

Countermeasure		Widespread	Limited	None	Crash Reduction Factor		Selected (Typical) Crash Threshold		Approximate Number of Intersections with Threshold Applied	Deployment Level	Total Targeted Crashes	Estimated Number of Improvements	Construction Unit Cost	Total	Estimated KAB per 100 Crashes	Estimated Severe CRF	Estimated KABs Prevented	KAB Cost Savings over 5 years	Approx. Benefit Cost Ratio
					Estimate	Crash Type	Urban	Rural											
Systemic																			
All intersections																			
ALL 1	Intersection Lighting		X		50; 25	Night (new inst.); night (upgrade)	1.25 (10) night crashes in 5 years and a night /total crash ratio above the statewide average for urban unlit intersections	1 (5) night crashes in 5 years and a night/total crash ratio above the statewide average for rural unlit intersections	52	24%	154	12	\$ 5,000	\$ 62,400	22	50	17	\$ 4,585,320	240
ALL 2	Skid resistant /high friction surface treatment		X		50	Wet pavement	4 (8) wet pavement crashes in 5 years, a wet /total crash ratio above the statewide average wet/total crashes for intersections	1.25 (8) wet pavement crashes in 5 years, a wet /total crash ratio above the statewide average wet/total crashes for intersections	410	49%	3833	201	\$ 40,000	\$ 8,036,000	18	50	352	\$ 95,476,010	15
ALL 3	Lane narrowing with pavement markings and rumble strip		X		31	All	1,25 (10) speed-related crashes in 5 years	1 (5) speed-related crashes in 5 years	91	23%	193	21	\$ 3,000	\$ 62,790	22	31	13	\$ 3,593,948	33
ALL 4	Access Control – Driveways,	X			7	None	None	None	1336	42%	5421	561	\$ 7,500	\$ 4,208,400	19	7	72	\$ 19,520,130	15
ALL 5	Fixed Objects at Intersection	X			5	None	None	None	1336	73%	9422	975	\$ 5,000	\$ 4,876,400	19	5	89	\$ 24,234,175	16
ALL 6	Parking/Sidewalks/ADA – Urban Areas		X		5	None	None	None	1336	71%	9164	949	\$ 10,000	\$ 9,485,600	19	5	87	\$ 23,570,225	8
Signalized intersections																			
SIG 1	Basic sign and marking improvement	X			30	All	20 crashes in 5 years	10 crashes in 5 years	205	94%	5081	193	\$ 5,000	\$ 963,500	18	30	277	\$ 75,199,248	165
SIG 2	Change permitted and protected / permitted left turn phasing to protected only	X			41-48	Left turn	20 (5) left turn mvmt crashes	10 (5) left turn mvmt crashes	846	62%	6044	525	\$ 2,500	\$ 1,311,300	18	41	452	\$ 122,409,470	305
SIG 3	Install advanced cross street name sign	X			1	All	20 crashes in 5 years	10 crashes in 5 years	205	88%	4756	180	\$ 750	\$ 135,300	18	1	9	\$ 2,346,841	37
SIG 4	Install No Turn on Red Signs		X		43	None	None	None	846	55%	107	465	\$ 750	\$ 348,975	18	43	8	\$ 2,277,345	14
SIG 5	Install advanced signal ahead warning sign		X		22	All	20 crashes in 5 years	10 crashes in 5 years	205	56%	3027	115	\$ 750	\$ 86,100	18	22	121	\$ 32,853,005	807
SIG 6	Install additional signal head per approach	X			28	All	20 crashes in 5 years	10 crashes in 5 years	205	68%	3675	139	\$ 10,000	\$ 1,394,000	18	28	187	\$ 50,772,826	119
SIG 7	Install advanced detection control system		X		40	Injury	2.5 (5) angle crashes in 5 years	1.25 (5) angle crashes in 5 years	314	48%	2587	151	\$ 25,000	\$ 3,768,000	23	40	238	\$ 64,623,744	56
SIG 8	Re-Time traffic signals for better coordination and for proper red and amber clear intervals	X			32	All	20 crashes in 5 years	10 crashes in 5 years	205	99%	5351	203	\$ 5,000	\$ 1,014,750	18	32	313	\$ 84,723,706	48
SIG 9	Install pedestrian countdown signals with appropriate pedestrian crossing clearance interval	X			25	Pedestrian	1.25 (2) pedestrian crashes in 5 years	1.25 (2) pedestrian crashes in 5 years	846	93%	181	787	\$ 7,500	\$ 5,900,850	18	25	8	\$ 2,238,827	1.2
SIG 10	Install enhanced crosswalks and advanced pedestrian warning signs	X			15	Pedestrian	1.25 (2) pedestrian crashes in 5 years	1.25 (2) pedestrian crashes in 5 years	846	93%	181	787	\$ 2,000	\$ 1,573,560	18	15	5	\$ 1,343,296	0.5
SIG 11	Flashing Yellow Left Turn Arrow	X			25	None	None	None	846	60%	5849	508	\$ 2,000	\$ 1,015,200	18	25	266	\$ 72,220,233	233
SIG 12	Enforcement-assisted lights		X		15	Angle	2.5 (8) angle crashes in 5 years	1.25 (4) angle crashes in 5 years	100	66%	544	66	\$ 1,000	\$ 66,000	18	15	15	\$ 3,979,277	197
Stop controlled intersections																			
STOP 1	Enhanced basic sign (double-up/oversize/retroreflective/Beacon) and pavement marking improvements (stop bars, yield lines, longitudinal markings), as well as optional lane control signs and markings or advance street name signs.	X			40	all	9 (10) crashes in 5 years	2 (4-5) crashes in 5 years	133	97%	1956	129	\$ 5,000	\$ 645,050	21	40	165	\$ 44,687,900	40
STOP 2	Install intersection median control; Install raised divider (6 ft or wider) on stop approach		X		15		18 (20) crashes in 5 years	4 (10) crashes in 5 years	30	50%	393	15	\$ 50,000	\$ 750,000	21	15	12	\$ 3,353,625	15
STOP 3	Advanced intersection warning signs with speed advisory plates		X		5	None	None	None	490	100%	3159	490	\$ 750	\$ 367,500	21	5	34	\$ 9,119,150	52
STOP 4	"Stop Ahead" pavement marking legend; Advanced stop sign warning signs		X		15	All	1.25 (5) running stop sign crashes in 5 years	1 (3) running stop sign crashes in 5 years	490	88%	2702	431	\$ 1,500	\$ 646,800	21	15	85	\$ 23,148,596	21
STOP 5	Overhead flashing intersection beacons; Flashing beacons on advance intersection warning signs and stop signs		X		10; 13	All; angle	18 (15-20) crashes in 5 years	4 (8-10) crashes in 5 years	30	81%	636	24	\$ 10,000	\$ 243,000	23	10	15	\$ 3,933,992	34
STOP 6	Transverse rumble strips		X		28	All	1.25 (5) running stop sign crashes in 5 years	1 (3) running stop sign crashes in 5 years	30	34%	267	10	\$ 2,000	\$ 20,400	21	28	16	\$ 4,255,274	197
STOP 7	Sight distance improvements for posted speed limits	X			48	None	None	None	490	100%	3159	490	\$ 5,000	\$ 2,450,000	21	48	323	\$ 87,543,840	34
STOP 10	Extension of through edge line along major road using short skip pattern		X		1	All	9 (10) crashes in 5 years	2 (5) crashes in 5 years	133	31%	625	41	\$ 750	\$ 30,923	21	1	1	\$ 357,020	7
STOP 11	Reflective panels on sign posts		X		1	All	9 (10) crashes in 5 years	2 (5) crashes in 5 years	133	100%	2016	133	\$ 500	\$ 66,500	21	1	4	\$ 1,151,750	37

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 Selected \$ 16,863,400 1879 \$ 509,091,295 30