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Piney Orchard Elementary School Safe Routes to School Accessibility Study: Existing Conditions and Recommendations

August 17, 2023

Anne Arundel Safe Routes to School Accessibility Study

Anne Arundel County (AACO) and Anne Arundel County Public Schools (AACPS) recognize that schools are vital community resources. To improve safety and transportation choices for all residents, the County and school district partnered to conduct a Safe Routes to School Accessibility Study at 17 schools identified in *Move Anne Arundel!*, the County's Transportation Functional Master Plan.

The studies were overseen by a Project Management Team consisting of County, State and School District representatives. They focused on infrastructure within the school walk zone but also assessed opportunities within the school attendance area to expand active transportation to school.

Studies were conducted October 24, 2022 through February 8, 2023, and included one-day site visits to observe school arrival and dismissal and to assess existing walking and bicycling infrastructure. Surveys were also conducted to assess travel modes and barriers to walking or bicycling to and from school.

This report summarizes existing conditions and recommendations for added infrastructure, education, or encouragement programs to increase the number of children that could safely walk or ride bikes to school.

Piney Orchard Elementary Accessibility Study

Report findings are derived from:

School site visits	• Observation of school arrival and dismissal conducted January 10, 2023 • Assessment of pedestrian and bicycling infrastructure within the current school walk zone and roads immediately adjacent (as connectivity allows) conducted October 26, 2022.
Parent Survey	• Administered January 26 – February 19, 2023 • Available online in English, Spanish, Chinese, and Korean • Survey link was provided via email

Recommendations were shared with the school community during a virtual open house in October 2023.

SCHOOL OVERVIEW

Study Area

- Field work was conducted on roads within a half mile of the school; desk-level review was conducted on roads within a one-mile radius of the school that fall within the school attendance area.
- The walk zone to the east and west extends to the limit of the attendance area.
- The walk zone to the south abuts the Piney Orchard Nature Preserve.

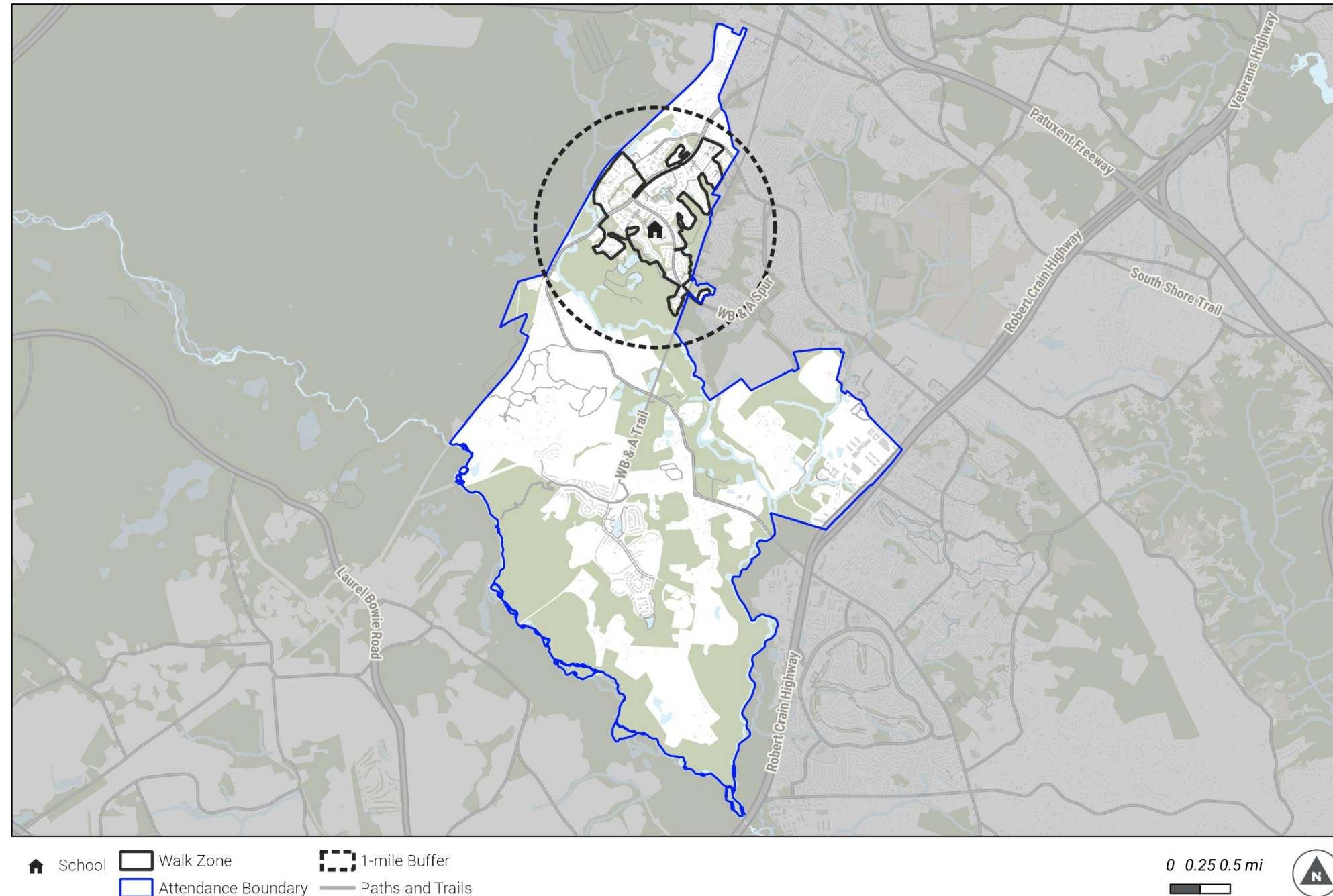
Piney Orchard Elementary School - 1-mile Radius



Student Attendance Area and Enrollment

- Piney Orchard Elementary School serves 966 students in grades K-5.
- 49% of students are registered for bus transportation*

Piney Orchard Elementary School - Attendance Boundary



*AACPS provides transportation from designated bus stops for students who reside within the school's attendance area. At elementary schools, transportation is provided for Pre-K students who live more than ½ mile from school, Kindergarten students who live more than ½ mile from school, and students of all other grades who live more than one mile from school.

Source: AACPS 2022-2023 Parent Handbook

School Location and Layout

- Piney Orchard Elementary School is located at Strawberry Lake Way and Stream Valley Drive, off Piney Branch Parkway in Odenton, MD.
- The school stands on a bluff above Strawberry Lake Way and is surrounded by wooded areas/green space to the west and south.
- The neighborhood contains a combination of single and multifamily housing, with many cul-de-sac and loop streets off Strawberry Lake Way, Stream Valley Drive, and Casuarina Way.
- Each street has a posted speed limit of 30 mph, two traffic lanes, marked parking on both sides, and – except for Casuarina Way - center turn lanes.

Piney Orchard Elementary School - Walk Zone



School Access

Walkers and Bicyclists:

- Walkers and bicyclists access the school campus via sidewalks along Strawberry Lake Way and Stream Valley Drive and a paved trail to the west of the school that connects to Running Wolf Trail and Riverscape Road.
- Four sidewalks exist on the school campus – two on the outer edges of the school bus loop and the school driveway, one in the center of campus that leads from stairs at intersection of Stream Valley Drive and Strawberry Lake way to the main school entrance, and one just south of the school driveway that also connects via stairs to sidewalks along Strawberry Lake Way.

Buses:

- Buses access the school from Strawberry Lake Way via a dedicated bus driveway to a loop in front of the school's main entrance.

Parent/Guardian Drop-Off:

- Parents/guardians drop-off students via the school's main driveway to access a drop-off and pick up line that runs through the staff parking lot in front of the school's main entrance. Pavement markings direct drivers.

Staff Vehicles:

- Staff who drive access the school via the main driveway and park in a parking lot at the front of the school.
- Staff overflow parking occurs along Strawberry Lake Way or in the bus loop.



PARENT-REPORTED STUDENT TRAVEL MODES AND BARRIERS

Piney Orchard Elementary - Parent Survey Response Overview

- 107 total survey responses received*
- 97% of respondents live in the area zoned to the school

Reported Distance from Home to School	
Distance	Number of Respondents
< ¼ mile	10
¼ mile – ½ mile	16
½ mile – 1 mile	17
1 mile – 1 ½ miles	9
>1 ½ miles	53

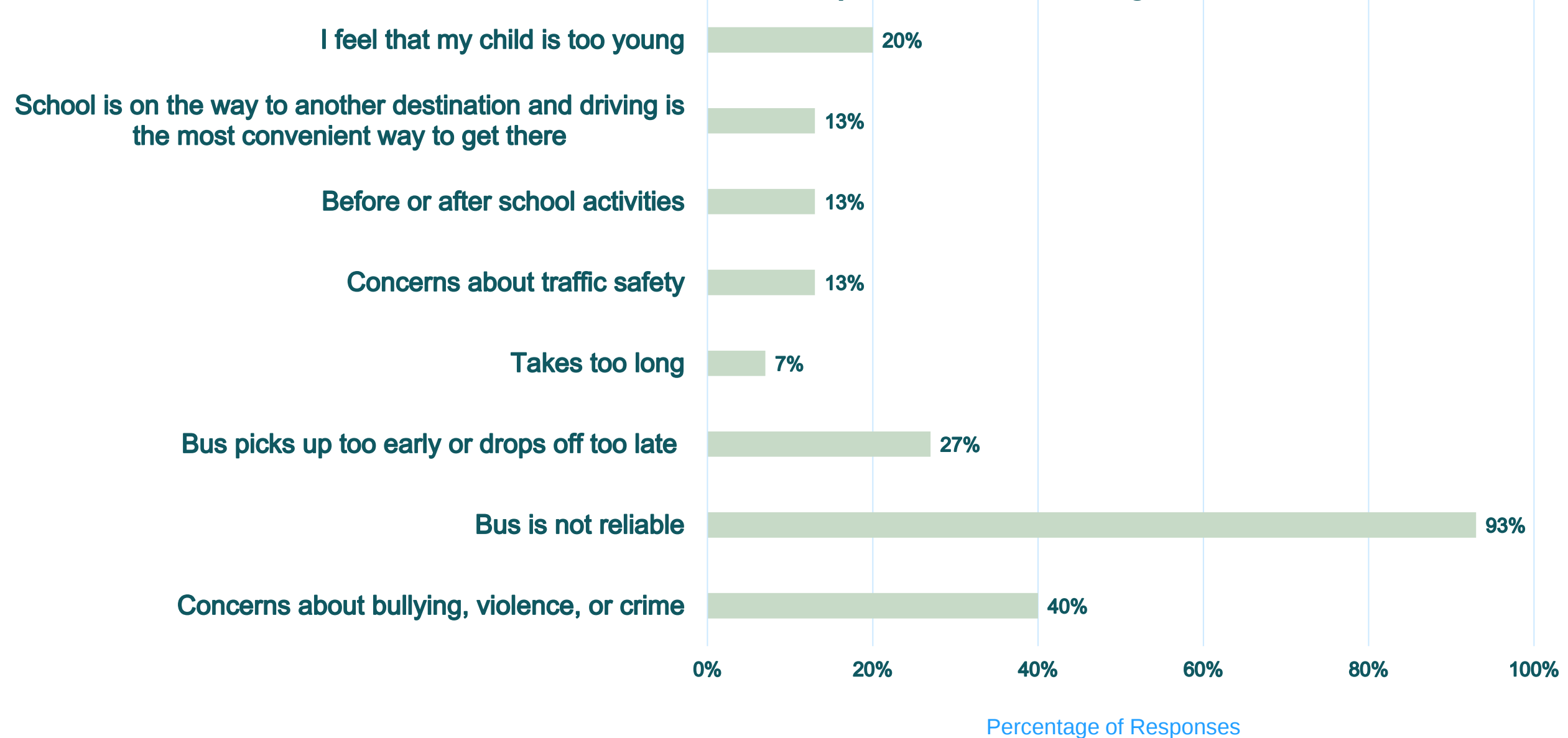
**Note that the survey response rate represents a fraction of the student population and may not reflect the experiences and perspectives of all families.*

Parent Survey Results

School Bus Eligibility and Use

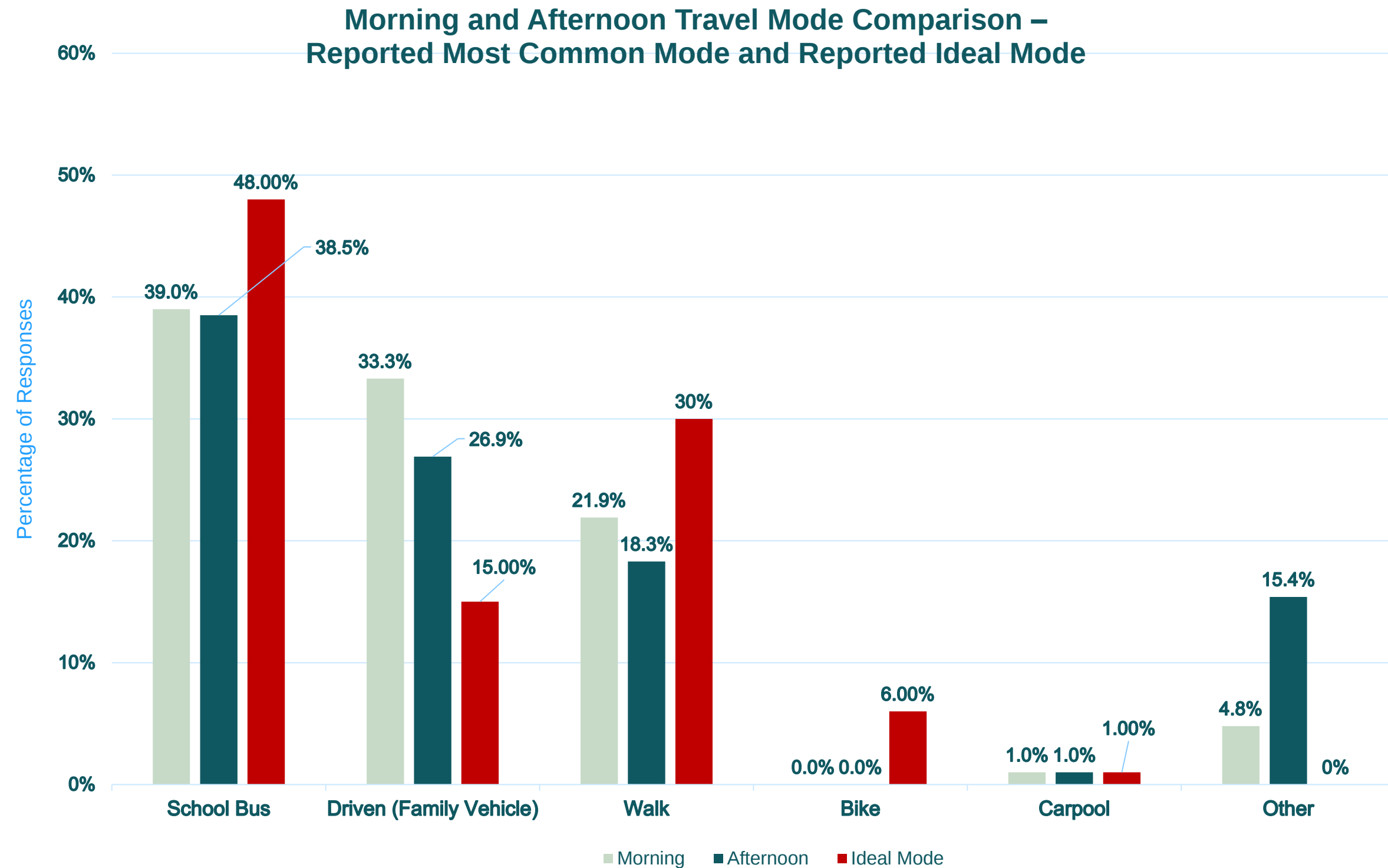
61% of respondents reported being eligible for school bus transportation;
39% reported riding the school bus to school.

Issues and Reasons Reported for Not Riding the Bus



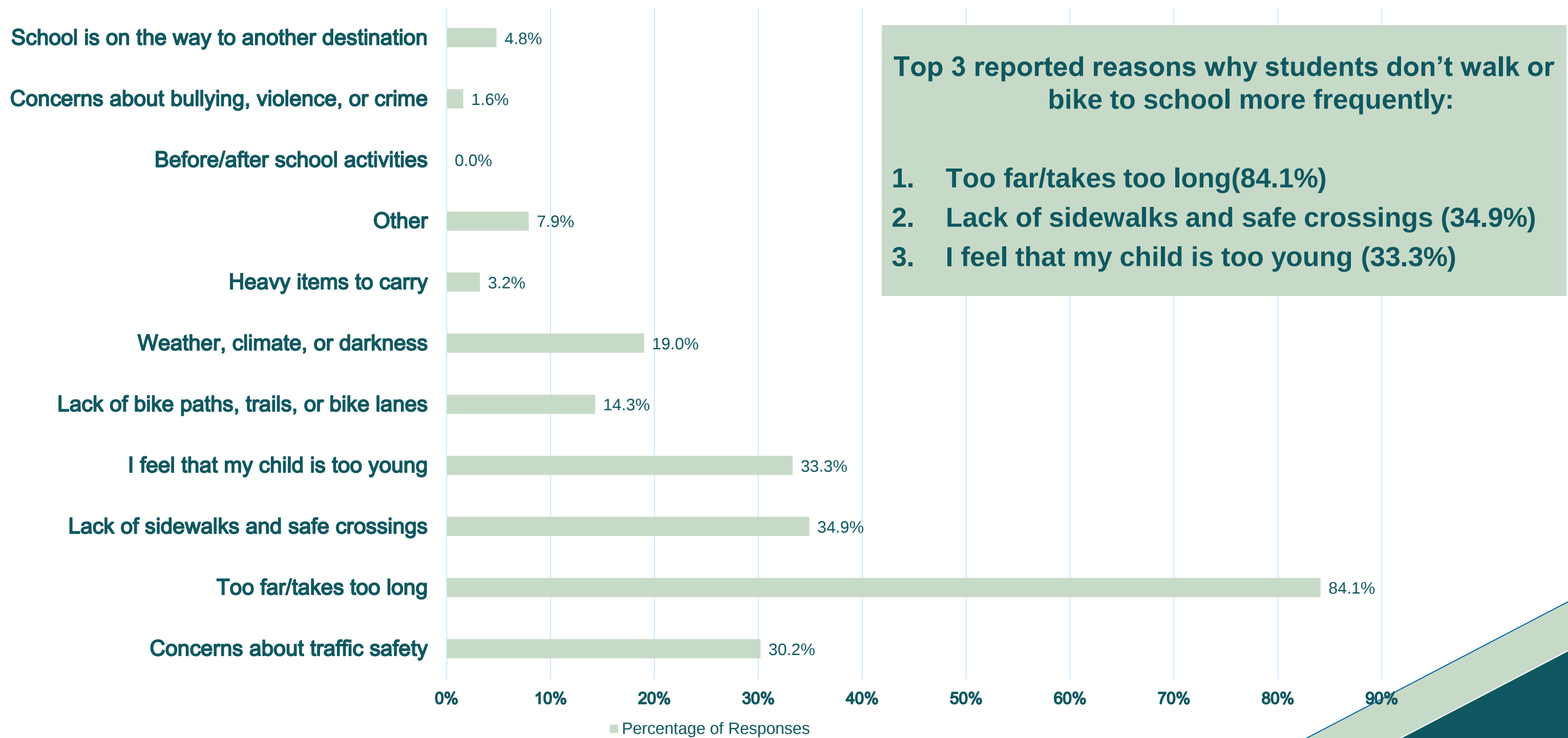
Parent Survey Results

Most Common Travel Mode versus Ideal Travel Mode



Parent Survey Results

Reported Barriers to Walking or Biking to School



Parent Survey Results

Reported Streets Used to Walk or Bike to School

- Piney Orchard Parkway
- Strawberry Lake Way
- Stream Valley Drive
- Casuarina Way
- Running Wolf Trail

ARRIVAL AND DISMISSAL OBSERVATIONS

Arrival and Dismissal Operations

School Hours:

- 8:00 am – 2:25 pm
- Doors open at 7:40 am

Observation Times (October 26th):

- Arrival: 7:25 am – 8:15 am
- Dismissal: 2:15 pm – 2:45 pm

Crossing Guards:

- Three crossing guards are assigned to Piney Orchard Elementary School at two locations. Two are stationed at the traffic signal at Piney Orchard Parkway and Strawberry Lake Way, and one at the intersection of Strawberry Lake Way and Stream Valley Drive directly in front of the school.



Bike racks at the main entrance of the school.

General Observations

General Observations:

- School arrival and dismissal generates heavy vehicle and pedestrian traffic volumes; a lot of student “walkers” appear to be park and walk.
- Many parents park on both sides of Strawberry Lake Way and Stream Valley Drive to drop off or walk students to the school campus. This creates conflicts as drivers attempt U-turns, parents/students attempt to cross the street midblock, or as on-street parking near intersections limits visibility of pedestrians using the crosswalk.



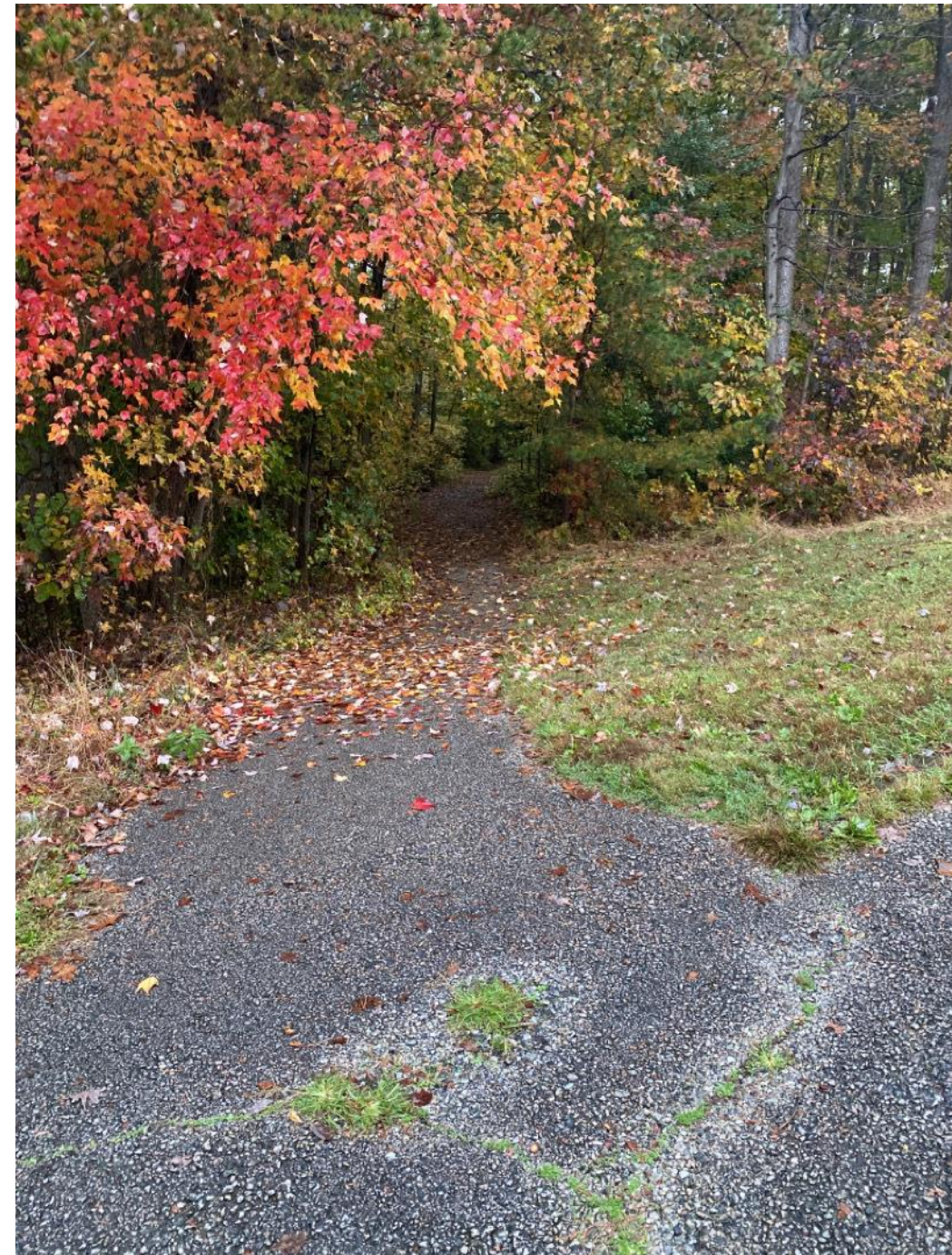
Arrival Observations

The study team observed arrival from the following locations:

- Intersection of Strawberry Lake Way and Stream Valley Drive
- Paved trail leading from school campus to Running Wolf Trail and Riverscape Road
- Intersection of Piney Orchard Parkway and Strawberry Lake Way
- Strawberry Lake Way, NW of school property

General Observations:

- School starts at 8:00 AM; most students arrived between 7:35 and 8:00 AM



Trail at back of school property headed towards Running Wolf Trail.

Arrival Observations

Walkers and Bicyclists

- Approximately 150 student walkers were observed during arrival, however most were dropped off by vehicles parked along Strawberry Lake Way and Stream Valley Drive.
 - Approximately 21 walkers used the path from Running Wolf Trail.
 - Most walkers were accompanied by adults and siblings.
 - Approximately 12 walkers arrived from the east via Strawberry Lake Way and accessed the stairs to campus.

Bus Lane

- Seven school buses were observed at school arrival.



Adult and student walking along Strawberry Lake Way after exiting a parked car.

Arrival Observations

Parent Drop-off

- Teachers and teacher assistants help students exit cars in the drop-off loop.
- The crossing guard posted at Strawberry Lake Way and Stream Valley Drive spends much of his time controlling vehicular traffic in and out of the school driveway.
- Many parents/guardians avoided the drop-off line, parked along both sides of Strawberry Lake Way and walked their students to school, often crossing Strawberry Lake Way mid-block.
- Traffic volumes along Strawberry Lake Way and Stream Valley Drive diminished after 8:15 a.m.



Students and parent waiting to cross midblock on Strawberry Lake Way.

Dismissal Observations

The study team observed dismissal from the following locations:

- Strawberry Lake Way at Stream Valley Drive
- Strawberry Lake Way, northwest of school property

General Observations:

- School ends at 2:25 PM, with most students departing between 2:25 and 2:35.

Walkers and Bicyclists:

- Student walkers were dismissed last, at about 2:30 pm.
- Approximately 125 walkers were observed during dismissal; Most walked with adults, but many were only with other students.
- Nearly all walkers exited the school campus via the staircase near Strawberry Lake Way/Stream Valley Drive, often clustered in groups of 20-40 people (including adults and siblings), then dispersed in all directions.
- Large numbers of parents were parked on Strawberry Lake Way, and a few were parked along Stream Valley Drive, so it is assumed that many of the “walkers” were actually car riders.



Students and parents waiting to cross Strawberry Lake Way at Stream Valley Drive

Dismissal Observations

Bus Lane

- Bus riders were dismissed first, and the buses departed before walkers were dismissed.

Parent Pick-up

- By 2:15 there were approximately 30 cars parked along Strawberry Lake Way, and numerous cars lined up in the school pick up line.
- Approximately 40 parents were observed parking along Strawberry lake Way and walking to the school to pick up their students; they waited outside of the school's main entrance until student walkers were dismissed.
- Vehicular and pedestrian traffic volumes in the immediate area of the school diminished by 2:40, and the school dismissal process appeared complete by 2:45.



Parents waiting in front of the main doors for children to be dismissed.

EXISTING INFRASTRUCTURE CONDITIONS

Existing Sidewalk Network

There are sidewalks present on all roads within the walk zone, with no observed gaps in the sidewalk network.

Several roads, including Strawberry Lake Way south of the school and Casuarina Way, have wide asphalt shared-use paths (shown on the Existing Trails, Park Trails and Paths map).

Piney Orchard Elementary School - Existing Sidewalk Network

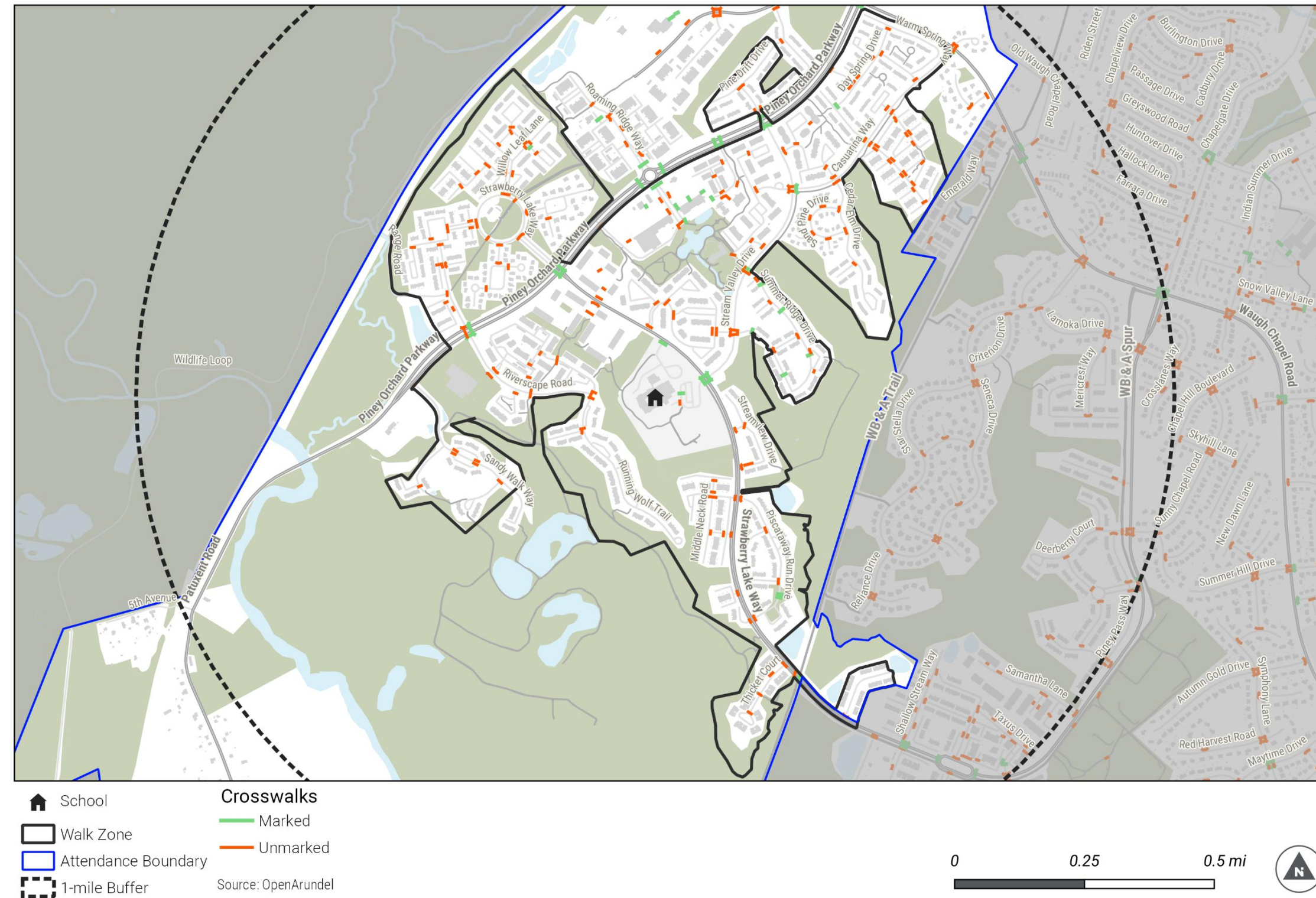


Existing Crosswalks

There are marked crosswalks across the entrance to both school driveways, and one marked crosswalk on the school campus for students exiting cars and crossing the driveway loop to the school entrance.

Many crossings at intersections in the school's walk zone are unmarked, though the few that exist are high-visibility, including at key intersections along the student walking route on Strawberry Lake Way.

Piney Orchard Elementary School - Existing Crosswalks

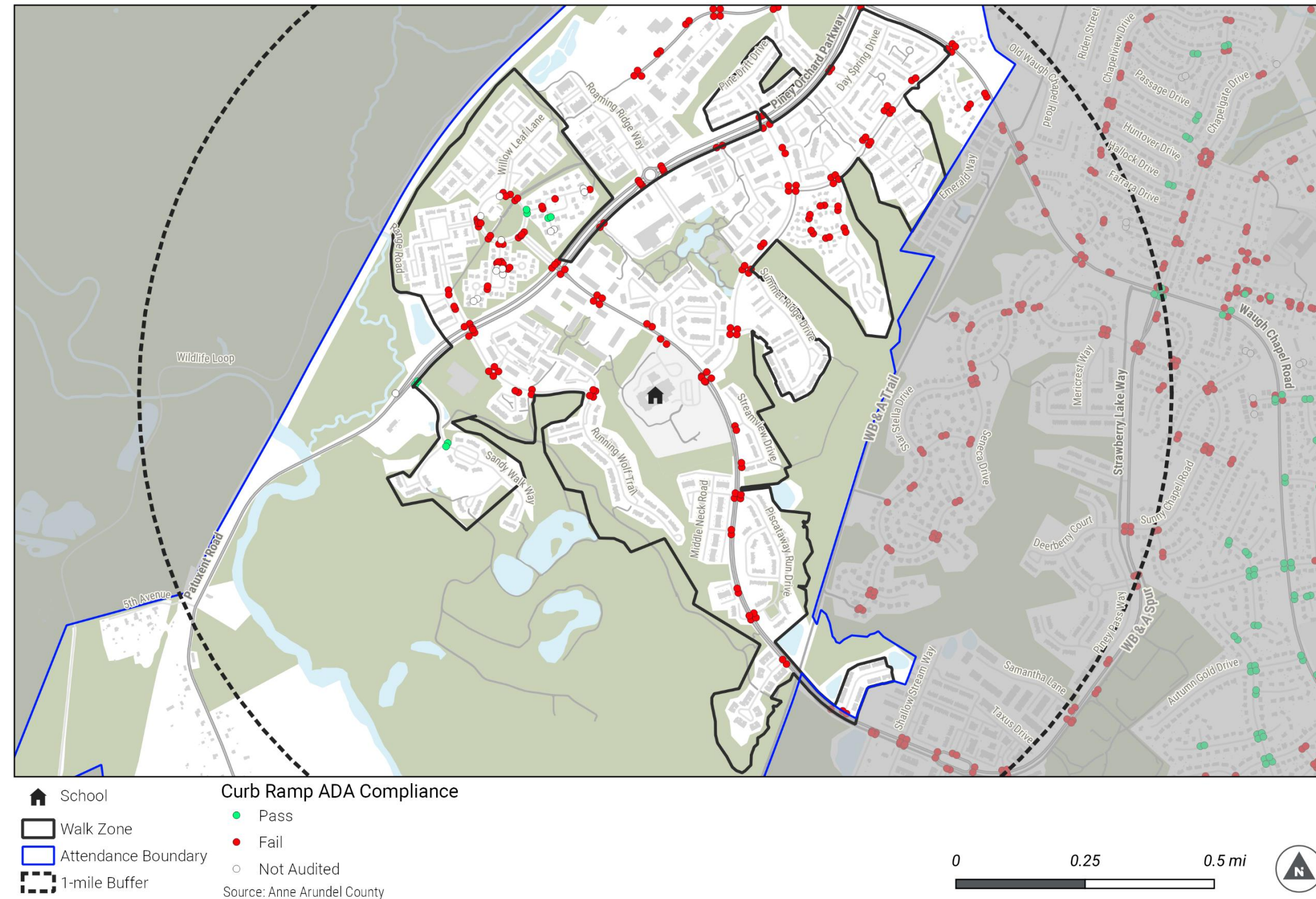


Existing Curb Ramps*

- Nearly all intersections on roads that have sidewalks have curb ramps.
- Many curb ramps lack detectable warning surfaces.

*Curb ramp data downloaded 9/14/22

Piney Orchard Elementary School - Existing Curb Ramps



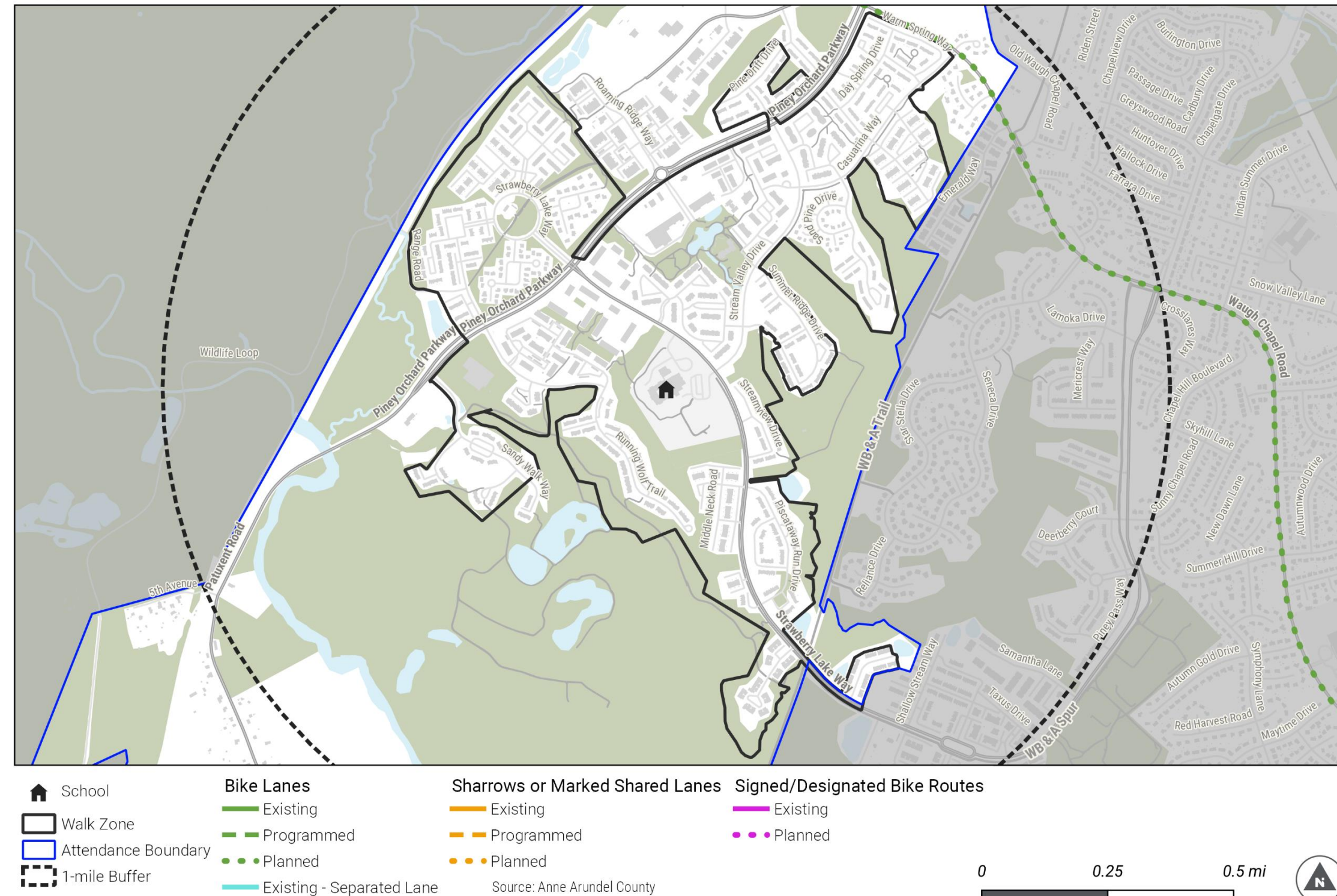
Existing On-Road Bike Facilities

No on-road bike facilities are known to exist on roads near the school walk zone.

Bike lanes are currently planned* for Waugh Chapel Road, at the northern edge of the attendance area.

*“Planned” means included in the County’s Master Plan

Piney Orchard Elementary School - Existing On-Road Bicycle Facilities



Existing Regional Trails, Park Trails, and Paths

The WB&A Trail runs adjacent to the eastern school attendance boundary. A shared-use path along Strawberry Lake Way provides a connection between the trail and the school.

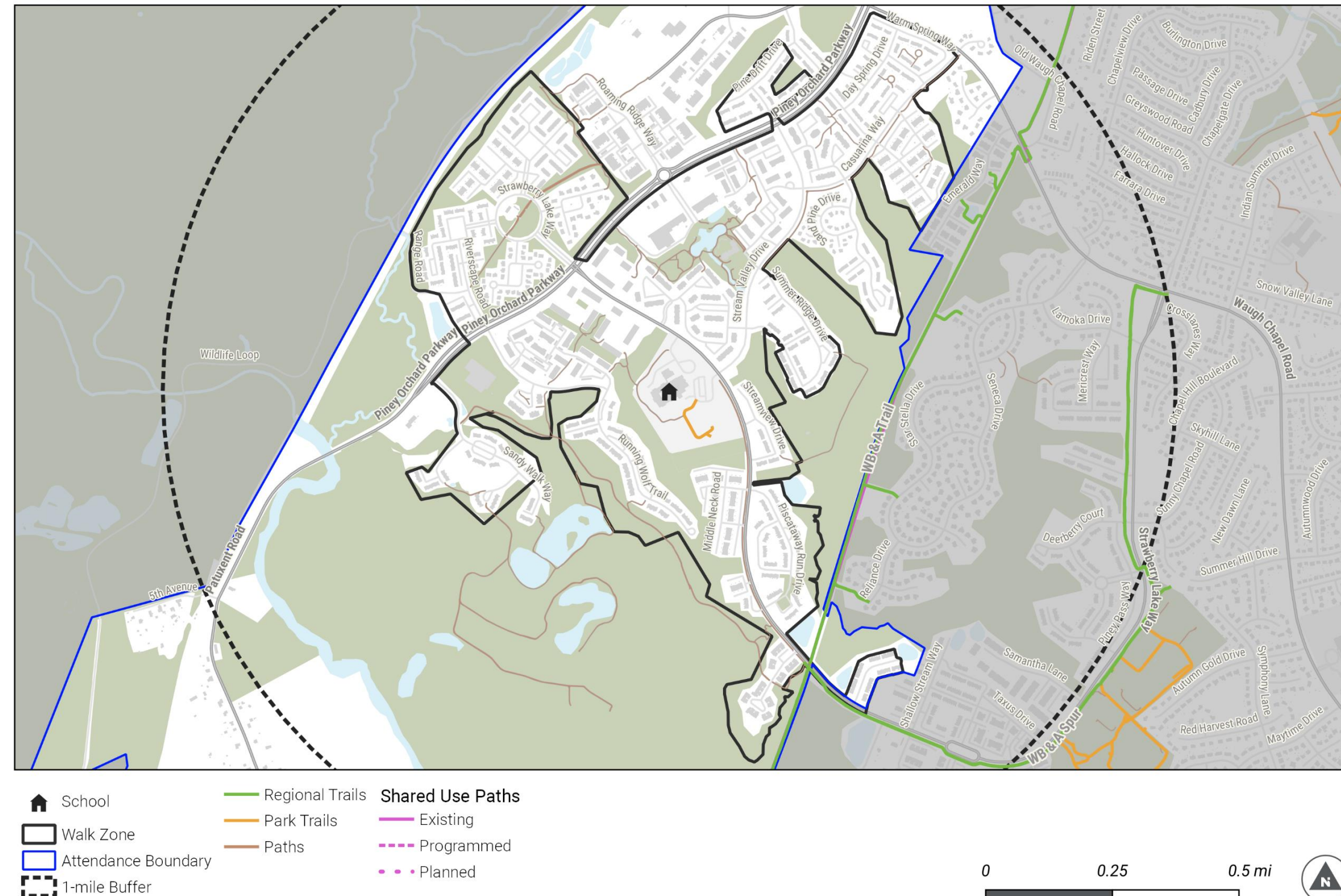
A paved path connects the school to the neighborhood immediately northwest and west of the school.

There are trails in the Piney Orchard Nature Preserve southwest of the school campus, but they are disconnected from the school.

There are currently no planned* trails near the school.

**“Planned” means included in the County’s Master Plan*

Piney Orchard Elementary School - Existing Regional Trails, Park Trails, and Paths



CRASH DATA

Crash Data (2017 – 2021)

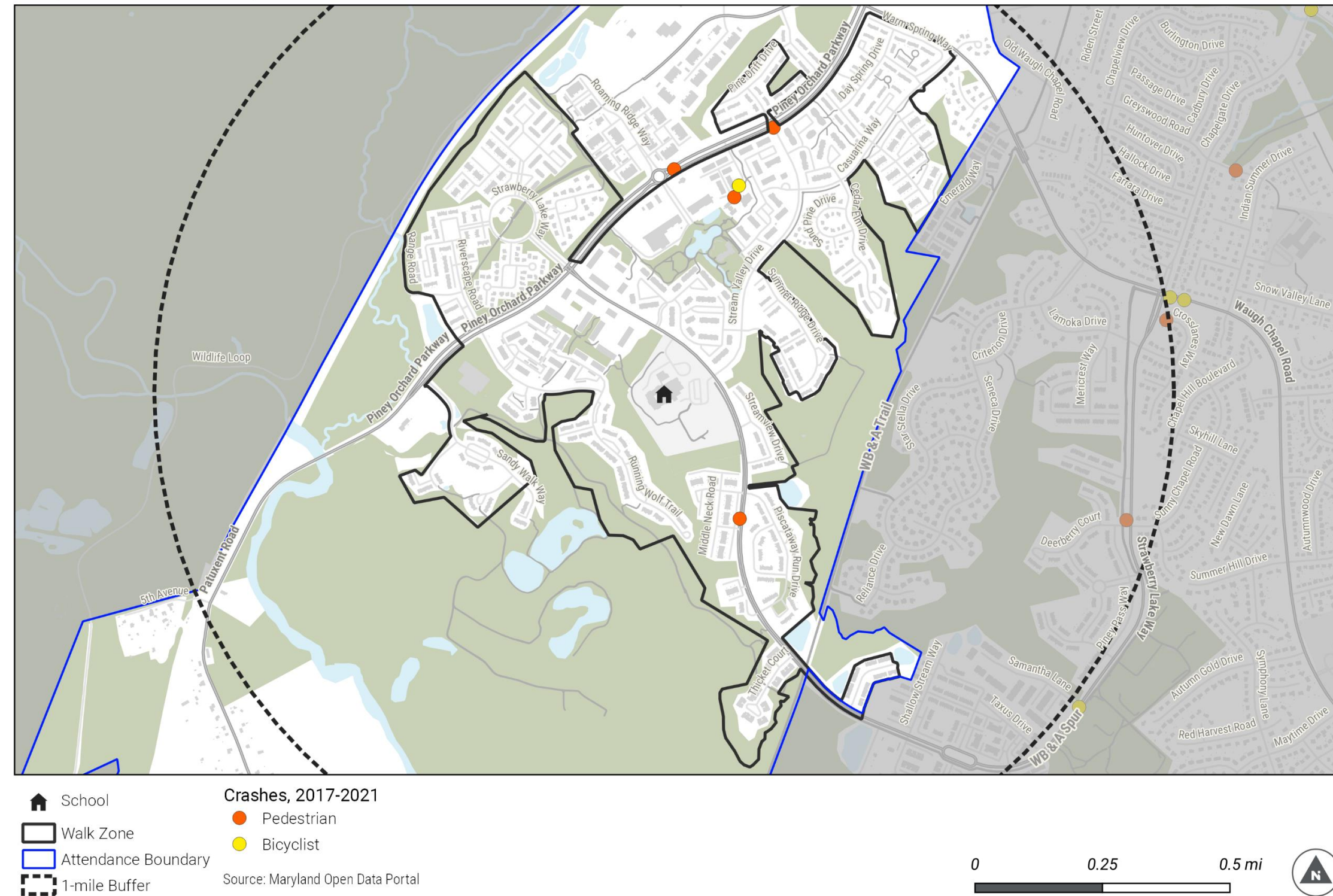
Crashes within 1-mile radius of the school:

- 172 total crashes (all modes)
- Six pedestrian-involved crashes, five resulting in injury
- Two bicyclist-involved crashes, both resulting in injury

Pedestrian and bicyclist crashes within the walk zone:

- Four pedestrian-involved crashes and one bicyclist-involved crash occurred in the walk zone.

Piney Orchard Elementary School - Pedestrian and Bicycle Crashes



INFRASTRUCTURE RECOMMENDATIONS

Infrastructure Recommendations

Safe Routes to School (SRTS) infrastructure recommendations aim to improve safety and accessibility for students to walk and bicycle to school. This may include reducing vehicle speeds, addressing conflicts between pedestrians/bicyclists and drivers, and providing fully accessible sidewalks and crossings near schools.

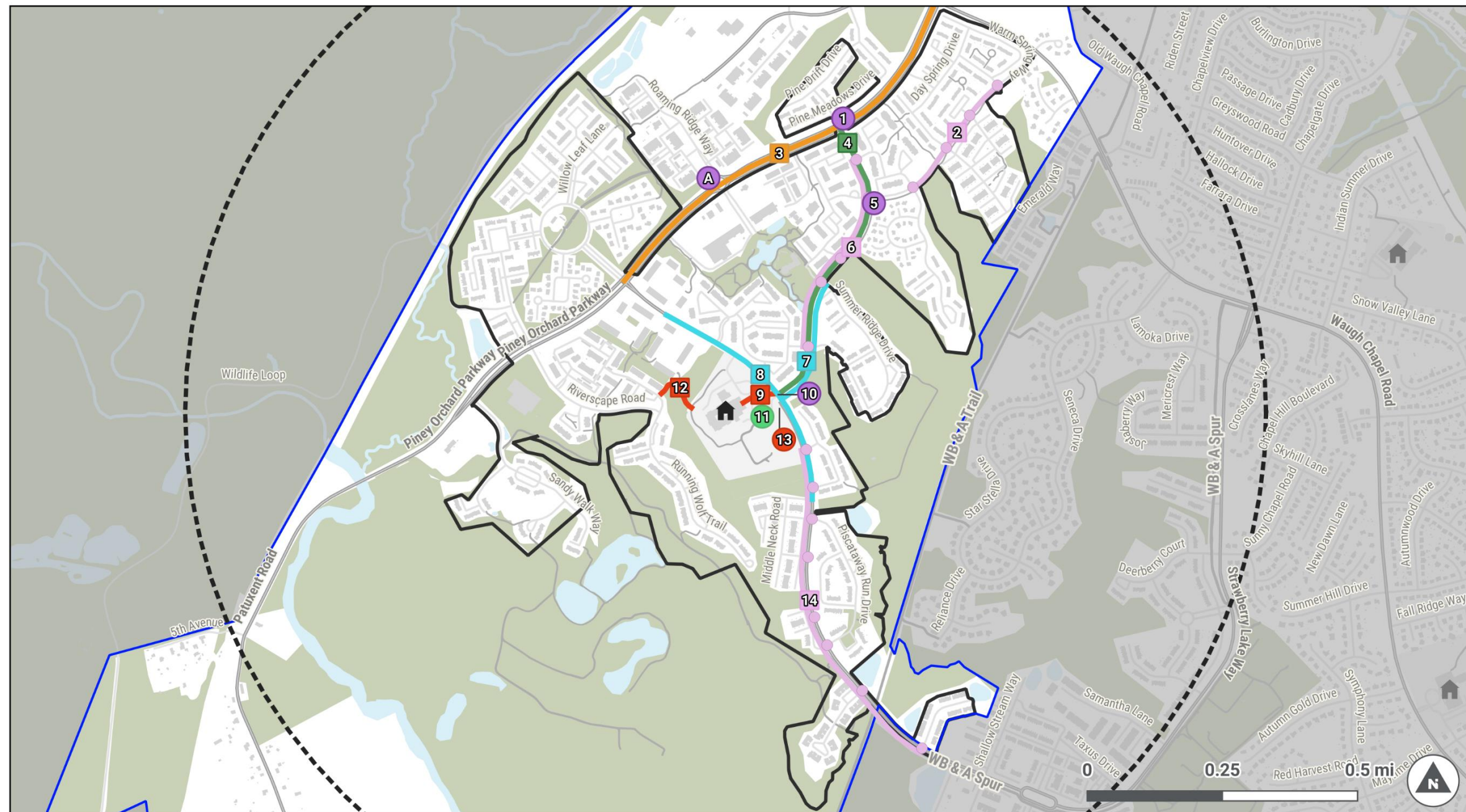
The following tables summarize infrastructure recommendations within and outside of the current school walk zone as relevant. Key student walking or bicycling routes were identified based on information received from school administration, parent surveys, and school observations. Key routes are noted in the recommendation “Location” field.

Note that other projects or planning/feasibility studies may be planned or ongoing within the study area. Anne Arundel County will confirm the approach to implementing recommendations from this SRTS Accessibility Study to ensure they align with other projects as necessary.

Potential costs do not include items calculated based on percent of construction items, such as mobilization, MOT, surveying, ROW/easements, design, CMI and administrative costs, and contingencies. These cannot be determined since the method of implementation for proposed improvements has not yet been confirmed.

Infrastructure Recommendations Map

Piney Orchard Elementary School - Recommendations



- | | | | |
|--|--|--|---|
| <ul style="list-style-type: none"> School Walk Zone Attendance Boundary 1-mile Buffer Paths and Trails | Spot Recommendations <ul style="list-style-type: none"> Access Management Bicycle Rack Intersection or Crossing School Zone Signs and Pavement Markings | <ul style="list-style-type: none"> Sidewalk Speed Management Other Recommendations | Segment Recommendations <ul style="list-style-type: none"> Bicycle Facility Corridor Intersection Upgrades School Zone Signs and Pavement Markings Speed Management Sidewalk |
|--|--|--|---|

Infrastructure Recommendations within the School Walk Zone

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Map ID	Location	Facility Type	Issue	Recommendation	Potential Cost	Timeframe*
1	Piney Orchard Pkwy & Stream Valley Dr / Orchard Knoll Way (Along key student walking route, Reported school concern, Inside school zone)	1a. Crosswalk	Existing crosswalks on north, west, and south legs are narrow	Remark existing crosswalks to 10ft wide with high-visibility markings.	\$2,400	Short
			Crossing of Piney Orchard Pkwy is long	Install median crossing islands	\$3,000	Long
			Crossing on east leg is unmarked	Install new high-visibility crosswalk (contingent upon traffic signal)	\$800	Short
			No stop bar on south leg	Mark new stop bar	\$100	Short
		1b. Curb ramp	East and west leg curb ramps missing	Install new ramps	\$8,000	Medium
			Existing curb ramps lack detectable warning surfaces	Reconstruct or repair existing ramps	\$8,000	
		1c. Other intersection or crossing issues	Neighborhood to the north of Piney Orchard Pkwy is within the school walk zone but busing has been provided due to parent concerns over unsignalized crossing. Stream Valley Dr / Orchard Knoll Way are currently stop controlled.	Consider evaluating for traffic signal or stop control	N/A	Long

*Short (1 year), medium (2-3 years) or long term (3+ years)

Infrastructure Recommendations within the School Walk Zone

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Map ID	Location	Facility Type	Issue	Recommendation	Potential Cost	Timeframe*
2	Casuarina Way (Along key student walking route)	2a. Crosswalk	Crossings at intersections are unmarked No stop bar, except at Winding Ridge Rd, Quiet Pond Ct, Warm Spring Way	Install new standard crosswalks at side street crossings of Cedar Elm Dr/Autumn Forest Ct, Spring Meadow Dr/Winding Ridge Rd, Meadow Wood Ct/Quiet Pond Ct, and Warm Spring Way, Mark new stop bars at side street crossings of Cedar Elm Dr/Autumn Forest Ct, Spring Meadow Dr, Meadow Wood Ct	\$2,800 \$400	Short
		2b. Curb ramp	Ramps lack detectable warning surface Ramp slope appears to exceed ADA Accessibility Standards at Spring Meadow	Reconstruct or repair existing ramps at same locations as crosswalks	\$56,000	Medium

Infrastructure Recommendations within the School Walk Zone

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Map ID	Location	Facility Type	Issue	Recommendation	Potential Cost	Timeframe*
3	Piney Orchard Pkwy (Strawberry Lake Way to Waugh Chapel Rd) (Along key student walking route, Reported school concern, Inside school zone)	Speed Management	Observed motor vehicle speeds appear to exceed speed limit Speeding concern reported by school	Conduct a speed study to consider speed management measures or other modifications	N/A	Long
4	Stream Valley Dr (Piney Orchard Pkwy to Strawberry Lake Way)	Bicycle facility	Missing facility	Install standard bike lane. Bike facilities on Stream Valley Dr would provide safe and efficient bicycle access for students north of Piney Orchard Parkway and along Stream Valley Drive	\$113,016	Long
5	Stream Valley Dr & Casuarina Way (Along key student walking route)	Other intersection or crossing issues	Concern about motor vehicle turning movements, Concern about motor vehicle turning speeds	Install curb extensions or curb radius reduction to improve pedestrian visibility and reduce turning radius and vehicle speeds for turns onto Casuarina Way	\$10,000	Long

**Short (1 year), medium (2-3 years) or long term (3+ years)*

Infrastructure Recommendations within the School Walk Zone

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Map ID	Location	Facility Type	Issue	Recommendation	Potential Cost	Timeframe*
6	Stream Valley Dr (Along key student walking route)	6a. Crosswalk	Crossings at intersections are unmarked No stop bars across side streets, except Summer Ridge Dr (south), where stop bar appears to be located too close to crosswalk.	Install new standard crosswalks and stop bars at side street crossings of Harvest Run Dr, Ash Grove Ln/Casaurina Way, Linden Grove Pl (north), Linden Grove Pl (south)/ Summer Ridge Dr (north), and White Pine Dr/Summer Ridge Dr (south) Reposition Summer Ridge Dr (south) stop bar a minimum 4ft from the nearest crosswalk line	\$4,000	Short
		6b. Curb ramp	Side street ramps lack detectable warning surface	Reconstruct or repair existing ramps	\$32,000	Medium
7	Stream Valley Dr (Summer Ridge Dr to Strawberry Lake Way) (Along key student walking route, Inside school zone)	School Zone Signs and Pavement Markings	SCHOOL pavement marking, school advance warning sign, school zone sign, school zone speed limit sign are all missing	Enhance existing school zone signage per MdMUTCD part 7: - Install new SCHOOL pavement marking - Install new school advance warning sign - Install new school zone sign - Install school zone speed limit sign	\$1,000 \$500 \$500 \$500	Short

*Short (1 year), medium (2-3 years) or long term (3+ years)

Infrastructure Recommendations within the School Walk Zone

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Map ID	Location	Facility Type	Issue	Recommendation	Potential Cost	Timeframe*
8	Strawberry Lake Way (from Herring Creek Ct to Iris Ridge Rd) (Along key student walking route, Inside school zone)	School Zone Signs and Pavement Markings	SCHOOL pavement marking missing, School advance warning sign missing, School zone speed limit sign missing	Enhance existing school zone signage per MdMUTCD part 7: - Install new SCHOOL pavement marking - Install new school advance warning sign - Install new school zone speed limit sign.	\$1,000 \$500 \$500	Short
9	School path from Strawberry Lake Way & Stream Valley Dr to front door (Along key student walking route, On school campus)	Sidewalk	Sidewalk is a primary access route onto campus but requires use of stairs and is not accessible. Sidewalk is too narrow for the volume of walkers.	Create an accessible route to the sidewalk. Widen sidewalk, add ramp	N/A (requires further study) \$23,869	Long

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Map ID	Location	Facility Type	Issue	Recommendation	Potential Cost	Timeframe*
10	Strawberry Lake Way & Stream Valley Dr (Along key student walking route, Inside school zone)	10a. Curb ramp	All ramps lack detectable warning surface	Reconstruct or repair existing ramps	\$16,000	Medium
		10b. Other intersection or crossing issues	High motor vehicle volumes on Strawberry Lake Way during school arrival and dismissal.	Install raised crosswalks across Strawberry Lake Way	\$20,000	Medium
			Crossing lacks appropriate crossing signage	Install school crossing signs with downward pointing arrows	\$1,000	Short
			Crosswalk is long and parked cars obstruct sight lines	Install curb extensions on Strawberry Lake way crossings to prevent parking near intersection and improve visibility of crossings.	\$20,000	Long

**Short (1 year), medium (2-3 years) or long term (3+ years)*

Infrastructure Recommendations within the School Walk Zone

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Map ID	Location	Facility Type	Issue	Recommendation	Potential Cost	Timeframe*
11	Main Entrance (On school campus)	Bicycle rack	Existing rack does not allow locking of frame	Replace existing rack with inverted U racks.	\$175/per (quantity TBD)	Short
12	Campus trail to Running Wolf Trail (Along key student walking route, On school campus)	Sidewalk	No lighting; parents and school reported concerns about lack of lighting.	Add lighting	\$5,000 each (quantity TBD)	Medium to Long
13	Southern campus path/staircase (Along key student walking route, On school campus)	Sidewalk	This access to the school campus requires use of stairs and is not accessible. Sidewalk too narrow.	Reconstruct or repair to provide an accessible route to the sidewalk on campus. Widen sidewalk.	N/A (requires further study)	Long

**Short (1 year), medium (2-3 years) or long term (3+ years)*

Infrastructure Recommendations within the School Walk Zone

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Map ID	Location	Facility Type	Issue	Recommendation	Potential Cost	Timeframe*
14	Strawberry Lake Way (Along key student walking and bicycling route)	14a. Crosswalk	Crossings at intersections are unmarked	Install new standard crosswalks at side street crossings of Black Gum Way, Streamview Dr, Estuary Dr Piscataway Run Dr (north), Hibiscus Dr, Oyster Ct, Emory Ct /Piscataway Run Dr (south), Thicket Ct, & Settlers View Dr, Apple Blossom Ln	\$4,400	Short
			No stop bar across side streets, except Estuary Dr and Piscataway Run (North), which have stop bars that are faded and too close to crossing.	Mark new stop bars at side street crossings of Black Gum Way, Streamview Dr, Hibiscus Dr, Oyster Ct, Emory Ct /Piscataway Run Dr (south), Thicket Ct, & Settlers View Dr, Apple Blossom Ln	\$900	Short
				Reposition existing stop bars at Estuary Dr and Piscataway Run (North) minimum of 4 ft from crosswalk.	\$200	Short
		14b. Curb ramp	Curb ramps lack detectable warning surfaces	Reconstruct or repair existing ramps at all side street crossings	\$44,000	Medium

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Infrastructure Recommendations outside the School Walk Zone

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Map ID	Location	Facility Type	Issue	Recommendation	Potential Cost	Timeframe*
A	Piney Orchard Pkwy & Roaming Ridge Way	Curb ramp	Ramps lack detectable warning surface	Reconstruct or repair existing ramps across Roaming Ridge Way.	\$8,000	Medium

**Short (1 year), medium (2-3 years) or long term (3+ years)*

Potential Sources of Funding for Safe Routes to School Projects

Funding for SRTS infrastructure improvements may come from a variety of sources, including the County's Capital Improvement Program, Operations and Maintenance Funds, and Multimodal Improvement Fund. Funding is also available via grants from the State of Maryland or the federal government, or efforts by local jurisdictions and private developers through the required Bicycle, Pedestrian, and Transit Assessment. Details on potential sources of funding for pedestrian and bicycle projects are described in Walk & Roll Anne Arundel! (page 73).

PROGRAMMATIC RECOMMENDATIONS

Safe Routes to School (SRTS) Program Recommendations

Safe Routes to School program recommendations may include Education, Encouragement, Enforcement and Evaluation strategies to improve safety awareness and knowledge, reinforce safe behaviors, encourage travel mode changes, and establish a culture of walking and bicycling to school.



SRTS Education

SRTS education can foster life-long skills for safe walking and bicycling. Education messages directed at the broader school community can help create safety role models and encourage safe driving.

Recommendations

Provide pedestrian and bicycle safety education to students. Students should receive age-appropriate pedestrian and bicycle education that is regularly reinforced (e.g., annually) and provides opportunities for skills practice. School-based education works best when integrated into the PE or Health curriculum.

Conduct a bicycle rodeo. Bike rodeos teach children skills related to walking and bicycling safely, which can increase their and their parent's confidence for biking or walking to school.

Conduct parent and staff safety education campaign. Information packets should be prepared and distributed to parents and school staff at the beginning of the school year containing school arrival and dismissal maps, a written description of the rules and procedures for arrival and dismissal, and general safety information. Procedures should emphasize driving safely, being alert for pedestrians and bicyclists, and respecting the school crossing guard/s. Materials could note safety conflicts created by vehicular drop off along Strawberry Lake Way and Stream Valley Drive.

Provide walking and bicycling maps. Walking and bicycling route maps can show the location of pedestrian and bicycle infrastructure and estimated walk/bike times.

SRTS Encouragement

SRTS encouragement programs can establish a culture supportive of active transportation and foster life-long habits for active transportation.

Recommendations



Participate in International Walk to School Day and Bike to School Day. Walk and Bike to School Days encourage families to try out walking in a supportive environment. Consider incorporating competitions between schools in the same area or district-wide. Once established, they can lead to monthly walking/bicycling events to maintain momentum and enthusiasm.

Encourage and support walking school buses and bike trains. Walking school buses and bike trains are groups of children who walk or bicycle to school together with adult supervision. Organize parent or community volunteers to "pick up" students on their walk or bike ride to and from school.

Establish a frequent walker / bicyclist program. Frequent walker and biker programs provide small rewards or incentives to students who regularly walk and bicycle to school. Frequent walker and biker programs require a system for tracking student trips. For example, students can be assigned a punch card that volunteers or teachers can punch each time a trip is completed.

Give away bicycle helmets and bike locks. Schools might partner with another community organization to acquire and fit the helmets for students who do not have them. Helmet and bike lock giveaways should be coordinated with bicycle safety education or skills practice and should include instruction on helmet safety.

Reward and encourage active transportation by releasing walkers and bicyclists first. Staggering student dismissal times by travel mode reduces conflicts between the modes. Dismissing walkers and bicyclists first may be seen as a reward and encourage walking and bicycling to school.

SRTS Enforcement

SRTS enforcement efforts aim to increase the safety of children walking and bicycling to school by helping to change unsafe behaviors of all roadway users (drivers, pedestrians, bicyclists). While SRTS enforcement strategies may include law enforcement, it is important to discuss enforcement strategies with the school community and be sensitive to any concerns regarding their role.

Recommendations

Establish school drop off and pick up monitors to reinforce school procedures on and around the school campus.

Continue student safety patrols to provide on-going reinforcement of safe pedestrian and bicyclist behavior. Resources are available through [AAA School Safety Patrol](#).

SRTS Evaluation

SRTS evaluation efforts aim to identify issues and opportunities and monitor the impact of comprehensive SRTS activities over time, such as infrastructure improvements and encouragement activities.

Recommendations

Conduct annual Student Travel Tallies to monitor student travel patterns.

Administer biennial Parent Surveys to monitor parent attitudes towards walking and bicycling and reasons why they may or may not allow their children to walk or bike to school.

Conduct biennial infrastructure assessments and observation of school arrival and dismissal to track improvements, monitor the condition of key school crossings and signage, and identify needed education or enforcement measures. Assess more frequently if any changes to travel patterns (such as new school or road construction).

APPENDIX: INFRASTRUCTURE RECOMMENDATION PHOTOS

INFRASTRUCTURE RECOMMENDATIONS within the School Walk Zone



Piney Orchard Pkwy & Stream Valley Drive / Orchard Knoll Way, west leg.

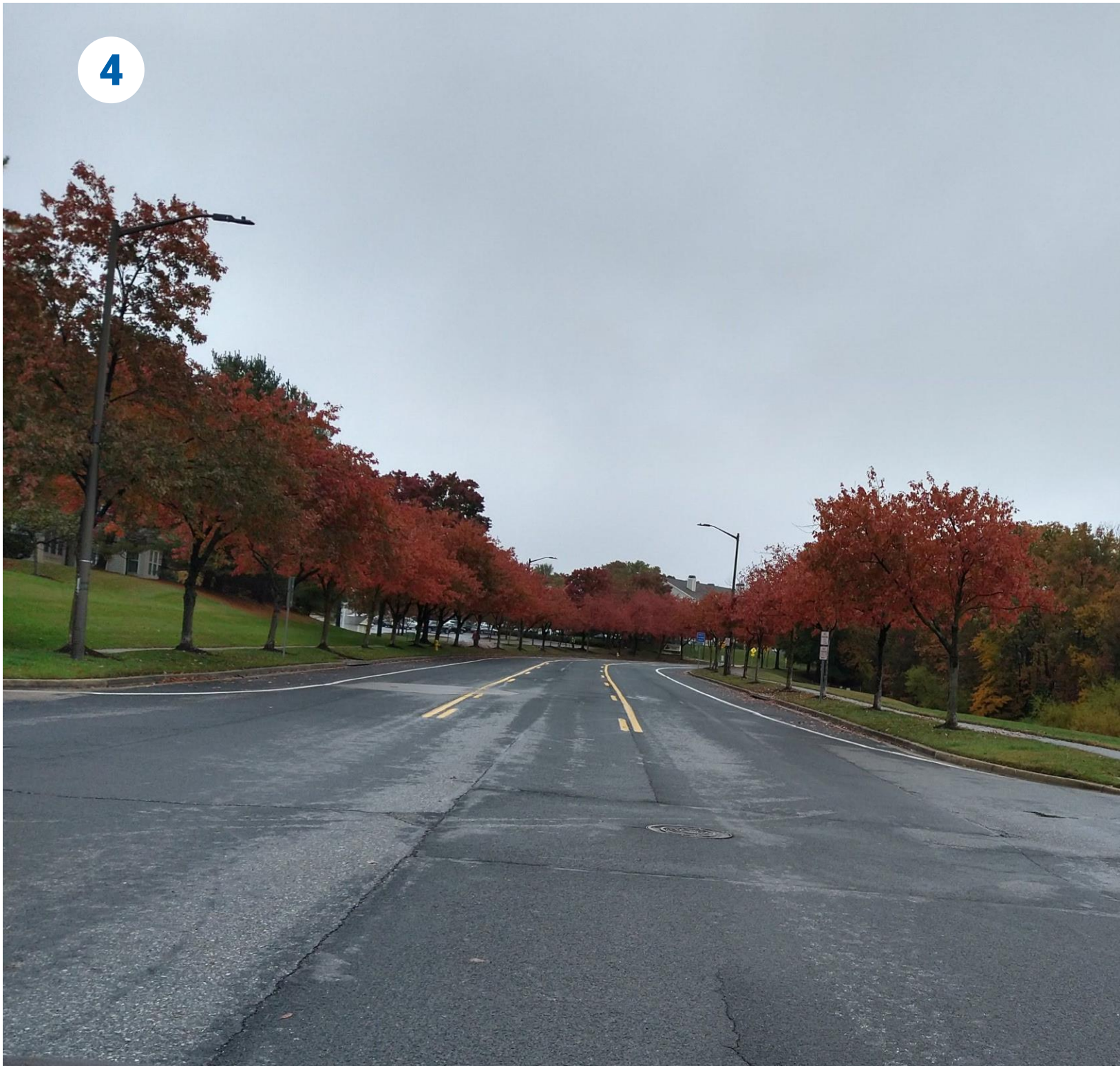


The intersections of Casuarina Way with Spring Meadow Drive (left) and Meadow Wood Drive (right) – part of recommendation corridor

INFRASTRUCTURE RECOMMENDATIONS within the School Walk Zone



Piney Orchard Parkway approaching the intersection with Stream Valley Drive and Orchard Knoll Way from Waugh Chapel Road



Stream Valley Drive

INFRASTRUCTURE RECOMMENDATIONS within the School Walk Zone



Stream Valley Dr & Casuarina Way.

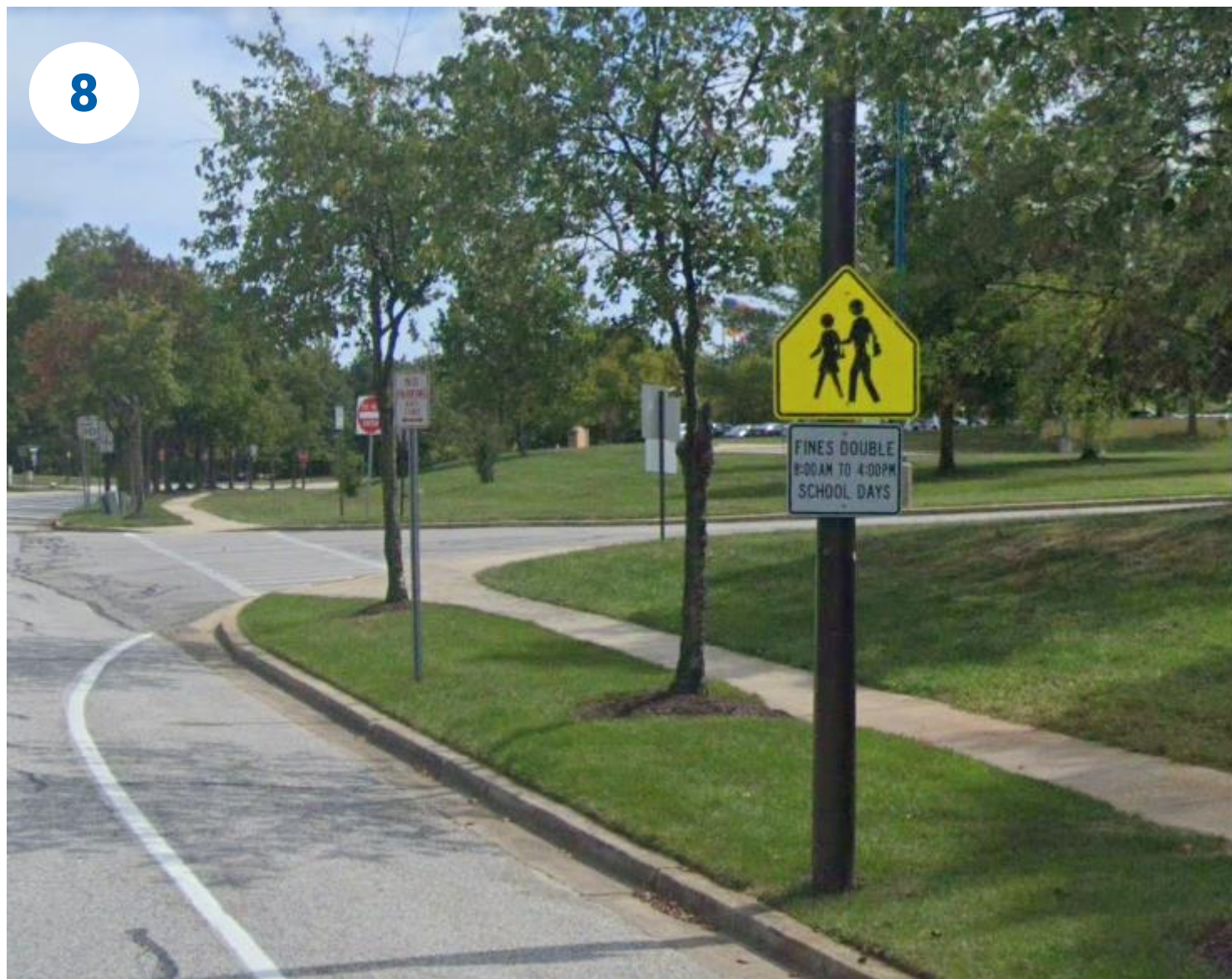
INFRASTRUCTURE RECOMMENDATIONS within the School Walk Zone



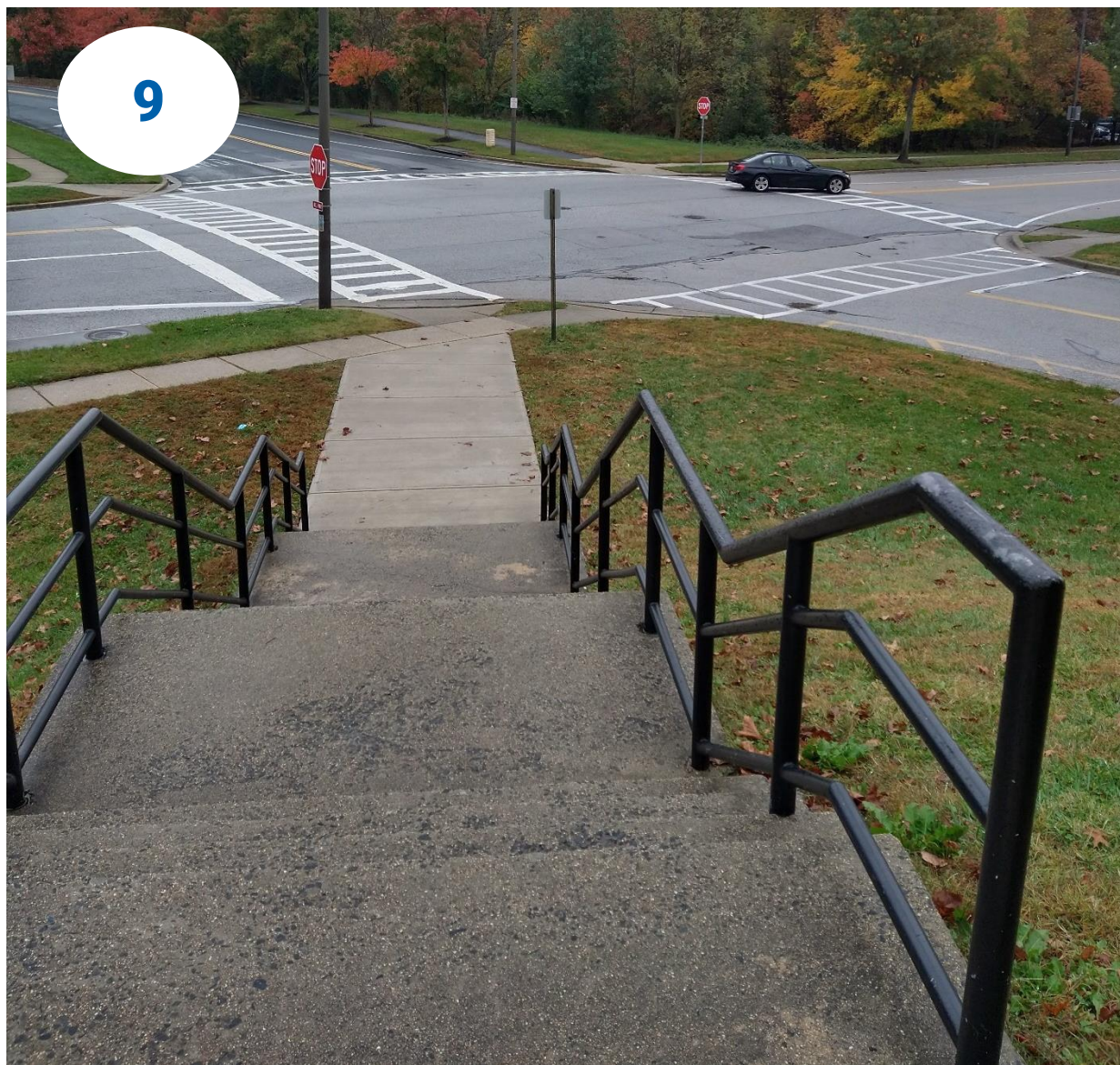
Stream Valley Drive south of Linden Grove Place

Stream Valley Drive & Summer Ridge Drive (above); Stream Valley Drive & Harvest Run Drive (below) – part of recommendation corridor

INFRASTRUCTURE RECOMMENDATIONS within the School Walk Zone



School zone signage on Strawberry Lake Way near bus driveway



School path to front door from Strawberry Lake Way & Stream Valley Drive

INFRASTRUCTURE RECOMMENDATIONS within the School Walk Zone



Strawberry Lake Way & Stream Valley Drive



Main Entrance bike racks

INFRASTRUCTURE RECOMMENDATIONS within the School Walk Zone



Trail at back of school property headed towards Running Wolf Trail.



Staircase at southern end of campus.

INFRASTRUCTURE RECOMMENDATIONS within the School Walk Zone



The intersections of Strawberry Lake Way with Estuary Drive (left) and Oyster Courtt (right) – part of recommendations corridor

INFRASTRUCTURE RECOMMENDATIONS – outside the School Walk Zone



Crossing Roaming Ridge Way; the roundabout at Piney Orchard Parkway is in the background.