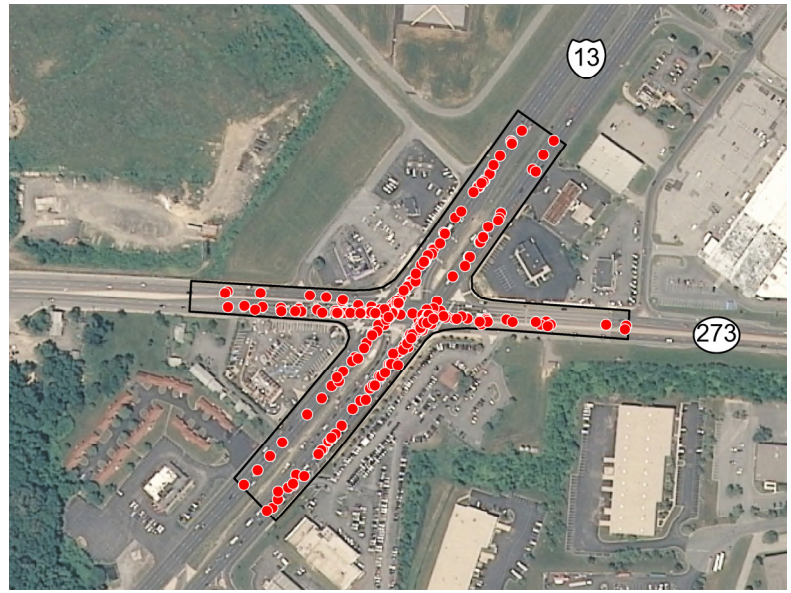
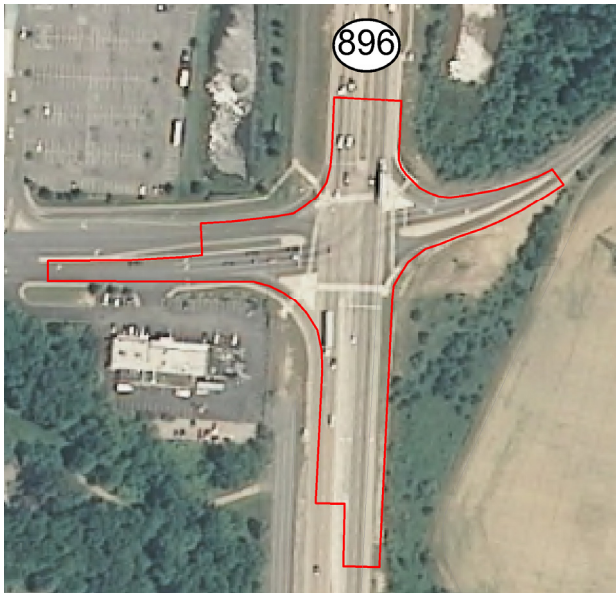


Crash Analysis Methodology:

The methodology for this analysis was taken from the results and recommendations found in the master's thesis titled "*Development and Analysis of an Intersection Safety Prioritization Method for the State of Delaware*" by Anna Duryea produced in the summer of 2015¹. The results found in the analysis are based on using an intersection's "sphere of influence" which varies at each location based on factors such as intersection width and acceleration lanes. According to the conclusions from the thesis, the intersection buffers created by WILMAPCO and DelDOT Planning provide a more accurate definition of an intersection than procedures that simply include all crashes within a specific distance from the intersection.

Sample Intersection Buffers



The analysis combines the use of three crash criteria: frequency, severity, and manner of impact at each intersection. Analysis includes a 3-year average of crashes (2020-2022) at signalized and non-signalized intersections that average 10 or more crashes per year throughout the State. It also compares intersections to each other by grouping them by the functional classification of the intersection roadways.

1. Crash Frequency: Total reported crashes within intersection "sphere of influence" between 2019 and 2021
2. Crash Severity Index: The severity weights for each crash by type (Property Damage Only, Injury or Fatal) Intersections then ranked by the total scoring.

$$\text{Crash Severity Index} = (\text{Number of Fatal Crashes} * 40) + (\text{Number of Injury Crashes} * 4.5) + (\text{Number of Property Damage Only Crashes} * 1)$$
3. Crashes by Manner of Impact: Total crash cost applied to each accident for each intersection based on the following values per impact types:

- Not a collision between two vehicles \$59,248	- Sideswipe, same direction \$8,817
- Front to rear \$12,163	- Sideswipe, opposite direction \$17,141
- Front to Front \$81,100	- Rear to side & Rear to Rear \$3,151
- Angle \$34,477	- Other & Unknown \$38,868

¹ Duryea, Anna (2015). *Development and Analysis of an Intersection Safety Prioritization Method for the State of Delaware* (Master's Thesis). University of Delaware.

Statewide Intersection Crash Rankings (New Castle County Locations) 2020-22

Permit	Intersection	Avg. Crashes 2020-22	Frequency Rank	Manner of Impact Cost	Impact Rank	Severity Rank	Final State Rank
N183	US 13 & SR 273	60	2	\$3,856,013	2	2	1
N165	SR 2 (Kirkwood Hwy) & SR 7 (Limestone Rd.)	61	1	\$4,256,688	1	4	2
N217	US 13 & Bacon Ave/Boulden Blvd.	55	4	\$3,139,887	4	5	4
N153	SR 4 / Elkton Rd. & SR 896	41.3	14	\$3,063,107	7	8	7
N346	SR 4 & SR 72	45	7	\$2,820,916	11	15	8
N185	US 40 & SR 7	45	6	\$2,778,918	13	16	9
N423T	SR 273 & Library Ave.	43	10	\$2,719,305	16	10	10
N436T	SR 4 & SR 896 (S.College Ave.)	41.7	13	\$2,423,545	25	7	12
N188	SR 896 & Old Baltimore Pk.	42.3	12	\$2,720,795	15	25	13
N242	SR 4 & Salem Church Rd.	37.7	16	\$2,329,131	30	11	15
N192	SR 7 & SR 273	42.3	11	\$2,681,992	18	28	16
N317	SR 2 & Red Mill/Polly Drummond Rd.	39	15	\$2,872,971	9	39	19
N351	SR 273 & Old Balt. Pike	37.7	17	\$2,493,437	22	35	20
N483	US 40 & SR 896	37	19	\$2,242,980	35	22	22
N239	US 40 & SR 72	27.7	42	\$2,538,778	21	21	23
N182	SR 72 & Old Baltimore Pike	33.7	25	\$2,041,541	50	20	24
N393	US 40 & Porter Rd.	31	31	\$2,397,312	27	42	28
N173	SR 9 (New Castle Ave.) & Memorial Dr.	24.3	63	\$2,697,185	17	26	30
N191	SR 7 & SR 58 (Churchmans Rd.)	32	28	\$2,094,928	43	43	32
N312	SR 4 & Harmony Rd.	29	38	\$1,972,675	56	29	36
N434T	SR 896 & Welsh Tract Rd.	25.3	56	\$2,236,628	36	37	37
N179	US 13 & Memorial Dr.	26.7	45	\$2,110,820	41	45	38
N339	SR 273 & Airport Rd.	24.3	62	\$2,081,447	47	33	40
N627T	Front St. & Walnut St.	19.3	103	\$2,344,056	29	18	41
N101	US 202 & SR 92 Naamans Rd.	30	32	\$2,023,844	51	73	44
N289	SR 7/ SR 4 & Telegraph Rd.	34.3	23	\$1,675,616	74	63	45
N225	SR 7 (Limestone Rd) & SR 4 (Main St.) Stanton	29.3	36	\$2,017,674	53	75	48
N337	SR 273 & Harmony Rd.	29	39	\$1,737,141	69	61	51
N552	US 40 & Church Rd.	26.3	48	\$1,581,630	85	38	52
N238	Old Baltimore Pk. & Otts Chapel Rd.	23.3	68	\$2,161,898	38	65	53
N272	SR 2 & SR 100	20	92	\$2,304,423	31	49	54
N303	SR 141 & SR 37 (Commons Blvd.)	29.3	37	\$1,917,142	60	76	55
N409	US 13 & Hamburg Rd	25.7	51	\$2,116,764	40	86	56
N595	SR 7 & AAA Blvd/Frontage Rds.	25.7	52	\$1,984,863	55	78	57
N301	SR 2 (Kirkwood Hwy) & Harmony Rd.	27.7	44	\$1,577,732	86	58	58
N366	SR 4 & SR 7/JP Morgan Ent.	26	49	\$1,775,979	67	84	62
N422T	SR 2 & Cleveland Ave.	22.3	70	\$1,778,974	66	69	63

Statewide Intersection Crash Rankings (New Castle County Locations) 2020– 22

Permit	Intersection	Avg. Crashes 2020-22	Frequency Rank	Manner of Impact Cost	Impact Rank	Severity Rank	Final State Rank
N301	SR 2 (Kirkwood Hwy) & Harmony Rd.	27.7	44	\$1,577,732	86	58	58
N366	SR 4 & SR 7/JP Morgan Ent.	26	49	\$1,775,979	67	84	62
N422T	SR 2 & Cleveland Ave.	22.3	70	\$1,778,974	66	69	63
N432T	Cleveland Ave. & Paper Mill Rd./ N. Chapel St.	22	74	\$2,093,067	44	87	64
N170	SR 141 & SR 273	20	91	\$2,074,805	48	67	65
N162	SR 2 & SR 41	25.7	50	\$1,725,345	70	94	66
N425T	SR 72 & Wyoming Rd.	19.7	102	\$1,569,628	87	27	67
N538	Road A & DE 1 Ramp NB & Fashion Center Ent.	20.3	90	\$2,370,326	28	112	69
N109	US 202 & Powder Mill/Murphy Rd.	24.7	59	\$1,547,220	90	85	70
N715	US 301 & Merrimac Av.	23.3	67	\$1,436,493	104	66	72
N233	SR 7 & Milltown Rd.	18.7	110	\$1,656,807	77	51	74
N556	SR 301 & SR 299 (W. MAIN ST.)	23	69	\$1,568,638	88	89	75
N120	Philadelphia Pike & Harvey Rd.	19.3	105	\$2,048,046	49	99	77
N243	SR 71 & Pine Tree Rd.	19	109	\$2,295,831	32	113	78
N219	US 13 & Harrison Ave.	21.3	80	\$1,614,045	79	100	82
N156	SR 48 & SR 141	24.3	61	\$1,591,783	83	119	84
N266	SR 72 & SR 71	21.3	82	\$1,953,737	58	126	86
N460	SR 273 & Appleby Rd.	20	95	\$1,601,559	81	93	88
N326	SR 92/ Naamans Rd. & Peachtree Dr.	21.3	81	\$1,804,241	64	127	89
N180	US 13 & Hazeldell Ave.	16	139	\$1,699,505	72	71	92
N008P	US 13 & School Lane (Airport)	20	94	\$1,525,906	91	101	93
N150	SR 141 & SR 100	19.3	104	\$1,432,577	106	92	97
N252	SR 2 & Duncan Rd.	21	85	\$1,382,770	111	109	98
N424T	S. College & E Del. Ave (Coll. Sq.)	21.7	78	\$1,371,587	117	111	99
N271	4th St. & N. Jackson St.	15.3	145	\$1,887,234	61	108	103
N726	US 301 & Levels Rd. (SR 15)	20.3	89	\$1,267,047	144	83	104
N181	SR 2 & Otts Chapel Rd	22	75	\$1,218,379	156	88	105
N435T	SR 896 & Old Chestnut Hill Rd.	18	122	\$1,397,493	110	107	109
N484	Gov. Printz Blvd. & Edgemoor Rd.	19.7	98	\$1,399,984	109	134	110
N369	SR 4 & Churchman's Rd.	17.3	126	\$1,520,481	93	132	114
N521	SR 273 & SR 1 NB Ramp	18	118	\$1,227,421	155	81	115
N285	SR 2 & Farrand Dr	19.7	99	\$1,504,122	97	160	117
N367	SR 273 & Chapman Rd (Eagle Run)	22	73	\$1,411,514	108	175	118
N501	SR 273 & Quigley Blvd.	16.7	130	\$1,108,261	174	60	120

Statewide Intersection Crash Rankings (New Castle County Locations) 2020-22

Permit	Intersection	Avg. Crashes 2020-22	Frequency Rank	Manner of Impact Cost	Impact Rank	Severity Rank	Final State Rank
N546	Road A & DE 1 Ramp Southbound	19.7	100	\$1,596,355	82	187	123
N147	SR 261 (Foulk Rd.) & Silverside Rd.	16.7	128	\$1,785,532	65	180	124
N035P	US 40 & Gov. Sq.	18.7	111	\$1,213,492	157	118	125
N548	SR 896 & Bethel Church Rd.	13	182	\$1,514,146	95	114	126
N381	Old Baltimore Pk. & Salem Church Rd. (East)	18.3	115	\$1,232,922	153	123	127
N144	SR 92 / Naamans Rd. & Marsh Rd.	15	152	\$1,327,694	127	117	128
N332	US 40 & Scotland Dr.	18.7	112	\$1,285,539	137	147	129
N702	US 301 & Armstrong/Marl Pit Rd.	17.7	124	\$1,361,451	120	156	130
N506	SR 72 & Porter Rd	15.3	150	\$1,492,229	99	155	131
N712	US 13 & SR 71 (Red Lion)	16	143	\$872,177	233	32	132
N168	Centerville Rd. & Boxwood Rd.	16.3	136	\$1,313,055	130	146	133
N163	SR 141 & SR 34 (Faulkland Rd.)	18	119	\$1,307,062	131	168	134
N184	US 13 & US 40	19	106	\$1,105,510	175	142	135
N038P	SR 2 & Elsmere Shop. Cntr.	14.3	160	\$1,442,871	103	171	136
N347	SR 7 & SR 72	17.3	125	\$1,235,081	152	161	139
N142	SR 3 (Marsh Rd) & Silverside Rd.	13.3	174	\$1,356,113	122	148	140
N522	SR 273 & SR 1 SB Ramp	19	107	\$1,048,716	191	150	141
N697T	S. Walnut St. & A St.	12.7	192	\$1,187,533	162	103	144
N454	SR 896 (Glasgow Ave.E) & Porter Rd.	16.7	129	\$1,102,539	176	154	145
N019P	SR 7 & Del. Park Ent.	15.3	147	\$1,375,973	114	198	146
N313	New Castle Ave. & Cherry Lane	16.3	137	\$1,123,952	168	158	147
N490	US 13 & Sienni Blvd.	15	154	\$1,289,076	136	176	149
N703T	SR 299 & Industrial Dr.	15.3	151	\$1,011,262	200	116	150
N230	US 202 & Woodrow Ave.	13.7	169	\$1,033,762	195	110	152
N686T	4th & Walnut St.	11.7	207	\$1,323,433	129	145	154
N741	US 40 & Glasgow Dr.	14.7	157	\$1,101,420	177	149	156
N634	Concord Pike & I-95 Ramp SB	13.3	177	\$1,352,843	124	190	159
N255	SR 4 & Marrows Rd.	16	140	\$1,193,804	160	196	160
N590	SR 273 & Old Ogletown Rd./Red Mill Rd.	15	153	\$1,257,791	145	200	161
N356	SR 7 & Linden Hill Rd.	16.3	132	\$1,030,780	197	174	162
N146	SR 92 / Naamans Rd. & Foulk Rd.	12.3	194	\$1,067,165	186	136	163
N495	US 40 & Brookmont Dr.	13.3	176	\$926,708	217	124	164
N247	SR 273 & Marrows Rd.	13.3	175	\$1,154,499	164	178	167
N625	US 13 & Hessler Blvd.	14	164	\$1,056,716	188	173	168

Statewide Intersection Crash Rankings (New Castle County Locations) 2020-22

Permit	Intersection	Avg. Crashes 2020-22	Frequency Rank	Manner of Impact Cost	Impact Rank	Severity Rank	Final State Rank
N358	SR 2 & Albertson Blvd..	16	141	\$1,068,655	185	201	170
N705	US 301 & Diamond State Blvd	14.7	156	\$911,759	221	153	171
N465	SR 4 & Samoset Dr.	15.3	149	\$1,150,384	165	222	172
N215	US 301& SR71	15.3	148	\$987,992	207	184	173
N540	Otts Chapel Rd. & Chestnut Hill Rd.	10	265	\$1,093,732	179	98	176
N166	SR 2 & Possum Park Rd.	14	163	\$1,040,393	193	186	178
N117	Philadelphia Pike & Darley Rd.	11.3	215	\$1,093,844	178	151	179
N407	SR 7 & Valley Rd.	12.7	191	\$1,284,457	138	215	180
N685T	King St. & 4th St.	11	218	\$1,353,646	123	210	182
N237	US 13 & Llangollen Blvd.	9.7	272	\$1,053,813	189	91	183
N261	SR 7 & Skyline Dr.	12.7	190	\$906,547	223	139	184
N472	SR 7 & Rivers End Dr.	10.7	232	\$1,281,558	140	182	186
N486	US 40 & Pleasant Valley Rd.	13.7	170	\$983,241	209	177	187
N456T	SR 299 (Broad St.) & Main St.	15.3	146	\$899,015	225	185	188
N017P	SR 2 & Haskell Rd.	13.7	167	\$804,159	253	137	189
N160	SR 41 & Hercules /Mill Creek Rd.	11.7	210	\$1,205,100	158	193	190
N127	Philadelphia Pike & Edgemoor Rd.	10.7	237	\$1,429,287	107	221	192
N175	SR 9 & Rodgers Rd.	13	184	\$1,005,880	201	183	193
N282	Centerville Rd. & Old Capitol Trail	12	202	\$1,235,306	151	220	194
N212	43rd St. & Market St.	10.7	239	\$1,280,892	141	199	196
N220	US 13 & Lincoln Ave.	12.7	189	\$870,581	235	163	197
N659	SR 299 & Brick Mill Rd.	12.7	193	\$1,049,444	190	208	200
N365	SR 72 & Polly Drummond Hill Rd.	11.7	209	\$1,305,450	133	254	201
N438T	SR 896 & W. Park Pl.	12	200	\$990,280	206	191	202
N474	Old Baltimore Pk. & Salem Church Rd. (West)	12.3	197	\$1,004,640	202	203	204
N102	US 202 NB & Sliverside Rd.	11.7	204	\$843,429	243	159	205
N228	SR 4 & Broom St.	11.7	205	\$1,093,621	180	225	207
N288	SR 52 & Jackson St.	11	221	\$1,068,701	184	211	209
N108	US 202 & Fairfax Blvd.	12.7	188	\$1,046,348	192	238	210
N577	SR 72 & SR 1 SB OFF RAMP	13.3	173	\$926,470	218	229	211

Statewide Intersection Crash Rankings (New Castle County Locations) 2020-22

Permit	Intersection	Avg. Crashes 2020-22	Frequency Rank	Manner of Impact Cost	Impact Rank	Severity Rank	Final State Rank
N525	US 13 & Second Ave.	10.7	234	\$806,469	251	138	213
N088P	Center Blvd. S & Mall Rd.	11.7	213	\$1,057,810	187	236	216
N136	SR 896 & Four Seasons Parkway	13.7	168	\$685,726	269	202	217
N164	SR 41 & Old Capitol Trail	10.3	253	\$1,236,526	150	237	218
N639	SR 2/Elkton Rd. & Casho Mill Rd.	11	222	\$848,379	240	179	219
N322	US 202 & AstraZeneca Ent.	13	181	\$831,953	248	214	220
N396	SR 4 (EB) & James St.	12.3	196	\$1,015,039	198	256	222
N417T	SR 2 (Del. Ave.) & Academy St.	10	257	\$1,120,920	169	227	223
N331	SR 92 / Naamans Rd. & Shipley Rd.	12.3	195	\$932,100	216	246	225
N193	SR 72 (Wrangle Hill Rd) & US 13 (Dupont Hwy)	11	220	\$924,008	219	219	226
N596	SR 58 & Geoffrey Blvd.	13	179	\$780,648	258	234	230
N152	SR 2 & Milltown Rd.	12	198	\$973,130	210	265	231
N574	US 13 & SR 71	10	261	\$972,909	211	204	232
N251	Marsh Rd. & Washington St. Exit	10.3	242	\$1,134,286	167	268	233
N489	SR 896 (S. College Ave.) & Corporate Blvd. (GBC DR)	10	260	\$693,819	266	152	234
N397	SR 4 (WB) & Marshall St.	11	217	\$937,393	215	249	235
N330	US 13 & Boyds Corner Rd.	11.7	206	\$881,841	229	261	240
N333	SR 2 & Clifton Ave.	10.3	248	\$952,675	213	240	241
N028P	US 202 (Concord Pike) & NORTH ROCKY RUN	12	199	\$868,649	236	266	242
N176	Salem Church Rd. & Chapman Rd.	11	219	\$881,687	230	257	244
N514	US 40 & Wilton Blvd.	10.7	233	\$837,120	244	233	246
N690T	4th Street & Church St.	9.7	270	\$844,093	242	205	247
N129	SR 2 (Kirkwood Hwy) & St James Church Rd.	10.7	230	\$670,573	271	223	248
N408	SR 58 (Churchmans Rd.) & Continental Dr.	12	203	\$686,252	268	260	249
N177	S Heald St. & Rodgers Rd.	10.7	238	\$751,333	259	235	250
N137	SR 7 & SR 71/Bear Corbit Rd.	9.7	276	\$1,040,248	194	264	251
N561	US 13 & Duck Creek Rd.	9.7	269	\$569,428	275	192	252
N254	SR 273 & Churchmans Rd.	10.7	228	\$783,807	257	251	253
N583	SR 2 & Kirkwood Plaza	9.7	273	\$856,337	238	230	254
N477	SR 4 & Robinson Ln.	10	259	\$918,267	220	262	256
N732	SR 299 & Gloucester Blvd.	10	266	\$688,479	267	209	257
N469	SR 2 & Green Valley Cir.	10.7	231	\$745,665	261	252	258

Statewide Intersection Crash Rankings (New Castle County Locations) 2020-22

Permit	Intersection	Avg. Crashes 2020-22	Frequency Rank	Manner of Impact Cost	Impact Rank	Severity Rank	Final State Rank
N463	US 13 SB & SR 299	10.3	243	\$873,999	232	269	259
N195	SR 4 & SR 100	10	254	\$892,794	226	271	262
N218	US 13 & Roosevelt Ave.	9.7	271	\$805,906	252	231	263
N464	SR 4 & Hygeia Dr.	10	258	\$828,227	249	247	264
N646	US 40 & LaGrange Ave.	10	262	\$874,532	231	263	265
N089P	SR 273 & Centerpointe Blvd.	10.3	246	\$641,863	274	243	268
N260	SR 4 & Augusta Rd.	10.3	247	\$791,073	254	276	271
N406	Churchmans Rd. & Christiana Hosp.	9.7	277	\$832,731	247	267	273
N371	SR 896 & Mt. Pleasant	9.7	268	\$696,696	265	274	275
N040P	US 40 & Eden SQ.	10	256	\$485,676	277	277	276