

**Volusia County
MPO**

November 2008



Timbercrest Elementary School

Bicycle and Pedestrian School Safety Review Study Phase 3B



School Summary

Timbercrest Elementary School is located on Eustace Avenue across from Galaxy Middle School, in a densely populated area in the City of Deltona.

Of the 925 students attending this school, 423 live within the designated walk zone area. During the 2007/2008 school year approximately 100 of these students walked or rode bicycles to school. According to the crossing guards, the number of students walking and bicycling to school has recently increased. This may be due to increased difficulty for motorists who drop off or pick up students because U-turns are no longer permitted near school property or possibly higher gas prices may be a factor.

The safety of the existing crosswalk/crossing guard location is affected by many factors, including: reduced horizontal and vertical visibility on Eustace Avenue, the intersection of Seagate Drive and the location of Galaxy Middle School.

At the time of this Study, there were three crossing guard locations serving Timbercrest Elementary School students. The crossing guard location at Seagate Drive and Placid Avenue was closed for the 2007/2008 school year. There was one reported pedestrian crash during estimated school travel times involving an elementary school age child within the walk zone during the last three years.

This Study recommends the construction of a sidewalk along the east side of Eustace Avenue from the school entrance road to Catalina Boulevard.



Figure 3.9.1

Timbercrest Elementary School – Summary Sheet

School Address: 2401 Eustace Avenue
Deltona, FL 32725

School Principal: Dr. Mary Cool
Phone: 386-575-4221
Email: mcool@volusia.k12.fl.us

Volusia County School District Representative: Saralee Morrissey, AICP
Phone: 386-947-8786, ext. 50772
Email: smorriss@volusia.k12.fl.us

Volusia County Public Works Traffic Engineering: Jon Cheney, P.E., Director
Phone: 386-736-5968 ext. 2709
Email: jcheney@co.volusia.fl.us

Crossing Guard Supervisor: Julyann Rivera
Phone: 386-860-7030
Email: jrivera@vcso.us

City Representative: Tom Burbank, Acting Planning and Development Services Director
(Previous representative, Becky Mendez is no longer with the City)
Phone: 386-878-8608
Email: tburbank@deltonafl.gov

Scott McGrath, Principal Planner
Phone: 386-878-8624
Email: smcgrath@deltonafl.gov

Volusia County MPO: Stephan Harris, Bicycle and Pedestrian Coordinator
Phone: 386-226-0422 ext. 34
Email: scharris@co.volusia.fl.us

Site Visit Observation Date: April 10, 2008 (weather: cool, clear, and seasonal)

Meeting Attendees:

- Dr. Mary Cool, School Principal
- Julyann Rivera, Crossing Guard Supervisor
- Becky Mendez, Deltona Planning Manager
- Scott McGrath, Deltona Principal Planner
- Stephan Harris, MPO Bicycle and Pedestrian Coordinator
- Ginger Hoke, Hoke Design, Inc.

Number of Enrolled Students (2008 data): 925

Estimated Number of Students Living in Walk Zone: 423

Number of School Buses: 6

Number of Aftercare Buses/Vans: 5

Estimated Number of Walkers/Bicycle Riders: 75-100

Number of Bicycles on Site: 27

Number of Bicycle Helmets (stored with bicycle): 12

Staggered Student Dismissal: Unknown

Estimated Number of Students Attending Breakfast: 300 (starts prior to 7:30am and a before-school program begins at 6:15am)

Number of Students for School Site Aftercare: 140

Teachers Assisting in Arrival and Dismissal Safety:
Arrival: 9 **Dismissal:** 10

Title One School: No (47%)

Backpack Policy: no wheeled backpacks permitted

Summary of Principal Comments:

- Traffic pattern and unsafe U-turns on Eustace Avenue
- Does not want to switch bus area with student drop-off and pick-up loop
- Feels that a community meeting should be held because she has had 7 letters from concerned parents when the crossing guard program was downsized

Crossing Guard Locations:

- Seagate Drive and Placid Avenue (will be eliminated 08/09)
- Providence Boulevard and Joyner Drive
- Seagate Drive and Eustace Avenue (2 guards)

Summary of Crossing Guard Supervisor Comments:

- U-turns are a problem
- Traffic in front of school is a problem

Number of Bicycle and Pedestrian Crash Events within the Existing Walk Zone (elementary age, during estimated school travel times, 2005-2007): 1 pedestrian (afternoon)

Planned Road, Sidewalk, or other Improvements: City has an ongoing sidewalk construction plan and budget

Planned Development in Walk Zone: The library and the Lyonia Preserve are undergoing expansion and will include an environmental studies center

Number of Students Transported (Designated as Hazardous): None

Votran Route in Walk Zone: Yes, Votran typically stops at the library but now turns around at City Hall until library construction is completed

Findings and Recommendations

Site Description: Timbercrest Elementary School is located on the north side of Eustace Avenue across from Galaxy Middle School. The student drop-off and pick-up area is located on the inside curve of Eustace Avenue. Seagate Drive is located across Eustace Avenue and is generally aligned with the student drop-off access drive. The east side parking lot is used for staff parking and bus loading and unloading.

Finding: The visitor parking lot includes a sidewalk along the north side of the parking area that collects students and leads them to openings in a fence where they cross with staff.

Recommendation: The combination of a sidewalk along the edge of the parking area and a fence function well together to direct pedestrians to the proper crossing location. This type of design should be considered for use at other schools.



A sidewalk and fence direct pedestrians to a designated crossing location

Finding: The accessible route for the parking spaces for persons with disabilities could potentially be blocked by the adjacent vehicle.

Recommendation: Consider relocating the accessible parking space to the edge of the parking area. Add bollards or a fence to prevent vehicles from encroaching into the sidewalk zone. The use of wheel stops may prevent vehicle encroachments, but may also pose a trip hazard.



The parking location of the white truck allows a clear path for motorists with disabilities

Finding: An overhead canopy support pole obstructs full access to the curb ramp.

Recommendations: Shift either the curb ramp or the pole to allow full clearance at the top of the ramp.

Accessible routes should be reviewed for obstacles when designing or modifying campus improvements.



A pole obstructs full curb ramp access

Findings: Vehicular access to the internal campus has created a ramp in the sidewalk in front of the school. This change in elevation has been painted yellow to warn the sidewalk user.

Recommendation: If concrete work is planned for this school, reconstruct the sidewalk further from the edge of pavement to allow a separate curb ramp and sidewalk.



Service access creates a grade change in the sidewalk

Finding: Twelve (12) of the twenty-seven (27) student bicyclists wore helmets. The student in the photograph to the right carries his helmet instead of wearing it.

Recommendation: Continue efforts to encourage helmet use. For additional recommendations, refer to the “Best Practices” section of the Bicycle and Pedestrian School Safety Study Phase 2.



A student carries his helmet instead of wearing it

Finding: Crossing guards are posted at their locations from 7:15 am to 8:15 am. However, breakfast starts prior to 7:30 am. Students may reach the crossing locations before the guards and cross unaided.

Recommendation: The crossing guard supervisor should coordinate with school staff to adjust the crossing guard schedule to serve students arriving early for breakfast.



School breakfast may start before the guards are at their post



Figure 3.9.2

Findings: The access drive for the student drop-off and pick-up area is located along a curve in Eustace Avenue, and the crosswalk is located on the north side of this intersection. The curve in the road and a change in elevation reduce the visibility of the crosswalk for motorists.

There are two crossing guards at this location, and they cross students primarily over Eustace Avenue. The placement of safety cones prevents motorists on Seagate Drive from turning left onto Eustace Avenue or going straight into the school access drive.

Additionally, cones prevent eastbound motorists on Eustace Avenue from turning left into the student drop-off and pick-up access road. Eastbound motorists on Eustace Avenue wishing to drop off and pick up students must travel beyond the access drive and make a U-turn further east on Eustace Avenue.

Recommendations: This Study recommends further review of the possibility of relocating the main crosswalk to the east side of the bus/staff parking entrance. Shifting the crosswalk will result in the need to construct a



The student drop-off and pick-up access road is located south of the main crosswalk



A curve along Eustace Avenue reduces motorist visibility

sidewalk along the west side of the bus/staff entrance and modifications to the existing fence. Shifting the crosswalk to the bus/staff access drive area would also benefit middle school students who frequently volunteer at Timbercrest Elementary School and cross Eustace Avenue unaided. Most of the vehicles traveling to and from the school will use the student drop-off and pick-up access road. Moving the crosswalk to the bus/staff access road area may reduce the pedestrian conflict with motorists.

Finally, the existing crosswalk located directly east of the bus/staff access drive and the mid-block crossing located east of the school site should be eliminated. This Study recommends the consolidation of three crosswalks into one crosswalk to increase safety for students crossing Eustace Avenue (See Figure 3.9.2).

Finding: A pedestrian crash occurred at the crosswalk over Eustace Avenue, east of the Timbercrest Elementary school site. According to the crash report, student visibility was blocked by parked vehicles along the right of way and the student ran into a moving vehicle.

Recommendation: As discussed earlier, this crosswalk should be reviewed for elimination. As an interim measure, post “no parking or stopping” signs along the right of way near the crosswalk and increase enforcement and student education measures.



A motorist parks along Eustace Avenue right of way near the crosswalk, reducing visibility for motorists and crosswalk users

Findings: Students walk or ride bicycles in groups, especially in the afternoon when they are released at the same time. Some sidewalks within the walk zone are too narrow to accommodate groups of students.

Recommendations: Walking in groups should be encouraged to increase visibility of students and to provide “safety in numbers”. Sidewalks along major travel routes should be constructed eight to ten feet wide to accommodate groups of students and multiple user groups.



Wide sidewalks accommodate groups of users



Narrow sidewalks discourage walking in groups

Finding: Eustace Avenue does not have a sidewalk on the east side of the road north of the school site. Students living east of Eustace Avenue may cross the road at random locations to reach the wide sidewalk on the west side.

Recommendation: Construct a minimum five foot wide sidewalk along the east side of Eustace Avenue between the school site and Catalina Boulevard. A short section of retaining wall may be needed near the school. This sidewalk is recommended as a Priority Project and is further described at the end of this chapter.



Eustace Avenue looking south toward Timbercrest Elementary School

Findings: A crossing guard location was closed in the 2007/08 school year at the intersection of Old Mills Road and Placid Avenue. A guard location at Seagate Drive and Placid Avenue will also close for the 08/09 school year.

Currently, the crosswalk over Old Mills Road aligns with the sidewalk on the east side of Placid Avenue and crosses into a private driveway where it connects with the wide sidewalk on the south side of Old Mills Road.

Recommendations: Relocate the crosswalk east of its current location to avoid termination into the driveway. Construct a short extension of the sidewalk along the south side of Old Mills Road to connect to the crosswalk.



The crosswalk over Old Mills Road at Placid Avenue terminates into a private driveway

Findings: Portions of Providence Boulevard include a narrow sidewalk that is flush and adjacent to the roadway. A painted shoulder has been added to provide some separation between the travel area and the sidewalk.

Recommendations: Future modifications should include sidewalks separated from the roadway. The sidewalk on the west side should continue and connect to the sidewalk south of the Deltona Lakes Elementary School access road. The construction of sidewalk along the east side of Providence Boulevard from Auburndale Street to the intersection of Eustace Avenue would provide sidewalk facilities for students attending Timbercrest



Portions of Providence Boulevard have narrow sidewalks adjacent to the roadway

Elementary and Galaxy Middle School.

The construction of a sidewalk along the east side of Providence Boulevard would also serve library patrons, Lyonia Preserve visitors, Votran users, and students attending Daytona State College and Deltona Lakes Elementary Schools.

If this sidewalk is constructed, the crossing guard location at Joyner Drive and Providence Boulevard should be evaluated for relocation to the intersection of Eustace Avenue and Providence Boulevard. A guard at this location would serve students living east of Providence Boulevard and Galaxy Middle students. This intersection should be evaluated for a signal with enhanced pedestrian features.

Master Plan

The following Bicycle and Pedestrian Master Plan specifies a network of sidewalks and trails that, if implemented, will greatly increase the convenience and safety of travel for pedestrians and bicyclists. A 24"x36" fold-out map is included as a deliverable with this Study.

The Bicycle and Pedestrian Master Plan includes the following information:

Existing Conditions:

- Existing Walk Zone area from School District GIS (shaded tan)
- Courtesy Transportation Zone from School District, if applicable (shaded blue)
- Hazardous Transportation Zone from School District, if applicable (shaded yellow)
- Student Home Location from School District (dark blue dot)
- Existing Trails from County GIS and field review (solid green line)
- Existing Wide Sidewalk 6-8' from field review (solid blue line)
- Existing Sidewalks 3-5' from field review (solid red line)
- Existing Crossing Guard Locations from County GIS and field observations (green cross for existing to remain and yellow cross for existing to be closed)
- Bicycle or Pedestrian Crash Event Locations from 2005-2007 from County GIS data, during estimated school travel times and involving an elementary age bicyclist or pedestrian (pink star)
- Existing Votran Routes and stops from Volusia County MPO (yellow lines along roadway centerline with yellow squares at bus stops)

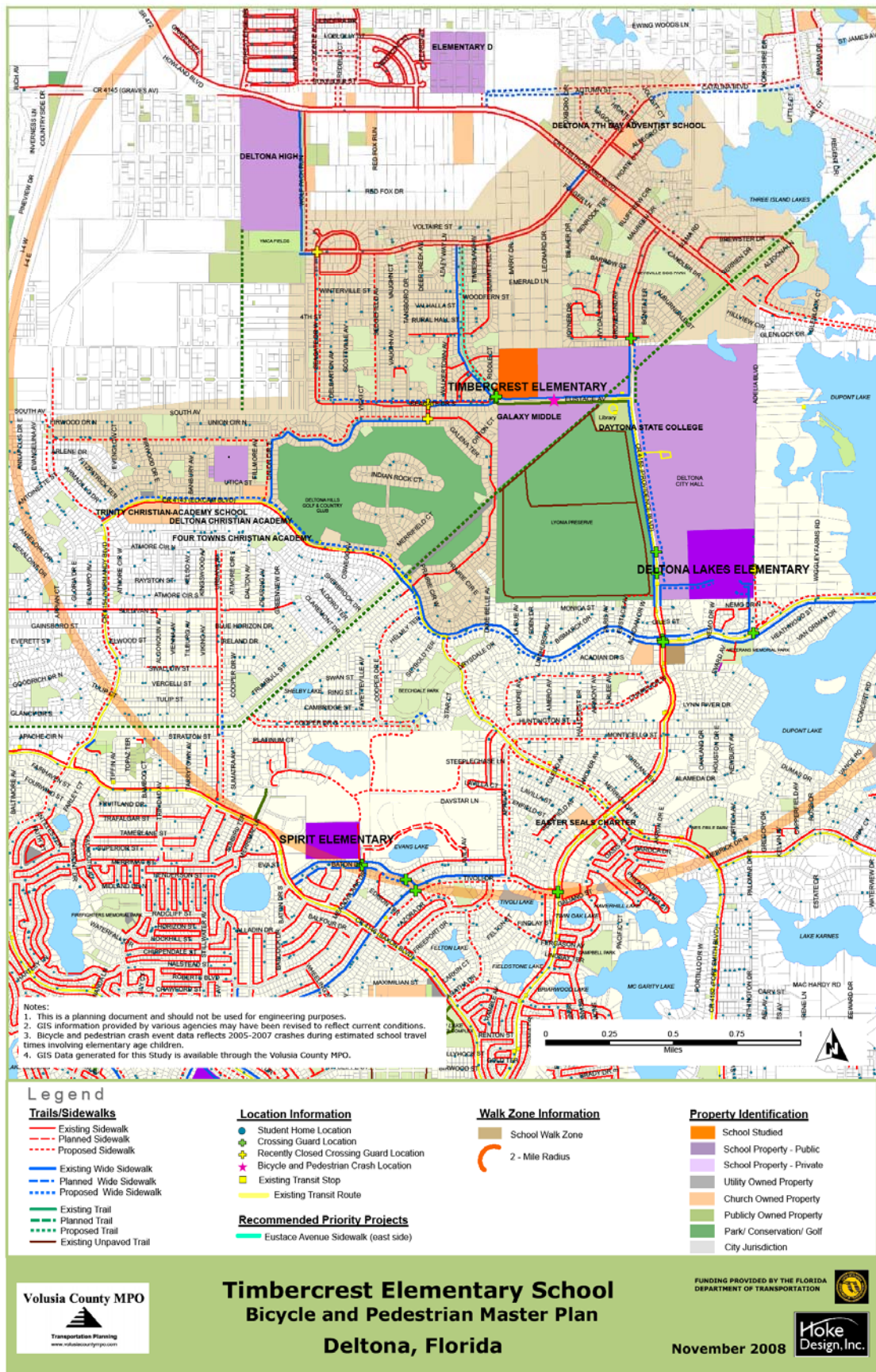
Planned Conditions:

- Planned trail (long dashed dark green line)
- Planned wide sidewalk (long dashed blue line)
- Planned sidewalk (long dashed red line)

Recommendations of this Study:

- Proposed Trails (dashed dark green line)
- Proposed Sidewalks 6-8' wide (dashed blue line)
- Proposed Sidewalks 5' (dashed red line)

This Master Plan and supplemental information supplied within the Implementation Report are meant as a guideline for sidewalk and trail planning. The Master Plan is not an engineering document.



Recommended Priority Project

Eustace Avenue Sidewalk (east side)

School Served: Timbercrest Elementary School and Galaxy Middle School

Project Location: East side of Eustace Avenue from Catalina Boulevard to the school entrance across from Seagate Drive.

Project Description: A .65 mile minimum 5 foot wide sidewalk with up to 200 linear feet of retaining wall

Maintaining Agency: City of Deltona

Finding: Eustace Avenue does not have a sidewalk on the east side of the road north of the school site. Students living east of Eustace Avenue may cross the road at random locations to reach the wide sidewalk on the west side.

Recommendation: Construct a minimum five foot wide sidewalk along the east side of Eustace Avenue between the school site and Catalina Boulevard. A 200 linear foot section of retaining wall may be needed near the school.

Potential Constraints: Grading issues are substantial near the school entrance drive and a retaining wall and coordination with adjacent property owners will most likely be necessary. Shade trees should be avoided and protected, possibly increasing project cost.

Potential Opportunities: The construction of this sidewalk would serve Timbercrest Elementary and Galaxy Middle School students. Additionally, the City of Deltona has an annual budget of \$350,000 for new sidewalk construction.

Estimated Cost (Not including right of way acquisition, if needed): \$400,000

Note: This project is highlighted blue on the corresponding Bicycle and Pedestrian Master Plan.



Eustace Avenue looking south toward Timbercrest Elementary School



Eustace Avenue looking west