

DISTRICT 4 ROAD SAFETY AUDIT REPORT

SOMERSET CANYONS ACADEMY SR-804 (BOYNTON BEACH BOULEVARD) FROM SR-7 (US-441) TO LYONS ROAD

SECTION: 93 200 000
MILE POST: 0.000 TO 1.048

TASK WORK ORDER NO: 3

CONTRACT NO: C-9E65

FM NO. 429650-2-32-01

PREPARED FOR:
FLORIDA DEPARTMENT OF TRANSPORTATION, DISTRICT 4



Engineer's Certification

I, William T. "WT" Bowman, P.E. #69132, certify that I currently hold an active Professional Engineers License in the State of Florida and am competent through education or experience to provide engineering services in the civil and traffic engineering disciplines contained in this plan, print, specification, or report.

I further certify that this Road Safety Audit (RSA) was prepared by me or under my responsible charge as defined in Chapter 61G15-18.001 F.A.C. and that all statements, conclusions and recommendations made herein are true and correct to the best of my knowledge and ability.

Study Roadway: SR-804 (Boynton Beach Boulevard)
Section No: 93 200 000
Project Start: Milepost 0.000 (SR-7/US-441)
Project End: Milepost 1.048 (Lyons Road)
Project Location: Palm Beach County



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Project Location

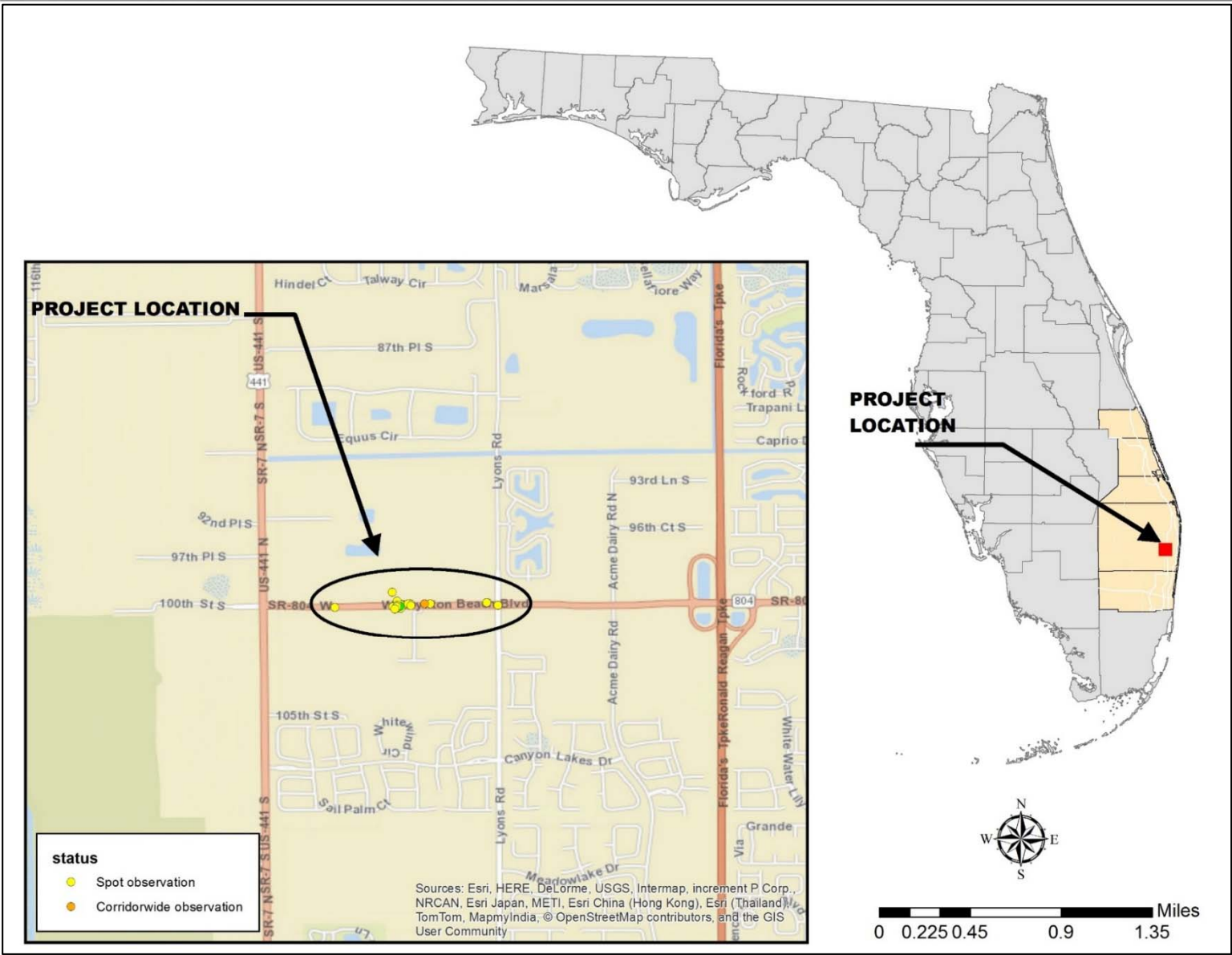


Figure 1: Project Location

Introduction

Road Safety Audit Process

The Federal Highway Administration's (FHWA) Safety Office has established the Road Safety Audit (RSA) process as a way to further enhance the overall safety performance of roadways for all users. An RSA is the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in Engineering, Education, Enforcement, and Emergency response to improve safety for all road users. The goal of an RSA is to save money and time and reduce the number and severity of crashes. RSAs are a low-cost, proactive approach to safety that considers all road users and identifies opportunities to enhance safety and reduce the number and severity of crashes.

A typical RSA consists of the following steps:

1. Identify project or road in service to be audited.
2. Select RSA team.
3. Conduct pre-audit meeting to review project information.
4. Perform field observations under various conditions.
5. Conduct audit analysis and prepare report of findings.
6. Present audit findings to Project Owner/Design Team.
7. Project Owner/Design Team prepares formal response.
8. Incorporate findings into project when appropriate.

Roadway Safety Audit Purpose

This RSA was conducted to assess the safety of the SR-804 (Boynton Beach Boulevard) corridor and look for opportunities (short-, long-, and mid-term) that could improve safety for Academy students who commute to and from the school. It is important to note that this RSA was not conducted in response to an accident involving a student; rather, it was a proactive RSA, requested by various stakeholders and conducted by FDOT D4, to review and improve upon the safety of the walking and biking students of Somerset Canyons Academy.

In preparation for this RSA, an on-site meeting with stakeholders was held at the school, during which the perceived safety hazards and mitigation were discussed. In addition, stakeholders discussed the intent and process of the RSA. The group decided to delay the RSA until school was in session to allow the study team to conduct observations during normal school operation.

Road Safety Audit Core Team Members

Tindale Oliver conducted pre-audit coordination with stakeholders familiarize and engage potential partners on the RSA process and outcomes, and also to provide the participants an opportunity to exchange information, ideas, and to ask questions. In addition to the core RSA team, stakeholders in the Audit included representatives from FDOT Traffic Operations, City of Hallandale Beach Police Department, City of Hallandale Beach Fire Department, Hallandale Beach Chamber of Commerce, and various commercial developments throughout the corridor including Gulfstream, Wal-Mart, and RK Centers development group.

The core RSA team members included:

- WT Bowman, P.E. - Tindale Oliver
- Demian Miller, AICP - Tindale Oliver
- Gary Tait – Tindale Oliver

Introduction

The RSA stakeholders included:

- Michael Strine, Palm Beach County Sheriff's Office
- Daniel Fernandez, Principal, Somerset Canyons Academy
- Motasem Al-Turk, Ph.D., P.E., Palm Beach County Traffic Division
- Sandra Greenberg, Coalition of Boynton West Residential Associations (COBWRA)
- Barbara Katz, COBWRA
- Shreya Kuntawala, Legislative Assistant and Constituent Liaison, Senator Joseph Abruzzo
- Maria Anaya de Yates, FDOT
- Gilbert Soles, FDOT
- Tracey Xie, FDOT

Report Structure

The Summary of RSA Findings lists each observation's location, observation overview, suggestion for consideration, and responsible agency. Observations are sorted geographically from south to north following mile post convention. Observations and corresponding recommendations are assigned one of three levels of effort categories: low, medium, and high:

- "Low" improvements consist of basic improvements such as signs and pavement markings that can generally be done with in-house maintenance forces.
- "Medium" improvements are more involved and can typically be done by push button forces.
- "High" improvements are most involved in scope, may require right-of-way, public involvement, and will typically require a work program project to complete.

Observations are also assigned one of three time frame categories: short-term, mid-term, and long-term.

- "Short-term" recommendations can take weeks to implement.
- "Mid-term" recommendations can months to implement.
- "Long-term" recommendations can take years to implement.

The observations and corresponding recommendations are grouped into spot observations, corridor-wide observations, or positive observations.

- Spot observations relate to one issue at a single location.
- Corridorwide observations relate to a recurring issue throughout a study area.

The detailed section of the report includes an aerial that illustrates the location of the observation highlighted with a red circle. Spot observations are shown in yellow, and corridor-wide observations are shown in orange.

Study Area

SR-804 (Boynton Beach Boulevard) an east/west 4-lane divided roadway with a posted speed of 45 miles per hour (mph). SR-7 (US-441) is a north/south 6-lane divided roadway with a posted speed limit of 55 mph, with access by bicycles. Figure 1 illustrates the project location and limits. The south leg of Lyons Road is a 2-lane divided roadway with a posted speed limit of 45 mph, and the north leg is a 4-lane divided roadway with a posted speed limit of 45 mph. There are two signalized intersections in the study area:

- SR-7 (US-441)
- Lyons Road

Somerset Canyons Academy on the north side of SR-804 (Boynton Beach Boulevard), and residential neighborhoods are major traffic generators along the study segment.

Introduction

Key Observations

The Academy's first bell is 7:30 AM for high school students and 8:00 AM for middle school students and the final bell is 2:30 PM for high school students and 3:00 PM for middle school students. On early release days, high school students are dismissed at 12:15 PM and middle school students at 12:45 PM. The school's gates open at 2:15 PM for cars to arrive for student pickup, but students are not allowed to leave until after the final bell. Pickups and departures are staggered, and the inbound and outbound traffic (both vehicular and pedestrian) is steady for approximately one hour (see Figure 2).



Figure 2: Parent Pickup/Drop-off Queue

A field estimate indicated that a small number of students walk or bike to school in the morning (approximately 30). The Academy's Principal estimated that approximately 150 students walk or bike from school on a typical day; on Fridays, this increases to 300. Field reviews indicated that the principal's estimate was accurate, as a large number of students who were walking or biking was observed in the afternoon. The majority of these students used the south side of SR-804 (Boynton Beach Boulevard), using the crosswalk (see Figure 3) on the east leg of the signalized intersection of Somerset Canyons

Academy and SR-804 (Boynton Beach Boulevard), and then proceeding east along SR-804 (Boynton Beach Boulevard) (see Figure 3).



Figure 3: Students Crossing to South Sidewalk

There is ample security on-site at the school but very little supervision off school grounds for the walking/biking students; crossing guards are provided at the signalized intersection (see Figure 4).



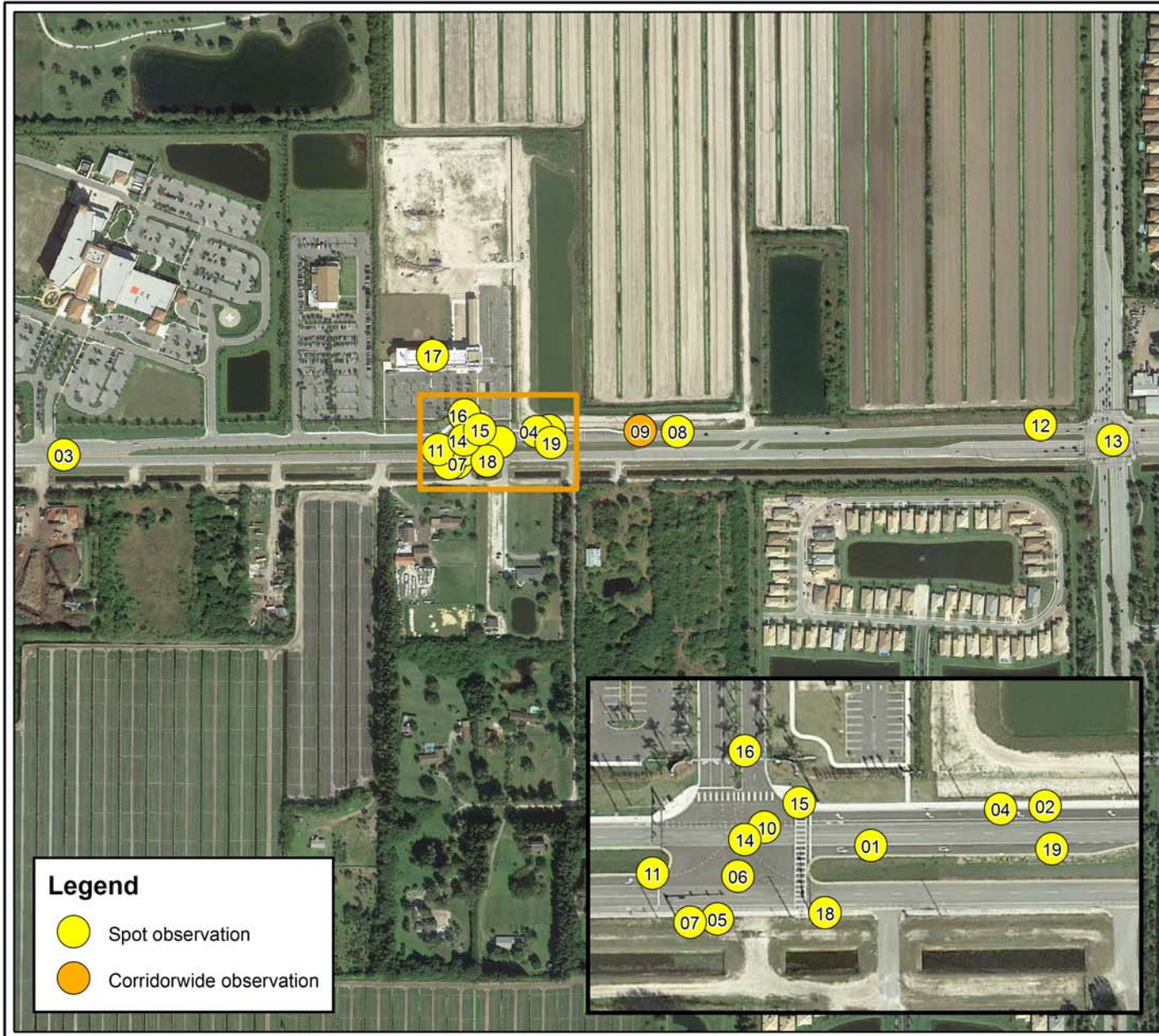
Figure 4: Crossing Guards

The school strongly encourages proper behavior and, for the most part, students were observed obeying proper and safe pedestrian and bicyclist behavior.

Summary of Findings

ID	Location Description:	Observation Overview:	Suggestions for Consideration:	Assigned to:
01	SR-804 (Boynton Beach Boulevard) east and west of Somerset Canyons Academy.	New School Zone signage is not per FDOT standard.	Upgrade School Zone signage.	FDOT
02	Westbound right-turn lane into Somerset Canyons Academy.	Queuing cars can obstruct visibility of School Zone signs.	Relocate School Zone signage.	FDOT
03	East and West of Somerset Canyons Academy driveway on SR-804 (Boynton Beach Boulevard).	Little or no advance warning of school zone and speed zone.	Consider advance "School Zone Ahead" signage.	FDOT
04	School Zone driveway.	Advance School Zone sign is obstructed.	Relocate sign.	FDOT
05	South side of SR-804 (Boynton Beach Boulevard) on eastbound approach to Somerset Canyons Academy.	Conflicting speed limit signs - 20 MPH and 45 MPH	Remove conflicting 45 MPH sign.	FDOT
06	Within school zone limits east and west of Somerset Canyons Academy.	No bright sticks or reflective tape on School Zone signage.	Increase visibility by adding reflective tape or bright sticks to School Zone sign pole.	FDOT
07	Somerset Canyons Academy driveway.	No "School Zone" signs for exiting vehicles.	Consider signage for exiting vehicles.	FDOT
08	North side of SR-804 (Boynton Beach Boulevard) from east of Somerset Canyons Academy to Lyons Road.	The existing guardrail along sidewalk is no longer warranted.	Evaluate and potentially remove guardrail.	FDOT
09	Along SR-804 (Boynton Beach Boulevard) between Lyons Road and SR-7 (US-441).	Several street lights are out.	Repair nonoperational street lights.	FDOT, Palm Beach County, or Local Utility
10	Westbound approach to Academy driveway.	High speed westbound right turns into the Somerset Canyons Academy driveway.	Consider flashing yellow arrow	FDOT & Somerset Canyons Academy
11	Somerset Canyons Academy driveway.	Existing crosswalk on east leg of SR-804 (Boynton Beach Boulevard) conflicts with major vehicular movements.	Relocate crossing to west side of the driveway.	FDOT and Somerset Canyons Academy
12	North side of SR-804 (Boynton Beach Boulevard), west of Lyons Road.	Utility poles obstructing sidewalk.	Relocate utility poles.	FDOT, PBCE, and Local Utility Company

ID	Location Description:	Observation Overview:	Suggestions for Consideration:	Assigned to:
13	Lyons Road & SR-804 (Boynton Beach Boulevard).	No crossing guard during Somerset Canyons Academy's departure times.	Consider supplementing or extending hours of crossing guards for Sunset Palms Elementary.	Somerset Canyons Academy
14	Intersection of Somerset Canyons Academy and SR-804 (Boynton Beach Boulevard).	During the AM, a security guard directs westbound right-turning and eastbound left-turning traffic into the driveway.	Consider security guard in the PM peak as well.	Somerset Canyons Academy
15	Westbound right turn from SR-804 (Boynton Beach Boulevard) into Somerset Canyons Academy.	High speed right turns into Somerset Canyon Academy conflict with difficult sight lines to pedestrians walking southbound out of the school.		Somerset Canyons Academy & FDOT
16	Somerset Canyons Academy driveway.	No sidewalk to get pedestrians from school grounds to traffic signal.	Consider a sidewalk from on-site to the northeast quadrant of SR-804 (Boynton Beach Boulevard).	Somerset Canyons Academy
17	Somerset Canyons Academy.	Educational component	Provide education on road user safety to students and parents.	Somerset Canyons Academy
18	Sidewalk on south side of SR-804 (Boynton Beach Boulevard).	Very high pedestrian and bike volume along the 5-6' sidewalk.	Coordinate with property owner to determine feasibility of a larger offset shared use path.	PBCE
19	Along SR-804 (Boynton Beach Boulevard) within School Zone of Somerset Canyons Academy.	Law enforcement presence observed	Encourage law enforcement presence (passive or aggressive).	PBCSO & Somerset Canyons Academy



ROAD SAFETY AUDIT REPORT



Road Safety Audit Findings Summary

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
01	SR-804 (Boynton Beach Boulevard) east and west of Somerset Canyons Academy.	New School Zone signage is not per FDOT standard.	Upgrade School Zone signage.

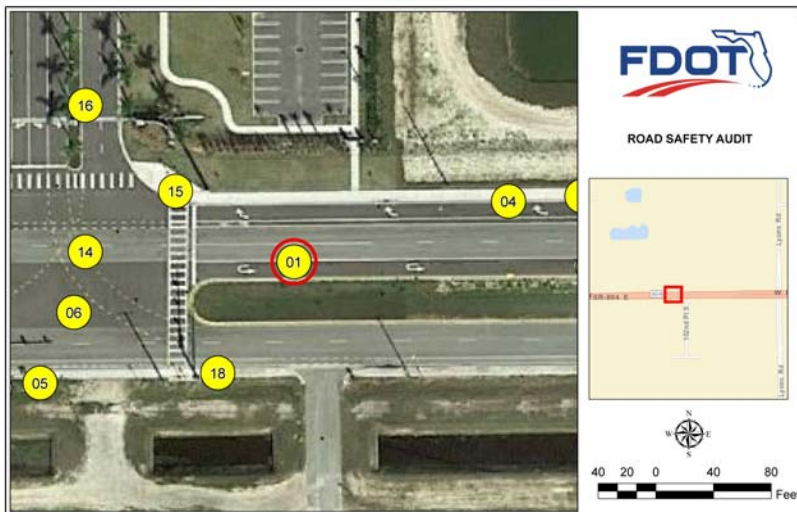


Observation Details:

The new pedestrian signage is not per FDOT standards for multilane highways. In particular, the "time of day" signs are specified for use on 2-lane roadways, and static signs do not take into account early dismissal days. In addition, the 20 MPH zone for Somerset Canyons Academy is difficult to detect due to sign placement and sign messages.

Suggestion Details:

Review upgrades to the School Zone signage per FDOT Index 17344 Sheet 3 and corresponding MUTCD guidance. Specifics include the following: remove the "time of day" signs and use "when flashing" beacons; relocate advance signage outside of turn lane limits, east of Somerset Canyons Academy, and further in advance of the zone.



Agency:	Improvement Type:
FDOT	
Time Frame:	EEE:
Short Term	Engineering
Level of Effort:	Comment:
Medium	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
02	Westbound right-turn lane into Somerset Canyons Academy.	Queuing cars can obstruct visibility of School Zone signs.	Relocate School Zone signage.

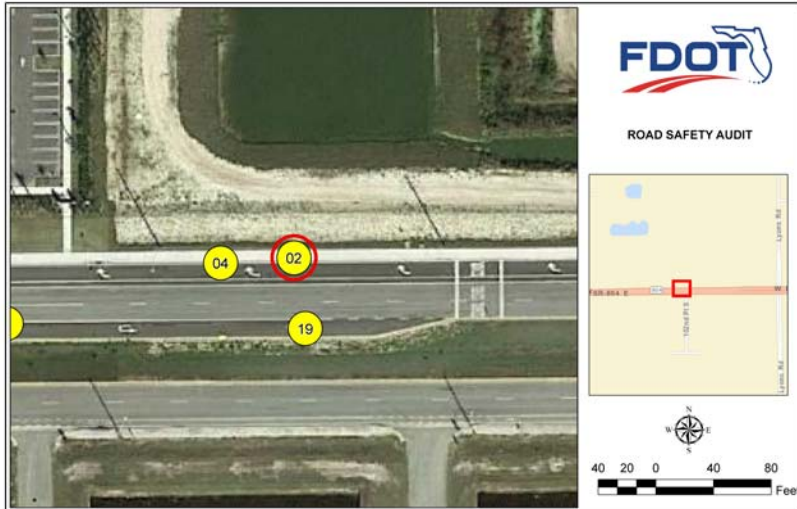


Observation Details:

When westbound right-turning cars queue in the turn lane, it creates an obstruction of School Zone signage, which is already difficult to see.

Suggestion Details:

Reevaluate placement and layout of School Zone signs and consider enhanced placements or additional signage beyond the standard requirements. Combine this recommendation with other recommendations related to School Zone signage. See FDOT Index 17344.



Agency:	Improvement Type:
FDOT	Signs
Time Frame:	EEE:
Short Term	Engineering
Level of Effort:	Comment:
Medium	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
03	East and West of Somerset Canyons Academy driveway on SR-804 (Boynton Beach Boulevard).	Little or no advance warning of school zone and speed zone.	Consider advance "School Zone Ahead" signage.



Observation Details:

There is little advance warning of the school zone. By the time a high speed car or heavy vehicle notices the communication, it is difficult to prepare to slow. Many vehicles were observed traveling at high speed within the school zone.

Suggestion Details:

Consider additional advance "School Zone Ahead" signage. Advance signage may not be necessary if beacons or overhead assemblies are installed per FDOT Index 17344. Also, see other comments related to signage.

Agency: FDOT	Improvement Type: Signs
Time Frame: Short Term	EEE: Engineering
Level of Effort: Low	Comment:

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
04	School Zone driveway.	Advance School Zone sign is obstructed.	Relocate sign.

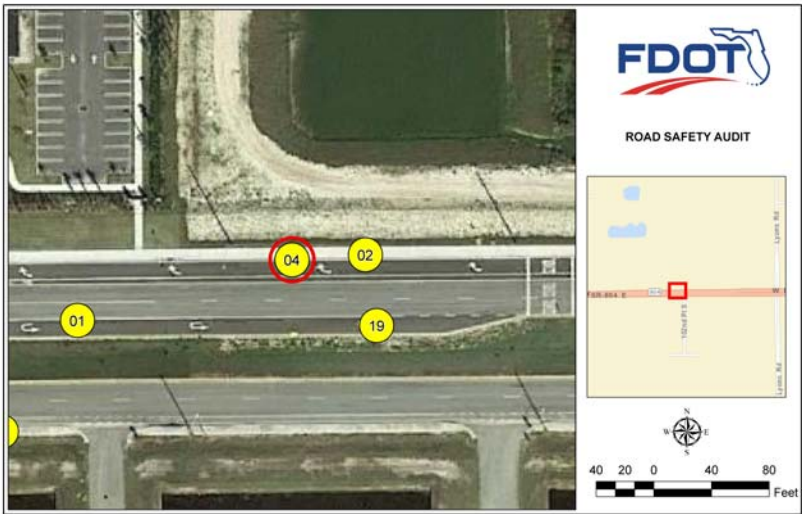


Observation Details:

The new advance School Zone sign is obstructed by two poles and is not placed adjacent to the "SCHOOL" pavement marking.

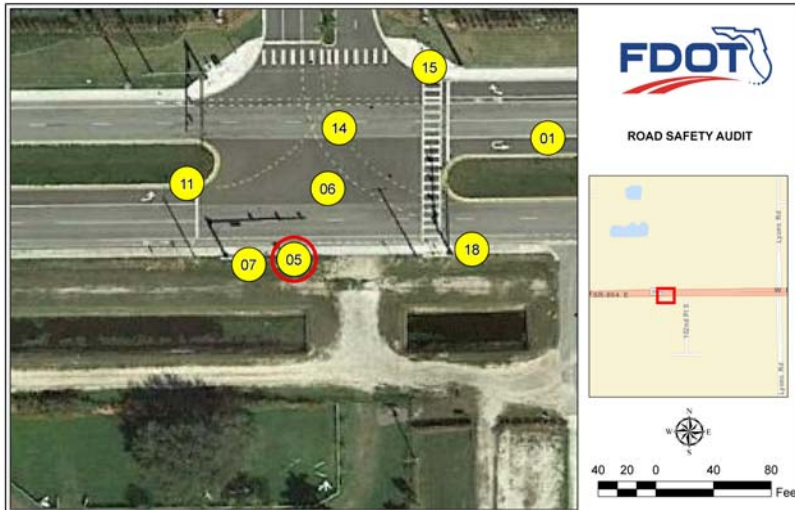
Suggestion Details:

Relocate the sign adjacent to the "SCHOOL" marking for improved visibility. See previous comments related to the school zone signage.



Agency:	Improvement Type:
FDOT	Signs
Time Frame:	EEE:
Short Term	Engineering
Level of Effort:	Comment:
Low	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
05	South side of SR-804 (Boynton Beach Boulevard) on eastbound approach to Somerset Canyons Academy.	Conflicting speed limit signs - 20 MPH and 45 MPH	Remove conflicting 45 MPH sign.



Observation Details:

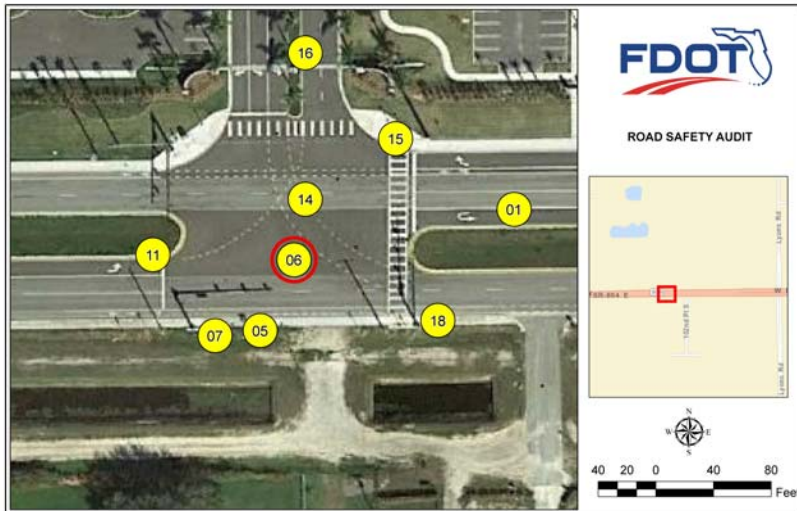
For the eastbound approach, there is a 20 MPH School Zone sign approximately 20 feet in advance of a 45 MPH speed limit sign. Both signs are within the limits of the school zone. There can be confusion and ambiguity if a typical regulatory speed limit sign is displayed after a school speed limit sign. In some jurisdictions, the regulatory sign is considered an indication of the end of the school zone. Applicable references include F.S. 316.1895, and MUTCD Chapter 7B.15.

Suggestion Details:

Remove the conflicting 45 MPH sign and relocate it outside of the school zone, to the east. Consider installing the sign on the same post as the "End School Zone" sign consistent with MUTCD Chapter 7B.15, Option 06.

Agency: FDOT	Improvement Type: Signs
Time Frame: Short Term	EEE: Engineering
Level of Effort: Low	Comment:

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
06	Within school zone limits east and west of Somerset Canyons Academy.	No bright sticks or reflective tape on School Zone signage.	Increase visibility by adding reflective tape or bright sticks to School Zone sign pole.



Observation Details:

No bright sticks or reflective tape on School Zone signage.

Suggestion Details:

Increase the visibility of School Zone signs by adding reflective tape to the pole. Note: This recommendation should be considered with other sign recommendations herein.

Agency:	Improvement Type:
FDOT	Signs
Time Frame:	EEE:
Short Term	Engineering
Level of Effort:	Comment:
Low	

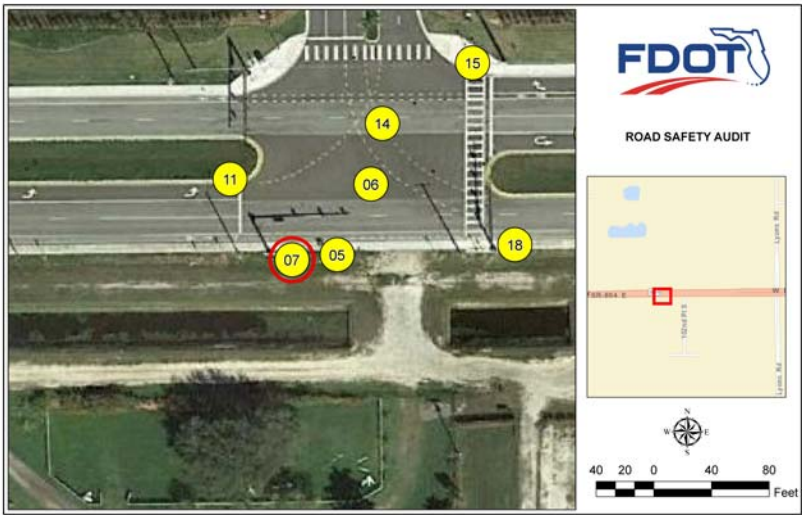
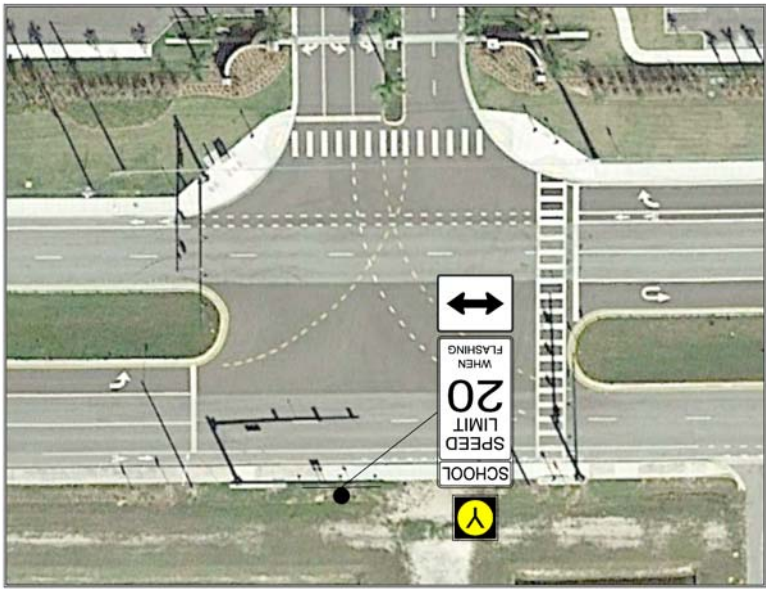
ID	Location Description:	Observation Overview:	Suggestions for Consideration:
07	Somerset Canyons Academy driveway.	No "School Zone" signs for exiting vehicles.	Consider signage for exiting vehicles.

Observation Details:

In the field, cars exiting Somerset Canyons Academy were observed exceeding 20 MPH within the designated school zone. There have been instances in which people leaving Somerset Canyons Academy property successfully fought a speeding ticket by claiming they did not know they were in a reduced-speed school zone.

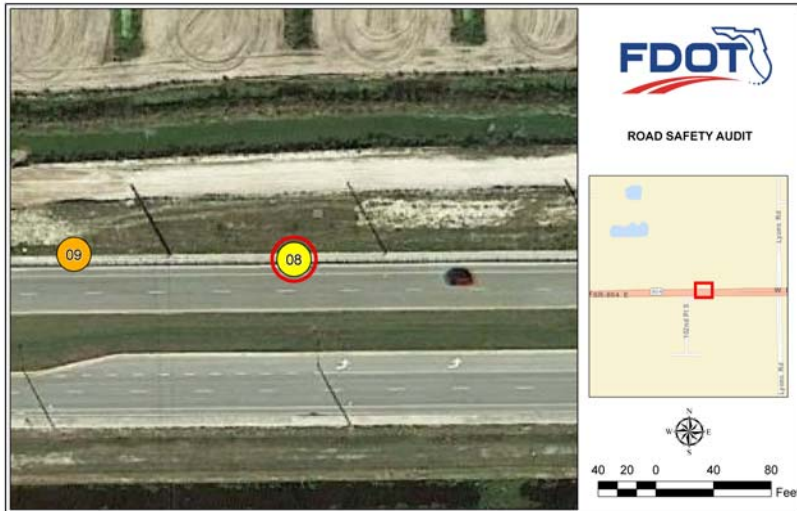
Suggestion Details:

Add signing to communicate the reduced speed school zone to vehicles exiting the school.



Agency:	Improvement Type:
FDOT	Signs
Time Frame:	EEE:
Short Term	Engineering
Level of Effort:	Comment:
Low	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
08	North side of SR-804 (Boynton Beach Boulevard) from east of Somerset Canyons Academy to Lyons Road.	The existing guardrail along sidewalk is no longer warranted.	Evaluate and potentially remove guardrail.



Observation Details:

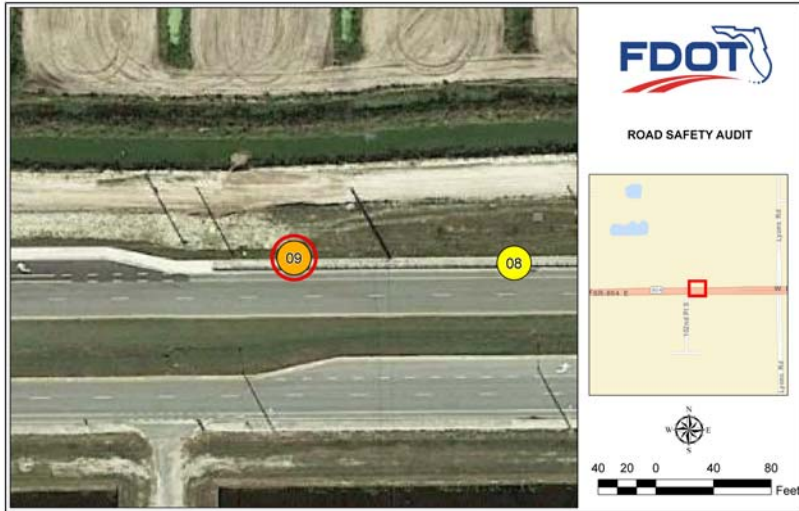
Based on the field review, approximately one fifth to one quarter of students walk and bike along the northside of SR-804 (Boynton Beach Boulevard) to the east . The sidewalk in this area, between the school and Lyons Road, is shielded by guardrail. The guardrail was installed, previously, to shield vehicles from a drainage canal. This canal has since been filled in.

Suggestion Details:

As the original hazard is no longer present, conduct an analysis to determine if the guardrail can and should be removed. As the guardrail does serve to keep students out of the roadway and on the sidewalk, if it is removed, consider a pedestrian fence treatment per developmental FDOT standards. See Appendix, "Discussion A" for details.

Agency:	Improvement Type:
FDOT	Construction
Time Frame:	EEE:
Mid Term	Engineering
Level of Effort:	Comment:
High	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
09	Along SR-804 (Boynton Beach Boulevard) between Lyons Road and SR-7 (US-441).	Several street lights are out.	Repair nonoperational street lights.



Observation Details:

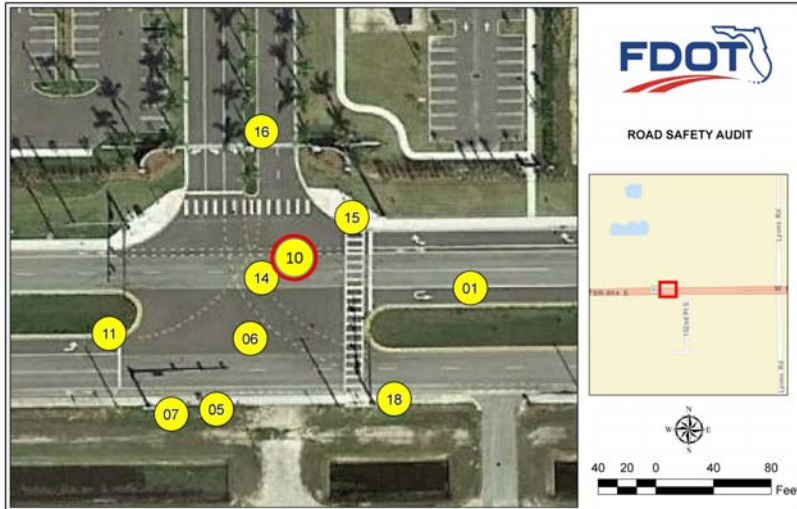
During a morning review (pre-dawn), several street lights were observed to be out on both the north and south sides of the roadway.

Suggestion Details:

Conduct maintenance on the nonoperational lights (bulb replacement, photocell, circuit, etc.)

Agency:	Improvement Type:
FDOT, Palm Beach County, or Local Utility	Maintenance
Time Frame:	EEE:
Short Term	Maintenance
Level of Effort:	Comment:
Medium	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
10	Westbound approach to Academy driveway.	High speed westbound right turns into the Somerset Canyons Academy driveway.	Consider flashing yellow arrow



Observation Details:

The parents turning right into Somerset Canyons Academy travel at a high speed (large turn radius) and make right turns on red at speed. These vehicles can conflict with both pedestrians crossing and pedestrians existing the grounds through the driveway.

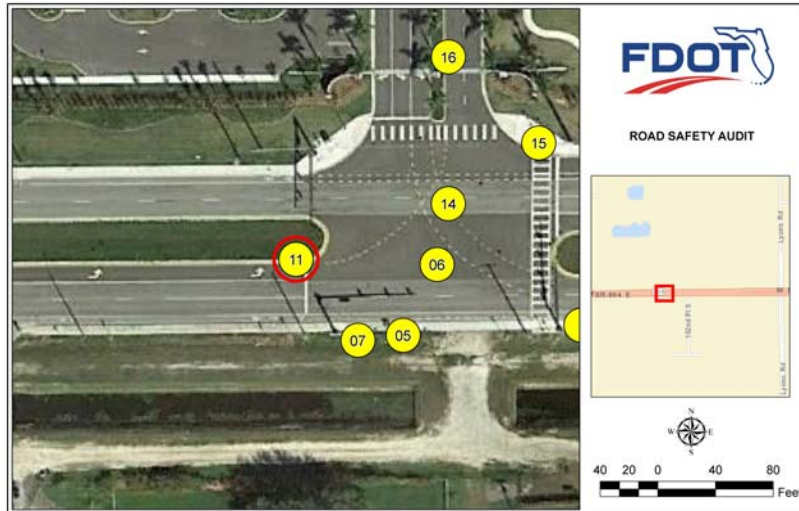
Suggestion Details:

This could be a multi-tier solution. Combine with previous recommendation:

- Have a "No Right Turn on Red" condition. Note this could cause significant westbound queue spillover.
- Have a "Blankout" NRTorR restriction that only activates when the pedestrian crossing is activated across the east leg.
- Use human control and presence similar to AM Peak. See previous recommendation.

Agency:	Improvement Type:
FDOT & Somerset Canyons Academy	
Time Frame:	EEE:
Level of Effort:	Comment:

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
11	Somerset Canyons Academy driveway.	Existing crosswalk on east leg of SR-804 (Boynton Beach Boulevard) conflicts with major vehicular movements.	Relocate crossing to west side of the driveway.



Observation Details:

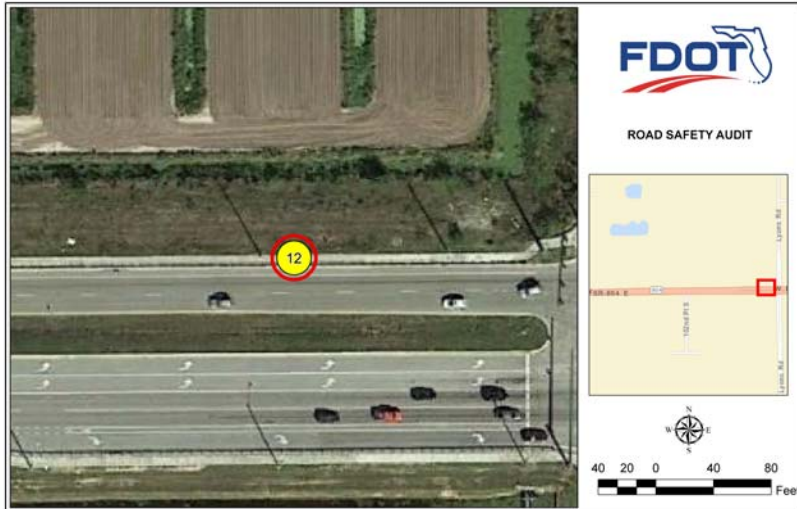
There is a crosswalk on the east leg of the Somerset Canyons Academy driveway crossing SR-804 (Boynton Beach Boulevard). In the PM peak, there is significant westbound right-turning traffic generated by cars entering the school for pickup. Many of these movements are made as "right turn on red," which directly conflicts with the protected pedestrian phase. In addition, these right-turning vehicles are in conflict with students walking from the school, through the driveway, to the northeast quadrant of the intersection. In addition, the pedestrian phase cannot operate when the southbound left-turn phase from the school is green. It should be noted that it is estimated that 70-80% of school traffic is executing these movements (to/from the east).

Suggestion Details:

Consider relocating the crosswalk to the west side of the Somerset Canyons Academy driveway. In conjunction with this, provide an on-site gated sidewalk access to this quadrant. Review the potential to provide a sidewalk through the planter on the west side of the property at the location of the existing on-site crosswalk. This sidewalk would connect, through a gate, to the northwest quadrant of the signalized intersection. Note, also, there is an existing street light along this potential crossing and not at the existing crossing. The relocated crossing would reduce the pedestrian/vehicle conflicts at the signalized intersection and within the driveway. See Appendix Figure 1 and Figure 2.

Agency:	Improvement Type:
FDOT and Somerset Canyons Academy	Construction
Time Frame:	EEE:
Mid Term	Engineering
Level of Effort:	Comment:
High	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
12	North side of SR-804 (Boynton Beach Boulevard), west of Lyons Road.	Utility poles obstructing sidewalk.	Relocate utility poles.



Observation Details:

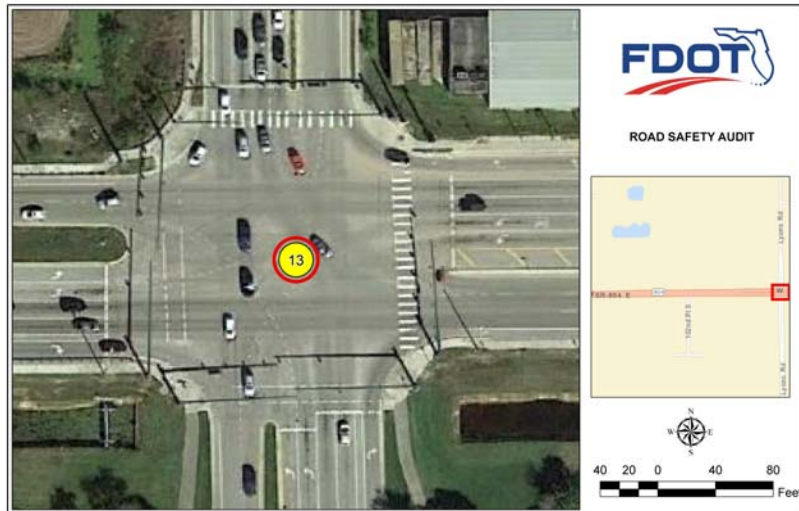
Two utility poles are obstructing the sidewalk, resulting in substandard ADA clearance and a potential hazard to bicyclists.

Suggestion Details:

Relocate the utility poles to the back of the sidewalk.

Agency:	Improvement Type:
FDOT, PBCE, and Local Utility Company	Other
Time Frame:	EEE:
Mid Term	Engineering
Level of Effort:	Comment:
High	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
13	Lyons Road & SR-804 (Boynton Beach Boulevard).	No crossing guard during Somerset Canyons Academy's departure times.	Consider supplementing or extending hours of crossing guards for Sunset Palms Elementary.



Observation Details:

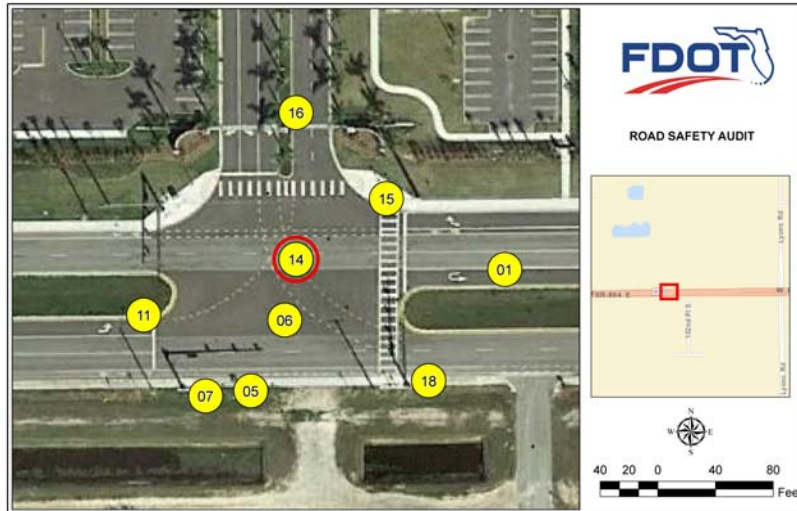
Sunset Palms Elementary School has crossing guards for its final bell from 1:45 PM to 2:30 PM. This is before Somerset Canyons Academy's final bells. Therefore, there are no crossing guards at Lyons Road for Somerset Canyons Academy students. The guards significantly improve driver compliance with pedestrian movements, in particular the right-turn movements.

Suggestion Details:

Consider extending the hours of the crossing guards at this location, if feasible. Coordinate with PBCSO.

Agency:	Improvement Type:
Somerset Canyons Academy	
Time Frame:	EEE:
Other	Enforcement
Level of Effort:	Comment:
Low	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
14	Intersection of Somerset Canyons Academy and SR-804 (Boynton Beach Boulevard).	During the AM, a security guard directs westbound right-turning and eastbound left-turning traffic into the driveway.	Consider security guard in the PM peak as well.



Observation Details:

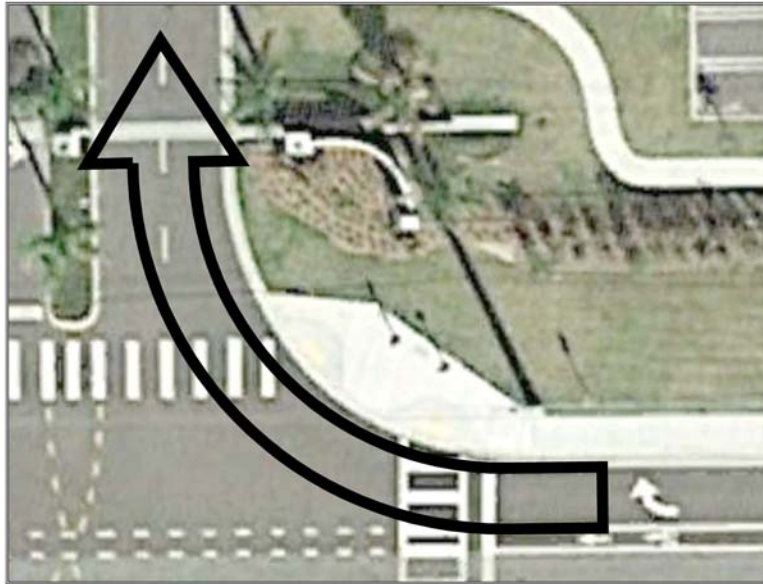
During the AM drop off, a security guard directs westbound right-turning and eastbound left-turning traffic into the Somerset Canyons Academy driveway. The goal of this staffing is to maintain traffic flow (in particular, the westbound right turn on red). By maintaining traffic flow, the westbound right turn rarely queues into the through lanes.

Suggestion Details:

As mentioned in other observations, during the PM departure, students were observed walking southbound from the school driveway to the northeast quadrant of the signal. There is also a significant conflict between westbound right turns on red and the pedestrians crossing in the crosswalk. This position could be staffed during the PM peak hour as well to balance traffic flow and pedestrian safety. Note that this position should obtain training as a Traffic Control Officer for Civilians. This class is offered through the Florida Department of Law Enforcement (Course Number 732) Note: Operationally, manual control of this movement would be preferable to enforcing a "No Right Turn on Red" condition (see other recommendations related to driveway operation).

Agency:	Improvement Type:
Somerset Canyons Academy	Other
Time Frame:	EEE:
Mid Term	Other
Level of Effort:	Comment:
Medium	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
15	Westbound right turn from SR-804 (Boynton Beach Boulevard) into Somerset Canyons Academy.	High speed right turns into Somerset Canyon Academy conflict with difficult sight lines to pedestrians walking southbound out of the school.	

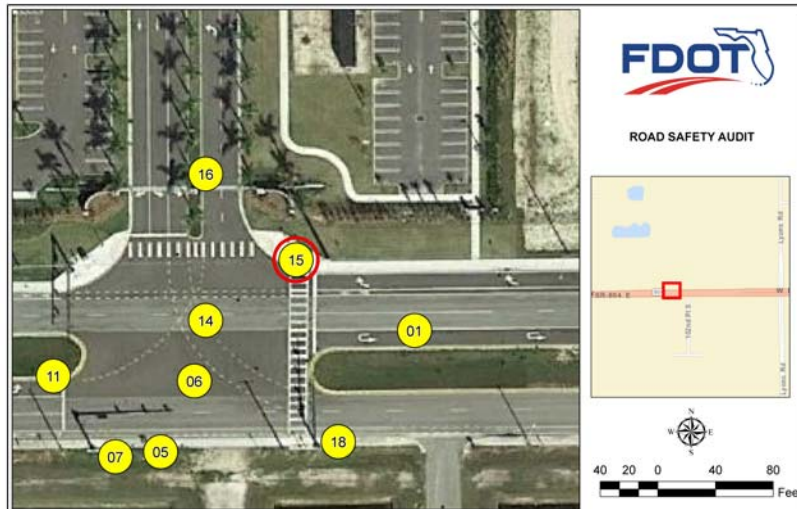


Observation Details:

Westbound right-turning vehicles (parents into school) are traveling at a high speeds into Somerset Canyons Academy. Many walking and biking students exit school grounds through the gate to get to the northeast quadrant of the signalized intersection. There is very little grass strip to walk on and minimal visibility.

Suggestion Details:

Short term: Inform parents and consider R10-15 signage or other "Watch for Pedestrians" signage. Mid term: Consider a "blank out" no right turn sign for when the pedestrians are actuated across the east leg. However, traffic control by security is preferable (see comment related to security). Long term: Consider a sidewalk connection from the school property, east of the gate, to the sidewalk on the northeast quadrant.



Agency:

Somerset Canyons Academy & FDOT

Improvement Type:

Pedestrian

Time Frame:

Mid Term

EEE:

Engineering

Level of Effort:

Medium

Comment:

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
16	Somerset Canyons Academy driveway.	No sidewalk to get pedestrians from school grounds to traffic signal.	Consider a sidewalk from on-site to the northeast quadrant of SR-804 (Boynton Beach Boulevard).



Observation Details:

There is no sidewalk from Somerset Canyons Academy to the vicinity of the signal. Most walking/biking students walk through the driveway, in direct conflict with entering cars, to get to the signal.

Suggestion Details:

Consider a sidewalk connection from school property slightly east of the gate to the northeast quadrant of the signal. See also the observation related to high-speed inbound vehicles. See Appendix Figure A3.



Agency:	Improvement Type:
Somerset Canyons Academy	Construction
Time Frame:	EEE:
Mid Term	Engineering
Level of Effort:	Comment:
Medium	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
17	Somerset Canyons Academy.	Educational component	Provide education on road user safety to students and parents.



Observation Details:

Based on behavior and discussions with the school Principal, it appears that the students, as a whole, do receive education or instruction on how to cross the road and how to behave along it.

Suggestion Details:

Consider conducting an educational campaign that includes students and parents. Suggestions include a mailer about proper circulation (yield, hazards, etc...) to parents in a one-hour, in-class lesson on proper roadway user behavior to improve safety to students, and on-site discussions with security personnel or the Principal when improper driving or walking behavior is observed. A discussion with the school Principal indicated that there is an educational program for students and parents. Consider upgrading the information dissemination to parents based on input of a Traffic Engineer.

Agency:	Improvement Type:
Somerset Canyons Academy	Other
Time Frame:	EEE:
Short Term	Education
Level of Effort:	Comment:
Low	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
18	Sidewalk on south side of SR-804 (Boynton Beach Boulevard).	Very high pedestrian and bike volume along the 5-6' sidewalk.	Coordinate with property owner to determine feasibility of a larger offset shared use path.

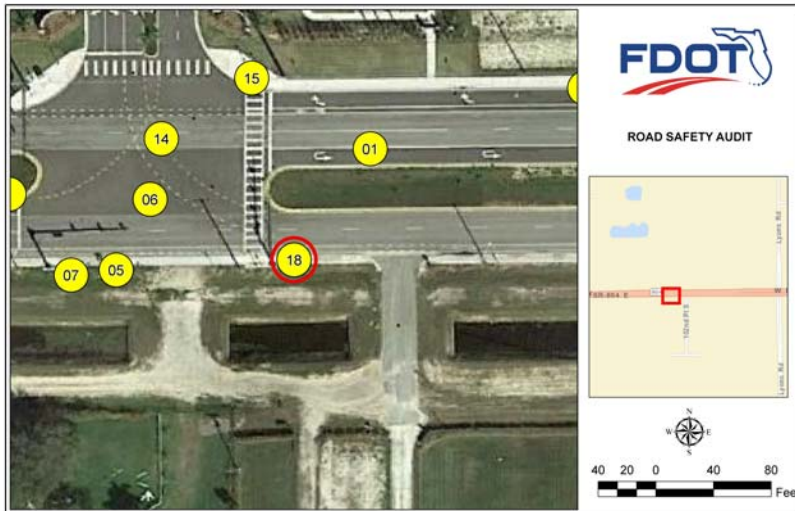


Observation Details:

The majority of students walk along the south side of SR-804 (Boynton Beach Boulevard). The sidewalks conform to FDOT standards (5' minimum width). However, the crowding and shared use by pedestrians and bicyclists is not an ideal scenario.

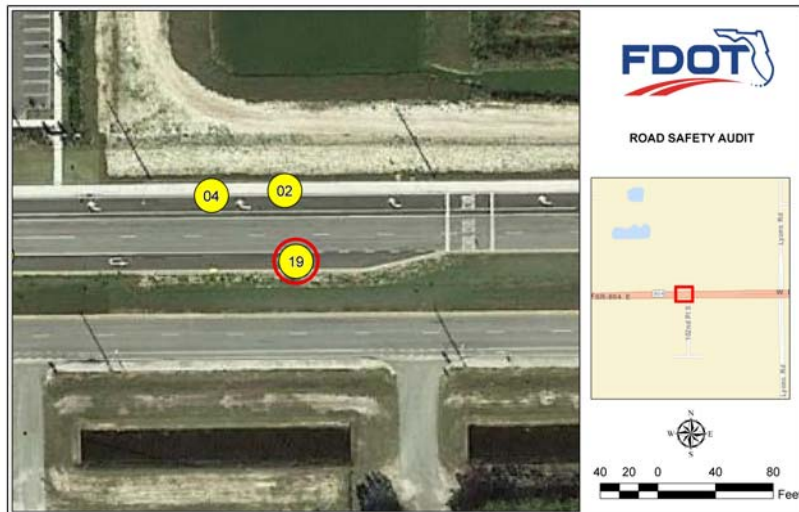
Suggestion Details:

Given the high pedestrian and bicycle volume and the proximity to a school, coordinate with the adjacent property owners (assumed to be a water management district) to determine the feasibility of installing a wider pathway within in an easement (see PPM Section 2.1.4.1).



Agency:	Improvement Type:
PBCE	Construction
Time Frame:	EEE:
Long Term	Engineering
Level of Effort:	Comment:
High	

ID	Location Description:	Observation Overview:	Suggestions for Consideration:
19	Along SR-804 (Boynton Beach Boulevard) within School Zone of Somerset Canyons Academy.	Law enforcement presence observed	Encourage law enforcement presence (passive or aggressive).



Observation Details:

On the day of the field review, a law enforcement officer was observed within Somerset Canyons Academy limits during the AM departure. He was positioned in highly visible locations, and it appeared that the presence increased the likelihood of driver compliance. A discussion with the Principal indicated this is not typical for PBCSO to be in the school vicinity.

Suggestion Details:

To improve compliance with the speed zone, several recommendations could be considered: Improve driver notification (overhead signs and/or beacon signs - see other sign recommendations) Employee DMS and/or speed feedback signs to notify drivers of new School Zone and new regulatory speed; dispatch police presence to area to provide passive, educational, and enforcement regulation of School Zone regulations.

Agency:	Improvement Type:
PBCSO & Somerset Canyons Academy	Other
Time Frame:	EEE:
Other	Enforcement
Level of Effort:	Comment:
Medium	

Discussion A:

ID 08: Regarding Guardrail

The Roadside Design Guide (RDG) Chapters 5 and 10 define the warranting criteria for roadside barriers: “Barrier warrants are based on the premise that a traffic barrier should be installed only if it reduces the severity of potential crashes.” Also, “The mere installation of barriers could lead to higher incident rates due to the proximity of the barriers to the traveled way.” Consideration should be given to the removal of the guardrail as the physical reason for its installation is no longer present.

However, the RDG does acknowledge special situations in which “conventional criteria...cannot be used to establish barrier needs.” In reference to protecting pedestrians and bicyclists RDG 5.2.3 and 10.3.3 state “the most desirable solution is to separate [pedestrians and bicyclists] from vehicular traffic.” Also, in regards to high speed facilities, “when sidewalks or bicycle paths are adjacent to the traveled way of high-speed facilities, some provision, other than curbing, may need to be made for the safety of the pedestrians and bicyclists.”

This particular location has experienced multiple changed conditions:

- A canal that resulted in the determination that guardrail be installed
- The removal of the canal which removed the hazard that warranted the guardrail installation
- The construction of a school which generated pedestrian/bicycle activity that is shielded from potential errant vehicles and channelizes pedestrians/bicyclists between the school and Lyons Road and creates a barrier inhibiting students from leaving the sidewalk and entering the roadway.

Without a vehicle crash history of collisions with the guardrail or significant maintenance history indicating frequent vehicle-guardrail collisions, as well as the recently introduced pedestrian/bicyclist conditions, it is recommended to maintain the existing condition.

Should the department ultimately decide to remove the guardrail, it is recommended that either the sidewalk be relocated to the north to create additional sidewalk to roadway separation and/or pedestrian barriers be considered.

See RDG Chapter 5.2, 5.2.3, 10.3, 10.3.3, 10.3.4. See also FDOT Developmental Standards for pedestrian barriers and FDOT “Greenbook” Chapter 8, Section D.

FIGURE A1: EXISTING CROSSWALK

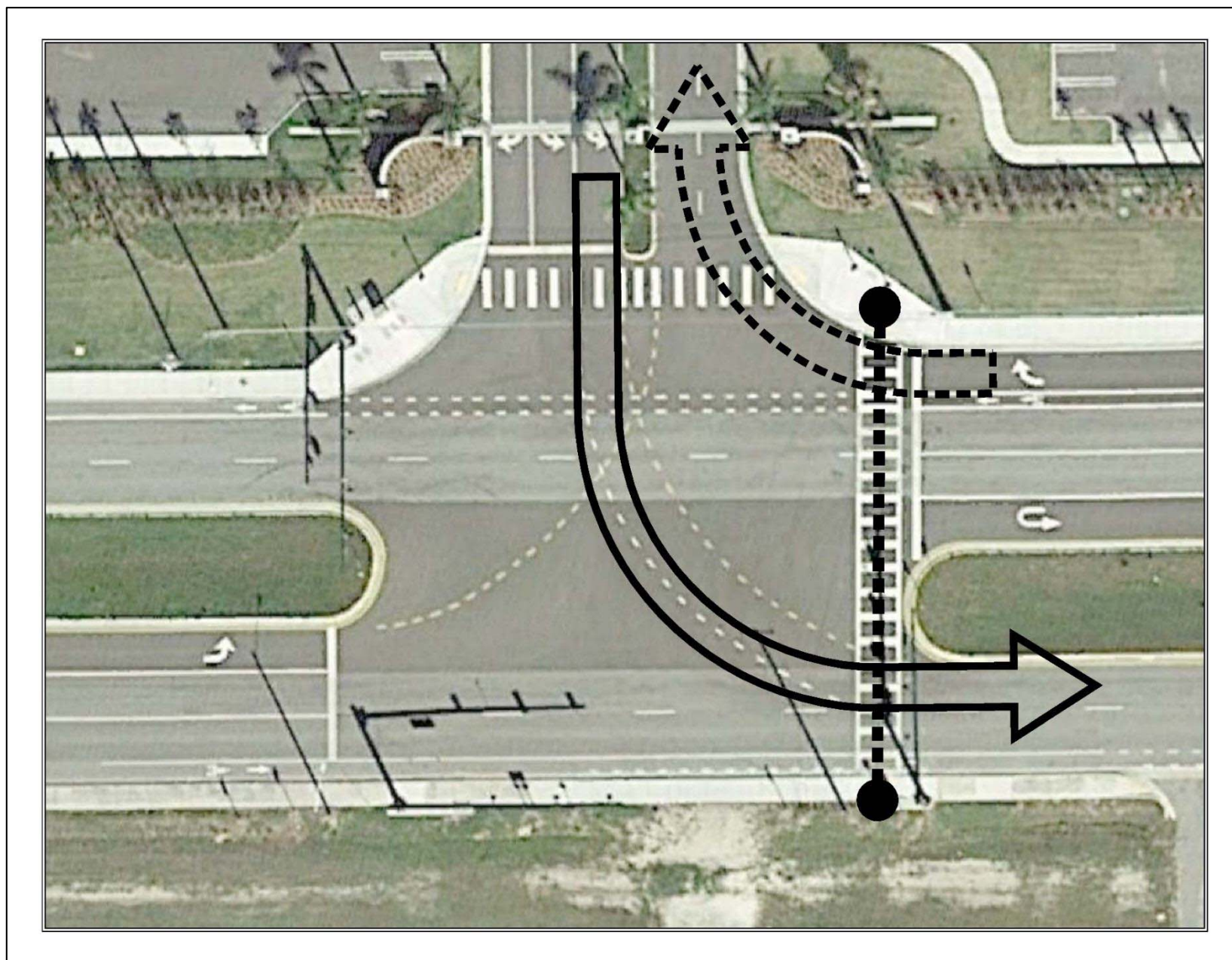


FIGURE A2: CONCEPTUAL CROSSWALK RELOCATION

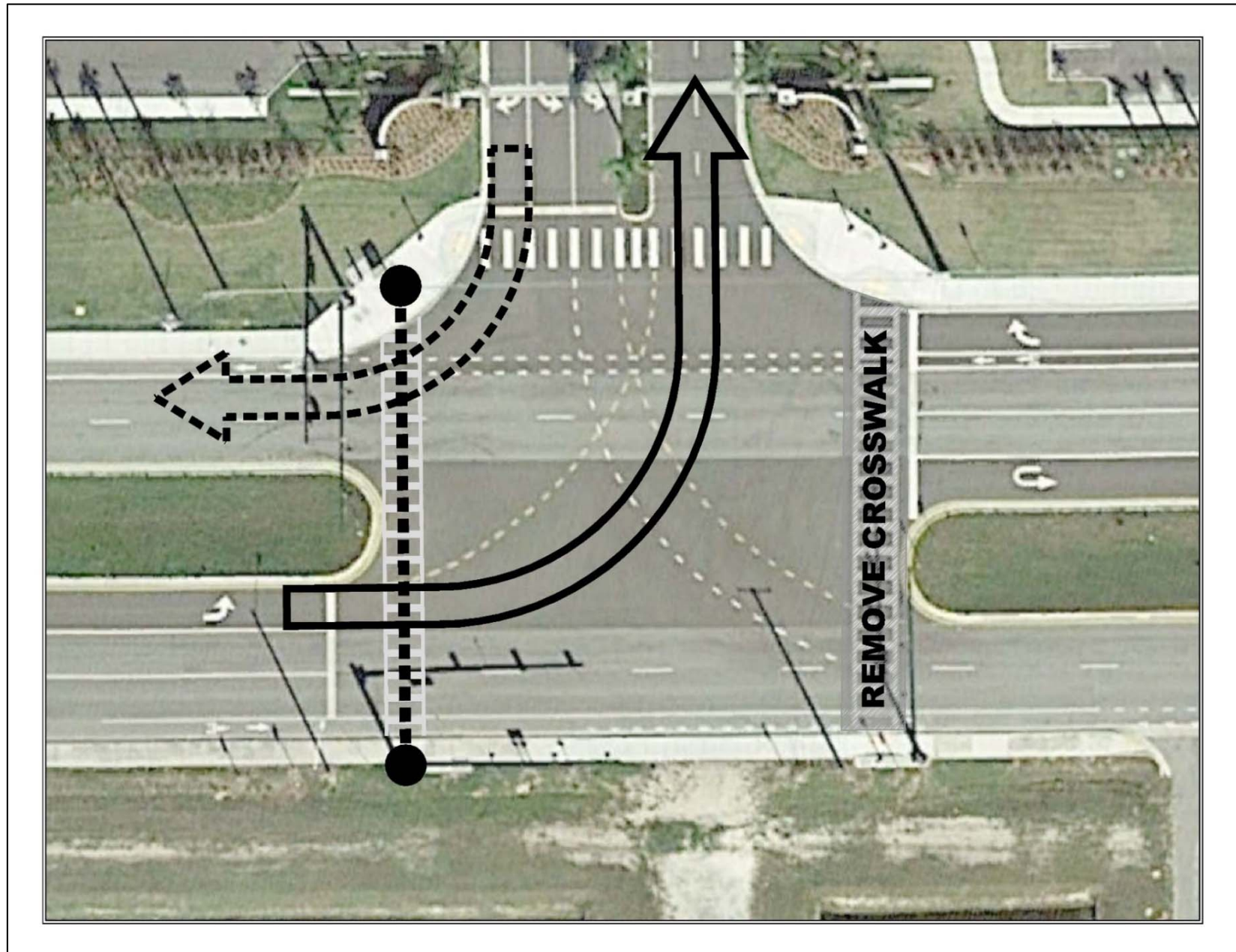


FIGURE A3: CONCEPTUAL SIDEWALK

