MARTIN COUNTY

BICYCLE & PEDESTRIAN 2007-2009 COLLISION REPORT

May 2011

MARTIN COUNTY MPO
METROPOLITAN PLANNING ORGANIZATION • 2401 S.E. Monterey Road • Stuart, FL 34996

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EXECUTIVE SUMMARY

Over the past few years, Martin County has had relatively high collision rates. Based on per capita calculations, Martin County has the highest bicycle collision, bicycle fatality, bicycle injury, and pedestrian fatality rates in the four-county region. When these collision rates are calculated based on 100 million vehicle miles traveled (MVMT), Martin County still ranks in the top two in the bicycle collision, bicycle fatality, and bicycle injury rates categories, but in the bottom two in the pedestrian collision, pedestrian fatality, and pedestrian rates categories. Unfortunately, there seems to be an upward trend in these collision-related statistics.

The significantly higher rates may be due, in part, to the aggressive efforts of the Martin County Sheriff's Office and the Stuart Police Department in reporting bicycle and pedestrian collisions. After discussions with law enforcement personnel, it was realized that reporting may not be consistent across the region among citizens and law enforcement agencies. Also, the data from the Florida Department of Highway Safety and Motor Vehicles only includes collisions reported using the Traffic Crash Report Long Form. The Martin County Crash Database, which was used to identify high-collision intersections, uses both the long and short forms. Therefore, the comparison tables should be viewed with this knowledge in mind.

Regardless of the possible inconsistencies in reporting, there is a problem of bicycle and pedestrian collisions that should be addressed. Martin County Staff uses the Crash Database to continually monitor high-collision intersections and is working to identify possible improvements.

Martin County Trends

From 2007 to 2009, the population in Martin County increased by about 0.1%; the number of licensed drivers decreased by 1.1%, and the number of daily vehicle miles traveled decreased by 3.5%. All of these growth rates followed statewide trends.

However, the number of collisions increased by 5.6% (1,361 to 1,437) and injuries by 1.9% (1,073 to 1,093). The number of fatalities increased from 26 to 33; bicycle collisions increased from 49 to 51, bicycle fatalities increased from 0 to 1 (6 in 2008), and bicycle injuries remained the same at 46. The number of pedestrian collisions increased from 37 to 43, pedestrian fatalities from 3 to 6, and pedestrian injuries from 29 to 30. In every case, other than bicycle injuries, the growth rates are much higher than the statewide rates (many of which are negative).

Martin County vs. Region and Florida

Table 1. State and Regional 2007-2009 Rates per Capita

2007-2009 Rates per 100,000 Persons						
Area	Bicycle Collision Rate	Bicycle Fatality Rate	Bicycle Injury Rate	Pedestrian Collision Rate	Pedestrian Fatality Rate	Pedestrian Injury Rate
Martin	35.7	1.6	32.7	27.3	2.8	21.1
Indian River	20.6	0.2	18.2	29.3	2.6	26.0
Palm Beach	28.5	0.7	25.9	50.5	2.7	44.1
St. Lucie	19.8	0.5	17.4	32.9	1.6	28.4
Florida	26.3	0.6	23.2	47.9	2.7	41.0

Sources: BEBR, FLHSMV

Table 2. State and Regional 2007-2009 Rates per 100 MVMT

2007-2009 Rates per 100 Million Vehicle Miles Traveled						
Area	Bicycle Collision Rate	Bicycle Fatality Rate	Bicycle Injury Rate	Pedestrian Collision Rate	Pedestrian Fatality Rate	Pedestrian Injury Rate
Martin	2.43	0.11	2.23	1.86	0.19	1.44
Indian River	1.89	0.02	1.67	2.69	0.24	2.39
Palm Beach	2.97	0.08	2.70	5.26	0.28	4.59
St. Lucie	1.71	0.04	1.50	2.83	0.14	2.44
Florida	2.47	0.06	2.18	4.49	0.25	3.85

Sources: FDOT, FLHSMV

Top Three Intersections by Crash Count

The top three intersections with the highest number of bicycle and pedestrian collisions are listed below. All of them are intersections with SE/SW Federal Highway in the City of Stuart and were identified using the Martin County Crash Database.

Table 3. Martin County 2007-2009 Top 3 Intersections by Bicycle and Pedestrian Crash Count

Number	Intersection	Crash Count	TOTAL ($) DAMAGE	FATALITY COUNT	INJURY COUNT	VEHICLE COUNT	PED COUNT	BIKE COUNT	Crash Severity
1	SE INDIAN ST & SE FEDERAL HWY	5	5920	0	1	5	1	4	1.6
2	SE/ SW FEDERAL HWY, KANNER HWY, AND COLORADO AVE	4	4920	0	4	4	1	3	4
3	SE MONTEREY RD & SE FEDERAL HWY	4	1400	0	0	4	0	4	1

Sources: Martin County Engineering Department

INTRODUCTION

Purpose

The purpose of this report is to evaluate bicycle and pedestrian collision data in Martin County within the context of the Treasure Coast region plus neighboring Palm Beach County. Maps of Martin County are used to identify areas with a higher tendency of bicycle and pedestrian collisions. This report is intended to be used by Martin County Staff, the MPO Bicycle & Pedestrian Advisory Committee, the MPO Board, and the Board of County Commissioners to evaluate potential bicycle and pedestrian improvement projects.

Methodology

Completing this report involved data collection, organization, and analysis. General collision, bicycle and pedestrian fatality and injury data were obtained from the Florida Department of Highway Safety and Motor Vehicles Traffic Crash Statistics Reports.[1] The DHSMV also provided historical reports for the number of licensed drivers[2] and bicycle and pedestrian collision data by county upon request. Daily vehicle miles traveled data were obtained from the Florida Department of Transportation Annual Public Road Mileage and Travel (DVMT) Reports.[3] Population estimates were obtained from the Bureau of Economic and Business Research at the University of Florida.[4]

These data were then organized into tables and analyzed. Rates were calculated based on 100,000 persons and 100 million vehicle miles traveled to facilitate comparison to national and state safety reports. The discussion below uses per capita statistics for comparison to the in the Florida Traffic Safety Facts annual reports for bicyclists and pedestrians.[5]

Bicycle and pedestrian high-collision intersections were identified using the Martin County crash database using the following custom query: Crash Date – 01/01/2007 to 12/31/2009; Geographic Extent – Entire County; Participants – Bicycles and Pedestrians; Show top 20 intersections ranked by crash count; Intersections to include all crashes within 300 feet. Variations to the Participants filter were used to control for bicycles and pedestrians separately.[6]

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[1] Traffic Crash Statistics Reports 2008 and 2009. These documents can be found at http://www.flhsmv.gov/html/safety.html

[2] These data can be found under General Reports, Driver Demographics located at http://www.flhsmv.gov/html/safety.html

[3] Public Road Mileage and Travel (DVMT) Reports 2007, 2008, and 2009. These documents can be found at http://www.dot.state.fl.us/planning/statistics/mileage-rpts/

[4] 2007-2009_Estimates_Tables. These documents can be found at http://www.bebr.ufl.edu/product/estimates-population-county-and-city-florida-april-1-2007

[5] Florida Traffic Safety Facts: Bicyclists & Pedestrians 2009 and 2010. These documents can be found under the Vulnerable Road User Reports tab at http://www.flhsmv.gov/html/safety.html

[6] According to this database, the Crash Severity Index is calculated by the following formula: (12 * [fatal crash count] + 4 * [injury crash count] + [property damage only crash count]) / [total crash count].

The maps were developed using point density analysis. According to ESRI, "point density calculates the density of point features around each output raster cell. Conceptually, a neighborhood is defined around each raster cell center, and the number of points that fall within the neighborhood is totaled and divided by the area of the neighborhood."[7] These maps were used to identify "hot spots" where there is a tendency for bicycle and pedestrian collisions.

Study Area

The main study area for this report was Martin County. Data for the State of Florida, Indian River, Palm Beach, and St. Lucie Counties were included for the sake of comparison.

Organization

The first section of this report describes general trends in population growth, the number of licensed drivers, the number of vehicle miles traveled, and collision statistics for the State of Florida and the region. The second part describes trends in bicycle and pedestrian collision statistics.

General Data

The population of Florida has increased by 0.4% from 2007 to 2009. The population in Martin County has increased by 0.1% during this time period, which is the lowest positive growth in the region. Indian River County experienced the highest growth rate of 1.3%. Palm Beach County experienced a negative growth rate of 0.6%. From 2007 to 2009, the number of licensed drivers in Florida decreased by a rate of 0.1% and by 1.1% in Martin County. St. Lucie County had a negative rate of 3.4% during this time period.

Daily vehicle miles traveled (DVMT) in Florida have decreased by 4.4% from 2007 to 2009. Daily vehicle miles traveled in Martin County have also declined by a rate of 3.5%, which is the second lowest decrease in the region. Indian River County had the highest decrease in DVMT of 9.9%. Palm Beach County had the lowest decrease of 1.5%.

Table 4. State and Regional 2007-2009 Population Estimates

Population Estimates				
Area	2007	2008	2009	% Change 07-09
Martin	143,737	143,868	143,856	0.1%
Indian River	139,757	141,667	141,634	1.3%
Palm Beach	1,295,033	1,294,654	1,287,344	-0.6%
St. Lucie	271,961	276,585	272,864	0.3%
Florida	18,680,367	18,807,219	18,750,483	0.4%

Source: Bureau of Economic and Business Research (BEBR), University of Florida

[7] Further explanation can be found at http://enddoc.esri.com/arcobjects/9.2/NET/shared/geoprocessing/spatial_analyst_tools/how_point_density_works.htm

Table 5. State and Regional 2007-2009 Daily Vehicle Miles Traveled

Daily Vehicle Miles Traveled (thousands)				
Area	2007	2008	2009	% Change 07-09
Martin	5,955.3	5,646.8	5,745.1	-3.5%
Indian River	4,573.9	3,936.6	4,121.8	-9.9%
Palm Beach	34,233.6	33,997.4	33,729.1	-1.5%
St. Lucie	8,964.9	8,779.2	8,366.1	-6.7%
Florida	562,798.0	542,334.4	538,089.0	-4.4%

Source: Florida Department of Transportation (FDOT)

COLLISION DATA

Within the State of Florida, there has been an overall decrease in the number of collisions from 2007 to 2009. However, there has been an increase of 5.6% in Martin County. Unfortunately, there has been a decrease in every other neighboring county. The highest decrease being in Indian River (15.6%) and the lowest in St. Lucie County (2.4%).

Similarly, there has been an overall decrease in the number of fatalities in Florida from 2007 to 2009. Again, the highest and only increase in the number fatalities was in Martin County with an increase of 26.9%. Indian River County had no net change, while the other counties had a decrease of over 10%. Martin County also had the highest number of fatalities per capita of 20.6 per 100,000 persons, which is much higher than in Florida. The next highest rate was in Indian River with 17.0 per 100,000 persons.

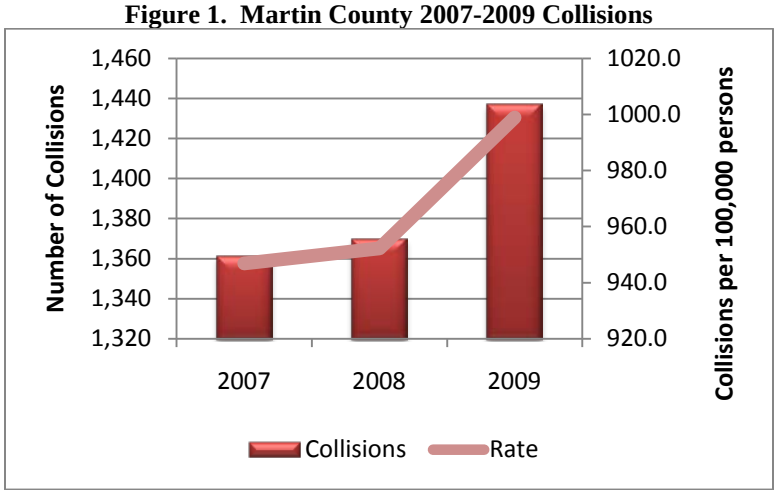
Lastly, there has been a decrease of 8.0% in the number of injuries across the State. Again, the highest and only increase in the number of injuries was in Martin County with an increase of 1.9%. The highest decrease was in Indian River with 16.6% and the lowest decrease was in Palm Beach County with 5.4%. However, Martin County's 747.2 injuries per 100,000 persons ranked second lowest, just above St. Lucie County's 734.5 injuries per 100,000.

Table 6. State and Regional 2007-2009 Collisions

Number of Collisions						
County	2007	2008	2009	% Change 07-09	07-09 Collisions per 100 MVMT	07-09 Collisions per 100,000
Martin	1,361	1,370	1,437	5.6%	65.83	966.0
Indian River	1,366	1,292	1,153	-15.6%	82.65	900.8
Palm Beach	14,674	13,831	13,398	-8.7%	112.60	1080.8
St. Lucie	2,393	2,288	2,336	-2.4%	73.63	854.3
Florida	256,206	243,342	235,778	-8.0%	122.60	1307.5

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Figure 1. Martin County 2007-2009 Collisions



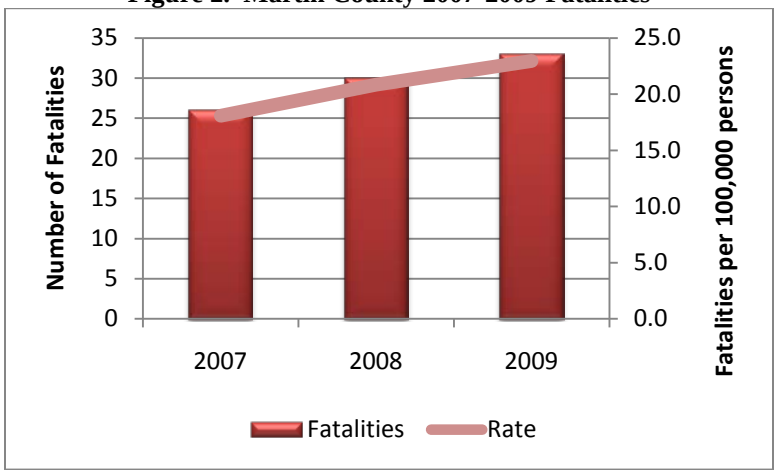
Sources: FL Dept of Highway Safety and Motor Vehicles, BEBR

Table 7. State and Regional 2007-2009 Fatalities

	Number of Fatalities					
County	2007	2008	2009	% Change 07-09	07-09 Fatalities per 100 MVMT	07-09 Fatalities per 100,000
Martin	26	30	33	26.9%	1.41	20.6
Indian River	23	26	23	0.0%	1.56	17.0
Palm Beach	206	198	151	-26.7%	1.49	14.3
St. Lucie	44	33	38	-13.6%	1.21	14.0
Florida	3221	2983	2563	-20.4%	1.46	15.6

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Figure 2. Martin County 2007-2009 Fatalities



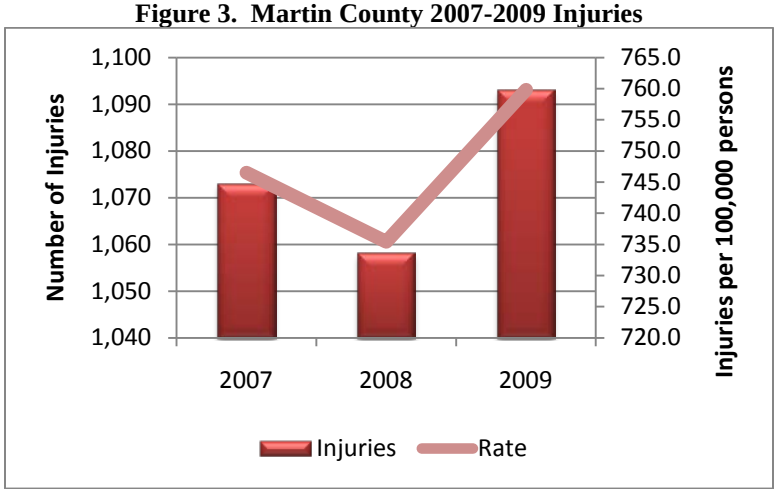
Sources: FL Dept of Highway Safety and Motor Vehicles, BEBR

Table 8. State and Regional 2007-2009 Injuries

Number of Injuries						
County	2007	2008	2009	% Change 07-09	07-09 Injuries per 100 MVMT	07-09 Injuries per 100,000
Martin	1,073	1,058	1,093	1.9%	50.92	747.2
Indian River	1,382	1,384	1,152	-16.6%	84.97	926.1
Palm Beach	13,207	12,595	12,488	-5.4%	102.89	987.6
St. Lucie	2,110	1,955	1,968	-6.7%	63.30	734.5
Florida	212,149	199,658	197,214	-7.0%	101.54	1082.9

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Figure 3. Martin County 2007-2009 Injuries



Sources: FL Dept of Highway Safety and Motor Vehicles, BEBR

BICYCLE & PEDESTRIAN COLLISION DATA

From 2007 to 2009, there have been 32 intersections with two or more collisions involving bicyclists or pedestrians. The table below lists the top 20 intersections by crash count. When both bicycle and pedestrian collisions are combined the intersection of SE Indian Street and SE Federal Highway has a higher tendency for collisions. This finding is consistent with the point density analysis maps.

The combined 2007-2009 Bike and Pedestrian Crashes map shows a distinct trend of crashes in the area around SE Federal Highway and Dixie Highway, especially near Kanner Highway, SE Indian Street, and SE Salerno Road.

Table 9. Martin County 2007-2009 Top 20 Intersections by Bicycle and Pedestrian Crash Count

Number	Intersection	Crash Count	TOTAL ($) DAMAGE	FATALITY COUNT	INJURY COUNT	VEHICLE COUNT	PED COUNT	BIKE COUNT	Crash Severity
1	SE INDIAN ST & SE FEDERAL HWY	5	5920	0	1	5	1	4	1.6
2	SE/ SW FEDERAL HWY, KANNER HWY, AND COLORADO AVE	4	4920	0	4	4	1	3	4
3	SE MONTEREY RD & SE FEDERAL HWY	4	1400	0	0	4	0	4	1
4	SE JACK AVE & SE SALERNO RD	3	1120	0	1	3	0	3	2
5	NW FEDERAL HWY & NW RIVER SHORES BLV	3	1100	0	0	3	0	3	1
6	SE SALERNO RD & SE FEDERAL HWY	3	9350	0	2	3	1	2	3
7	SE MONTEREY RD & SE RAYS WAY	3	4600	1	2	3	2	1	6.67
8	SE SEWALLS POINT RD SO & SE RIO VISTA DR	2	401	0	0	2	0	2	1
9	SE MONROE ST E & SE FEDERAL HWY	2	800	1	1	2	1	1	8
10	SE FEDERAL HWY & SE CENTRAL PKWY	2	5000	0	0	2	2	0	1
11	SE MONTEREY RD & SE DIXIE HWY/SE PALM BEACH RD	2	4200	0	2	2	0	2	2.5
12	S KANNER HWY & SE MONTEREY RD/SW MONTEREY RD	2	200	0	0	2	2	1	1
13	SW WARFIELD BLV & SW VAN BUREN AVE	2	250	0	2	2	1	1	4
14	SE ISABELITA AVE & SE SALERNO RD	2	1600	0	1	2	0	2	2.5
15	NE JENSEN BEACH BLV & NE HOLLY CREEK DR	2	1800	0	0	2	0	2	1
16	SE DIXIE HWY & SE GARDEN ST/SE RAILROAD AVE	2	175	0	0	2	0	2	1
17	SE COVE RD & SE FEDERAL HWY	2	1320	0	2	2	0	2	4
18	NE SAVANNAH RD & NE COLLINS CIR/NE PINELAKE VILLAGE BLV	2	75	0	0	2	0	2	1
19	NE INDIAN RIVER DR & NE DIXIE HWY	2	10000	0	0	2	0	2	1
20	SE FEDERAL HWY & SE JOHNSON AVE	2	385	0	2	2	0	2	4

Sources: Martin County Engineering Department

Bicycle Collision Stats

There has been an increase of 1.4% in the number of reported bicycle collisions in the State of Florida from 2007 to 2009. Martin County had a slightly higher increase of 4.1%. The highest increase in the region was in Indian River County with 21.4%, while the only decrease was in Palm Beach County with a 3.2% reduction. Martin County had the highest number of bicycle collisions per capita with 35.7 collisions per 100,000 persons. Palm Beach County ranked second with 28.5 collisions. St. Lucie County had the lowest rate with 19.8 collisions.

From 2007 to 2009, there has been a decrease of 18.2% in the number of bicycle fatalities in the State of Florida. The sum of fatalities from 2007 to 2009 corresponds to a rate of 0.6 bicycle fatalities per 100,000 persons in Florida. The highest rate was in Martin County with 1.6. The second highest was in Palm Beach County with 0.7. The lowest was in Indian River with 0.2 bicycle fatalities per capita.

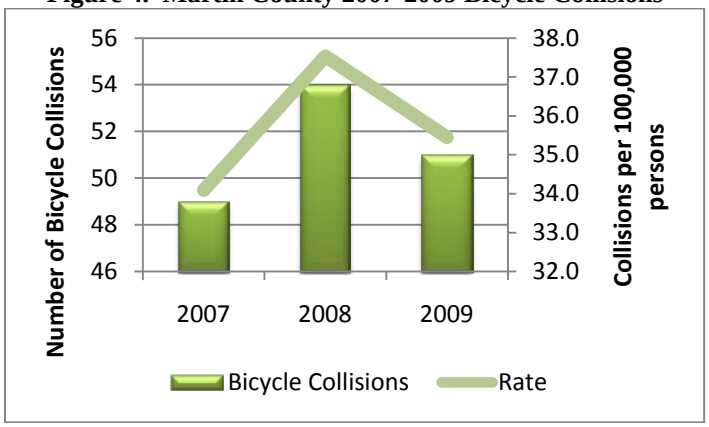
From 2007 to 2009, there has been a slight increase in the number of bicycle injuries in the State. The sum of injuries during this time period corresponds to a rate of 23.2 injuries per 100,000 persons in Florida. Again, the highest rate was in Martin County with 32.7. The second highest was in Palm Beach County with 25.9, while the lowest was in St. Lucie County with 17.4 bicycle injuries per capita.

Table 10. State and Regional 2007-2009 Bicycle Collisions

Number of Bicycle Collisions						
County	2007	2008	2009	% Change 07-09	07-09 Collisions per 100 MVMT	07-09 Collisions per 100,000
Martin	49	54	51	4.1%	2.43	35.7
Indian River	28	25	34	21.4%	1.89	20.6
Palm Beach	375	366	363	-3.2%	2.97	28.5
St. Lucie	54	54	55	1.9%	1.71	19.8
Florida	4,894	4,957	4,964	1.4%	2.47	26.3

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Figure 4. Martin County 2007-2009 Bicycle Collisions



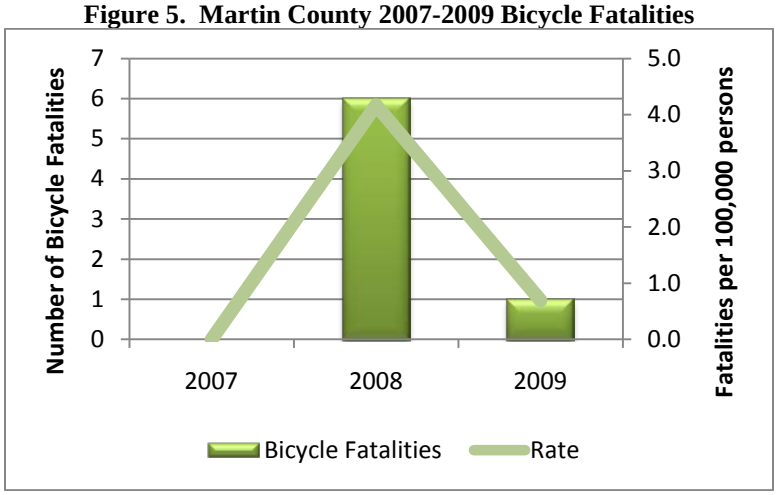
Sources: FL Dept of Highway Safety and Motor Vehicles, BEBR

Table 11. State and Regional 2007-2009 Bicycle Fatalities

Number of Bicycle Fatalities						
County	2007	2008	2009	% Change 07-09	07-09 Fatalities per 100 MVMT	07-09 Fatalities per 100,000
Martin	0	6	1	100.0%	0.11	1.6
Indian River	0	0	1	100.0%	0.02	0.2
Palm Beach	10	8	11	10.0%	0.08	0.7
St. Lucie	1	2	1	0.0%	0.04	0.5
Florida	121	118	99	-18.2%	0.06	0.6

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Figure 5. Martin County 2007-2009 Bicycle Fatalities



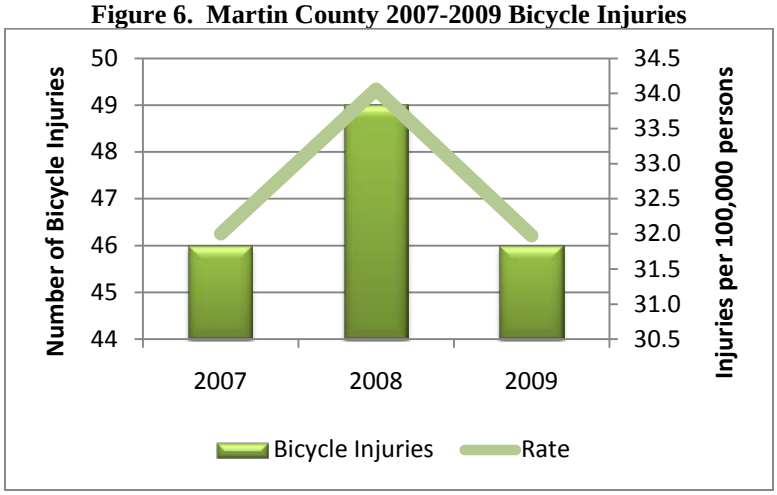
Sources: FL Dept of Highway Safety and Motor Vehicles, BEBR

Table 12. State and Regional 2007-2009 Bicycle Injuries

Number of Bicycle Injuries						
County	2007	2008	2009	% Change 07-09	07-09 Injuries per 100 MVMT	07-09 Injuries per 100,000
Martin	46	49	46	0.0%	2.23	32.7
Indian River	27	21	29	7.4%	1.67	18.2
Palm Beach	336	335	335	-0.3%	2.70	25.9
St. Lucie	46	46	51	10.9%	1.50	17.4
Florida	4,303	4,380	4,376	1.7%	2.18	23.2

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Figure 6. Martin County 2007-2009 Bicycle Injuries



Sources: FL Dept of Highway Safety and Motor Vehicles, BEBR

From 2007 to 2009, there have been 22 intersections with two or more collisions involving bicyclists. The table below lists the top 20 intersections by crash count. Again, the intersection of SE Indian Street and SE Federal Highway had the most collisions during this time period.

According to the bike crashes map, the main hotspots are on SE Salerno between SE Federal Highway and Dixie Highway, the area near SE Federal Highway and Kanner Highway, and the area near SE Federal Highway and SE Indian Street.

Table 13. Martin County 2007-2009 Top 20 Intersections by Bicycle Crash Count

Number	Intersection	Crash Count	TOTAL ($) DAMAGE	FATALITY COUNT	INJURY COUNT	VEHICLE COUNT	BIKE COUNT	Crash Severity
1	SE INDIAN ST & SE FEDERAL HWY	4	5720	0	1	4	4	1.75
2	SE MONTEREY RD & SE FEDERAL HWY	4	1400	0	0	4	4	1
3	SE/ SW FEDERAL HWY, KANNER HWY, AND COLORADO AVE	3	920	0	3	3	3	4
4	NW FEDERAL HWY & NW RIVER SHORES BLV	3	1100	0	0	3	3	1
5	SE JACK AVE & SE SALERNO RD	3	1120	0	1	3	3	2
6	SE INDIAN ST & SE COMMERCE AVE	2	300	0	1	2	2	2.5
7	SE MONTEREY RD & SE DIXIE HWY/SE PALM BEACH RD	2	4200	0	2	2	2	2.5
8	SE ISABELITA AVE & SE SALERNO RD	2	1600	0	1	2	2	2.5
9	NE JENSEN BEACH BLV & NE HOLLY CREEK DR	2	1800	0	0	2	2	1
10	SE DIXIE HWY & SE GARDEN ST/SE RAILROAD AVE	2	175	0	0	2	2	1
11	SE COVE RD & SE FEDERAL HWY	2	1320	0	2	2	2	4
12	NE INDIAN RIVER DR & NE DIXIE HWY	2	10000	0	0	2	2	1
13	SE FEDERAL HWY & SE JOHNSON AVE	2	385	0	2	2	2	4

14	SW MONTEREY RD & SW PALM CITY RD	2	650	0	0	2	2	1
15	NW FEDERAL HWY & NW FORK RD/NW WRIGHT BLV	2	801	0	0	2	2	1
16	NW FEDERAL HWY & NW SUNSET BLV	2	400	0	0	2	2	1
17	SE ST LUCIE BLV & SE OCEAN A1A BLV	2	430	0	1	2	2	2.5
18	SW FARM RD & SW 169 TH AVE	2	910	0	2	2	2	4
19	SE SALERNO RD & SE FEDERAL HWY	2	8850	0	2	2	2	4
20	SW FEDERAL HWY & SW JOAN JEFFERSON WAY	2	275	0	1	2	2	2.5

Sources: Martin County Engineering Department

Pedestrian Collision Stats

There has been an increase of 3.0% in the number of reported pedestrian collisions in the State of Florida from 2007 to 2009. Martin County had a significantly higher increase of 16.2%. Neighboring counties all had a decrease in the number of pedestrian collisions. The highest decrease was in Indian River County with 18.2, while the lowest decrease was in Palm Beach County with 4.4%.

On a positive note, Martin County had the lowest number of pedestrian collisions per capita with 27.3 collisions per 100,000 persons. Palm Beach County had the highest with 50.5 collisions per capita.

From 2007 to 2009, there has been a decrease of 9.1% in the number of pedestrian fatalities in the State of Florida. The sum of fatalities from 2007 to 2009 corresponds to a rate of 2.7 pedestrian fatalities per 100,000 persons in Florida. The highest rate was in Martin County with 2.8. The second highest was in Palm Beach County with 2.7. The lowest was in St. Lucie with 1.6 pedestrian fatalities per capita.

From 2007 to 2009, there has been a slight increase in the number of pedestrian injuries in the State. The sum of injuries during this time period corresponds to a rate of 41.0 injuries per 100,000 persons in Florida. The lowest rate was in Martin County with 21.1 per capita. The highest was in Palm Beach County with 44.1.

Table 14. State and Regional 2007-2009 Pedestrian Collisions

Number of Pedestrian Collisions						
County	2007	2008	2009	% Change 07-09	07-09 Collisions per 100 MVMT	07-09 Collisions per 100,000
Martin	37	38	43	16.2%	1.86	27.3
Indian River	44	44	36	-18.2%	2.69	29.3
Palm Beach	658	670	629	-4.4%	5.26	50.5
St. Lucie	96	90	84	-12.5%	2.83	32.9
Florida	8,762	9,158	9,028	3.0%	4.49	47.9

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Table 15. State and Regional 2007-2009 Pedestrian Fatalities

Number of Pedestrian Fatalities						
County	2007	2008	2009	% Change 07-09	07-09 Fatalities per 100 MVMT	07-09 Fatalities per 100,000
Martin	3	3	6	100.0%	0.19	2.8
Indian River	2	8	1	-50.0%	0.24	2.6
Palm Beach	33	32	39	18.2%	0.28	2.7
St. Lucie	2	5	6	200.0%	0.14	1.6
Florida	530	502	482	-9.1%	0.25	2.7

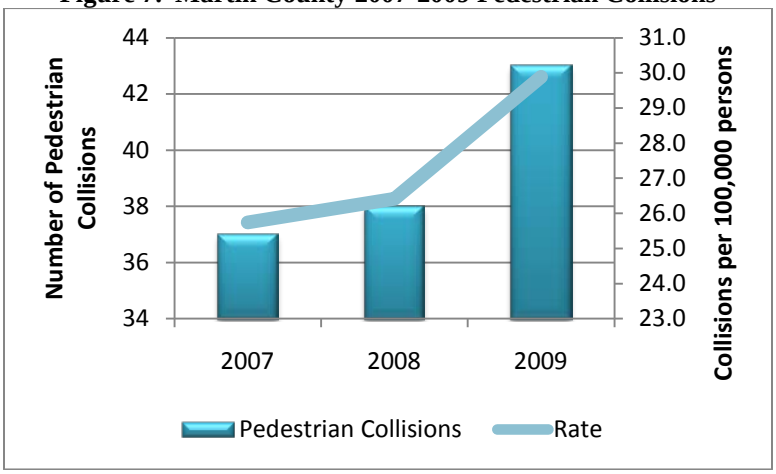
Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Table 16. State and Regional 2007-2009 Pedestrian Injuries

Number of Pedestrian Injuries						
County	2007	2008	2009	% Change 07-09	07-09 Injuries per 100 MVMT	07-09 Injuries per 100,000
Martin	29	32	30	3.4%	1.44	21.1
Indian River	46	32	32	-30.4%	2.39	26.0
Palm Beach	566	583	560	-1.1%	4.59	44.1
St. Lucie	87	78	68	-21.8%	2.44	28.4
Florida	7529	7878	7676	2.0%	3.85	41.0

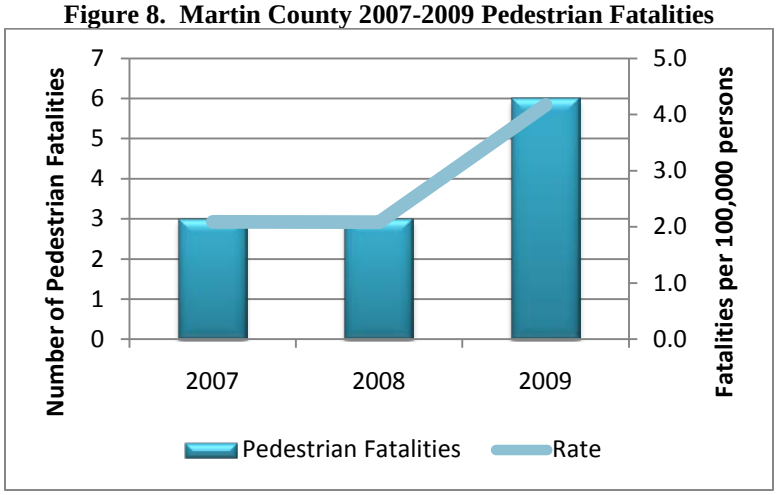
Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Figure 7. Martin County 2007-2009 Pedestrian Collisions



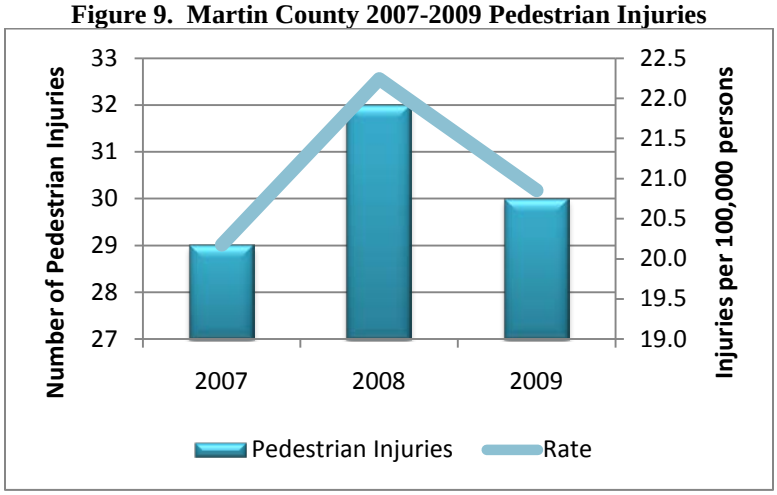
Sources: FL Dept of Highway Safety and Motor Vehicles, BEBR

Figure 8. Martin County 2007-2009 Pedestrian Fatalities



Sources: FL Dept of Highway Safety and Motor Vehicles, BEBR

Figure 9. Martin County 2007-2009 Pedestrian Injuries



Sources: FL Dept of Highway Safety and Motor Vehicles, BEBR

From 2007 to 2009, there have been 54 intersections with one or more collisions involving pedestrians. The table below lists the top 20 intersections by crash count. There is a tie for the top three intersections, with two collisions occurring at each.

According to the pedestrian crashes map, the main hotspots are on SE Indian Street between SE Federal Highway and Dixie Highway, the area near SE Monterey Road and Rays Way, and the area near Federal Highway and Slater Street.

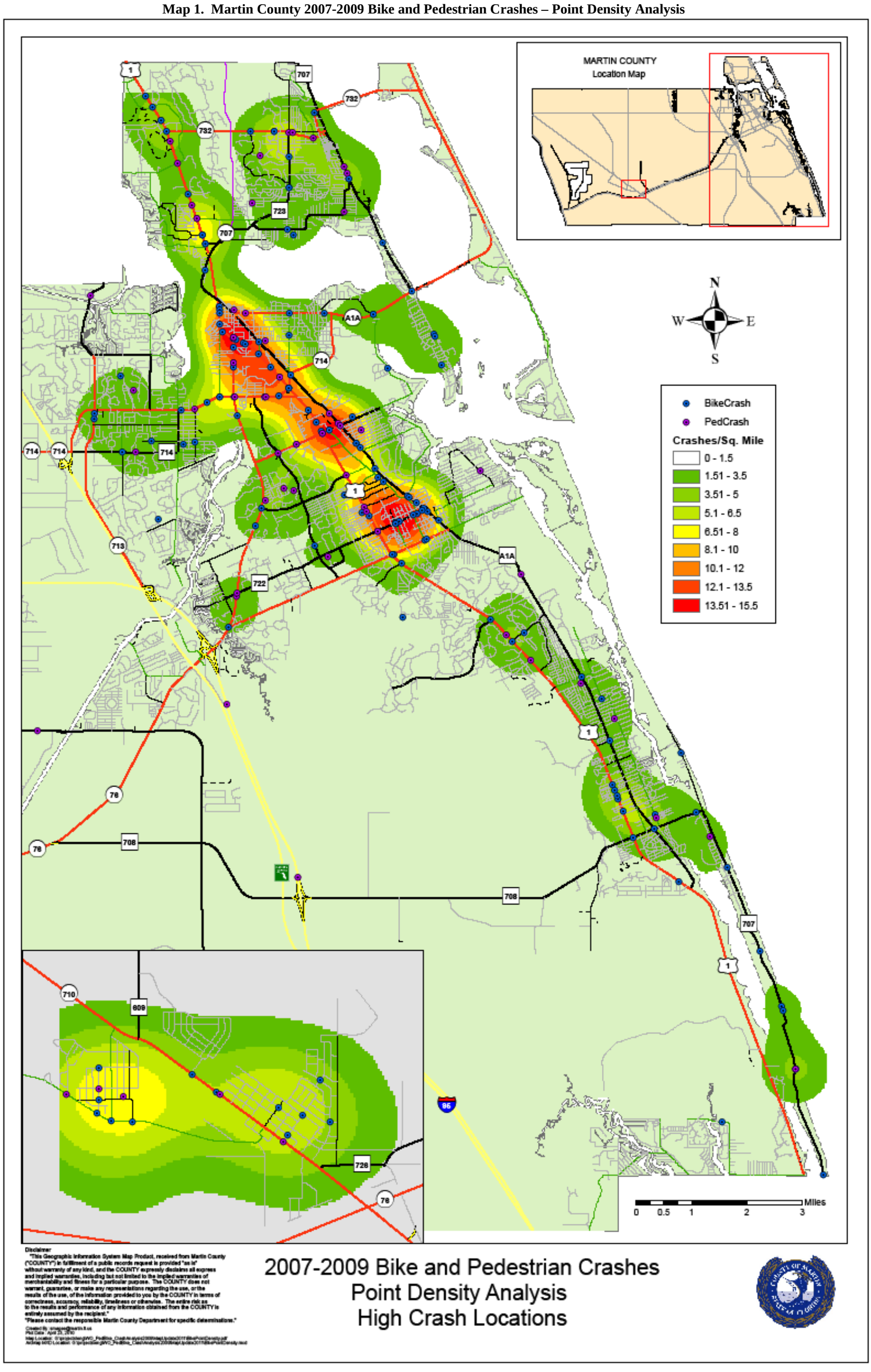
Table 17. Martin County 2007-2009 Top 20 Intersections by Pedestrian Crash Count

Number	Intersection	Crash Count	TOTAL ($) DAMAGE	FATALITY COUNT	INJURY COUNT	VEHICLE COUNT	PED COUNT	Crash Severity
1	SE MONTEREY RD & SE RAYS WAY	2	4500	1	1	2	2	8
2	S KANNER HWY & SW SALERNO RD/SE SALERNO RD	2	1350	0	1	3	2	2.5
3	SE FEDERAL HWY & SE CENTRAL PKWY	2	5000	0	0	2	2	1
4	NE DIXIE HWY & NE ROBERTA ST	1	500	1	0	1	1	12
5	SW FEDERAL HWY & SW PALM CITY RD	1	8000	1	0	2	1	12
6	SW WARFIELD BLV & SW VAN BUREN AVE	1	0	0	1	1	1	4
7	S KANNER HWY & SE MONTEREY RD/SW MONTEREY RD	1	0	0	0	1	2	1
8	NE SAVANNAH RD & NE JENSEN BEACH BLV	1	0	0	1	1	1	4
9	SE ONTARIO WAY & SE SUPERIOR WAY	1	300	0	1	1	1	4
10	SE FEDERAL HWY & SE MARKET PL/SE POMEROY ST	1	0	0	1	1	1	4
11	SE/ SW FEDERAL HWY, KANNER HWY, AND COLORADO AVE	1	4000	0	1	1	1	4
12	NW FEDERAL HWY & NW MALL ENTRY MID	1	0	0	0	1	1	1
13	SE SALERNO RD & SE FEDERAL HWY	1	500	0	0	1	1	1
14	SE SALERNO RD & SE TOWER DR	1	0	0	0	1	1	1
15	SW 174 TH CT & SW 175 TH CT	1	0	0	1	1	1	4
16	SE SHILOH TER & SE GETTYSBURG CT	1	0	0	1	1	1	4
17	SW OSCEOLA ST EA & SW COLORADO AVE & 2 more	1	0	0	0	1	1	1
18	SW GROVESIDE DR & SW GROVESIDE DR	1	500	0	0	1	1	1
19	NE INDIAN RIVER DR & NE GARDNER TER	1	0	0	0	1	1	1
20	NE INDIAN RIVER DR & NE SKYLINE DR	1	0	0	0	1	1	1

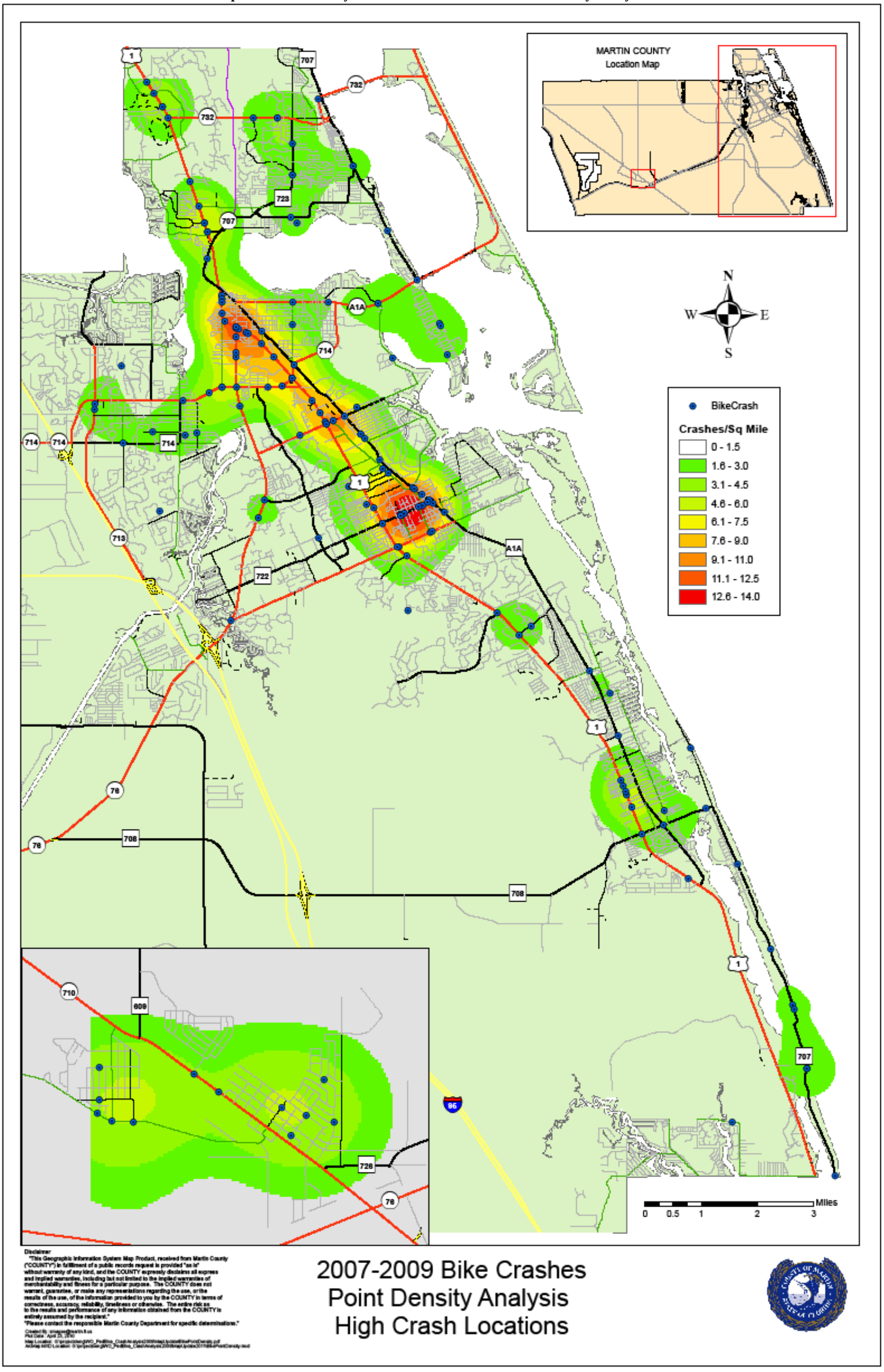
Sources: Martin County Engineering Department

COLLISION MAPS

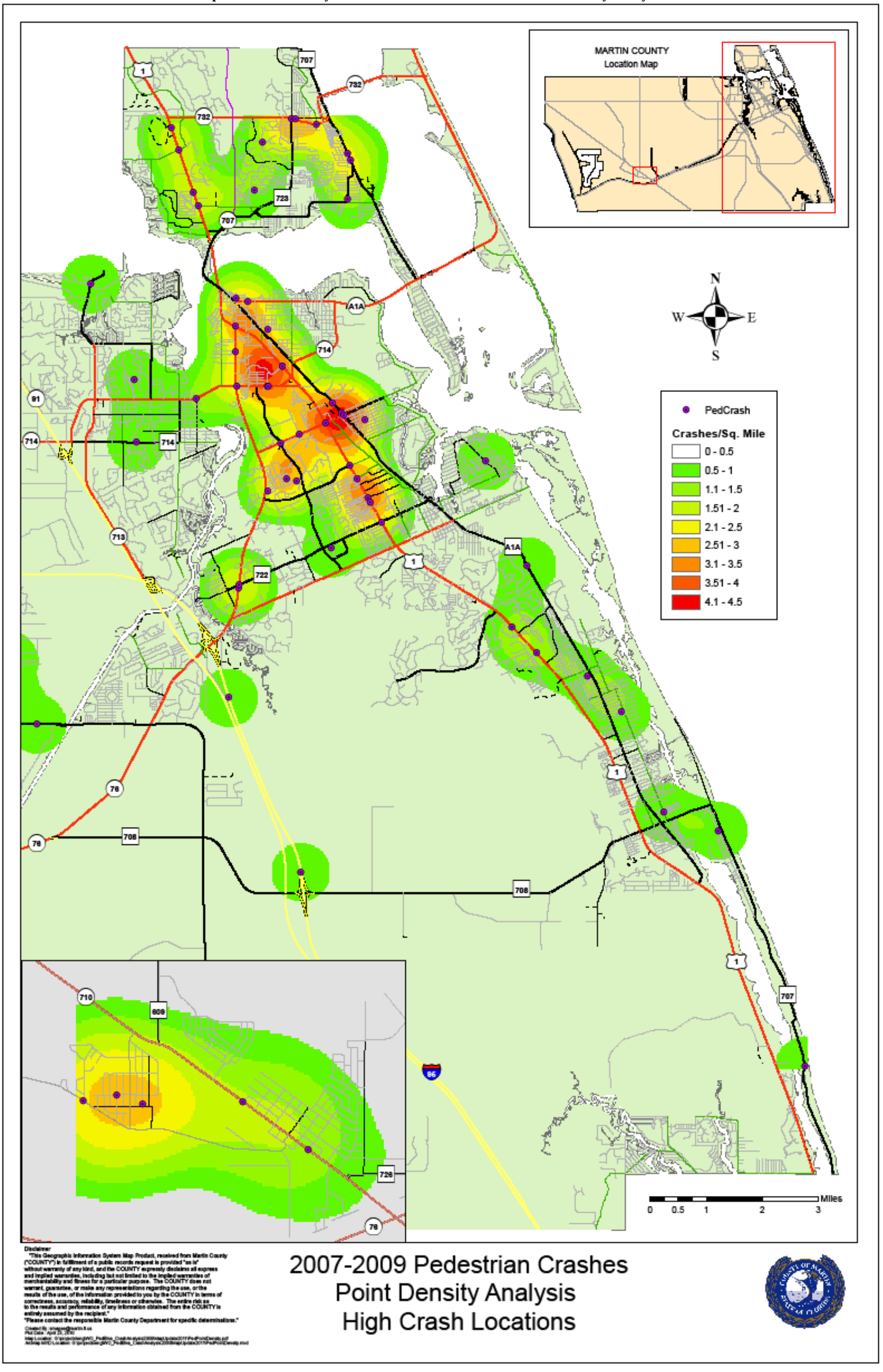
Map 1. Martin County 2007-2009 Bike and Pedestrian Crashes – Point Density Analysis



Map 2. Martin County 2007-2009 Bike Crashes – Point Density Analysis



Map 3. Martin County 2007-2009 Pedestrian Crashes – Point Density Analysis



APPENDICES

Appendix A: General Data

Population Estimates				
Area	2007	2008	2009	% Change 07-09
Martin	143,737	143,868	143,856	0.1%
Indian River	139,757	141,667	141,634	1.3%
Palm Beach	1,295,033	1,294,654	1,287,344	-0.6%
St. Lucie	271,961	276,585	272,864	0.3%
Florida	18,680,367	18,807,219	18,750,483	0.4%

Source: Bureau of Economic and Business Research (BEBR), University of Florida

Licensed Drivers				
Area	2007	2008	2009	% Change 07-09
Martin	127,935	127,617	126,587	-1.1%
Indian River	115,883	117,330	117,550	1.4%
Palm Beach	1,037,024	1,044,020	1,045,836	0.8%
St. Lucie	213,469	211,631	206,171	-3.4%
Florida	15,556,658	15,579,603	15,491,878	-0.4%

Source: FLHSMV

Daily Vehicle Miles Traveled (thousands)				
Area	2007	2008	2009	% Change 07-09
Martin	5,955.3	5,646.8	5,745.1	-3.5%
Indian River	4,573.9	3,936.6	4,121.8	-9.9%
Palm Beach	34,233.6	33,997.4	33,729.1	-1.5%
St. Lucie	8,964.9	8,779.2	8,366.1	-6.7%
Florida	562,798.0	542,334.4	538,089.0	-4.4%

Source: Florida Department of Transportation (FDOT)

Number of Collisions						
County	2007	2008	2009	% Change 07-09	07-09 Collisions per 100 MVMT	07-09 Collisions per 100,000
Martin	1,361	1,370	1,437	5.6%	65.83	966.0
Indian River	1,366	1,292	1,153	-15.6%	82.65	900.8
Palm Beach	14,674	13,831	13,398	-8.7%	112.60	1080.8
St. Lucie	2,393	2,288	2,336	-2.4%	73.63	854.3
Florida	256,206	243,342	235,778	-8.0%	122.60	1307.5

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Number of Fatalities						
County	2007	2008	2009	% Change 07-09	07-09 Fatalities per 100 MVMT	07-09 Fatalities per 100,000
Martin	26	30	33	26.9%	1.41	20.6
Indian River	23	26	23	0.0%	1.56	17.0
Palm Beach	206	198	151	-26.7%	1.49	14.3
St. Lucie	44	33	38	-13.6%	1.21	14.0
Florida	3221	2983	2563	-20.4%	1.46	15.6

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Number of Injuries						
County	2007	2008	2009	% Change 07-09	07-09 Injuries per 100 MVMT	07-09 Injuries per 100,000
Martin	1,073	1,058	1,093	1.9%	50.92	747.2
Indian River	1,382	1,384	1,152	-16.6%	84.97	926.1
Palm Beach	13,207	12,595	12,488	-5.4%	102.89	987.6
St. Lucie	2,110	1,955	1,968	-6.7%	63.30	734.5
Florida	212,149	199,658	197,214	-7.0%	101.54	1082.9

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Number of Bicycle Collisions						
County	2007	2008	2009	% Change 07-09	07-09 Collisions per 100 MVMT	07-09 Collisions per 100,000
Martin	49	54	51	4.1%	2.43	35.7
Indian River	28	25	34	21.4%	1.89	20.6
Palm Beach	375	366	363	-3.2%	2.97	28.5
St. Lucie	54	54	55	1.9%	1.71	19.8
Florida	4,894	4,957	4,964	1.4%	2.47	26.3

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Number of Bicycle Fatalities						
County	2007	2008	2009	% Change 07-09	07-09 Fatalities per 100 MVMT	07-09 Fatalities per 100,000
Martin	0	6	1	100.0%	0.11	1.6
Indian River	0	0	1	100.0%	0.02	0.2
Palm Beach	10	8	11	10.0%	0.08	0.7
St. Lucie	1	2	1	0.0%	0.04	0.5
Florida	121	118	99	-18.2%	0.06	0.6

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Number of Bicycle Injuries						
County	2007	2008	2009	% Change 07-09	07-09 Injuries per 100 MVMT	07-09 Injuries per 100,000
Martin	46	49	46	0.0%	2.23	32.7
Indian River	27	21	29	7.4%	1.67	18.2
Palm Beach	336	335	335	-0.3%	2.70	25.9
St. Lucie	46	46	51	10.9%	1.50	17.4
Florida	4,303	4,380	4,376	1.7%	2.18	23.2

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Number of Pedestrian Collisions						
County	2007	2008	2009	% Change 07-09	07-09 Collisions per 100 MVMT	07-09 Collisions per 100,000
Martin	37	38	43	16.2%	1.86	27.3
Indian River	44	44	36	-18.2%	2.69	29.3
Palm Beach	658	670	629	-4.4%	5.26	50.5
St. Lucie	96	90	84	-12.5%	2.83	32.9
Florida	8,762	9,158	9,028	3.0%	4.49	47.9

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Number of Pedestrian Fatalities						
County	2007	2008	2009	% Change 07-09	07-09 Fatalities per 100 MVMT	07-09 Fatalities per 100,000
Martin	3	3	6	100.0%	0.19	2.8
Indian River	2	8	1	-50.0%	0.24	2.6
Palm Beach	33	32	39	18.2%	0.28	2.7
St. Lucie	2	5	6	200.0%	0.14	1.6
Florida	530	502	482	-9.1%	0.25	2.7

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Number of Pedestrian Injuries						
County	2007	2008	2009	% Change 07-09	07-09 Injuries per 100 MVMT	07-09 Injuries per 100,000
Martin	29	32	30	3.4%	1.44	21.1
Indian River	46	32	32	-30.4%	2.39	26.0
Palm Beach	566	583	560	-1.1%	4.59	44.1
St. Lucie	87	78	68	-21.8%	2.44	28.4
Florida	7529	7878	7676	2.0%	3.85	41.0

Sources: FL Dept of Highway Safety and Motor Vehicles, FDOT

Appendix B: Derived Data

Annual Vehicle Miles Traveled (thousands)				
County	2007	2008	2009	% Change 07-09
Martin	2,173,698	2,061,083	2,096,967	-3.5%
Indian River	1,669,488	1,436,872	1,504,460	-9.9%
Palm Beach	12,495,248	12,409,062	12,311,133	-1.5%
St. Lucie	3,272,175	3,204,416	3,053,620	-6.7%
Florida	205,421,282	197,952,047	196,402,480	-4.4%

Source: FDOT (AVMT Calculation: Daily Vehicle Miles Traveled * 365)

Annual Vehicle Miles Traveled (millions)					
Area	2007	2008	2009	% Change 07-09	Sum of 07-09
Martin	2,174	2,061	2,097	-3.5%	6,332
Indian River	1,669	1,437	1,504	-9.9%	4,611
Palm Beach	12,495	12,409	12,311	-1.5%	37,215
St. Lucie	3,272	3,204	3,054	-6.7%	9,530
Florida	205,421	197,952	196,402	-4.4%	599,776

Source: FDOT (AVMT Calculation: Daily Vehicle Miles Traveled * 365)

Collision Rates per 100,000 Persons					
Area	2007	2008	2009	% Change 07-09	07-09 Collisions per 100,000
Martin	946.9	952.3	998.9	5.5%	966.0
Indian River	977.4	912.0	814.1	-16.7%	900.8
Palm Beach	1133.1	1068.3	1040.7	-8.2%	1080.8
St. Lucie	879.9	827.2	856.1	-2.7%	854.3
Florida	1371.5	1293.9	1257.5	-8.3%	1307.5

Sources: BEBR, FLHSMV

Fatality Rates per 100,000 Persons					
Area	2007	2008	2009	% Change 07-09	07-09 Fatalities per 100,000
Martin	18.1	20.9	22.9	26.8%	20.6
Indian River	16.5	18.4	16.2	-1.3%	17.0
Palm Beach	15.9	15.3	11.7	-26.3%	14.3
St. Lucie	16.2	11.9	13.9	-13.9%	14.0
Florida	17.2	15.9	13.7	-20.7%	15.6

Sources: BEBR, FLHSMV

Injury Rates per 100,000 Persons					
Area	2007	2008	2009	% Change 07-09	07-09 Injuries per 100,000
Martin	746.5	735.4	759.8	1.8%	747.2
Indian River	988.9	976.9	813.4	-17.7%	926.1
Palm Beach	1019.8	972.8	970.1	-4.9%	987.6
St. Lucie	775.8	706.8	721.2	-7.0%	734.5
Florida	1135.7	1061.6	1051.8	-7.4%	1082.9

Sources: BEBR, FLHSMV

Bicycle Collision Rates per 100,000 Persons					
Area	2007	2008	2009	% Change 07-09	07-09 Collisions per 100,000
Martin	34.1	37.5	35.5	4.0%	35.7
Indian River	20.0	17.6	24.0	19.8%	20.6
Palm Beach	29.0	28.3	28.2	-2.6%	28.5
St. Lucie	19.9	19.5	20.2	1.5%	19.8
Florida	26.2	26.4	26.5	1.1%	26.3

Sources: BEBR, FLHSMV

Bicycle Fatality Rates per 100,000 Persons					
Area	2007	2008	2009	% Change 07-09	07-09 Fatalities per 100,000
Martin	0.0	4.2	0.7	-69.5%	1.6
Indian River	0.0	0.0	0.7	-70.6%	0.2
Palm Beach	0.8	0.6	0.9	10.7%	0.7
St. Lucie	0.4	0.7	0.4	-0.3%	0.5
Florida	0.6	0.6	0.5	-18.5%	0.6

Sources: BEBR, FLHSMV

Bicycle Injury Rates per 100,000 Persons					
Area	2007	2008	2009	% Change 07-09	07-09 Injuries per 100,000
Martin	32.0	34.1	32.0	-0.1%	32.7
Indian River	19.3	14.8	20.5	6.0%	18.2
Palm Beach	25.9	25.9	26.0	0.3%	25.9
St. Lucie	16.9	16.6	18.7	10.5%	17.4
Florida	23.0	23.3	23.3	1.3%	23.2

Sources: BEBR, FLHSMV

Pedestrian Collision Rates per 100,000 Persons					
Area	2007	2008	2009	% Change 07-09	07-09 Collisions per 100,000
Martin	25.7	26.4	29.9	16.1%	27.3
Indian River	31.5	31.1	25.4	-19.3%	29.3
Palm Beach	50.8	51.8	48.9	-3.8%	50.5
St. Lucie	35.3	32.5	30.8	-12.8%	32.9
Florida	46.9	48.7	48.1	2.7%	47.9

Sources: BEBR, FLHSMV

Pedestrian Fatality Rates per 100,000 Persons					
Area	2007	2008	2009	% Change 07-09	07-09 Fatalities per 100,000
Martin	2.1	2.1	4.2	99.8%	2.8
Indian River	1.4	5.6	0.7	-50.7%	2.6
Palm Beach	2.5	2.5	3.0	18.9%	2.7
St. Lucie	0.7	1.8	2.2	199.0%	1.6
Florida	2.8	2.7	2.6	-9.4%	2.7

Sources: BEBR, FLHSMV

Pedestrian Injury Rates per 100,000 Persons					
Area	2007	2008	2009	% Change 07-09	07-09 Injuries per 100,000
Martin	20.2	22.2	20.9	3.4%	21.1
Indian River	32.9	22.6	22.6	-31.4%	26.0
Palm Beach	43.7	45.0	43.5	-0.5%	44.1
St. Lucie	32.0	28.2	24.9	-22.1%	28.4
Florida	40.3	41.9	40.9	1.6%	41.0

Sources: BEBR, FLHSMV

2007-2009 Rates per 100,000 Persons						
Area	Bicycle Collision Rate	Bicycle Fatality Rate	Bicycle Injury Rate	Ped Collision Rate	Ped Fatality Rate	Ped Injury Rate
Martin	35.7	1.6	32.7	27.3	2.8	21.1
Indian River	20.6	0.2	18.2	29.3	2.6	26.0
Palm Beach	28.5	0.7	25.9	50.5	2.7	44.1
St. Lucie	19.8	0.5	17.4	32.9	1.6	28.4
Florida	26.3	0.6	23.2	47.9	2.7	41.0

Sources: BEBR, FLHSMV

2007-2009 Rates per 100 Million Vehicle Miles Traveled						
Area	Bicycle Collision Rate	Bicycle Fatality Rate	Bicycle Injury Rate	Ped Collision Rate	Ped Fatality Rate	Ped Injury Rate
Martin	2.43	0.11	2.23	1.86	0.19	1.44
Indian River	1.89	0.02	1.67	2.69	0.24	2.39
Palm Beach	2.97	0.08	2.70	5.26	0.28	4.59
St. Lucie	1.71	0.04	1.50	2.83	0.14	2.44
Florida	2.47	0.06	2.18	4.49	0.25	3.85

Sources: FDOT, FLHSMV