Bicycle and Pedestrian School Safety Review Study

Assessment & Implementation Reports Coronado Beach Elementary School

New Smyrna Beach, FL

VOLUSIA TPO
TRANSPORTATION PLANNING ORGANIZATION
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Volusia Transportation Planning Organization
Bicycle and Pedestrian School Safety Review Study

Assessment and Implementation Report
Coronado Beach Elementary School
New Smyrna Beach, Florida

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Jeri Murphy: Principal of Coronado Beach Elementary School

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EXECUTIVE SUMMARY

Lassiter Transportation Group, Inc. (LTG) was contracted by the Volusia Transportation Planning Organization (TPO) to prepare an Assessment and Implementation 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 enable the Volusia TPO to make recommendations for projects that will improve the walkability of students living within the school walk zone. 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 report is Coronado Beach Elementary School.

Purpose

The purpose of the Bicycle and Pedestrian School Safety Review Study is to create a safe environment for students to walk or bicycle to school. The goal for the assessment phase of this study is to provide the Volusia 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 includes the walk zone surrounding the school and it will evaluate safety issues that may affect students walking or bicycling to school. Another goal of the assessment report is to continue the coordination among the stakeholders to implement the recommendations of these studies. The purpose of the Implementation Report for the Bicycle and Pedestrian School Safety Review Study is to conduct a constructability review and develop a cost feasibility plan that is based upon the recommendations from Coronado Beach Elementary School's Assessment Report. Ultimately, the recommendations within the Implementation Report should create a safer environment for children who live within the walk zone that choose to walk or bicycle to and from school.

To make walking and bicycling a chosen mode of transportation for students at Coronado Beach Elementary School, remedial measures have been recommended that should make the school walk zone safer. Local and state laws like the *Intermodal Surface Transportation Efficiency Act* (ISTEA) *of 1991* require transit agencies to work towards incorporating walking and bicycling into the transit system and the *Transportation Efficiency Act for the 21st Century* (TEA-21) reinforces the ISTEA. In creating walkable communities, streets should become safer for children since more people will be using the sidewalks to walk or bicycle to work or to shop. The goal of this report is to create a safer environment for roads adjacent to Coronado Beach Elementary School and recommend best practices for older and new developments.

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
- Improve childhood health
- Improve sense of self-image and autonomy
- Reduce childhood obesity
- Contributes 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

Table 1 summarizes safety concerns observed within Coronado Beach Elementary School's walk zone with recommendations documented in this report.

Table 1
Findings and Recommendations Summary
Coronado Beach Elementary School Assessment Study

Location	Agency Responsible	Observations	Recommendations
Throughout Walk Zone	New Smyrna Police Department, School Staff, and Parents	Bicycling students were not wearing helmets	The New Smyrna Beach Police Department and school staff should take an active role in ensuring all students are wearing helmets; if students choose not to wear helmets then warnings should be given, followed by the issuance of tickets (2009 Florida Statutes, 316.2065 Bicycle Regulations)
Michigan Avenue South of the School Campus	City of New Smyrna Beach	Crosswalk markings are faded and worn	Existing crosswalk markings should be removed and thermoplastic crosswalk markings should be installed in accordance with Standard Index No. 17346
		Crosswalk signage at mid-block crossing is not appropriate for this crosswalk	Existing crosswalk signage should be removed and an In-Street Pedestrian Crossing sign (R1-6c) which is appropriate for unsignalized school crossings with the inclusion of the STATE LAW legend should be installed; the In-Street Pedestrian Crossing Assembly should be installed in accordance with Standard Index No. 17302 and should also be placed in the centerline of the roadway
		Advance school sign is outdated and has a washed out area in middle	Replace the school in advance sign with an approved School Advance Crossing Assembly (S1-1 and W16-9P)

Table 1 (Continued)
Findings and Recommendations Summary
Coronado Beach Elementary School Assessment Study

Location	Agency Responsible	Observations	Recommendations
Michigan Avenue	New Smyrna Beach Police Department	Motorists appeared to be driving over the posted speed limit of 15 mph	Periodic placement of speed monitoring trailers should be used to remind drivers that they are driving over the posted speed limit; law enforcement officers should periodically monitor the school walk zone to ensure that motorists are following the rules; if it is found that motorists are driving over the posted speed limit then the New Smyrna Beach Police Department officers should consider issuing fines during school arrival and dismissal times
		Motorists were exiting the unpaved parking lot and heading northbound; Michigan Avenue is restricted to southbound traffic only during the school arrival and dismissal times	A sign should be placed at the entrance/exit of the unpaved parking area on the east side of Michigan Avenue that shows the hours of restriction and in what direction all traffic should be traveling during those times; parents should be informed of the proper procedures during the times of arrival and dismissal in the school newsletter
Saxon Drive and Sandpiper Street	City of New Smyrna Beach	Northwest quadrant has a missing tubular delineator	Tubular delineator should be replaced
	City of New Smyrna Beach	Crosswalk markings across Saxon Drive and Sandpiper Street are old and faded	Existing crosswalk markings should be removed and thermoplastic crosswalk markings should be installed in accordance with Standard Index No. 17346

Table 1 (Continued)
Findings and Recommendations Summary
Coronado Beach Elementary School Assessment Study

Location	Agency Responsible	Observations	Recommendations
Michigan Avenue and Mathews Avenue	City of New Smyrna Beach	Crosswalk markings across Mathews Avenue are faded and worn	Existing crosswalk markings should be removed and thermoplastic crosswalk markings should be installed in accordance with Standard Index No. 17346
		No school crossing signs are located at the crosswalk	Two School Crossing Assemblies (S1-1 and W16-7P) should be installed on both sides of the crosswalk and two School Advance Crossing Assemblies (S1-1 and W16-9P) should be placed 200 ft east and west of the crosswalk markings on Mathews Avenue to warn drivers of the crossing; crossing assemblies should be installed in accordance with Standard Index No. 17302
South Atlantic Avenue and Mathews Avenue	City of New Smyrna Beach	Crosswalk markings across Mathews Avenue are faded and worn	Existing crosswalk markings should be removed and thermoplastic crosswalk markings should be installed in accordance with Standard Index No. 17346
Saxon Drive and Mathews Avenue	City of New Smyrna Beach	Sidewalks do not connect in the northeast quadrant of this intersection	Sidewalks should be extended beyond the driveway and Type D curbing should be installed to delineate the pavement from the sidewalk
Schoolway Avenue and Esther Court	City of New Smyrna	Water collects in the pavement and curb in the southwest quadrant of this intersection which blocks students from entering/exiting the sidewalk when it rains	An inlet should be placed in this quadrant to convey water to the underground stormwater system

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INTRODUCTION

The following Assessment Report for Coronado Beach Elementary School was conducted as part of a Bicycle and Pedestrian School Safety Review Study for the Volusia TPO. An aerial that shows the walk zone and the boundary of Coronado Beach Elementary School is presented as Figure 1. Coronado Beach Elementary School is located at 3550 Michigan Avenue, west of South Atlantic Avenue and east of Saxon Drive between Schoolway Avenue and Mathews Avenue, in the City of New Smyrna Beach. The purpose of this study is to evaluate the walk zone of Coronado Beach Elementary School for any safety issues that students might encounter if they choose to walk or ride their bicycles to school.

Background on Coronado Beach Elementary School

Coronado Beach Elementary School, shown in Illustration 1, was constructed in 1961 and has since added a media center and administration building. It is a small community-based beachside school that has continuously strived to create an atmosphere of excellence for its students.

Illustration 1: Coronado Elementary School – looking west

Coronado Beach Elementary School has earned an A ranking on the Florida A+ recognition program. The school earned 622 points when only 525 points would have sufficiently qualified them for an A-rating. The school has also met all standards for the Southern Association of Colleges and Schools (SACS). SACS accredited schools focuses on continuously improving student learning, organizational effectiveness, and engages the entire community in promoting excellence as a "habit and not an act."

Students play an integral role within the school. Safety patrol students can be found before and after school monitoring various sites including the bicycle storage rack and the Student Drop Off/Pick Up Loop. An extensive after school program also offers students more than an educational curriculum. After school activities include Girls on the Run which is a program for girls that instills self-respect and healthy lifestyles, chorus, Science, Technology, Engineering, and Math (STEM), Future Florida Educators of America (FFEA), and much more.

Parents and community members also contribute to the success of Coronado Beach Elementary School. To supplement state funds, the Parent Teacher Association (PTA) helps to raise money for classrooms and special

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School Aerial

Figure 1

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123 Live Oak Ave.
Daytona Beach, FL 32114

areas while business members provide incentives in the form of treats and coupons for various activities and awards. Coronado Beach Elementary School has formed partnerships with several businesses including the American association of University of Women, Center Dance and Performing Arts, and Clancy's Cantina to implement its incentive program.

Coronado Beach Elementary School has continuous sidewalks along Saxon Boulevard and South Atlantic Avenue which extends throughout the entire walk zone. Sidewalk widths range from four feet to ten feet. Some local residential roads have sidewalks as well.

The following data was provided by Principal Jeri Murphy:

- **Number of Volusia County buses in use (see Illustration 2):** 2
- **Number of daycare buses:** 0
- **Student population:** 280 students
- **Percent of students who walk/bicycle:** 12%
- **Number of students who participate in on-site afterschool care:** 110 students
- **School commencement and dismissal times:** 7:55 a.m. – 2:05 p.m.

Illustration 2: Bus loop looking west on the north side of the school campus

Crash Data

Pedestrian and bicycle crash data for Coronado Beach Elementary School's walk zone was provided by Volusia County. The following criteria were used to gather crash data.

- Data was collected during the timeframes of 7:15 a.m. - 8:15 a.m. and 1:45 p.m. - 2:30 p.m. on Mondays, Tuesdays, Thursdays, and Fridays
- Data was collected during the timeframes of 7:15 a.m. - 8:15 a.m. and 12:45 p.m. – 1:30 p.m. on Wednesdays
- Data was collected within the walk zone of the school
- Crashes occurring within the last three years

No crashes occurred during the timeframes shown above; however, it was noted during the interview with the Principal of Coronado Beach Elementary School that two crashes occurred with bicycles and motor vehicles during the 2009-2010 school year. One crash occurred at the intersection of Michigan Avenue and Mathews Avenue and the other crash occurred along Mathews Avenue. No injuries were reported to the school.

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INTERVIEW

The Principal of Coronado Beach Elementary School, Ms. Jeri Murphy, and the Crossing Guard Supervisor, Ms. Joan Marshall, were interviewed on May 3, 2010. Chad Lingenfelter, the Chief Planner for the City of New Smyrna Beach was also present at the meeting. The interview identified areas that required further investigation even though they may not have been considered high crash areas after reviewing the County-provided crash data.

Interview with Principal Jeri Murphy

- Coronado Beach Elementary School allows only one-way traffic on Michigan Avenue for one hour in the mornings and afternoons: 7:15 A.M. TO 8:15 A.M. and 1:45 P.M. TO 2:45 P.M.
- No crossing guards are currently assigned to this school due to the low numbers of walkers and bicyclists.
- Citizens on Patrol, a volunteer program funded by the police department, conducts neighborhood security patrols and are often seen driving through the bus and parent-loops at Coronado Beach Elementary School.
- Approximately 12 students walk or bicycle to and from school (see Illustration 3).
- 90 – 95% of students are bussed or have a personal vehicle take them back and forth to school.
- No known sidewalk issues exist within the walk zone.
- Flashing beacons are located on Saxon Drive.
- 110 students take part in the after school care provided by Coronado Beach Elementary School. No before school care is provided. Daycare busses do not pick students up from this school.

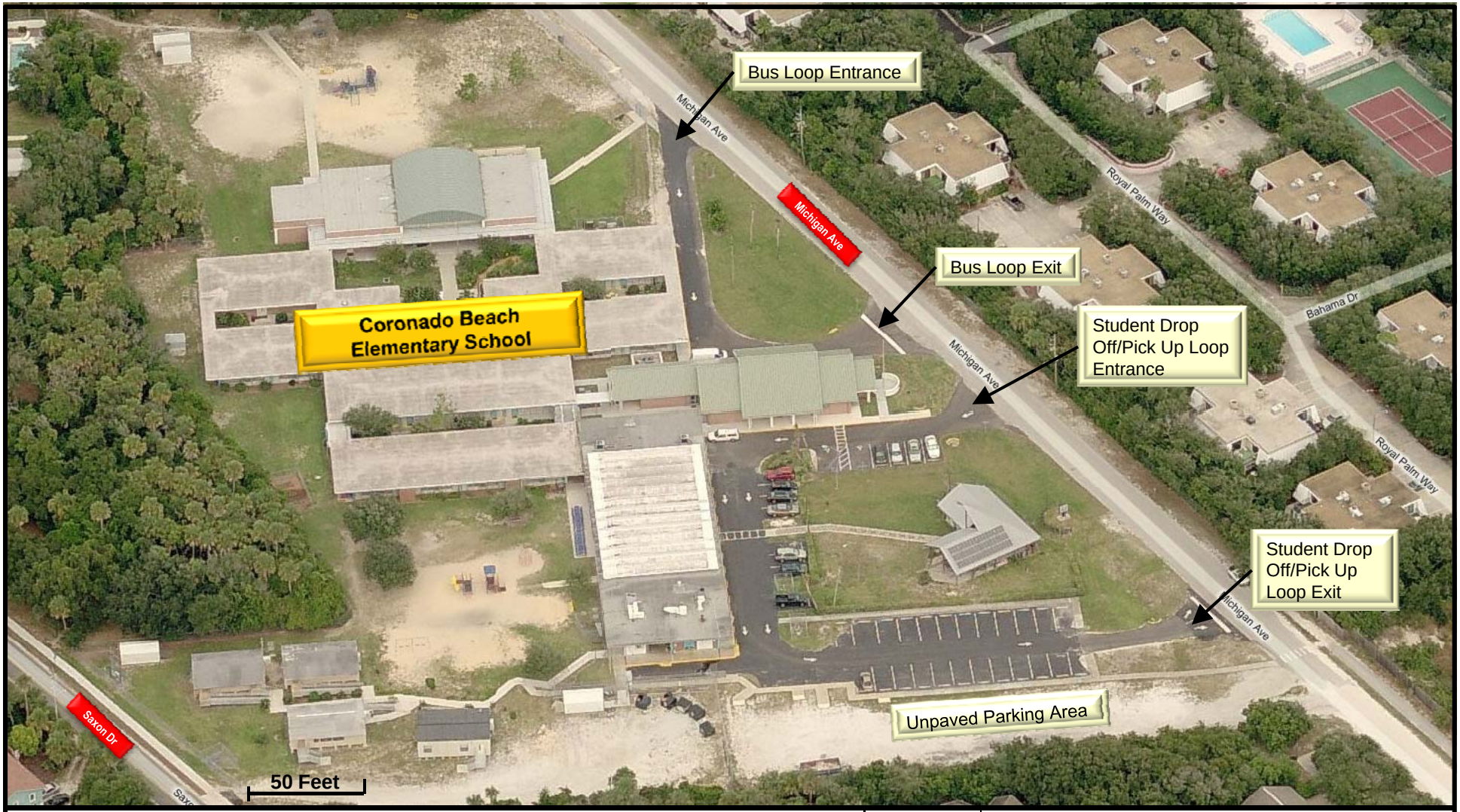
Illustration 3: Students walking home - Michigan Avenue looking north

- Coronado Beach Elementary School does not provide safety education to teachers and students regarding walking and bicycling to and from school.
- Motorists park on Michigan Avenue and motion students across the road. Parents have promised to comply with the NO PARKING restriction in front of the school when informed that they were practicing unsafe procedures.
- Two known accidents occurred with students from Coronado Beach Elementary School at the following locations.

    - The intersection of Michigan Avenue and Mathews Avenue
    - Along Mathews Avenue
- The PE Coach, supplemented teachers, and principal assist in arrival and dismissal procedures. The PE Coach is responsible for the Safety Patrol students who are located at specific locations around the school campus in pairs (see Illustration 4).
- The Principal is concerned about students who live far from the school and must use Saxon Drive to walk to school since most of the west side of Saxon Drive is wooded.

Illustration 4: Two Safety Patrol students at the bicycle storage rack – looking north on Michigan Avenue

- Coronado Beach Elementary School mostly experiences traffic issues in the afternoons.
- The school can be accessed from Michigan Avenue only (see Figure 2 for Coronado Beach Elementary School's geometry).



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School Geometry

Figure 2

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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 Coronado Beach Elementary School and its walk zone. Intersections of interest were investigated based on comments from Principal Murphy, the Crossing Guard Supervisor, Ms. Marshall, and a walk zone drive through. Figure 3 shows existing traffic signals, approximate student locations, and existing conditions within Coronado Beach Elementary School's walk zone.

Hazardous Conditions Evaluation of Sidewalk Locations

The evaluation of sidewalk safety features were 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 Florida Highway Administration (FHWA).

For a walkway that is parallel to the road, the following conditions will be considered hazardous:

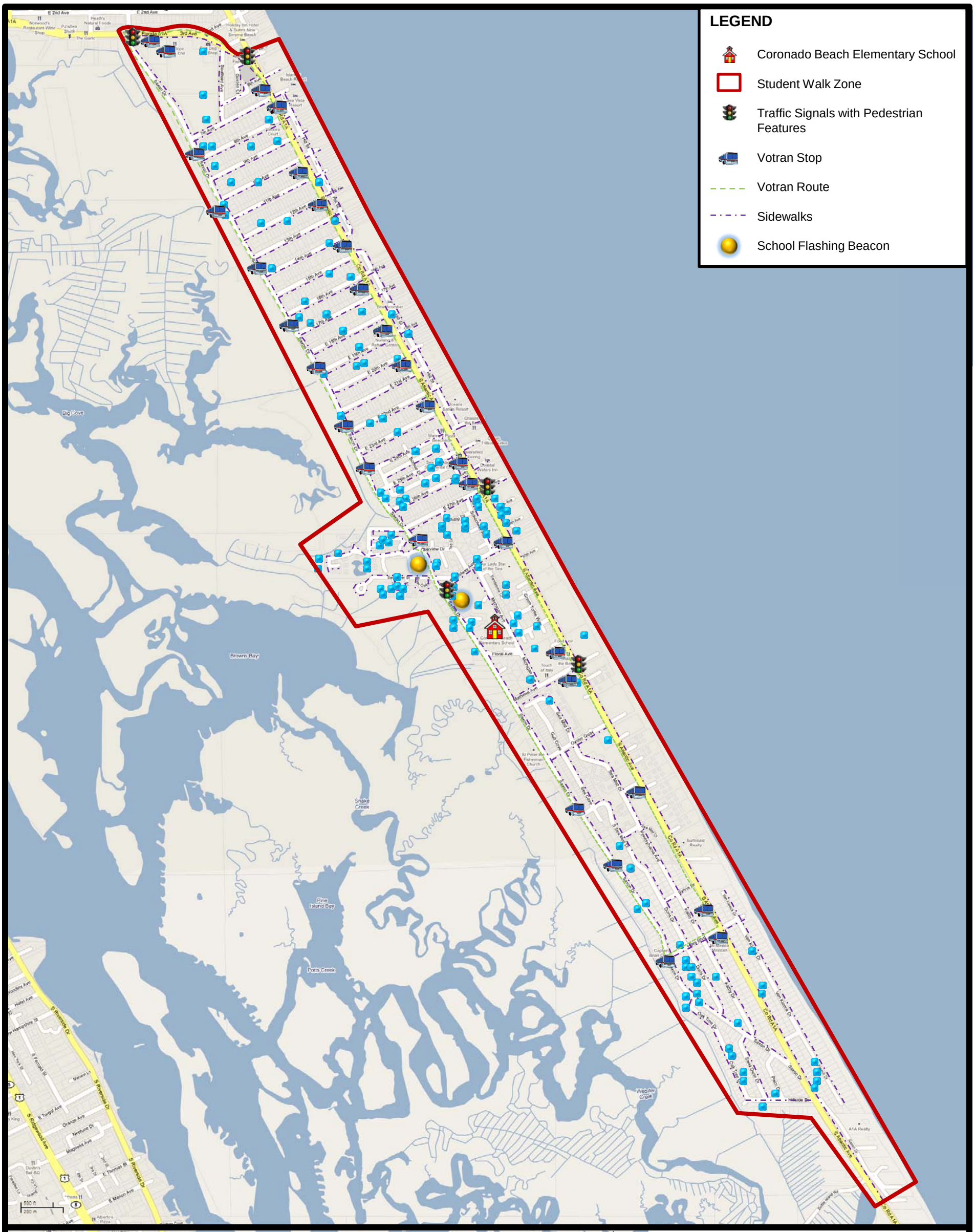
- If there is not an area at least 4 feet wide adjacent to the road, having a surface upon which students may walk without being required to walk on the road surface
- The road along which students must walk is uncurbed and has a posted speed limit of 55 miles per hour

For walkways that are perpendicular to the road, the following conditions will be considered 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

The most current traffic counts, taken from the Florida Department of Transportation's 2009 Annual Average Daily Traffic Report, show that the two-way peak-hour traffic volume on Saxon Drive, south of 3rd Avenue, is an average of 295 vehicles. South Atlantic Avenue at 26th Avenue, experiences an average two-way peak-hour traffic volume of 759 vehicles. South Atlantic Avenue, from 26th Avenue to Sixth Avenue, experiences an average two-way peak hour traffic volume of 1,866 vehicles. South Atlantic Avenue, southeast of SR 5, experiences an average two-way peak-hour traffic volume of 1,929 vehicles.

Saxon Drive clearly experiences traffic below hazardous conditions since the two-way count is below the one-way threshold and the posted speed limit is well below the 55 mph. South Atlantic Avenue at 26th Avenue, from 26th Avenue to Sixth Avenue, and southeast of SR 5 experiences two-way traffic over the one-way hazardous condition volume; however, the posted speed limit on South Atlantic Avenue is 10-20 mph below the hazardous conditions speed (55 mph), and sidewalks are provided. Furthermore, pedestrian features are present at crossings and mid-block crossings. Based on these findings, there are no hazardous conditions within the



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Existing Conditions

Figure 3

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Coronado Beach Elementary School's walk zone. The findings and recommendations relative to hazardous conditions evaluations are summarized below in Table 2.

Table 2
Sidewalk Evaluation
Coronado Beach Elementary School Assessment Study

Street Name	Two-Way Peak-Hour Traffic Volume*	Perpendicular or Parallel Street	Crossing Guard Threshold	Traffic Signal or Stop Sign Available:	Posted Speed Limit	Threshold Exceeded?
Saxon Drive	295	Perpendicular	360 vph per direction	Yes	N/A	No - Volume < Threshold
South Atlantic Avenue at 26th Avenue	759	Perpendicular	360 vph per direction	Yes	N/A	No - Traffic Signal and Stop Signs Provided
South Atlantic Avenue from 26th Avenue to Sixth Avenue	1,866	Perpendicular	360 vph per direction	Yes	N/A	No - Traffic Signal and Stop Signs Provided
South Atlantic Avenue Southeast of SR 5	1,929	Perpendicular	360 vph per direction	Yes	N/A	No - Traffic Signal and Stop Signs Provided

** Note - Only two-way peak-hour volumes are available (AADT x K-Factor). Logical inferences are made to evaluate probable one-way volumes based on the two-way data.*

vph = vehicles per hour

On-Site Investigation - A.M. Observations

On-site observations were made at Coronado Beach Elementary School on May 27, 2010 during school arrival hours, 7:40 a.m. to 8:15 a.m., to examine entering and exiting vehicles as well as queuing which are normal activities that the school would experience on any given day. The following general information was gathered.

- Bicycles Parked in Bicycle Rack: 5
- Number of Skateboards: 0
- Number of Helmets: 1
- School-related flashing beacons (see Illustration 5): 2 on Saxon Drive

Six students were observed riding their bicycles or walking to school. Mostly, parents dropped students off in the Student Drop Off/Pick Up Loop or the Volusia County School Bus brought students to school. During the on-site school visit, the following observations were made, followed by recommendations for each area of concern.

Illustration 5: School flashing beacon on Saxon Avenue

Observation: Coronado Beach Elementary School bicycling students were not wearing helmets (see Illustration 6).

Recommendation: The City of New Smyrna Beach Police Officers should patrol the walk zone and help to promote bicycle safety by enforcing the bicycling rules which includes giving warnings and issuing tickets to students who do not follow the rules. Incentive programs that reward students who adhere to bicycle safety rules should be implemented to encourage students to wear helmets.

The school newsletter should inform parents and students of the proper procedures regarding students who ride their bicycles to school. They should be informed of free helmets that may be available to student in the front office and the penalties associated with not wearing a helmet including the $15 ticket that may be issued to a student each time they are observed not wearing a helmet (see 2009 Florida Statutes, 316.2065 Bicycle Regulations and 316.18). To ensure that all bicycling students wear helmets, the law should be enforced by the New Smyrna Police Department, school staff, Safety Patrol students, and parents to be effective.

Illustration 6: Only one bicycle has a helmet – bicycle rack

Observation: Motorists exiting from the unpaved parking lot were heading northbound when traffic was restricted to only southbound movements (see Illustration 7).

Recommendation: A sign, such as the one posted in front of the Student Drop Off/Pick Up Loop, should be posted in front of the unpaved parking lot on the east side of Michigan Avenue and facing motorists as they exit the parking lot. This should remind drivers of the SOUTHBOUND ONLY restriction during the restricted hours. Michigan Avenue should be monitored by the New Smyrna Police Department or their Citizens on Patrol to ensure that motorists are following the rules.

Illustration 7: Vehicle driving northbound during the afternoon hour when traffic on Michigan Avenue is southbound only

On-Site Investigations - P.M. Observations

On-site observations were made at Coronado Beach Elementary School on May 27, 2010 during school dismissal hours of 1:45 p.m. to 2:30 p.m. to examine entering and exiting vehicles as well as queuing which are normal activities that the school would experience on any given day. During the afternoon school visit, the following observations were made followed by recommendations for each issue.

Observation: Coronado Beach Elementary School bicycling students were not wearing helmets (see Illustration 8).

Recommendation: The City of New Smyrna Beach Police Officers should patrol the walk zone and help to promote bicycle safety by enforcing the bicycling rules which include giving warnings and issuing tickets to students who do not follow the rules. Incentive programs that reward students who adhere to bicycle safety rules should be implemented to encourage student to wear helmets.

The school newsletter should inform parents and students of the proper procedures regarding students who ride their bicycles home. They should be informed of free helmets that may be available to students in the front office and the penalties associated with not wearing a helmet including the $15 ticket that may be issued to a

Illustration 8: Students not wearing helmets – Michigan Avenue north

student each time they are observed not wearing a helmet (see 2009 Florida Statutes, 316.2065 Bicycle Regulations and 316.18). To ensure that all bicycling students wear helmets, the law should be enforced by the New Smyrna Police Department, school staff, Safety Patrol students, and parents to be effective.

Observation: Motorists exiting from the unpaved parking lot were heading northbound when traffic was restricted to only southbound movements in the afternoons.

Recommendation: A sign, such as the one posted in front of the Student Drop Off/Pick Up Loop, should be posted in front of the unpaved parking lot on the east side of Michigan Avenue and facing motorists as they exit the parking lot. This should remind drivers of the SOUTHBOUND ONLY restriction during the restricted hours. Michigan Avenue should be monitored by the New Smyrna Police Department or their Citizens on Patrol to ensure that motorists are following the rules.

Illustration 9: Faded crosswalk marking south of school on Michigan Avenue

Observation: Michigan Avenue south of the school campus has crosswalk markings that are old and faded (see Illustration 9).

Recommendation: The crosswalk markings south of Coronado Beach Elementary School on Michigan Avenue should be removed and thermoplastic crosswalk markings should be installed in accordance with Standard Index No. 17346.

Observation: Michigan Avenue south of Coronado Beach Elementary School has a faded crosswalk sign at a mid-block crossing.

Recommendation: The crosswalk signage should be removed and an R1-6c sign for an unsignalized school crossing with the inclusion of the STATE LAW legend should be installed at the crosswalk located on Michigan Avenue south of the school campus. The In-Street Pedestrian Crossing sign should be installed in accordance with Standard Index No. 17302 and should be installed in the center line of Michigan Avenue.

Observation: Michigan Avenue south of the school campus has school in advance signs that are outdated and has a washed out center (see Illustration 10).

Recommendation: The school in advance crossing sign should be replaced with a School Advance Crossing Assembly (S1-1 and W16-9P) and should be installed in accordance with Standard Index No. 17302.

Observation: Motorists appeared to be driving over the posted speed limit of 15 mph on Michigan Avenue.

Recommendation: Periodic placement of speed monitoring trailers should be placed on the east side of Michigan Avenue since no sidewalks exist north of the school or on the west side of Michigan Avenue south of the school to remind drivers that they may be driving over the posted speed limit. The New Smyrna Beach Police Department officers should also monitor Michigan Avenue and the walk zone to ensure that motorists are following the rules. If it is found that motorists are driving over the posted speed limit then the city should consider issuing fines during school arrival and dismissal times.

Illustration 10: School in advance sign is outdated with a washed out center south of the school campus

Off-Site Investigations

Observation: The northwest quadrant of the intersection of Saxon Drive and Sandpiper Street has a broken tubular delineator that is laying in the right-of-way as shown in Illustration 11.

Recommendation: The tubular delineator should be replaced to delineate the sidewalk and the pavement.

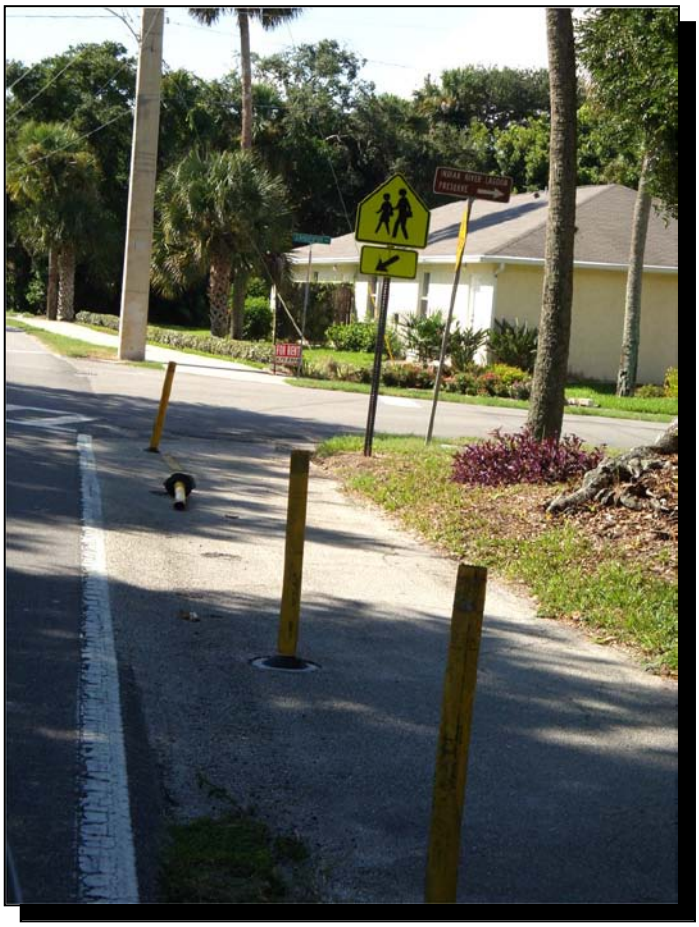

Illustration 11: Broken tubular delineator at Saxon Drive and Sandpiper Street

Observation: The crosswalk markings are faded across Mathews Avenue at the intersection of South Atlantic Avenue and Mathews Avenue (see Illustration 12).

Recommendation: The crosswalk markings at the intersection of South Atlantic Avenue and Mathews Avenue should be removed and thermoplastic crosswalk markings should be installed in accordance with Standard Index No. 17346.

Observation: The crosswalk markings across Mathews Avenue at Michigan Avenue are old and faded (see Illustration 13).

Recommendation: The existing crosswalk markings should be removed and thermoplastic crosswalk markings should be installed in accordance with Standard Index No. 17346.

Observation: No crosswalk signage exists on either sides of the crosswalk at the intersection of Michigan Avenue and Mathews Avenue.

Recommendation: Two school crossing assemblies (S1-1 and W16-7P) should be installed on both sides of the crosswalk in accordance with Standard Index No. 17302 on Mathews Avenue at the intersection of Michigan Avenue and Mathews Avenue.

Observation: No SCHOOL in advance signs are posted on Mathews Avenue to warn motorists that a school crossing is ahead.

Recommendation: Two School Crossing Assemblies (S1-1 and W16-9P) should be installed, east and west of Michigan Avenue, 200 feet of the crosswalk in both directions and should be installed in accordance with Standard Index No. 17346.

Illustration 12: Faded crosswalk markings across Mathews Avenue at South Atlantic Avenue

Illustration 13: Faded crosswalk markings and not crossing signage across Mathews Avenue at Michigan Avenue

Observation: The intersection of Saxon Avenue and Sandpiper Street, as shown in Figure 14, has faded crosswalk markings. This intersection has four crosswalks with two different types of crosswalk markings.

Recommendation: All four crosswalk markings should be removed since they are outdated and two types of crosswalk markings exist at this intersection. Thermoplastic crosswalk markings should be installed in accordance with Standard Index No. 17346. Crosswalk markings should be uniform at intersections if not throughout the walk zone.

Illustration 14: Faded crosswalk markings at the intersection of Saxon Avenue and Sandpiper Street

Observation: The sidewalk on Saxon Drive does not connect to the sidewalk on Mathews Avenue in the northeast quadrant at the intersection of Saxon Drive and Mathews Avenue as shown in Illustrations 15-18.

Recommendation: Sidewalks should be installed to have a continuous sidewalk network on Saxon Drive and Mathews Avenue. Type D curbing should be installed to delineate the pavement and the sidewalk (see Figure 4).

Illustrations 15 and 16: No sidewalk from driveway on Saxon Drive and Mathews Avenue– looking west

Illustrations 17 and 18: No sidewalk connection in the northeast quadrant at Saxon Drive and Mathews Avenue

Coronado Beach Elementary School

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Proposed Conditions

Figure 4

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Observation: Water collects in the pavement and curb, as shown in Illustrations 19 and 20, in the southeast quadrant at the intersection of Schoolway Avenue and Esther Court and blocks students from entering/exiting the sidewalk when it rains.

Recommendations: The City of New Smyrna Beach should install a curb inlet in the southeast quadrant of the intersection of Schoolway Avenue and Esther Court to convey water to the underground stormwater system.

Illustration 19: Flooding in the southwest quadrant of Schoolway Avenue and Esther Court

Illustration 20: Water collects at Schoolway Avenue and Esther Court when it rains

5

OTHER OFF-SITE RECOMMENDATIONS

Coronado Beach Elementary School is located in a neighborhood that allows all of its students within the walk zone the opportunity to walk or bicycle to school. Saxon Avenue and South Atlantic Boulevard extends throughout the entire walk zone and sidewalks are located on at least one side of the roadway. The available sidewalks within the walk zone present an opportunity to promote safe walking and bicycling practices.

Parents or community leaders should take turns walking to school with students. Coronado Beach Elementary School and its business partners should provide incentives to make walking and bicycling a preferred mode of transportation. The following are a few of the major programs that encourage walking and bicycling to school and foster safety awareness in students and parents.

- Walking School Bus – A group of students who walk to school with an adult and pick up students on the way to school at a set place and time like a school bus.
- KidsWalk-to-School – A group of students who walk to school with an adult.
- SAFE KIDS Walk this Way – A year-round pedestrian safety program conducted by the National SAFE KIDS Campaign that participates in the International Walk to School Day. They work with parents, educators, and community leaders to teach pedestrian safety to students, enforce speed limits, and other traffic regulations.
- International Walk to School Day – An event that occurs around the world in October where students, parents, teachers, and community leaders walk to school together to promote being active and making the streets more friendly for walking and bicycling.

The existing sidewalks on Saxon Avenue and South Atlantic Avenue would accommodate all students and parents if they were to commit to making walking and bicycling a preferred mode of transportation or endeavored to implement a safety program.

6

IMPLEMENTATION

The previous sections of the report contain the Assessment Report and the following sections are the Implementation Report. Since the issues within Coronado Beach Elementary School's walk zone were identified then each recommendation was evaluated. The evaluation was focused on the following items:

- 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

The safety issues were 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.

7

BEST PRACTICES

This section of the report deals with the best practices to 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.

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 that resides 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 accessibility 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 people with disabilities in the first phases of programming, planning, designing, operating, and constructing pedestrian facilities
- Agencies should ensure that accessible 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 I 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. These older neighborhoods must then be retrofitted to be compliant with 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, non-complying 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 the 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 hazardous. When sidewalks are obstructed or do not have curb ramps, it is unsafe 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 control of their bicycles.

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 (Illustration 5 shows a displacement of less than 13mm)
- 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 addressed immediately and 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 should 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 (Illustration 6). At some intersections, the crosswalk did not align with the sidewalks and did not allow for the shortest distance crossing.

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, and slip resistant.
- 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.

School flashing beacons (Illustration 7) also play an important role in safety. Flashing beacons alert drivers that they are entering a school zone and indicates 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 8). 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.

Students who choose to ride their bicycles to school do not always wear helmets. Also, bicycle storage facilities may not always be in the best of conditions or secured during the school day. This may cause students to chain their bicycles to the school fence on the outer perimeter of the school.

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

Most school districts 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

- The school board should create a walk zone based on the safest routes that avoid congested intersections and busy driveways.
- School arrival and dismissal times should be established to avoid the inter-mingling of elementary, middle, and high school traffic.
- The school board should consider reviewing 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.
- Sidewalks should be constructed on both sides of the road.
- For sidewalks that end at an unsignalized intersection, crosswalks and proper signage should be in place to safely cross walkers and bicyclists.
- All new schools should be planned with good sidewalk connectivity/network to all neighborhoods and developments within its walk zone.
- Alternative sidewalk routes should be available to areas that do not support enough right-of-way to install sidewalks or hazardous courtesy transportation should be evaluated.
- Buses should be provided to students who do not have access to safe routes to school.
- The school district should implement programs that promote walking and bicycling to school (Walking School Bus, SAFE KIDS Walk This Way, International Walk to School Day, etc.).
- A NO BACKPACK policy could 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, and helmet usage should be closely monitored for compliance.
- All teachers assisting during arrival/dismissal should wear safety vests when they are crossing students or interacting with vehicular traffic.

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MASTER IMPROVEMENT PLAN

The recommended Master Improvement Plan is presented in Figure 5. The following are presented in the Master Improvement Plan.

- Student Walk Zone
- Existing Sidewalks
- Existing Votran Stops
- Existing Votran Routes
- Existing Traffic Signals
- Existing School Flashing Beacon
- Proposed Sidewalk

Coronado Beach Elementary School

Bicycle and Pedestrian School Safety Review Study

New Smyrna Beach, Florida

N

Proposed Conditions

Figure 4

VOLUSIA TPO
TRANSPORTATION PLANNING ORGANIZATION
VISION - PLAN - IMPLEMENT

Lassiter Transportation Group, Inc.
Engineering and Planning

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CONSTRUCTABILITY MATRIX

The matrix in Table 1 shows the estimated cost of projects that are recommended for improvement. FDOT's *2010 Basis of Estimates* manual was used to develop the constructability matrix. The estimated engineering cost for the five foot sidewalk at Mathews Avenue and Saxon Drive is $2,516.55. The costs shown in the constructability matrix include construction and labor fees. Grading costs are not included. As mentioned before, these improvements are based on field observations and should be verified by a contractor prior to construction.

Table 3
Constructability Matrix
Coronado Beach Elementary School Implementation Report

Location	Description of Project	Potential Constraints	Pay Item Number[1]	Pay Item Description[1]	Plan Qty	Unit Measure[1]	Unit Price[2]	Contract Amount[3]
Northeast Quadrant of Mathews Avenue at Saxon Drive	Mid-block crosswalk markings are old, faded, and do not meet current standards	Right-of-way should be verified prior to construction	110-4	REMOVAL OF EXISTING CONCRETED PAVEMENT	22.23	SY	$16.90	$375.69
			520-1-10	CONCRETE CURB, TYPE D	45.00	LF	$12.98	$584.10
			522-1	SIDEWALK CONC, 4" THICK	22.23	SY	$70.03	$1,556.77
TOTAL								$2,516.55

1 Taken from FDOT's 2010 Basis of Estimates Manual

2 Taken from FDOT's Pay Item Cost History, specifically from Area 6 (Volusia County) or 6 Month Statewide Averages

3 Unit Price x Plan Qty

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RECOMMENDED PRIORITY PROJECTS

The recommended projects, prioritized in Table 1, were ranked and rated with regards to safety, benefits associated with the improvement, constructability, and cost. This section of the report provides additional information about on sidewalk/trail projects in ranking order.

Project No. 1: Mathews Avenue at Saxon Drive

Submitting Agency: City of New Smyrna Beach
Project Location: Northeast Quadrant of Michigan Avenue at Saxon Drive
School Served: Coronado Beach Elementary School
Project Description: Installation of 40 feet of sidewalk and Type D curbing
Maintaining Agency: City of New Smyrna Beach

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.

Safety Issue: Sidewalks exist on Saxon Drive and Michigan Avenue on at least one side of the road; the sidewalks do not connect in the northeast quadrant of this intersection.

Project Description: This project will include the installation of five-foot sidewalks, approximately 40 feet in length, which will connect to existing sidewalks on Saxon Drive and a driveway on Mathews Avenue. Appendix C shows the right-of-way description for this recommended section of sidewalks. The right-of-way data was taken from the *Volusia County Property Appraiser* website.

Existing Conditions: Students who live south of the school campus can use Michgian Avenue to Mathews Avenue to access Saxon Drive. Mathews Avenue has sidewalks on the south side of the roadway if students are heading to South Atlantic Avenue and on the north side if students are heading to Saxon Drive. The sidewalk stops at the last driveway on Mathews Avenue. Students who are trying to access Saxon Drive must either walk in the pavement or in the grass.

Estimated Cost: The estimated cost for this project is $2,516.55.

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APPENDICES

APPENDICES

APPENDIX A:
Data Collection – On-Site

On-Site Observations: VCMPO Bike/Pedestrian Safety Study

Name of School: Coronado Beach Elementary School

Job #: 3706.02

Principal: Jeri Murphy

Date of Site Visit: August

Location: 3550 Michigan Avenue
New Smyrna Beach, FL 32169

- [x] Observe Entry and Exit Pedestrians and Bicyclists
- [x] Observe Traffic Patterns and the Impact to Bicycle Riders and Pedestrians

Photos of Study Area (Note Any Adverse Conditions)

- [x] Entrance of School — On Michigan
- [x] Entry Locations — On Michigan - Bus Loop & Student ~~Pick Up~~ Pick Up / Drop Off Entrance
- [x] Exit Locations — On Michigan - Bus Loop & Student Pick Up / Drop Off Exit
- [x] Obstacles — None
- [x] Use of Bicycles — Number of Bicycles: 1
- [ ] Check for Helmet Compliance — Helmets: 1 — Without Helmets: 0
- [x] Sidewalk Conditions (Take Pictures where Applicable)
- [x] Transit Stops/Routes
- [x] Traffic Flashing Signals ~~2 on Saxon Dr~~
- [x] School Related Signage
- [x] School Related Flashing Signals 2 on Saxon Dr
- [x] Traffic Signals
- [x] Pedestrian Signals (2) Traffic signals
- [x] Drainage Ditches/Bridges/Retention Ponds
- [x] Conservation and Park Lands

☒ Trails

☒ Check for Opportunities to Make Improvements and Photograph

Description of Obstacles: Need similar sign in front of ~~the~~ Student Loop Exit to be placed in front of unpaved parking area

☒ Curb Ramp at All Crosswalk to Sidewalk

Existent X Non-existent _____

☒ Observance of Illegal Drop-offs

☒ Observance of Illegal Right of Way Parking

Yes X No _____

Notes: Parents pull up by Bus Loop Entrance by gate (next to bicycle storage area) to pull into shoulder & let students out of vehicles in AM.

Principal Comment:

APPENDIX B:
Data Collection – Off-Site

(Circle One) High Crash Proposed by Principal Proposed by Guard Crossing Guard Station

Off-Site Observations: VCMPO Bike/Pedestrian Safety Study

School: Coronado Beach Elementary School Page: 1 of 5

Observer: Sans & Dian Observation Date: August

Principal: Ms. Jeri Murphy Crossing Guard/Supervisor: Ms. Joan Marshall

Location	Clear Path (No Obstacles)	> 4 ft Between Sidewalk & Pavement	No Drainage Issues: Ditches, Bridges, Rmin. Pipes	Correct Drop-Off/Pick-Up Procedures Followed	Existing Shoulder	No Sidewalk Deficiencies	No Sidewalk Obstacles	Sidewalk Connects to Crosswalk with Ramp	Crosswalk & Sidewalk Line Up	Designated Bike Lane	Proper Crosswalk Signage	Maintained Crosswalk Striping	School Related Flashing Signals	School Related Signage	Traffic Signal	Pedestrian Signals	Pedestrian Signage	No Illegal Parking	Comments
CurbType: None / Type E / Type F / Valley Gutter Front of School	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	- signage @ crosswalk on Michigan Ave old - has only one sign (should be 1 on each side of crosswalk)
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
CurbType: None / Type E / Type F / Valley Gutter Front of School	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	- crosswalk faded - motorists parked between no parking signs - 1-way street (Michigan)
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
CurbType: None / Type E / Type F / Valley Gutter Front of School	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	1 hr during arrival & dismissal → not always followed - NO PARKING signs faded & worn
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

Pictures: school, school entrance and exit, intersection of study, obstacles, maintenance issues, possible improvements etc.

(Circle One) **High Crash** **Proposed by Principal** **Proposed by Guard** **Crossing Guard Station**

Off-Site Observations: VCMPO Bike/Pedestrian Safety Study

School: Coronado Beach Elementary School

Observer: Sans & Dian

Observation Date: August

Principal: Ms. Jeri Murphy

Crossing Guard/Supervisor: Ms. Joan Marshall

Location	Clear Path (No Obstacles)	> 4 ft Between Sidewalk & Pavement	No Drainage Issues: Ditches, Bridges, Rivlin. Beds	Correct Drop-Off/Pick-Up Procedures Followed	Existing Shoulder	No Sidewalk Deficiencies	No Sidewalk Obstacles	Sidewalk Connects to Crosswalk with Ramp	Crosswalk & Sidewalk Line Up	Designated Bike Lane	Proper Crosswalk Signage	Maintained Crosswalk Striping	School Related Flashing Signals	School Related Signage	Traffic Signal	Pedestrian Signals	Pedestrian Signage	No Illegal Parking	Comments
CurbType: None / Type E / Type F / Valley Gutter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	- Good condition
Michigan & Ave School way	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
CurbType: None / Type E / Type F / Valley Gutter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	-DO NOT ENTER sign distorted
Bus Loop Exit	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	-ONE WAY sign faded and worn
CurbType: None / Type E / Type F / Valley Gutter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	STUDENT DROP OFF/ PICK UP sign old & faded
Student Drop off/ Pick Up Loop Entrance	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

Pictures: school, school entrance and exit, intersection of study, obstacles, maintenance issues, possible improvements etc.

(Circle One) **High Crash** **Proposed by Principal** **Proposed by Guard** **Crossing Guard Station**

Off-Site Observations: VCMPO Bike/Pedestrian Safety Study

School: Coronado Beach Elementary School

Page: 3 of 5

Observer: Sans & Dian

Observation Date: August

Principal: Ms. Jeri Murphy

Crossing Guard/Supervisor: Ms. Joan Marshall

Location	Clear Path (No Obstacles)	> 4 ft Between Sidewalk & Pavement	No Drainage Issues: Ditches, Bridges, Rinlt, Ends	Correct Drop-Off/Pick-Up Procedures Followed	Existing Shoulder	No Sidewalk Deficiencies	No Sidewalk Obstacles	Sidewalk Connects to Crosswalk with Ramp	Crosswalk & Sidewalk Line Up	Designated Bike Lane	Proper Crosswalk Signage	Maintained Crosswalk Striping	School Related Flashing Signals	School Related Signage	Traffic Signal	Pedestrian Signals	Pedestrian Signage	No Illegal Parking	Comments
CurbType: None / Type E / Type F / (Valley Gutter) circled Back of School on Saxon Dr	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)	(Y)	Y	Y	Y	(Y)	(Y)	(Y)	(Y)	Y	Y	Y	Y	-2 Flashing signals between schoolway & 'SCHOOL ENTRANCE' sign should be removed since back entrance no longer used by school
	N	N	N	N	N	N	N	N	N	(N)	N	N	N	N	(N)	(N)	(N)	(N)	
CurbType: None / Type E / Type F / Valley Gutter ~~[illegible]~~	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	~~DO NOT ENTER~~
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
CurbType: None / Type E / Type F / Valley Gutter Esther & Schoolway	(Y)	(Y)	Y	[scribbled]	(Y)	(Y)	(Y)	(Y)	(Y)	Y	(Y)	Y	Y	Y	Y	Y	Y	Y	Drainage Issues
	N	N	(N)	N	N	N	N	N	N	N	N	N	(N)	(N)	(N)	(N)	(N)	(N)	

Pictures: school, school entrance and exit, intersection of study, obstacles, maintenance issues, possible improvements etc.

(Circle One) **High Crash** **Proposed by Principal** **Proposed by Guard** **Crossing Guard Station**

Off-Site Observations: VCMPO Bike/Pedestrian Safety Study

School: Coronado Beach Elementary School

Observer: Sans & Dian

Observation Date: August

Principal: Ms. Jeri Murphy

Crossing Guard/Supervisor: Ms. Joan Marshall

Location	Clear Path (No Obstacles)	> 4 ft Between Sidewalk & Pavement	No Drainage Issues: Ditches, Bridges, Ends	Correct Drop-Off/Pick-Up Procedures Followed	Existing Shoulder	No Sidewalk Deficiencies	No Sidewalk Obstacles	Sidewalk Connects to Crosswalk with Ramp	Crosswalk & Sidewalk Line Up	Designated Bike Lane	Proper Crosswalk Signage	Maintained Crosswalk Striping	School Related Flashing Signals	School Related Signage	Traffic Signal	Pedestrian Signals	Pedestrian Signage	No Illegal Parking	Comments
CurbType: None / Type E / Type F / Valley Gutter ~~Hudson~~ Saxon & Mathews	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	- flush (sidewalk & pavement), no shoulder in this section - sidewalk segment missing
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
CurbType: None / Type E / Type F / Valley Gutter Michigan & Mathews	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	- crosswalk faded - No school crossing Signage (school)
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
CurbType: None / Type E / Type F / Valley Gutter Schoolway & Sandpiper	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	- crosswalk markings are faded
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

Pictures: school, school entrance and exit, intersection of study, obstacles, maintenance issues, possible improvements etc.

(Circle One) High Crash Proposed by Principal Proposed by Guard Crossing Guard Station

Off-Site Observations: VCMPO Bike/Pedestrian Safety Study

School: Coronado Beach Elementary School

Observer: Sans & Dian

Observation Date: August

Principal: Ms. Jeri Murphy

Crossing Guard/Supervisor: Ms. Joan Marshall

Location	Clear Path (No Obstacles)	> 4 ft Between Sidewalk & Pavement	No Drainage Issues: Ditches, Bridges, Ruts, Ends	Correct Drop-Off/Pick-Up Procedures Followed	Existing Shoulder	No Sidewalk Deficiencies	No Sidewalk Obstacles	Sidewalk Connects to Crosswalk with Ramp	Crosswalk & Sidewalk Line Up	Designated Bike Lane	Proper Crosswalk Signage	Maintained Crosswalk Striping	School Related Flashing Signals	School Related Signage	Traffic Signal	Pedestrian Signals	Pedestrian Signage	No Illegal Parking	Comments
Saxon & Sandpiper CurbType: None / Type E / Type F / Valley Gutter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	- Delineator broken & laying in rtw
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
CurbType: None / Type E / Type F / Valley Gutter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
CurbType: None / Type E / Type F / Valley Gutter	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	

Pictures: school, school entrance and exit, intersection of study, obstacles, maintenance issues, possible improvements etc.

APPENDIX C:
2009 Florida Statutes 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.

The 2009 Florida Statutes

318.18 Amount of penalties.--The penalties required for a noncriminal disposition pursuant to s. 318.14 or a criminal offense listed in s. 318.17 are as follows:

(1) Fifteen dollars for:

(a) All infractions of pedestrian regulations.

(b) All infractions of s. 316.2065, unless otherwise specified.

(c) Other violations of chapter 316 by persons 14 years of age or under who are operating bicycles, regardless of the noncriminal traffic infraction's classification.

(2) Thirty dollars for all nonmoving traffic violations and:

(a) For all violations of s. 322.19.

(b) For all violations of ss. 320.0605, 320.07(1), 322.065, and 322.15(1). Any person who is cited for a violation of s. 320.07(1) shall be charged a delinquent fee pursuant to s. 320.07(4).

1. If a person who is cited for a violation of s. 320.0605 or s. 320.07 can show proof of having a valid registration at the time of arrest, the clerk of the court may dismiss the case and may assess a dismissal fee of up to $10. A person who finds it impossible or impractical to obtain a valid registration certificate must submit an affidavit detailing the reasons for the impossibility or impracticality. The reasons may include, but are not limited to, the fact that the vehicle was sold, stolen, or destroyed; that the state in which the vehicle is registered does not issue a certificate of registration; or that the vehicle is owned by another person.

2. If a person who is cited for a violation of s. 322.03, s. 322.065, or s. 322.15 can show a driver's license issued to him or her and valid at the time of arrest, the clerk of the court may dismiss the case and may assess a dismissal fee of up to $10.

3. If a person who is cited for a violation of s. 316.646 can show proof of security as required by s. 627.733, issued to the person and valid at the time of arrest, the clerk of the court may dismiss the case and may assess a dismissal fee of up to $10. A person who finds it impossible or impractical to obtain proof of security must submit an affidavit detailing the reasons for the impracticality. The reasons may include, but are not limited to, the fact that the vehicle has since been sold, stolen, or destroyed; that the owner or registrant of the vehicle is not required by s. 627.733 to maintain personal injury protection insurance; or that the vehicle is owned by another person.

(c) For all violations of ss. 316.2935 and 316.610. However, for a violation of s. 316.2935 or s. 316.610, if the person committing the violation corrects the defect and obtains proof of such timely repair by an affidavit of compliance executed by the law enforcement agency within 30 days from the date upon which the traffic citation was issued, and pays $4 to the law enforcement agency, thereby completing the affidavit of compliance, then upon presentation of said affidavit by the defendant to the clerk within the 30-day time period set forth under s. 318.14(4), the fine must be reduced to $10, which the clerk of the court shall retain.

(d) For all violations of s. 316.126(1)(b), unless otherwise specified.

(3)(a) Except as otherwise provided in this section, $60 for all moving violations not requiring a

The 2009 Florida Statutes

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.

APPENDIX E: CITY OF NEW SMYRNA BEACH LAND DEVELOPMENT EXCERPTS

c. Off-premises parking lots may be allowed provided they are located no more than 1,500 feet from the entranceway of the building or structure containing the principal use.

(3) *Licensing requirements.* The following shall be required for a valet parking license:

a. The licensee shall comply with all city design, sign and location standards contained in the city's land development regulations, except as modified herein.

b. The licensee shall maintain a one million dollar insurance policy issued by an insurance company licensed to do business in the State of Florida for personal and property damage arising out of unlawful or negligent acts of the licensee, its officers, employees, agents or invitees.

c. The licensee shall not employ as a valet parking attendant or valet ticket-taker any person who has been convicted of a felony or a crime involving theft, dishonesty or moral turpitude; or who is less than 18 years of age.

d. The licensee shall pay a $75.00 application fee.

604.11. *Permanent reference points.* The following shall be required in all subdivisions:

A. *Subdivision corner tie.* At least one corner of the subdivision shall be designated by course and distance (tie) from a readily discernible reference marker, such as a U.S. government marker, section corner or quarter-section corner. When such a monument or station is not available, the tie shall be made to some pertinent and readily recognizable landmark or identifiable point, physical object or structure.

B. *Monuments.* Within each block of a subdivision at least two monuments designed and designated as control corners shall be installed. The surveyor shall employ additional monuments when required by the city engineer. All monuments shall be constructed of metal encased in concrete and shall be at least four inches in diameter or square and not less than three feet in length. Each monument shall have embedded its top or attached by a suitable means, a metal plate of noncorrosive material and marked plainly with the point, the surveyor's registration number, the month and year it was installed, and the words "permanent reference monument" or the initials "P.R.M." to designate the same. Monuments shall be set in the ground so that the top is flush with the finish grade.

C. *Property markers.* Steel or wrought iron pipe or the equivalent not less than three-fourths inch in diameter and at least 30 inches in length shall be set at all corners, except those located by monuments. A marker shall also be set at a point of curve, point of intersection, property corner, point of tangency and reference point unless a monument is placed at said points. Additional markers shall be placed where required by the city engineer.

D. *Accuracy.* The allowable angular and linear error of closure for subdivision surveys shall be as follows:

(1) Angular error of closure shall not exceed 15 seconds times the square root of the number of angles turned. Total angular error shall be no greater than 40 seconds.

(2) Linear error of closure shall not exceed one foot per 10,000 feet.

604.12. *Sidewalks.*

A. *General requirements.*

(1) Sidewalks shall be constructed on both sides of all roadways except where a bike path is provided on one side of the roadway in conformance with the requirements of the right-of-way improvement design standards contained within this LDR. The location of the sidewalk within the right-of-way may vary if the alternative location is approved by the city engineer.

(2) All developments shall have a sidewalk plan included to enable pedestrians to access the building(s) and parking lot, parking spaces and other accessory components

of the site without walking through landscaped areas. The sidewalk plan shall be designed to provide direct pedestrian traffic, shall assume the pedestrians will take the most direct path to their destination, and shall assume that reasonable pedestrians will travel through grass or landscaping, if able to, before walking great distances to stay on the sidewalk.

(3) All developments, whether new or additions, are required to install public sidewalks along all road frontage in front of their parcel within the right-of-way six inches from the right-of-way line. This is not required if a sidewalk exists. If a sidewalk exists but does not meet the width requirements, the developer shall add the required width. This provision shall not apply if a bicycle path (not lane) exists in front of the establishment.

(4) The minimum width of sidewalks located along all local streets is four feet and collectors and arterials shall have five feet wide sidewalks. Sidewalks located in multifamily or duplex developments shall have a minimum width of 30 inches provided they are used to access ten or less dwelling units. Sidewalks located within multifamily and duplex and nonresidential developments, where the sidewalk accesses more than ten dwelling units, shall have a minimum width of four feet. For the purpose of this section, access to residential development shall mean the only paved pathway to a building entranceway. All buildings shall have a sidewalk leading from the city right-of-way, public walkway or vehicular access way to the building entranceway. Stepping stones, gravel, or decorative rock shall not constitute a sidewalk.

(5) Sidewalks shall be constructed of 3,000 psi 28-day concrete with a minimum thickness of four inches except that a minimum of six inches is required at driveways. Sidewalks shall be reinforced with six-inch by six-inch and 10/10 wire mesh. Wheelchair ramps for the handicapped shall be provided at all intersections and other points of pedestrian traffic flow.

604.13. *Bicycle facilities.*

A. *General requirements.*

(1) Any development adjacent to an arterial or collector roadway shall provide a bike path along one side of the arterial or collector roadway in lieu of the public sidewalk. This provision shall not apply if bike lanes are provided.

(2) Bike paths shall be located within the roadway right-of-way and constructed to city, county, or state bike path specifications. If adequate area is not available within the right-of-way, the bicycle facility shall be constructed to city, county, or state specifications on private property and a public access easement shall be granted for the width of the bicycle facility.

(3) City specifications for a bicycle path are a minimum width of eight feet, a minimum limerock base thickness of four inches, and a minimum Type I asphaltic concrete pavement thickness of 1.5 inches.

(4) A bicycle path shall not be required for any development located adjacent to an arterial or collector roadway with an existing sidewalk or bicycle path located on the same side of the right-of-way as the proposed development.

604.14. *Signs.*

A. *Purposes, intent, and scope.* The purpose of these sign regulations is to protect, preserve, and improve the character and appearance of the City of New Smyrna Beach; to provide ample opportunity to advertise in commercial and industrial areas while preventing excessive advertising which would have a detrimental effect on the character and appearance of those areas; and to limit signs in noncommercial and nonindustrial areas to essential signs, primarily for the purpose of identification and information, in order to protect the residential character and appearance of those areas. These regulations shall be the minimum requirements necessary to accomplish these purposes, and therefore, to protect the public health, safety, and general welfare. It is intended that signs placed on land or on a building for the purpose of identification, or for advertising use conducted on that land, or in that building, shall be deemed to be

accessory and incidental to the land, building, or use. With respect to signs advertising business uses, it is specifically intended, among other things, to avoid excessive competition and clutter among sign display in the demand for public attention. Therefore, the display of signs should be appropriate to the land, building or use to which they are appurtenant and be adequate, but not excessive, for the intended purpose of identification or advertisement. Signs commonly referred to as billboards, outdoor advertising or poster panels, which advertise products or businesses not connected with the site on which they are located, are prohibited in accordance with the predominantly residential atmosphere of the community, such signs being most appropriate on open highways and roads where they do not detract from community character. It is also intended that all temporary signs erected for directional purposes, public information, or to direct attention to special events, shall be confined to those that are of a general public interest, and that such signs shall be limited to the giving of information.

B. *Prohibited signs.* The following signs are prohibited in the City of New Smyrna Beach:

Beacon light signs.

Billboards.

Flashing signs except time and temperature signs.

Moving signs.

Off-site signs except those off-site signs which for limited specific purposes are expressly permitted by the terms of this LDR, including but not limited to, banner signs, bench signs, bus signs, political signs, real estate signs, and excluding off-site directional signs.

Roof signs.

Snipe signs.

Traveling light signs.

Signs which in any way simulate or appear to simulate emergency vehicles, traffic control signs, or devices, or directional, informational or warning signs, erected or maintained by any public body, or any railroad, public utility, or similar body.

Private signs placed on public property, except as expressly permitted by the appropriate public body.

Signs containing any statements, words or pictures of an obscene nature, that is, which are utterly without redeeming social value as determined by the community standard prevailing in New Smyrna Beach and the immediate surrounding area.

Signs attached to passenger vehicles (automobile) except signs not exceeding three square feet on the sides of such vehicles operated during the normal course of business, and identifying only the business, its principal products or services, address, and/or a phone number.

Signs which in any way obstruct, cover, or block, any fire escape, window, or door, or which are attached to any fire escape or ventilation device.

Signs which include pennants, ribbons, streamers, spinners, or wind-operated devices, except as provided herein.

Signs designed to be visible from any part of the Atlantic Ocean beach area, or from any waterway within the city limits, except approved wall signs in MU, B-2, B-3, B-4, or CM zoning districts, and except those signs complying with the exemption provision of this LDR.

Signs containing a portion of a message where some other portion is contained on another sign, thereby creating a series of advertising messages along a street or highway.

Signs located in the visibility triangle of any corner lot, such triangle to be drawn using

the street right-of-way lines and a line connecting them at points 25 feet from the intersection formed by such right-of-way lines, or signs which otherwise obstruct the view in any direction at a street intersection. Notwithstanding the foregoing, a sign shall not be considered an obstruction and shall be permitted in the visibility triangle where the sign conforms with the following requirements:

(1) A ground sign shall not exceed three feet in height above the elevation of the centerline of the adjoining street right-of-way;

(2) The sign shall consist of not more than two poles and neither pole shall exceed eight inches in diameter between three feet and eight feet above the elevation of the centerline of the adjoining right-of-way;

(3) The bottom of the face of the sign shall be located no less than eight feet above the elevation of the centerline of the adjoining right-of-way; and

(4) The maximum allowable sign height, measured from the centerline of the adjoining street right-of-way, is 30 feet.

C. *Exemptions.* The following signs shall be exempt from the permitting requirements of this LDR:

Automobile dealerships informational/directional service sign provided the dealership contains over 40,000 square feet of lot area, the sign only reads "service," has no advertising or logo, and has a copy area of 75 square feet or less.

Bus signs.

Construction signs for one- or two-unit residential construction projects provided that only one such sign not exceeding 5 1/2 square feet for each such project may be erected.

Integral signs, provided the individual letters or numerals of such sign do not exceed two inches in height, and provided the sign itself does not exceed three square feet of display area.

Legal notices--Political signs.

Neon light or other type of light sign hung inside the window of an establishment and intended to be seen from the outside provided: (1) no more than five are exempt; (2) the sign advertises a product sold at the establishment; and (3) the energy sources is by plug into an existing wall outlet.

No trespassing, warning, or similar signs of not more than two square feet where such signs are reasonably necessary to notify the public of the matters contained in the signs.

One sign not exceeding three square feet in area per premises, bearing only property numbers, post office numbers, and names of occupants of such premises, for identification purposes only.

Real estate signs provided that only one such sign not exceeding 5 1/2 square feet in area may be erected for each street frontage adjoining the parcel of property offered for sale, lease, or rent, and provided further that no such signs shall be erected on the subject property adjacent to the Atlantic Ocean beach. "Add-on" signs (warranty, multiple listing, sold, by appointment, etc.) not exceeding one square foot may be attached to permissible real estate signs. Real estate signs shall be located a minimum of 15 feet from side property lines and a minimum of two feet from the public right-of-way lines.

Signs attached to passenger vehicles (automobiles) not exceeding three square feet on the sides of vehicles operated during the normal course of a business and identifying only the business, its principal products or services, a phone number, and an address.

Signs erected by, and on the premises of, any church, identifying the church, the pastor, minister, priest, etc., and giving a schedule of services, and any other information

This shall include those streets designated as constrained or scenic. The purpose of this program will be to adequately monitor traffic conditions so that the City can anticipate future capacity improvements required on the City street network.

o. By October 1991, New Smyrna Beach will work with Volusia County and the FDOT to establish a traffic operating conditions monitoring program for the major state roads running through the City (US Highway 1, State Road A1A, and State Road 44). This program will include travel time studies to determine actual peak-period operating levels-of-service. The purpose of these studies will be to accurately determine operating levels-of-service on these roadways; in addition, these studies will attempt to determine how much of the traffic volume increases on these state roadways is attributable to new development activity approved within the City of New Smyrna Beach.

p. The City hereby adopts a long-term transportation concurrency management system that shall be implemented to maintain adopted levels-of-service on backlogged roadway facilities. Backlogged facilities are defined as roadway links that are forecast to operate below the adopted level-of-service standard during the pending five (5) year planning period, and are scheduled in the 10-year capital improvement program to be improved by the responsible jurisdiction under the uniform classification system so that the adopted level-of-service standard will be met within the 10-year planning period.

OBJECTIVE:

5. To minimize the public sector capital outlay in the construction of new transportation facilities and the improvement of existing facilities.

POLICIES:

a. Rights-of-way required for future roadway widenings or new construction will be reserved and/or acquired as early as reasonably possible; and the donation of the necessary right-of-way will be encouraged in the development approval process.

b. The City will adopt and enforce ordinances requiring new development to provide needed rights-of-way, and develop an acquisition and funding program for rights-of-way to be acquired by the City.

c. New development will be required to provide facilities and/or pay its fair share toward transportation improvements.

d. Developers will be required to provide paved roads, lighting, street trees, and sidewalks within all new developments.

e. New development patterns will be monitored, and the Transportation Plan revised in a timely manner as necessary. This may entail revising the schedule, and/or the content, of the improvement program at irregular intervals.

OBJECTIVE:

6. To protect and preserve the character of the existing New Smyrna Beach central business districts and beachside areas, areas of historic and archeological significance, and environmentally sensitive areas, while providing for safe traffic circulation.

POLICIES:

a. Several City and State roadways have been designated constrained and/or scenic facilities and will not be widened as provided in Policy 4.c.

b. Pedestrian and bike travel and safety considerations will be considered in conjunction with vehicle operating efficiency.

c. Roadway construction that impacts areas of historic significance will be vigorously

discouraged.

d. Mitigation measures for roadway construction, which has a negative impact on environmentally sensitive areas, will be required.

OBJECTIVE:

7. To adopt by 1995 a roadway plan and evacuation routes which provide for safe and efficient evacuation of the population in emergency situations.

POLICY:

An emergency evacuation plan consistent with state and local guidelines will be developed and adopted by the City of New Smyrna Beach.

OBJECTIVE:

8. To create a physical environment that supports access to mass transit.

POLICIES:

a. Improve accessibility to bus stops through the extension of sidewalks and the removal of architectural barriers in both new development and reconstruction projects.

b. Improve the amenities available at bus stops through provision of benches, landscaping, shade trees, and shelters. Locations for improvements shall be coordinated with Votran.

c. Assist Votran in developing a transfer site in the Canal Street area.

d. Within existing and potential transit corridors, geometric design of intersections and driveways to major activity centers will be adequate to service standard transit vehicles.

e. Assist Votran in identifying options for park-and-ride lots supporting express bus service.

f. Work with Votran to establish bus service in higher-density areas and encourage higher-density development and redevelopment in support of mass transit.

OBJECTIVE:

9. Support the provision of mass transit service and its coordination with other modes of transportation.

POLICIES:

a. Continue to support transit service at the policy and technical levels of the MPO.

b. Assist Votran in the distribution of schedules and literature about transit services by making this information available at the various City facilities.

c. Assist Votran in generating public involvement by hosting meetings, assisting in surveys and other similar efforts.

property within the city and therefore enhance the welfare of the general public.

(15) *Off-street parking and loading.*

a. Some land uses require more parking spaces than other land uses;

b. The size of automobiles have varied throughout the years. During the late 1970's and early 1980's car sizes were generally reduced. During the mid and late 1980's, car sizes increased. Inadequate parking space and access aisle size results in damaged automobiles and injured persons;

c. Over-paving a site is unattractive and results in runoff pollution and flooding; and

d. Parking lots need to be designed for vehicular and pedestrian traffic.

(16) *Permanent reference points.*

a. Accurate subdivision of land is necessary to easily determine lot and block boundary lines so there is no question of ownership in the future.

(17) *Sidewalk and bicycle facilities.*

a. New Smyrna Beach is a beach and retirement community and thus has a large amount of bicycle and pedestrian traffic.

b. Sidewalk and bicycle facilities are needed to assure a safe separation between vehicular, bicycle and pedestrian traffic.

c. The city averages approximately one pedestrian/vehicular accident per month. If more sidewalk and bicycle facilities were available, this rate would, most likely, be lower.

d. The city may be held liable in a pedestrian or bicycle/automobile accident for not providing adequate pedestrian or bicycle facilities.

(18) *Signs.*

a. The manner of the erection, location and maintenance of signs affects the public health, safety, morals and welfare of the people of this community.

b. The safety of motorists, cyclists, pedestrians, other users of the public streets, and property is affected by the number, size, location and appearance of signs that are intended to and result in the diversion of the attention of drivers.

c. The size and location of signs may, if uncontrolled, constitute an obstacle to effective firefighting techniques.

d. The construction, erection and maintenance of large signs suspended from or placed on the tops of buildings, walls or other structures may constitute a direct danger to pedestrian and vehicular traffic below, especially during periods of strong winds.

e. Uncontrolled and unlimited signs may degrade the aesthetic attractiveness of the natural and manmade attributes of the community and thereby undermine the economic value of tourism, visitation and permanent economic growth.

f. It is therefore necessary for the promotion and preservation of the public health, safety and welfare of the people of this community that the erection, construction, location and maintenance of signs be regulated and controlled.

g. Large signs, flashing signs, or other signs specifically prohibited are prohibited because they distract traffic and thus create unsafe conditions for the general public.

D. *Subdivision design.*

(1) Aesthetically pleasing subdivision design attracts potential residents and thus

ARTICLE I. IN GENERAL

Sec. 70-1. Gates opening over sidewalks.

The owner of any lot or parcel of land who shall have any gate opening to any street or sidewalk shall have the gate hung so that it swings inward when open and so that it cannot be swung outward over or toward the street or sidewalk. Any person violating the provisions of this section shall, upon conviction, be punished as provided in section 1-14.

(Code 1975, § 24-5)

Sec. 70-2. Boxes, barrels, similar materials on sidewalks or streets.

(a) It shall be unlawful for any person to obstruct, restrict or prevent use of any portion of the sidewalk; and no person shall place or deposit or permit to remain in front of or abutting a place of business any boxes, barrels, poultry coops or articles of any description, on any sidewalk or street in the city, except as otherwise provided in this section.

(b) The placement of news racks in a location on the sidewalks in the city that does not unreasonably interfere with or impede the flow of pedestrian traffic and which racks are maintained in a clean, neat and attractive condition and good repair at all times, shall not constitute a violation of this section. The placement of flower boxes, benches, and litter containers by the city on the sidewalks of the city shall not constitute a violation of this section.

(c) The city commission and/or its grantees may by resolution authorize other specified exceptions and temporary uses of the sidewalks of the city at such locations and under such conditions as the city commission shall determine to be consistent with the public interest and benefit.

(d) Upon complaint that any person is violating the provisions of this section, the chief of police shall notify such person to forthwith remove such articles. Any person failing or refusing to comply with the provisions of this section after such notice has been given, or who, after having removed such articles shall replace the article upon the street or sidewalk, shall be punished as provided in section 1-14.

(Code 1975, § 24-6)

Sec. 70-3. Spanish bayonets and century plants, permitted proximity to sidewalks.

It shall be unlawful for any person to plant or allow to grow or to remain any Spanish bayonet, century plant or any plant of a similar nature, having sharp thorns or spines, within three feet of any sidewalk or roadway, nor shall the outer ends of the branches of such plants be allowed to come within three feet of the sidewalks or roadways of the city. For failure to remove any such plant within 48 hours of being served with a written notice by the chief of police or by any police officer to remove such plant, the owner of the property on which the plant is growing shall, upon conviction, be punished as provided in section 1-14.

(Code 1975, § 24-8)

Sec. 70-4. Operation of bicycles or other similar devices on streets and sidewalks.

It shall be unlawful at any time for any person upon roller skates, a skateboard, or riding in or by means of any coaster, toy vehicle or similar device, or riding a bicycle, tricycle or unicycle, to ride or otherwise operate such vehicle or device upon the public sidewalks within a business district or shopping center of this city. Nothing in this section shall prohibit a person from walking a bicycle or operating a wheelchair upon a sidewalk in such areas, or the operation of bicycles upon designated bike routes of this city.

APPENDIX F:
Letter to Principal and Principal Questionnaire

Lassiter Transportation Group, Inc.
Engineering and Planning

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

Ref: 3706.02

April 6, 2010

Principal Ms. Jeri Murphy
Coronado Beach Elementary School
3550 Michigan Ave
New Smyrna Beach, Fl 32169

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

Dear Mrs. Murphy:

The VCMPO 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 Coronado Elementary, in the VCMPO planning area. Lassiter Transportation Group, Inc. has been retained to conduct these studies on the VCMPO'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, VCMPO
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
Joan Marshall, Coronado Beach Elementary Crossing Guard Supervisor, Volusia County Sheriff's Office
Chad Lingenfelter, Chief Planner, City of New Smyrna Beach

VOLUSIA COUNTY
METROPOLITAN PLANNING ORGANIZATION

PRINCIPAL
QUESTIONNAIRE

TO: Coronado Beach Elementary School
Ms. Jeri Murphy, Principal
3550 Michigan Ave
New Smyrna Beach, Fl 32169

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

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

The Volusia County Metropolitan Planning Organization (MPO) is conducting assessments aimed at improving the safety conditions for students who bicycle or walk to and from school. Coronado Beach Elementary 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: _____

   Comments: _____

2. Number of students (or approximate percentage) who walk/bicycle to/from school: _____

   Comments: _____

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

_____

_____

_____

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?

_____

_____

_____

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

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.

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

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

COMMENTS:

APPENDIX G:
Letter to Crossing Guard Supervisor and Crossing Guard Supervisor Questionnaire

Lassiter Transportation Group, Inc.
Engineering and Planning

Via Email (jmarshall@vcso.us)

Ref: 3706.02

April 6, 2010

Ms. Joan Marshall, Crossing Guard Supervisor
Volusia County Sheriff's Department
123 W. Indiana Avenue
DeLand, FL 32721

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

Dear Ms. Marshall:

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

We understand that you are the crossing Guard Supervisor for Coronado Beach Elementary, which is the next school we will be studying. We are seeking your input to identify any bicycle and pedestrian safety-related issues or concerns that this school may be experiencing. Enclosed with this letter is a questionnaire form detailing the information that we are requesting you fill out and return to us by mail/email as soon as possible. We would also like to arrange a time to speak with you by phone to discuss these items and will contact you soon 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: Lt. Bobby Lambert, Volusia County Sheriff's Office
Principal Ms. Jeri Murphy, Coronado Beach Elementary School
Stephan C. Harris, Bicycle & Pedestrian Coordinator, VCMPO
Saralee Morrissey, AICP, Director of Site Acquisitions & Intergovernmental Coordinator, Volusia County Schools
Jon Cheney, PE, Volusia County Traffic Engineering
Chad Lingenfelter, Chief Planner, City of New Smyrna Beach

VOLUSIA COUNTY
METROPOLITAN PLANNING ORGANIZATION

CROSSING GUARD SUPERVISOR QUESTIONNAIRE

TO: Volusia County Sheriff's Department
Ms. Joan Marshall, Crossing Guard Supervisor
123 W. Indiana Avenue
DeLand, FL 32721

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

RE: CORONADO BEACH ELEMENTARY SCHOOL - SCHOOL WALK ZONE SAFETY ANALYSIS

The Volusia County Metropolitan Planning Organization (MPO) is conducting assessments aimed at improving the safety conditions for students who bicycle or walk to and from school. Coronado Beach Elementary 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.

Please direct all responses specifically to the school being analyzed.

1. Number of crossing locations: _____ 2. Number of crossing guards: _____

Please list all crossing locations and crossing guards (name, contact information) below:

LOCATION	CROSSING GUARD

2. Are you aware of any safety issues/concerns concerning the walk zone for this school? If yes, please explain.

3. What is your biggest concern regarding the students who walk/bicycle to/from this school?

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

5. In your opinion, do you feel that more students would walk/bicycle to school if the walking/biking facilities were improved? If yes, please explain (make note of intersections, specific crosswalks, etc.)

COMMENTS:

APPENDIX H:
Hazardous-Courtesy (09-10)

APPENDIX I:
FHWA Guidelines for
New Sidewalk Installation

APPENDIX J:
Detailed Constructability Matrix

APPENDIX K:
Right-of-way: Mathews Avenue at Saxon Drive

APPENDIX L:
Funding Sources

APPENDIX M:
Safety Programs

APPENDIX L:
Contact List