

DRAFT

**Lockwood Ridge Corridor/
DeSoto Acres Analysis**



Transportation Planning
1001 Sarasota Center Boulevard
Sarasota, FL 34240

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Background

The owners of the Rolling Green Golf Course submitted a petition to Sarasota County to rezone their parcel to Residential Single Family (RSF-2) in order to develop the land for 487 new single-family homes. Citizens within the community were concerned that this development would create additional traffic congestion to Tuttle Avenue. Tuttle Avenue is currently operating at Level of Service (LOS) F from University Parkway to Dr. Martin Luther King, Jr. Way (Dr. MLK, Jr. Way). During the board hearing about the Rolling Green Golf Course development several residents within the DeSoto Acres subdivision and The Winds of Saint Armands Mobile Home Park presented further concerns about traffic backup from turning vehicles along Tuttle Avenue, cut through traffic in their neighborhood, speeding vehicles, and vehicles that ignore stop signs.

A study was then conducted to investigate possible improvements to the performance of the roadway network within these communities. Several aspects were examined as part of this study that included crash data analysis, speeding, sidewalk improvements and roads with restricted access. Short-term, mid-term and long-term transportation measures were considered for implementation within the community.

Study Area Roadway Network

The study area is bordered by University Parkway to the north, Dr. Martin Luther King, Jr. Way (Dr. MLK, Jr. Way) to the south, US 301 (North Washington Boulevard) to the west, and Lockwood Ridge Road to the east. **Figure 1** is an aerial map showing the study area identified within a yellow rectangle. Communities and schools within and nearby the study area are shown in **Figure 2**. DeSoto Acres is a residential subdivision along the north half of the study area and is highlighted in blue (**Figure 2**). The DeSoto Acres neighborhood is the largest community within the study area and covers over 850 acres.

Figure 1 – Study Area

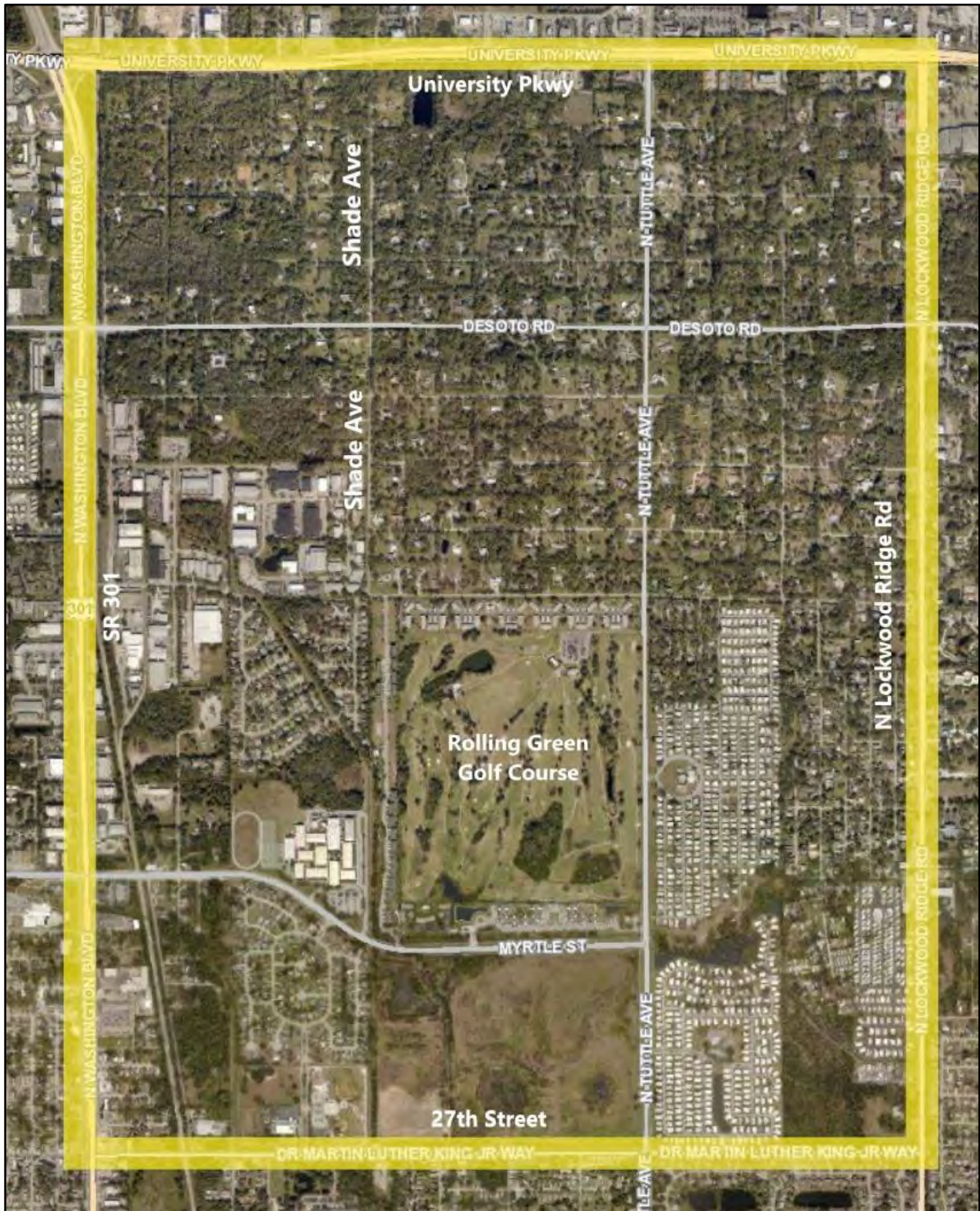
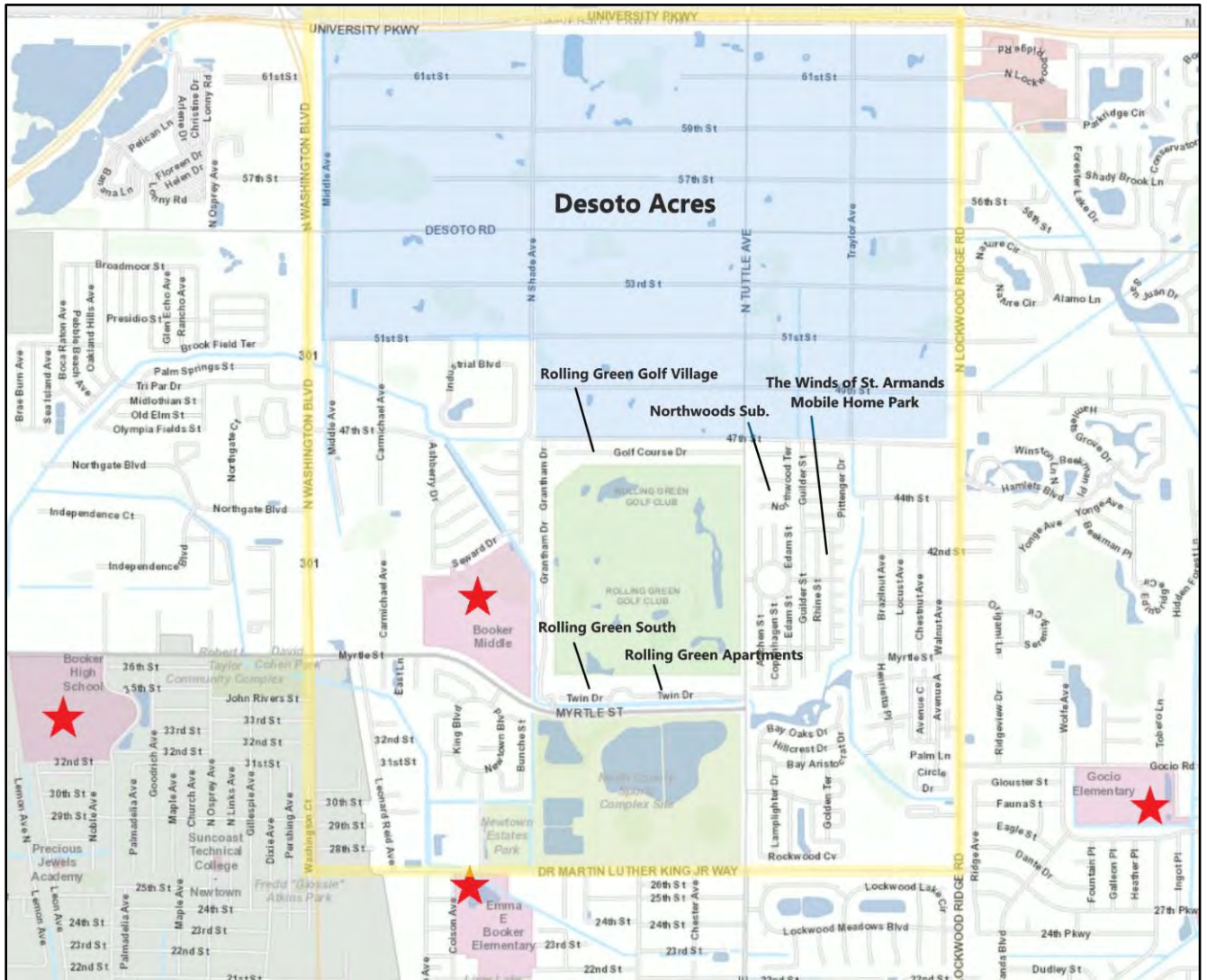


Figure 2 – Communities and Schools



Crash Analysis

Data from traffic crash records for the years 2014 to 2018 was examined within the study area. This data was sorted into intersections and road segments for evaluation. Intersection data included crash data within 200 feet of road intersections. Segment data included the crash data for road sections between the limits of the intersection data.

Crash data included the crash type, severity, lighting condition, and roadway surface condition. Total crashes, types of crashes, and other factors were evaluated for possible patterns or common contributors to the automobile crashes. **Figure 3** is a graphical view showing the locations of 10 or more total crashes per intersection and road segment for the five-year study period. **Table 1** is

a subset of the intersection crash data showing the higher number of incidents such as rear end, angle, and sideswipe collisions.

Figure 3 – Intersection and Road Segment Crash Totals

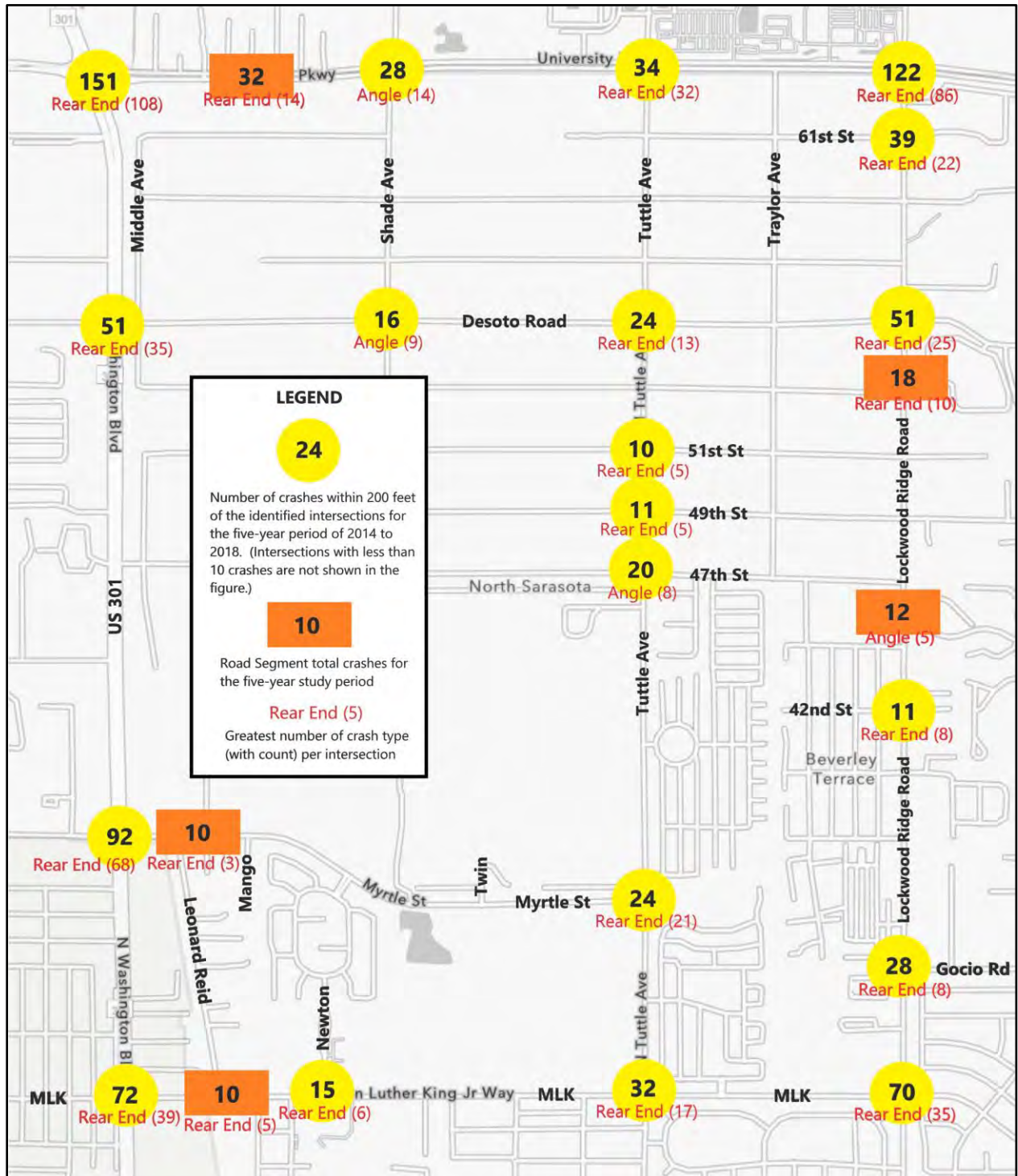


Table 1 – Intersection Crash Data

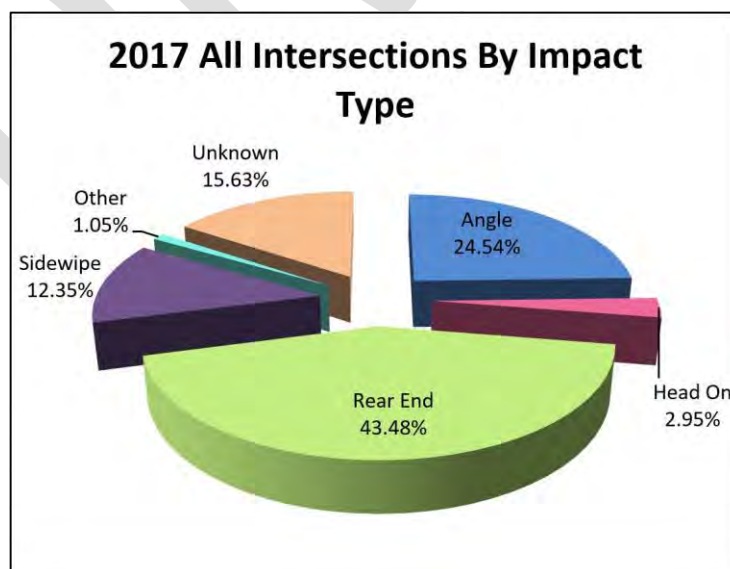
Intersection		Number of Crashes per Year					Crash Type		Lighting Condition		Surface Condition	
		2018	2017	2016	2015	2014	Angle	Rear End	Dark-Lighted	Daylight	Dry	Wet
University Pkwy	US 301	31	29	38	29	24	5	108	28	118	128	22
University Pkwy	Shade Ave	5	8	4	9	2	14	4	0	23	25	3
University Pkwy	Tuttle Ave	6	9	5	7	7	0	32	1	28	31	3
University Pkwy	Traylor Ave	1	1	3	0	0	0	2	0	3	5	0
University Pkwy	Lockwood Ridge Rd	28	28	30	19	17	4	86	18	90	110	10
Desoto Road	US 301	8	9	12	11	11	3	35	9	38	47	4
Desoto Road	Middle Ave	0	0	0	0	0	0	0	0	0	0	0
Desoto Road	Shade Ave	4	4	4	2	2	9	3	0	13	16	0
Desoto Road	Tuttle Ave	5	4	2	5	8	4	13	4	18	23	1
Desoto Road	Traylor Ave	0	0	3	1	0	2	0	0	2	4	0
Desoto Road	Lockwood Ridge Rd	12	12	15	9	3	9	25	12	33	46	3
Myrtle Street	US 301	26	22	17	12	15	9	68	25	61	79	11
Myrtle Street	Mango Ave	0	0	0	1	0	0	0	0	0	1	0
Myrtle Street	Newtown Blvd	0	0	0	2	0	0	0	1	1	2	0
Myrtle Street	Twin Dr	0	0	0	1	0	0	0	0	0	1	0
Myrtle Street	Tuttle Ave	3	8	2	6	5	1	21	4	18	20	4
MLK	US 301	22	19	8	10	13	8	39	21	44	59	9
MLK	Manago Ave	2	2	1	1	1	0	2	1	5	6	0
MLK	Colson Ave	2	0	1	0	4	1	1	1	5	6	1
MLK	Newtown	5	4	2	2	2	1	6	3	6	14	1
MLK	Booker Ave	0	1	1	0	0	1	0	1	1	2	0
MLK	Euclid	0	1	2	1	1	1	0	1	2	4	1
MLK	Chester	0	1	0	0	0	0	1	0	1	1	0
MLK	Tuttle Ave	10	2	11	7	2	4	17	3	22	26	6
MLK	Lockwood Ridge Rd	15	16	18	13	8	18	35	15	46	65	5
Lockwood Ridge Rd	61st St	10	11	5	7	6	5	22	3	34	35	4
Lockwood Ridge Rd	59th St	0	6	3	0	0	3	4	2	7	9	0
Lockwood Ridge Rd	57th St	0	0	0	1	0	0	0	0	1	1	0
Lockwood Ridge Rd	56th St	1	1	0	0	0	0	0	0	0	2	0
Lockwood Ridge Rd	53rd St	3	1	1	1	2	0	5	0	8	7	1
Lockwood Ridge Rd	51st St	1	2	2	2	1	2	5	3	3	7	1
Lockwood Ridge Rd	49th St	2	0	3	1	3	3	3	0	6	7	2
Lockwood Ridge Rd	47th St	0	1	1	2	3	2	2	2	4	5	1
Lockwood Ridge Rd	44th St	1	1	0	0	1	1	1	1	2	3	0
Lockwood Ridge Rd	42nd St	2	1	2	2	4	1	8	0	10	8	3
Lockwood Ridge Rd	40th St	2	1	0	1	0	0	2	0	4	4	0
Lockwood Ridge Rd	Gocio Rd	5	6	5	6	6	4	14	3	24	27	1
Tuttle Ave	61st St	0	0	2	1	1	0	3	0	3	4	0
Tuttle Ave	59th St	1	2	1	0	1	3	1	0	4	5	0
Tuttle Ave	57th St	1	0	2	0	0	1	2	0	2	3	0
Tuttle Ave	53rd St	1	2	1	1	0	0	3	0	4	4	1
Tuttle Ave	51st St	3	1	4	1	1	4	5	0	9	10	0
Tuttle Ave	49th St	6	2	2	1	0	1	5	1	7	8	3
Tuttle Ave	47th St	4	5	2	8	1	8	5	2	14	20	0
Tuttle Ave	Amsterdam Ave	0	1	1	0	0	0	1	0	1	1	1
Tuttle Ave	Windmill Blvd	0	0	1	1	0	0	0	0	2	2	0
Traylor Ave	61st St	1	0	0	0	0	0	0	0	1	1	0
Traylor Ave	59th St	1	0	0	0	0	0	0	0	0	1	0
Traylor Ave	49th St	0	0	1	0	0	0	0	0	1	1	0
Traylor Ave	47th St	0	0	1	0	0	1	0	0	1	1	0
47th St	Grantham Dr	0	0	0	0	1	0	1	0	1	1	0
47th St	Northwood Terrace	0	0	1	0	0	0	0	0	1	1	0
47th St	Brazilmut Ave	0	0	0	0	0	0	0	0	0	0	0
Shade Ave	61th St	0	0	0	0	0	0	0	0	0	0	0
Shade Ave	59th St	0	0	0	0	0	0	0	0	0	0	0
Shade Ave	53th St	0	0	0	0	0	0	0	0	0	0	0
Shade Ave	51th St	0	0	0	0	0	0	0	0	0	0	0
Shade Ave	49th St	0	0	0	0	0	0	0	0	0	0	0
Shade Ave	47th St	0	0	0	0	0	0	0	0	0	0	0
Shade Ave	Seward Dr	0	0	1	0	0	1	0	0	1	0	1

Intersection and Road Segment Crash Data

The greatest number of crash types for the study intersections and road segments was rear end collisions. The second and third highest crashes were caused by angle and sideswipe crashes, respectively. The main causes of these crashes were that the driver operated the motor vehicle in a careless or negligent manner, failed to yield the right-of-way, followed too closely, or ran the red light. The highest percentage of the total crashes occurred during daylight and dry surface conditions. There were no severe injuries in most of the crashes. Three (3) fatal crashes occurred over the five-year study period and were caused by speeding, drunk driving, and failure to keep in the proper lane.

Sarasota County publishes an annual Crash Summary Report that provides information about crashes throughout the county for each calendar year. The report includes the top 20 signalized intersections with the highest crash rates, a breakdown of crash types, and driver contributing circumstances. In 2017 the top crash rates for signalized intersections ranged from 1.37 to 2.37 per Million Vehicles Entering (MVE). The Lockwood Ridge Road/ Dr. MLK, Jr. Way intersection ranked number 11 of the top 20 signalized intersections in the 2017 report with a crash rate of 1.51 MVE. The most frequent cause of crashes was due to drivers operating their motor vehicle in a careless or negligent manner. This was followed by drivers who failed to yield the right-of-way. Most of the crashes occurred when the road surface was dry and during daylight. The greatest number of impacts was from rear end collisions and was followed by angle and sideswipe crashes. The pie chart below is taken from the Sarasota County 2017 Crash Summary Report and shows the distribution of impact type for all intersections.

Figure 4 – Impact Type for all Intersections



The crash rates for intersections within the Lockwood Ridge Corridor/DeSoto Acres study area ranged from 0.64 to 0.97 MVE except for the Lockwood Ridge Road and Dr. MLK, Jr. Way intersection which was 1.28 MVE for the five-year study period. These crash rates are less than those of the top 20 signalized intersections identified in the Sarasota County 2017 Crash Summary Report. The types of crashes, cause of crashes, and road and lighting conditions in the Lockwood Ridge Corridor/DeSoto Acres study area are consistent with those crashes reported throughout Sarasota County.

Speeding Analysis

The 85th Percentile Speeds were considered for speeding analysis within the study area. This is the expected speed that 85 percent of the drivers will drive at or below under free-flowing conditions. **Table 2** lists the posted speeds and 85th percentile speeds for the study roadways. **Figure 5** is a graphical view showing the posted speed limits and the upper 85th percentile speed of the road segments. The upper 85th Percentile Speeds were found to be 8 to 19 mph above the posted speed limits along the roadway network. These speeds were slightly lower than the upper 85th Percentile Speeds measured throughout Sarasota County which was 15 to 25 mph above the posted speed limits.

Table 2 – Lockwood Ridge Corridor 85th Percentile Speed

**SARASOTA COUNTY
DESOTO ACRES - 85th Percentile Speed**

ID #	Road Segments			Segment Attributes										
	Roadway Name	Roadway Limits		Jurisdiction	# of Lanes	Future # of Lanes	Sgmnt Length	Analysis Sgmnt Length	Posted Speed	85th Percentile Speed				
										NB	SB	EB	WB	Date
9	27th Street/Dr MLK Jr Way	U.S. 301	Newtown Blvd	County	2	2	0.40	0.40	35			54	50	1/23/2019
9.5	27th Street/Dr MLK Jr Way	Newtown Blvd	Tuttle	County	2	2	0.60	0.60	35			49	48	1/23/2019
10	27th Street/Dr MLK Jr Way	Tuttle	Lockwood Ridge	County	2	2	0.50	0.50	35			40	43	1/23/2019
87	Desoto Road	U.S. 301	Shade	County	2	2	0.50	1.00	35			48	52	1/11/2019
88	Desoto Road	Shade	Tuttle	County	2	2	0.50	1.00	35			49	51	1/11/2019
89	Desoto Road	Tuttle	Lockwood Ridge	County	2	2	0.50	0.50	35			53	46	1/11/2019
143	Lockwood Ridge Road	University	61st	County	4	4	0.13	0.13	45	39	39			2/6/2019
143.5	Lockwood Ridge Road	61st	Desoto	County	4	4	0.37	0.37	45	50	54			2/6/2019
144	Lockwood Ridge Road	Desoto	Gocio	County	4	4	1.25	1.25	45	55	59			2/6/2019
145	Lockwood Ridge Road	Gocio	27th/MLK	County	4	4	0.25	0.25	45	51	55			2/6/2019
1045	Myrtle Street	U.S. 301	Tuttle Av	County	2	4	1.07	1.07	35			41	49	1/11/2019
227	Tuttle Avenue	University Pkwy	Desoto	County	2	4	0.50	0.50	35	45	39			1/23/2019
228	Tuttle Avenue	Desoto	Myrtle	County	2	4	1.10	1.10	35	50	49			1/23/2019
228.5	Tuttle Avenue	Myrtle	27th	County	2	4	0.40	0.40	35	46	48			1/23/2019
240	University Parkway	U.S. 301	Tuttle Av	County	6	6	1.08	1.08	50			67	67	3/6/2018
240.5	University Parkway	Tuttle Av	Lockwood Ridge	County	6	6	0.47	0.47	50			58	57	3/6/2019
243	U.S. 301 (SR 683)*	University	Desoto	FDOT	6	6	0.51	0.51	50					
244	U.S. 301 (SR 683)*	Desoto	47th	FDOT	6	6	0.45	0.45	45					
244.5	U.S. 301 (SR 683)*	47th	Northgate	FDOT	6	6	0.17	0.17	45					
244.6	U.S. 301 (SR 683)*	Northgate	Myrtle	FDOT	6	6	0.38	0.38	45					
245	U.S. 301 (SR 683)*	Myrtle	27th	FDOT/Sar	6	6	0.50	0.50	45					

*FDOT has not provided 85th Percentile data for this Major Arterial.

Figure 5 – 85th Percentile Speed



Sidewalks

The DeSoto Area Sidewalk project includes new sidewalks to increase safety for school children, pedestrians and bicyclists. The project involves the construction of 8-foot wide sidewalks along one side of Tuttle Avenue and DeSoto Road. The design of these sidewalks is scheduled for Fiscal Year 2021 with construction anticipated in Fiscal Year 2023. **Table 3** and **Figure 6** identify the locations of the sidewalk improvements along the roadway network within the study area.

A survey conducted by Neighborhood Services in June and September 2019 had a 50 percent response rate with 56.25 percent of the respondents in favor of sidewalks in the area. Some residents proposed a sidewalk segment along Shade Avenue from DeSoto Road to University Parkway, however, this segment is not part of the priority network nor has a formal request been made for this segment of sidewalk. Following the residents’ proposal, Neighborhood Services conducted a survey along Shade Avenue from DeSoto Road to University Parkway. There was a response rate of 29 percent (5 out of 17 responding) with two in support of sidewalks and three not in support of sidewalks. A sidewalk safety investigation will be needed to determine which sidewalk segments may be added or removed from the construction schedule.

Table 3 – Sidewalk Improvements

Sidewalks West of Lockwood Ridge Road			
Roadway	Limits	Proposed Side	Length (mile)
Tuttle Avenue	Myrtle Street to University Parkway	east side	1.58
DeSoto Road	U.S. 301 to Lockwood Ridge Road	south side	1.54

Figure 6 – Location of Sidewalk Improvements



Tuttle Avenue

Tuttle Avenue is severely congested from University Parkway to Dr. Martin Luther King, Jr. Way (Dr. MLK, Jr. Way). Tuttle Avenue is currently a two-lane undivided minor arterial that needs to be widened to four lanes in order to achieve and maintain the minimum adopted level of service. The Future Thoroughfare Plan designates Tuttle Avenue as a four-lane minor arterial from University Parkway to Dr. MLK, Jr. Way. There are reported traffic backups along Tuttle Avenue from turning vehicles during the weekday peak hours of traffic. Once the road is widened to four lanes the congestion from turning traffic will be relieved.

Prior to or concurrent with the site development of residential homes at the Rolling Green Golf Course the owner shall construct southbound to westbound right-turn lanes and northbound to westbound left-turn lanes at the intersections of the access driveways on Tuttle Avenue. These turn lanes are stipulations in the Rolling Green development order detailed in Ordinance No. 2019-007. The turn lanes will help to relieve traffic along Tuttle Avenue from vehicles entering the Rolling Green Golf Course development.

Crash reports were reviewed to access the number of traffic crashes specifically due to vehicles passing each other on Tuttle Avenue. One crash occurred when a vehicle traveling north on Tuttle Avenue was stopped to make a left turn onto 61st Street. Approximately four vehicles were stopped or slowed behind this vehicle. A driver on a motorcycle passed these vehicles on the left and stuck the front fender of the turning vehicle as it began to make a left turn. Other passing crashes were found to be a result of a vehicle in front slowing to make a right or left turn and the vehicle behind attempted to pass when contact was made.

Crashes on Tuttle Avenue not due to passing include:

- Running a stop sign
- Running a red light
- Failure to stop for stopped traffic ahead
- Failure to yield to other vehicles
- Turning into traffic
- Driving under the influence
- Fatigued driving and running off the road

Roundabouts

Modern roundabouts reduce the likelihood and severity of right angle and head-on collisions.

They also reduce traffic speeds but should not be viewed as a traffic calming device.

Roundabouts were considered at three roadway intersections within the study area that included Tuttle Avenue and 47th Street, Tuttle Avenue and DeSoto Road, and DeSoto Road and Shade Avenue. Traffic simulation software was utilized to model the study area roadway network and observe the impact of roundabouts at these intersections.

The Florida Standard Urban Transportation Modeling Structure (FSUTMS) was used to model roundabouts within the study area. Data was used to analyze the change in daily traffic volumes passing through Tuttle Avenue and DeSoto Road as roundabouts were installed in the roadway network. A reduction in daily traffic from two to 10 percent was observed passing through Tuttle Avenue and DeSoto Road, and an increase in daily traffic from one to four percent was observed along Lockwood Ridge Road, Dr. MLK, Jr. Way and Myrtle Street as roundabouts were incorporated in the study area. Thus, it was observed in the FSUTMS models that a small percentage of the daily traffic avoided the new roundabouts and rerouted onto the adjacent roadway network.

Trafficware's *Synchro* (v10) is another traffic simulation software application that was used to model and examine the effect of roundabouts within the study area. The model showed no improvement to the Level of Service (LOS) at DeSoto Road and Shade Avenue when a roundabout replaced the two-way stop intersection. Likewise, there was no improvement to the intersection LOS at Tuttle Avenue and 47th Street when the two-way stop was replaced with a roundabout. The intersection LOS remained the same at Tuttle Avenue and DeSoto Road when a roundabout replaced the signaled intersection. There was, however, an improvement of 11 percent in the intersection capacity utilization when a roundabout was installed at this location.

Cut Through Traffic

Residents in the community voiced their concern about cut through traffic in their neighborhood. It was suspected that some of this traffic may be originating at the intersection of University Parkway and Shade Avenue where a signalized intersection was recently installed. A peak hour turning movement count was conducted at this intersection on April 11, 2019, that counted 32 vehicles turning into the DeSoto Acres subdivision at Shade Avenue during the PM peak hour of study. This represents about one percent of the daily traffic volume counted on the nearest section of DeSoto Road and less than one percent of the daily traffic volume counted on the nearest section of Tuttle Avenue. Peak hour volumes equal to or less than 10 percent of the daily traffic are considered normal traffic while the volume above 10 percent is considered cut through traffic. Since the 32 vehicles turning into Shade Avenue during the PM peak hour was less than 10 percent of the daily traffic volume on DeSoto Road and Tuttle Avenue, these vehicles are not considered to be cut through traffic.

Additional analysis is needed to determine the existence of cut through traffic in the DeSoto Acres area. One method to determine the existence of cut through traffic is to use a Location-Based Services (LBS) consultant. The Sarasota/Manatee Metropolitan Planning Organization (MPO) has a subscription with StreetLight Data, Inc. to provide location-based data for transportation analytics and modeling. The StreetLight InSight® platform sources information from mobile device applications to determine what share of traffic on a road is local and what share is cut through. This method will provide a real-time look at about 28 percent of the study area traffic and compare it to measured AADT on these roadways. Coordination with the MPO will be needed to obtain the transportation information from StreetLight Data for the Origin-Destination (OD) and cut through traffic.

Traffic Safety

There are five E's to traffic safety: Engineering, Enforcement, Education, Encouragement and Evaluation. The most effective traffic abatement plans encompass all components and requires a team effort. Engineering measures alone will not produce the desired results to speeding problems, cut through traffic or vehicle crashes.

1. **Engineering measures** alter the road layout or appearance of the roadway to make driving more difficult and may include:
 - Pavement legends
 - Flashing beacons
 - Stop sign post reflectors
2. **Enforcement** can include:
 - Increased police presence
 - Citations
 - Radar speed signs

3. **Education** involves students, parents, teachers, and other community members and emphasizes the shared responsibility of safe and attentive driving. Training and education include:
 - Pedestrian and bicycle safety
 - Motorists instructed to not be in a hurry in school zones
 - Role models to encourage traffic compliance
4. **Encouragement** can get people excited about safety programs by hosting special events, holding schoolwide bicycle safety programs, or celebrating walking and biking with student art, senior art or other projects.
5. **Evaluation** is used to see if implemented strategies are working. Evaluating activities can help set goals and establish baseline data for planning projects.

Neighborhood Projects

The following topics identify concerns within the DeSoto Acres community with measures that may be considered to improve the performance of the roadway network. The items below are generally listed and are intended for discussion prior to implementation.

A. Rear End Crashes

Most of the crash types in the study area were rear end crashes. Approximately 75 percent of the rear end crashes were caused by careless or negligent driving. Other causes were due to failure to drive in a single lane, following too closely, and weaving in traffic. Several police reports stated that vehicles were stopped at a red light, stopped for traffic, or stopped while waiting to make a left turn when a motorist behind them failed to properly brake causing the rear end crash.

Cars equipped with automatic emergency braking (AEB) may reduce the amount of rear end crashes. Additionally, collision avoidance systems that include sensors and alarms to alert drivers to potential impacts could be installed in vehicles to prevent or reduce the severity of rear end crashes (e.g. forward collision avoidance). Motorists also need to drive responsibly. Drivers must be predictable, not follow too closely and be aware of their surroundings. Although vehicle warning systems can assist in reducing crashes it is ultimately the driver who is responsible for his/her behavior, actions and alertness.

B. Speeding

The 85th Percentile Speeds were used to evaluate speeding within the Lockwood Ridge corridor. These speeds were less than the typical 85th Percentile Speeds observed throughout Sarasota County. Measures that may reduce speeding within the study area include:

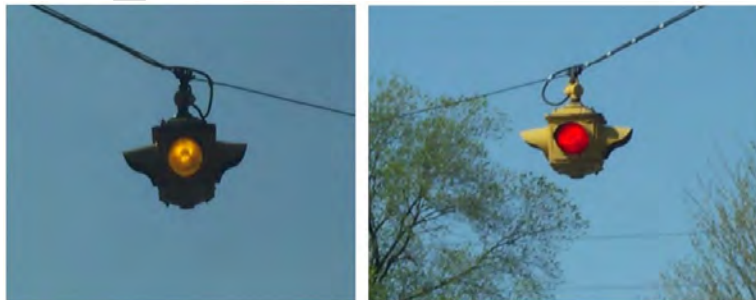
- 1) **Radar Speed Signs** are effective at slowing down speeding drivers and gives them the opportunity to change driver behavior.



- 2) **Signal Ahead Signs** catch the attention of drivers and alerts them to the signalized intersection ahead and possible stopped traffic. These signs would be useful at the Tuttle Avenue and DeSoto Road signalized intersection.



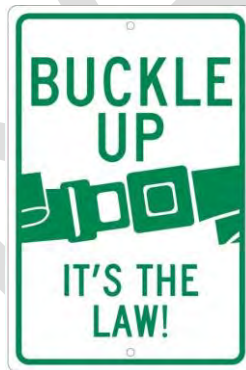
- 3) A **Flashing Yellow/Red** at the intersection of DeSoto Road and Shade Avenue, and Tuttle Avenue and 47th Street will alert drivers to these intersections and possibly slow traffic as motorists proceed with caution.



- 4) **Flashing Stop Signs** are also useful for catching motorists's attention. This may be considered for the 2 stop signs on Shade Avenue at the intersection of DeSoto Road and Shade Avenue if a Flashing Yellow/Red cannot be installed. (Please see the discussion below regarding the DeSoto Road and Shade Avenue intersection.) There have been no reported issues, however, with the visibility of the existing stop signs within the Lockwood Ridge Corridor/DeSoto Acres study area.



- 5) **Buckle Up Signs** remind drivers to fasten their seatbelts. As motorists take the time to be safety-minded they may also be prompted to drive carefully.



C. DeSoto Road and Shade Avenue Intersection

Several angle crashes have occurred at the DeSoto Road and Shade Avenue intersection. One possible cause of these crashes is the driver expectancy that this intersection is a multi-way stop. This may be due to the several multi-way stops on Shade Avenue to the north and south of this intersection which generates this driver expectation. Some crash reports stated that motorists entered the intersection from Shade Avenue because they thought the vehicle travelling on DeSoto Road was going to stop.

The Manual on Uniform Traffic Control Devices (MUTCD) gives guidance in Section 2C.59 that a Cross Traffic Does Not Stop plaque (W4-4P) may be used in combination with a Stop sign

when engineering judgement indicates that conditions are present that are causing or could cause drivers to misinterpret the intersection as an all-way stop. Plaques can be mounted below the two Stop signs on Shade Avenue to alert drivers that DeSoto Road traffic does not stop at this intersection.



Another probable cause of crashes at this intersection is that the roadside bushes are blocking the motorists' line of sight as reported in some of the DeSoto Road and Shade Avenue intersection crash reports. Brush and vegetation can be cleared at this intersection to improve the line of sight for drivers stopped at the two Stop signs on Shade Avenue.



Roundabouts are also effective countermeasures to right angle crashes. A roundabout at the DeSoto Road and Shade Avenue intersection may reduce the number of crashes at this location and reduce speeding along this section of DeSoto Road.

D. Roadway Surface Marking

Surface markings are used on paved roadways to provide direction and information to motorists and pedestrians. Newly painted markings provide better guidance to drivers than old, worn markings and may contribute to reduced automobile crashes and accidents.



Roadways within the study area are not currently included in the five-year resurfacing program nor the five-year restriping program. The roadways within the study area may, however, be inspected to identify areas where the existing pavement markings have faded or worn away. A request for restriping or repainting worn markings such as stop bars can be submitted to the county. As an example, the north stop bar at the Shade Avenue and DeSoto Road intersection is worn as observed in a recent field inspection (shown below).



E. Rumble Strips

Rumble Strips may be considered at the approach to the stop signs at the Shade Avenue and DeSoto Road intersection. The strips would assist in alerting motorists to the stop signs ahead. However, the noise generated from the rumble strips may be disruptive to residents.

F. Education

Educating motorists to the importance of paying attention while driving, not following too closely, proper use of signaling for turns, and yielding to other vehicles would be an effective measure in reducing crashes within the DeSoto Acres community. Additionally, neighborhood participation in driver support groups may help in improving driver behavior, traffic awareness and impatient drivers. Points of discussion can include:

- Driving too closely
- Weaving in traffic
- Speeding
- Distracted driving
- Consideration for other drivers

An important element for motorists to consider is perception and reaction time. This is the amount of time it takes for a driver to identify a situation on the roadway, decide what to do, and start the maneuver. Perception-reaction time (PRT) is approximately 1.5 seconds and is increased by the effects of aging, intoxication and fatigue. In addition to PRT, braking distance must be considered. Braking distance is determined by the vehicle speed and road conditions. For example, when a motorist is travelling 20 mph and a situation ahead requires braking to a stop, the total stopping distance is about 40 feet (three car lengths). At a speed of 30 mph the total stopping distance is about 75 feet (six car lengths). A driver who is following too closely may not have the stopping distance needed for perception, reaction and braking.

Educational efforts may include:

- Distribution of driver safety literature and videos (available from the Sheriff's Office, FDOT, etc.)
- Driver safety meetings/classes held at the library or school
- Lessons within the school system that develop positive motorist behavior in children from an early age through high school

G. WalkWise Florida

WalkWise Florida provides pedestrian safety education to the citizens of Florida. Communities, HOAs and businesses can request a free 15-20 minute presentation with a discussion on bicycle and pedestrian safety. The campaign is funded by the Florida Department of Transportation (FDOT) and is managed by the University of South Florida (USF) Center for Urban Transportation Research (CUTR).



Frequently Asked Questions

A frequent complaint that people have in residential areas is that vehicles constantly speed by the front of their house. They are concerned about the safety of their children and want to install additional stop signs. The addition of a stop sign, however, does not usually solve the problem. Residents also ask to have speed limits lowered or that measures are installed to make their neighborhood roads safer. The following section contains frequently asked questions and answers to these questions.

Q1: Can the County put stop signs at the DeSoto Road and Shade Avenue intersection? The new stop signs will force people to stop on DeSoto Road and there will be less accidents. Additionally, the stop signs will keep people from speeding on DeSoto Road.

A1(a): Stop signs have been installed on the minor street (Shade Avenue) but not on the major street (DeSoto Road) at this intersection. In order to install additional stop signs at this location, Sarasota County Transportation staff must conduct an engineering review to evaluate if there is justification for stop signs on DeSoto Road. This evaluation follows Resolution Number 2018-179, a resolution of the Board of County Commissioners on September 1, 2018, to establish local warrants for multi-way stop signs. This resolution includes warrants found in the Manual on Uniform Traffic Control Devices (MUTCD) and gives the Board of County Commissioners (BCC) the latitude to make decisions to install stop signs based on their discretion to promote the safety, health and welfare of the traveling public in Sarasota County.

To satisfy the local warrant, a point system is calculated based on the annual crash rate, traffic volume, traffic speed, special circumstances and average daily traffic split. Per the Resolution, a total of seven points must be met to warrant the need for a multi-way stop controlled intersection. It should be noted that it is not mandatory that a warrant found in the MUTCD be met for the installation of multi-way stop signs on local streets in residential neighborhoods to address the needs of the community.

The DeSoto Road and Shade Avenue intersection was evaluated and found to satisfy the local warrant and MUTCD warrant for multi-way stop signs. The current TAC process prohibits the citizen's request of putting multi-way stops on streets that are functionally classified as a major collector or higher (Resolution No. 2018-179). DeSoto Road is classified as a minor arterial in the Sarasota County thoroughfare plan which is higher than a major collector. The TAC process, however, does not prohibit staff from making the recommendation for a multi-way stop control.

In order to maintain safe and efficient traffic flow, staff recommends that incremental improvements be considered at the DeSoto Road and Shade Avenue intersection prior to implementation of multi-way stop control. Improvements at this intersection may include the addition of Cross Traffic Does Not Stop plaques, flashing stop signs, rumble strips, improved roadway surface marking, a flashing yellow/red signal light, or installation of a roundabout.

A1(b): Research on traffic abatement measures found that multi-way stops do not reduce speeds on residential streets and that unwarranted stop signs should not be used. Problems

caused when unwarranted stop signs are installed include traffic noise, automobile pollution, traffic enforcement and undesirable driver behavior. Compliance is poor at unwarranted multi-way stops because drivers feel little reason to yield the right-of-way when there are usually no vehicles on the minor street. Drivers will also increase speed between intersections to make up time they lost at the “unnecessary” stop signs.

Studies have been conducted on the use of stop signs and motorist behavior for several years. Published articles include *Increasing Motorist Compliance and Caution at Stop Signs* by Ron Van Houten and Richard A. Retting (*Journal of Applied Behavior Analysis*, 2001, 34, 185-193), *Multi-way Stops – The Research Shows the MUTCD is Correct!* by W. Martin Bretherton Jr., P.E. (Presentation at Transportation Frontiers for the Next Millennium: 69th Annual Meeting of the Institute of Transportation Engineers, 1999, 13 pages), *Multi-way Stop Signs—Have We Gone Too Far?* by H. Chadda and E. Carter (*ITE Journal*, May 1983, 53(5): pages 19-21), and *Death by Stop Sign* by John Staddon, Ph.D. (*Psychology Today*, posted May 04, 2016. Retrieved from URL.) Several other articles can be found on the internet with the search query “compliance at multi-way stop signs”.

Safety of pedestrians is decreased at unwarranted multi-way stops. This results from the expectation that vehicles will stop at posted stop signs, but many drivers get in the habit of running the “unnecessary” stop signs. Increased fuel consumption and vehicle emissions are a result of multi-way stops. Noise is also increased in the vicinity of these intersections from vehicles braking and accelerating up to speed.

The use of stop signs as speed control measures is expressly prohibited in the MUTCD (Section 2B.05 STOP Sign Applications). Research has shown that (1) the installation of stop signs, while reducing roadway speeds immediately adjacent to the stop sign, has no effect on overall neighborhood speed limit compliance and (2) unwarranted stop signs tend to have a lower driver compliance rate. The probability of automobile crashes increases as drivers disregard stop signs.

Q2: Can the County lower the speed limit on DeSoto Road from 35 mph to 30 mph? People will drive slower, speeding will cease, and the road will be safer.

A2(a): Simply lowering the speed limit does not guarantee motorists will drive slower. Most motorists drive at a speed in which they feel comfortable and safe. A speed limit sign should not dictate speed, it should reflect how drivers are actually using the road.

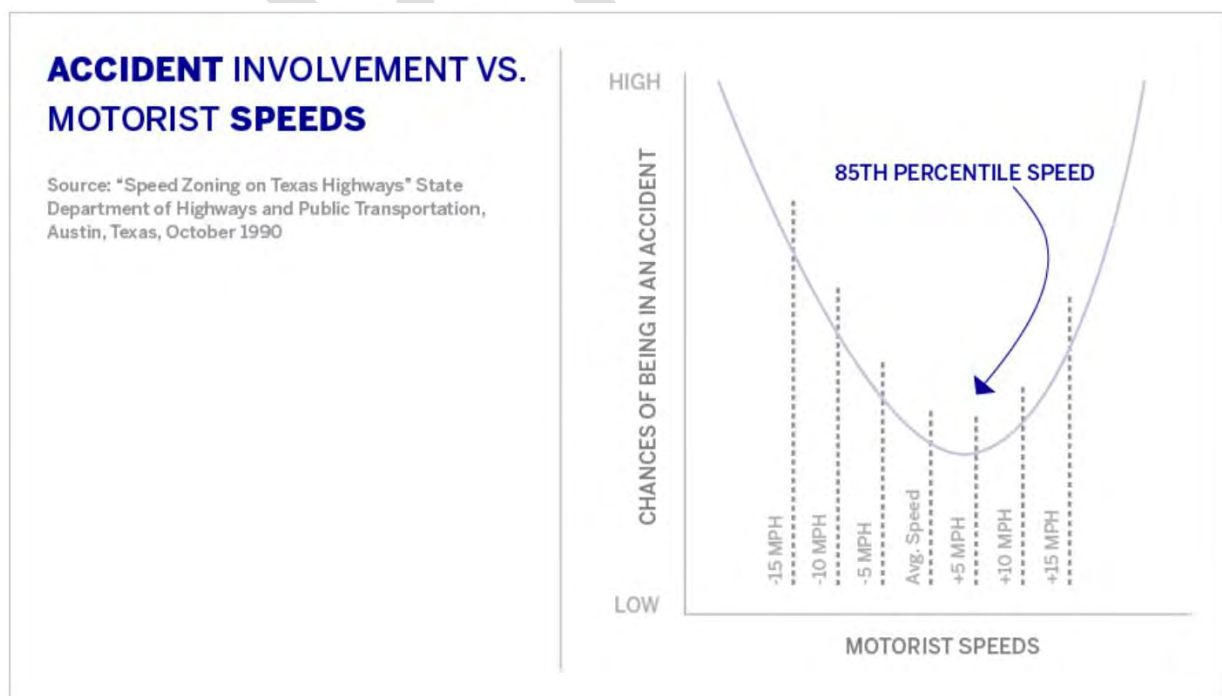
A “prevailing speed” is how fast the majority of motorists are actually driving and is referred to as the 85th percentile speed. This is the expected speed that 85 percent of the drivers will drive at or below during free-flowing conditions and is used to determine the safe and strategic speed limit along a section of roadway. When cars are moving slow or weaving through traffic at high speeds this causes unsafe conditions because their speeds are very different than those of the other drivers.

The U.S. Department of Transportation Federal Highway Administration conducted research on the effects of raising and lowering the speed limits on driver behavior and accidents (U.S. DOT FHA, Report No. FHWA-RD-92-084, October 1992). Speed and accident data were collected in 22 states before and after speed limits were altered. Repeated measurements were made to examine the short-term and long-term effects of the speed limit changes.

Results of the study showed that lowering or raising the speed limit had little effect on motorist's speed. Motorists drove the prevailing speed and did not alter their speed to conform to speed limits that they perceived as unreasonable for prevailing conditions. The data clearly showed that lowering the posted speed limit did not reduce vehicle speeds or crashes. Additionally, raising the posted speed limit did not increase speeds and accidents. It was found that adjusting the speed limit near the 85th percentile speed had an extremely beneficial effect on drivers complying with the posted speed limits.

Additional studies have been conducted regarding lowering speed limits in residential neighborhoods. Some published articles include *Concerned about Speeding in your Neighborhood?* by City of Citrus Heights (Retrieved from URL), *Residential Speed Limit Reduction Case Studies* by Rossy, Sun, Jessen and Newman ([The Open Transportation Journal](#), 2012, 6, 39-45, Retrieved from URL) and *Stop Speeding in Your Neighborhood* by Herbert, Rowland and Gubic, Inc. ([Pennsylvania Borough News magazine](#), September 2017).

Safety decreases significantly as drivers deviate from the prevailing speed. Changes in speed limits should be adjusted to reduce speed variations among the fastest and slowest drivers. For example, when the prevailing speed goes up the speed limit should follow. The following graph illustrates how it is safer to drive at the prevailing speed.



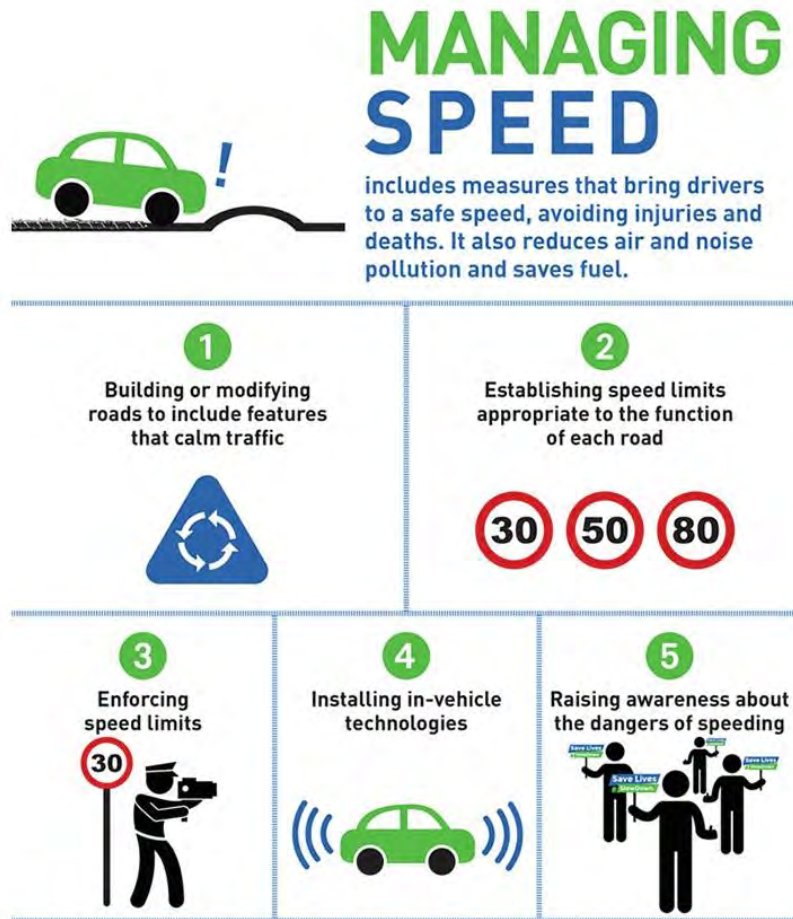
A2(b): The Sarasota County Board of County Commissioners (BCC) reduced the speed limit on several roadway segments in the county. Fruitville Road from Verna Road to Twelve Oak Lane was lowered from 50 mph to 45 mph on August 24, 2015. There was a 4.5 mph drop in the 85th percentile speed on the eastbound lane after the speed limit change, however, there was a 3.9 mph increase on the westbound lane.

The speed limit on Honore Avenue from University Parkway to Longmeadow was lowered from 45 mph to 40 mph on November 5, 2014. After this change the 85th percentile speed on the northbound lane dropped 1.3 mph but increased 0.5 mph on the southbound lane. On August 27, 2014, the BCC lowered the speed limit on Midnight Pass Road from Vista Hermosa Circle to Sanderling Road from 40 mph to 35 mph, however, the 85th percentile speed on the northbound lane increased 1.5 mph and increased 2.3 on the southbound lane.

These examples show that lowering the speed limit does not guarantee a reduction in the 85th percentile speed. There are roads within the county that showed little to no effect on the prevailing speed when the speed limit was reduced. Road geometry, proximity to stop intersections and the speed of motorists familiar with the roadway are factors that mainly contribute to the actual speeds travelled on a roadway.

A2(c): The county needs to address the issue of speeding within the DeSoto Acres community, however, solely lowering the posted speed limit is not the solution to the speeding problem. When you want drivers to slow down there needs to be physical and visual changes on the roadway. This can be done through implementation of safety countermeasures (e.g. narrower travel lanes, roundabouts, enhanced pavement markings and signage).

Safety and mobility are important factors in setting safe and reasonable speed limits on roadways. A speed management program is necessary to address undesirable speeding along a corridor or within a road network. Speed management activities include policy, planning, engineering, enforcement, education, public health and maintenance. The following graphic outlines the basic steps in speed management.



Q3: What can the County do to make our roads safer?

A3: There are several initiatives currently planned and may be considered to make our roadways safer. These include:

- Improved bicycle lanes
- Multi-use trails
- Sidewalks
- Roundabouts
- Road reconfiguration
- Narrow travel lanes through or striping
- Neighborhood gateway treatments
- Red light cameras that include ticket citations for violators
- Speed enforcement
- Education to discourage aggressive and impatient driving
- Safety education for bicyclists and pedestrians

Q4: How can I request multi-way stop signs, speed limit changes, parking restrictions, U-turn restrictions, truck prohibition, or Do Not Enter signage?

A4: The petitioner must fill out an Item Request Form and submit it to the Traffic Advisory Council (TAC) with the required signatures or relevant Home Owner Association board meeting minutes. The following steps will need to occur in order to implement the request:

- 1) TAC transportation engineers will evaluate the request.
- 2) TAC transportation engineers will perform a study as needed for the petition and prepare a report with recommendations.
- 3) A meeting will be scheduled with the TAC to hear the petition. (The TAC meets quarterly.)
- 4) The petitioner, staff members, residents and HOA representatives may speak at the hearing.
- 5) The TAC makes a recommendation for approval or denial of the petition.
- 6) Following the speakers and presentations the Council members vote to approve or deny the petition.
- 7) If the petition is approved by the BCC a resolution will be drafted and signed.
- 8) A budget will then be allocated.
- 9) Following an approval by the BCC the petition is sent to Traffic Operations to schedule implementation.

Notes:

- The county is not accepting applications for traffic calming at this time (i.e. speed bumps, speed tables, chicanes) as this funding was suspended in 2007 and has yet to be re-appropriated.
- The petitioner(s) should be aware that many of the traffic operation problems are related to improper road user behavior and can only be corrected through effective education and enhanced enforcement programs.
- Stop signs should not be used for speed control (MUTCD, Section 2B.04.05).
- Speeding concerns should be reported to the Sheriff Traffic Unit by calling 941-861-4076.
- Reconfiguration of a roadway is not a TAC item.

Q5: When will Tuttle Avenue be widened from 2-lanes to 4-lanes from University Parkway to Dr. Martin Luther King Jr. Way?

A5: Tuttle Avenue is designated as a 4-lane minor arterial on the county's future thoroughfare plan. Tuttle Avenue will be widened but it is not currently in the 5-year Capital Improvement Program (CIP).

Q6: When will we get sidewalks in our neighborhood?

A6(a): Sidewalks on DeSoto Road and Tuttle Avenue, as part of the DeSoto Area Sidewalks Phase II project, are programmed for design in the current 5-year CIP. Once the design has

reached 60 percent design staff will have a cleaner idea of the cost estimates for construction. It is anticipated that construction will occur in Fiscal Year 2023.

A6(b): A sidewalk request form may be submitted by property owners who want sidewalks in their neighborhood. The signatures of five Sarasota County property owners are required on the form. A steering committee must be formed, county staff will review the request, and the sidewalk will be assigned a priority ranking. A public meeting will be held if there is continued interest and a neighborhood consensus must be established before the project can be presented to the commission for approval.

If the commission approves the project, the next step is design and construction. The time frame for this phase depends on funding. Projects typically remain on the sidewalk priority network list for several years before funding is available.

Conclusion

The following table identifies neighborhood plan projects for consideration. The initiatives are divided into short-term (one to five years), mid-term (five to ten years) and long-term (ten years or more) categories. Specific details such as quantity, location, cost feasibility and construction schedule will need to be addressed before approval and implementation. Educational initiatives are listed after the engineering measures. Bicycle safety literature should include the importance of wearing helmets, bright colors, reflective vests and using bicycle lights. Driver safety videos can be approximately one minute in duration and produced for distribution on social media.

Table 4 – Neighborhood Plan Projects for Consideration

Lockwood Ridge Corridor/DeSoto Acres Neighborhood Plan Projects

PROJECT*	Short-Term	Mid-Term	Long-Term
Pavement Markings:			
• Stop Lines with "STOP" stencil marking	X		
• Crosswalks	X		
• Road Striping	X		
Roadway Signs:			
• Signal Ahead Sign	X		
• Cross Traffic Does Not Stop Sign	X		
• Buckle Up Sign	X		
• Flashing Stop Sign	X		
• Radar Speed Sign	X		
Roadway Maintenance:			
• Clear brush and vegetation for line of sight	X		
Flashing Light at Intersection:			
• Flashing Yellow/Red		X	
Sidewalks:			
• Sidewalk Improvements (CIP #95703)	X		
DeSoto Road Improvements:			
• Roundabout at DeSoto Road and Shade Avenue			X
• Roundabout at DeSoto Road and Tuttle Avenue			X
Tuttle Avenue Improvements:			
• Widen to Four Lanes (Thoroughfare Plan)			X
Education:			
• WalkWise Florida Presentation	X		
• Distribution of Bicycle/Pedestrian Safety Literature	X		
• Distribution of Driver Safety Literature	X		
• Driver Safety Meetings/Classes	X		
• Driver Safety Videos for websites	X		

*Sarasota County's Traffic Calming Program has been suspended. A Board policy change is required to reinstitute the program.