2017

Crash Analysis Report

Adopted by TPO Board

September 27, 2017

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Countywide Crash Analysis

The purpose of this report is to provide a more detailed review and analysis of crash data in Volusia and Flagler Counties as a follow-up to the observations noted in the "Congestion Management Process and Performance Measures Report" completed in October 2016. Findings in this report are intended to provide traffic engineers and planners with a broad crash analysis to determine safety concerns and locations that may require a more focused analysis. Follow up analyses will identify needed infrastructure improvements, awareness or enforcement programs, and/or other countermeasures. These countermeasures and improvements will reduce crashes and increase safety. This study analyzed auto crashes (rear-end, left-turn and sideswipes, right angle, head-on), bicycle and pedestrian crashes and also identified high crash intersections and road segments based on crash count, crash severity, and fatal crashes.

The crash data was primarily obtained from Signal Four Analytics, which is a statewide, interactive, web-based geospatial crash analytical tool developed and maintained by the GeoPlan Center at the University of Florida. The crash data analyzed for this report covers the period from 2011 through 2015. Data from the National Highway Traffic Safety Administration's Fatality Analysis Reporting System was also used to supplement this report.

Overview of the Crashes

A comparison of crash data for Volusia and Flagler Counties with data from other similar areas and the state gives important dimension to the recent crash history in the TPO's planning area. For Florida and the nation as a whole, there had been a general downward trend in traffic fatalities from 2005 through 2011[1]. However, beginning in 2012, fatalities have been increasing. The fatality rate (number of fatalities per 100,000 population), which accounts for the effect of population growth, has shown a significant increase since 2011. In contrast, the fatality rates in Volusia and Flagler Counties have generally decreased from 2005 through 2015. Flagler County's fatality rate spiked in 2014, but dropped in 2015 to the lowest level for the period.

Figure 1: Annual Crash Fatalities per 100,000 Populations for Flagler and Volusia Counties, Florida, and the US: 2005 - 2015
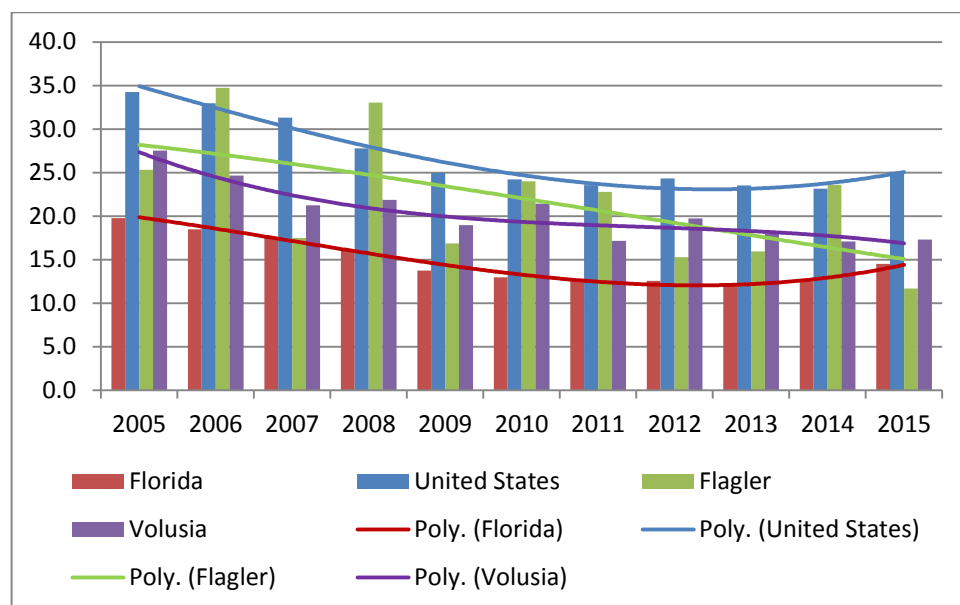
Source: Fatality Analysis Reporting System, National Highway Traffic Safety Administration

The Florida Department of Transportation 2016 Highway Safety Plan[2] ranks counties by highest risk for crashes, fatalities, and injuries for the five year period from 2009 through 2013. Recognizing that a fair comparison must reflect relative exposure to risk, counties are assigned to one of three groups based on population and then ranked within each group on a per capita basis. Within groups, counties are ranked for each of 10 program areas:

- **Total Fatalities and Injuries (F&I)** – overall combined fatalities and injuries
- **Impaired** – includes combined fatalities and injuries for both driving under influence crashes and crashes where impairment was a contributing circumstance
- **Bicycle Related** – bicycle related fatalities and injuries (combined)
- **Motorcycle Related** – motorcycle related fatalities and injuries (combined)
- **Pedestrian Related** – pedestrian related fatalities and injuries (combined)
- **Speed Related** – speed related fatalities and injuries (combined)

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[1] Traffic Safety Facts, National Highway Traffic Safety Administration, U.S. Department of Transportation, DOT HS 812 318, August 2016.
[2] Florida Department of Transportation 2016 Highway Safety Plan, Florida Department of Transportation, January 15, 2015.

- **Occupant Protection** – combined fatalities and injuries among drivers and passengers who were both not using safety equipment and were subject to the seat belt law
- **Aggressive Driving** – combined fatalities and injuries in crashes where two or more of certain moving violations (includes careless driving, improper passing, and several others) were cited
- **Teen Drivers** – combined fatalities and injuries among drivers aged 15-19, excluding bicyclists and motorcyclists
- **Drivers 65+** – combined fatalities and injuries among older drivers, excluding bicyclists and motorcyclists

Volusia County is assigned to Group 1 (population 200,001 and above). Of the 24 counties in Group 1, Volusia County ranks 1st in both motorcycle related injuries and fatalities and occupant protection injuries and fatalities, 3rd in impaired driving injuries and fatalities, 4th in bicycle related injuries and fatalities, and 5th in speed related injuries and fatalities.

Flagler County is assigned to Group 2 (population 50,000 to 200,000). Of the 17 counties in Group 2, Flagler County ranks 3rd in motorcycle related injuries and fatalities, 7th in pedestrian related injuries and fatalities, and 8th in both impaired driving injuries and fatalities and occupant protection injuries and fatalities.

Table 1: Highway Safety Matrix - Volusia & Flagler County Ranking (2009-2013)

	fatalities & injuries	impaired	bicycle related	motorcycle related	pedestrian related	speed related	occupant protection	aggressive driving	teen drivers	drivers 65 years & older
Group 1 – Population 200,001 and above (includes 24 counties)										
Volusia County	11	3	4	1	8	5	1	11	14	11
Group 2 – Population 50,000 to 200,000 (includes 17 counties)										
Flagler County	11	8	9	3	7	10	8	10	9	13

Source: Florida Department of Transportation 2016 Highway Safety Plan, Florida Department of Transportation, January 15, 2015

Overall, the Flagler County rankings compare favorably against its peers, listing the county below the mean in most categories. One exception is in motorcycle related crashes. Given the level of event activity (Biketoberfest, Race Week etc.) in the area, this is not surprising.

Volusia County ranks relatively high in several categories. Some of these program areas are the result of driver behavior. Using seat belts, impaired driving, and speed require more detailed research to identify potential crash reduction strategies such as law enforcement and public awareness campaigns.

Table 2 shows the Volusia and Flagler Cities Highway Safety matrix based on population. Daytona Beach, DeBary, DeLand, Edgewater, New Smyrna Beach, Ormond Beach, and Port Orange are assigned to Group 2 (population 15,000 to 74,999). Of the 94 cities in Group 2, Daytona Beach ranks 2nd in motorcycle related and pedestrian related injuries and fatalities. Ormond Beach, New Smyrna Beach and DeLand rank 3rd, 4th and 5th in motorcycle related fatalities and injuries, respectively.

Daytona Beach Shores, Holly Hill and Orange City are assigned to Group 3 (Population 3,000 to 14,999). Of the 123 cities in Group 3, Daytona Beach Shores ranks 4th and Holly Hill ranks 6th in motorcycle related injuries and fatalities.

Table 2: Highway Safety Matrix - Volusia and Flagler Cities Ranking (2009-2013)

	fatalities & injuries	impaired	bicycle related	motorcycle related	pedestrian related	speed related	occupant protection	aggressive driving	teen drivers	drivers 65 years & older
Group 1 – Population of 75,000 and above – 31 Cities										
Deltona	26	26	30	17	29	22	21	28	29	29
Palm Coast	28	18	25	14	30	17	24	27	18	23
Group 2 – Population 15,000 to 74,999 (includes 94 cities)										
Daytona Beach	7	11	9	2	2	11	5	8	13	23
DeBary	88	78	93	49	92	57	85	90	85	75
DeLand	10	14	21	5	16	28	6	7	5	14
Edgewater	55	37	35	17	61	27	55	63	81	39
New Smyrna Beach	19	5	16	4	29	18	7	16	17	15
Ormond Beach	29	19	22	3	39	10	28	20	27	19
Port Orange	64	50	30	16	67	52	80	58	54	40
Group 3 – Population 3,000 to 14,999 (includes 123 cities)										
Daytona Beach Shores	69	79	54	4	8	62	53	84	66	68
Flagler Beach	88	88	29	10	19	78	98	69	107	85
Holly Hill	35	23	10	6	27	25	10	29	49	48
Orange City	20	18	19	12	18	26	13	10	45	16
Ponce Inlet	110	89	55	92	95	102	100	108	79	54
South Daytona	71	43	31	22	76	60	73	68	83	71

Source: Florida Department of Transportation 2016 Highway Safety Plan, Florida Department of Transportation, January 15, 2015.

Crash Frequency

A total of 55,098 crashes were reported in Volusia County from 2011-2015. Of those, 13,108 (23.79%) occurred at intersections and 41,990 (76.20%) occurred on roadway segments (not intersection-related). A total of 7,938 crashes occurred in Flagler County from 2011-2015. Of those, 2,107 crashes (26.54%) occurred at intersections and 5,831 (73.45%) occurred on roadway segments.

For purposes of comparison, measures of crash frequency must be "normalized" to account for varying degrees of exposure. One method for doing so is to divide the number of crashes for a given area and time by a measure of travel for the same area and time. The resulting crash rates (annual crashes divided by annual 100 million vehicle miles traveled) are reasonably comparable from one area to another and from one time to another. The crash rates for Volusia and Flagler Counties and the state of Florida are shown in

Table 3, below, and Figure 4: In reviewing the data, it might be noted that the crash rates for all three areas generally increased through the five-year period shown. The rates in both Volusia and Flagler Counties, however, were lower than those highest for the state as a whole, ranging from a low of 185.69 in 2011 to a high of 325.42 in 2015. Of particular concern is the increase of crashes reported in Flagler County over the five-year period with total crashes increasing by three times over the period.

Table 3: Total Crashes – Volusia County, Flagler County, and State of Florida (2011-2015)

Year	2011	2012	2013	2014	2015
Volusia County					
Intersection Related Crashes	1,728	2,104	2,944	3,059	3,273
Corridor Related Crashes	5,312	6,768	9,308	10,111	10,491
Total Crashes	7,040	8,872	12,252	13,170	13,764
Total Population	495,400	497,145	498,978	503,851	510,494
Total Crashes per 100,000 Population	1,421	1,785	2,455	2,614	2,696
100 Million VMT	53.934	53.742	54.284	55.461	57.263
Total Crashes per 100 Million VMT	130.53	165.09	225.70	237.46	240.36
Flagler County					
Intersection Related Crashes	242	342	415	507	601
Corridor Related Crashes	469	804	1,358	1,599	1,601
Total Crashes	711	1,146	1,773	2,106	2,202
Total Population	96,241	97,160	97,843	99,121	101,353
Total Crashes per 100,000 Population	739	1,179	1,812	2,125	2,173
100 Million VMT	10.980	10.357	10.520	12.975	13.431
Total Crashes per 100 Million VMT	64.75	110.65	168.54	162.31	163.95
State of Florida					
Total Crashes	356,258	467,606	579,957	625,748	672,711
Total Population	18,905,070	19,074,434	19,259,543	19,507,369	19,815,183
Total Crashes per 100,000 Population	1,884	2,451	3,011	3,208	3,395
100 Million VMT	1,918.55	1,908.51	1,927.02	2,010.40	2,067.21
Total Crashes per 100 Million VMT	185.69	245.01	300.96	311.25	325.42

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015 & Population Data from University of Florida- Bureau of Economic and Business Research

Figure 2: Volusia County Total Crashes (2011-2015)

Figure 3: Flagler County Total Crashes (2011-2015)

High crash frequency at any given location likely indicates that a problem exists. Detailed review and analysis may be necessary to determine the nature of the problem and an appropriate correction (e.g., stricter enforcement, reconfiguration of the roadway/intersection geometry, signal modification, new signage, etc.). Table 4 and Table 5 show the ten highest crash frequency intersections and road segments based on crash counts from 2011-2015. A minimum crash count is five.

Table 4: Volusia & Flagler Counties Ten Highest Crash Intersection Locations Based on Crash Count (2011-2015)

Rank	Intersection Name	Crash Count	Crash Severity	Fatal Crashes	Fatal & Incapacitating Injury Crashes	Injury Crashes	*PDO Crashes	Bike/Ped Crashes	Vehicles	Damages	City
1	SR 421 (Dunlawton Av) & SR 5A (S Nova Rd)	145	2.151	1	7	52	92	8	271	$497,448	Port Orange
2	SR 40 (W Granada Blvd) & US 1(Yonge St)	136	2.279	0	2	58	78	3	277	$543,541	Ormond Beach
3	US 1 (Ridgewood Ave) & US 92 (W International Speedway Blvd)	125	2.032	0	3	43	82	3	250	$370,380	Daytona Beach
4	US 92 (W International Speedway Blvd) & Williamson Blvd	121	2.115	0	6	45	76	1	253	$411,274	Daytona Beach
5	SR 421 (Dunlawton Av) & S Clyde Morris Blvd	119	1.882	0	5	35	84	5	234	$492,571	Port Orange
6	SR 40 (W Granada Blvd) & SR 5A (Nova Rd)	116	1.956	0	3	37	79	7	227	$307,895	Ormond Beach
7	Cypress Point Pkwy & Palm Coast Pkwy	113	2.221	0	2	46	67	2	243	$506,207	Palm Coast
8	SR 40 (W Granada Blvd) & Williamson Blvd	107	2.065	0	4	38	69	2	212	$587,790	Ormond Beach
9	US 92 (W International Speedway Blvd) & Clyde Morris Blvd	104	1.836	0	0	29	75	2	219	$278,616	Daytona Beach
10	Old Kings Rd N & Palm Coast Pkwy	101	1.683	0	1	23	78	2	213	$261,198	Palm Coast

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

*PDO – Property Damage Only

Figure 5: Volusia & Flagler Counties Ten Highest Crash Intersection Locations Based on Crash Count (2011-2015)

Table 5: Volusia & Flagler Counties Ten Highest Crash Roadway Segments Based on Crash Count (2011 - 2015)

Rank	Street Name	Intersecting Street(s)	Crash Count	Crash Severity	Fatal Crashes	Fatal & Incapacitating Injury Crashes	Injury Crashes	*PDO Crashes	Bike/Ped Crashes	Vehicles	Damages	City
1	W Granada Blvd	Between Lewis St And N Beach St	67	2.074	0	2	24	43	1	135	$245,401	Ormond Beach
2	Saxon Blvd	Between Enterprise Rd And Bloxham Ave	53	2.528	0	2	27	26	1	109	$243,214	Orange City
3	W Granada Blvd	Between S Forty Trl And Clyde Morris Blvd	51	2.294	0	1	22	29	3	101	$130,901	Ormond Beach
4	E Granada Blvd	At S Halifax Dr	49	2.04	0	3	17	32	3	102	$188,951	Ormond Beach
5	Dunlawton Ave	Between S Nova Rd And Jackson St	48	2.687	0	7	27	21	4	89	$242,260	Port Orange
6	N Spring Garden Ave	Between W Minnesota Ave And W Plymouth Ave	44	2.34	1	2	16	27	2	92	$214,812	DeLand
7	W Granada Blvd	At S Yonge St	44	2.159	0	2	17	27	1	89	$150,978	Ormond Beach
8	S Yonge St	At W Granada Blvd	44	2.431	0	0	21	23	0	94	$163,201	Ormond Beach
9	Beville Rd	At S Nova Rd	43	1.697	0	1	10	33	4	83	$78,950	Daytona Beach
10	Dunlawton Ave	At S Clyde Morris Blvd	43	1.767	0	0	11	32	3	83	$194,071	Port Orange

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

*PDO – Property Damage Only

Ten intersections and ten roadway segments were identified as high crash locations based on crash frequency. To further detail this study, the top five intersections and roadway segments were analyzed to determine the predominant crash factors. The majority of the intersection and roadway segments crashes were rear-end crashes, accounting for about 28% of all crashes. Most rear-end crashes occurred in daylight when the road surface was dry (See Appendix). Thus, it is important to determine the possible causes for rear-end crashes for the segment and intersection; further review needs to be done to determine possible causes and contributing factors.

Crash Severity

A total of 448 fatal crashes and 25,418 injuries were reported in Volusia County from 2011-2015. There were a total of 89 fatal crashes and 4,060 injuries, in Flagler County during the same study period. It is important to note that while total crashes and crashes with injuries increased in both counties, crashes resulting in fatalities were generally steady in Volusia County and trended downward in Flagler County during this period.

Table 6: Volusia & Flagler County Fatalities and Injuries (2011-2015)

Year	2011	2012	2013	2014	2015
Volusia County					
Total Crashes	7,040	8,873	12,252	13,170	13,764
Fatalities	88	97	90	86	87
Fatalities per 100,000 Population	17.76	19.51	18.04	17.07	17.04
Injuries	4,477	4,713	5,211	5,256	5,761
Injuries per 100,000 Population	903.71	948.01	1044.33	1043.17	1128.51
Flagler County					
Total Crashes	711	1,146	1,773	2,106	2,224
Fatalities	22	15	16	24	12
Fatalities per 100,000 Population	22.86	15.44	16.35	24.21	11.84
Injuries	672	777	851	816	1,023
Injuries per 100,000 Population	698.25	799.71	869.76	823.24	931.40

Source: Signal Four Analytics and Population Data from University of Florida- Bureau of Economic and Business Research

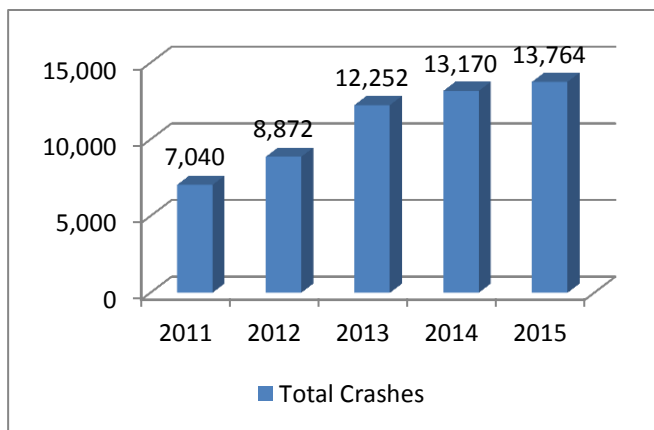**Figure 6: Volusia County Fatalities and Injuries (2011-2015)**   **Figure7: Flagler County Fatalities and Injuries (2011-2015)**
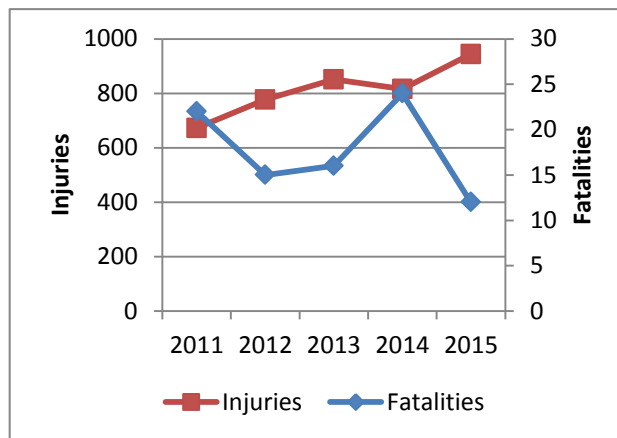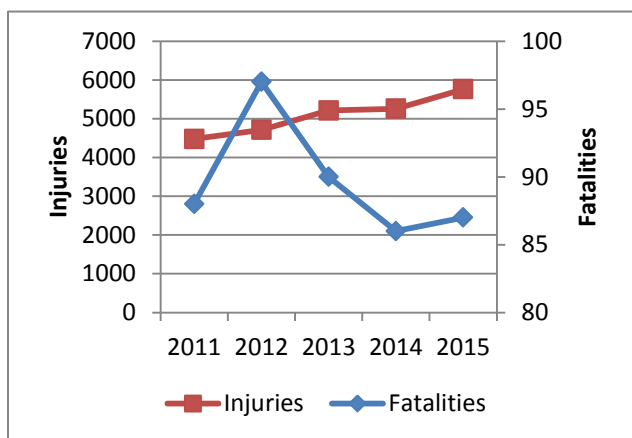
Table 7 and Figure 6 show the ten highest crash intersections and road segments based on crash severity in Volusia and Flagler Counties from 2011-2015. A minimum crash count is five. The crash severity index is calculated as follows: (Fatal crashes * 12) + (Injury crashes * 4) + (Property damage only crashes * 1)) ÷ number of crashes.

Table 7: Volusia & Flagler Counties Ten Highest Crash Intersections Based on Crash Severity (2011 - 2015)

Rank	Intersection Name	Crash Count	Crash Severity	Fatal Crashes	Fatal & Incapacitating Injury Crashes	Injury Crashes	*PDO Crashes	Bike/Ped Crashes	Vehicles	Damages	City
1	Pelican Dr & S Ridgewood Ave	6	7.5	3	4	2	1	3	9	$22,000	Edgewater
2	CR-304 & SR-11	9	5.333	3	3	2	4	0	21	$190,100	Unincorporated Volusia County
2	Tomoka Farms Rd & Country Farms Rd & E Country Circle Dr	6	5.333	1	2	5	0	1	8	$43,550	Unincorporated Volusia County
4	Forest Glen Blvd & S Nova Rd	5	5	1	1	3	1	0	14	$24,000	Daytona Beach
4	Trojan Ave & US-1	5	5	1	3	3	1	0	9	$69,500	Unincorporated Volusia County
4	S Palmetto Ave & S Ridgewood Ave & Buchanan Way	5	5	1	2	3	1	1	9	$13,101	South Daytona
7	High Bridge Rd & John Anderson Dr	11	4.909	2	5	7	2	0	12	$19,500	Unincorporated Volusia County
8	15th St & Ridgewood Ave	6	4.833	1	1	4	1	1	12	$22,400	Holly Hill
8	Sundy Trl & E New York Ave	6	4.833	1	1	4	1	0	10	$43,300	Unincorporated Volusia County
10	US 1 & Aldenham Ln	17	4.764	2	4	14	1	1	30	$19,6400	Unincorporated Volusia County

Source: Signal Four Analytics, The Geoplan Center, University Of Florida, Gainesville, FL, 2011-2015.
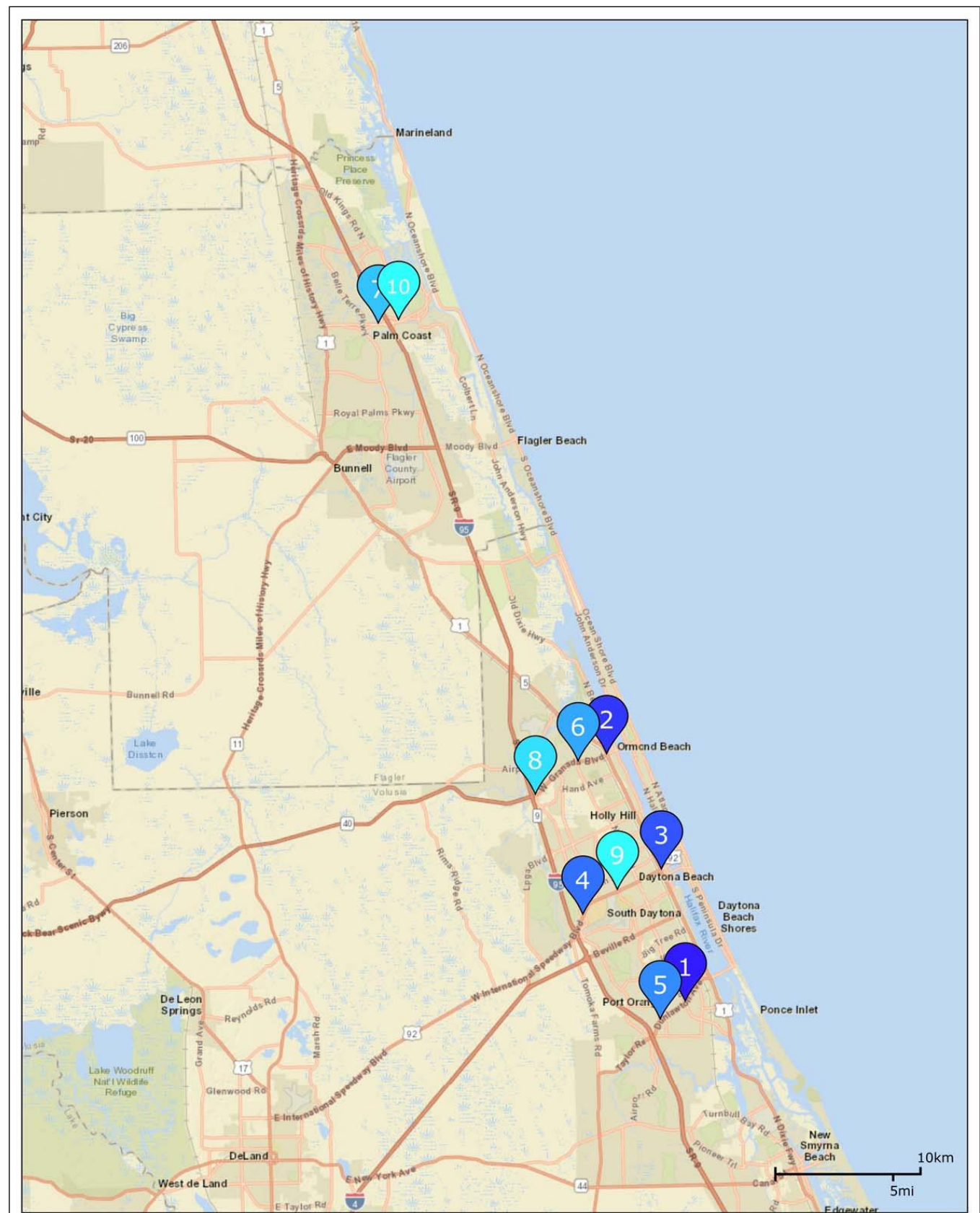
*PDO – Property Damage Only

Table 8: Volusia & Flagler Counties Ten Highest Crash Road Segments Based on Crash Severity (2011 -2015)

Rank	Street Name	Intersecting Street(s)	Crash Count	Crash Severity	Fatal Crashes	Fatal & Incapacitating Injury Crashes	Injury Crashes	*PDO Crashes	Bike/Ped Crashes	Vehicles	Damages	City
1	Bunnell Rd	At Mcglon Rd	5	6	2	2	1	2	0	5	$29,200	Unincorporated Volusia County
2	White View Pkwy	Between Wood Aspen Ln And Rolling Sands Dr	6	5.666	2	3	2	2	0	11	$35,500	Palm Coast
3	N Woodland Blvd	At Poinsettia Dr	5	5.6	1	3	4	0	0	9	$38,350	Unincorporated Volusia County
3	Ridgewood Ave	At 15th St	5	5.6	1	1	4	0	0	11	$22,300	Holly Hill
5	High Bridge Rd	At John Anderson Dr	7	5.428	2	4	3	2	0	8	$17,000	Unincorporated Volusia County
6	US 1	Between White View Pkwy And White View Pkwy	7	5.142	1	1	6	0	0	15	$88,500	Unincorporated Volusia County
7	US 1	At Aldenham Ln	9	5.111	2	3	5	2	0	20	$151,500	Unincorporated Volusia County
8	S Atlantic Ave	Between Nassau Ct And 30th Ave	5	5	1	1	3	1	1	9	$30,600	New Smyrna Beach
8	N Charles Richard Beall Blvd	At Saxon Blvd	5	5	1	2	3	1	0	10	$60,400	DeBary
8	Beville Rd	Between S Nova Rd And S Nova Rd	5	5	1	2	3	1	0	10	$31,400	Daytona Beach
8	I-95	(See Map)	5	5	1	1	3	1	1	14	$58,501	Palm Coast
8	US 1	At Royal Palm Pkwy	5	5	1	2	3	1	0	6	$40,000	Bunnell
8	US 1	At County Road 304	5	5	1	3	3	1	0	10	$52,000	Unincorporated Volusia County
8	N Clyde Morris Blvd	At Mayberry Ave	5	5	1	1	3	1	1	10	$25,500	Daytona Beach
8	US 17-92	At E Roberts St	5	5	1	2	3	1	1	9	$23,700	Orange City
8	US 1	At Lowndes Ave	5	5	1	2	3	1	1	7	$47,200	Unincorporated Volusia County

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

*PDO – Property Damage Only

** Table and map show more than ten locations, these locations have same ranking value so the number repeats

Table 9: Volusia & Flagler Counties Ten Highest Crash Road Segments Based on Fatal Crashes (2011-2015)

Rank	Street Name	Intersecting Street(s)	Crash Count	Fatal Crashes	City
1	I-95	between Pioneer Trl and Spruce Creek Bridge	71	6	Port Orange
2	I-4	St Johns River Bridge and Dirksen Dr/DeBary Av	145	5	Unincorporated Volusia County
3	I-4	at E New York Av/River of Lake Heritage Corridor Scenic Hwy/SR-44 Ramp	170	3	Unincorporated Volusia County
3	I-95	at Dunlawton Av/SR-421/Taylor Rd Ramp	62	3	Port Orange
3	LPGA Blvd	at W International Speedway Blvd	30	3	Daytona Beach
3	I-95	between Maytown Rd and SR 442	64	3	Unincorporated Volusia County
3	I-95	between W International Speedway Blvd/US-92/SR-600 Ramp and W International Speedway Blvd/US-92/SR-600 Ramp	27	3	Daytona Beach
3	SR-415	between Reed Ellis Rd and Lemon Bluff Rd	29	3	Deltona
3	I-95	at LPGA Blvd/CR-4019 Ramp	30	3	Daytona Beach
3	SR-415	at Reed Ellis Rd	61	3	Unincorporated Volusia County

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

Ten intersections and ten roadway segments were identified as high crash locations based on crash severity. To further detail the study, the top five intersections and roadway segments were analyzed to determine the predominant crash factors. The majority of the intersection and roadway segments crashes were rear-end crashes.

Crash Types

For the crash types analysis, the following types of crashes are analyzed: rear-end, left-turn, sideswipes, right-angle, head-on, and several other types including rollover, pedestrian, bicycle, distraction related, alcohol related, impaired driving, other, and unknown (See Appendix).

Rear-End Crashes

A total of 15,655 rear-end crashes occurred in Volusia County, and 1,838 crashes occurred in Flagler County from 2011-2015, accounting for nearly 28% of all crashes. The number of rear-end crashes increased by nearly 168% or an average of 594 per year over the five-year period. This sharp increase is likely caused by distracted driving. However, further investigation of the crash reports should be completed to determine the predominant factors.

Figure 10: Volusia County Rear-End Crashes (2011-2015)
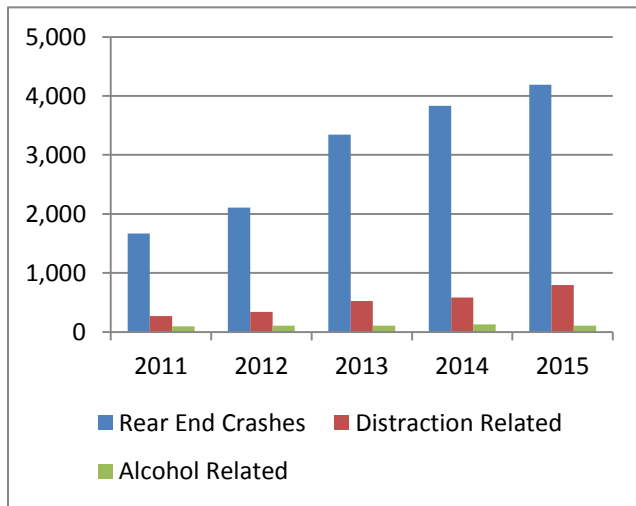
Figure 11: Flagler County Rear-End Crashes (2011-2015)
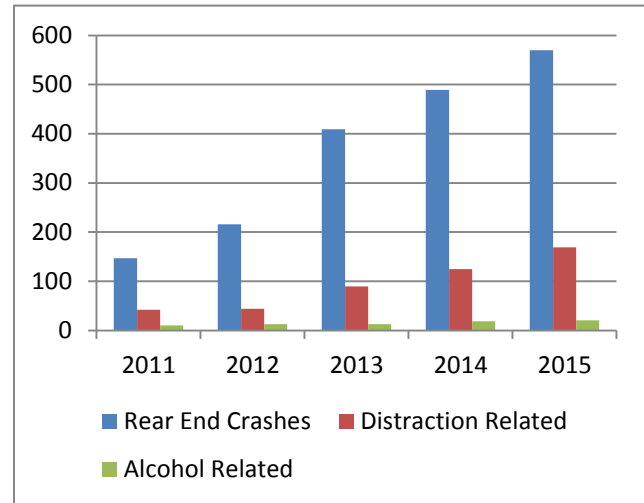
Table 10: Volusia & Flagler County Rear End Crashes Causes (2011-2015)

Year	2011		2012		2013		2014		2015	
Volusia										
Rear End Crashes	1,666	100%	2,106	100%	3,343	100%	3,832	100%	4,208	100%
Distraction Related	268	16.08%	341	16.19%	525	15.70%	587	15.31%	797	18.94%
Alcohol Related	98	5.88%	105	4.98%	110	3.29%	127	3.31%	108	2.56%
Flagler										
Rear End Crashes	147	100%	216	100%	409	100%	489	100%	570	100%
Distraction Related	42	28.57%	44	20.37%	90	22%	125	25.56%	169	29.64%
Alcohol Related	10	6.80%	13	6.01%	13	3.17%	19	3.88%	21	3.68%

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

Left-Turn Crashes

Left-turn crashes are the second most common type of crashes in Volusia County. A total of 3,968 left-turn crashes occurred in Volusia County during the study period. The majority of the left-turn crashes occurred along US 17, SR 44, US 92 in Daytona Beach, SR 40 in Ormond Beach, and South and North Atlantic Avenue. A total of 498 left-turn crashes occurred in Flagler County, of which, most occurred along Palm Coast Pkwy, SR 100, and Belle Terre Pkwy. The majority of the left-turn crashes occurred at four-way intersections in Volusia County, and at T intersections in Flagler County.

Table 11: Volusia and Flagler Counties Left Turn Crashes (2011-2015)

Year	2011		2012		2013		2014		2015	
Volusia										
Left Turn Crashes	489	100%	581	100%	856	100%	978	100%	1064	100%
Four Way Intersection Related	251	51.32%	274	47.16%	415	48.48%	465	47.54%	507	47.65%
T Intersection	147	30.06%	178	30.63%	253	29.55%	285	29.14%	313	29.41%
Not at Intersection, Y Intersection and Other	91	18.60%	123	21.17%	187	21.84%	228	23.31%	244	22.93%
Flagler										
Left Turn Crashes	54	100%	84	100%	93	100%	119	100%	148	100%
Four Way Intersection Related	23	42.59%	32	38.09%	27	29.03%	42	35.29%	55	37.16%
T Intersection	26	48.14	42	50%	54	58.06%	63	52.94%	68	46.89%
Not at Intersection and Other	5	9.25%	10	11.90%	12	12.90%	14	11.76%	25	16.89%

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

Figure 12: Volusia County Left Turn Crashes (2011-2015)

Figure 13: Flagler County Left Turn Crashes (2011-2015)
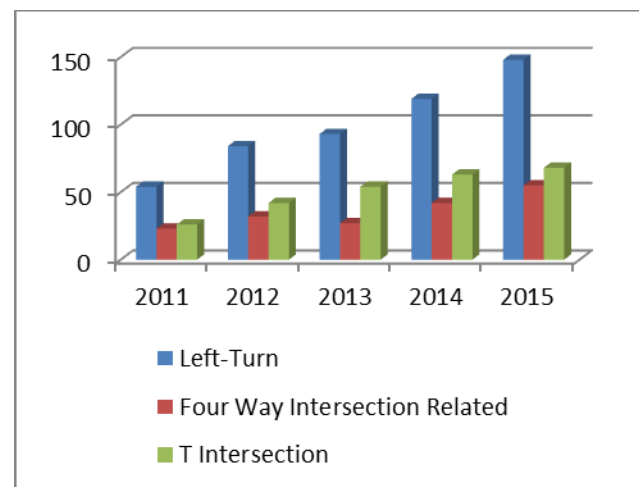
Sideswipe Crashes

Sideswipe crashes are the third most common type of crashes in Volusia and Flagler Counties. A total of 3,753 sideswipe crashes occurred in Volusia County from 2011-2015. Sideswipe crashes are found all over the Volusia County, but the majority occurred at I-4, I-95, and US 92 (International Speedway Blvd). A total of 564 sideswipe crashes occurred in Flagler County, most of which occurred at I-95 and Palm Coast Pkwy.

Right Angle Crashes

There were 3,188 right angle crashes in Volusia County; of those, 2,043 occurred at four-way intersections. There was a larger concentration of high frequency, right angle crashes at intersections along US 17, SR 44 (East New York Av), SR 421 (Dunlawton Av) and US 1. A total of 354 right angle crashes occurred in Flagler County from 2011-2015; of those, 186 crashes occurred at four-way intersections. There was a larger

concentration of high frequency, right angle crashes at intersections along Palm Coast Parkway and SR 100 (E Moody Blvd).

Head-On Crashes

A total of 2,546 head-on crashes occurred in Volusia County. The majority of the crashes occurred along SR 44 (East and West New York Av), Saxon Blvd, US 92 (East - West International Speedway Blvd), LPGA Blvd, and Nova Road. Head-on crashes are the second most common crash types in Flagler County. A total of 634 head-on crashes occurred in Flagler County, of which, the majority happened along Palm Coast Pkwy and SR 100.

Impaired Driving Crashes

Impaired driving crashes include those that are alcohol and drug related. A total of 2,784 crashes occurred in Volusia County and 500 crashes occurred in Flagler County from 2011-2015. The data shows that impaired driving crashes decreased in Volusia County with the exception of an increase in 2014, but these crashes have increased in Flagler County. The majority of the total impaired driving crashes occurred between 6:00 p.m. – 10:00 p.m. and 10:00 p.m. - 2:00 a.m. in both counties.

Table 12: Volusia & Flagler Counties Impaired Driving Crashes (2011-2015)

Year	2011	2012	2013	2014	2015
Volusia					
Impaired Driving	576	567	565	587	489
Flagler					
Impaired Driving	87	109	86	104	114

Figure 14: Impaired Driving Crashes in Volusia & Flagler Counties (2011-2015)
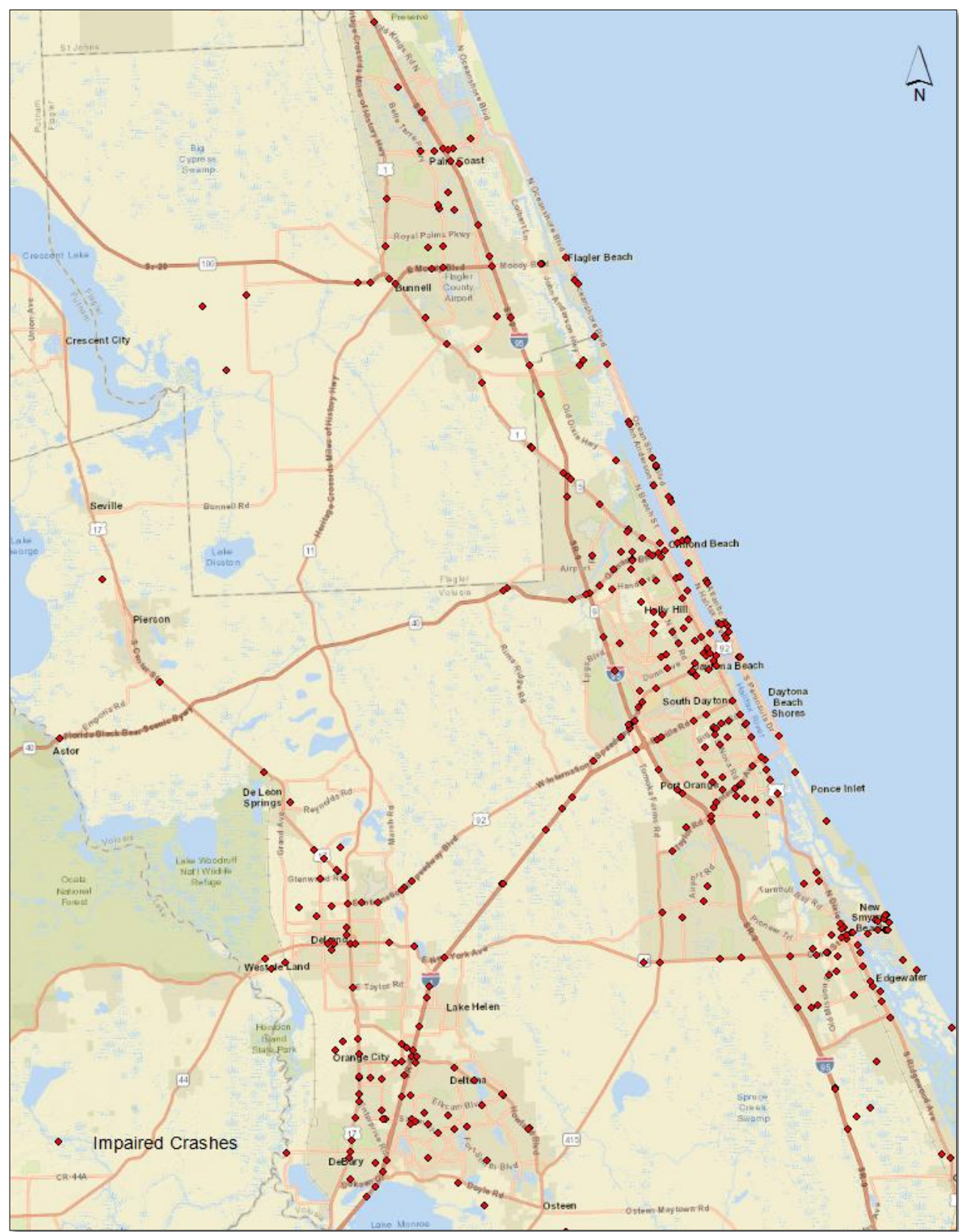
Distracted Driving Related Crashes

A total of 5,637 distraction related crashes occurred in Volusia County from 2011-2015; of these, 46 were fatal crashes and 3 were distraction related, impaired driving fatalities. A total of 1,231 distraction related crashes occurred in Flagler County from 2011-2015; 11 were fatal and one was a distraction related impaired driving fatality. Distracted driving related crashes have been increasing since 2011 in both counties.

Table 13: Volusia & Flagler County Distracted Driving Crashes (2011-2015)

Year	2011	2012	2013	2014	2015	Total
Volusia						
Distraction Related Crashes	739	834	1,173	1,305	1,586	5,637
Distraction Related Fatalities	13	5	9	9	10	46
Distraction Related Impaired Driving Fatalities	3	1	3	0	0	7
Flagler						
Distraction Related Crashes	111	144	216	323	437	1,231
Distraction Related Fatalities	2	3	3	2	1	11
Distraction Related Impaired Driving Fatalities	0	0	0	1	0	1

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

Figure 15: Volusia County Distraction Related Crashes and Fatalities (2011-2015)
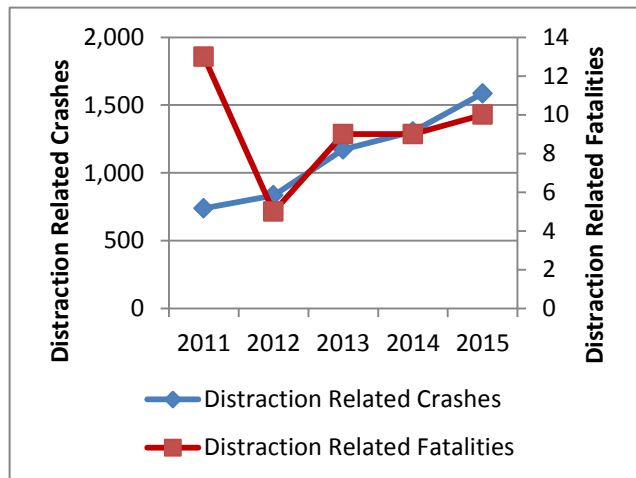
Figure 16: Flagler County Distraction Related Crashes and Fatalities (2011-2015)
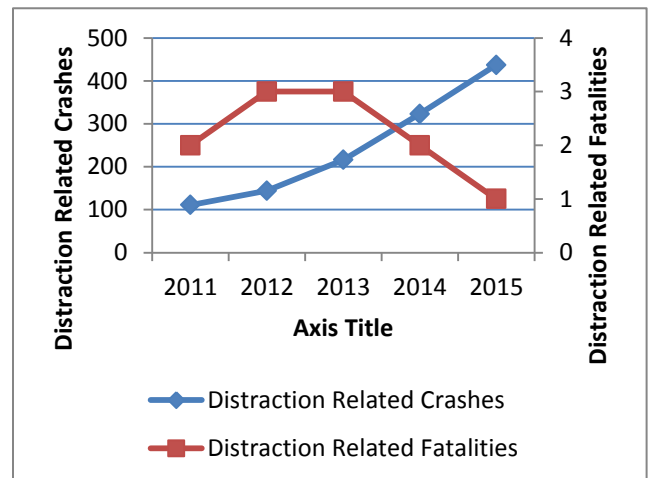
Figure 17: Distraction Related Crashes in Volusia and Flagler Counties (2009-2015)

Distraction Related Crashes
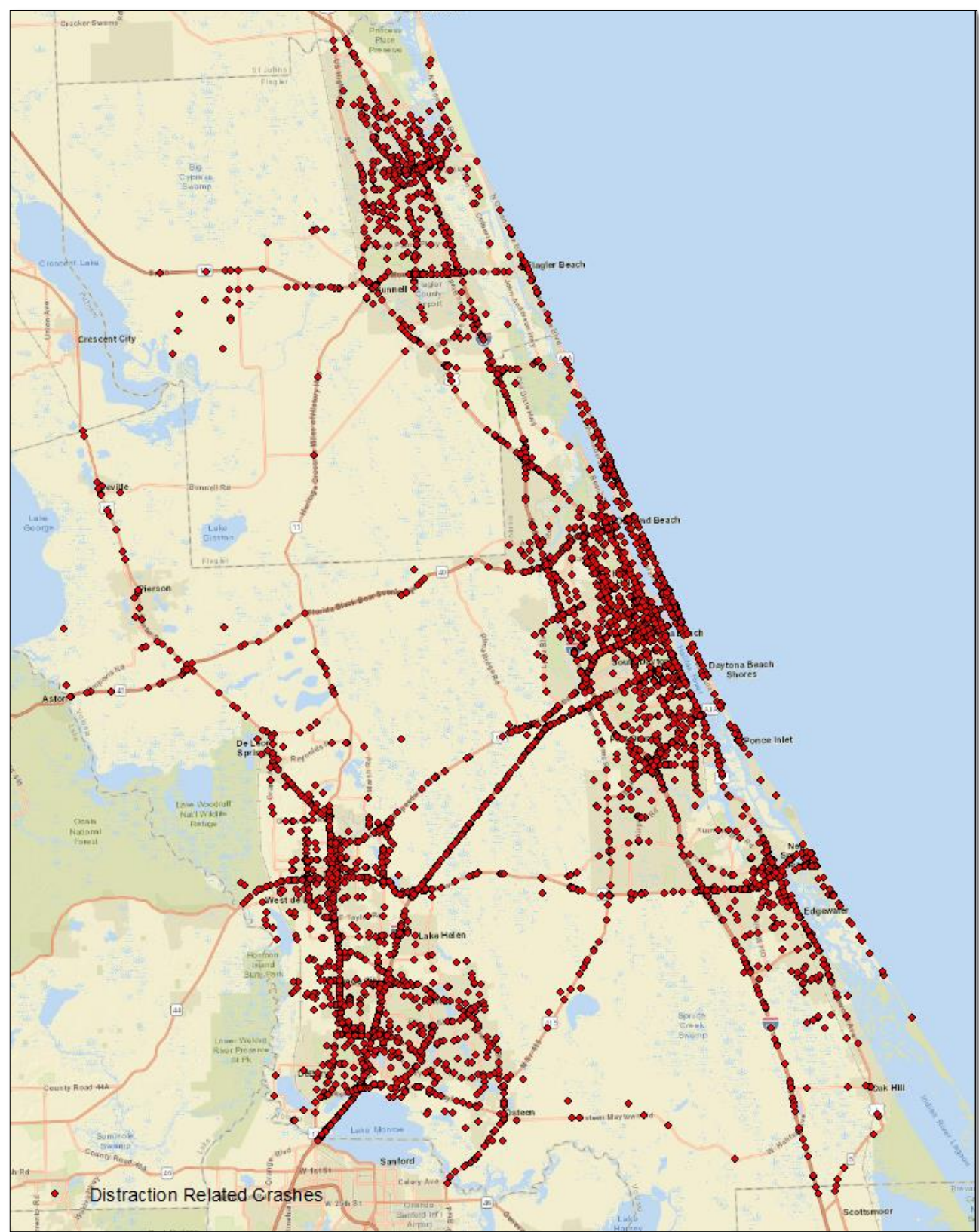
Crashes Involving Bicyclists

A total of 684 crashes involving bicyclists occurred in Volusia County from 2011-2015. The level of bicycle fatalities reported in Volusia County is generally stable except for an increase in 2013 and 2014; however, bicycle injuries have trended upward over the five-year period. A total of 116 crashes involving bicyclists occurred in Flagler County. Bicycle fatalities in Flagler County have also been relatively stable over time with injuries trending slightly upward.

Table 14: Volusia & Flagler Counties Crashes Involving Bicyclists (2011-2015)

Year	2011	2012	2013	2014	2015	Total
Volusia						
Bicyclists Fatalities	4	1	4	4	2	15
Bicyclists Injuries	117	130	160	127	135	669
Flagler						
Bicyclists Fatalities	1	0	2	1	0	4
Bicyclists Injuries	13	22	28	23	25	111

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

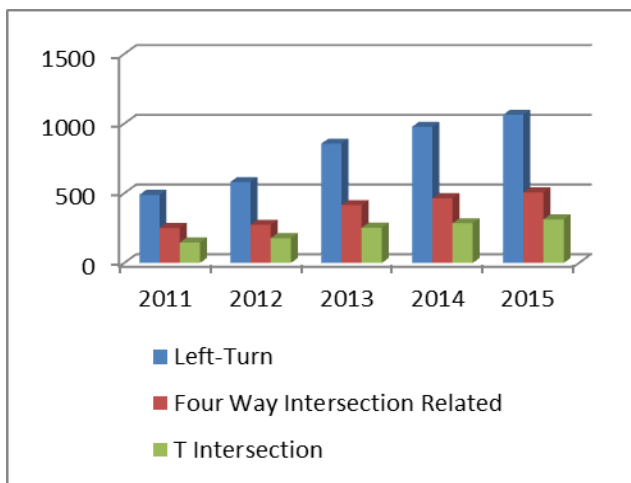**Figure 18: Volusia County Bicycle Crashes (2011-2015)**
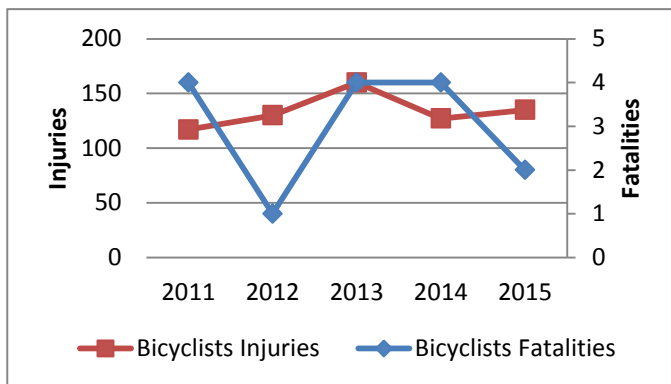
Figure 19: Flagler County Bicycle Crashes (2011-2015)
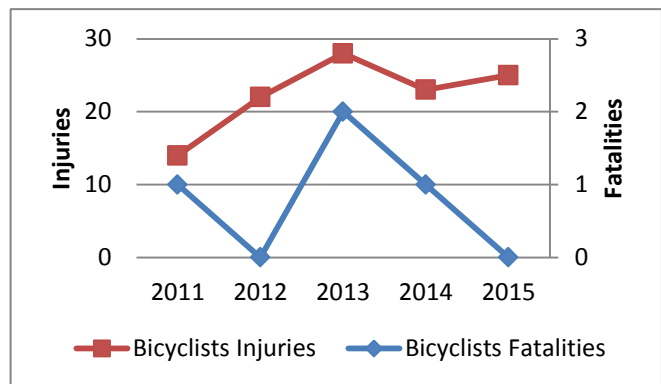
Crashes Involving Pedestrians

A total of 1,123 crashes, involving pedestrians, including 86 pedestrian fatalities, occurred in Volusia County during the study period. Over the five-year period, pedestrian fatalities in Volusia County showed a downward trend. After an initial rise, pedestrian injuries have decreased in the three most recent years. A total of 117 crashes involving pedestrians occurred in Flagler County over the study period. With the exception of 2011, pedestrian injuries and fatalities in Flagler County are generally stable over time.

Although the numbers of fatalities have trended downward in recent years, publication of the 2016 Dangerous by Design Report has focused interest and attention on this issue in Volusia County. A more detailed analysis of pedestrian related crashes is included in a separate report completed by the River to Sea TPO in 2017 titled "Pedestrian High Crash Locations Analysis Report."

Table 15: Volusia & Flagler County Crashes Involving Pedestrians (2011-2015)

Year	2011	2012	2013	2014	2015	Total
Volusia						
Pedestrian Fatalities	20	16	18	19	13	86
Pedestrian Injuries	203	211	231	205	187	1,037
Flagler						
Pedestrian Fatalities	6	2	0	0	2	10
Pedestrian Injuries	15	24	24	23	21	107

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

Figure 20: Volusia County Crashes Involving Pedestrians (2011-2015) **Figure 21: Flagler County Crashes Involving Pedestrians (2011-2015)**
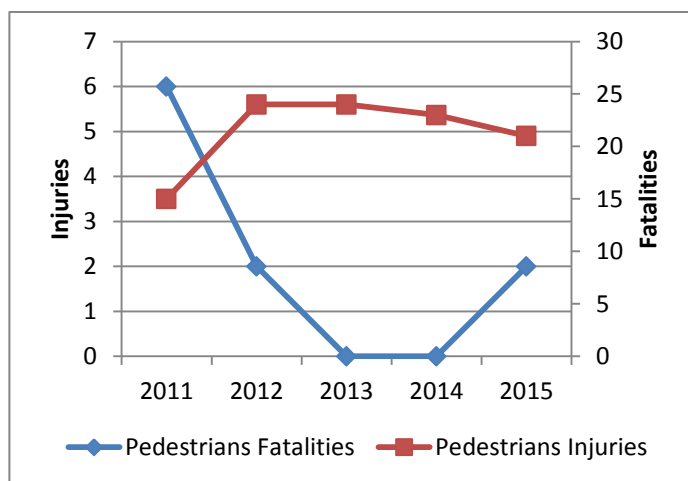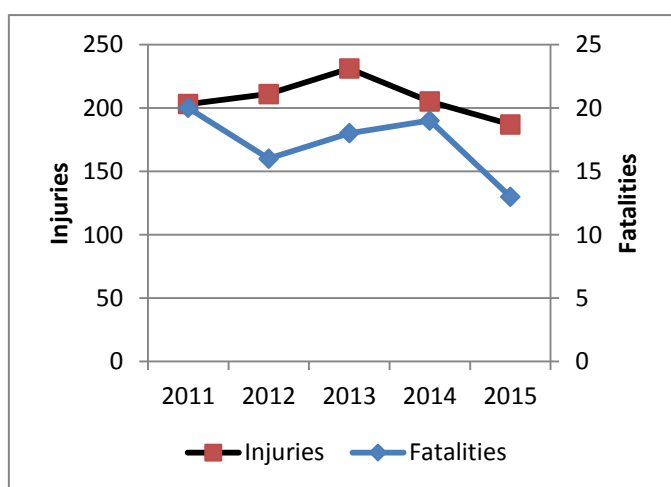
Conclusions and Recommendations

Safety has been a top priority of the River to Sea TPO. This emphasis is reflected in the prioritization of projects that receive funding as well as the programmatic efforts of the organization. In addition to the TPO's interests, a transportation authorization bill took effect on December 4, 2015 titled "The Fixing America's Surface Transportation Act" or the FAST Act. Among other provisions, the FAST Act carried forward the requirements of the previous authorization (MAP-21) for states and MPOs to establish performance measures and targets. Under this rule, the Florida Department of Transportation and the River to Sea TPO will collect data and set targets to support performance-based decision-making. This report provides an important step towards the identification of high crash areas that will require more detailed review to identify projects and programs that will reduce crash rates and severity.

The following recommendations should be pursued over time to decrease the number of crashes within the River to Sea TPO planning area:

- The total number of crashes reported annually has increased substantially over the five-year study period. This report identified high crash segments and intersections throughout the planning area. A more detailed engineering review should be pursued for these locations to identify causes and potential countermeasures to reduce crashes at these locations.

- Rear-end collisions are the predominant contributing factor for crashes accounting for nearly 28% of the total. A more detailed review of these crashes should be completed to determine the predominant contributing factors and potential countermeasures to reduce these types of crashes.

- Both Volusia and Flagler Counties are ranked high for motorcycle related crashes in the Florida Department of Transportation 2016 Highway Safety Plan. This is not surprising given the history of events such as Bike Week and Biketoberfest. In addition, the severity of these crashes tends to be worse due to the exposure of the motorcycle riders. A more detailed review of these crashes should be pursued to determine potential countermeasures that can improve safety in this area.

- In the Florida Department of Transportation 2016 Highway Safety Plan, Volusia County ranks fairly high in several categories including impaired driving, speed related crashes, distracted driving, occupant protection and aggressive driving. These are generally human behavior factors requiring promotional campaigns rather than a change to infrastructure or traffic engineering. A closer review of crash reports to identify behavioral issues that result in crashes should be completed in order to develop an outreach program and/or law enforcement campaign that will raise awareness.

APPENDIX

Figure 22: Intersection with Rank #1 the Highest Crash Counts SR 421 (Dunlawton Av) & SR 5A (S Nova Rd) (2011 - 2015)
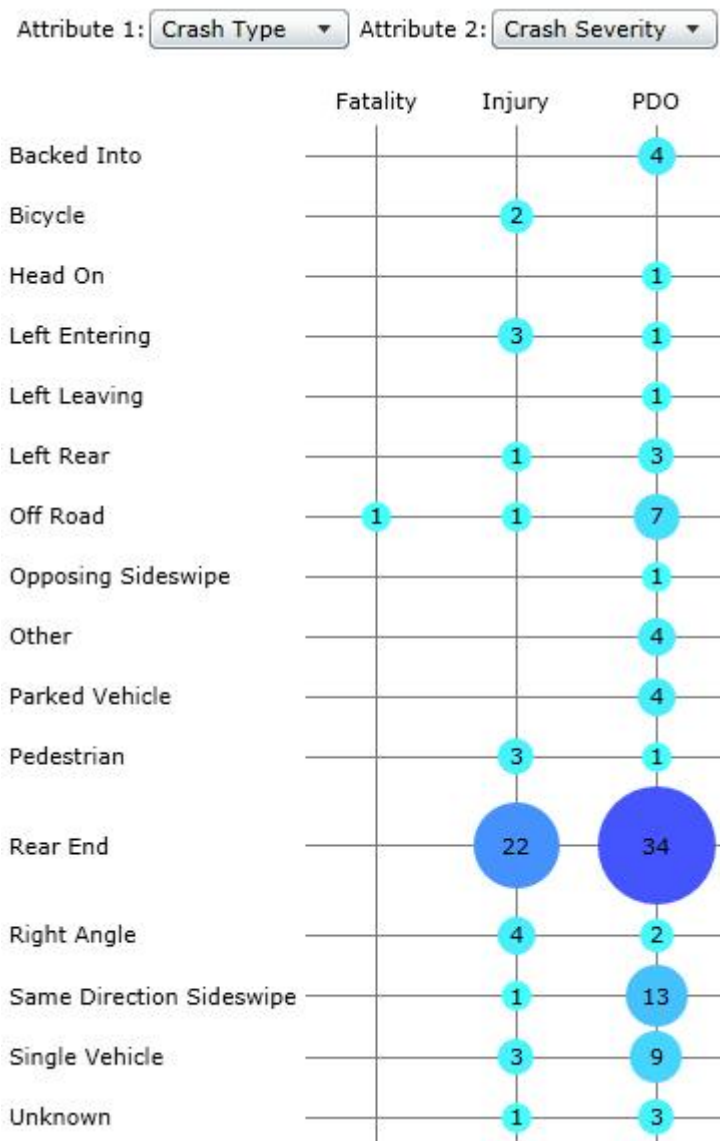
Attribute 1: [Crash Type ▼] Attribute 2: [Crash Severity ▼]

Crash Type	Fatality	Injury	PDO
Backed Into			4
Bicycle		2	
Head On			1
Left Entering		3	1
Left Leaving			1
Left Rear		1	3
Off Road	1	1	7
Opposing Sideswipe			1
Other			4
Parked Vehicle			4
Pedestrian		3	1
Rear End		22	34
Right Angle		4	2
Same Direction Sideswipe		1	13
Single Vehicle		3	9
Unknown		1	3

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

Figure 23: Intersection with Rank #1 the Highest Crash Counts SR 421 (Dunlawton Av) & SR 5A (S Nova Rd) **Crashes by Light Condition & Crash Severity (2011 - 2015)**
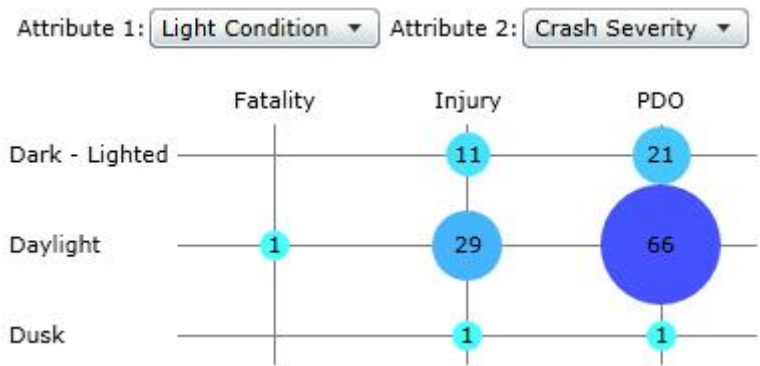
Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

Figure 24: Intersection with Rank #1 the Highest Crash Counts SR 421 (Dunlawton Av) & SR 5A (S Nova Rd) **by Road Surface Condition & Crash Severity (2011 - 2015)**
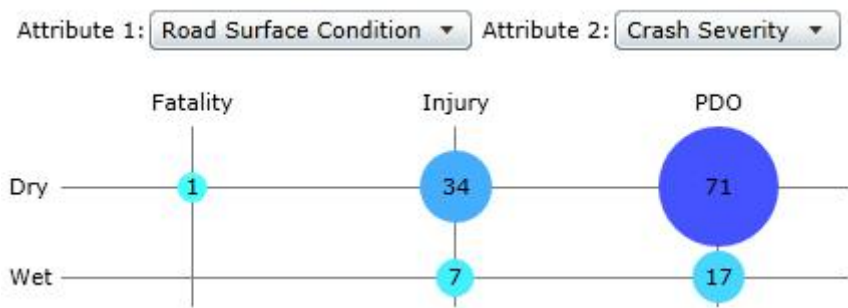
Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

Figure 25: Intersection with Rank #2 the Highest Crash Counts SR 40 (W Granada Blvd) & US 1(Yonge St) Crashes by Crash Type & Crash Severity (2011 - 2015)

Attribute 1: Crash Type	Attribute 2: Crash Severity

Crash Type	Injury	PDO
Backed Into	1	4
Bicycle	1	
Head On	2	
Left Entering	6	5
Left Leaving	1	
Left Rear	3	2
Off Road		3
Opposing Sideswipe		1
Other	3	4
Parked Vehicle		1
Pedestrian	2	
Rear End	29	38
Right Angle	3	2
Right/Left		1
Right/Through		2
Rollover	1	
Same Direction Sideswipe		9
Single Vehicle	1	2
Unknown		2
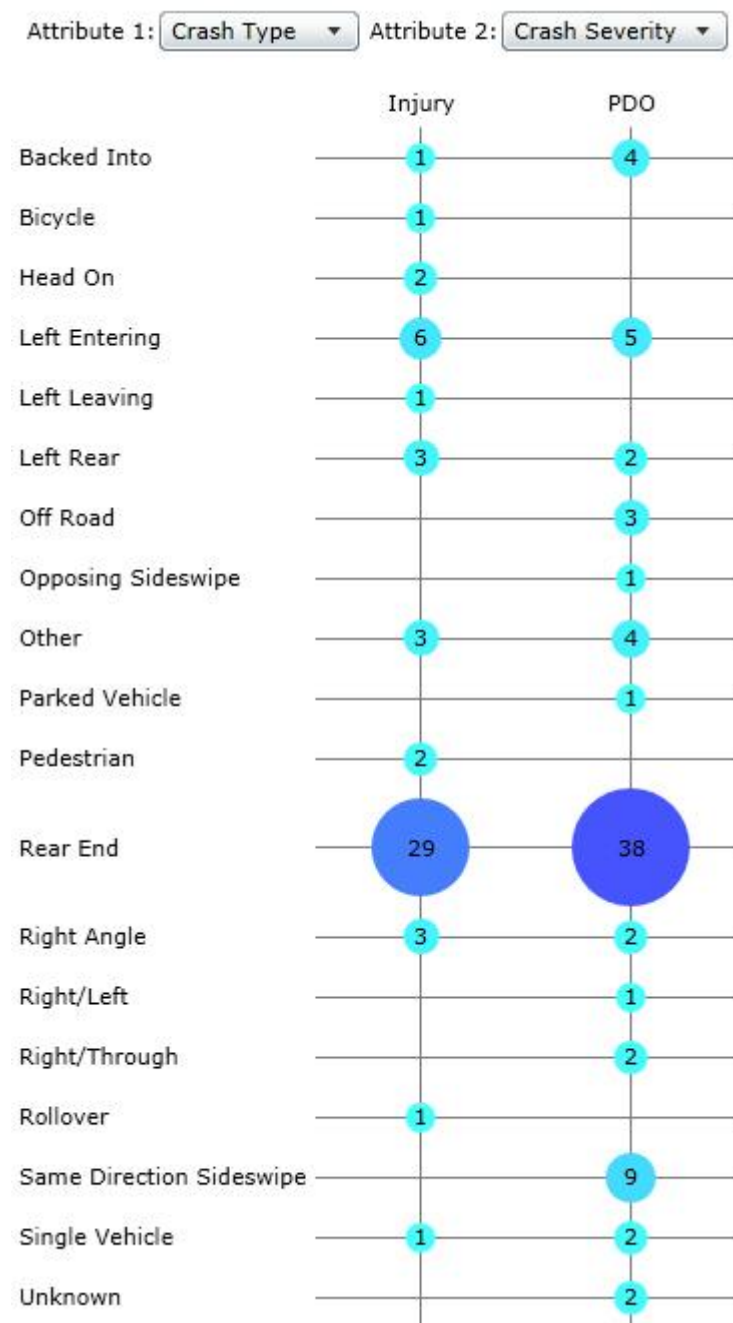
Figure 26: Intersection with Rank #2 the Highest Crash Counts SR 40 (W Granada Blvd) & US 1(Yonge St)) **Crashes by Light Condition & Crash Severity (2011 - 2015)**
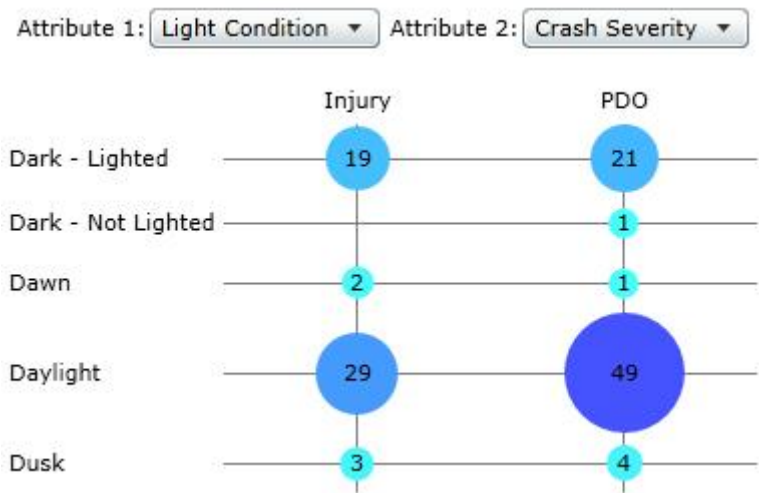
Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

Figure 27: Intersection with Rank #2 the Highest Crash Counts SR 40 (W Granada Blvd) & US 1(Yonge St) **Crashes by Road Surface Condition & Crash Severity (2011 - 2015)**
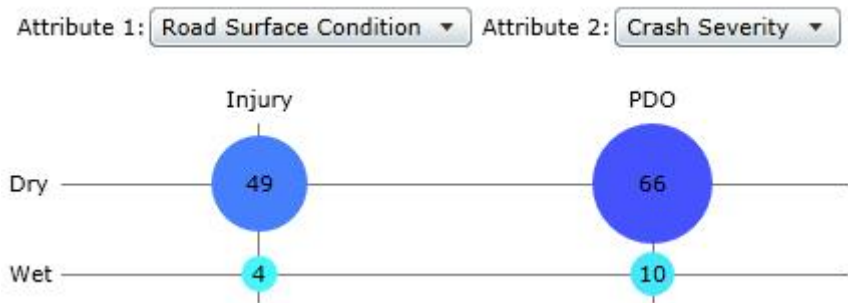
Figure 28: Intersection with Rank #3 the Highest Crash Counts US 1 (Ridgewood Ave) & US 92 (W International Speedway Blvd) Crashes by Crash Type & Crash Severity (2011 - 2015)

Attribute 1: Crash Type ▾   Attribute 2: Crash Severity ▾

	Injury	PDO
Backed Into	1	4
Bicycle	2	
Head On		1
Left Entering	1	2
Left Rear		1
Off Road	2	2
Other	1	2
Parked Vehicle		2
Pedestrian	1	
Rear End	20	42
Right Angle	2	1
Right/Left	1	1
Same Direction Sideswipe	3	12
Single Vehicle	1	2
Unknown		1
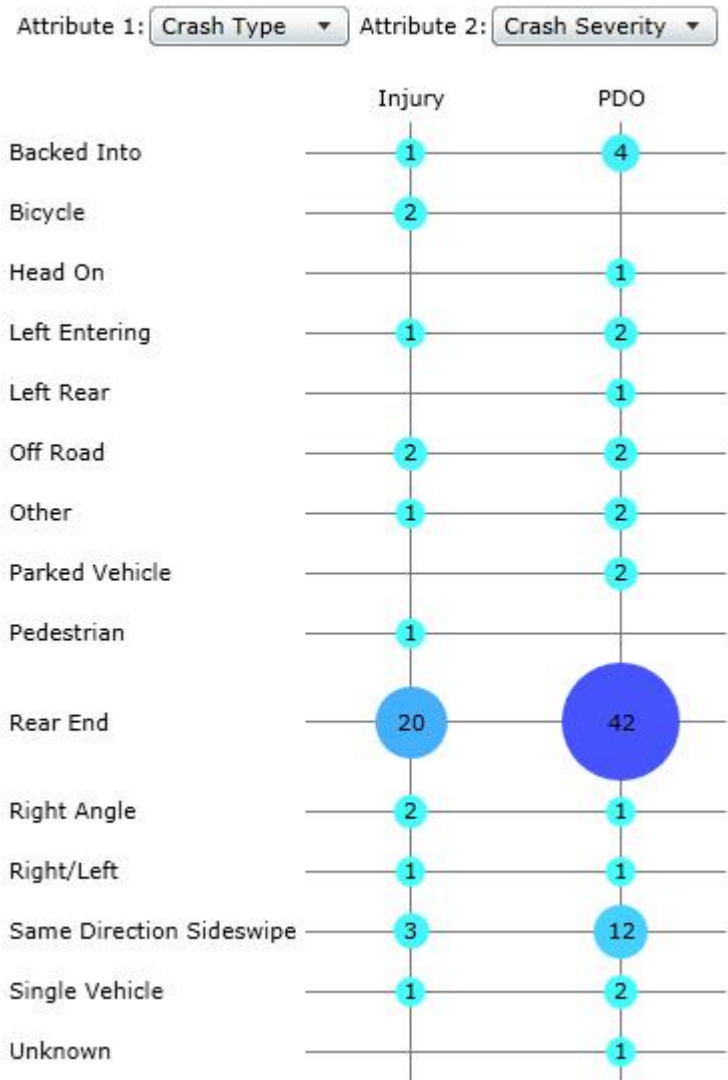
Figure 29: Intersection with Rank #3 the Highest Crash Counts US 1 (Ridgewood Ave) & US 92 (W International Speedway Blvd) Crashes by Light Condition & Crash Severity (2011 - 2015)
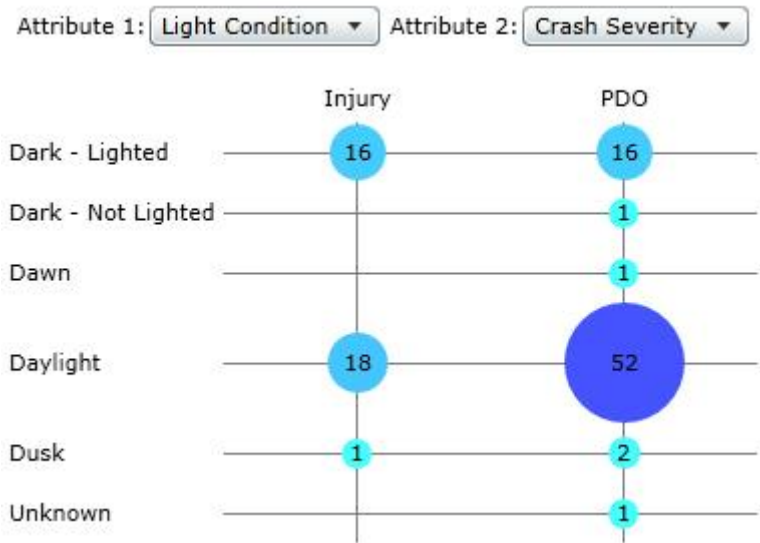
Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

Figure 30: Intersection with Rank #3 the Highest Crash Counts US 1 (Ridgewood Ave) & US 92 (W International Speedway Blvd) Crashes by Road Surface Condition & Crash Severity (2011 - 2015)
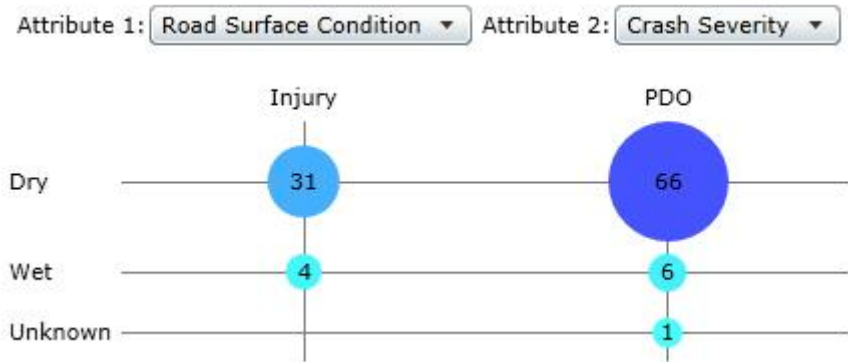
Figure 31: Intersection with Rank #4 the Highest Crash Counts US 92 (W International Speedway Blvd) & Williamson Blvd Crashes by Crash Type & Crash Severity (2011 – 2015)
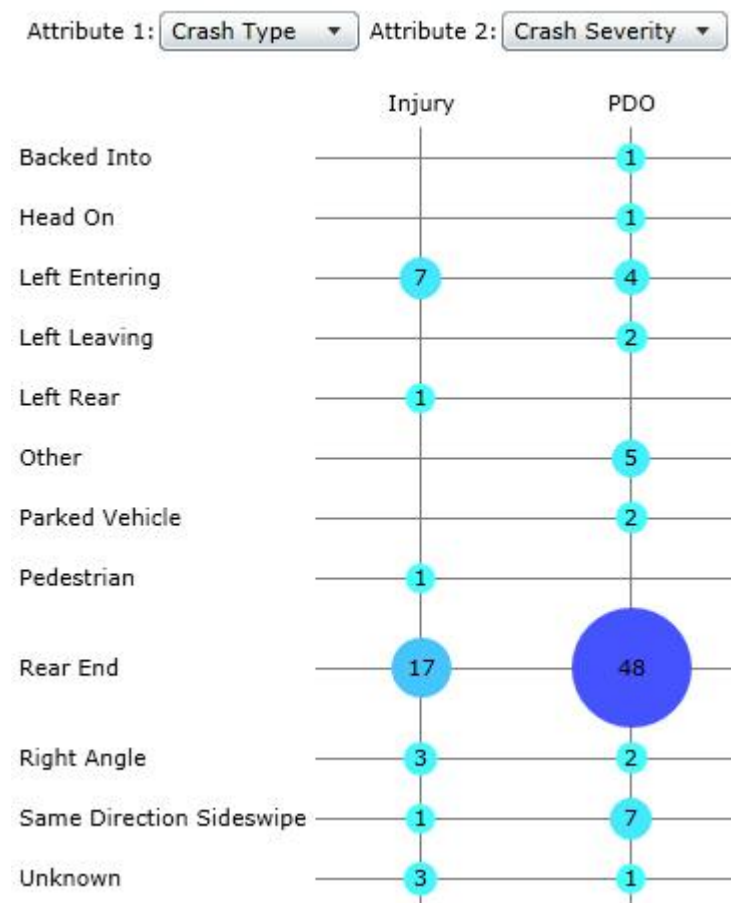
Figure 32: Intersection with Rank #4 the Highest Crash Counts US 92 (W International Speedway Blvd) & Williamson Blvd

Crashes by Light Condition & Crash Severity (2011 – 2015)
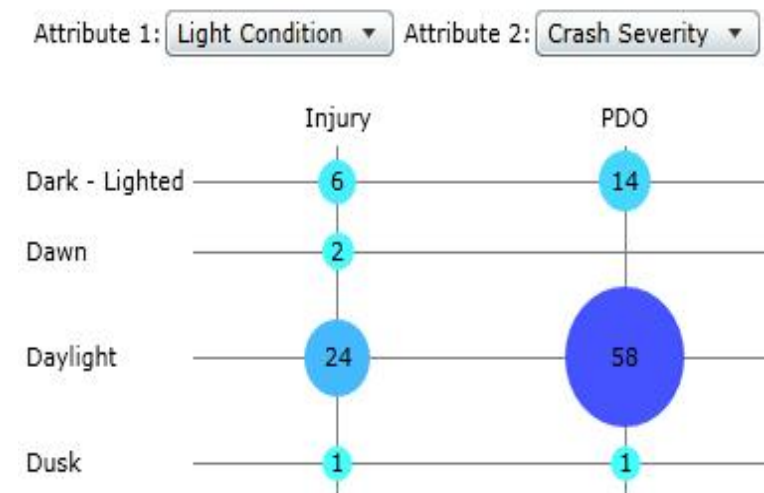
Figure 33: Intersection with Rank #4 the Highest Crash Counts US 92 (W International Speedway Blvd) & Williamson Blvd by Road Surface Condition & Crash Severity (2011 – 2015)
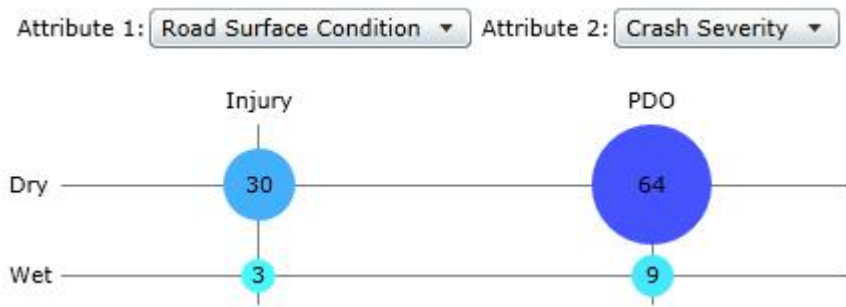
Figure 34: Intersection with Rank #5 the Highest Crash Counts SR 421 (Dunlawton Av) & S Clyde Morris Blvd Crashes by Crash Type & Crash Severity (2011 – 2015)
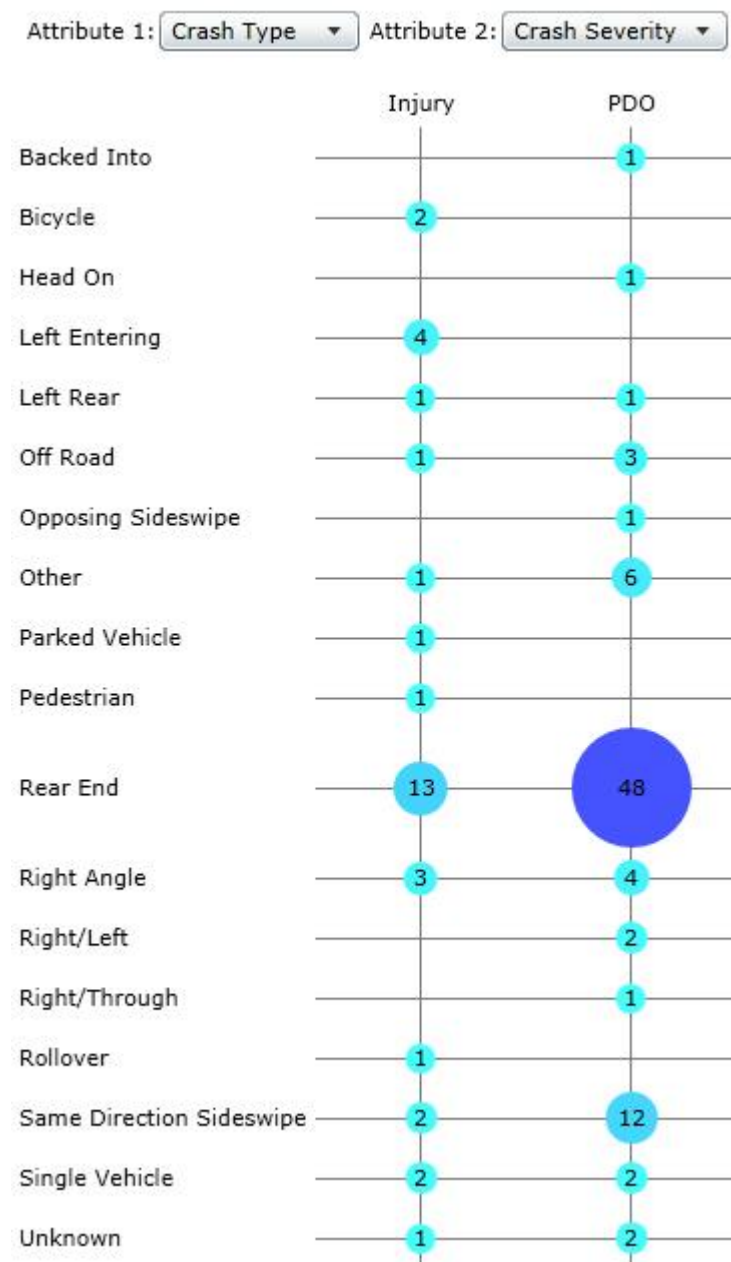
Figure 35: Intersection with Rank #5 the Highest Crash Counts SR 421 (Dunlawton Av) & S Clyde Morris Blvd **Crashes by Light Condition & Crash Severity (2011 – 2015)**
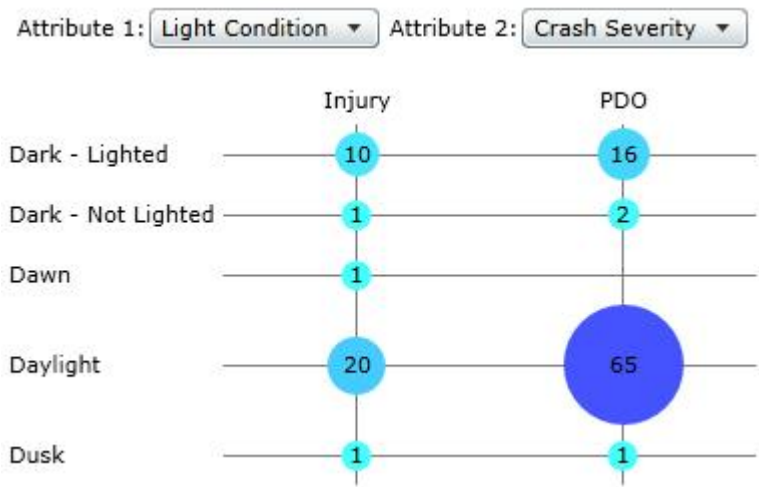
Figure 36: Intersection with Rank #5 the Highest Crash Counts SR 421 (Dunlawton Av) & S Clyde Morris Blvd **Crashes by Road Surface Condition & Crash Severity (2011 – 2015)**

40
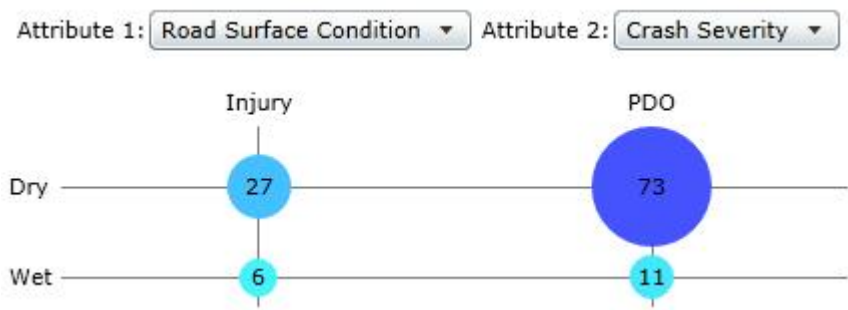
Figure 37: : Roadway Segments with Rank #1 the Highest Crash Counts W Granada Blvd between Lewis St and N Beach St Crashes by Crash Type & Crash Severity (2011 – 2015)

Attribute 1: [Crash Type ▼]   Attribute 2: [Crash Severity ▼]

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Animal	2					
Backed Into	1		1	1		
Left Entering			1			
Left Rear				1		
Off Road	6		3	2	1	
Opposing Sideswipe	1					
Other	5					
Parked Vehicle	4			1		
Pedestrian			1			
Rear End	20		3	1	1	
Right Angle	5					
Same Direction Sideswipe	6				1	
Single Vehicle	3					
Unknown	1					

41
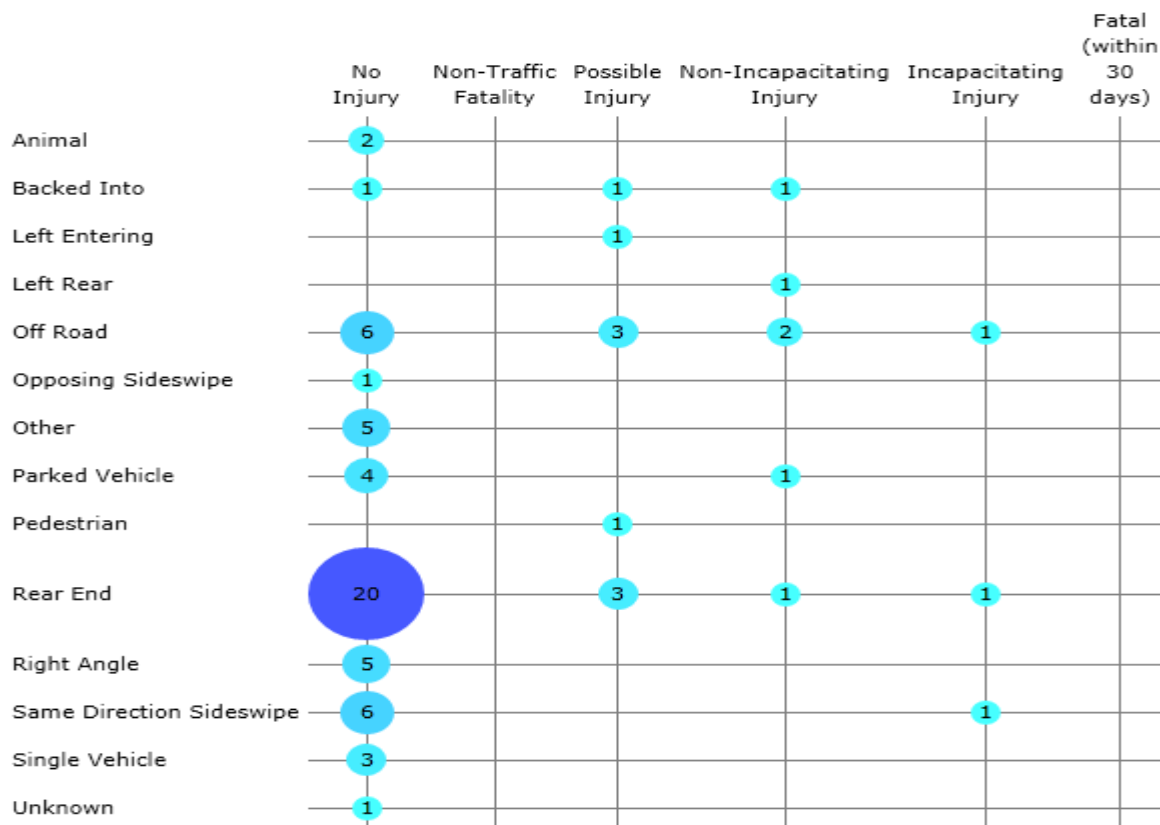
Figure 38: Roadway Segments with Rank #1 the Highest Crash Counts W Granada Blvd between Lewis St and N Beach St Crashes by Light Condition & Crash Severity (2011 – 2015)

Attribute 1: Light Condition ▼   Attribute 2: Crash Severity ▼

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Dark - Lighted	7		2			
Dark - Not Lighted	4			3	1	
Dawn	1					
Daylight	42		7	3	2	

Figure 39: Roadway Segments with Rank #1 the Highest Crash Counts W Granada Blvd between Lewis St and N Beach St Crashes by Light Condition & Crash Severity (2011 – 2015)

Attribute 1: Road Surface Condition ▼   Attribute 2: Crash Severity ▼

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Dry	38		7	4	3	
Mud, Dirt, Gravel	1					
Wet	15		2	2		

Figure 40: Roadway Segments with Rank #2 the Highest Crash Counts Saxon Blvd between Enterprise Road and Bloxham Ave Crashes by Crash Type & Crash Severity (2011 – 2015)

Attribute 1: Crash Type ▾   Attribute 2: Crash Severity ▾

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Backed Into	1		1			
Bicycle					1	
Head On	2					
Left Entering	2		2	5	1	
Left Rear				2		
Off Road	1		1			
Other	1					
Parked Vehicle	1					
Pedestrian				1		
Rear End	12		7	2		
Right/Left	1					
Right/Through			1			
Same Direction Sideswipe	5		1	1		
Unknown				1		
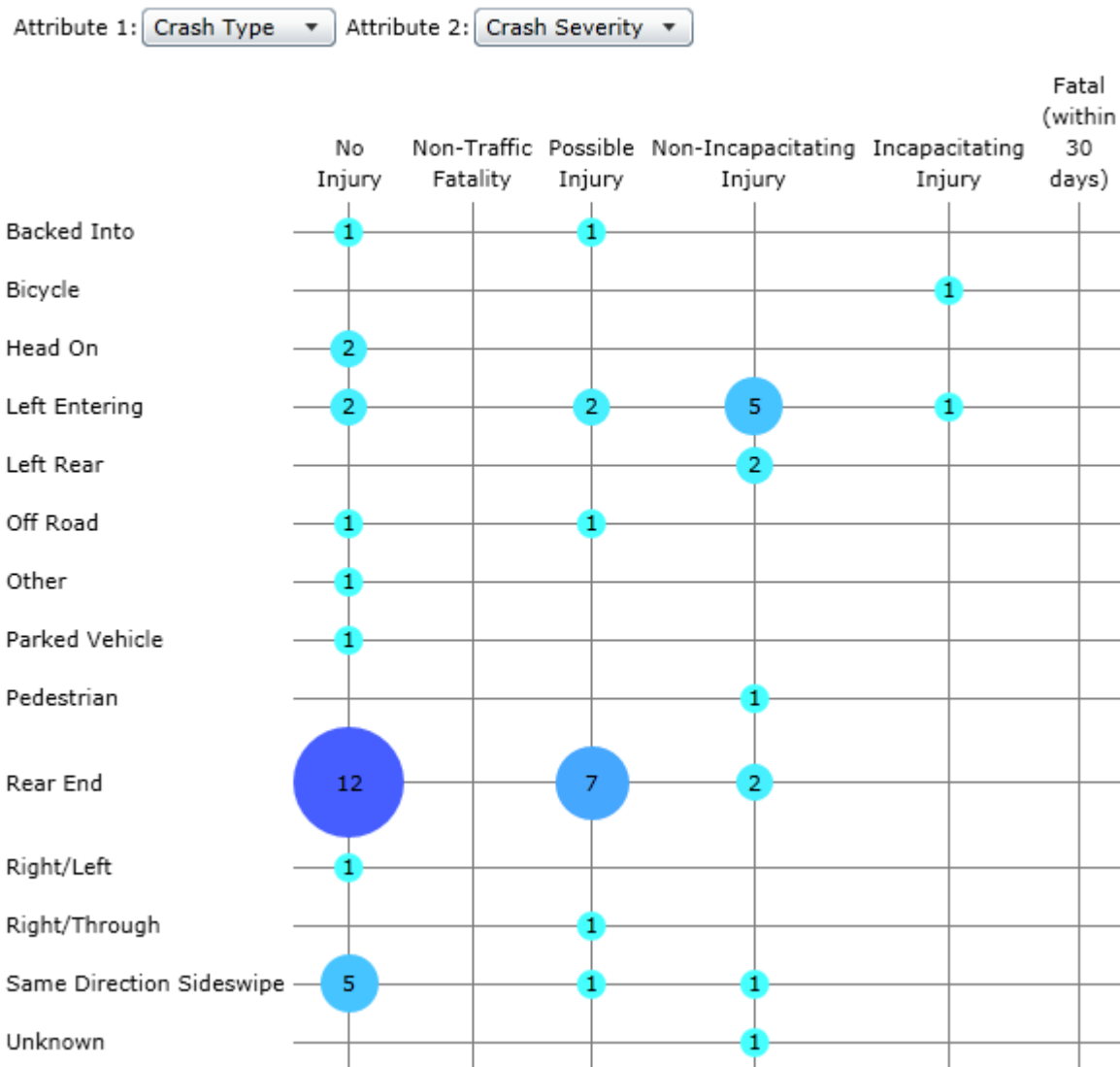
Figure 41: Roadway Segments with Rank #2 the Highest Crash Counts Saxon Blvd between Enterprise Road and Bloxham Ave rashes by Light Condition & Crash Severity (2011 – 2015)

Attribute 1: Light Condition ▾   Attribute 2: Crash Severity ▾

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Dark - Lighted	4		1	3		
Dark - Unknown Lighting			1			
Dawn				2		
Daylight	20		11	7	1	
Dusk	1			1		
Unknown	1					

43
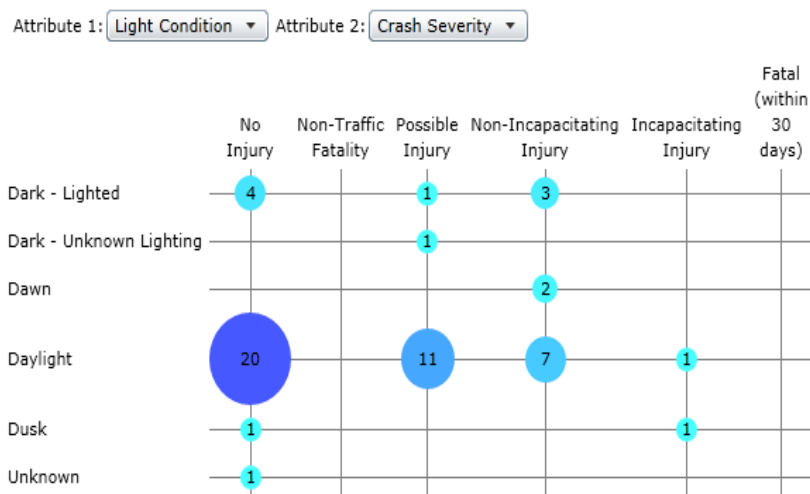
Figure 42: Roadway Segments with Rank #2 the Highest Crash Counts Saxon Blvd between Enterprise Road and Bloxham Ave Crashes by Road Surface Condition & Crash Severity (2011 – 2015)

Attribute 1: Road Surface Condition ▾   Attribute 2: Crash Severity ▾

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Dry	22		12	10	1	
Wet	3		1	2	1	
Unknown	1					
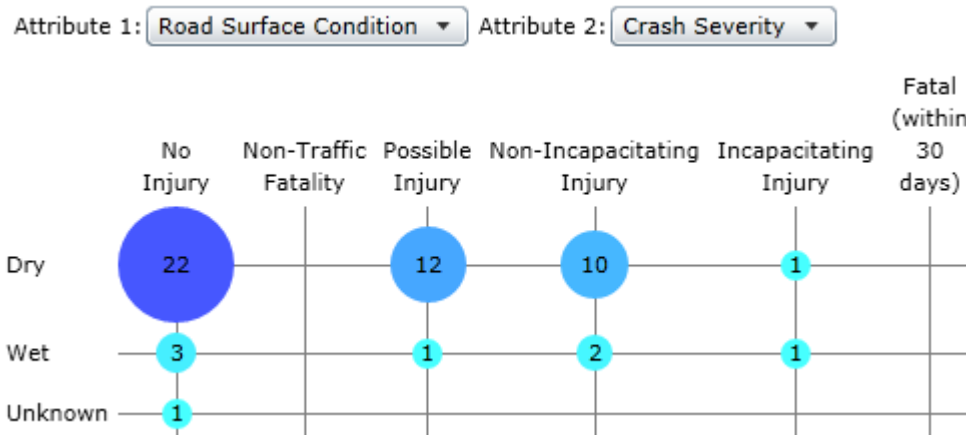
Figure 43: Roadway Segments with Rank #3 the Highest Crash Counts W Granada Blvd between S Forty Trl and Clyde Morris Blvd Crash Type & Crash Severity (2011-2015)

Attribute 1: Crash Type ▾   Attribute 2: Crash Severity ▾

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Bicycle			1	1		
Left Entering				1		
Off Road	3					
Other	1			1		
Parked Vehicle	4					
Pedestrian				1		
Rear End	14		12	1	1	
Same Direction Sideswipe	3		1			
Single Vehicle				1		
Unknown	4		1			

44
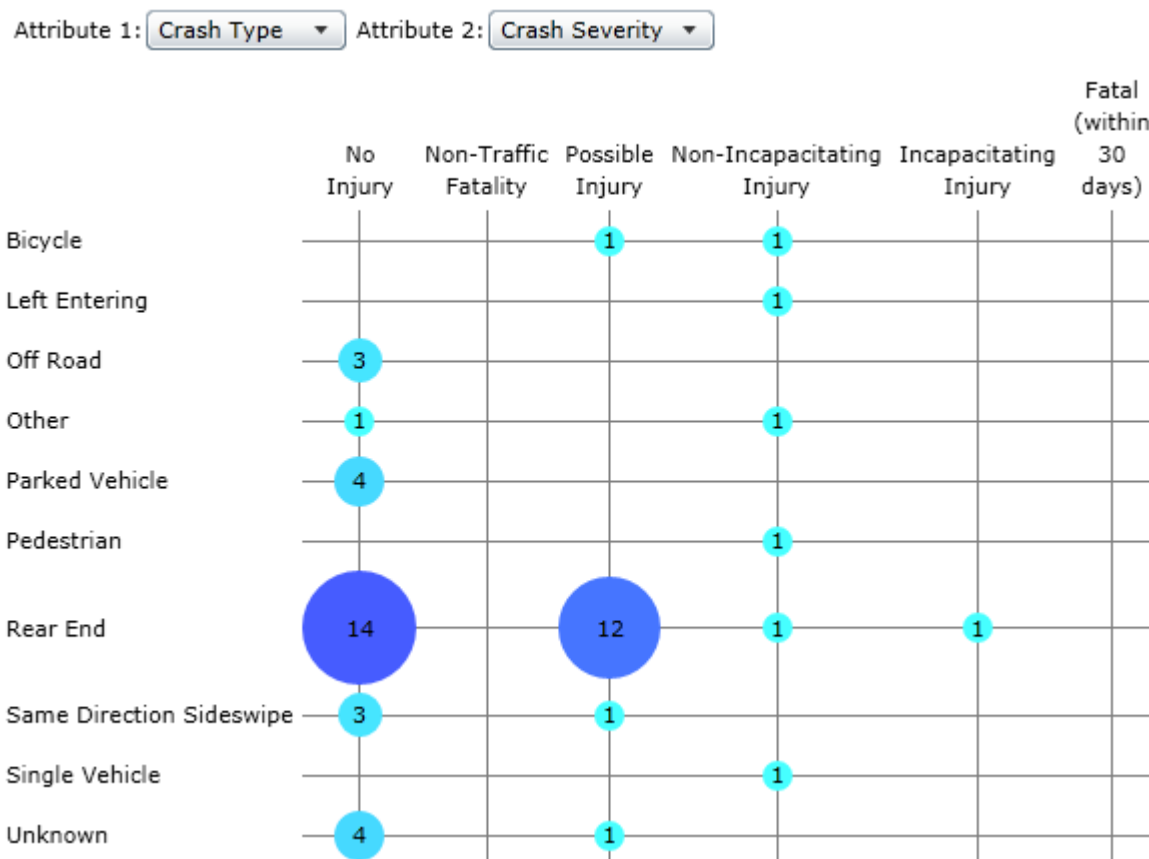
Figure 44: Roadway Segments with Rank #3 the Highest Crash Counts W Granada Blvd between S Forty Trl and Clyde Morris Blvd by Light Condition & Crash Severity (2011-2015)

Attribute 1: [Light Condition ▼]   Attribute 2: [Crash Severity ▼]

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Dark - Lighted	3		3	1		
Dark - Not Lighted	1					
Daylight	19		12	4	1	
Dusk	2			1		
Unknown	4					
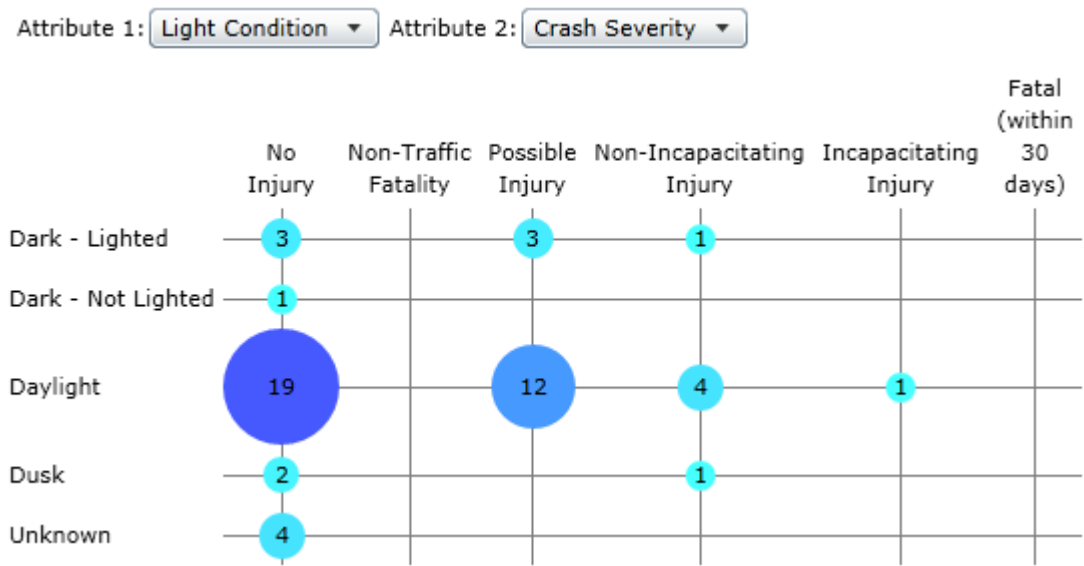
Figure 45: Roadway Segments with Rank #3 the Highest Crash Counts W Granada Blvd between S Forty Trl and Clyde Morris Blvd) by Road Surface Condition & Crash Severity (2011-2015)

Attribute 1: [Road Surface Condition ▼]   Attribute 2: [Crash Severity ▼]

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Dry	23		13	6	1	
Wet	2		2			
Unknown	4					
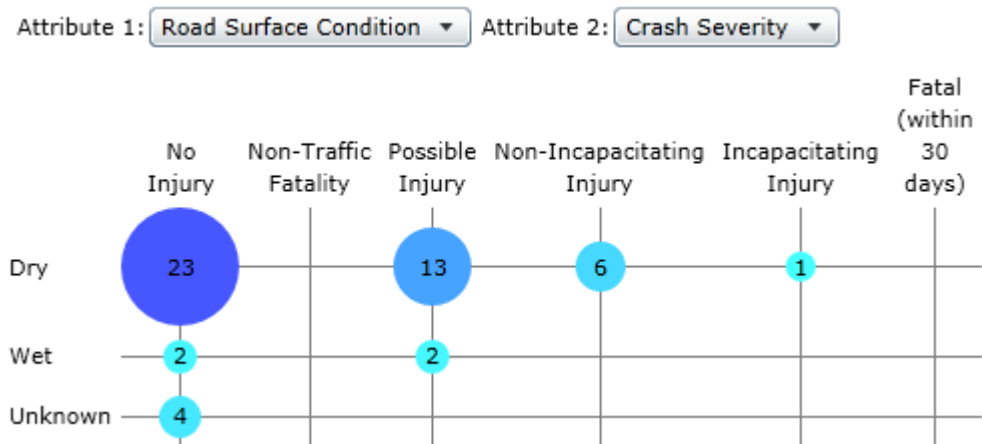
Figure46: Roadway Segments with Rank #4 the Highest Crash Counts E Granada Blvd at S Halifax Dr Crashes by Crash Type & Crash Severity (2011-2015)
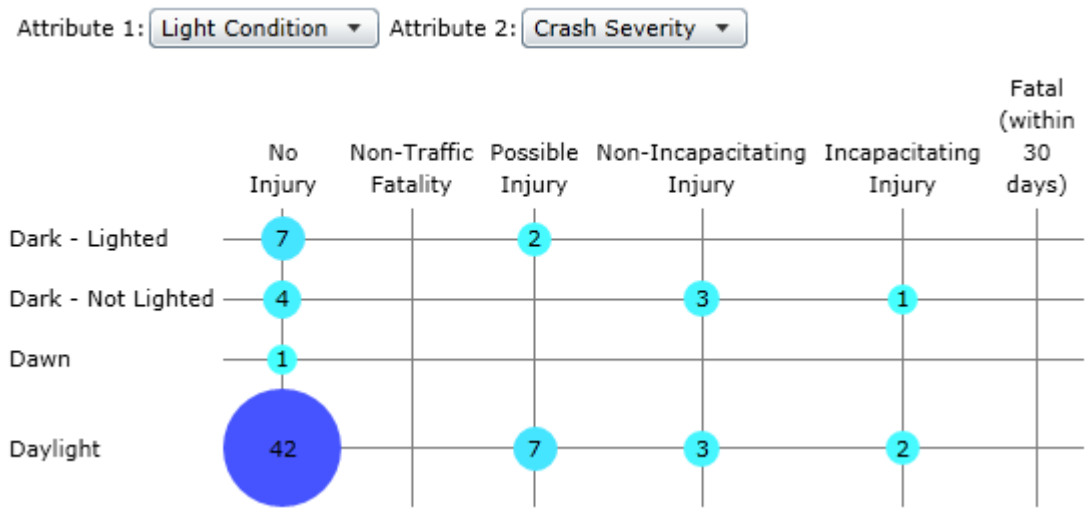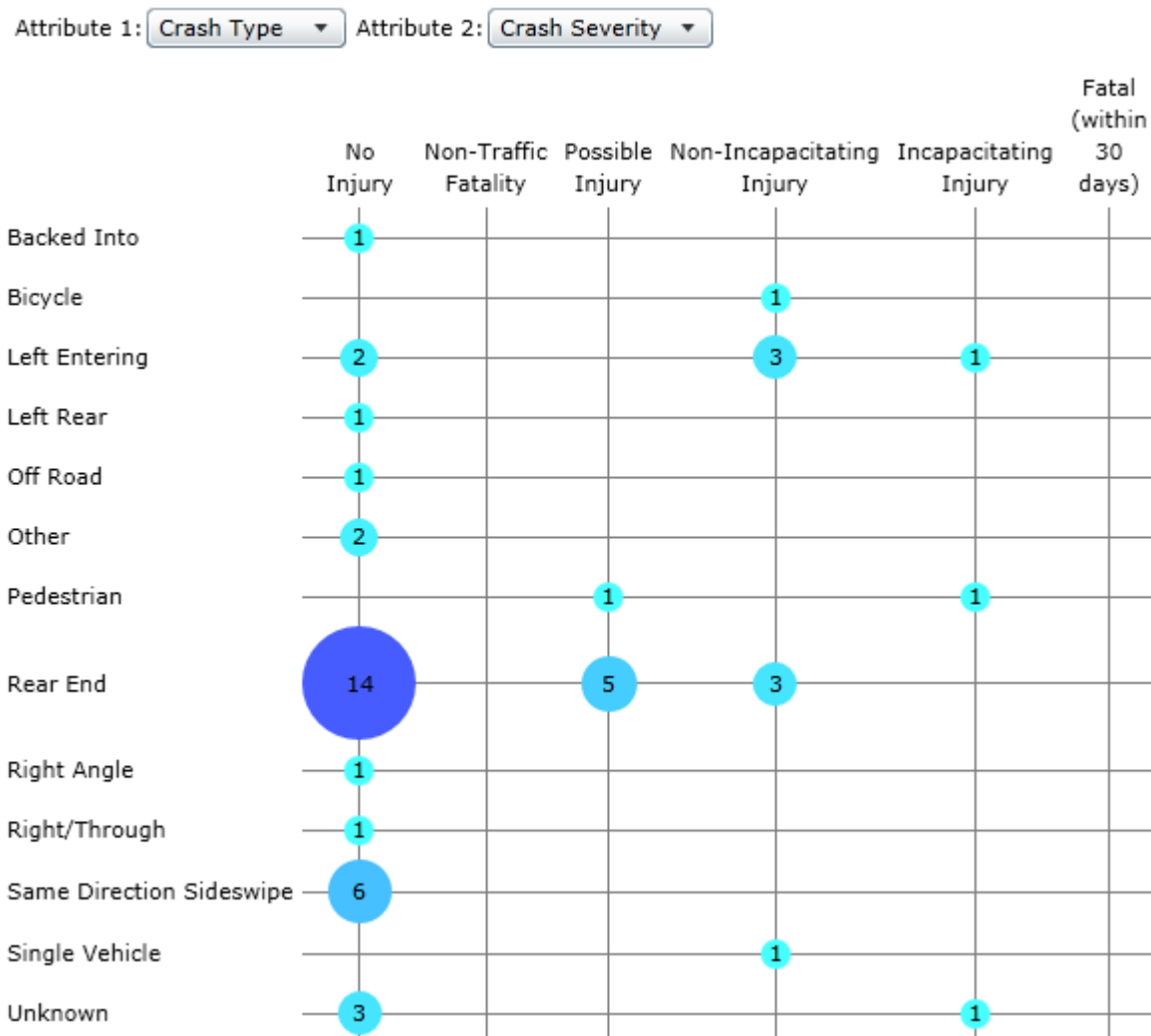

Figure 47: Roadway Segments with Rank #4 the Highest Crash Counts E Granada Blvd at S Halifax Dr Crashes by Light Condition & Crash Severity (2011-2015)

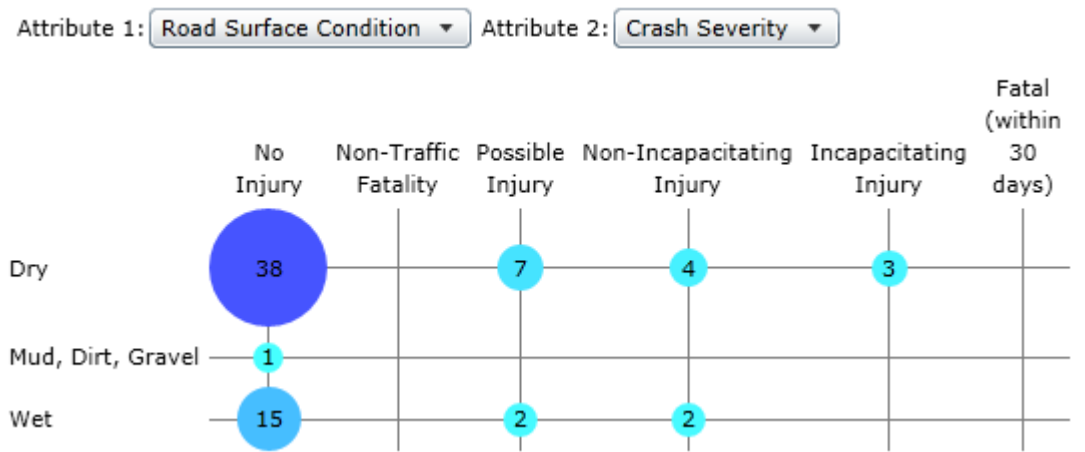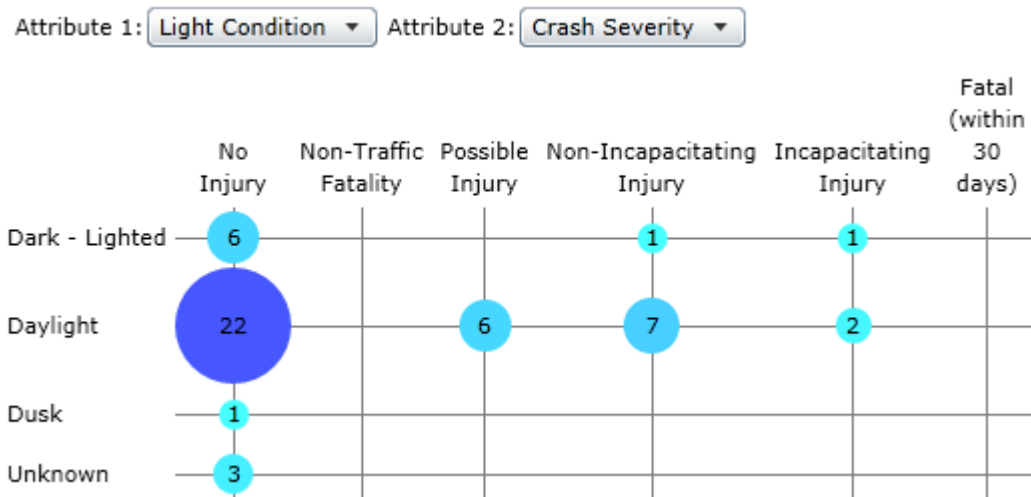**Figure 48: Roadway Segments with rank #4 the Highest Crash Counts E Granada Blvd at S Halifax Dr Crashes by Road Surface Condition & Crash Severity (2011-2015)**

Attribute 1: Road Surface Condition ▼ Attribute 2: Crash Severity ▼

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Dry	25		6	6	3	
Wet	4			2		
Unknown	3					
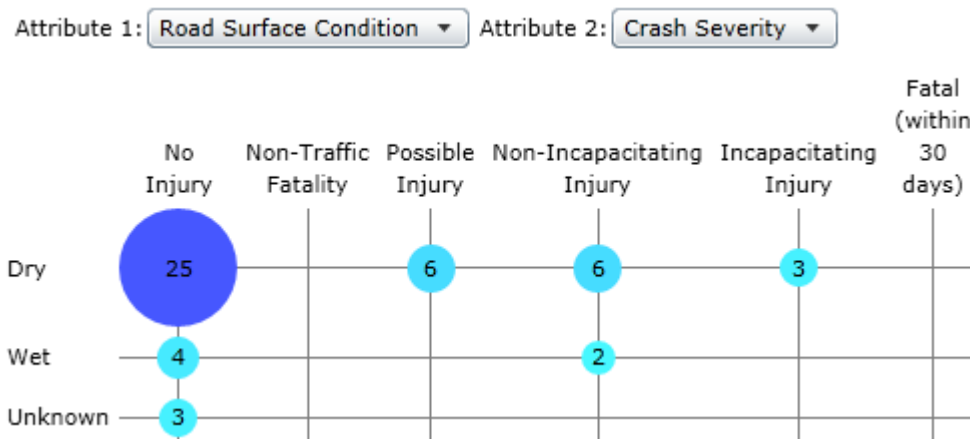
Figure 49: Roadway Segments with Rank #5 the Highest Crash Counts Dunlawton Ave between S Nova Road and Jackson St Crashes by Crash Type & Crash Severity (2011-2015)

Attribute 1: Crash Type ▼ Attribute 2: Crash Severity ▼

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Bicycle			1	1	1	
Left Entering			1	1		
Left Rear	1				1	
Off Road	2		1		1	
Pedestrian				1		
Rear End	7		6	3	1	
Right Angle	2		2		3	
Right/Through				1		
Same Direction Sideswipe	6					
Single Vehicle	3			1		
Unknown				1		

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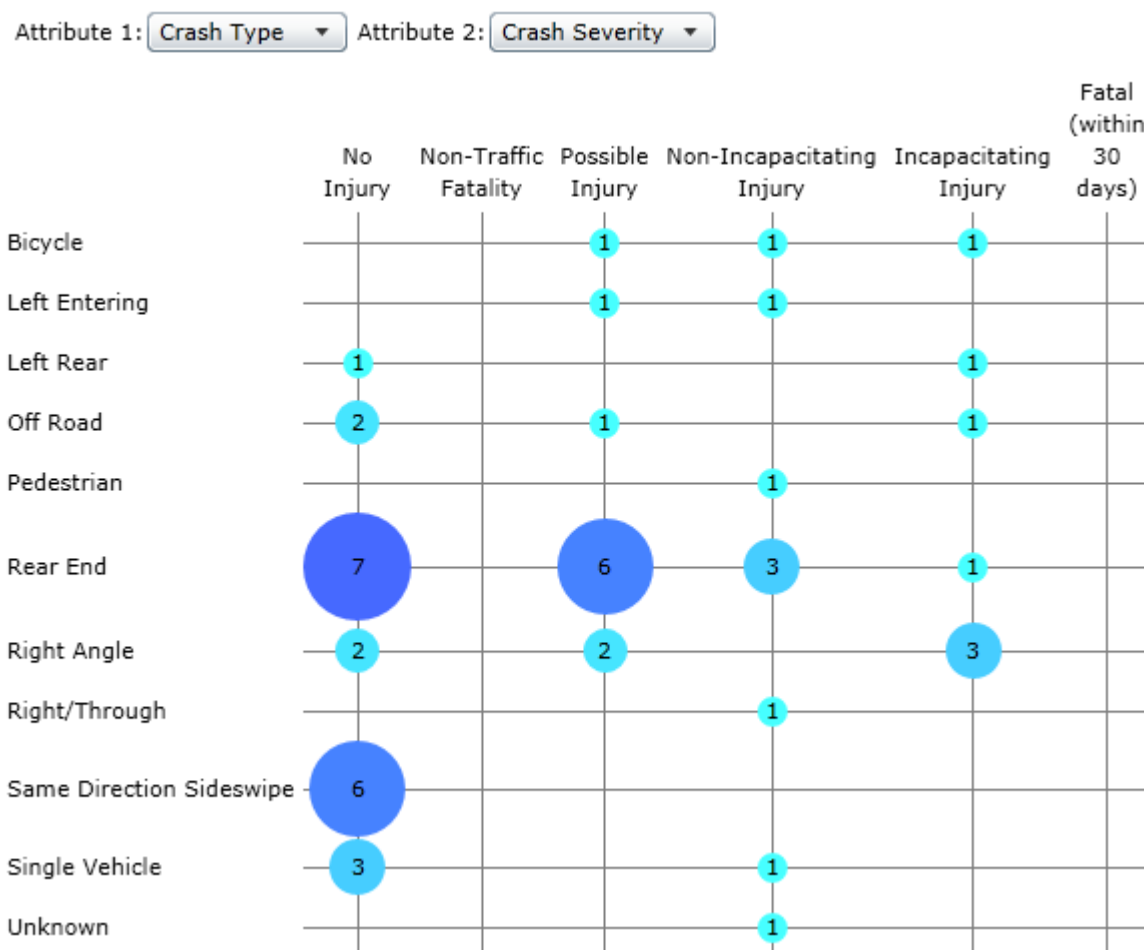
Figure 50: Roadway Segments with Rank #5 the Highest Crash Counts Dunlawton Ave between S Nova Road and Jackson St Crashes by Light Condition & Crash Severity (2011-2015)

Attribute 1: [Light Condition ▾]   Attribute 2: [Crash Severity ▾]

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Dark - Lighted	5		2	2		
Dark - Not Lighted					1	
Daylight	16		8	6	6	
Dusk			1	1		
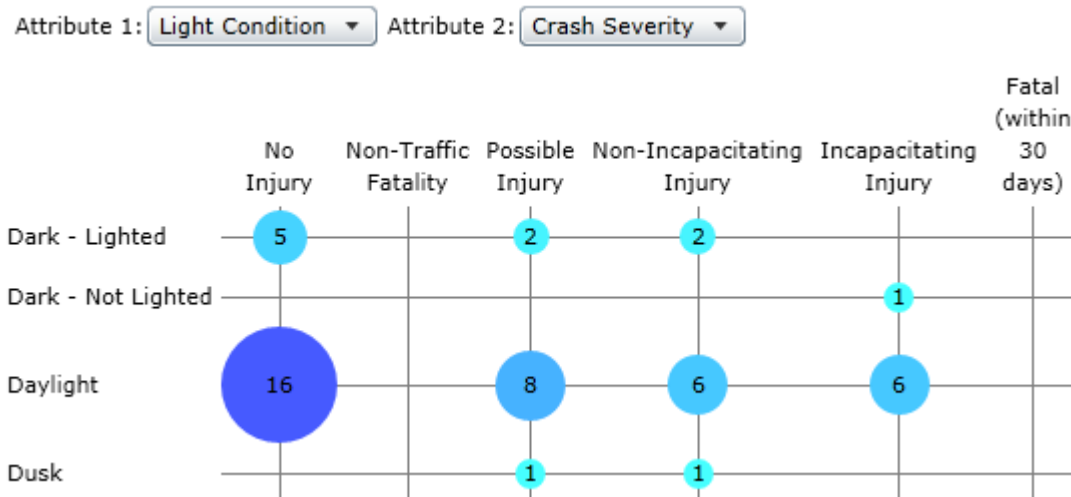
Figure 51: Roadway Segments with Rank #5 the Highest Crash Counts Dunlawton Ave between S Nova Road and Jackson St Crashes by Road Surface Condition & Crash Severity (2011-2015)
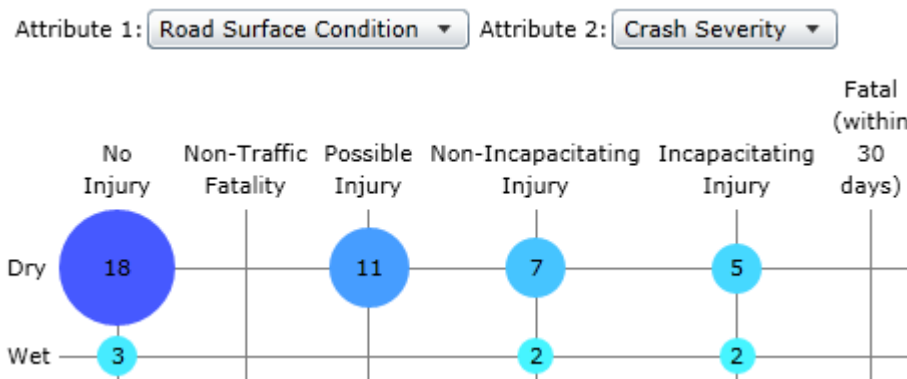
Attribute 1: [Road Surface Condition ▾]   Attribute 2: [Crash Severity ▾]

	No Injury	Non-Traffic Fatality	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal (within 30 days)
Dry	18		11	7	5	
Wet	3			2	2	

Source: Signal Four Analytics, The GeoPlan Center, University of Florida, Gainesville, FL, 2011-2015.

Table 16: Volusia County Crash Types (2011-2015)

Year	2011		2012		2013		2014		2015		5-Year Total	
Volusia												
Rear End Crashes	1,666	23.66%	2,106	23.74%	3,343	27.29%	3,832	29.10%	4,208	30.57%	15,155	27.51%
Angle	435	6.18%	439	4.95%	711	5.80%	791	6.01%	812	5.90%	3,188	5.79%
Animal	57	0.81%	80	0.90%	114	0.93%	95	0.72%	85	0.62%	431	0.78%
Bicycle	139	1.97%	142	1.60%	194	1.58%	154	1.17%	158	1.15%	787	1.43%
Pedestrian	221	3.14%	224	2.52%	251	2.05%	226	1.72%	202	1.47%	1,124	2.04%
Head-On	519	7.37%	308	3.47%	679	5.54%	508	3.86%	532	3.87%	2,546	4.62%
Left-Turn	489	6.95%	581	6.55%	856	6.99%	978	7.43%	1,064	7.73%	3,968	7.20%
Right-Turn	34	0.48%	61	0.69%	91	0.74%	136	1.03%	121	0.88%	443	0.80%
Sideswipe	407	5.78%	523	5.89%	818	6.68%	974	7.40%	1,037	7.53%	3,759	6.82%
Rollover	341	4.84%	314	3.54%	276	2.25%	276	2.10%	306	2.22%	1,513	2.75%
Unknown	205	2.91%	905	10.20%	502	4.10%	258	1.96%	312	2.27%	2,182	3.96%
Off Road	1258	17.87%	1344	15.15%	1,569	12.81%	1,529	11.61%	1,610	11.70%	7,310	13.27%
Other	1269	18.03%	1845	20.80%	2848	23.25%	3413	25.91%	3,317	24.10%	12,692	23.04%
Total	**7,040**	**100.00%**	**8,872**	**100.00%**	**12,252**	**100.00%**	**13,170**	**100.00%**	**13,764**	**100.00%**	**55,098**	**100.00%**

Table 17: Flagler County Crash Types (2011-2015)

Flagler	2011		2,012		2,013		2014		2015		5-Year Total	
Rear End	147	20.68%	216	18.85%	409	23.07%	489	23.22%	570	25.63%	1,831	23.00%
Angle	47	6.61%	58	5.06%	64	3.61%	83	3.94%	102	4.59%	354	4.45%
Animal	13	1.83%	25	2.18%	49	2.76%	62	2.94%	71	3.19%	220	2.76%
Bicycle	15	2.11%	27	2.36%	33	1.86%	33	1.57%	26	1.17%	134	1.68%
Pedestrian	21	2.95%	26	2.27%	26	1.47%	20	0.95%	24	1.08%	117	1.47%
Head-On	8	1.13%	125	10.91%	261	14.72%	169	8.02%	71	3.19%	634	7.96%
Left-Turn	54	7.59%	84	7.33%	93	5.25%	119	5.65%	148	6.65%	498	6.26%
Right-Turn	2	0.28%	9	0.79%	15	0.85%	11	0.52%	19	0.85%	56	0.70%
Sideswipe	53	7.45%	47	4.10%	84	4.74%	168	7.98%	212	9.53%	564	7.09%
Rollover	39	5.49%	54	4.71%	62	3.50%	47	2.23%	48	2.16%	250	3.14%
Unknown	9	1.27%	34	2.97%	90	5.08%	31	1.47%	24	1.08%	188	2.36%
Off Road	158	22.22%	204	17.80%	212	11.96%	270	12.82%	230	10.34%	1,074	13.49%
Other	145	20.39%	237	20.68%	375	21.15%	604	28.68%	679	30.53%	2,040	25.63%
Total	**711**	**100.00%**	**1,146**	**100.00%**	**1,773**	**100.00%**	**2,106**	**100.00%**	**2,224**	**100.00%**	**7,960**	**100.00%**