019	138.4	1.1	3.4	14.8	28.0	91.1
	2020	141.2	1.1	3.5	15.1	28.6	92.9
	2021	144.0	1.1	3.5	15.4	29.2	94.7
	2022	146.8	1.1	3.6	15.7	29.9	96.5
	2023	149.6	1.1	3.7	16.0	30.5	98.4
	2024	152.5	1.1	3.7	16.2	31.2	100.2
	2025	155.4	1.2	3.8	16.5	31.8	102.0
	2026	158.3	1.2	3.9	16.8	32.5	104.0
	2027	161.3	1.2	3.9	17.1	33.2	105.9
	2028	164.4	1.2	4.0	17.4	33.9	107.9

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	14.1	0.2	0.5	2.2	3.6	7.6
	Right-angle crashes:	345.5	1.3	9.6	42.8	132.7	159.2
	Rear-end crashes:	993.8	6.9	25.8	114.9	253.9	592.3
	Sideswipe crashes:	432.4	2.3	5.6	23.3	30.9	370.3
	Other multiple-vehicle crashes:	77.5	0.5	1.6	6.6	11.4	57.5
	Total multiple-vehicle crashes:	1863.4	11.2	43.1	189.7	432.5	1186.9
Single vehicle	Crashes with animal:	54.2	0.1	0.3	1.3	1.5	50.9
	Crashes with fixed object:	778.2	7.3	19.0	80.9	108.3	562.7
	Crashes with other object:	108.9	0.4	1.0	4.0	5.1	98.4
	Crashes with parked vehicle:	37.4	0.3	0.8	3.5	4.5	28.2
	Other single-vehicle crashes	318.6	5.2	14.1	61.1	83.5	154.8
	Total single-vehicle crashes:	1297.3	13.3	35.2	150.8	202.9	895.0
	Total crashes:	3160.6	24.5	78.3	340.5	635.4	2081.9

CMT
Engineers and Consultants

2045 Build

iSATe Analysis

Output Summary

General Information

Project description:	I-70 to US 40 Corridor and New Interchange Study				
Analyst:	GTB	Date:	9/17/2020	Area type:	Rural
First year of analysis:	2005				
Last year of analysis:	2028				

Crash Data Description

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

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	3837.1	30.1	99.0	418.6	818.2	2471.1
Estimated average crash freq. during Study Period, crashes/yr:	159.9	1.3	4.1	17.4	34.1	103.0

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	6	2230.2	24.1	58.6	242.9	313.0	1591.5
Ramp segments, crashes:	16	156.5	2.1	6.2	33.0	20.3	94.9
Crossroad ramp terminals, crashes:	6	1450.4	4.0	34.1	142.7	484.9	784.8

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2005	116.9	1.0	3.1	13.3	25.5	74.0
	2006	120.4	1.0	3.2	13.6	26.2	76.5
	2007	124.0	1.0	3.3	14.0	26.9	78.9
	2008	127.6	1.0	3.4	14.3	27.6	81.3
	2009	131.2	1.1	3.5	14.7	28.3	83.8
	2010	134.9	1.1	3.5	15.0	29.0	86.2
	2011	138.5	1.1	3.6	15.4	29.7	88.7
	2012	142.2	1.1	3.7	15.7	30.5	91.2
	2013	146.0	1.2	3.8	16.1	31.2	93.7
	2014	149.7	1.2	3.9	16.5	32.0	96.2
	2015	153.5	1.2	4.0	16.8	32.7	98.7
	2016	157.3	1.2	4.1	17.2	33.5	101.3
	2017	161.1	1.3	4.2	17.6	34.3	103.9
	2018	165.0	1.3	4.2	17.9	35.1	106.4
	2019	168.9	1.3	4.3	18.3	35.9	109.0
	2020	172.8	1.3	4.4	18.7	36.7	111.7
	2021	176.7	1.4	4.5	19.1	37.5	114.3
	2022	180.7	1.4	4.6	19.5	38.3	116.9
	2023	184.7	1.4	4.7	19.9	39.1	119.6
	2024	188.7	1.5	4.8	20.2	40.0	122.3
	2025	192.8	1.5	4.9	20.6	40.8	125.0
	2026	196.9	1.5	5.0	21.0	41.7	127.7
	2027	201.1	1.5	5.1	21.5	42.6	130.5
	2028	205.4	1.6	5.2	21.9	43.5	133.4

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	21.9	0.3	0.9	3.4	6.9	10.5
	Right-angle crashes:	510.3	2.6	16.2	64.7	207.9	219.0
	Rear-end crashes:	1195.7	8.7	32.0	137.8	308.3	709.1
	Sideswipe crashes:	520.7	2.7	6.8	28.1	38.9	444.2
	Other multiple-vehicle crashes:	95.9	0.6	1.9	7.9	14.1	71.4
	Total multiple-vehicle crashes:	2344.6	14.9	57.7	241.8	576.1	1454.1
Single vehicle	Crashes with animal:	59.3	0.1	0.3	1.5	1.6	55.7
	Crashes with fixed object:	892.8	8.3	22.0	93.5	128.2	640.8
	Crashes with other object:	119.8	0.4	1.1	4.4	5.6	108.3
	Crashes with parked vehicle:	44.9	0.4	1.0	4.3	5.9	33.2
	Other single-vehicle crashes	375.7	6.0	16.8	73.2	100.6	179.0
	Total single-vehicle crashes:	1492.5	15.2	41.3	176.9	242.1	1017.0
Total crashes:		3837.1	30.1	99.0	418.6	818.2	2471.1

Output Summary

General Information

Project description:	I-70 to US 40 Corridor and New Interchange Study				
Analyst:	GTB	Date:	9/17/2020	Area type:	Rural
First year of analysis:	2005				
Last year of analysis:	2028				

Crash Data Description

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

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	3980.5	30.5	101.5	427.4	849.5	2571.7
Estimated average crash freq. during Study Period, crashes/yr:	165.9	1.3	4.2	17.8	35.4	107.2

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	6	2212.2	23.8	58.0	240.5	310.9	1579.0
Ramp segments, crashes:	12	167.9	2.2	6.6	35.0	21.5	102.6
Crossroad ramp terminals, crashes:	6	1600.3	4.5	36.8	151.8	517.1	890.1

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2005	123.6	1.0	3.3	13.8	27.2	78.4
	2006	127.1	1.0	3.3	14.1	27.9	80.7
	2007	130.6	1.0	3.4	14.5	28.6	83.1
	2008	134.2	1.1	3.5	14.8	29.3	85.5
	2009	137.7	1.1	3.6	15.1	30.0	88.0
	2010	141.3	1.1	3.7	15.5	30.6	90.4
	2011	144.9	1.1	3.8	15.8	31.3	92.9
	2012	148.6	1.2	3.8	16.2	32.1	95.3
	2013	152.2	1.2	3.9	16.5	32.8	97.8
	2014	155.9	1.2	4.0	16.9	33.5	100.4
	2015	159.6	1.2	4.1	17.2	34.2	102.9
	2016	163.4	1.3	4.2	17.6	34.9	105.4
	2017	167.1	1.3	4.3	17.9	35.6	108.0
	2018	170.9	1.3	4.3	18.3	36.4	110.6
	2019	174.7	1.3	4.4	18.7	37.1	113.2
	2020	178.6	1.4	4.5	19.0	37.9	115.8
	2021	182.4	1.4	4.6	19.4	38.6	118.4
	2022	186.3	1.4	4.7	19.7	39.3	121.1
	2023	190.2	1.4	4.8	20.1	40.1	123.8
	2024	194.2	1.5	4.9	20.5	40.9	126.5
	2025	198.1	1.5	5.0	20.9	41.6	129.2
	2026	202.2	1.5	5.1	21.2	42.4	132.0
	2027	206.2	1.5	5.1	21.6	43.2	134.7
	2028	210.3	1.6	5.2	22.0	44.0	137.6

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	24.1	0.3	0.9	3.5	7.5	11.9
	Right-angle crashes:	569.7	2.8	17.5	69.3	224.3	255.7
	Rear-end crashes:	1230.8	8.6	32.3	138.6	315.5	735.7
	Sideswipe crashes:	527.6	2.7	6.8	27.8	39.0	451.3
	Other multiple-vehicle crashes:	99.1	0.6	1.9	8.0	14.6	73.9
	Total multiple-vehicle crashes:	2451.2	15.0	59.4	247.2	601.0	1528.6
Single vehicle	Crashes with animal:	59.6	0.1	0.4	1.5	1.7	55.9
	Crashes with fixed object:	917.3	8.4	22.4	95.1	131.6	659.9
	Crashes with other object:	120.0	0.4	1.0	4.3	5.6	108.6
	Crashes with parked vehicle:	47.3	0.4	1.1	4.4	6.2	35.2
	Other single-vehicle crashes	385.1	6.1	17.2	74.8	103.5	183.5
	Total single-vehicle crashes:	1529.3	15.4	42.0	180.2	248.5	1043.1
	Total crashes:	3980.5	30.5	101.5	427.4	849.5	2571.7

Output Summary

General Information

Project description:	I-70 to US 40 Corridor and New Interchange Study				
Analyst:	GTB	Date:	9/17/2020	Area type:	Rural
First year of analysis:	2005				
Last year of analysis:	2028				

Crash Data Description

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

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	3791.2	29.6	96.8	411.5	796.3	2457.1
Estimated average crash freq. during Study Period, crashes/yr:	158.0	1.2	4.0	17.1	33.2	102.4

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	6	2210.0	23.9	58.3	241.2	310.6	1576.0
Ramp segments, crashes:	16	156.4	2.1	6.2	33.0	20.2	94.9
Crossroad ramp terminals, crashes:	6	1424.8	3.6	32.3	137.2	465.4	786.3

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2005	115.2	0.9	3.0	13.0	24.4	73.9
	2006	118.8	1.0	3.1	13.3	25.1	76.3
	2007	122.3	1.0	3.2	13.7	25.8	78.7
	2008	125.9	1.0	3.3	14.0	26.5	81.1
	2009	129.5	1.0	3.4	14.4	27.2	83.5
	2010	133.1	1.1	3.5	14.7	28.0	85.9
	2011	136.8	1.1	3.5	15.1	28.7	88.3
	2012	140.4	1.1	3.6	15.4	29.5	90.8
	2013	144.1	1.1	3.7	15.8	30.2	93.3
	2014	147.9	1.2	3.8	16.1	31.0	95.7
	2015	151.6	1.2	3.9	16.5	31.8	98.2
	2016	155.4	1.2	4.0	16.9	32.6	100.8
	2017	159.2	1.2	4.1	17.3	33.4	103.3
	2018	163.0	1.3	4.1	17.6	34.2	105.8
	2019	166.9	1.3	4.2	18.0	35.0	108.4
	2020	170.8	1.3	4.3	18.4	35.8	110.9
	2021	174.7	1.3	4.4	18.8	36.6	113.5
	2022	178.6	1.4	4.5	19.2	37.5	116.1
	2023	182.6	1.4	4.6	19.6	38.3	118.7
	2024	186.6	1.4	4.7	20.0	39.2	121.4
	2025	190.7	1.5	4.8	20.4	40.1	124.0
	2026	194.8	1.5	4.9	20.8	41.0	126.7
	2027	199.1	1.5	5.0	21.2	41.9	129.5
	2028	203.3	1.5	5.1	21.6	42.8	132.3

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	21.1	0.3	0.8	3.2	6.4	10.4
	Right-angle crashes:	494.1	2.4	15.1	61.5	196.7	218.4
	Rear-end crashes:	1184.3	8.5	31.4	135.9	303.2	705.3
	Sideswipe crashes:	516.1	2.7	6.7	27.7	38.0	440.9
	Other multiple-vehicle crashes:	94.6	0.6	1.8	7.7	13.8	70.6
	Total multiple-vehicle crashes:	2310.3	14.4	55.9	236.1	558.2	1445.7
Single vehicle	Crashes with animal:	58.9	0.1	0.3	1.5	1.6	55.3
	Crashes with fixed object:	886.0	8.2	21.8	92.7	126.1	637.3
	Crashes with other object:	119.0	0.4	1.1	4.3	5.6	107.6
	Crashes with parked vehicle:	44.5	0.4	1.0	4.3	5.8	33.1
	Other single-vehicle crashes	372.4	6.0	16.6	72.6	99.0	178.1
	Total single-vehicle crashes:	1480.9	15.1	40.8	175.4	238.1	1011.5
	Total crashes:	3791.2	29.6	96.8	411.5	796.3	2457.1

CMT
Engineers and Consultants

2019 Existing

iSATe Analysis

Output Summary

General Information

Project description:	I-70 to US 40 Corridor and New Interchange Study				
Analyst:	GTB	Date:	9/17/2020	Area type:	Rural
First year of analysis:	2005				
Last year of analysis:	2028				

Crash Data Description

Freeway segments	Segment crash data available?	Yes	First year of crash data:	2005
	Project-level crash data available?	Yes	Last year of crash data:	2007
Ramp segments	Segment crash data available?	Yes	First year of crash data:	2005
	Project-level crash data available?	Yes	Last year of crash data:	2007
Ramp terminals	Segment crash data available?	Yes	First year of crash data:	2005
	Project-level crash data available?	No	Last year of crash data:	2007

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	1831.1	16.8	56.7	231.9	480.1	1045.6
Estimated average crash freq. during Study Period, crashes/yr:	76.3	0.7	2.4	9.7	20.0	43.6

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes:	6	972.0	12.5	30.4	126.0	162.3	640.7
Ramp segments, crashes:	12	77.0	1.0	3.0	15.6	9.6	47.9
Crossroad ramp terminals, crashes:	4	782.1	3.3	23.3	90.3	308.2	357.0

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes:	2005	61.8	0.6	1.9	7.9	15.6	35.8
	2006	63.0	0.6	2.0	8.0	15.9	36.4
	2007	64.2	0.6	2.0	8.2	16.3	37.1
	2008	65.4	0.6	2.0	8.3	16.7	37.8
	2009	66.7	0.6	2.1	8.5	17.0	38.4
	2010	67.9	0.6	2.1	8.6	17.4	39.1
	2011	69.1	0.6	2.1	8.8	17.8	39.8
	2012	70.4	0.7	2.2	8.9	18.2	40.5
	2013	71.7	0.7	2.2	9.1	18.5	41.1
	2014	72.9	0.7	2.3	9.2	18.9	41.8
	2015	74.2	0.7	2.3	9.4	19.3	42.5
	2016	75.5	0.7	2.3	9.6	19.7	43.2
	2017	76.8	0.7	2.4	9.7	20.1	43.9
	2018	78.1	0.7	2.4	9.9	20.5	44.5
	2019	79.4	0.7	2.5	10.0	20.9	45.2
	2020	80.7	0.7	2.5	10.2	21.3	45.9
	2021	82.0	0.7	2.5	10.4	21.7	46.6
	2022	83.3	0.8	2.6	10.5	22.2	47.3
	2023	84.6	0.8	2.6	10.7	22.6	48.0
	2024	86.0	0.8	2.7	10.9	23.0	48.7
	2025	87.3	0.8	2.7	11.0	23.4	49.4
	2026	88.7	0.8	2.7	11.2	23.9	50.1
	2027	90.1	0.8	2.8	11.4	24.3	50.8
	2028	91.5	0.8	2.8	11.5	24.8	51.6

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes:	13.1	0.2	0.6	2.1	5.0	5.3
	Right-angle crashes:	311.4	2.0	11.4	42.9	141.0	114.1
	Rear-end crashes:	533.6	4.5	17.2	71.6	166.4	273.9
	Sideswipe crashes:	206.5	1.4	3.5	14.1	20.6	166.9
	Other multiple-vehicle crashes:	42.6	0.3	1.0	4.2	7.9	29.2
	Total multiple-vehicle crashes:	1107.2	8.4	33.7	135.0	340.9	589.3
Single vehicle	Crashes with animal:	26.2	0.1	0.2	0.8	0.9	24.2
	Crashes with fixed object:	432.0	4.6	12.4	51.7	74.3	289.1
	Crashes with other object:	53.1	0.2	0.6	2.3	3.0	47.0
	Crashes with parked vehicle:	22.2	0.2	0.6	2.4	3.7	15.2
	Other single-vehicle crashes	190.4	3.3	9.3	39.7	57.4	80.7
	Total single-vehicle crashes:	723.9	8.4	23.0	97.0	139.3	456.2
Total crashes:		1831.1	16.8	56.7	231.9	480.1	1045.6

Output Summary

General Information

Project description	I-70 to US 40 Corridor and New Interchange Study				
Analyst:	GTB	Date:	3/23/2020	Area type	Rural
First year of analysis	2005				
Last year of analysis	2028				

Crash Data Description

Freeway segments	Segment crash data available	Yes	First year of crash data	2005
	Project-level crash data available	Yes	Last year of crash data	2007
Ramp segments	Segment crash data available	Yes	First year of crash data	2005
	Project-level crash data available	Yes	Last year of crash data	2007
Ramp terminals	Segment crash data available	Yes	First year of crash data	2005
	Project-level crash data available	No	Last year of crash data	2007

Estimated Crash Statistics

Crashes for Entire Facility	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during Study Period, crashes:	1918.7	16.9	59.2	235.1	530.0	1077.6
Estimated average crash freq. during Study Period, crashes/yr:	79.9	0.7	2.5	9.8	22.1	44.9

Crashes by Facility Component	**Nbr. Sites**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Freeway segments, crashes	6	972.0	12.5	30.4	126.0	162.3	640.7
Ramp segments, crashes	1	10.3	0.2	0.5	2.2	1.3	6.1
Crossroad ramp terminals, crashes	4	936.5	4.2	28.3	106.9	366.3	430.8

Crashes for Entire Facility by Year	**Year**	**Total**	**K**	**A**	**B**	**C**	**PDO**
Estimated number of crashes during the Study Period, crashes	2005	58.1	0.6	1.8	7.2	14.9	33.7
	2006	61.1	0.6	1.9	7.6	15.9	35.2
	2007	64.0	0.6	2.0	7.9	16.9	36.6
	2008	67.0	0.6	2.1	8.2	17.9	38.1
	2009	69.9	0.6	2.2	8.6	18.9	39.6
	2010	72.9	0.6	2.2	8.9	20.0	41.1
	2011	75.8	0.7	2.3	9.3	21.0	42.6
	2012	78.8	0.7	2.4	9.6	22.0	44.1
	2013	81.8	0.7	2.5	10.0	23.1	45.5
	2014	84.8	0.7	2.6	10.3	24.1	47.0
	2015	85.0	0.7	2.6	10.3	24.1	47.2
	2016	85.2	0.7	2.6	10.4	24.1	47.4
	2017	85.4	0.7	2.6	10.4	24.1	47.5
	2018	85.5	0.7	2.6	10.4	24.0	47.7
	2019	85.7	0.7	2.6	10.5	24.0	47.8
	2020	85.9	0.7	2.6	10.5	24.0	48.0
	2021	86.0	0.7	2.7	10.5	24.0	48.1
	2022	86.2	0.8	2.7	10.5	23.9	48.3
	2023	86.3	0.8	2.7	10.6	23.9	48.4
	2024	86.4	0.8	2.7	10.6	23.9	48.5
	2025	86.5	0.8	2.7	10.6	23.9	48.6
	2026	86.7	0.8	2.7	10.7	23.8	48.7
	2027	86.8	0.8	2.7	10.7	23.8	48.8
	2028	86.9	0.8	2.7	10.7	23.8	49.0

Distribution of Crashes for Entire Facility

Crash Type	**Crash Type Category**	**Estimated Number of Crashes During the Study Period**					
		Total	**K**	**A**	**B**	**C**	**PDO**
Multiple vehicle	Head-on crashes	15.7	0.2	0.7	2.4	6.2	6.3
	Right-angle crashes	380.9	2.5	14.1	51.6	171.3	141.5
	Rear-end crashes	571.2	4.8	18.5	75.9	182.2	289.9
	Sideswipe crashes	213.2	1.4	3.6	14.4	21.7	172.2
	Other multiple-vehicle crashes	44.7	0.3	1.1	4.3	8.6	30.3
	Total multiple-vehicle crashes	1225.8	9.1	37.9	148.6	390.0	640.1
Single vehicle	Crashes with animal	25.2	0.1	0.2	0.7	0.8	23.4
	Crashes with fixed object	421.5	4.3	11.7	47.5	75.4	282.6
	Crashes with other object	53.1	0.2	0.6	2.3	3.0	47.0
	Crashes with parked vehicle	21.4	0.2	0.6	2.2	3.9	14.5
	Other single-vehicle crashes	171.7	2.9	8.3	33.7	56.8	69.9
	Total single-vehicle crashes	693.0	7.8	21.4	86.4	140.0	437.4
	Total crashes:	1918.7	16.9	59.2	235.1	530.0	1077.6

Evaluation Site Summary

General Information

Project description	I-70 to US 40 Corridor and New Interchange Study				
Analyst:	GTB	Date:	3/23/2020	Area type	Rural
First year of analysis	2005	Total length of freeway segments for Study Period (mi	8.200		
Last year of analysis	2028				

Site Description

Freeway Segments

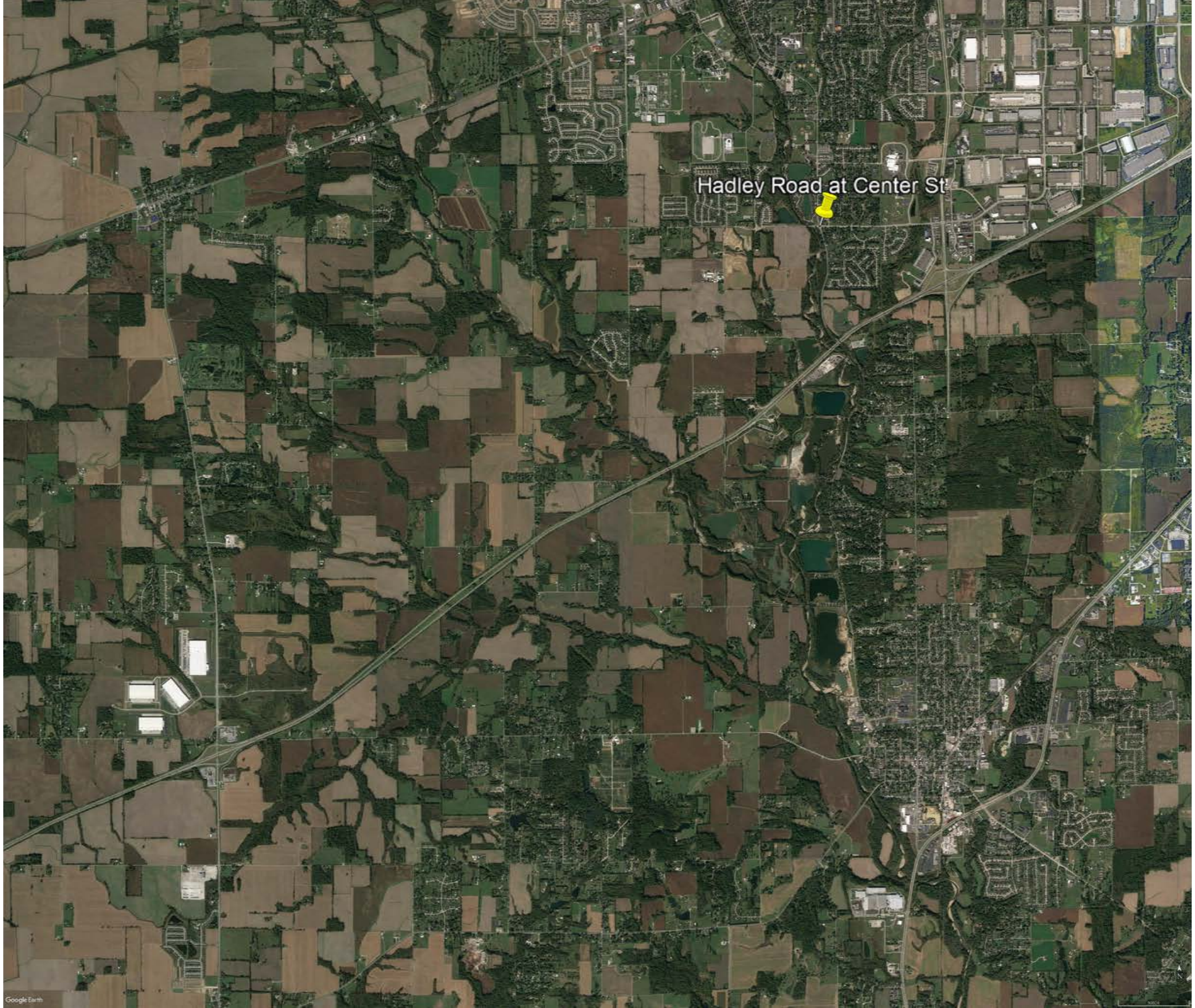
Number	Lanes	Study Period Length (mi)	Crash Period Description	Study Period Description
1	4	1.750	SR 39 to Widened Median	0
2	4	1.400	Widened Median	0
3	4	1.500	Widened Med past Moon	0
4	4	1.700	Rest Stop to Center Rd	0
5	4	1.100	Center Rd to 6 Lanes	0
6	6	0.750	6 Lanes	0
7	0	0.000	0	0
8	0	0.000	0	0
9	0	0.000	0	0
10	0	0.000	0	0
11	0	0.000	0	0
12	0	0.000	0	0
13	0	0.000	0	0
14	0	0.000	0	0
15	0	0.000	0	0
16	0	0.000	0	0
17	0	0.000	0	0
18	0	0.000	0	0
19	0	0.000	0	0
20	0	0.000	0	0

Ramp Segments

Number	Crash Period Description	Study Period Description	Number	Crash Period Description	Study Period Description
1	EB Exit at SR 39	0	21	0	0
2	EB Entrance at SR 39	0	22	0	0
3	WB Exit at SR 39	0	23	0	0
4	WB Entrance at SR 39	0	24	0	0
5	WB Exit at Rest Stop	0	25	0	0
6	WB Entrance at Rest Stop	0	26	0	0
7	EB Exit at Rest Stop	0	27	0	0
8	EB Entrance at Rest Stop	0	28	0	0
9	WB Exit at SR 267	0	29	0	0
10	WB Entrance at SR 267	0	30	0	0
11	EB Exit at SR 267	0	31	0	0
12	EB Entrance at SR 267	0	32	0	0
13	0	0	33	0	0
14	0	0	34	0	0
15	0	0	35	0	0
16	0	0	36	0	0
17	0	0	37	0	0
18	0	0	38	0	0
19	0	0	39	0	0
20	0	0	40	0	0

Crossroad Ramp Terminals

Number	Config.	Control	Crash Period Description	Study Period Description
1	D4	One stop	WB exit ramp at SR 39	0
2	D4	One stop	EB exit ramp at SR 39	0
3	D4	Signal	WB exit ramp at SR 267	0
4	D4	Signal	EB exit ramp at SR 267	0
5	0	0	0	0
6	0	0	0	0


Hadley Road at Center St
Google Earth