Bicycle and Pedestrian School Safety Review Study: Assessment & Implementation Report

River Springs Middle School

Orange City, FL

VOLUSIA TPO
TRANSPORTATION PLANNING ORGANIZATION
VISION - PLAN - IMPLEMENT

May 16, 2011

Lassiter Transportation Group, Inc.
Engineering and Planning

Volusia County Transportation Planning Organization
Bicycle and Pedestrian School Safety Review Study

Assessment & Implementation Report
River Springs Middle School
Orange City, FL

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Acknowledgements

Lassiter Transportation Group, Inc. would like to thank the following people for their help and contribution in developing this Bicycle and Pedestrian School Safety Review Study for River Springs Middle School. The information and advice they have given, as well as the connections they shared was invaluable.

Greg Akin: Director, Volusia County School District/Student Transportation Services

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EXECUTIVE SUMMARY

Lassiter Transportation Group, Inc. (LTG) was contracted by the Volusia County Transportation Planning Organization (TPO) to prepare an Assessment Report for the Bicycle and Pedestrian School Safety Review Study for 17 Volusia County schools. The Assessment Report for the Bicycle and Pedestrian School Safety Review Study will aid the Volusia County TPO in making recommendations for projects that will improve conditions within the walk zones for these schools, and potentially make walking and biking to school a more attractive mode of transportation for students. The subject of this Assessment Report is River Springs Middle School.

Purpose

The purpose of this study is to improve the environment for students to walk or bicycle to school. The goal for the assessment phase of the Bicycle and Pedestrian School Safety Review Study is to provide the Volusia County TPO with a comprehensive study that will delineate each of the listed school's concerns, document the observed pedestrian and bicycle circulation routes adjacent to the school sites, and then make recommendations for improvements. The assessment examines the walk zone surrounding the school to evaluate safety issues that may affect students walking or bicycling to school.

The U.S. Department of Health and Human Services Center for Disease Control (CDC) and Prevention has determined that students are not as active as they were 10 years ago when physical activity was incorporated into each student's schedule (KidsWalk-to-School, CDC). This has caused the percentage of overweight students from ages six to eleven years to double over the past 30 years. The CDC has determined that the following are benefits associated with students who walk or ride their bicycle to school.

- Increased practice of safe bicycle, pedestrian, and traffic skills
- Knowledge of their environment
- Improved childhood health
- Improved sense of self-image and autonomy
- Reduced childhood obesity
- Conducive to a healthy social and emotional development
- More alert students who do better in school
- Increased likelihood that students will grow up to lead a healthy lifestyle

The Safe Routes to School (SRTS) program and the CDC went on to say that not only does a safe walking and bicycling environment benefit students, but it also benefits the community in the following ways:

- Decline in the congestion on the roads
- Decreased opportunities for traffic accidents
- Improved air quality
- Improved community security
- Reduced fuel consumption
- Enhanced community accessibility
- Increased community involvement
- Improved partnerships among schools, parents, community groups, and the local government leaders

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INTRODUCTION

LTG has been retained to conduct an Assessment Report for River Springs Middle School as part of a Bicycle and Pedestrian School Safety Review Study for the Volusia County TPO. River Springs Middle School is located at 900 West Ohio Avenue, in the City of Orange City. A school location map, that also illustrates the walk zone of the school, is presented as Figure 1.

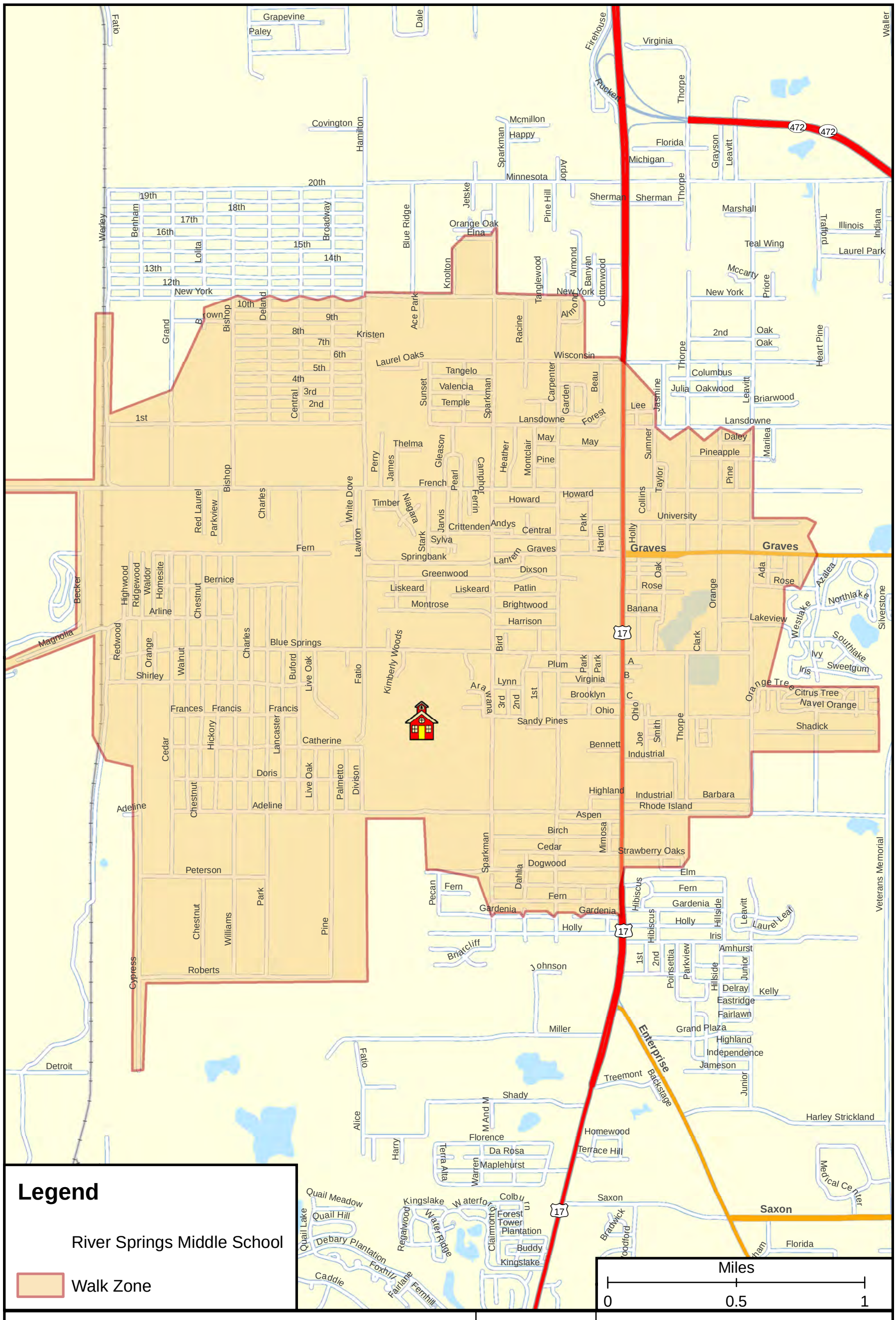
Background on River Springs Middle School

The construction of River Springs Middle School was completed in 2008 and the school is currently in its third year of operation. The Principal of River Springs Middle School is Mr. John Atkinson.

The following information on River Springs Middle School has been provided by Principal Atkinson:

- **Student Population:** 1,350 Students
- **Percentage of Walkers:** approximately 30%
- **Number of Volusia County Buses in Use:** 8
- **Location and Description of Access Points:** Two driveways on Scholars Path. The northern driveway provides access to the parent loop and the southern driveway, at the intersection of Scholars Path and West Ohio Avenue, provides access to the bus loop. There is one walker's gate adjacent to the bus loop entrance. Figure 2 depicts the location of these access points.

Illustration 1: Cars stacking up at Parent Loop prior to afternoon dismissal



River Springs Middle School

Bicycle and Pedestrian School Safety Review Study

Bicycle and Pedestrian School Safety Review Study

School Walk Zone

Figure: 1

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River Springs Middle School

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Aerial of School

Figure: 2

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EXISTING CONDITIONS

River Springs Middle School is located at 900 West Ohio Avenue in the City of Orange City, Florida. The school is immediately adjacent to Manatee Elementary School. Access to the school is provided via Blue Springs Avenue, an east/west collector, which connects to Scholars Path or via Sparkman Avenue, a north/south collector which connects to Ohio Avenue. Both roadways have residences located along them as well as provide access to the surrounding residential areas. Both roadways have a posted speed limit of 30 mph (except during the school arrival and dismissal time through the school zone, when the speed limit is 20 mph). Beresford Avenue is a Volusia County urban arterial with a posted speed limit of 30 mph (except during the school arrival and dismissal time through the school zone, when the speed limit is 20 mph).

School Walk Zone

The River Springs Middle School walk zone is primarily bounded by New York Avenue to the north, the railroad tracks to the west, Leavitt Avenue to the east, and Roberts Road and Gardenia Avenue to the south. The following Volusia County Schools are also located within these limits:

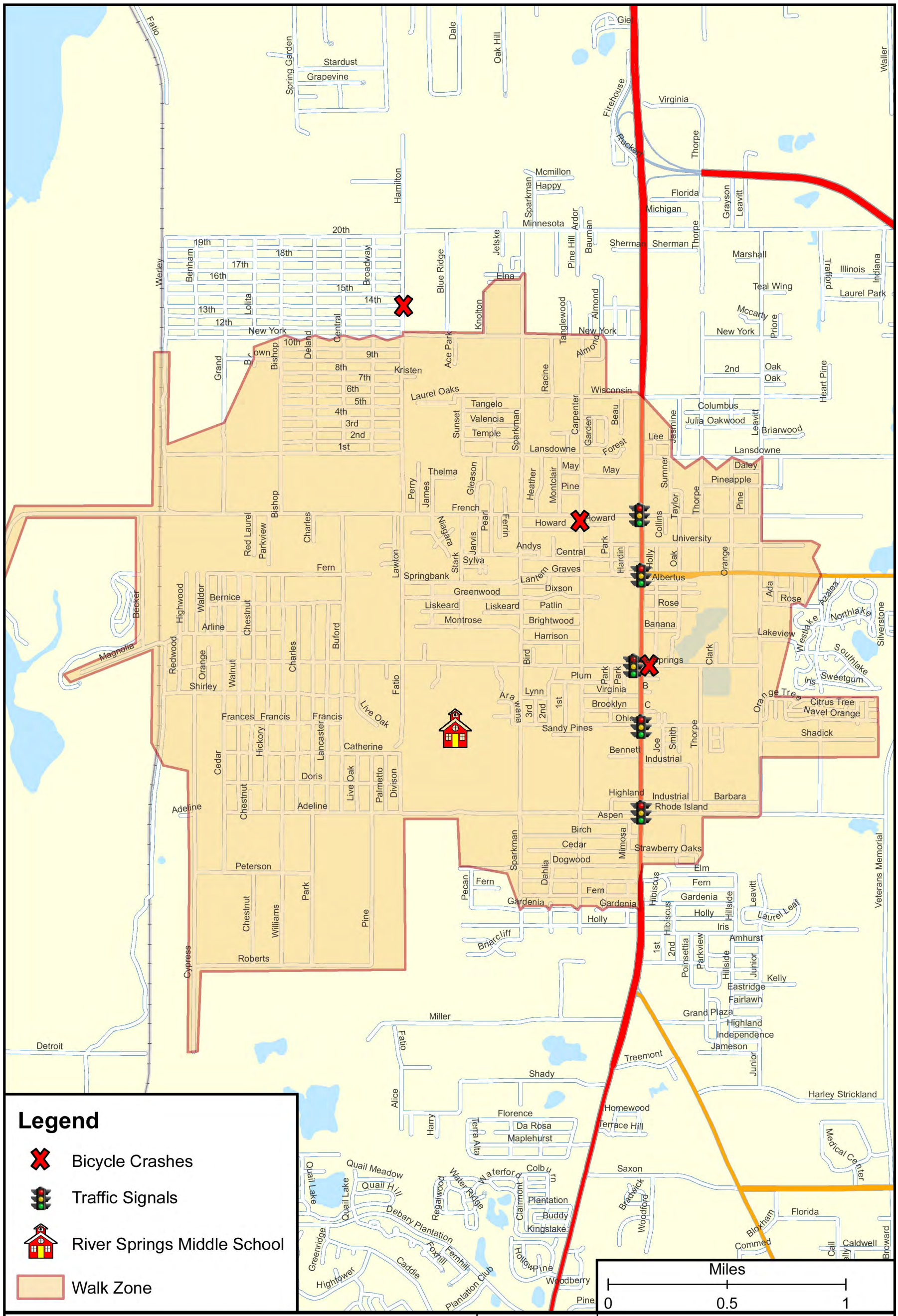
- Manatee Cove Elementary School
- Orange City Elementary School
- University High School

US 17/92 is a north/south arterial which runs through the school's walk zone. Other than the commercial properties located adjacent to US 17/92, the area is predominately residential. A significant portion of the residential area located west and northwest of the school consists of residential subdivisions with dirt roads. With the exception of the land use adjacent to US 17/92, the remainder of the walk zone is primarily residential and served by a network of local streets. Votran route 20 runs along US 17/92 from DeLand to Debary. However, since this route does not serve the residential areas of the school zone, there is no impact from public transit. Figure 3 shows the approximate locations of the other schools within the walk zone, the traffic signals and the crash locations discussed in the following section.

Crash Data

Pedestrian and bicycle crash data for River Springs Middle School's walk zone was obtained from Volusia County and is presented in Table 1. The data in Table 1 was generated based on the following guidelines:

- Data was collected for crashes falling within the boundaries of the 2011 School Year Walk Zone
- Data was collected during the time frames of 7:15 a.m.-8:15 a.m. and 2:30 p.m.-3:30 p.m. on Mondays, Tuesdays, Thursdays, and Fridays
- Data was collected during the time frames of 7:15 a.m.-8:15 a.m. and 1:30 p.m.-2:30 p.m. on Wednesdays
- Data was collected within the walk zone of the school
- Crashes occurring within the last three years



River Springs Middle School

Bicycle and Pedestrian School Safety Review Study

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Existing Conditions

Figure: 3

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Table 1
Bicycle and Pedestrian Crash Data for Starke Elementary School
River Springs Middle School Assessment Study

DATE	ACCIDENT INTERSECTION	BICYCLE/ PEDESTRIAN INVOLVMENT	DAY/NIGHT	AGE OF CYCLIST/ PEDESTRIAN
01/02/2009	14th Street at Hamilton Avenue	Collision with Bicycle	Daylight 3:55 p.m.	9
Unknown	Blue Springs Avenue at US 17/92	Collision with Bicycle	Unknown	Middle School Student

Data collected for this table is attached as Appendix A. The crash data shows that within the walk zone, there was one bicycle related accident. However, Principal Atkinson indicated that a student was struck on a bicycle at the intersection of US 17/92 and Blue Springs Avenue, though no crash data was available for this incident.

It should be noted that in 2009, a River Springs Middle School student was fatally hit in a vehicle/pedestrian accident on Highbanks Road at the student's bus stop. This incident falls outside of the walk zone for the school, but within the River Springs Middle School's attendance boundary.

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MEETINGS

A meeting was held at River Springs Middle School on September 30, 2010. In attendance were members of LTG Staff, Volusia TPO Staff, River Springs Principal John Atkinson, and Orange City employees Wendy Hickey and Allen Branton. This meeting, along with questionnaires which were produced by LTG and completed by Principal Atkinson, assisted in identifying matters of concern within the school walk zone (see completed questionnaires as well as initial letters sent to establish this meeting in Appendix B).

Meeting Summary

Most prevalent among the concerns discussed in the meeting, as expressed by Principal Atkinson, is the heavy pedestrian and vehicle traffic concentrated around the intersection of Ohio Avenue and Scholar's Path following the afternoon dismissal. Other concerns pointed out by Principal Atkinson are as follows:

- Cars line up on both sides of Scholars Path and along the south side of Ohio Avenue in the p.m. to pick up students rather than utilizing the parent loop
- There is a sandy area adjacent to Scholars Path that parent's utilize as a morning drop-off and afternoon pick-up location for their students. This area has had issues following heavy rains and the edge of the roadway is deteriorating
- Students arrive to school prior to supervision and loiter outside the gate
- The sidewalk crossing in front of the parent loop on Scholars Path does not have a crosswalk and the visibility of the students on the sidewalk from the vehicles exiting the parent loop is obstructed by the adjacent wall
- The absence of a sidewalk on Blue Springs from Scholars Path to Sparkman Boulevard
- Lack of enforcement of helmet safety laws

Illustration 2: The edge of Scholars Path and adjacent washout area

Illustration 3: Pedestrian conflict at the Parent Loop

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FINDINGS AND RECOMMENDATIONS

This section of the report includes data collected during the on-site and off-site investigative observations of River Springs Middle School and its walk zone. Areas of interest identified in the meeting with and completed questionnaires from Principal Atkinson were investigated, along with a thorough field review of conditions within the walk zone.

LTG evaluated the safety of sidewalk features based on conditions that are deemed hazardous in the *2009 Florida Statutes*, the *Americans with Disabilities Act (ADA) of 1990 Guidelines*, the *Manual on Uniform Traffic Control Devices* (MUTCD), the *Florida Department of Transportation* (FDOT), and the *Federal Highway Administration* (FHWA). The relevant excerpts are included in Appendices C and D.

For a walkway that is parallel to the road, the *2009 Florida Statutes*, Chapter 1006.23 considers the following conditions to be hazardous:

- If there is not an area at least four feet wide adjacent to the road, having a surface upon which students may walk without being required to walk on the road surface
- If the road along which students must walk is uncurbed, has a posted speed limit of 55 miles per hour or greater, and the walk area is not set off the road by at least three feet.

For walkways that are perpendicular to the road, the *2009 Florida Statutes,* Chapter 1006.23 considers the following conditions to be hazardous:

- If the traffic volume on the road exceeds the rate of 360 vehicles per hour, per direction (including all lanes), during the time students walk to and from school and if the crossing site is uncontrolled (an "uncontrolled crossing site" is an intersection or other designated crossing site where no crossing guard, traffic enforcement officer, or stop sign or other traffic control signal is present during the times students walk to and from school)
- If the total traffic volume on the road exceeds 4,000 vehicles per hour through an intersection or other crossing site controlled by a stop sign or other traffic control signal, unless crossing guards or other traffic enforcement officers are also present during the times students walk to and from school

On-Site Investigation - A.M. Observations

LTG visited River Springs Middle School on Tuesday October 26, 2010, during student dismissal and Wednesday October 27, 2010, during student arrival. Both periods were observed for an interval of 25 minutes before and after the bell for a comprehensive view of all queuing, entering, and exiting patterns at different entry/exit points around the school as well as student walking and cycling practices at the crosswalk and along the adjacent roadways. The following general information was gathered:

- The school had one bicycle rack area with approximately 50 bicycles
- One skateboard was present during observation
- No helmets were observed on bicyclists. A few helmets were observed in the bicycle rack
- Two school related flashing signals located to the east and west of the school

Illustration 4: Bike Rack

Observation: LTG began the investigation by observing the intersection of Ohio Avenue and Scholars Path. This intersection was identified by Principal Atkinson as having heavy vehicle and pedestrian traffic in both the arrival and dismissal time periods. All students that bike or walk to and from school must travel through this intersection as the sole walker's gate into the school is located at this intersection. Additionally, parents use this intersection as a place to drop off and pick-up students, rather than utilizing the dedicated parent loop. This practice is hazardous because it creates an unnecessary conflict between students crossing the road and vehicles pulling in and out and stopping in the roadway and intersection to drop off and pick up students.

Recommendations: Installing a second walk gate for students travelling to and from the north on Scholars Path will eliminate some of the pedestrian and bicycle congestion at this intersection. This will require extending the on-site sidewalk from its current terminus north of the parent pick-up/drop-off area and marking a crosswalk across the service drive. An additional bike rack may be installed at this location for students travelling to and from the north on Scholars Path. Additionally, the presence of a staff member in the morning at the intersection may discourage parents from utilizing this area as a drop-off point.

Illustration 5: Extend on-site sidewalk and install crosswalk

Observation: On the days of observation, helmet usage was poor among the observed bikers.

Recommendations: This school may be a good candidate for the receipt of free bicycle helmets through programs headed by the Department of Health or the Sheriff's Office.

Observation: The sidewalk crossing in front of the parent loop does not have a crosswalk. Additionally, the location of the walls adjacent to the driveway limits visibility of the sidewalk from vehicles exiting the parent loop. This causes a hazardous situation for students crossing this driveway.

Recommendations: The previous recommendation to add an additional walker's gate at the north side of the parent loop will eliminate this conflict. Additionally, crosswalk markings should be placed across this driveway.

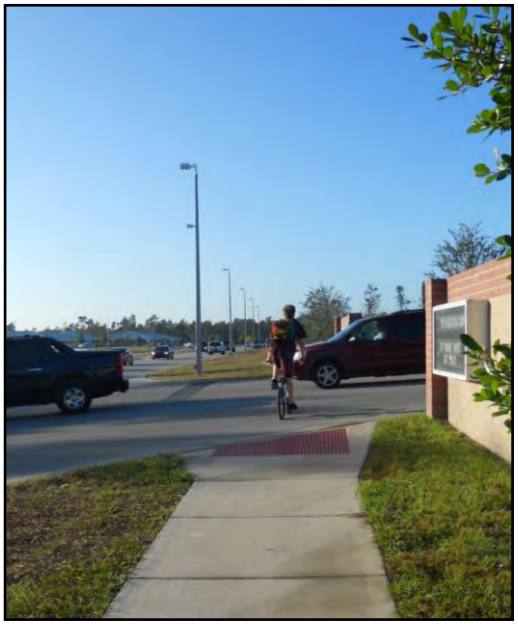

Illustration 6: Bicyclist crossing parent loop, no helmet

On-Site Investigations - P.M. Observations

Observation: The sidewalk crossing in front of the parent loop on Scholars Path also provides the same hazardous situation during the dismissal period for students as it does on the arrival period.

Recommendation: As previously recommended, the addition of a north walker's gate will reduce this conflict. Additionally, crosswalk markings should be placed across this driveway.

Observation: Motorists parked along both sides of Scholars Path and along the southern side of Ohio Avenue waiting for the dismissal of students, rather than utilizing the parent-loop.

Recommendation: Locating cones along these areas during the school dismissal period would prevent parents from being able to use Scholars Path and Ohio Avenue for this purpose.

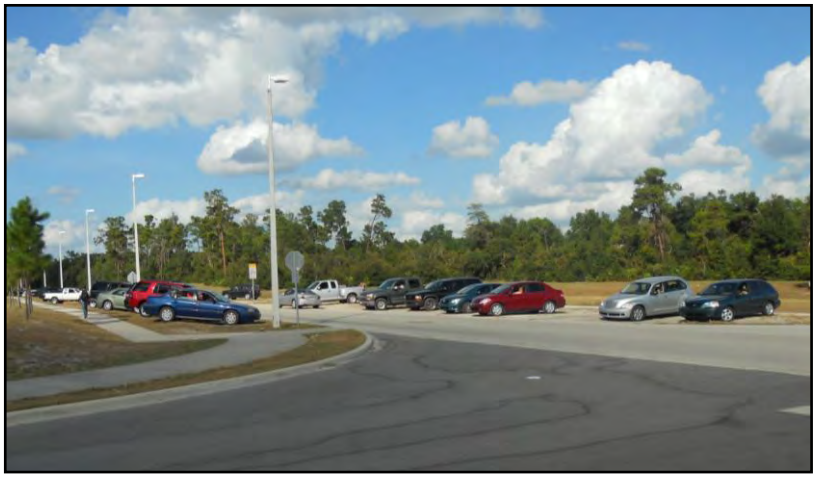

Illustration 7: Vehicles line up along Scholars Path prior to dismissal

Observation: As pointed out by Principal Atkinson, the four-way stop at the intersection of Ohio Avenue and Sparkman Avenue causes a back-up of traffic along Ohio Avenue.

Recommendation: The queue of vehicles at this intersection clears approximately 15 minutes following student dismissal. It is recommended that this situation be monitored.

Observation: The intersection of Ohio Avenue and Scholars Path experiences heavy vehicle, walker and bicycle traffic during the period immediately following dismissal. Students were observed crossing the intersection not only at the crosswalk, but also through the middle of the intersection. Vehicles were observed stopping in the middle of the intersection to pick-up students, pulling out from the shoulder and turning around in the intersection. This creates an extremely hazardous condition as there is no order at this intersection or enforcement of laws during this period.

Recommendation: It is recommended that cars be prohibited from picking up students on Scholars Path and Ohio Avenue. Cones should be placed along these areas to prevent cars from stacking prior to afternoon dismissal. The presence of a staff member in the afternoon at this intersection should require students to utilize the crosswalk and may discourage parents from stopping to pick students up on the street.

Illustration 8: Intersection of Ohio Avenue and Scholars Path at dismissal

Off-Site Investigation

Observations: There is a lack of continuous sidewalk along portions of Blue Springs Avenue, Ohio Avenue, French Avenue and Carpenter Avenue creating hazardous conditions.

Recommendations: Sidewalks should be constructed to provide continuity. See the following section on parallel sidewalk evaluation.

Observation: The crosswalk across Scholars Path at Blue Springs Avenue is faded and worn.

Recommendation: The pavement markings at this location should be refurbished.

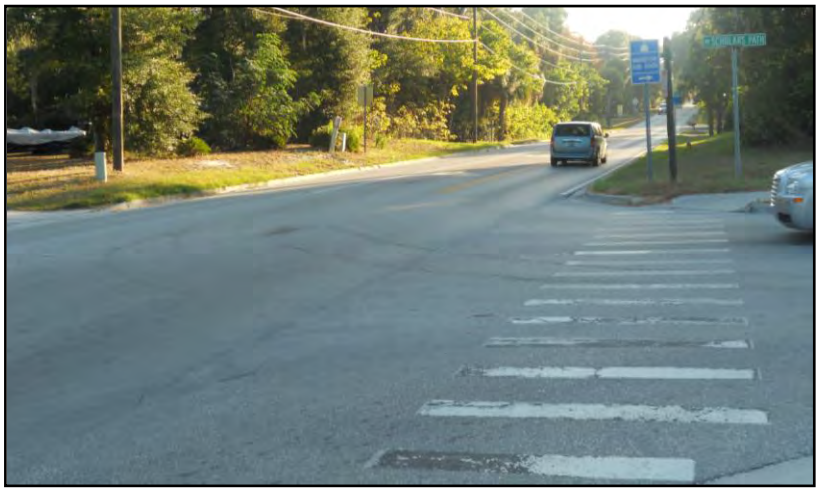

Illustration 9: Worn out crosswalk and missing sidewalk on Blue Springs Avenue

Observation: There is no crosswalk across French Avenue at Sparkman Avenue or across Carpenter Avenue at Ohio Avenue.

Recommendation: Crosswalk markings should be placed at this location.

Observation: The crossing of US 17/92 at University Avenue is an uncontrolled crossing site. Given the traffic volumes on US 17/92, this is considered a hazardous condition.

Recommendations: Pedestrian signal warrants should be evaluated at this location in accordance with Chapter 4 of the Manual on Uniform Traffic control Devices (MUTCD).

Illustration 10: Uncontrolled crossing of US 17/92 at University Avenue

Parallel and Perpendicular Sidewalk Inventory

The amount of walkers to River Springs Middle School, estimated by the Principal at approximately 30 percent, is average. Good and, seemingly, well-maintained sidewalk coverage is already in place serving the collector roadways within the walk zone. A portion of the school's walk zone lies east of US 17/92 requiring pedestrians and cyclists to cross US 17/92. The portion of US 17/92 which runs through the school's walk zone has been recently resurfaced and all the crosswalk markings are new. All major crossings are controlled with a crosswalk and traffic signal with the exception of University Avenue, which only has a crosswalk. Additionally, a review of crash history and discussions with the Principal and other members of the school staff have indicated that road safety within the walk zone has not been a concern.

An inventory of sidewalk coverage within the walk zone was taken. The focus of this inventory was the east/west and north/south urban collectors within the walk-zone. This was to verify whether there are routes of continuous sidewalk coverage that can be taken to and from the school and whether or not any of these routes are considered hazardous based on the parallel criteria listed above. There are no streets within the walk zone with a posted speed limit of 55 miles per hour or greater. The parallel sidewalk coverage on these urban collector roads is summarized in Tables 2 and 3.

The perpendicular sidewalk conditions are summarized in Table 4. Peak-hour, directional volumes were estimated using the Volusia County Traffic Counts (see Appendix E) for collector and arterial roadways within the school walk zone by applying a peak-hour factor of 0.977 and a directional factor of 0.55. Crossing conditions are deemed to be hazardous if they meet the criteria listed above for walkways perpendicular to the roadway.

Table 2
East/West Urban Collector Parallel Sidewalk Inventory
River Springs Middle School Assessment Study

East/West Roadway	Segment	Sidewalk Details				Hazardous Condition?
		Sidewalk Coverage	Side of Road			
			North	South	Exceptions	
Rhode Island Avenue	Division Dr to Sparkman Ave	✓	✓	✓		No
	Sparkman Ave to Carpenter Ave	✓	✓	✓		No
	Carpenter Ave to US 17/92	✓	✓	✓		No
	US 17/92 to Leavitt Ave	✓		✓		No
Ohio Avenue	Scholars Path to Sparkman Ave	✓	✓			No
	Carpenter Ave to US 17/92	✓		✓		No
	US 17/92 to Leavitt Ave	✓	✓		No sidewalk from Thorpe Ave to a point approx 940 feet east	Yes
Blue Springs Avenue	Cypress Ave to Buford Ave	✓		✓		No
	Buford Avenue to Scholars Path	✓		✓	No sidewalk from Live Oak Avenue to a point approx. 340 feet east	Yes
	Scholars Path to Sparkman Ave	No				Yes
	Sparkman Ave to Carpenter Ave	✓	✓			No
	Carpenter Ave to US 17/92	✓		✓		No
	US 17/92 to Leavitt Ave	✓	✓	✓	North side sidewalk only extends approx 275 feet east of US 17/92 to Holly Ave	No
Graves Avenue	Sparkman Ave to Carpenter Ave	✓		✓		No
	Carpenter Ave to Park Ave	✓		✓		No
	Park Ave to US 17/92	✓			Sidewalk located in median of one-way pairs.	No
	US 17/92 to Leavitt Ave	✓	✓	✓	South side sidewalk terminates approx. 340 feet east of Oak Ave	No
French Avenue*	Grand Ave to Bishop Avenue	No			No sidewalk, however unlikely walk route based on student locations	No
	Bishop Ave to Hamilton Avenue	✓	✓	✓	Sidewalk on north side only from Bishop to eastern limits of Valentine Park. Bike lane only on both sides from Valentine Park to Hamilton Ave	No
	Hamilton Avenue to Sparkman Ave	✓	✓	✓	Bike lane only on both sides	No
	Sparkman Ave to Carpenter Ave	✓	✓	✓	Bike lane only on both sides	No
	Carpenter Ave to US 17/92	✓	✓	✓		No
	US 17/92 to Orange Ave	✓	✓	✓	No sidewalk on south side or street for approx 200 feet east of US 17/92	No
	Orange Ave to Leavitt Ave	✓		✓		No

**From Valentine Park east to Carpenter Avenue, there is a minimum four foot wide bike lane along both sides of French Avenue.*

Table 3
North/South Urban Collector Parallel Sidewalk Inventory
River Springs Middle School Assessment Study

North/South Roadway	Segment	Sidewalk Details				
		Sidewalk Coverage	Side of Road			Hazardous Condition?
			West	East	Exceptions	
Lawton Avenue	Blue Springs Ave to French Ave	No			Lawton Ave is a narrow dirt road	No
Hamilton Ave	French Ave to New York Ave	✓	✓			No
Scholars Path	Ohio Ave to Blue Springs Ave	✓	✓	✓		No
Sparkman Ave	Rhode Island Ave to Ohio Ave	✓	✓	✓		No
	Ohio Ave to Blue Springs Ave	✓		✓		No
	Blue Springs Ave to Graves Ave	✓		✓		No
	Graves Ave to French Ave	✓		✓		No
	French Ave to New York Ave	✓		✓		No
Carpenter Avenue	Fern Drive to Rhode Island Ave	No				Yes
	Rhode Island Ave to Ohio Ave	✓	✓		No sidewalk from Rhode Island Avenue to Sandy Pines Dr, however unlikely walk route based on student locations	No
	Ohio Ave to Blue Springs Ave	✓	✓			No
	Blue Springs Ave to Graves Ave	✓	✓			No
	Graves Ave to French Ave	✓		✓		No
	French Ave to New York Ave	✓		✓	No sidewalk north of May St	Yes
US 17/92	Rhode Island Ave to Ohio Ave	✓	✓	✓		No
	Ohio Ave to Blue Springs Ave	✓	✓	✓		No
	Blue Springs Ave to Graves Ave	✓	✓	✓		No
	Graves Ave to French Ave	✓	✓	✓		No
	French Ave to Wisconsin Ave	✓	✓	✓		No
Leavitt Avenue	Ohio Ave to Blue Springs Ave	✓	✓			No
	Blue Springs Ave to Graves Ave	✓		✓		No
	Graves Ave to French Ave	✓	✓			No

Table 4
Perpendicular Sidewalk Evaluation
River Springs Middle School Assessment Study

Roadway	Perpendicular Street	Daily Traffic Volume	Peak-Hour Directional Traffic Volume	Exceed Volume Threshold	Traffic Signal or Stop Sign	Hazardous Condition
Blue Springs Avenue	Lawton Avenue	7,710	414	Yes	Yes	No
	Sparkman Avenue	7,710	414	Yes	Yes	No
	Carpenter Avenue	7,711	414	Yes	Yes	No
French Avenue	Hamilton Avenue	1,340	72	No	No	No
	Sparkman Avenue	5,970	320	No	No	No
	Carpenter Avenue	5,970	320	No	No	No
Sparkman Avenue	Ohio Avenue	770	41	No	Yes	No
	Blue Springs Avenue	2,200	118	No	Yes	No
US 17/92	Rhode Island Avenue	29,500	1,585	Yes	Yes	No
	Ohio Avenue	29,500	1,585	Yes	Yes	No
	Blue Springs Avenue	29,500	1,585	Yes	Yes	No
	Graves Avenue	29,500	1,585	Yes	Yes	No
	University Avenue	29,500	1,585	Yes	No	Yes
	French Avenue	29,500	1,585	Yes	Yes	No

Based on the criteria for hazardous conditions identified above, there are five roadway segments with hazardous conditions identified in the walk zone. It is recommended that sidewalks be installed along these segments. The perpendicular sidewalk inventory identifies one crossings deemed hazardous based on predicted walk routes; US 17/92 at University Avenue. While, this crossing of US17/92 is only marked by a crosswalk and not controlled by a traffic signal, there are signal controlled crossings of US 17/92 to both the north and south of University Avenue at Graves Avenue and French Avenue, respectively.

Additionally, there are a number of dirt roads within the schools walk zone. While these roads may be utilized by pedestrians, it is not recommended that they be paved nor a sidewalk installed. Additionally, although there is no sidewalk on French Avenue from Valentine Park to Carpenter Avenue, there is a generous bike lane which provides students with a sufficient area to walk along the adjacent roadway and does not create a hazardous condition.

Florida Highway Administration (FHWA) guidelines indicate that urban collector roadways should have sidewalk coverage on both sides of the roadway where there is commercial development, and on at least one side of the road where there is residential development. The following sidewalk and crosswalk improvements are recommended to improve connectivity within the walk zone:

- Continue sidewalk on north side of Ohio Avenue from Thorpe Ave to a point approx 940 feet east.
- Continue sidewalk on south side of Blue Springs Avenue from Live Oak Avenue to a point approx. 340 feet east
- Continue sidewalk on south side of Blue Springs Avenue from Scholars Path to Sparkman Avenue
- Install sidewalk on Carpenter Avenue from Fern Drive to Rhode Island Avenue
- Continue sidewalk on Carpenter Avenue from May Street to New York Avenue
- Install crosswalk on Scholars Path across the drive to the parents loop
- Install crosswalk at the intersection of Sparkman Avenue at French Avenue
- Install crosswalk at the intersection of Ohio Avenue at Carpenter Avenue

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SUMMARY

Table 5 summarizes all recommendations that have been made within this report. These recommendations and existing conditions are also illustrated on Figure 4. It should be noted that Volusia County has identified $1,000,000 for the purpose of constructing sidewalks at not-yet determined locations in its 2010/2011-2014/2015 Transportation Improvement Program. Therefore, it is recommended that the City of Orange City and the County collaborate to implement the recommendations of highest priority.

Table 5
Summary of Recommended Improvements
River Springs Middle School Assessment Study

Location	Observations	Recommendations
On-Campus		
Intersection of Ohio Avenue and Scholars Path	This intersection experiences heavy pedestrian and vehicle traffic during both the a.m. and p.m. periods, creating many conflicts.	Install a second walk gate on Scholars Path, north of the parent loop to direct some pedestrian traffic away from this intersection and a staff member should be present during both the morning and afternoon time periods to help direct students and vehicles
Scholars Path and Ohio Avenue	Parents park and wait in their vehicles to drop off and pick up students	Cones should be set up across these areas during arrival and dismissal periods
Sidewalk crossing in front of parent loop	Low visibility of the sidewalk from vehicles exiting the parent loop due to adjacent wall and no crosswalk at this location	Install a crosswalk across the parent loop driveway and install an additional walk's gate north of the parent loop
General	Poor helmet usage	School should work with programs that provide free helmets to school students such as those offered through the Sheriff's office and Department of Health
Off-Campus		
Various sidewalk locations in walk zone	There are gaps in sidewalk connectivity	Recommend that sidewalks be installed to continue connectivity in the walk zone. See page 15 for detailed segments
Intersection of Scholars Path/Blue Springs Avenue	Faded crosswalk markings	Crosswalk should be restriped
Various Crosswalk locations	No crosswalk at intersections along walk routes	Recommend that crosswalks be installed at French Avenue at Sparkman Avenue and Ohio Avenue at Carpenter Avenue
Intersection of US 17/92 and University Avenue	The crossing of US 17/92 is an uncontrolled crossing site. Given the traffic volumes on US 17/92, this is considered a hazardous condition.	Recommend that a pedestrian signal be installed at this location
General	Group walking, headed by parents or adults	Growth of the Walking Bus Program targeted at existing groups with view to expand.

Legend

- Proposed Sidewalk
- Proposed Crosswalk
- Proposed Crosswalk Location
- River Springs Middle School
- Walk Zone

Miles
0 0.5 1

River Springs Middle School

Bicycle and Pedestrian School Safety Review Study

Orange City, FL

Recommended Improvements

N W E S

Figure: 4

VOLUSIA TPO
TRANSPORTATION PLANNING ORGANIZATION
VISION - PLAN - IMPLEMENT

Lassiter Transportation Group, Inc.
Engineering and Planning

7

EXECUTIVE SUMMARY – IMPLEMENTATION REPORT

Lassiter Transportation Group, Inc. (LTG) was retained by the Volusia Transportation Planning Organization (TPO) to prepare an Implementation Report for the Bicycle and Pedestrian School Safety Review Study for 17 Volusia County schools. The Implementation Report for the Pedestrian and Bicycle School Safety Review Study is based on observations and recommendations of the Assessment Report and includes cost data, ranking criterion for the recommended improvements, and the best practices to follow on old and new developments. The subject of this Implementation Report is River Springs Middle School. Recommendations for sidewalk improvements within this report have an associated total cost of $180,624.16.

Assessment of Existing Conditions

Conditions within the walk zone of River Springs Middle School have been presented and assessed within the Assessment Report contained in the previous sections. Recommendations were also made within those sections to improve observed conditions. These recommendations are evaluated within the following sections, based on these factors:

- Safety severity
    - Distance from the school
    - Crashes
    - Traffic flow (how it affects walkers and bicyclists)
- Benefits associated with improvement
    - Walker and bicyclist traffic
    - Walking and bicycling network/connectivity
- Constructability
- Cost

Each safety issue was rated, ranked, and placed on a prioritized list. A preliminary cost estimate was completed using the FDOT's *2010 Basis of Estimates Manual*. Actual construction costs may vary based on detailed engineering. It is noted that an in-depth engineering constructability analysis of the project should be conducted to determine if the recommendation can be constructed at the suggested estimated cost since recommendations are based on field observations.

8

Best Practices

This section of the report will address the best practices which make walking and bicycling a safer mode of transportation for students. These practices are not only applicable to the walk zone but to any new or old development that supports walking and bicycling. The data gathered for this section of the report comes from the Federal Highway Administration (FHWA), Americans with Disabilities Act of 1990 (ADA), and other documents that are supported by the FDOT and the Volusia County School District.

Sidewalk Design for New Roadways and Developments

Findings

Sidewalk design for new roadways and developments are usually based on anticipated pedestrian demand, the type of development, whether residential, industrial, or commercial, and the jurisdiction. Developers may not want to construct sidewalks because the adjoining properties may not have sidewalks. In some cases, development requirements did not address sidewalk construction or connectivity. These conditions have led to developments that do not include sidewalk connectivity.

Best Practices

When planning a development which is located within the walk zone of a school, safe, connected networks of sidewalks that can be easily navigated by students should be required. If it is not possible to have safe sidewalks then multi-use trails should be considered.

All sidewalks should provide for disabled pedestrians and ought to be incorporated into the planning process for all new roadways and developments. The FHWA has established the following guidelines to assist local jurisdiction with determining when and where pedestrian facilities are needed.

- Develop sidewalks as integral parts of all city streets
- If land use plans anticipate pedestrian activity then sidewalks should be constructed as part of the street development
- Sidewalks should connect nearby urban communities
- Provide sidewalks in rural and suburban areas at schools, local businesses, and industrial plants that result in pedestrian concentrations
- Provide sidewalks whenever the roadside and land development conditions are such that pedestrians regularly move along a main or high-speed highway
- Incorporate sidewalks in rural areas with higher traffic speeds and the general absence of lighting
- Construct sidewalks along any street or highway without shoulders, even if there is light pedestrian traffic

The FHWA went on to say that to initiate the sidewalk installation guidelines above and to promote accessible sidewalk facilities, municipalities should consider the following recommendations:

- Agencies should accept bids from contractors who understand and construct accessible facilities

- Require employees and contractors to demonstrate their knowledge of accessibility topics. If, at any stage of the development process (i.e., planning, design, or installation) accessibility is not addressed, hold the responsible party accountable and make improvements.
- Engineering, transportation, and public policy decision makers should partner with transit providers on projects and programs, and require that transit systems include accessible pedestrian facilities
- Consult with representatives from disability agencies and organizations during all phases of project development
- Include persons with disabilities in the first phases of programming, planning, designing, operating, and constructing pedestrian facilities
- Agencies should ensure that accessibility guidelines are followed throughout planning, project development, and construction of pedestrian facilities

Other local agencies, such as the school board within which the development falls, and the city or county planner, should make sure that the sidewalks are within the minimum set requirements, have good connectivity between residential and commercial developments, increases the allowable densities near major intersections (wider sidewalks), are near major shopping areas and transit lines, and ensure pedestrian friendly sidewalk designs. However, specific design principles must be in place before these options can be exercised. Planning for pedestrian sidewalk usage should be one of the primary goals for developers and should be an integral part of planning for walkable communities.

Appendix D presents the FHWA's guidelines of best practices for the installation of new sidewalks. New developments should consider the following sidewalk safety features to plan for walkers and bicyclists:

- Sidewalks should be constructed on both sides of the road
- Wide pathways
- Acceptable lighting
- No obstacles within walkway
- Sidewalk connectivity
- Sidewalk network
- ADA compliant
- Pedestrian facilities (e.g., shaded benches)
- Changes in grade and slope should be moderate

Sidewalk Retrofit

Findings

Cities, counties, and states have codes and regulations that determine how wide a sidewalk must be and how much shoulder should exist between the sidewalk and pavement. The cities and counties must also follow regulations, set by the ADA, to aid disabled pedestrians. These codes have changed as a result of society working towards consuming less energy and promoting safety and healthier lifestyles. In some older neighborhoods, sidewalks are not up to standards since ADA guidelines were not developed and implemented until the 1990s. If the roadway is retrofitted in the future, then existing sidewalks must be brought into compliance with current ADA standards.

Issues with retrofitting sidewalks may include right-of-way costs, conflicting drainage features or swales in the right-of-way, and steep grades. Some sidewalks may have all the aforementioned issues but insufficient right-of-way for retrofitting.

Best Practices

It is best to create developments with school routes, pedestrian transit routes, and amenities within close walking distances. However, retrofitting sidewalks should be considered in older, noncompliant developments. Additional right-of-way may be required to implement retrofit recommendations.

Projects aimed at retrofitting older sidewalks should research data pertaining to what type of right-of-way exists, a cost analysis of the right-of-way purchase, cost of construction, the condition of existing sidewalks, and the benefits associated with the project. The right-of-way acquisitions process is detailed in *The Real Estate Acquisition Handbook* and is produced by the FDOT.

Existing Substandard Sidewalk

Findings

Older neighborhoods and developments that did not plan for pedestrians may have existing substandard sidewalks. Substandard sidewalk issues include the following (Pedestrian and Bicycle Information Center):

- Sidewalks are buckled, lifted, or cracked due to tree roots or other causes
- Sidewalks are blocked due to the placement of utility poles, sign posts, potholes, fire hydrants, bus benches, newspaper racks, parked cars, or other obstructions
- Sidewalks are blocked by bushes or low tree branches
- Sidewalks lack curb ramps at street corners, crosswalks, and driveways
- The driveway side slopes are steep and hard to cross
- Sidewalk shoulders and adjacent drop-offs are excessive

Any of these existing conditions may make walking and bicycling difficult. When sidewalks are obstructed or do not have curb ramps, it is difficult for walkers and bicyclists to get off the sidewalk and on to the pavement to walk around the obstruction. Driveways with steep side slopes may cause walkers to trip or bicyclists to lose balance.

Best Practices

It is important to determine what sidewalks are substandard and those sidewalks should be placed on a prioritized list to be repaired or brought up to current standards. Maintaining existing sidewalks is paramount to providing a safe walking and bicycling environment.

The restriction of heavy vehicles on the sidewalk, installing root barriers if trees are planted too close to a sidewalk, and removing obstacles will keep sidewalks safe for students who are walking or bicycling to school. Depending on the average width of tree root spread, there should be rules that determine what species, and how far, trees must be planted from the sidewalk to prevent cracks and buckling. Trees and bushes should be kept trimmed to avoid blocking the sidewalk and to maximize the mobility of pedestrians. For obstacles that cannot be moved, regulations should be developed that prevent future installations affecting the sidewalk.

Driveways that have steep slopes should be re-graded to conform to ADA approved practices. This will allow for an easy transition between the sidewalk and the driveway for all pedestrians and bicyclists.

Curb ramps should be installed at all crossings, wherever applicable, such as at an intersection or at a mid-block crossing. Sidewalks should end at a detectable warning strip or whenever the sidewalk changes, such as at a mid-block crossing, and should conform to standards approved by the ADA. Standards set by the ADA include the width, length, slope, and texture of curb ramps and the width and length of landings, if they are needed.

Sidewalk Maintenance

Findings

A sidewalk that clearly has maintenance issues may inhibit pedestrian and bicyclist usage. Existing sidewalks may be hazardous to pedestrians and bicyclists if the following issues exist (FHWA):

- Step separation - a vertical displacement of 13 mm (0.5 in) or greater that could cause pedestrians to trip or prevent the wheels of a wheelchair or stroller from rolling smoothly
- Badly cracked concrete - holes and rough spots ranging from hairline cracks to indentations wider than 13 mm (0.5 in)
- Spalled areas - fragments of concrete or other building material detached from larger structures
- Settled areas that trap water - sidewalk segments with depressions, reverse cross slopes, or other indentations that make the sidewalk path lower than the curb; these depressions trap silt and water on the sidewalk and reduce the slip resistant nature of the surface.
- Tree root damage - roots from trees growing in adjacent landscaping that cause the walkway surface to buckle and crack
- Vegetation overgrowth - ground cover, trees, or shrubs on properties or setbacks adjacent to the path that have not been pruned can encroach onto the path and create obstacles
- Obstacles - objects located on the sidewalk, in setbacks, or on properties adjacent to the sidewalk that obstruct the passage space or the visibility of sidewalk users; obstacles commonly include trash receptacles, utility poles, newspaper vending machines, and mailboxes
- Blocked or inadequately protected drainage inlets and inadequate flow planning
- Temporary construction interruptions
- Inadequate patching after utility installation

Sidewalks are typically in the public right-of-ways and are the sole responsibility of the City or County, depending on who has jurisdiction over that roadway. In some cases, sidewalks are provided along privately maintained roads and common spaces and are the responsibility of a Homeowners Association (HOA) or other property management entity.

Best Practices

- A division of the City or County should be solely dedicated to sidewalk maintenance or, if in the case of privately maintained sidewalks, should be addressed through code enforcement procedures.
- Sidewalk maintenance issues should be placed on a prioritized list of sidewalk projects to be completed.
- Maintenance issues should be solved by using strategies standard to road maintenance. This will minimize the risk of walkers and bicyclists on their way to and from school; and all maintenance issues should be handled consistently throughout the jurisdiction.

Improving Existing Roadway Conditions

Findings

Existing roadway conditions may not offer enough safety for walkers and bicyclists. Motorists may speed within school walk zones and not pay attention to their surroundings. Motorists pulling out of driveways may look for oncoming vehicles but may not look for walkers and bicyclists crossing the driveway.

Best Practices

Roadway conditions can be improved to maintain safety and accessibility for walkers and students who may want to ride their bicycles to school. The following are best practices that improve existing roadway conditions for walkers and students who choose to ride their bicycles to school.

- Signage and pavement markings should be highly visible and current
- Traffic calming devices should be considered to reduce speeds
- Speed studies should be conducted to lower speed limits year-round
- ADA standards should be adhered to
- Consider one-way streets if traffic is too congested during the arrival and dismissal times
- Strict police enforcement should be imposed to deter illegal and unsafe parking practices as well as moving violations within the school zone

Pavement Markings

Findings

Pavement markings are essential to the transportation system to communicate and enhance the messages of roadway operational conditions by augmenting other traffic control devices. School pavement markings and crosswalk markings are especially important since they alert the motorist of walkers and bicyclists entering the pavement at crosswalks and intersections. Pavement markings can easily fade or become obliterated over time. It was observed that SCHOOL markings, which warn motorists that they will soon enter into a school zone, are often faded, cracked, or chipped.

Best Practices

The following best practices are recommended to improve the safety, life, and effectiveness of pavement markings.

- SCHOOL pavement markings and crosswalk markings should be clear and visible in order to warn motorists that they are entering a school zone and/or children are crossing.
- The FDOT's current standard (Index No. 17346) uses a special emphasis crosswalk that lengthens the life of the crosswalk marking.
- Thermoplastic paint should be used for all pavement and school markings to enhance the visibility of walkers and bicyclists. Thermoplastic paint should be used since it is durable, retro-reflective.
- The crosswalk should align with the sidewalk ramps.
- Crosswalks should be installed where walkers and bicyclists are in the pavement for the shortest distance and time possible.
- Pavement markings should be accompanied by the proper signage.
- Pedestrian median refuges should be installed for long crosswalks with interim medians.
- Walkers and bicyclists should be dissuaded from crossing at intersections or mid-block crossings where heavy traffic exists unless accompanied by crossing guards.

Traffic Signal Control

Findings

Traffic signalization has an important role in promoting safety for students who walk or bicycle to school. Drivers at busy intersections can easily overlook students trying to cross a street; consequently, signals allow students the necessary time to safely cross busy intersections.

Illustration 11: Flashing beacon traffic signal control

School flashing beacons (Illustration 11) also play an important role in safety. Flashing beacons alert drivers that they are entering a school zone and indicate that the displayed speed limit is in effect. It was observed that school flashing beacons can be operated manually or can be pre-set to turn off/on during pre-programmed timeframes. Manually run school flashing beacons are usually operated by school crossing guards, who are primarily assigned to cross elementary school students. Unfortunately, this does not address the needs of middle school students.

Best Practices

- Pedestrian signal heads should be considered at all intersections that utilize traffic control signals for motor vehicles within the school walk zones.
- Pedestrian signal buttons should be placed such that it is obvious to elementary and middle school students which buttons to press to access the desired sidewalk.
- Pedestrian signal heads should employ the countdown display which exhibits the symbols of the WALKING MAN beside the numerical countdown. This will help students to decide if they have enough time to cross or if they should wait for the next pedestrian signal phase.
- Students should be educated on the proper ways to cross an intersection when using a pedestrian signal head.
- For students who must cross more than two lanes of traffic, the assignment of crossing guards or overhead pedestrian bridges should be considered.
- U-turns and right-on-reds should be prohibited at intersections where students utilize pedestrian crossings.
- School attendance zones that have crossings at heavily congested intersections should have their walk zones re-evaluated so that students can either walk to another school or transportation could be provided.

Enforcement and Education

Findings

Walkers and bicyclists do not always follow proper crossing procedures. Students may dart through traffic to access the school in the mornings or access a vehicle parked across the road from the school in the afternoons. Students may also cross streets at mid-block without the aid of a crosswalk or an adult. When crosswalks do exist, students do not always follow proper crossing procedures.

Regulations are not always followed by adults dropping off/picking up students (Illustration 12). Motorists were observed to park in No Parking areas and make prohibited vehicular movements, including u-turns. Some motorists were observed to be speeding within the reduced-speed zone.

Illustration 12: Intersection of Ohio Avenue and Scholars Path at dismissal

Students who choose to ride their bicycles to school do not always wear helmets.

Best Practices

- Students and parents should be educated on proper crossing procedures. Parents, crossing guards, and School Resource Officers (SRO) should be the main resources for safety.
- Parents should receive flyers or recorded messages on a school-wide basis to inform them of the proper drop-off/pick-up procedures. Strict enforcement of these procedures should eventually deter parents from practicing unsafe drop-off/pick-up actions.
- Prohibited vehicular movements should be strictly handled and higher fines could be considered, where allowable by law, during the arrival and dismissal times of school.
- Helmets should always be worn by bicycling students. Parents, school staff, crossing guards, and school resource officers should encourage helmet usage. Non-compliant helmet users should be dealt with consistently and strictly.
- Encourage walking and bicycling by providing free helmets, stickers, reflective gear, or create an incentive program.
- Schools should provide a safe and secure bicycle storage facility for students who choose to ride their bicycles to school.
- Parents should be informed about the different walking and bicycling programs available and the school and its volunteers should assist in planning and implementing those programs.
- Students who are regular walkers and bicyclists should be paired with other walkers and bicyclists who live in the same area.
- Crossing guards should be involved in the re-zoning of walk zones since they have a better understanding of the distribution of the walker and bicyclist population.

School Board Considerations

Findings

School districts generally employ the two-mile walk route to determine the walk zone. This is not always the best option to promote safety. Students may have to cross congested intersections, too many intersections, and/or busy driveways.

Sidewalks are not always located on both sides of the road. This may encourage unsafe crossings where no crosswalks exist. Walk zones can also include sidewalks that end at an unsignalized intersection with no safe alternative to gain access to the sidewalk on the opposite side of the roadway.

It was noted that schools prefer to have one controlled point of entry that is monitored by school staff. In these cases, students who walk or ride their bicycles to school may have to cross busy driveways including drop-off/pick-up loops, bus loops, and even parent and teacher parking lots, to enter/exit the controlled point of entry.

Best Practices

- **As defined in F.S. 1006.23, the School District staff collaborates with the Sheriff's crossing** guards, City and County Public Works and FDOT to evaluate a school's walk zone and its hazardous walking conditions as defined.
- In effort to avoid the inter-mingling of elementary, middle, and high school traffic, school arrival and dismissal, Volusia County School District has a three-tiered bell schedule. Further, each school separates bus traffic from parent pick-up drop-off traffic.
- It is necessary to review all new development plans within the school walk zone to ensure that developers are providing sidewalks on either side of the road and maintaining sidewalk connectivity and networking to the school. Volusia County School District is a member of city and county development review teams and reviews new site plans and subdivisions to ensure adequate area is designated for school bus stops and sidewalks. City and County land development regulations require sidewalks.
- All new schools should be planned with good sidewalk connectivity/network to all neighborhoods and developments within its walk zone.
- As required by F.S. 1006.23, Volusia County School District provides bus service to students who do not have access to safe routes to school.
- There are certain programs which promote walking and bicycling to school. Volusia County School District currently participates in such programs (e.g. Walking School Bus, SAFE KIDS Walk This Way, and International Walk to School Day). Bicycle and pedestrian safety is part of the existing elementary physical education curriculum.
- A No Backpack policy should be considered to encourage walking and bicycling to school and consideration to the following is recommended:
    - All textbooks should be accessible on-line
    - A set of textbooks should be available at the local library
    - Provide students with a set of textbooks to keep at home
- Each school should enforce bicycle safety, helmet usage should be closely monitored for compliance, and PTA meetings to ensure parent support and compliance with these policies should be promoted.
- All teachers assisting during arrival/dismissal should wear safety vests when they are crossing students or interacting with vehicular traffic.

9

Master improvement Plan

Refer to Figure 4 of the Assessment Section for the recommendations. It highlights the locations of existing conditions as well as the proposed improvements. The following sections will provide more details on the recommendations shown in Figure 4.

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CONSTRUCTABILITY MATRIX

The matrix in Table 5 shows the estimated cost of sidewalk-related projects that are recommended for improvement. FDOT's *2010 Basis of Estimates* manual was used to develop the constructability matrix. The estimated construction costs for these recommendations are $180,624.16. The costs shown in the constructability matrix includes material and labor fees. As mentioned before, these improvements are based on field observations and should be verified by a contractor prior to construction.

Table 5
Constructability Matrix
River Springs Middle School Implementation Report

PRIORITY #	PROJECT NAME	DESCRIPTION		PAY ITEM NUMBER	PAY ITEM DESCRIPTION	PLAN QTY	UNIT MEASURE	UNIT PRICE	ESTIMATED COST
		LOCATION	RECOMMENDATION						
1	Pavement Markings	west side of Scholars Path at Parent Loop	Special emphasis crosswalk should be installed	711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	125.00	LF	$4.51	$563.75
				711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	100.00	LF	$1.84	$184.00
	SUBTOTAL:								$747.75
2	Sidewalk Extension	south side of Blue Springs Ave. from Live Oak Ave. to approx. 340 ft. east	Sidewalk should be installed	522-1	SIDEWALK CONC, 4" THICK	189.00	SY	$45.22	$8,546.58
		south side of Blue Springs Ave. from Scholars Path to Sparkman Ave.	Sidewalk should be installed	522-1	SIDEWALK CONC, 4" THICK	508.00	SY	$45.22	$22,971.76
	SUBTOTAL:								$31,518.34
3	Pavement Markings	east side of Sparkman Ave. at French Ave.	Special emphasis crosswalk should be installed	711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	158.00	LF	$4.51	$712.58
				711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	126.00	LF	$1.84	$231.84
	SUBTOTAL:								$944.42
4	Pavement Markings	south side of Ohio Ave. at Carpenter Ave.	Landing should be installed according to Std. Index No. 310	522-1	SIDEWALK CONC, 4" THICK	1.00	SY	$45.22	$45.22
		south side of Ohio Ave. at Carpenter Ave.	Special emphasis crosswalk should be installed	711-11-125	THERMOPLASTIC, STD, WHITE, SOLID, 24"	75.00	LF	$4.51	$338.25
				711-11-123	THERMOPLASTIC, STD, WHITE, SOLID, 12"	60.00	LF	$1.84	$110.40
	SUBTOTAL:								$493.87
5	Sidewalk Installation	west side of Carpenter Ave. from Fern Dr. to Rhode Island Ave.	Sidewalk should be installed	522-1	SIDEWALK CONC, 4" THICK	1,019.00	SY	$45.22	$46,079.18
6	Sidewalk Extension	east side of Carpenter Ave. from May St. to New York Ave.	Sidewalk should be installed	522-1	SIDEWALK CONC, 4" THICK	1,708.00	SY	$45.22	$77,235.76
7	Sidewalk Extension	north side of Ohio Ave. from Thorpe Ave. to current terminus approx. 940 ft. east	Sidewalk should be installed	522-1	SIDEWALK CONC, 4" THICK	522.00	SY	$45.22	$23,604.84
TOTAL:									**$180,624.16**

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RECOMMENDED PRIORITY PROJECTS

This section of the report provides additional information about each project in ranking order.

Background: The Volusia TPO is continuing in its capacity to improve the safety of the school walk zone for walkers and bicyclists who live within the school walk zone. The safety issues addressed within this report will be reviewed by the TPO for potential funding to implement the recommended changes and, thereby, improve the safety of the school walk zone, where possible. The safety issues which produce the following four sidewalk recommendations are that gaps in sidewalk coverage along major school routes may force students to walk or bicycle within the travelled way. Provision of well connected sidewalks dictates exactly where students should walk.

Project No. 1: **Installation of crosswalk on Scholars Path at the parent loop driveway**
Submitting Agency: City of Orange City
Project Location: Scholars path at the parent loop drive
School Served: River Springs Middle Scho**ol**
Project Description: Crosswalk pavement markings
LAP Coordinator: City of Orange City
Maintaining Agency: City of Orange City

Project Description: This project includes installing a special emphasis crosswalk on the west side of Scholars Path at the parent loop driveway crossing.

Estimated Cost: The estimated cost for this project is $747.75.

Project No. 2: **Installation of Sidewalk on Blue Springs Avenue**
Submitting Agency: City of Orange City
Project Location: Blue Springs Avenue
School Served: River Springs Middle School
Project Description: Sidewalk installation
LAP Coordinator: City of Orange City
Maintaining Agency: City of Orange City

Project Description: This project includes the installation of five-foot sidewalks on the south side of Blue Springs Avenue from Live Oak Avenue to approximately 340 feet east and from Scholars Path to Sparkman Avenue

Estimated Cost: The estimated cost for this project is $31,518.34.

Project No. 3: **Installation of crosswalk on Sparkman Avenue at French Avenue**
Submitting Agency: Volusia County
Project Location: Sparkman Avenue at French Avenue
School Served: River Springs Middle School
Project Description: Crosswalk pavement markings
LAP Coordinator: Volusia County
Maintaining Agency: Volusia County

Project Description: This project includes installing a special emphasis crosswalk on the east side of Sparkman Avenue at the French Avenue crossing.

Estimated Cost: **The estimated cost for this project is $944.42.**

Project No. 4: **Installation of crosswalk on Ohio Avenue at Carpenter Avenue**
Submitting Agency: City of Orange City
Project Location: Ohio Avenue at Carpenter Avenue
School Served: River Springs Middle School
Project Description: Crosswalk pavement markings
LAP Coordinator: City of Orange City
Maintaining Agency: City of Orange City

Project Description: This project includes installing a special emphasis crosswalk on the south side of Ohio Avenue at the Carpenter Avenue crossing and installation of a landing.

Estimated Cost: The estimated cost for this project is $498.87.

Project No. 5: **Installation of sidewalk on Carpenter Avenue**
Submitting Agency: City of Orange City
Project Location: Carpenter Avenue
School Served: River Springs Middle School
Project Description: Sidewalk installation
LAP Coordinator: City of Orange City
Maintaining Agency: City of Orange City

Project Description: This project includes the installation of a five-foot sidewalk on the west side of Carpenter Avenue from Fern Drive to Rhode Island Avenue.

Estimated Cost: The estimated cost for this project is $46,079.18.

Project No. 6: **Installation of sidewalk on Carpenter Avenue**
Submitting Agency: City of Orange City
Project Location: Carpenter Avenue
School Served: River Springs Middle School
Project Description: Sidewalk installation
LAP Coordinator: City of Orange City
Maintaining Agency: City of Orange City

Project Description: This project includes the installation of a five-foot sidewalk on the east side of Carpenter Avenue from May Street to New York Avenue.

Estimated Cost: The estimated cost for this project is $77235.76.

Project No. 7:	**Installation of sidewalk on Ohio Avenue**
Submitting Agency:	City of Orange City
Project Location:	Ohio Avenue
School Served:	River Springs Middle School
Project Description:	Sidewalk installation
LAP Coordinator:	City of Orange City
Maintaining Agency:	City of Orange City

Project Description: This project includes installing a special emphasis crosswalk on the north side of Ohio Avenue from Thorpe Avenue to current terminus approximately 940 feet east.

Estimated Cost: The estimated cost for this project is $23,604.84.

WORKS CITED

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"Manual on Uniform Traffic Control Devices." < http://mutcd.fhwa.dot.gov/htm/2009/part7/part7_toc.htm>.

"Safe Routes to School Guideline." < http://www.saferoutesinfo.org/guide/pdf/SRTS-Guide_full.pdf>.

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APPENDICES

Appendices

Appendix A
Crash Reports

FLORIDA TRAFFIC CRASH REPORT
LONG FORM

MAIL TO: DEPT. OF HIGHWAY SAFETY & MOTOR VEHICLES, TRAFFIC CRASH RECORDS, NEIL KIRKMAN BUILDING, TALLAHASSEE, FL 32399-0537

DO NOT WRITE IN THIS SPACE

Time & Location

DATE OF CRASH	TIME OF CRASH	TIME OFFICER NOTIFIED	TIME OFFICER ARRIVED	INVEST. AGENCY REPORT NUMBER	HSMV CRASH REPORT NUMBER
05/01/08	400 AM [X] PM	729 AM [X] PM	735 AM [X] PM	08-01640	72697332

COUNTY / CITY CODE	FEET or MILE(S)	N S E W	CITY OR TOWN	(Check if in City or Town)	COUNTY
08/48		[ ] [ ] [ ] [ ]	of ORANGE CITY	[X]	VOLUSIA

AT NODE NO.	or FEET	or MILE(S)	FROM NODE NO.	NEXT NODE NO.	NO. OF LANES	1. DIVIDED 2. UNDIVIDED	ON STREET, ROAD OR HIGHWAY
	75		20910A	20906	2	2	(400 BLK) N. CARPENTER

AT THE INTERSECTION OF (street, road or highway) | or FEET 75 | MILE(S) | N [X] S E W | FROM INTERSECTION OF (street, road or highway) W. FRENCH AVE

Section 1 — Vehicle / Pedestrian

DRIVER ACTION (1. Phantom 2. Hit & Run 3. N/A)	YEAR	MAKE	TYPE	USE	VEH. LICENSE NUMBER	STATE	VEHICLE IDENTIFICATION NUMBER
3	00	FORD	02	01	K609AW	FL	2FMZA51484BB83032
TRAILER OR TOWED VEHICLE INFORMATION	N/A		TRAILER TYPE				

18. Undercarriage 19. Overturn 20. Windshield 21. Trailer — SHOW FIRST POINT OF VEHICLE DAMAGE AND CIRCLE DAMAGED AREA(S): 2

VEHICLE TRAVELLING N S E W	ON	AT	Est. MPH	Posted Speed	EST. VEHICLE DAMAGE	1. Disabling 2. Functional 3. No Damage	EST. TRAILER DAMAGE
[X]	N. CARPENTER AVE		30 MPH	25 MPH	$1000.00	2	

MOTOR VEHICLE INSURANCE COMPANY (LIABILITY OR PIP)	POLICY NUMBER	VEHICLE REMOVED BY:	1. Tow Rotation List 2. Tow Owner's Request 3. Driver 4. Other
ALL STATE	081039442		3

NAME OF VEHICLE OWNER (Check Box If Same As Driver) [X]	CURRENT ADDRESS (Number and Street)	CITY AND STATE	ZIP CODE
THORSTON DELOS CUMMINGS III	610 PATLIN AV.	ORANGE CITY FL	32763

NAME OF OWNER (Trailer or Towed Vehicle)	CURRENT ADDRESS (Number and Street)	CITY AND STATE	ZIP CODE

NAME OF MOTOR CARRIER (Commercial Vehicle Only)	CURRENT ADDRESS (Number and Street)	CITY, STATE AND ZIP CODE	US DOT or ICC MC IDENTIFICATION NUMBERS

NAME OF DRIVER (Take From Driver License) / PEDESTRIAN	CURRENT ADDRESS (Number and Street)	CITY, STATE & ZIP CODE	DATE OF BIRTH
			4/21/56

DRIVER LICENSE NUMBER	STATE	DL TYPE	REQ. END.	ALC/DRUG TEST TYPE (1 Blood 2 Breath 3 Urine 4 Refused 5 None)	RESULTS	ALC/DRUG	PHYS.DEF.	RES.	RACE	SEX	INJ.	S. EQUIP.	EJECT.
C552 804 56 141 0	FL	E	-	5		5	1	1	1	1	1	2	1

HAZARDOUS MATERIALS BEING TRANSPORTED (1 Yes 2 No)	PLACARDED (1 Yes 2 No)	IF YES, INDICATE NAME OR 4 DIGIT NUMBER FROM DIAMOND OR BOX ON PLACARD, AND 1 DIGIT NUMBER FROM BOTTOM OF DIAMOND.	WAS HAZARDOUS MATERIAL SPILLED? (1 Yes 2 No)	RECOMMEND DRIVER RE-EXAM, IF YES EXPLAIN IN NARRATIVE (1 Yes 2 No)	DRIVER'S PHONE NO.
2	2		2	2	(386) 775 9478

Section 2 — Vehicle / Pedestrian

DRIVER ACTION (1. Phantom 2. Hit & Run 3. N/A)	YEAR	MAKE	TYPE	USE	VEH. LICENSE NUMBER	STATE	VEHICLE IDENTIFICATION NUMBER
3	—	BICYCLE	10	01	—	—	UNK
TRAILER OR TOWED VEHICLE INFORMATION			TRAILER TYPE				

18. Undercarriage 19. Overturn 20. Windshield 21. Trailer — SHOW FIRST POINT OF VEHICLE DAMAGE AND CIRCLE DAMAGED AREA(S): 1

VEHICLE TRAVELLING N S E W	ON	AT	Est. MPH	Posted Speed	EST. VEHICLE DAMAGE	1. Disabling 2. Functional 3. No Damage	EST. TRAILER DAMAGE
[X]	N. CARPENTER AVE		8 MPH	25	UNK	1	

MOTOR VEHICLE INSURANCE COMPANY (LIABILITY OR PIP)	POLICY NUMBER	VEHICLE REMOVED BY:	1. Tow Rotation List 2. Tow Owner's Request 3. Driver 4. Other
N/A		UNK	4

NAME OF VEHICLE OWNER (Check Box If Same As Driver) [ ]	CURRENT ADDRESS (Number and Street)	CITY AND STATE	ZIP CODE
UNK			

NAME OF OWNER (Trailer or Towed Vehicle)	CURRENT ADDRESS (Number and Street)	CITY AND STATE	ZIP CODE

NAME OF MOTOR CARRIER (Commercial Vehicle Only)	CURRENT ADDRESS (Number and Street)	CITY, STATE AND ZIP CODE	US DOT or ICC MC IDENTIFICATION NUMBERS

NAME OF DRIVER (Take From Driver License) / PEDESTRIAN	CURRENT ADDRESS (Number and Street)	CITY, STATE & ZIP CODE	DATE OF BIRTH
ROB			

DRIVER LICENSE NUMBER	STATE	DL TYPE	REQ. END.	ALC/DRUG TEST TYPE (1 Blood 2 Breath 3 Urine 4 Refused 5 None)	RESULTS	ALC/DRUG	PHYS.DEF.	RES.	RACE	SEX	INJ.	S. EQUIP.	EJECT.
UNK						UNK	1	5	1	1	2		2

WAS HAZARDOUS MATERIAL BEING TRANSPORTED (1 Yes 2 No)	PLACARDED (1 Yes 2 No)	IF YES, INDICATE NAME OR FOUR DIGIT NUMBER FROM DIAMOND OR BOX ON PLACARD, AND 1 DIGIT NUMBER FROM BOTTOM OF DIAMOND.	WAS HAZARDOUS MATERIAL SPILLED? (1 Yes 2 No)	RECOMMEND DRIVER RE-EXAM, IF YES EXPLAIN IN NARRATIVE (1 Yes 2 No)	DRIVER'S PHONE NO.
2	2		2	2	( ) UNK

Code Information

VEHICLE TYPE	VEHICLE USE	TRAILER TYPE
01 Automobile	01 Private Transportation	01 Single Semi Trailer
02 Van	02 Commercial Passengers	02 Tandem Semi Trailer
03 Light Truck / P.U. - 2 or 4 rear tires	03 Commercial Cargo	03 Tank Trailer
04 Medium Truck - 4 rear tires	04 Public Transportation	04 Saddle Mount / Flatbed
05 Heavy Truck - 2 or more rear axles	05 Public School Bus	05 Boat Trailer
06 Truck Tractor (Cab-Bobtail)	06 Private School Bus	06 Utility Trailer
07 Motor Home (RV)	07 Ambulance	07 House Trailer
08 Bus (driver + seats for 9-15)	08 Law Enforcement	08 Pole Trailer
09 Bus (driver + seats for over 15)	09 Fire / Rescue	09 Towed Vehicle
10 Bicycle	10 Military	10 Auto Transport
11 Motorcycle	11 Other Government	77 Other
12 Moped	12 Dump	
13 All Terrain Vehicle	13 Concrete Mixer	
14 Train	14 Garbage or Refuse	
15 Low Speed Vehicle	15 Cargo Van	
77 Other	77 Other	

RESIDENCE (Driver / Ped.)	DL TYPE	RACE
1 County of Crash	1 A 2 B 3 C	1 White
2 Elsewhere in State	4 D/ Chauffeur	2 Black
3 Non-Resident Out of State	5 E/ Operator	3 Hispanic
4 Foreign 5 Unknown	6 E/ Oper.-Rest.	4 Other
	7 None	
REQUIRED ENDORSEMENTS		**SEX**
1 Yes		1 Male
2 No		2 Female
3 No Endorsement Required		

PHYSICAL DEFECTS	ALCOHOL / DRUG USE
1 No Defects Known	1 Not Drinking or Using Drugs
2 Eyesight Defect	2 Alcohol - Under Influence
3 Fatigue / Asleep	3 Drugs - Under Influence
4 Hearing Defect	4 Alcohol & Drugs - Under Influence
5 Illness	5 Had Been Drinking
6 Seizure, Epilepsy, Blackout	6 Pending ALC/DRUG Test Results
7 Other Physical Defect	
INJURY SEVERITY	**SAFETY EQUIPMENT IN USE**
1 None	1 Not In use
2 Possible	2 Seat Belt / Shoulder Harness
3 Non-Incapacitating	3 Child Restraint
4 Incapacitating	4 Air Bag - Deployed
5 Fatal (Within 30 Days)	5 Air Bag - Not Deployed
6 Non-Traffic Fatality	6 Safety Helmet
	7 Eye Protection

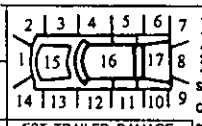
LOCATION IN VEHICLE
1 Front Left
2 Front Center
3 Front Right
4 Rear Left
5 Rear Center
6 Rear Right
7 In Body Of Truck
8 Bus Passenger
9 Other
EJECTED
1 No
2 Yes
3 Partial

ZONE 5

08-01640

Section 3

DRIVER ACTION: 1. Phantom 2. Hit & Run 3. N/A	YEAR	MAKE	TYPE	USE	VEH. LICENSE NUMBER	STATE	VEHICLE IDENTIFICATION NUMBER
TRAILER OR TOWED VEHICLE INFORMATION			TRAILER TYPE				



18. Undercarriage 19. Overturn 20. Windshield 21. Trailer
SHOW FIRST POINT OF VEHICLE DAMAGE AND CIRCLE DAMAGED AREA(S)

Vehicle

VEHICLE TRAVELLING N S E W	ON	AT	Est MPH	Posted Speed	EST. VEHICLE DAMAGE	1. Disabling 2. Functional 3. No Damage	EST. TRAILER DAMAGE

MOTOR VEHICLE INSURANCE COMPANY (LIABILITY OR PIP)	POLICY NUMBER	VEHICLE REMOVED BY:	1. Tow Rotation List 2. Tow Owner's Request 3. Driver 4. Other

NAME OF VEHICLE OWNER (Check Box If Same As Driver) ☐	CURRENT ADDRESS (Number and Street))	CITY AND STATE	ZIP CODE

NAME OF OWNER (Trailer or Towed Vehicle)	CURRENT ADDRESS (Number and Street)	CITY AND STATE	ZIP CODE

Pedestrian

NAME OF MOTOR CARRIER (Commercial Vehicle Only)	CURRENT ADDRESS (Number and Street)	CITY , STATE AND ZIP CODE	US DOT or ICC MC IDENTIFICATION NUMBERS

NAME OF DRIVER (Take From Driver License) / PEDESTRIAN	CURRENT ADDRESS (Number and Street))	CITY , STATE & ZIP CODE	DATE OF BIRTH

DRIVER LICENSE NUMBER	STATE	DL TYPE	REQ. END.	ALC/DRUG TEST TYPE 1 Blood 3 Urine 5 None 2 Breath 4 Refused	RESULTS	ALC/DRUG	PHYS.DEF.	RES.	RACE	SEX	INJ.	S. EQUIP.	EJECT.

HAZARDOUS MATERIALS BEING TRANSPORTED 1 Yes 2 No	PLACARDED 1 Yes 2 No	IF YES, INDICATE NAME OR 4 DIGIT NUMBER FROM DIAMOND OR BOX ON PLACARD, AND 1 DIGIT NUMBER FROM BOTTOM OF DIAMOND.	WAS HAZARDOUS MATERIAL SPILLED? 1 Yes 2 No	RECOMMEND DRIVER RE-EXAM, IF YES EXPLAIN IN NARRATIVE 1 Yes 2 No	DRIVER'S PHONE NO.
					( )

#	PROPERTY DAMAGED - OTHER THAN VEHICLES	EST. AMOUNT	OWNER'S NAME	ADDRESS	CITY	STATE	ZIP
1		$					
2	PROPERTY DAMAGED - OTHER THAN VEHICLES	EST. AMOUNT	OWNER'S NAME	ADDRESS	CITY	STATE	ZIP
		$					

CONTRIBUTING CAUSES - DRIVER / PEDESTRIAN

	[1]	[2]	[3]
	01	77	/
	/	/	/
	/	/	/
	/	/	/

01 No Improper Driving / Action
02 Careless Driving (Explain In Narrative)
03 Failed To Yield Right - of - Way
04 Improper Backing
05 Improper Lane Change
06 Improper Turn
07 Alcohol - Under Influence
08 Drugs - Under Influence
09 Alcohol & Drugs - Under Influence
10 Followed Too Closely
11 Disregarded Traffic Signal
12 Exceeded Safe Speed Limit
13 Disregarded Stop Sign
14 Failed To Maintain Equip. / Vehicle
15 Improper Passing
16 Drove Left of Center
17 Exceeded Stated Speed Limit
18 Obstructing Traffic
19 Improper Load
20 Disregarded Other Traffic Control
21 Driving Wrong Side / Way
22 Fleeing Police
23 Vehicle Modified
24 Driver Distraction (Explain In Narrative)
77 All Other (Explain In Narrative)

VEHICLE DEFECT

	[1]	[2]	[3]
	01	01	/
	/	/	/

01 No Defects
02 Def. Brakes
03 Worn / Smooth Tires
04 Defective / Improper Lights
05 Puncture / Blowout
06 Steering Mech.
07 Windshield Wipers
08 Equipment / Vehicle Defect
77 All Other (Explain In Narrative)

POINT OF COLLISION

	[1]	[2]	[3]
	01	01	/

01 On Road
02 Not On Road
03 Shoulder
04 Median
05 Turn Lane

WORK AREA

	[1]	[2]	[3]
	01	01	/

01 None
02 Nearby
03 Entered

VEHICLE MOVEMENT

	[1]	[2]	[3]
	02	77	/

01 Straight Ahead
02 Slowing / Stopped / Stalled
03 Making Left Turn
04 Backing
05 Making Right Turn
06 Changing Lanes
07 Entering / Leaving / Parking Space
08 Properly Parked
09 Improperly Parked
10 Making U-Turn
11 Passing
12 Driverless or Runaway Vehicle
77 All Other (Explain In Narrative)

VEHICLE SPECIAL FUNCTIONS

	[1]	[2]	[3]
	1	1	/

1 None
2 Farm
3 Police Pursuit
4 Recreational
5 Emergency Operation
6 Construction / Maintenance

SOURCE OF CARRIER INFORMATION

	[1]	[2]	[3]
	1	1	/

1 Not Applicable
2 Shipping Papers
3 Vehicle Side
4 Driver
5 Other

PEDESTRIAN ACTION

	[1]	[2]	[3]
	/	/	/

01 Crossing Not at Intersection
02 Crossing at Mid-block Crosswalk
03 Crossing at Intersection
04 Walking Along Road With Traffic
05 Walking Along Road Against Traffic
06 Working on Vehicle In Road
07 Working In Road
08 Standing/Playing In Road
09 Standing In Pedestrian Island
77 All Other (Explain In Narrative)
88 Unknown

LOCATION TYPE

2

1 Primarily Business
2 Primarily Residential
3 Open Country

FIRST / SUBSEQUENT HARMFUL EVENT(S)

	[1]	[2]	[3]
	11	03	/
	/	/	/
	/	/	/
	/	/	/

01 Collision With MV in Transport(Rear End)
02 Collision With MV in Transport(Head On)
03 Collision With MV in Transport(Angle)
04 Collision With MV in Transport(Left Turn)
05 Collision With MV in Transport(Right Turn)
06 Collision With MV in Transport(Sideswipe)
07 Collision With MV in Transport(Backed Into)
08 Collision With Parked Car
09 Collision With MV on Roadway
10 Collision With Pedestrian
11 Collision With Bicycle
12 Collision With Bicycle (Bike Lane)
13 Collision With Moped
14 Collision With Train
15 Collision With Animal
16 MV Hit Sign / Sign Post
17 MV Hit Utility Pole / Light Pole
18 MV Hit Guardrail
19 MV Hit Fence
20 MV Hit Concrete Barrier Wall
21 MV Hit Bridge/Pier/Abutment/Rail
22 MV Hit Tree /Shrubbery
23 Collision With Construction Barricade Sign
24 Collision With Traffic Gate
25 Collision With Crash Attenuators
26 Collision With Fixed Object Above Road
27 MV Hit Other Fixed Object
28 Collision With Moveable Object On Road
29 MV Ran Into Ditch/Culvert
30 Ran Off Road Into Water
31 Overturned
32 Occupant Fell From Vehicle
33 Tractor/Trailer Jackknifed
34 Fire
35 Explosion
36 Downhill Runaway
37 Cargo Loss or Shift
38 Separation of Units
39 Median Crossover
77 All Other (Explain In Narrative)

ROAD SYSTEM IDENTIFIER

05

01 Interstate
02 U.S.
03 State
04 County
05 Local
06 Turnpike / Toll
07 Forest Road
08 Private Roadway
77 All Other (Explain In Narrative)

LIGHTING CONDITION

01

01 Daylight
02 Dusk
03 Dawn
04 Dark (Street Light)
05 Dark (No Street Light)
88 Unknown

ROAD SURFACE CONDITION

01

01 Dry
02 Wet
03 Slippery
04 Icy
77 All Other (Explain In Narrative)

WEATHER

01

01 Clear
02 Cloudy
03 Rain
04 Fog
77 All Other (Explain In Narrative)

ROAD SURFACE TYPE

02

01 Slag/Gravel/Stone
02 Blacktop
03 Brick/Block
04 Concrete
05 Dirt
77 All Other (Explain In Narrative)

ROAD CONDITIONS AT TIME OF CRASH

01

01 No Defects
02 Obstruction With Warning
03 Obstruction Without Warning
04 Road Under Repair / Construction
05 Loose Surface Materials
06 Shoulders - Soft / Low / High
07 Holes / Ruts / Unsafe Paved Edge
08 Standing Water
09 Worn / Polished Road Surface
77 All Other (Explain In Narrative)

VISION OBSTRUCTED

01

01 Vision Not Obscured
02 Inclement Weather
03 Parked / Stopped Vehicle
04 Trees / Crops / Bushes
05 Load On Vehicle
06 Building / Fixed Object
07 Signs / Billboards
08 Fog
09 Smoke
10 Glare
77 All Other (Explain In Narrative)

TRAFFIC CONTROL

03

01 No Control
02 Special Speed Zone
03 Speed Control Sign
04 School Zone
05 Traffic Signal
06 Stop Sign
07 Yield Sign
08 Flashing Light
09 Railroad Signal
10 Officer / Guard / Flagperson
11 Posted No U-Turn
12 No Passing Zone
77 All Other (Explain In Narrative)

SITE LOCATION

77

01 Not At Intersection / RR X-ing / Bridge
02 At Intersection
03 Influenced By Intersection
04 Driveway Access
05 Railroad
06 Bridge
07 Entrance Ramp
08 Exit Ramp
09 Parking Lot - Public
10 Parking Lot - Private
11 Private Property
12 Toll Booth
13 Public Bus Stop Zone
77 All Other (Explain In Narrative)

TRAFFICWAY CHARACTER

01

01. Straight - Level
02. Straight - Upgrade / Downgrade
03. Curve - Level
04. Curve - Upgrade / Downgrade

TYPE SHOULDER

02

01. Paved
02. Unpaved
03. Curb

Violator(s)

SECTION #	NAME OF VIOLATOR	FL STATUTE NUMBER	CHARGE	CITATION NUMBER
SECTION #	NAME OF VIOLATOR	FL STATUTE NUMBER	CHARGE	CITATION NUMBER
SECTION #	NAME OF VIOLATOR	FL STATUTE NUMBER	CHARGE	CITATION NUMBER
SECTION #	NAME OF VIOLATOR	FL STATUTE NUMBER	CHARGE	CITATION NUMBER

FLORIDA TRAFFIC CRASH REPORT
NARRATIVE/DIAGRAM

MAIL TO: DEPARTMENT OF HIGHWAY SAFETY & MOTOR VEHICLES, TRAFFIC CRASH RECORDS SECTION, NEIL KIRKMAN BUILDING, TALLAHASSEE, FL 32399-0500

DO NOT WRITE IN THIS SPACE

TIME EMS NOTIFIED (FATALITIES ONLY)	TIME EMS ARRIVED (FATALITIES ONLY)	DATE OF CRASH	COUNTY / CITY CODE	INVEST. AGENCY REPORT NUMBER	HSMV CRASH REPORT NUMBER
☐ AM ☐ PM	☐ AM ☐ PM	05 / 01 / 08	08/48	12697332	08-01640

(NARRATIVE)

VEHICLE 1 WAS TRAVELING NORTH BOUND ON N. CARPENTER AVE. VEHICLE 2 (BICYCLE) WAS TRAVELING SOUTHBOUND ON N. CARPENTER AVE IN THE NORTH BOUND LANE. VEHICLE 2 ATTEMPTED TO MAKE A R-TURN INTO 421 N. CARPENTER, HOWEVER VEHICLE 2 DID NOT YIELD TO VEHICLE 1. VEHICLE 1 DID ATTEMPT TO AVOID VEHICLE 2 BY SWERVING TO THE SOUTH BOUND LANE, VEHICLE 1 STRUCK VEHICLE 2 WITH THE FRONT PASSENGER SIDE BUMPER.

DRIVER OF VEHICLE 1 OFFERED TO CALL POLICE, BUT THE RIDER OF VEHICLE 2 STATED HE WAS OK AND HE DID NOT WANT ANYTHING TO HAPPEN. THIS WAS CONFIRMED BY WITNESS 1. SEE STATEMENTS. THE RIDER IS ONLY KNOWN AS ROB AND IS A W/M 5'07 150 LBS SHORT BROWN HAIR.)

BOTH PARTIES THEN LEFT SCENE, DRIVER OF VEHICLE 1 STATED HE WAS SHAKEN UP AND WENT HOME AND HAD AN ALCOHOLIC BEVERAGE ~~AND~~ SO HE THEN DECIDED TO NOTIFY THE POLICE.

SEC#	PASS#	PASSENGER'S NAME	CURRENT ADDRESS	CITY & STATE	ZIP CODE	DATE OF BIRTH	RACE	SEX	LOC	INJ	S. EQUIP.	EJECT.

Violator(s)	SECTION #	NAME OF VIOLATOR	FL STATUTE NUMBER	CHARGE	CITATION NUMBER
	SECTION #	NAME OF VIOLATOR	FL STATUTE NUMBER	CHARGE	CITATION NUMBER

WITNESS NAME (1)	CURRENT ADDRESS	CITY & STATE	ZIP CODE	WITNESS NAME (2)	CURRENT ADDRESS	CITY & STATE	ZIP CODE
RICHARD MCLEAN	421 N. CARPENTER	ORANGE CITY FL	32763				

FIRST AID GIVEN BY - NAME	1. Physician or Nurse 2. Paramedic or EMT 3. Police Officer 4. Certified 1st Aider 5. Other	INJURED TAKEN TO:	BY - NAME

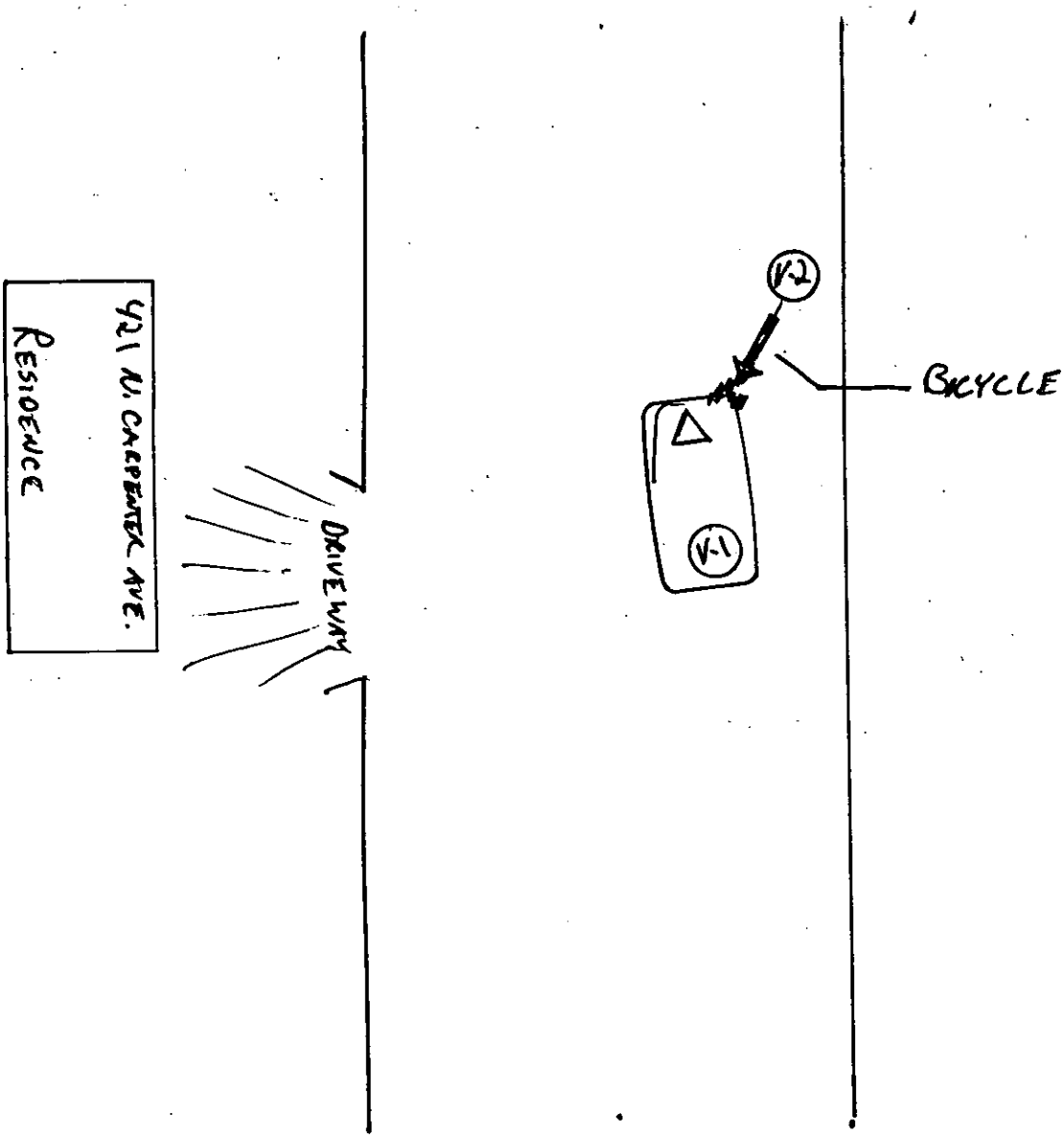
WAS INVESTIGATION MADE AT SCENE? 1. YES 2. NO	IF NO, THEN WHERE?	IS INVESTIGATION COMPLETE? 1. YES 2. NO	IF NO, THEN WHY?	DATE OF REPORT	PHOTOS TAKEN 1. YES 2. NO	IF YES, BY WHOM? 1. INVESTIGATING AGENCY 2. OTHER
1		1		05 / 01 / 08	2	

INVESTIGATOR - RANK & SIGNATURE	ID/BADGE NUMBER	DEPARTMENT	FHP	SO	PD	OTHER
	21110	ORANGE CITY			X	

HSMV-90005 (Rev. 4/03)

DIAGRAM NOT TO SCALE

INDICATE NORTH WITH ARROW



VEHICLES NOT AT SCENE

FLORIDA TRAFFIC CRASH REPORT
LONG FORM

MAIL TO DEPT. HIGHWAY SAFETY & MOTOR VEHICLES, TRAFFIC CRASH RECORDS, NEIL KIRKMAN BUILDING, TALLAHASSEE, FL 32399-0537

DO NOT WRITE IN THIS SPACE

TIME & LOCATION

Date of Crash	Time of Crash	Time Officer Notified	Time Officer Arrived	Invest. Agency Report Number	HSMV Crash Report Number
02-JAN-09	03: 55 PM	03: 58 PM	04: 31 PM	FHPD09OFF000435	77439522

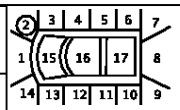
County Code	City Code	Feet or Mile(s)	Direction of	City or Town	(check if in City or Town)	County
08	00	1	N	ORANGE CITY	☐	Volusia

At Node No.	or Feet or Mile(s)	From Node No.	Next Node No.	No. of Lanes	1. Divided 2. Undivided	On Street, Road or Highway
				1	2	14TH STREET

At The Intersection Of (street, road or highway)	or Feet or Mile(s)	Direction	From Intersection Of (street, road or highway)
HAMILTON AVENUE			

SECTION 1 — Pedestrian ☐ Vehicle X

Driver Action (1. Phantom 2. Hit and Run 3. N/A)	Year	Make	Type	Use	Veh. License Number	State	Vehicle Identification Number
3	1996	FORD	02	15	M373NJ	FL	1FTFS24YXTHA76492
Trailer Or Towed Vehicle Information			Trailer Type				



18. Undercarriage
19. Overturn
20. Windshield
21. Trailer

Vehicle Traveling on	At	Est. MPH	Posted Speed	Est. Vehicle Damage	1. Disabling 2. Functional 3. No Damage	Est. Trailer Damage	Show first point of vehicle damage and circle damaged areas
E 14TH STREET		5	30	$100	2		2

Motor Vehicle Insurance Company (Liability or PIP)	Policy Number	Vehicle Removed By:	1. Tow Rotation List 2. Tow Owner's Request 3. Driver 4. Other
TRAVELERS INDEM CO OF AMERICA	BA1478B80708SEL	DRIVER	3

Name of Vehicle Owner (Check Box If Same As Driver)	Current Address (Number and Street)	City and State	Zip Code
AJM PAINTING INC ☐	685 CLOVERLEAF BLVD	DELTONA FL	32725

Name of Owner (Trailer or Towed Vehicle)	Current Address (Number and Street)	City and State	Zip Code

Name of Motor Carrier (Commercial vehicle only)	Current Address (Number and Street)	City, State and Zip Code	US DOT or ICC MC Identification Numbers

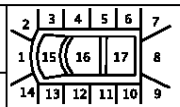
Name of Driver (Taken from Driver license)/ Pedestrian	Current Address (Number and Street)	City, State and Zip Code	Date Of Birth
GREGORY F WAINWRIGHT	3205 TINLEY TERRACE	SANFORD FL 32773	10-MAY-73

Driver License Number	State	DL Type	Req. End	AIC/Drug Test Type (1 Blood 2 Breath 3 Urine 4 Refused 5 None)	Results	Alc/Drug	Phys.Def	Res.	Race	Sex	Inj.	S. Equip.	Eject.
W562286731700	FL	5	3	5	.	1	1	2	1	1	1	2	1

Hazardous Materials Being Transported (1 yes 2 No)	Placarded (1 yes 2 No)	If Yes, Indicate Name or 4 Digit Number From diamond Box on Placard, and 1 Digit Number From Bottom of Diamond	Was Hazardous Material Spilled? (1 yes 2 No)	Recommend Driver Re-exam, if Yes Explain In Narrative (1 yes 2 No)	Driver's Phone No.
2	2	☐	2	2	

SECTION 2 — Pedestrian X Vehicle ☐

Driver Action (1. Phantom 2. Hit and Run 3. N/A)	Year	Make	Type	Use	Veh. License Number	State	Vehicle Identification Number
☐							
Trailer Or Towed Vehicle Information			Trailer Type				



18. Undercarriage
19. Overturn
20. Windshield
21. Trailer

Vehicle Traveling on	At	Est. MPH	Posted Speed	Est. Vehicle Damage	1. Disabling 2. Functional 3. No Damage	Est. Trailer Damage	Show first point of vehicle damage and circle damaged areas
					☐		☐

Motor Vehicle Insurance Company (Liability or PIP)	Policy Number	Vehicle Removed By:	1. Tow Rotation List 2. Tow Owner's Request 3. Driver 4. Other
			☐

Name of Vehicle Owner (Check Box If Same As Driver)	Current Address (Number and Street)	City and State	Zip Code
☐			

Name of Owner (Trailer or Towed Vehicle)	Current Address (Number and Street)	City and State	Zip Code

Name of Motor Carrier (Commercial vehicle only)	Current Address (Number and Street)	City, State and Zip Code	US DOT or ICC MC Identification Numbers

Name of Driver (Taken from Driver license)/ Pedestrian	Current Address (Number and Street)	City, State and Zip Code	Date Of Birth
MARCUS O JACKSON	1180 9TH STREET	ORANGE CITY FL 32763	11-FEB-99

Driver License Number	State	DL Type	Req. End	AIC/Drug Test Type (1 Blood 2 Breath 3 Urine 4 Refused 5 None)	Results	Alc/Drug	Phys.Def	Res.	Race	Sex	Inj.	S. Equip.	Eject.
				5	.	1	1	1	2	1	2		

Hazardous Materials Being Transported (1 yes 2 No)	Placarded (1 yes 2 No)	If Yes, Indicate Name or 4 Digit Number From diamond Box on Placard, and 1 Digit Number From Bottom of Diamond	Was Hazardous Material Spilled? (1 yes 2 No)	Recommend Driver Re-exam, if Yes Explain In Narrative (1 yes 2 No)	Driver's Phone No.
☐	☐	☐	☐	☐	352-216-6988

CODE INFORMATION

Vehicle Type
01 Automobile
02 Van
03 Light Truck/P.U.-2 or 4 rear tires Automobile
04 Medium Truck - 4 rear tires
05 Heavy Truck - 2 or more rear axles
06 Truck Tractor (Cab-Bobtail)
07 Motor Home (RV)
08 Bus (driver + seats for 9-15)
09 Bus (driver + seats for over 15)
10 Bicycle
11 Motorcycle
12 Moped
13 All Terrain Vehicle
14 Train
15 Low Speed Vehicle
77 Other

Vehicle Use
01 Private Transportation
02 Commercial Passengers
03 Commercial Cargo
04 Public Transportation
05 Public School Bus
06 Private School Bus
07 Ambulance
08 Law Enforcement
09 Fire/Rescue
10 Military
11 Other Government
12 Dump
13 Concrete Mixer
14 Garbage or Refuse
15 Cargo Van
77 Other

Trailer Type
01 Single Semi Trailer
02 Tandem Semi Trailer
03 Tank Trailer
04 Saddle Mount/Flatbed
05 Boat Trailer
06 Utility Trailer
07 House Trailer
08 Pole Trailer
09 Towed Vehicle
10 Auto Transport
77 Other

Residence (driver/Ped.)
1 County Of Crash
2 Elsewhere In State
3 Non-Resident Out Of State
4 Foreign 5 Unknown

DL Type
1 A 2 B 3 C
4 D/Chauffeur
5 E/Operator
6 E/Oper.-Rest.
7 None

Race
1 White
2 Black
3 Hispanic
4 Other

Required Endorsements
1 Yes
2 No
3 No endorsement Required

Sex
1 Male
2 Female

Physical Defects
1 No Defects Known
2 Eyesight Defect
3 Fatigue/Asleep
4 Hearing Defect
5 Illness
6 Seizure, Epilepsy, Blackout
7 Other Physcial Defect

Injury Severity
1 None
2 Possible
3 Non-Incapacitating
4 Incapacitating
5 Fatal (within 30 days)
6 Non-Traffic Fatality

Alcohol/Drug Use
1 Not Drinking or using Drugs
2 Alcohol - Under Influence
3 Drugs - Under Influence
4 Alcohol & Drugs - Under Influence
5 Had Been Drinking
6 Pending ALC/DRUG Test Results

Safety Equipment In Use
1 Not in use
2 Seat Belt / Shoulder Harness
3 Child Restraint
4 Air Bag - Deployed
5 Air bag - Not Deployed
6 Saftey Helmet
7 Eye Protection

Location In Vehicle
1 Front Left
2 Front Center
3 Front Right
4 Rear Left
5 Rear Center
6 Rear Right
7 In Body Of Truck
8 Bus Passenger
9 Other

Ejected
1 No
2 Yes
3 Partial

SECTION	Pedestrian ☐	Vehicle ☐						
Driver Action 1. Phantom 2. Hit and Run 3. N/A ☐	Year	Make	Type	Use	Veh. License Number	State	Vehicle Identification Number	18. Undercarriage 19. Overturn 20. Windsheild 21. Trailer
Trailer Or Towed Vehicle Information			Trailer Type					

Vehicle Traveling	on	At	Est. MPH	Posted Speed	Est. Vehicle Damage	1. Disabling 2. Functional 3. No Damage ☐	Est. Trailer Damage	Show first point of vehicle damage and circle damaged areas ☐

Motor Vehicle Insurance Company (Liability or PIP)	Policy Number	Vehicle Removed By:	1. Tow Rotation List 2. Tow Owner's Request 3. Driver 4. Other ☐

Name of Vehicle Owner (Check Box If Same As Driver) ☐	Current Address (Number and Street)	City and State	Zip Code
Name of Owner (Trailer or Towed Vehicle)	Current Address (Number and Street)	City and State	Zip Code

Name of Motor Carrier (Commercial vehicle only)	Current Address (Number and Street)	City, State and Zip Code	US DOT or ICC MC Identification Numbers
Name of Driver (Taken from Driver license)/ Pedestrian	Current Address (Number and Street)	City, State and Zip Code	Date Of Birth

Driver License Number	State	DL Type	Req. End	AIC/Drug Test Type ☐ 1 Blood 2 Breath 3 Urine 4 Refused 5 None	Results	Alc/Drug	Phys.Def	Res.	Race	Sex	Inj.	S. Equip.	Eject.

Hazardous Materials Being Transported 1 yes 2 No ☐	Placarded 1 yes 2 No ☐	If Yes, Indicate Name or 4 Digit Number From diamond Box on Placard, and 1 Digit Number From Bottom of Diamond ☐	Was Hazardous Material Spilled? 1 yes 2 No ☐	Recommend Driver Re-exam, if Yes Explain In Narrative 1 yes 2 No ☐	Driver's Phone No.

#	Property Damaged - Other Than Vehicles	Est. Amount	Owner's Name	Address	City	State	Zip
#	Property Damaged - Other Than Vehicles	Est. Amount	Owner's Name	Address	City	State	Zip

Contributing Causes - Driver/Pedestrian — [1] [2] [3] = 03, 01

01 No Improper Driving/Action
02 Careless Driving (Explain in Narrative)
03 Failure to Yield Right-Of-Way
04 Improper Backing
05 Improper Lane Change
06 Improper Turn
07 Alcohol - Under Influence
08 Drugs - Under Influence
09 Alcohol & Drugs - Under Influence
10 Followed To Closely
11 Disrecarded Traffic Signal
12 Exceeded Safe Speed Limit
13 Disregarded Stop Sign
14 Failed To Maintain Equip./ Vehicle
15 Improper Passing
16 Drove Left of Center
17 Exceeded Stated Speed Limit
18 Obstructing Traffic
19 Improper Load
20 Disregarded other Trafic Control
21 Driving Wrong Side/Way
22 Fleeing Police
23 Vehicle Modified
24 Driver Distraction (Explain in Narrative)
77 All Other (Explain in Narrative)

Vehicle Defect — [1] [2] [3] = 01

01 No Defects
02 Def. Brakes
03 Warn/ Smooth Tires
04 Defective/ Improper Lights
05 Puncture/Blowout
06 Steering Mech.
07 Windshield Wipers
08 Equipment/Vehicle Defect
77 All Other (Explain In Narrative)

Point Of Collision — [1] [2] [3] = 01

01 On Road
02 Not On Road
03 Shoulder
04 Median
05 Turn Lane

Work Area — [1] [2] [3] = 01

01 None
02 Nearby
03 Entered

Vehicle Movement — [1] [2] [3] = 01

01 Straight Ahead
02 Slowing/ Stopping/ Stalled
03 Making Left Turn
04 Backing
05 Making Right Turn
06 Changing Lanes
07 Entering/Leaving/ Parking Space
08 Properly Parked
09 Improperly Parked
10 Making U-Turn
11 Passing
12 Driverless or Runaway Vehicle
77 All Other (Explain in Narrative)

Pedestrian Action — [1] [2] [3] = 03

01 Crossing Not At Intersection
02 Crossing At Mid-block Crosswalk
03 Crossing At Intersection
04 Walking Along Road With Traffic
05 Walking Along Road Against Traffic
06 Working on Vehicle in Road
07 Working in Road
08 Standing/Playing in Road
09 Standing in Pedestrian Island
77 All Other (Explain in Narrative)
88 Unknown

Vehicle Special Functions — [1] [2] [3] = 1

1 None
2 Farm
3 Police Pursuit
4 Recreational
5 Emergency Operation
6 Construction/Maintenance

Source Of Carrier Information — [1] [2] [3] = 1

1 Not Applicable
2 Shipping Papers
3 Vehicle Side
4 Driver
5 Other

Location Type = 2

1 Primarily Business
2 Primarily Residential
3 Open Country

First /Subsequent Harmful Event (s) — [1] [2] [3] = 11

01 Collision With MV in Transport (Rear End)
02 Collision With MV in Transport (Head On)
03 Collision With MV in Transport (Angle)
04 Collision With MV in Transport (Left Turn)
05 Collision With MV in Transport (Right Turn)
06 Collision With MV in Transport (Sideswipe)
07 Collision With MV in Transport (Backed Into)
08 Collision With Parked Car
09 Collision with MV on Roadway
10 Collision With Pedestrian
11 Collision With Bicycle
12 Collision With Bicycle (Bike Lane)
13Collision With Moped
14 Collision With Train
15 Collision With Animal
16 MV Hit Sign / Sign Post
17 MV Hit Utility Pole / Light Pole
18 MV Hit Guardrail
19 MV Hit Fence
20 MV Hit Concrete Barrier Wall
21 MV Hit Bridge/Pier/Abutment/Rail
22 MV Hit Tree / Shrubbery
23 Collision With Construction Barricade Sign
24 Collision With Traffic Gate
25 Collision With Crash Attenuators
26 Collision With Fixed Object Above Road
27 MV Hit Other Fixed Object
28 Collision With Moveable Object on Road
29 Mv Ran Into Ditch/Culvert
30 Ran Off Road Into Water
31 Overturned
32 Occupant Fell From Vehicle
33 Tractor/Trailer Jackknifed
34 Fire
35 Explosion
36 Downhill Runaway
37 Cargo Loss or Shift
38 Separation of Units
39 Median Crossover
77 All Other (Explain in Narrative)

Road System Identifier = 05

01 Interstate
02 U.S.
03 State
04 County
05 Local
06 Turnpike / Toll
07 Forest Road
08 Private Roadway
77 All other (Explain In Narrative)

Road Surface Condition = 01

01 Dry
02 Wet
03 Slippery
04 Icy
77 All other (Explain in Narrative)

Weather = 01

01 Clear
02 Cloudy
03 Rain
04 Fog
77 All other (Explain in Narrative)

Lighting Condition = 01

01 Daylight
02 Dusk
03 Dawn
04 Dark (Street Light)
05 Dark (No Street Light)
88 Unknown

Road Surface Type = 05

01 Slag/Gravel/Stone
02 Blacktop
03 Brick/Block
04 Concrete
05 Dirt
77 All Other (Explain in Narrative)

Road Conditions At Time Of Crash = 01

01 No Defects
02 Obstruction With Warning
03 Obstruction Without Warning
04 Road under Repair/ Construction
05 Loose Surface Materials
06 Shoulders - Soft/Low/High
07 Holes/Ruts/Unsafe Paved Edge
08 Standing Water
09 Worn/Polished Road Surface
77 All other (Explain In Narrative) ☐

Vision Obstructed = 01

01 Vision Not Obstructed
02 Inclement Weather
03 Parked/ Stopped Vehicle
04 Trees/Crops/Bushes
05 Load On Vehicle
06 Building/Fixed Object
07 Signs/Billboards
08 Fog
09 Smoke
10 Glare
77 All other (Explain In Narrative) ☐

Traffic Control = 06

01 No Control
02 Special Speed Zone
03 Speed Control Sign
04 School Zone
05 Traffic Signal
06 Stop Sign
07 Yield Sign
08 Flashing Light
09 Railroad Signal
10 Officer/Guard/Flagperson = 03
11 Posted No U-Turn
12 No Passing Zone
77 All Other (Explain In Narrative)

Site Location = 02

01 Not At Intersection/RR X-ing/Bridge
02 At Intersection
03 Influenced By Intersection
04 Driveway Access
05 Railroad
06 Bridge
07 Entrance Ramp
08 Exit Ramp
09 Parking Lot - Public
10 Parking Lot - Private
11 Private Property
12 Toll Booth
13 Public Bus Stop Zone
77 All Other (Explain In Narrative)

Trafficway Character = 1

01 Straight - Level
02 Straight - Upgrade/Downgrade
03 Curve - Level
04 Curve - Upgrade/Downgrade

Type Shoulder = 2

01 Paved
02 Unpaved
03 Curb

Violator(s)

Section #	Name Of Violator	FL Statute Number	Charge	Citation Number
1	GREGORY F WAINWRIGHT	316.130.7a	FAIL TO YIELD ROW TO PED - W/TRAF CNTRL	0099-SLV
Section #	Name Of Violator	FL Statute Number	Charge	Citation Number
Section #	Name Of Violator	FL Statute Number	Charge	Citation Number
Section #	Name Of Violator	FL Statute Number	Charge	Citation Number

FLORIDA TRAFFIC CRASH REPORT
NARRATIVE/DIAGRAM

MAIL TO DEPT. HIGHWAY SAFETY & MOTOR VEHICLES, TRAFFIC CRASH RECORDS, NEIL KIRKMAN BUILDING, TALLAHASSEE, FL 32399-0537

DO NOT WRITE IN THIS SPACE

Time EMS Notified (Fatalities Only)	Time EMS Arrived (Fatalities Only)	Date Of Crash	County/	City Code	Invest. Agency Report Number	HSMV Crash Report Number
:	:	02-JAN-09	08	00	FHPD09OFF000435	77439522

(Narrative)

VEHICLE 1 WAS TRAVELING WESTBOUND ON 14TH STREET. VEHICLE 2 WAS TRAVELING NORTHBOUND ON THE SOUTHBOUND SIDEWALK OF HAMILTON AVENUE. VEHICLE 1 STOPPED FOR THE STOP SIGN AT THE INTERSECTION; HOWEVER, FAILED TO YIELD THE RIGHT-OF-WAY TO VEHICLE 2 IN THE INTERSECTION. VEHICLE 1'S RIGHT FRONT CORNER STRUCK VEHICLE 2'S FRONT TIRE. VEHICLE 1 CAME TO FINAL REST AT THE AREA OF IMPACT. VEHICLE 2 CAME TO FINAL REST AT THE AREA OF IMPACT, ON IT'S RIGHT SIDE.

Sec#	Pass#	Passenger's Name	Current Address	City & State	Zip Code	Date Of Birth	Race	Sex	Loc	Inj	S. Eqip.	Eject
											|	
											|	
											|	
											|	
											|	
											|	

Violator(s)

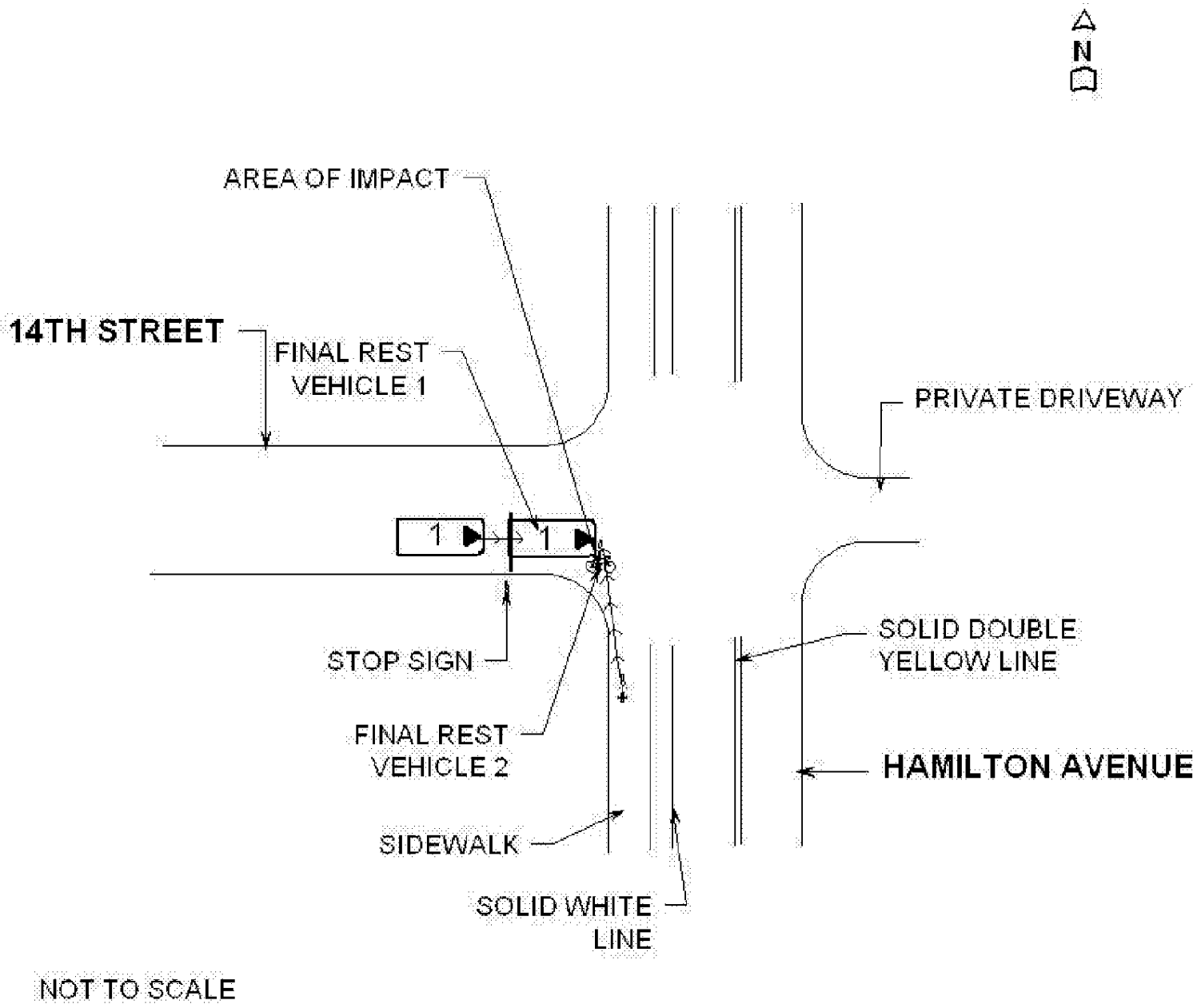
Section #	Name Of Violator	FL Statute Number	Charge	Citation Number

Witness Name	Current Address	City & State	Zip Code

First Aid Given By - Name		Injured Taken To:	By - Name
EVAC	1 Physicain or Nurse, 2 Parametic or EMT, 3 Police Officer, 4 Certified 1st Aider, 5 Other: 2	FLORIDA HOSP FISH	EVAC

Was Investigation Made At Scene? 1 Yes 2 No	If No, Then Where?	Is Investigation Complete? 1 Yes 2 No	If No, Then Why?	Date of Report	Photos Taken? 1 Yes 2 No	If Yes, By Whom? 1 Invest. Agency 2 Other
1		1		02-JAN-09	2	

Investigator - Rank & Signature	ID/Badge Number	Department	FHP	SO	CPD	Other
TPR. J.E. COSTA	2717	FHPD	X			


N
AREA OF IMPACT
14TH STREET
FINAL REST
VEHICLE 1
PRIVATE DRIVEWAY
1
1
STOP SIGN
SOLID DOUBLE
YELLOW LINE
FINAL REST
VEHICLE 2
HAMILTON AVENUE
SIDEWALK
SOLID WHITE
LINE
NOT TO SCALE

Appendix B

Letter to Principal and Completed Principal Questionnaire

Lassiter Transportation Group, Inc.
Engineering and Planning

Via Email (jatkinso@volusia.k12.fl.us)

Ref: 3706.08

September 14, 2010

Principal Mr. John Atkinson
River Springs Middle School
900 West Ohio Avenue
Orange City, Florida 32763

Re: Volusia County Metropolitan Planning Organization (VCTPO) Bike and Pedestrian Safety Review

Dear Mr. Atkinson:

The VCTPO has been awarded a Florida Department of Transportation (FDOT) safety grant to study bicycle and pedestrian safety as it relates to elementary schools, such as River Springs Middle School, in the VCTPO planning area. Lassiter Transportation Group, Inc. has been retained to conduct these studies on the VCTPO's behalf.

We would like input from you to identify any bicycle and pedestrian safety-related issues or concerns that the school may be experiencing. Enclosed with this letter is a questionnaire form detailing the information that we are requesting. We would like to arrange a meeting with you, at your convenience, to discuss these items and will contact you in the near future to this end.

If you should have any questions or comments regarding this letter, please feel free to contact me at (386) 257-2571.

Sincerely,

LASSITER TRANSPORTATION GROUP, INC.

R. Sans Lassiter, PE
President

c: Stephan C. Harris, Bicycle & Pedestrian Coordinator, VCTPO
Saralee Morrissey, AICP, Director of Site Acquisitions & Intergovernmental Coordinator, Volusia County Schools
Jon Cheney, PE, Volusia County Traffic Engineering
Lt. Bobby Lambert, Volusia County Sheriff's Office
Jim Kerr, Planner, City of Orange City
Joan Carter, M.A., Bicycle & Pedestrian Coordinator, FDOT D-5

3706.08

VOLUSIA COUNTY
TRANSPORTATION PLANNING ORGANIZATION

PRINCIPAL QUESTIONNAIRE

TO: River Springs Middle School
Principal Mr. John Atkinson
900 West Ohio Avenue
Orange City, Florida 32763

FROM: Stephan Harris
Volusia County Transportation Planning Organization (VCTPO)
2570 W. International Speedway Blvd, Suite 120
Daytona Beach, FL 32114-8145

RE: **MEETING DATE (TBD)**
SCHOOL WALK ZONE SAFETY ANALYSIS

The Volusia County Transportation Planning Organization (VCTPO) is conducting assessments aimed at improving the safety conditions for students who bicycle or walk to and from school. River Springs Middle School has been chosen as one of the schools to be studied during this study phase. The following questionnaire will aid us in this effort. Your participation is key to the success of this analysis and is greatly appreciated.

You will be meeting with our traffic engineering consultants who will be conducting this study, Lassiter Transportation Group. Each staff member responsible for conducting the on-site analysis has gone through the appropriate back-ground check. Should you have any questions, please do not hesitate to contact them directly. Mr. Sans Lassiter or Ms. Crystal Mercedes PH: (386) 257-2571 or by E-mail: rlassiter@lassitertransportation.com or cmercedes@lassitertransportation.com.

1. Number of students currently enrolled: 1,350

   Comments: WE ARE 150 STUDENTS OVER CAPACITY.

2. Number of students (or approximate percentage) who walk/bicycle to/from school: 30% OR MORE

   Comments: HEAVY BIKE + FOOT TRAFFIC AT DISMISSAL

3. Are you aware of any facility (sidewalk, crosswalk, etc.) maintenance issues? If yes, please explain.

   WASH OUT DIRECTLY ACROSS FROM BUS GATE.
   NO SIDEWALK ON BLUE SPRING FROM SCHOOL'S
   PATH TO SPARKMAN.

4. Are you aware of any parents who stop and/or park along the walk zone route to drop-off/pick-up their students to avoid the regular school pick-up lines? If yes, does this cause a safety issue with the students who walk/bicycle?

   YES - MANY
   YES - IT CAUSES A DANGEROUS SITUATION.

5. Are you aware of any safety hazards or issues along the school's walk zone?

LACK OF SIDEWALK ON BLUE SPRINGS. HEAVY CAR, BUS, WALKER, BIKE RIDER CONGESTION, ESPECIALLY AT DISMISSAL.

6. Please list all known crash incidents within the walk zone. Did any of the crashes cause an issue for walkers/bikers? If yes, please explain.

NONE KNOWN

7. What is your biggest concern relative to the conditions faced by the students who walk/bicycle to/from school?

HEAVY CONGESTION CAUSED BY CARS PARKING OUTSIDE THE GATE, AND PICKING UP | DROPPING OFF IN THE STREET.

8. What changes/improvements would you like to see relative to the conditions faced by the students who walk/bicycle to/from school?

PARENTS NOT ALLOWING STUDENTS TO ARRIVE EARLY AND LOITER OUTSIDE THE GATES.

COMMENTS:

BIGGER CONCERNS. PARENTS NOT FOLLOWING TRAFFIC LAWS. STUDENTS ARRIVING BEFORE SUPERVISION AND ALLOWED TO LOITER. LACK OF ENFORCEMENT OF HELMET SAFETY LAWS.

Appendix C

2009 Florida Statute Excerpts

The 2009 Florida Statutes

(1) DEFINITION.--As used in this section, "student" means any public elementary school student whose grade level does not exceed grade 6.

(2) TRANSPORTATION; CORRECTION OF HAZARDS.--

(a) It is intended that district school boards and other governmental entities work cooperatively to identify conditions that are hazardous along student walking routes to school and that district school boards provide transportation to students who would be subjected to such conditions. It is further intended that state or local governmental entities having jurisdiction correct such hazardous conditions within a reasonable period of time.

(b) Upon a determination pursuant to this section that a condition is hazardous to students, the district school board shall request a determination from the state or local governmental entity having jurisdiction regarding whether the hazard will be corrected and, if so, regarding a projected completion date. State funds shall be allocated for the transportation of students subjected to such hazards, provided that such funding shall cease upon correction of the hazard or upon the projected completion date, whichever occurs first.

(3) IDENTIFICATION OF HAZARDOUS CONDITIONS.--When a request for review is made to the district school superintendent or the district school superintendent's designee concerning a condition perceived to be hazardous to students in that district who live within the 2-mile limit and who walk to school, such condition shall be inspected by a representative of the school district and a representative of the state or local governmental entity that has jurisdiction over the perceived hazardous location. The district school superintendent or his or her designee and the state or local governmental entity or its representative shall then make a final determination that is mutually agreed upon regarding whether the hazardous condition meets the state criteria pursuant to this section. The district school superintendent or his or her designee shall report this final determination to the department.

(4) STATE CRITERIA FOR DETERMINING HAZARDOUS WALKING CONDITIONS.--

(a) *Walkways parallel to the road.*--

1. It shall be considered a hazardous walking condition with respect to any road along which students must walk in order to walk to and from school if there is not an area at least 4 feet wide adjacent to the road, having a surface upon which students may walk without being required to walk on the road surface. In addition, whenever the road along which students must walk is uncurbed and has a posted speed limit of 55 miles per hour, the area as described above for students to walk upon shall be set off the road by no less than 3 feet from the edge of the road.

2. The provisions of subparagraph 1. do not apply when the road along which students must walk:

a. Is in a residential area which has little or no transient traffic;

b. Is a road on which the volume of traffic is less than 180 vehicles per hour, per direction, during the time students walk to and from school; or

c. Is located in a residential area and has a posted speed limit of 30 miles per hour or less.

(b) *Walkways perpendicular to the road.*--It shall be considered a hazardous walking condition with respect to any road across which students must walk in order to walk to and from school:

1. If the traffic volume on the road exceeds the rate of 360 vehicles per hour, per direction (including all lanes), during the time students walk to and from school and if the crossing site is uncontrolled. For purposes of this subsection, an "uncontrolled crossing site" is an intersection or other designated crossing site where no crossing guard, traffic enforcement officer, or stop sign or other traffic control signal is present during the times students walk to and from school.

2. If the total traffic volume on the road exceeds 4,000 vehicles per hour through an intersection or other crossing site controlled by a stop sign or other traffic control signal, unless crossing guards or other traffic enforcement officers are also present during the times students walk to and from school.

Traffic volume shall be determined by the most current traffic engineering study conducted by a state or local governmental agency.

History.--s. 297, ch. 2002-387.

316.75 School crossing guards.--The Department of Transportation shall adopt uniform guidelines for the training of school crossing guards. Each local governmental entity administering a school crossing guard program shall provide a training program for school crossing guards according to the uniform guidelines. Successful completion of the training program shall be required of each school guard except:

(1) A person who received equivalent training during employment as a law enforcement officer.

(2) A person who receives less than $5,000 in annual compensation in a county with a population of less than 75,000.

(3) A student who serves in a school patrol.

School crossing guard training programs may be made available to nonpublic schools upon contract.

History.--s. 2, ch. 92-194; s. 42, ch. 97-190.

Note.--Former s. 234.302.

316.2065 Bicycle regulations.--

(1) Every person propelling a vehicle by human power has all of the rights and all of the duties applicable to the driver of any other vehicle under this chapter, except as to special regulations in this chapter, and except as to provisions of this chapter which by their nature can have no application.

(2) A person operating a bicycle may not ride other than upon or astride a permanent and regular seat attached thereto.

(3)(a) A bicycle may not be used to carry more persons at one time than the number for which it is designed or equipped, except that an adult rider may carry a child securely attached to his or her person in a backpack or sling.

(b) Except as provided in paragraph (a), a bicycle rider must carry any passenger who is a child under 4 years of age, or who weighs 40 pounds or less, in a seat or carrier that is designed to carry a child of that age or size and that secures and protects the child from the moving parts of the bicycle.

(c) A bicycle rider may not allow a passenger to remain in a child seat or carrier on a bicycle when the rider is not in immediate control of the bicycle.

(d) A bicycle rider or passenger who is under 16 years of age must wear a bicycle helmet that is properly fitted and is fastened securely upon the passenger's head by a strap, and that meets the standards of the American National Standards Institute (ANSI Z 90.4 Bicycle Helmet Standards), the standards of the Snell Memorial Foundation (1984 Standard for Protective Headgear for Use in Bicycling), or any other nationally recognized standards for bicycle helmets adopted by the department. As used in this subsection, the term "passenger" includes a child who is riding in a trailer or semitrailer attached to a bicycle.

(e) Law enforcement officers and school crossing guards may issue a bicycle safety brochure and a verbal warning to a bicycle rider or passenger who violates this subsection. A bicycle rider or passenger who violates this subsection may be issued a citation by a law enforcement officer and assessed a fine for a pedestrian violation, as provided in s. 318.18. The court shall dismiss the charge against a bicycle rider or passenger for a first violation of paragraph (d) upon proof of purchase of a bicycle helmet that complies with this subsection.

(4) No person riding upon any bicycle, coaster, roller skates, sled, or toy vehicle may attach the same or himself or herself to any vehicle upon a roadway. This subsection does not prohibit attaching a bicycle trailer or bicycle semitrailer to a bicycle if that trailer or semitrailer is commercially available and has been designed for such attachment.

(5)(a) Any person operating a bicycle upon a roadway at less than the normal speed of traffic at the time and place and under the conditions then existing shall ride as close as practicable to the right-hand curb or edge of the roadway except under any of the following situations:

1. When overtaking and passing another bicycle or vehicle proceeding in the same direction.

2. When preparing for a left turn at an intersection or into a private road or driveway.

3. When reasonably necessary to avoid any condition, including, but not limited to, a fixed or moving object, parked or moving vehicle, bicycle, pedestrian, animal, surface hazard, or substandard-width lane, that makes it unsafe to continue along the right-hand curb or edge. For the purposes of this subsection, a "substandard-width lane" is a lane that is too narrow for a bicycle and another vehicle to travel safely side by side within the lane.

(b) Any person operating a bicycle upon a one-way highway with two or more marked traffic lanes may ride as near the left-hand curb or edge of such roadway as practicable.

(6) Persons riding bicycles upon a roadway may not ride more than two abreast except on paths or parts of roadways set aside for the exclusive use of bicycles. Persons riding two abreast may not impede traffic when traveling at less than the normal speed of traffic at the time and place and under the conditions then existing and shall ride within a single lane.

(7) Any person operating a bicycle shall keep at least one hand upon the handlebars.

(8) Every bicycle in use between sunset and sunrise shall be equipped with a lamp on the front exhibiting a white light visible from a distance of at least 500 feet to the front and a lamp and reflector on the rear each exhibiting a red light visible from a distance of 600 feet to the rear. A bicycle or its rider may be equipped with lights or reflectors in addition to those required by this section.

(9) No parent of any minor child and no guardian of any minor ward may authorize or knowingly permit any such minor child or ward to violate any of the provisions of this section.

(10) A person propelling a vehicle by human power upon and along a sidewalk, or across a roadway upon and along a crosswalk, has all the rights and duties applicable to a pedestrian under the same circumstances.

(11) A person propelling a bicycle upon and along a sidewalk, or across a roadway upon and along a crosswalk, shall yield the right-of-way to any pedestrian and shall give an audible signal before overtaking and passing such pedestrian.

(12) No person upon roller skates, or riding in or by means of any coaster, toy vehicle, or similar device, may go upon any roadway except while crossing a street on a crosswalk; and, when so crossing, such person shall be granted all rights and shall be subject to all of the duties applicable to pedestrians.

(13) This section shall not apply upon any street while set aside as a play street authorized herein or as designated by state, county, or municipal authority.

(14) Every bicycle shall be equipped with a brake or brakes which will enable its rider to stop the bicycle within 25 feet from a speed of 10 miles per hour on dry, level, clean pavement.

(15) A person engaged in the business of selling bicycles at retail shall not sell any bicycle unless the bicycle has an identifying number permanently stamped or cast on its frame.

(16)(a) A person may not knowingly rent or lease any bicycle to be ridden by a child who is under the age of 16 years unless:

1. The child possesses a bicycle helmet; or

2. The lessor provides a bicycle helmet for the child to wear.

(b) A violation of this subsection is a nonmoving violation, punishable as provided in s. 318.18.

(17) The court may waive, reduce, or suspend payment of any fine imposed under subsection (3) or subsection (16) and may impose any other conditions on the waiver, reduction, or suspension. If the court finds that a person does not have sufficient funds to pay the fine, the court may require the performance of a specified number of hours of community service or attendance at a safety seminar.

(18) Notwithstanding s. 318.21, all proceeds collected pursuant to s. 318.18 for violations under paragraphs (3)(e) and (16)(b) shall be deposited into the State Transportation Trust Fund.

(19) The failure of a person to wear a bicycle helmet or the failure of a parent or guardian to prevent a child from riding a bicycle without a bicycle helmet may not be considered evidence of negligence or contributory negligence.

(20) Except as otherwise provided in this section, a violation of this section is a noncriminal traffic infraction, punishable as a pedestrian violation as provided in chapter 318. A law enforcement officer may issue traffic citations for a violation of subsection (3) or subsection (16) only if the violation occurs on a bicycle path or road, as defined in s. 334.03. However, they may not issue citations to persons on private property, except any part thereof which is open to the use of the public for purposes of vehicular traffic.

History.--s. 1, ch. 71-135; s. 1, ch. 76-31; s. 2, ch. 76-286; s. 1, ch. 78-353; s. 8, ch. 83-68; s. 5, ch. 85-309; s. 1, ch. 86-23; s. 7, ch. 87-161; s. 21, ch. 94-306; s. 899, ch. 95-148; s. 1, ch. 96-185; s. 2, ch. 97-300; s. 161, ch. 99-248.

Note.--Former s. 316.111.

Appendix D

Americans with Disabilities Accessibility Guidelines Excerpts

4.7 Curb Ramps.

4.7.1 Location. Curb ramps complying with 4.7 shall be provided wherever an accessible route crosses a curb.

4.7.2 Slope. Slopes of curb ramps shall comply with 4.8.2. The slope shall be measured as shown in Fig. 11. Transitions from ramps to walks, gutters, or streets shall be flush and free of abrupt changes. Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not exceed 1:20.

4.7.3 Width. The minimum width of a curb ramp shall be 36 in (915 mm), exclusive of flared sides.

4.7.4 Surface. Surfaces of curb ramps shall comply with 4.5.

4.7.5 Sides of Curb Ramps. If a curb ramp is located where pedestrians must walk across the ramp, or where it is not protected by handrails or guardrails, it shall have flared sides; the maximum slope of the flare shall be 1:10 (see Fig. 12(a)). Curb ramps with returned curbs may be used where pedestrians would not normally walk across the ramp (see Fig. 12(b)).

4.7.6 Built-up Curb Ramps. Built-up curb ramps shall be located so that they do not project into vehicular traffic lanes (see Fig. 13).

4.7.7 Detectable Warnings. A curb ramp shall have a detectable warning complying with 4.29.2. The detectable warning shall extend the full width and depth of the curb ramp.

4.7.8 Obstructions. Curb ramps shall be located or protected to prevent their obstruction by parked vehicles.

4.7.9 Location at Marked Crossings. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides (see Fig. 15).

4.7.10 Diagonal Curb Ramps. If diagonal (or corner type) curb ramps have returned curbs or other well-defined edges, such edges shall be parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have 48 in (1220 mm) minimum clear space as shown in Fig. 15(c) and (d). If diagonal curb ramps are provided at marked crossings, the 48 in (1220 mm) clear space shall be within the markings (see Fig. 15(c) and (d)). If diagonal curb ramps have flared sides, they shall also have at least a 24 in (610 mm) long segment of straight curb located on each side of the curb ramp and within the marked crossing (see Fig. 15(c)).

4.7.11 Islands. Any raised islands in crossings shall be cut through level with the street or have curb ramps at both sides and a level area at least 48 in (1220 mm) long between the curb ramps in the part of the island intersected by the crossings (see Fig. 15(a) and (b)).

4.8 Ramps.

4.8.1* General. Any part of an accessible route with a slope greater than 1:20 shall be considered a ramp and shall comply with 4.8. Appendix Note

4.8.2* Slope and Rise. The least possible slope shall be used for any ramp. The maximum slope of a ramp in new construction shall be 1:12. The maximum rise for any run shall be 30 in (760 mm) (see Fig. 16). Curb ramps and ramps to be constructed on existing sites or in existing buildings or facilities may have slopes and rises as allowed in 4.1.6(3)(a) if space limitations prohibit the use of a 1:12 slope or less. Appendix Note

4.8.3 Clear Width. The minimum clear width of a ramp shall be 36 in (915 mm).

4.8.4* Landings. Ramps shall have level landings at bottom and top of each ramp and each ramp run. Landings shall have the following features:

(1) The landing shall be at least as wide as the ramp run leading to it.

(2) The landing length shall be a minimum of 60 in (1525 mm) clear.

(3) If ramps change direction at landings, the minimum landing size shall be 60 in by 60 in (1525 mm by 1525 mm).

(4) If a doorway is located at a landing, then the area in front of the doorway shall comply with 4.13.6. Appendix Note

4.8.5* Handrails. If a ramp run has a rise greater than 6 in (150 mm) or a horizontal projection greater than 72 in (1830 mm), then it shall have handrails on both sides. Handrails are not required on curb ramps or adjacent to seating in assembly areas. Handrails shall comply with 4.26 and shall have the following features:

(1) Handrails shall be provided along both sides of ramp segments. The inside handrail on switchback or dogleg ramps shall always be continuous.

(2) If handrails are not continuous, they shall extend at least 12 in (305 mm) beyond the top and bottom of the ramp segment and shall be parallel with the floor or ground surface (see Fig. 17).

(3) The clear space between the handrail and the wall shall be 1 - 1/2 in (38 mm).

(4) Gripping surfaces shall be continuous.

(5) Top of handrail gripping surfaces shall be mounted between 34 in and 38 in (865 mm and 965 mm) above ramp surfaces.

(6) Ends of handrails shall be either rounded or returned smoothly to floor, wall, or post.

(7) Handrails shall not rotate within their fittings. Appendix Note

4.8.6 Cross Slope and Surfaces. The cross slope of ramp surfaces shall be no greater than 1:50. Ramp surfaces shall comply with 4.5.