

FRAMEWORK FOR LEVY COUNTY SAFETY PLAN

TASK 2 DELIVERABLE

Prepared for

The Florida Department of Transportation

FDOT Contract BE920 945-001

Prepared by

University of Florida

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Introduction

The Florida Strategic Highway Safety Plan (SHSP) was developed and updated through collaboration with Florida's safety partners. The Florida Transportation Plan (FTP) and the SHSP share a common vision of a fatality-free roadway system to protect its residents and visitors. SHSP recognizes the need to implement a variety of strategies to achieve the "Vision Zero" initiative and a multidisciplinary effort, including engineering, education, enforcement, and emergency response. The Florida SHSP calls for all stakeholders to "**update their safety plans**, including other state, coalition, MPO, and local government plans, to reflect alignment with the FTP and SHSP zero fatality vision." This document provides the initial framework for the county safety plan for Levy County. This version 1.0 of the Levy County Safety Plan lays out the basic structure for the documentation of the safety plan and identifies stakeholders, next steps to build upon, and the leadership to adopt it formally.

Levy County – General Overview

Levy County is situated in Florida's Big Bend area along the west coast within the Florida's north central region and is part of Florida Department of Transportation's District 2. Levy County serves more than 40,000 residents. Levy County has 616.20 miles of paved county roadways and more than half as many unpaved county roadways (390.65 miles) for a total of just over one million miles of roadway.

Additional city roadways are located in Bronson, Cedar Key, Chiefland, Fanning Springs, Inglis, Otter Creek, Williston, and Yankee Town, totaling 146.06 miles of city roadway miles.

The county's road department coordinates utility placement and relocation and maintains county roads dedicated to the public by grading, paving, re-surfacing, signing, mowing, and maintaining trees

within the county right-of-way. The Levy County safety study assesses corridors and intersections through spot analysis and the Highway Capacity Manual Roadway Safety Management procedure. In the next chapters of this report, a network analysis of Levy County local roadways is presented along with crash data, stakeholders, selected sites, curve improvement program and intersection improvement program.

The Levy County road network is summarized in the following tables and figures.

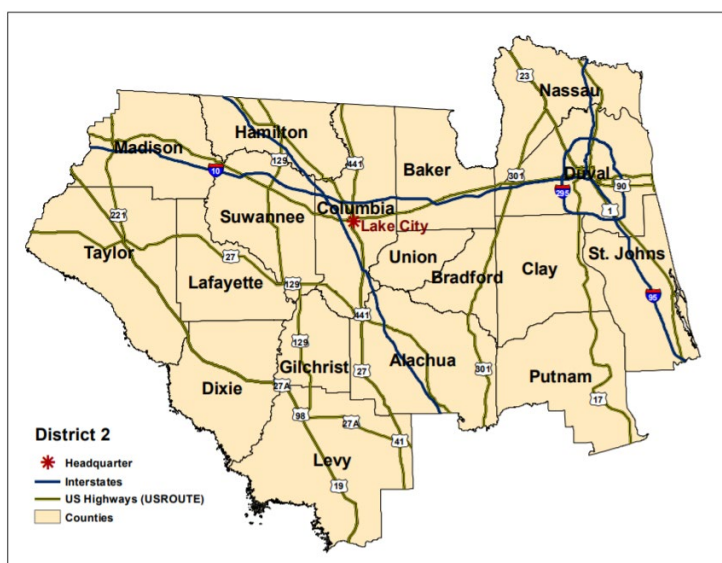


Figure 1. FDOT District 2 map. Headquarters in Lake City.

Table 1. Levy County state highway DVMT

Levy County State Highway System Daily Vehicle Miles Traveled				
2012	2013	2014	2015	2016
2,434,700	2,488,100	2,640,400	2,554,300	2,612,100

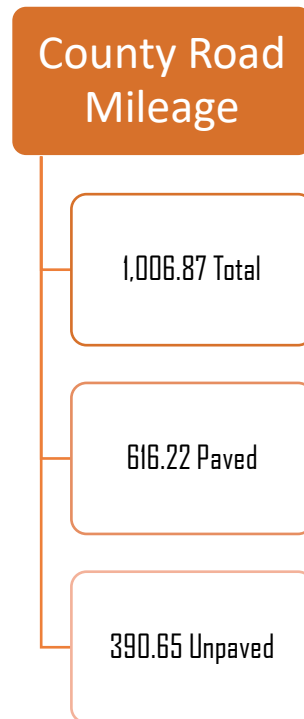


Figure 2. County roadway systems in Levy County

Table 2. Levy County road mileage by jurisdiction

County Road Mileage (thousands of miles)		
Paved	Unpaved	Total
616.22	390.65	1,006.87

City Road Mileage (thousands of miles)			
City	Paved	Unpaved	Total
Bronson	9.06	2.5	11.56
Cedar Keys	9.09	1.11	10.2
Chiefland	18.23	4.35	22.58
Fanning Springs	17.6	0	17.6
Inglis	30	10	40
Otter Creek	3.4	2.8	6.2
Williston	26.1	0.5	26.6
Yankeetown	8.1	2.9	11
	121.88	24.18	146.06

Table 3. Roads on SHS – Totals

County	Centerline Miles (thousands of miles)	Lane Miles (thousands of miles)	Daily Vehicle Miles Traveled (thousands of miles)
Levy	182.4	515	865.3

Table 4. Roads on SHS – centerline miles

County	Rural				Urban				Total			
	Inter-state	Toll	Other	Total	Inter-state	Toll	Other	Total	Inter-state	Toll	Other	Total
Levy	0	0	182.4	182.4	0	0	0	0	0	0	182.4	182.4

Table 5. Daily vehicle miles traveled (DVMT)

Levy	Rural				Urban				Total			
	0	0	865.3	865.3	0	0	0	0	0	0	865.3	865.3

Table 6. Functional classification – centerline miles

County	Rural				Urban				Total		
	Principal Arterial	Minor Arterial	Major Collector	Minor Collector	Principal Arterial	Minor Arterial	Total Collector	Principal Arterial	Minor Arterial	Total Collector	Total
Levy	93.9	75.1	13.4	0	0	0	0	93.9	75.1	13.4	182.4

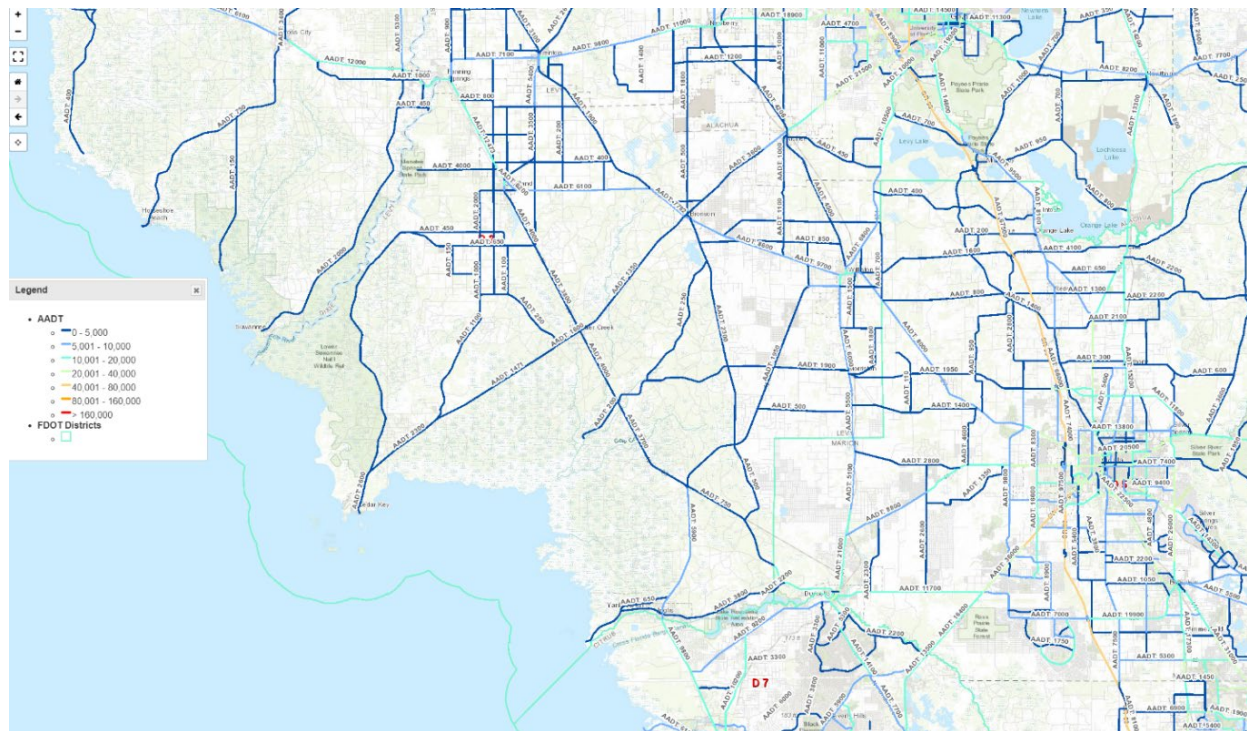


Figure 3. Levy County road network with AADT

Vision and Goals

Levy County Safety Plan Vision is to serve the residents of the county and the visitors passing through the county with the best and safest roadway infrastructure. Levy county strives to support the vision of the Florida SHSP and FTP which is to improve road safety by reducing fatal and serious injuries through roadway and intersection improvements. The County will need to formally establish goals to meet the County Vision within a specific time period. This would include targeting a specific crash type which is overrepresented. The below sections on crash data will help the stakeholders in determining the areas of specific concern within Levy county. Based on the focus areas and the locations, the decision makers can then determine what countermeasures to recommend for each location and an implementation plan and identify funding sources.

Safety Partners and Stakeholders

Florida Department of Transportation (FDOT) has been proactive in establishing safety partners and stakeholders throughout the state through Community Traffic Safety Teams (CTSTs). CTSTs are composed of roadway safety advocates, members from city, county, state, private industry representatives and local citizens. CTSTs are instrumental in identifying local traffic safety problems and finding a solution using the 4 E's – Engineering, Enforcement, Education, and Emergency Management. Each FDOT District has a full-time CTST Coordinator who works closely with the CTSTs in their geographic area. In addition, the State Safety Office has a Traffic Safety Program Manager who serves as a Central Office resource to the District Coordinators. It is recommend that Levy county roadway department staff along with the county officials actively participate in the CTST meetings.

Data Sources and Evaluation Tools

In order to identify the emphasis area for the county, a comprehensive data analysis must be performed. Three main data sources were used to analyze and identify the critical issues of safety in Levy County roadways:

- Signal Four Analytics
- Traffic and roadway characteristics data
- FDOT crash data summaries

Signal Four Analytics Data Summary

Levy County fatal and incapacitating injury crashes on local roads that occurred during the five-year period between January 1, 2013, and December 31, 2017 were reviewed. There were 132 fatal and incapacitating injury crashes during the five-year period. Figure 2 shows the aggregated distribution of crashes in the network. Most of these crashes occurred on arterials around the cities of Chiefland, Williston, and Inglis.

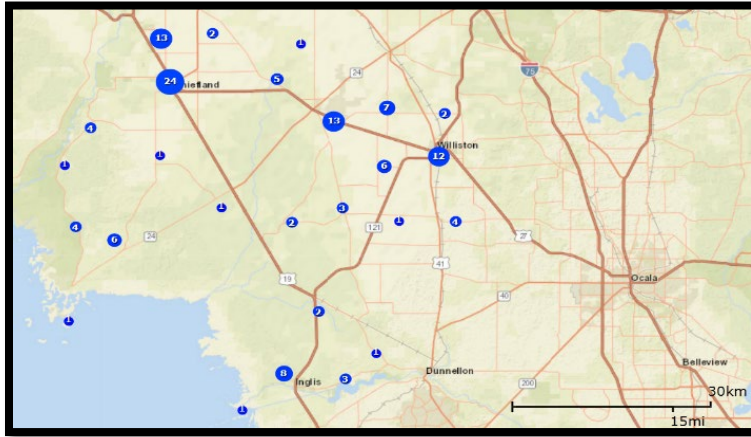


Figure 2. Levy County fatal and incapacitating injury crashes 2013-2017, aggregated

Figure 3 shows the location of fatal and incapacitating injury crashes in Levy County. Among the 132 mentioned crashes, 38 of them were fatal crashes.

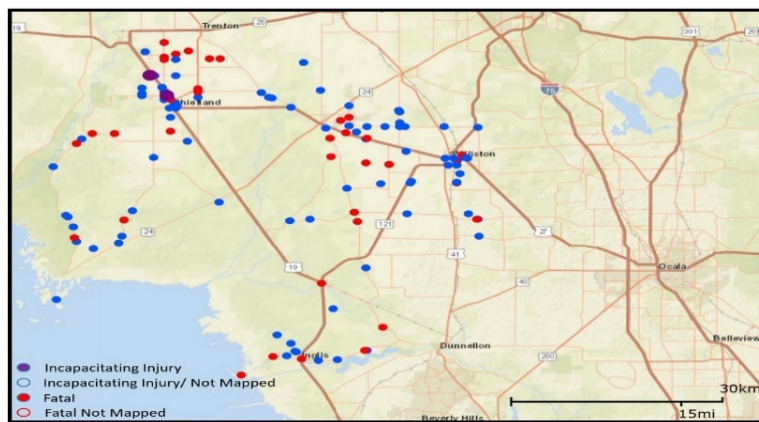


Figure 3. Levy County fatal and incapacitating injury crashes, 2013-2017, disaggregated

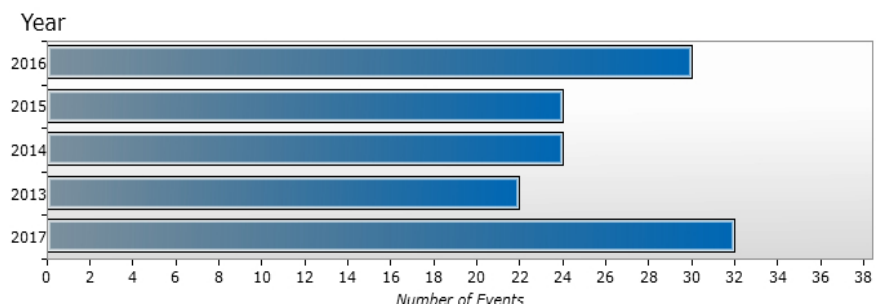


Figure 4 Yearly distribution of fatal and incapacitating injury crashes in Levy County, 2013-2017

The yearly distribution of fatal and incapacitating injury crashes between these years is shown in Figure

4. The number of the severe crashes in 2017 was 13.25 % more than the number in 2013. The increasing trend of the three-year average of severe crashes also is shown in Figure 6.

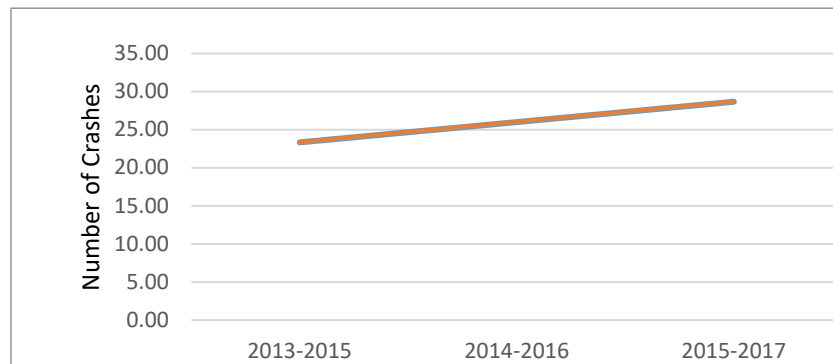


Figure 6. Three-year-average of fatal and incapacitating injury crashes

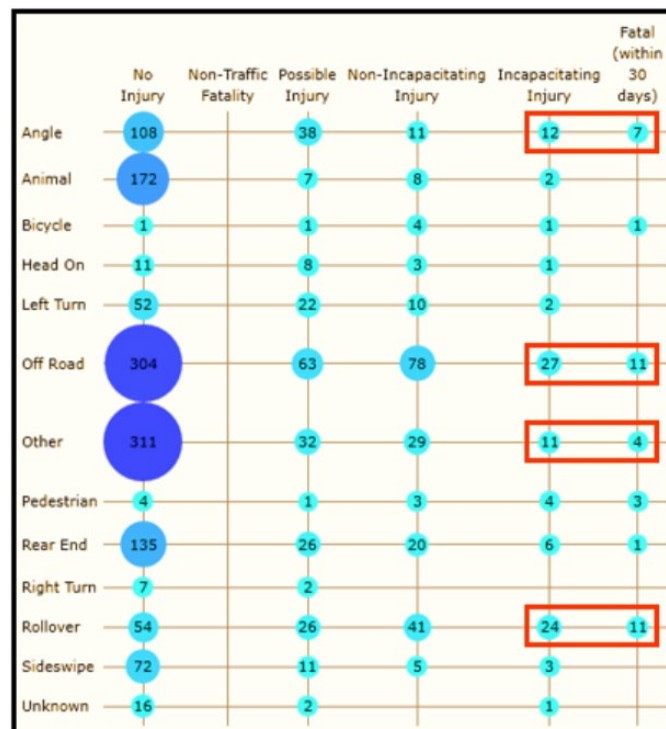


Figure 5 Levy County crash severity versus crash type on local road, 2013-2017

Figure 6 shows the crash type distribution versus the severity of crashes. As shown, the top three fatal and incapacitating injury crash types were off-road (27+11=38), rollover (35), and angle (19).

Figure 7 shows the Levy County crash tree for local and county roads between 2013 and 2017. Among the 1,587 crashes, 44% were lane departure, 24% were intersection and driveway-related crashes, 1% were pedestrian and bike crashes, and the remaining 31% were other crash type. Among the 26 small rural counties within Florida, Levy ranks sixth highest in terms of fatal and serious injury crashes.

Please refer to details on PRank and SRank in the previous Levy and Jackson report¹. The SRank of Levy County is 13, showing that this county is an average county in terms of severe crashes. The number of lane departure crashes is almost twice that of intersection and driveway-related crashes (703 vs. 378). However, the PRanks are 15 and 9 for lane departure and intersection-related crashes, respectively. As a result, the relative proportion of intersection-related crashes in Levy County, in comparison to other counties, is higher. As mentioned, the PRank of lane departure crashes is 15; 79.5% of these crashes occurred on tangent sections of the roads. The curve PRank for lane departure crashes is 23, showing that the curve-related lane departures are low in comparison to other counties.

The PRank of curve and tangent crashes for Levy County are 24 and 4, respectively. This shows an overrepresentation of crashes occurring on tangent sections of the network. As shown in Figure 8, there are 838 daylight and 749 non-daylight crashes in Levy County, which may give a conclusion of no overrepresentation. However, comparing Levy with other counties shows a high overrepresentation of non-daylight crashes (PRank=1).

These conclusions may be drawn from the crash tree:

- slight overrepresentation of intersection and driveway crashes
- low relative observation of curve-related crashes when compared with other small counties
- high overrepresentation of non-daylight crashes (PRank=1).

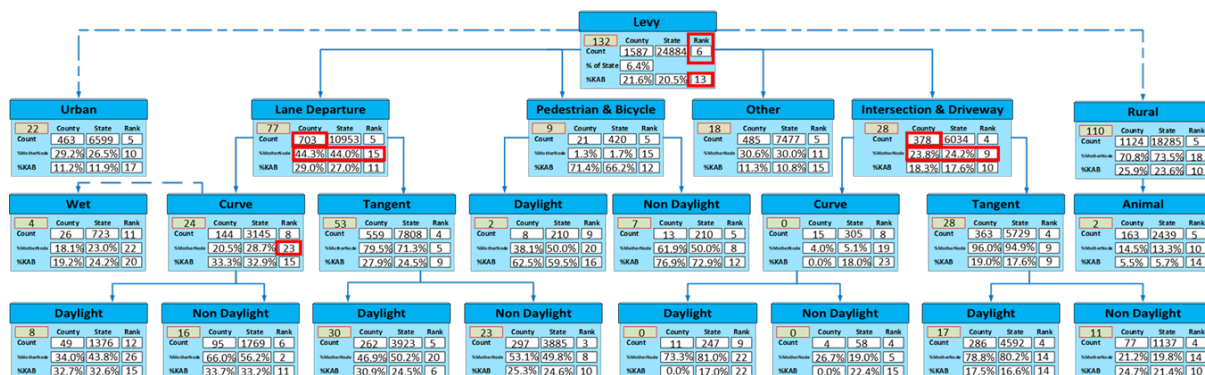
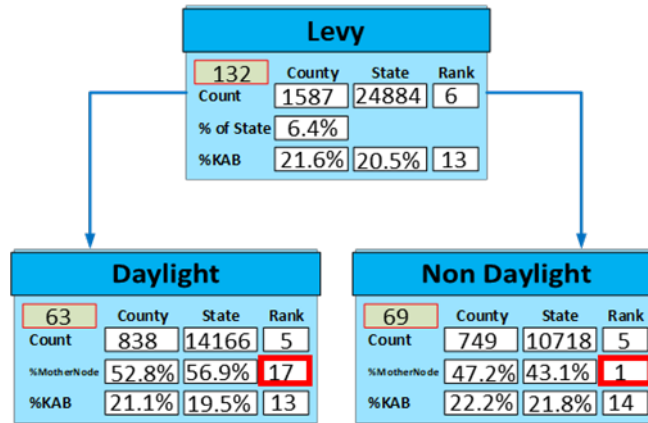


Figure 7. Crash tree for Levy County

Figure 8. Crash tree showing the disproportionately high non-daylight crash

¹ TSC reports available at <https://techtransfer.ce.ufl.edu/2020/08/19/tsc-completed-research-and-reports/>



3.1.1 All Crashes

Figure 9 shows that the crashes distributed in Levy county jurisdiction. Crashes are sporadically distributed with certain concentrations along the city of Chiefland and Williston.

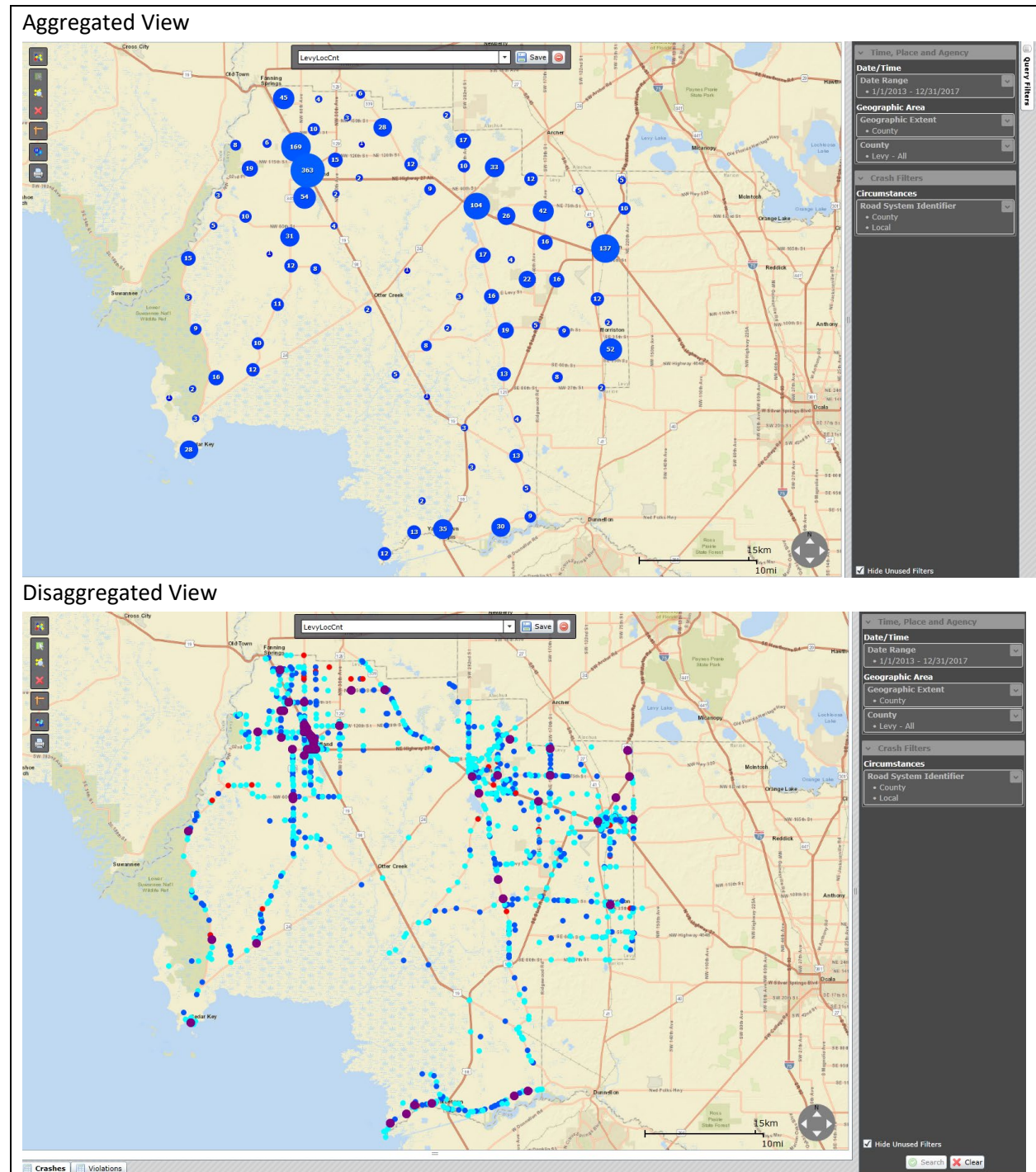


Figure 9. Levy County crashes on local and county roads

3.1.2 KA crashes

Figure 10 shows all 132 KA crashes on local and county roads.

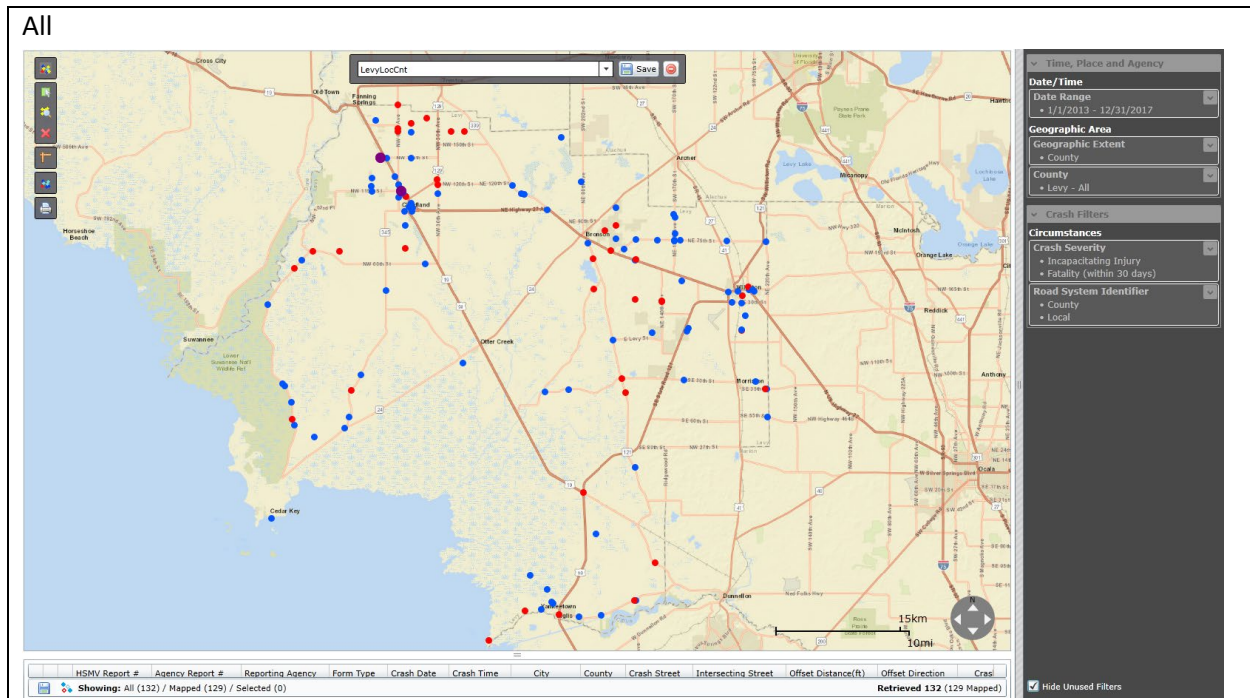


Figure 10. Levy County KA crashes on local and county roads

3.1.3 Non-daylight

Figure 11 shows all 132 KA crashes on local and county roads.

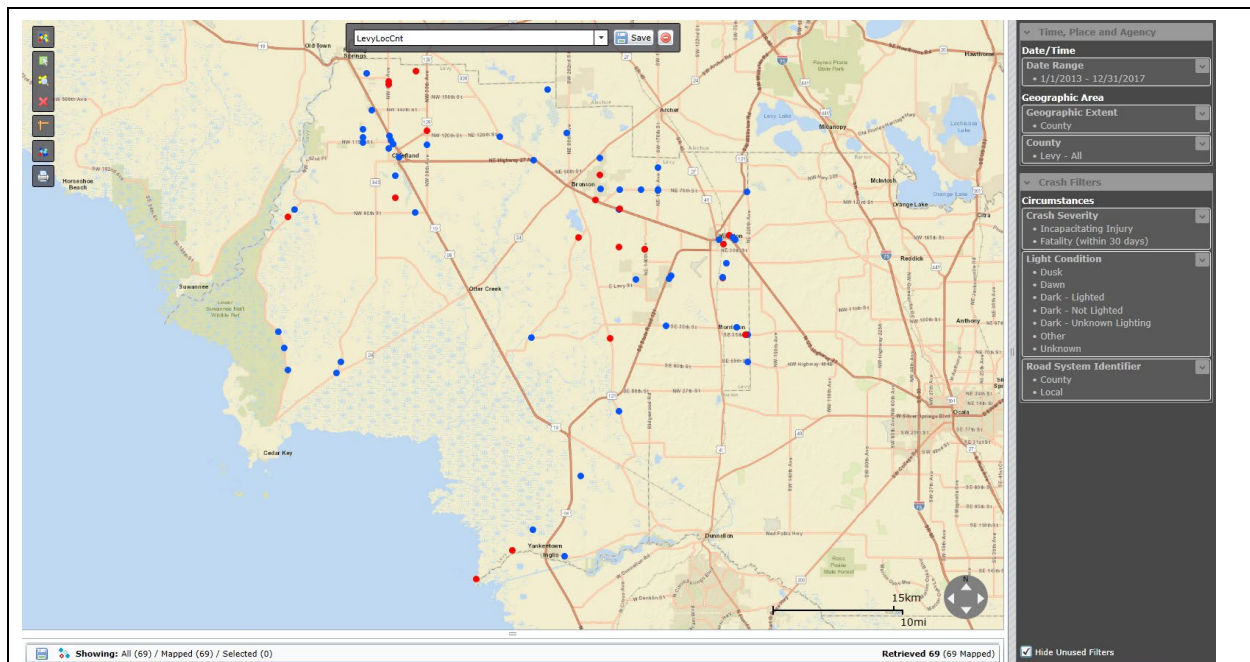


Figure 11. Levy County KA crashes on local and county roads

3.1.4 Intersection and driveway related crashes

Figure 12 shows the intersection and driveway-related crashes. Most of these crashes occurred in Chiefland, Williston, and Branson cities.

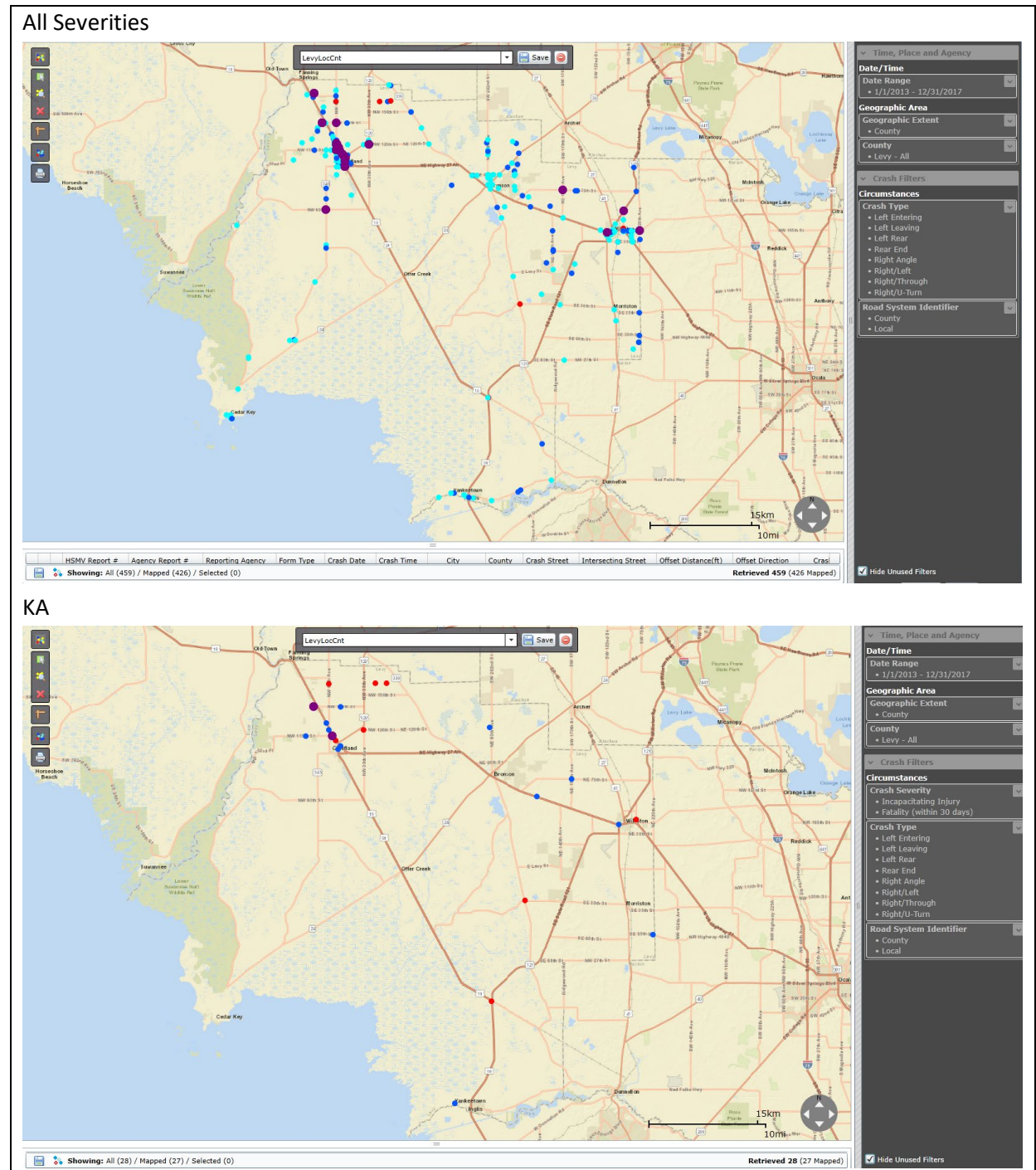


Figure 12. Levy County intersection and driveway-related crashes on local and county roads

3.1.5 Lane departure crashes

Figure 13 shows the lane departure crashes which are scattered all over the network.

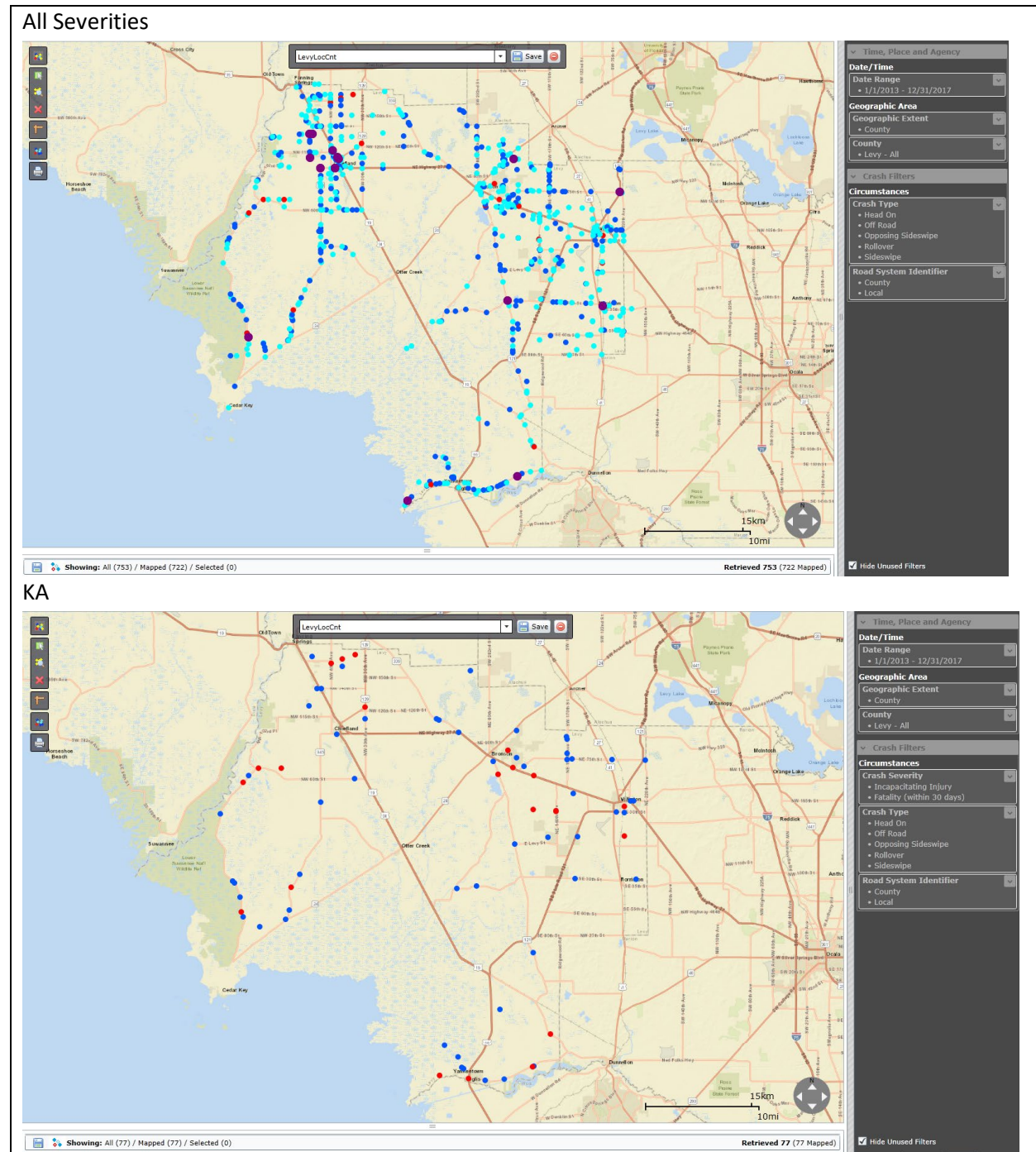


Figure 13. Levy County lane departure crashes on local and county roads

Emphasis Areas

Of the emphasis areas from the Florida Strategic Highway Safety Plan, the following areas are most relevant to this county:

- Lane departure crashes
- Night time crashes

Safety Evaluation and Implementation

TSC has identified and developed selected safety projects for the local roads. However, for other roads in FDOT jurisdiction, the county and cities will need to prioritize high crash locations and segments based on inputs from stakeholders. The county will then work with the District Safety Engineer and District Safety Program Engineer to prioritize the projects that will be submitted to the Central Office for programming. The county can also leverage some of the SCRAP and SCOP funding to implement low cost countermeasures.

Next Steps

This document provides a general overview of the county, the stakeholders, and safety trends of Levy County. The emphasis areas will need to be further explored, and goals will need to be established. The stakeholder group will need to identify a champion who will work on updating this document to incorporate the county-specific goals and implementation strategies. This is a living document that the stakeholders and higher officials in the county administration will need to formally adopt and update on a regular basis.