Safe Routes to School

Existing Conditions Analysis

Orange County, North Carolina

Prepared by WSP

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1. Introduction

Background

The Orange County Safe Routes to School Existing Conditions Analysis outline the existing traffic conditions, pedestrian infrastructure, strengths, and deficiencies of 13 public schools in Orange County. The Existing Conditions Analysis is the first step towards identifying action steps to address the deficiencies at each school that are preventing active transportation. This report addresses 13 schools in Orange County:

- AL Stanback Middle,
- New Hope Elementary,
- Cedar Ridge High,
- Grady A Brown Elementary,
- Central Elementary,
- Hillsborough Elementary,
- Orange Middle,
- Orange High,
- Gravelly Hill Middle,
- Efland Cheeks Global Elementary,
- River Park Elementary,
- Partnership Academy, and
- Pathways Elementary.

The analysis of the existing conditions acts as a resource to further engage schools and identify how travel to and from schools can be made safer, and how to provide safe opportunities for the students to walk or bike to school. There are a multitude of reasons for the lack of active travel to school. A few of these reasons include valid concerns about traffic safety surrounding the schools, the absence of sufficient non-motorized transportation, land use policies, and school consolidation. As a result, more parents are driving their children to school, morning traffic congestion is worsening, and children are getting less exercise. Residents in Orange County can change this cycle, just as those in other communities across the country have done.

The North Carolina Department of Transportation's Integrated Mobility Division (IMD) has a long history of promoting active travel to and around schools. The IMD continues to work with numerous communities across the state to develop pedestrian and bicycle plans. This is the first step in improving non-motorized transportation infrastructure within a municipality. IMD provides a number of other services, including safety education, bicycle use training, crossing guard training, and helmet promotions throughout the state. NCDOT first identified safe routes to school as a safety priority in 2000. The North Carolina Safe Routes to School (SRTS) Program was established in 2005 to coordinate with the federal program. The program works with schools, local governments and agencies, advocacy and non-profit organizations, and public health professionals at a grassroots level to identify improvements that can help make bicycling and walking to and from school a safe and healthy transportation alternative.

2. Existing Conditions

Introduction

Defining the existing conditions of the study area is an important first step towards creating an SRTS Action Plan. It documents the physical conditions of the study area, participant observations and the pedestrian and vehicle norms within each individual school that eventually decide the issues the Action Plan must mitigate. The existing conditions were documented through on-site visits, publicly available Geographic Information Systems (GIS) data, and information provided by each school. Infrastructure barriers and deficiencies were identified using the policies and patterns of the area around each school community. Using this information, a school overview was created to define the existing infrastructures strengths and deficiencies.

A comprehensive approach was used to analyze existing conditions including the collection of data from site work, field interviews, and area mapping. A thorough inventory of the existing conditions at each school is compiled to provide a baseline to measure the outcomes of the SRTS Program. Field assessments and Geographic Information Systems (GIS) data were used to develop the baseline profiles of the existing conditions.

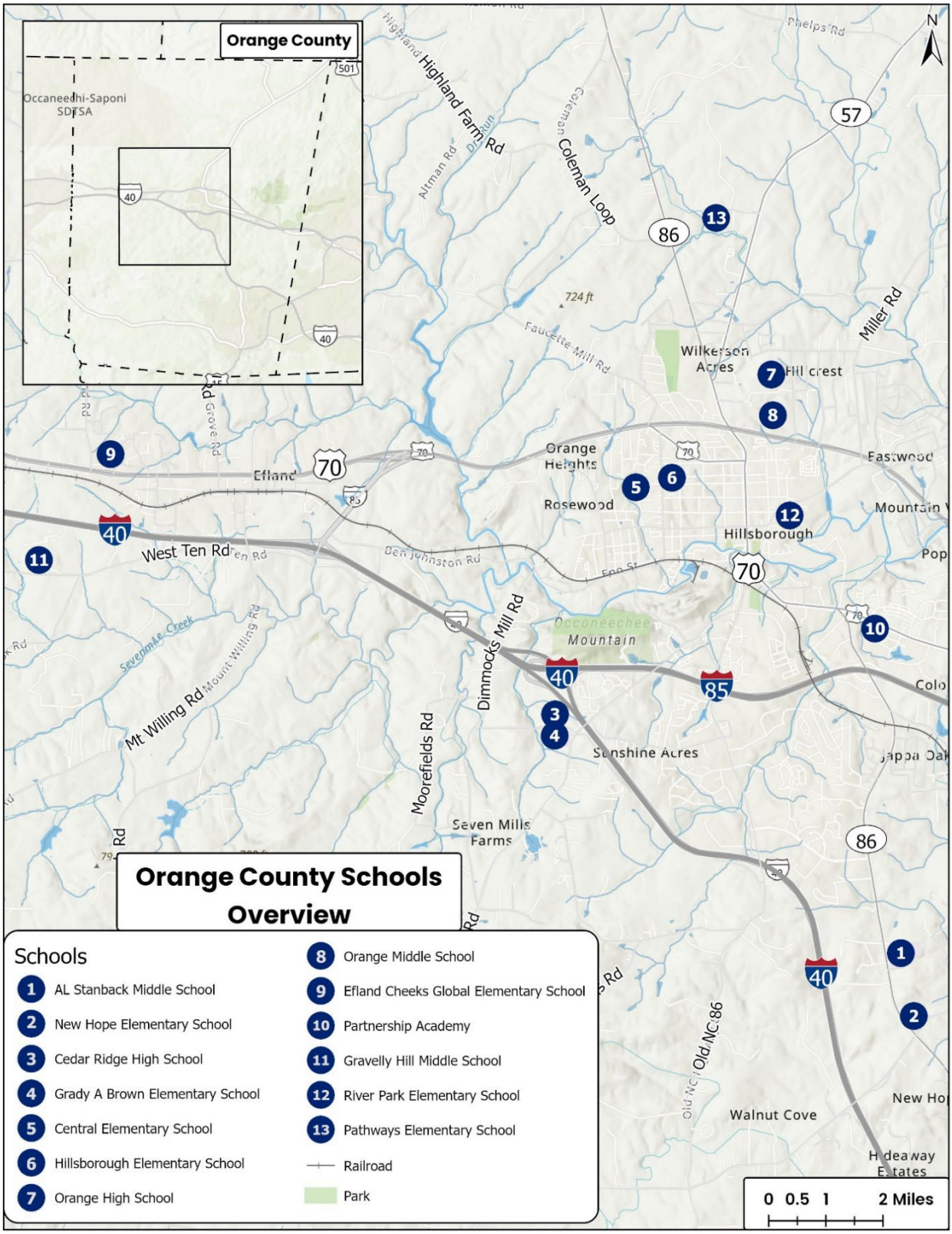
Field assessments were used to assess the existing infrastructure, travel patterns, and user behavior. This included a thorough on-site assessment of existing infrastructure within the school zone, and an evaluation of both traffic and behavioral patterns exhibited by roadway users during drop off and pick up. Staff logged the important features of both the physical and behavioral components of the transportation environment within the school zone and spoke with police officers, teachers, and administrators. The field assessments broadly analyze school traffic patterns, characteristics of the transportation network users, and the existing infrastructure strengths and weaknesses within the school zone.

GIS data was used to find relevant points-of-interest, crash histories, existing bike and pedestrian facilities, and walk and bike zones. GIS data was also used to analyze bicycle and pedestrian facilities and gaps.

Overview

The 13 schools being examined for this study are part of the Orange County school system and all reside inside or near the Town of Hillsborough. The Town has made improving the active transportation around schools a high priority. Cooperation between schools, citizens, and local officials is necessary for improvements surrounding the schools. Figure 2.1 shows an overview map of the 13 schools.

Figure 2.1: Schools Overview



1 - AL Stanback Middle School

Al Stanback Middle School serves grades 6 to 8 and has a total enrollment of 644 students. It is located in south Hillsborough on Benton Drive and Storey Lane just off of NC 86. Traffic volumes along Benton Drive and Storey Lane are low, while traffic volumes along NC 86 range from 5,600 to 11,000 vehicles per day in the vicinity of the school. There are no pedestrian or bicycle facilities on the roadways in the vicinity of the school. No students walk or bike to school.

Table 1.1: AL Stanback Middle School Characteristics

Grades Serviced	6th-8th
Total Enrollment	644
Number of Buses	14
Number of Students Riding the Bus	424 in the AM; 457 in the PM
Number of Students Walking	0
Number of Students Cycling	0
Number of Students Driven	185
Special Needs Population	114 (18%)
Land Uses Surrounding School	Rural, Low density residential
Presence of Bike Racks	No
No Walk Zones	Entire school zone
Crossing Guards	Sherriff directing traffic in AM
Policies that Restrict Walking or Bicycling	Yes—students are not allowed to walk or bike to school
Bicycle/Pedestrian Safety Taught to Students	No
Existing Parking Capacity	Front lot: 74 spaces; Back lot: 20 spaces
Presence of Car Waiting Zones	Yes
Number of Staff Managing Drop off/Pick up	3 staff in the AM and PM

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for AL Stanback Middle School. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.2.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are no AL Stanback students walking or bicycling to school. On-site observations noted no elementary school pedestrians or cyclists walking in the vicinity of the school. Field staff noted the following travel norms for AL Stanback:

- Motorist behavior was observed as good. Drivers are generally respectful of other cars and follow the rules.
- The car rider drop off and pick up occurs at the entrance along Benton Drive. The car line queues along Benton Drive, but it was not observed backing up to NC 86.
- Staff indicated that the carpool line backs onto NC 86 sometimes, especially in the beginning of the school year before after-school sports start.

- Exiting traffic was a little backed up on Benton Drive, but not substantial.
- The left-turn lane on NC 86 can back up at times.
- The morning drop-off line queues along the westernmost driveway and down Benton Road. The afternoon pick-up car line queues around the easternmost driveway near the sports fields to prevent significant backups.
- Traffic was slightly backed up on Benton Drive in the afternoon by a few vehicles, but not significant.
- Crossing guards were not present. However, staff indicated a sheriff sometimes directs traffic at the intersection of Benton Drive and NC 86.
- The shoulder on NC 86 is narrow and the terrain is difficult for walking.

Existing Infrastructure - Strengths

Few strengths were noted due to the lack of pedestrian and bicycle facilities. The following observations were noted as existing system strengths:

- There are on-campus sidewalks along the building front, adjacent to the carpool drop-off line.
- Due to its location in a very sparse residential neighborhood, there is no through traffic along Benton Drive and the car queues do not cause significant traffic issues or concerns.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- There is no clear pedestrian crossing signage on any of the roads surrounding the school.
- There are multiple two-lane, rural roadways that pose safety barriers for school-age cyclists and pedestrians.
- Traffic is significant, especially during school start and end times, along the primary route to school, NC 86.
- There are no pedestrian or bicycle facilities found on adjacent roadways. Table 2.1 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.2: Key Infrastructure Gaps at AL Stanback Middle

Road	Orientation	Gap
NC 86	Both directions	No sidewalk or bike lanes
Storey Lane	Both directions	No sidewalk or bike lanes
Benton Drive	Both directions	No sidewalk or bike lanes

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

Benton Drive and NC 86: Benton Drive ends at NC 86 as an unsignalized intersection. Due to high speeds coupled with high traffic volumes along NC 86, this intersection is very difficult for pedestrians to cross. There are no sidewalks or pedestrian crossings at this location.

Photos

NC 86 right-turn lane onto Benton Drive

Looking west along Benton Road to NC 86

NC 86 left-turn lane onto Benton Drive

Afternoon pick-up line along the school driveway

2 - New Hope Elementary

New Hope Elementary School serves grades Pre-Kindergarten to 5 and has a total enrollment of 559 students. It is located in south Hillsborough along New Hope Church Road just off of NC 86. Traffic volumes along New Hope Church Road range from 1,800 vehicles per day east of NC 86 to 5,100 vehicles per day west of NC 86. Traffic volumes along NC 86 range from 5,600 vehicles per day south of New Hope Church Road to 8,500 vehicles per day north of New Hope Church Road. The school is currently overcapacity based on projected land use in the area and future residential development projections. There are no pedestrian or bicycle facilities on the roadways in the vicinity of the school. No students walk or bike to school.

Table 1.3: New Hope Elementary School Characteristics

Grades Serviced	Pre K-5th
Total Enrollment	559
Number of Buses	7
Number of Students Riding the Bus	316 in the AM; 391 in the PM
Number of Students Walking	0
Number of Students Cycling	0
Number of Students Driven	243 in the AM; 168 in the PM
Special Needs Population	16 (3%)
Land Uses Surrounding School	Rural, Low density residential
Presence of Bike Racks	No
No Walk Zones	None
Crossing Guards	No
Policies that Restrict Walking or Bicycling	No
Bicycle/Pedestrian Safety Taught to Students	No
Existing Parking Capacity	Front lot: 60 spaces; Back lot: 77 spaces
Presence of Car Waiting Zones	No
Number of Staff Managing Drop off/Pick up	16 staff in the AM; 15 staff in the PM

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for New Hope Elementary School. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.2.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are no New Hope students walking or bicycling to school. On-site observations noted no elementary school pedestrians or cyclists walking in the vicinity of the school. Field staff noted the following travel norms for New Hope:

- Motorist behavior was observed as poor. Many drivers try to cut in line and make illegal U-turns in the road. Through traffic passes in the center turn lane at full speed.
- There are three driveways into the school. Car rider drop off and pick up occurs at the westernmost driveway. Cars queue around the easternmost and westernmost driveways. The middle driveway is for buses only.

- Cars are not supposed to turn left into the school. They are supposed to get in the car queue to turn right. This necessitates that cars coming from the west make a U-turn to enter the car queue.
- Several vehicles arriving from the southwest were observed making a U-turn on New Hope Church Road to get in the car queue. Field staff observed several near misses with a car driving straight and a car making a U-turn.
- The majority of motorists turn right out of the school towards NC 86.
- The morning carpool queue wraps all the way around the third/easternmost driveway and onto New Hope Church Road past the last school driveway. Traffic backs up onto New Hope Church Road by 7:17AM and backs up past the third driveway entrance by 7:25AM. Traffic does not clear until after 7:40AM.
- Through traffic was observed passing in the two-way left-turn lane.
- Buses were observed crossing through the morning carpool line and passing in the two-way left-turn lane.
- All traffic in the two-way left-turn lane causes a conflict for exiting traffic.
- The signal at the intersection of New Hope Church Road / NC 86 queues all the way to the carpool exit line and does not include a protected left phase/ exclusive turn lane.

Existing Infrastructure - Strengths

Few strengths were noted due to the lack of pedestrian and bicycle facilities. The following observations were noted as existing system strengths:

- Clear school zone pavement marking is found along New Hope Church Road.
- There are on-campus sidewalks along the building front, adjacent to the carpool drop-off line.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- There are multiple two-lane, rural roadways that pose safety barriers for school-age cyclists and pedestrians.
- Traffic is significant, especially during school start and end times, along the primary routes to school, NC 86 and New Hope Church Road.
- Overall, the carpool queue is not efficient or suitable for the morning drop off. Very few cars can drop off at one time and cars wait in the queue for an excessive amount of time. Additionally, many students were tardy in the morning due to the excessive amount of time to get through the car line.
- There are no pedestrian or bicycle facilities found on adjacent roadways. Table 2.2 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.4: Key Infrastructure Gaps at New Hope Elementary

Road	Orientation	Gap
Highway 86	Both directions	No sidewalk or bike lanes
New Hope Church Road	Both directions	No sidewalk or bike lanes

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

New Hope Church Road and NC 86: New Hope Church Road and NC 86 intersect at a signalized intersection. Due to high speeds coupled with high traffic volumes along NC 86, this intersection is very difficult for pedestrians to cross. There are no sidewalks or pedestrian crossings at this location.

New Hope Church Road and I-40 Off/On Ramps: New Hope Church Road crosses I-40 at a grade separated interchange. There are two stop controlled off ramps and two on ramps to I-40 on New Hope Road. These intersections are very difficult for pedestrians to cross. There are no sidewalks or pedestrian crossings at this location.

Photos

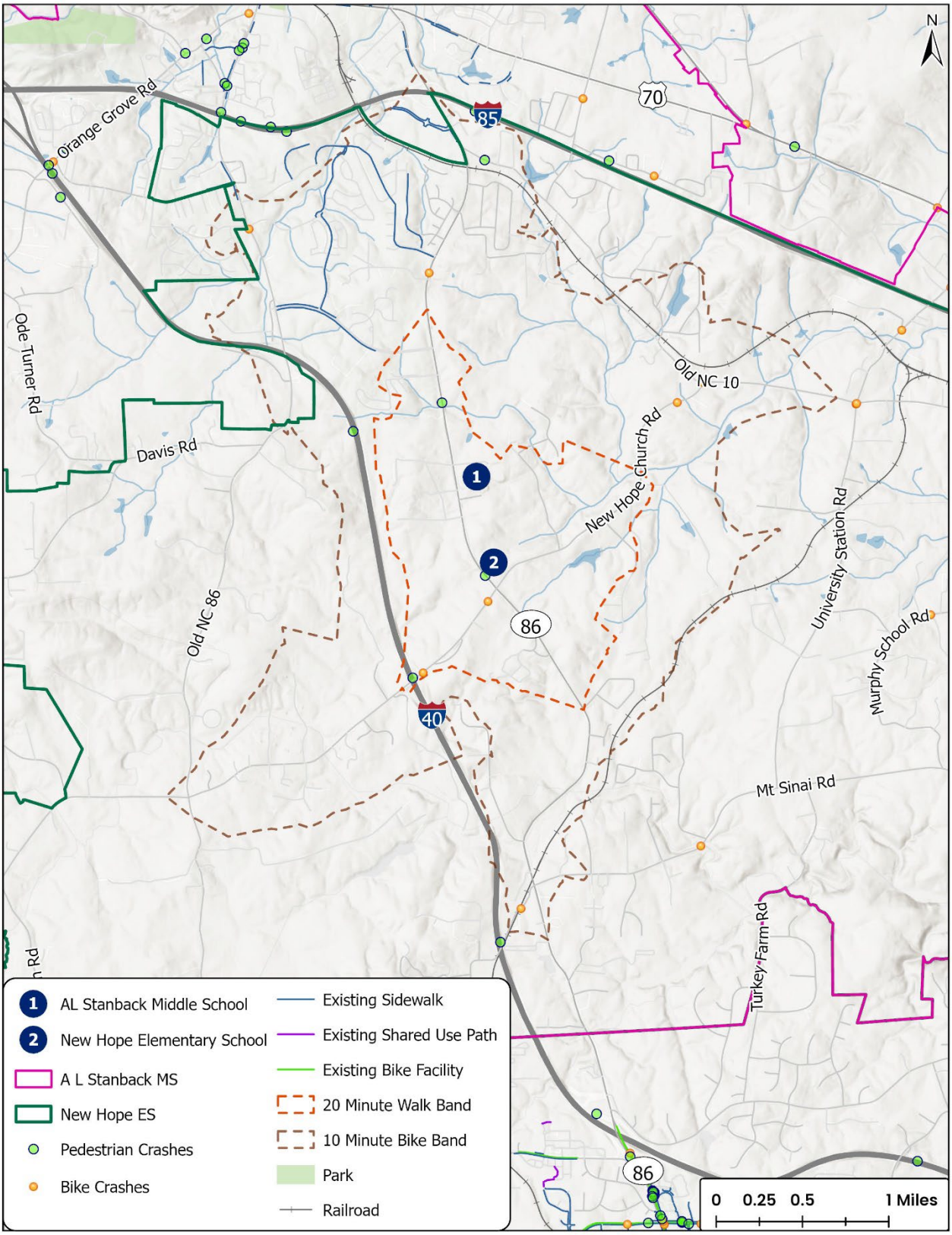
Bus crossing through the line of cars

School traffic turning left in center turn lane, while 2 cars also try to pass in the center turn lane

Looking southwest down New Hope Church Road towards the intersection with NC 86

Afternoon pick-up line along New Hope Church Road

Figure 2.2: AL Stanback Middle and New Hope Elementary Overview



3 - Cedar Ridge High School

Cedar Ridge High serves grades 9 to 12 and is located in southwest Hillsborough along New Grady Brown School Road just off of Orange Grove Road. The school has a total enrollment of 1,103 students. The traffic volume along New Grady Brown School Road is 3,200 vehicles per day, while Orange Grove Road has an average daily traffic volume of 4,600 vehicles per day. There are no pedestrian or bicycle facilities on the roadways in the vicinity of the school. Approximately 20-30 students walk to school.

Table 1.5: Cedar Ridge High School Characteristics

Grades Serviced	9th-12th
Total Enrollment	1103
Number of Buses	17
Number of Students Riding the Bus	503 in the AM; 615 in the PM
Number of Students Walking	20-30
Number of Students Cycling	0
Number of Students Driven	500
Special Needs Population	Unknown
Land Uses Surrounding School	Rural, Low density residential, Agricultural
Presence of Bike Racks	Yes
No Walk Zones	None
Crossing Guards	Sheriff directing traffic in the AM and PM
Policies that Restrict Walking or Bicycling	Unknown
Bicycle/Pedestrian Safety Taught to Students	Unknown
Existing Parking Capacity	600 spaces
Presence of Car Waiting Zones	Yes
Number of Staff Managing Drop off/Pick up	4-5

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for Cedar Ridge High School. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.3.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are approximately 20-30 students walking to school. On-site observations noted a number of elementary school pedestrians that walked from Orange Grove Road east of the school and from Grady Brown Elementary School across the street. A small number of pedestrians walked from Orange Grove Road west of the school. Additional information describing the travel norms for Cedar Ridge High School is listed below:

- Motorist behavior was observed as poor. Many drivers park on the side of the road to avoid the afternoon car queue and make illegal U-turns in the road.
- Staff noted that approximately 20 walkers come down Orange Grove Road and then east along New Grady Brown School Road. Walkers mainly come from the apartment complex and mobile home park nearby.

- There were only minor backups of automobile traffic during drop-off times. Traffic does back up during the morning in the right turn lane into the school.
- In the afternoon, approximately 15-25 vehicles parked along New Grady Brown School Road to avoid the pick-up queue. Most of these vehicles were then observed making U-turns in the road to leave the school.
- In the afternoon, traffic was heavily backed up at the New Grady Brown School Road and Orange Grove Road intersection.
- There are currently no sidewalks or crosswalks for walkers crossing the Orange Grove Road bridge over I-40, which has very narrow shoulders. Staff noted that a student has been hit walking in the area. Parents parking on the side of New Grady Brown School Road further limited a safe place for walkers.
- In the afternoon, several students were observed crossing Orange Grove Road bridge over I-40. Several students were observed crossing New Grady Brown School Road to go to New Grady Brown Elementary School. One student was observed crossing the New Grady Brown School Road and Orange Grove Road intersection to access a residence east of the intersection.
- The sheriff directing traffic expressed concerns over the level of traffic and said that it's a problem.

Existing Infrastructure - Strengths

Few strengths were noted due to the lack of pedestrian and bicycle facilities. The following observations were noted as existing system strengths:

- Clear school zone signage is found along New Grady Brown School Road and Orange Grove Road.
- There are on-campus sidewalks along the building front, adjacent to the carpool drop-off line.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- There are multiple two-lane, rural roadways that pose safety barriers for school-age cyclists and pedestrians.
- Through traffic is significant, especially during school start and end times, along the primary routes to school, New Grady Brown School Road and Orange Grove Road.
- Traffic speeds are an issue along all adjacent and nearby roadways. The speed limit along Orange Grove Road and New Grady Brown School Road is 40 mph and 30 mph within the school zone.
- There are no pedestrian or bicycle facilities found on adjacent roadways. Table 2.3 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.6: Key Infrastructure Gaps at Cedar Ridge High

Road	Orientation	Gap
New Grady Brown School Road	Both directions	No sidewalk or bike lanes
Orange Grove Road	Both directions	No sidewalk or bike lanes
Oakdale Drive	Both directions	No sidewalk or bike lanes
Timbers Drive	Both directions	No sidewalk or bike lanes
Arbors Lane	Both directions	No sidewalk or bike lanes

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

New Grady Brown School Road and Orange Grove Road: New Grady Brown School Road and Orange Grove meet at a signalized intersection. Due to high traffic volumes and the high volume of turning traffic, this intersection is very difficult for pedestrians to cross. There are no sidewalks or pedestrian crossings at this location.

Orange Grove Road and I-40: Orange Grove Road bridges over I-40 at a grade separation. The shoulder along the bridge is very narrow, making this a very unsafe location for pedestrians. There are no sidewalks or pedestrian crossings at this location.

Orange Grove Road and Oakdale Drive: Oakdale Drive ends at Orange Grove Road at a stop sign-controlled intersection. Due to high traffic volumes, this intersection is difficult for pedestrians to cross. There are no sidewalks or pedestrian crossings at this location.

Photos

Cars parked on the side of the road during afternoon pick up. One car makes a U-turn in the road.

Traffic from the afternoon pick up is heavily backed up at the New Grady Brown School Road and Orange Grove Road intersection

Student crossing the intersection at New Grady Brown School Road and Orange Grove Road

A sheriff is directing traffic in the morning at the school entrance and exit.

4 - Grady A Brown Elementary School

Grady Brown Elementary serves grades Kindergarten to 5 and is located in southwest Hillsborough along New Grady Brown School Road just off of Orange Grove Road. Surrounding land use is mostly rural, low density residential with some agricultural. The traffic volume along New Grady Brown School Road is 3,200 vehicles per day, while Orange Grove Road has an average daily traffic volume of 4,600 vehicles per day. There are no pedestrian or bicycle facilities on the roadways in the vicinity of the school. No students walk or bike to school, but some Cedar Ridge High students do cross the street to travel to and from the elementary school.

Table 1.7: Grady Brown Elementary School Characteristics

Grades Serviced	K-5th
Total Enrollment	415
Number of Buses	8
Number of Students Riding the Bus	189 in the AM; 251 in the PM
Number of Students Walking	0
Number of Students Cycling	0
Number of Students Driven	200
Special Needs Population	80 (19%)
Land Uses Surrounding School	Rural, Low density residential, Agricultural
Presence of Bike Racks	No
No Walk Zones	None
Crossing Guards	Sheriff directing traffic occasionally
Policies that Restrict Walking or Bicycling	No
Bicycle/Pedestrian Safety Taught to Students	No
Existing Parking Capacity	90 spaces
Presence of Car Waiting Zones	No
Number of Staff Managing Drop off/Pick up	20

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for Grady A Brown Elementary School. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.3.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are no students walking or bicycling to this school. On-site observations noted no elementary school pedestrians or cyclists walking in the vicinity of the school, but there were a small number of high school students walking between the high school and elementary school. Field staff noted the following travel norms for Grady A Brown:

- Motorist behavior was observed as good. Drivers are generally respectful and follow rules.
- There is one point of entrance and exit for carpool traffic with a center turn lane on New Grady Brown School Road.

- Morning traffic was observed backing up to New Grady Brown School Road by 7:20AM and lining up in the center turn lane.
- Through traffic was observed passing in the center turn lane coming from the west, but not a lot of non-school traffic was observed.
- Vehicles were observed zippering into the carpool line from both directions.
- Staff were observed passing the backed-up traffic to enter a separate staff entrance.
- Vehicles were observed in both the morning and afternoon making a U-turn along New Grady Brown School Road to get into the shortest queue.
- Moderate back up was observed in both directions in the morning.
- Vehicles turning left out of the school have a limited line of sight due to the vehicles in the center turn lane, creating safety concerns.
- A sheriff was present directing morning traffic, but staff noted they are not present every day.
- Heavy back up was observed from both directions in the afternoon. Traffic coming from the east backs up almost to the intersection with Orange Grove Road.
- In the afternoon, vehicles lined up in the center turn lane sometimes block the left turn exit out of the school.

Existing Infrastructure - Strengths

Few strengths were noted due to the lack of pedestrian and bicycle facilities. The following observations were noted as existing system strengths:

- Clear school zone and pedestrian crossing signage is found along New Grady Brown School Road and Orange Grove Road.
- There are on-campus sidewalks along the building front, adjacent to the carpool drop-off line.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- There are multiple two-lane, rural roadways that pose safety barriers for school-age cyclists and pedestrians.
- There are no pedestrian or bicycle facilities found on adjacent roadways. Table 2.4 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.8: Key Infrastructure Gaps at Grady A Brown Elementary

Road	Orientation	Gap
New Grady Brown School Road	Both directions	No sidewalk or bike lanes
Orange Grove Road	Both directions	No sidewalk or bike lanes
Oakdale Drive	Both directions	No sidewalk or bike lanes
Timbers Drive	Both directions	No sidewalk or bike lanes
Arbors Lane	Both directions	No sidewalk or bike lanes

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

New Grady Brown School Road and Orange Grove Road: New Grady Brown School Road and Orange Grove meet at a signalized intersection. Due to high traffic volumes and the high volume of turning traffic, this intersection is very difficult for pedestrians to cross. There are no sidewalks or pedestrian crossings at this location.

Orange Grove Road and I-40: Orange Grove Road bridges over I-40 at a grade separation. The shoulder along the bridge is very narrow, making this a very unsafe location for pedestrians. There are no sidewalks or pedestrian crossings at this location.

Orange Grove Road and Oakdale Drive: Oakdale Drive ends at Orange Grove Road at a stop sign-controlled intersection. Due to high traffic volumes, this intersection is difficult for pedestrians to cross. There are no sidewalks or pedestrian crossings at this location.

Photos

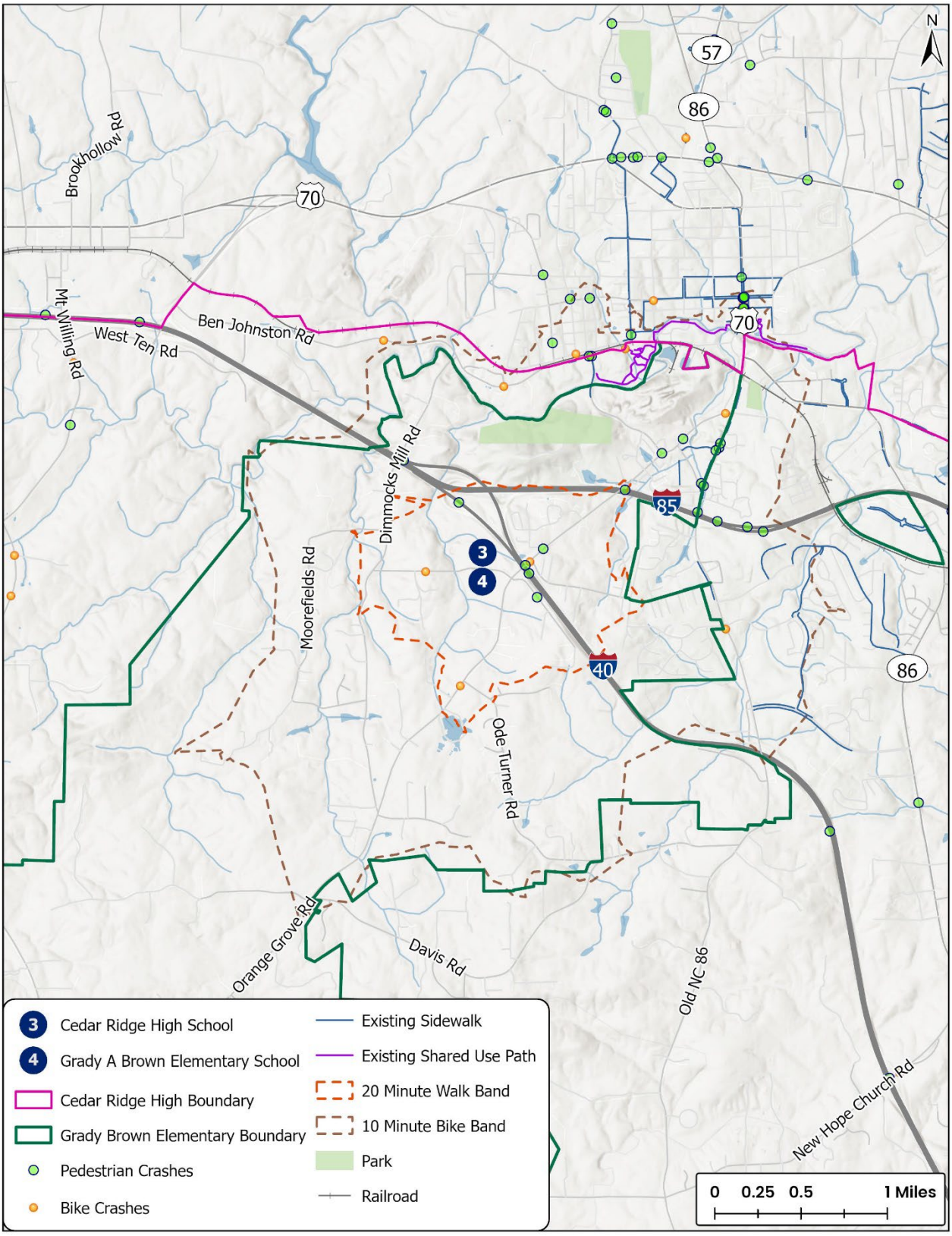
Looking west along New Grady Brown School Road at cars turning right into the school for the afternoon pick up

Looking west along New Grady Brown School Road at cars turning left into the school for the afternoon pick up

Pedestrian signage on New Grady Brown School Road

Sheriff directing traffic exiting out of the school

Figure 2.3: Cedar Ridge High School and Grady A Brown Elementary School Overview



5 - Central Elementary School

Central Elementary serves grades Kindergarten to 5 and is located northeast of downtown Hillsborough along Hayes Street. The total enrollment of this school is 291 students. Surrounding land use is mostly residential. Traffic volumes along Hayes Street are low, while W King Street has an average daily traffic volume of 1,300 vehicles per day. There is a sidewalk along the north side of Hayes Street from Nash Street to the school. Approximately 5 students walk to school.

Table 1.9: Central Elementary School Characteristics

Grades Serviced	K-5th
Total Enrollment	291
Number of Buses	6
Number of Students Riding the Bus	134 in the AM; 168 in the PM
Number of Students Walking	5
Number of Students Cycling	0
Number of Students Driven	113
Special Needs Population	36 (12%)
Land Uses Surrounding School	Residential
Presence of Bike Racks	Yes
No Walk Zones	Yes
Crossing Guards	Yes
Policies that Restrict Walking or Bicycling	No
Bicycle/Pedestrian Safety Taught to Students	No
Existing Parking Capacity	70 spaces
Presence of Car Waiting Zones	Yes
Number of Staff Managing Drop off/Pick up	6

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for Central Elementary School. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.4.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are approximately 5 Central Elementary students walking to school. On-site observations noted several elementary school pedestrians that walked from Hayes Street west of the school Field staff noted the following travel norms for Central Elementary:

- Motorist behavior was observed as fair. Drivers were respectful of pedestrians and other vehicles, but occasionally did not follow the rules.
- Crossing guards were present with a stop sign to let vehicles in and out. Police were also present to assist.
- In the afternoon queuing backs up in both directions past Foust Street and Spruce Street.
- Safety concerns include school buses passing without a passing lane during queuing.
- Vehicles will ignore signage restricting left turns out if there is no crossing guard.

- Some walkers were observed arriving from the back side of the school, Foust Street, Latimer Street, and Nash Street.
- Cyclists were observed coming from both directions along Hayes Street.

Existing Infrastructure - Strengths

The following observations were noted as existing system strengths:

- There is sidewalk along the north side of Hayes Street from North Nash Street to Central Elementary School and a sidewalk along the west side of North Nash Street.
- Pedestrian crossing signage is found along Hayes Street.
- There are on-campus sidewalks along the building front, adjacent to the carpool drop-off line.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- There are no school zone markings along Hayes Street.
- Sections of Hayes Street south of the school have narrow shoulders and overgrown vegetation, making it difficult for walking.
- There are no sidewalks or sidewalk gaps found on adjacent roadways. There are no bicycles facilities found on adjacent roadways. Table 2.5 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.10: Key Infrastructure Gaps at Central Elementary

Road	Orientation	Gap
W King Street	Both directions	No sidewalk or bike lanes
Hayes Street	Both directions	No bike lanes. No sidewalk on the south/east side. No sidewalk on the west side east of the school.
Latimer Street	Both directions	No sidewalk or bike lanes

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

Hayes Street and W King Street: Hayes Street ends at W King Street at a stop sign-controlled intersection. This location has narrow shoulders and overgrown vegetation that makes it difficult for pedestrians to cross safely. There are no sidewalks or pedestrian crossings at this location.

Photos

Students and a parent walking to school. Entering off of Hayes Street through the driveway exit

Driveway entrance for car queue. Cars waiting to turn left

Looking east along Hayes Street at traffic turning left into the school.

Looking west along Hayes Street. Through traffic is passing on the left side.

6 - Hillsborough Elementary School

Hillsborough Elementary serves grades Kindergarten to 5 and is located northeast of downtown Hillsborough along W Union Street and N Nash Street. This school has a total enrollment of 438 students. Surrounding land use is mostly residential. Traffic volumes along W Union Street are low, while N Nash Street has an average daily traffic volume of 1,400-2,000 vehicles per day. Hillsborough Elementary is located in a residential neighborhood. The school is currently overcapacity based on projected land use in the area and future residential development projections. There are some sidewalks along the east side of North Nash Street opposite the school and along the north side of West Union Street adjoining the school. Approximately 20-30 students walk or bike to school.

Table 1.11: Hillsborough Elementary School Characteristics

Grades Serviced	K-5th
Total Enrollment	438
Number of Buses	4
Number of Students Riding the Bus	44 in the AM; 89 in the PM
Number of Students Walking	20
Number of Students Cycling	2
Number of Students Driven	365
Special Needs Population	72 (16%)
Land Uses Surrounding School	Residential
Presence of Bike Racks	Yes
No Walk Zones	None
Crossing Guards	Sheriff directing traffic
Policies that Restrict Walking or Bicycling	No
Bicycle/Pedestrian Safety Taught to Students	No
Existing Parking Capacity	115 spaces
Presence of Car Waiting Zones	Yes
Number of Staff Managing Drop off/Pick up	15-20

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for Hillsborough Elementary School. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.4.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are approximately 20-30 Hillsborough Elementary students walking or cycling to school. On-site observations noted several elementary school pedestrians walking from W Union Street, N Nash Street, and Occoneechee Street. Field staff noted the following travel norms for Hillsborough Elementary:

- Motorist behavior was observed as fair. Drivers are respectful and obey speed limits, but there is a high volume of through traffic that passes in the left lane.
- Traffic backup along N Nash Street is a major concern, leading to several near misses.

- There are two drop-off and pick-up areas for the car riders. Grades K-1 drop off and pick up at the W Union Street entrance. Grades 2-5 drop off and pick up at the N Nash Street entrance.
- Moderate non-school traffic was observed along N Nash Street including semi-trailers.
- Walkers enter at the school bus drop-off entrance.
- Some school and non-school pedestrians were observed walking along W Union Street and N Nash Street.
- In the afternoon, traffic for the K-1 pick up backed up onto N Occoneechee Street with minor through traffic.
- Traffic backs up along N Nash Street in the right and left turn lanes for the 2-5 pick up. The school has separate entrance lanes for right turn traffic and left turn traffic. The left turn traffic backs up to W Corbin Street and the right turn traffic backs up past the intersection of N Nash Street and W Union Street.
- Through traffic passes in the opposite lane on N Nash Street. Through traffic is moderately heavy in the afternoon. Several near misses were observed.
- Buses also pass in the opposite lane on N Nash Street to get around the car line, creating safety concerns.
- Vehicles were unable to exit left onto Nash Street because traffic was backed up and blocking the exit.
- The intersection of Hayes Street, N Nash Street, and W Union Street is a skewed intersection creating safety concerns.
- Vehicles were observed blocking the crosswalk at the school entrance on and the crosswalk to the parking across the street on W Union Street.
- Crossing guards were not present. However, a police car with lights on was situated at the grades 2-5 drop-off area.

Existing Infrastructure - Strengths

The following observations were noted as existing system strengths:

- Clear school zone and pedestrian crossing signage is found along N Nash Street.
- There is a bike rack located on campus.
- There are on-campus sidewalks along the building front, adjacent to the carpool drop-off line.
- There are sidewalks and pedestrian crossings along the north side of W Union Street.
- There is sidewalk located along the west side of N Nash Street across the street from the school.
- There are crosswalks at the intersection of N Nash Street and Hayes Street.

Existing Infrastructure - Deficiencies

Key weaknesses, barriers, and obstacles include the following:

- There is a lack of connecting sidewalks on nearby roadways. There are no bicycle facilities on adjacent roadways. Table 2.6 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.12: Key Infrastructure Gaps at Hillsborough Elementary

Road	Orientation	Gap
W Union Street	South side	No sidewalk or bike lanes
N Nash Street	East side	No sidewalk or bike lanes
Occoneechee Street	Both Sides	No sidewalk or bike lanes

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

W Union Street and N Occoneechee Street: W Union Street and N Occoneechee Street meet at a four-way stop intersection. Due to morning and afternoon traffic backups and through traffic passing on the left side, this intersection can be difficult for pedestrians to cross. The only sidewalk is located on W Union Street west of the intersection.

Photos

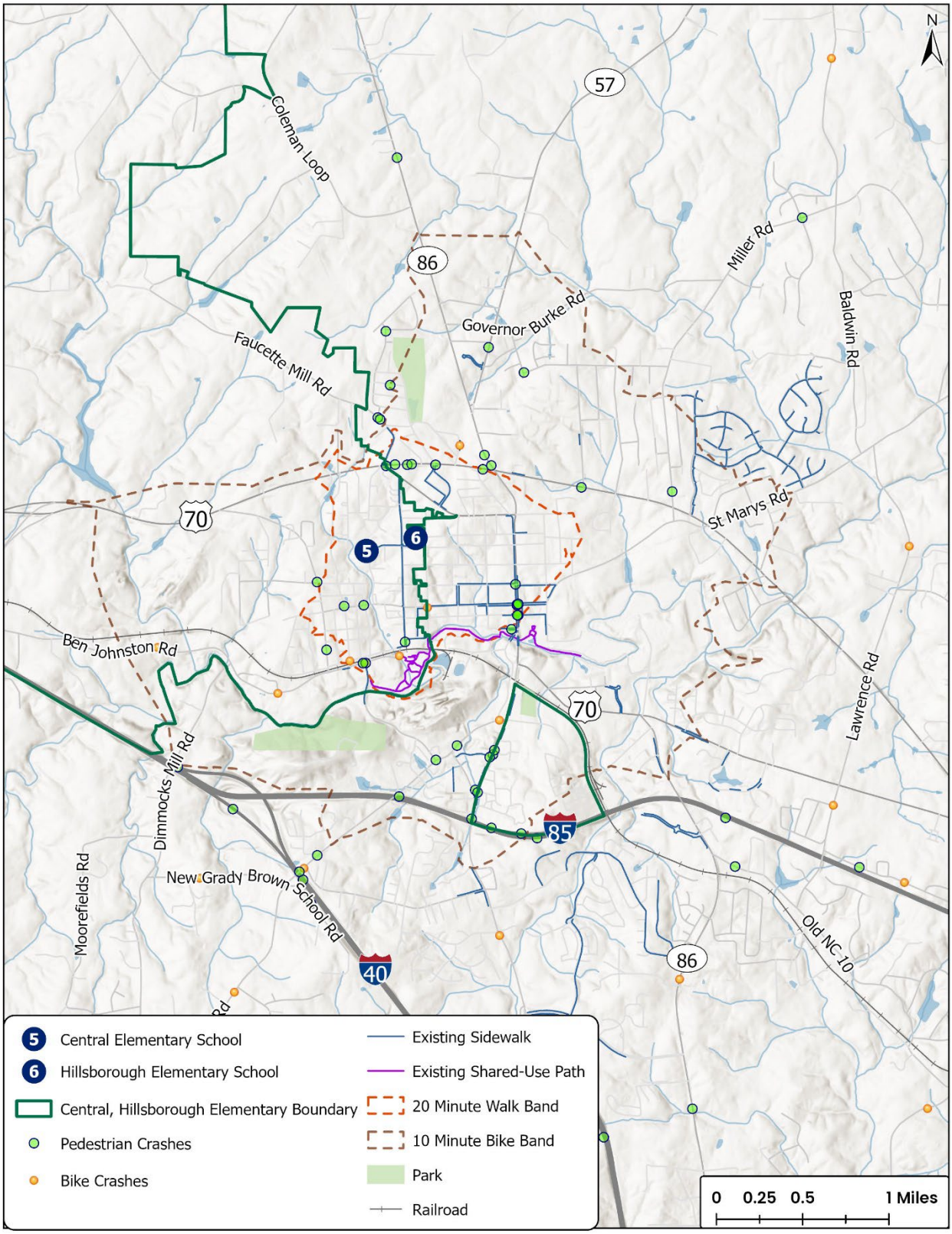
Looking south along N Nash St at the pick-up line for grades 2-5. A bus is passing on the left, while a car coming from the opposite direction is also passing.

Looking north along N Nash St at left-turn pick-up line for grades 2-5.

Standing on W Union Street looking west at the skewed intersection with N Nash Street and Hayes Street.

Crosswalks on W Union Street in front of the school

Figure 2.4: Central Elementary School and Hillsborough Elementary School Overview



7 - Orange Middle School

Orange Middle, previously known as C.W. Stanford, serves grades 6 to 8 and has a total enrollment of 521 students. It is located in northeast Hillsborough along Orange High School Road just off of US 70 and the surrounding land use is mostly residential with some commercial. The traffic volume along Orange High School Road is 3,500 vehicles per day, while US 70 has an average daily traffic volume of 13,500 vehicles per day. There are no pedestrian or bicycle facilities in the vicinity of the school, other than a short section of sidewalk along Orange High School Road. Approximately 15-20 students walk to school.

Table 1.13: Orange Middle School Characteristics

Grades Serviced	6th-8th
Total Enrollment	521
Number of Buses	14
Number of Students Riding the Bus	274 in the AM; 320 in the PM
Number of Students Walking	15-20
Number of Students Cycling	0
Number of Students Driven	200-250
Special Needs Population	4-6 (1%)
Land Uses Surrounding School	Residential, Commercial
Presence of Bike Racks	No
No Walk Zones	None
Crossing Guards	Sheriff directing traffic occasionally
Policies that Restrict Walking or Bicycling	Walkers must have written permission
Bicycle/Pedestrian Safety Taught to Students	No
Existing Parking Capacity	100 spaces
Presence of Car Waiting Zones	Yes
Number of Staff Managing Drop off/Pick up	2-5

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for Orange Middle School. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.5.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are approximately 15-20 Orange Middle students walking to school. On-site observations noted a number of middle school pedestrians walking from the direction of Orange High School. Field staff noted the following travel norms for Orange Middle:

- Motorist behavior was observed as good. Motorist behavior was observed as good. Drivers are generally respectful and pull of to the shoulder to allow other traffic to pass.
- There is one entrance and exit out of the same driveway for carpool traffic.
- During the morning drop off, motorists were observed queuing along Orange High School Road and traffic was backed up in both directions. Traffic cleared quickly once the sheriff arrived to direct traffic in the morning.

- During the afternoon pick up, traffic backed up in both directions along Orange High School Road. Vehicles were observed pulling onto the shoulder to wait until the afternoon bell. Through traffic was observed passing through the left lane at full speed, creating safety concerns.
- Staff noted that some walkers come from the direction of Orange High School down the street and walkers are not released in the afternoon until 3:55PM.
- Some cars pull into the driveway exit lane while the carpool traffic is also leaving the exit lane creating the potential for an accident.
- Buses must pass in the left lane to get past the cars lined up on Orange High School Road and into the bus lot.
- There is not a crossing guard present, but office staff said there is occasionally someone directing traffic during pick-up times when available.

Existing Infrastructure - Strengths

Few strengths were noted due to the lack of pedestrian and bicycle facilities. The following observations were noted as existing system strengths:

- There is some sidewalk along the immediate school entrance.
- There is a short section of sidewalk along Orange High School Road, but it doesn't connect to any other sidewalk.
- There is a crosswalk across Orange High School Road at Ann Road.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- The high speeds and high traffic volume along US 70 presents a serious safety threat for pedestrians and bicyclists.
- There is no sidewalk connecting to the crosswalk.
- The shoulder along Orange High School Road is narrow and has a steep drop off along certain parts.
- There are no bicycle racks located on campus.
- There are no pedestrian or bicycle facilities found on adjacent roadways. Table 2.7 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.14: Key Infrastructure Gaps at Orange Middle

Road	Orientation	Gap
Orange High School Road	Both sides	No sidewalk or bike lanes
US 70	Both sides	No sidewalk or bike lanes
Ann Road	Both sides	No sidewalk or bike lanes
Joyce Road	Both sides	No sidewalk or bike lanes
Harold Latta Road	Both sides	No sidewalk or bike lanes

Gwen Road	Both sides	No sidewalk or bike lanes

Key Crossing Issues

The following crossings were noted in the 2013 Safe Route to School Strategic Action Plan. They are still barriers to safety and prevent children from walk and cycling to school safely:

Orange High School Road and US 70: Orange High School Road ends at US 70 as a signalized intersection. However, due to high speeds coupled with high traffic volumes along US 70, this intersection is very difficult for pedestrians to cross. There are no sidewalks or pedestrian treatments at this location. Orange High School Road provides the primary access to the school, so any student walking from US 70 must utilize this intersection. Students living south of US 70 will have to cross this very busy 3-lane roadway.

Gwen Road and US 70: Gwen Road ends at US 70 at a stop sign-controlled intersection. Due to high speeds coupled with high traffic volumes along US 70, this intersection is very difficult for pedestrians to cross. There are no sidewalks or pedestrian treatments at this location.

N Scotswood Boulevard and US 70: N Scotswood Boulevard provides access to the Churton Grove Community, a 330-acre residential area. Scotswood Boulevard currently ends at US 70 at an unsignalized intersection. There are no sidewalks or pedestrian treatments at this location. High traffic speeds and volumes along US 70 make this intersection difficult for pedestrians to cross. Due to the lack of east-west connectivity in the Churton Grove area, many of the students living in this community might choose US 70 as their preferred route if walking or bicycling to school.

NC 86 and NC 57: NC 86 and NC 57 meet at a signalized intersection northwest of the school. Students living northwest of the school may choose to use this intersection to access the school from Holman Drive. Traffic volumes can be high during the peak hours. There are currently no sidewalks or pedestrian treatments at this location.

Orange High School Road and Orange Middle School Entrance: This unsignalized intersection provides primary access to the school. Although speeds are not high during arrival and dismissal times due to the school traffic, there is a significant amount of traffic at this location. Currently, there is a short section of sidewalk and one curb ramp along school property but no pedestrian crosswalk.

Orange High School Road and Harold Latta Road: Orange High School Road meets Harold Latta Road at a stop sign-controlled intersection. Students living in this neighborhood may choose to use this intersection to access the school via Orange High School Road. There are currently no sidewalks or pedestrian treatments at this intersection. Due to the unusual geometry, pedestrian paths should be clearly defined at this intersection.

Photos

Small section of sidewalk along Orange High School Road

Looking north along Orange High School Road at the school entrance

School entrance and end of sidewalk

Looking south along Orange High School Road at traffic turning left into the school. A UPS truck is passing on the left side.

8 - Orange High School

Orange High serves grades 9 to 12 and has a total enrollment of 1,200 student. It is located in northeast Hillsborough along Orange High School Road just off of US 70 and the surrounding land use is mostly residential with some commercial. The traffic volume along Orange High School Road is 3,500 vehicles per day, while US 70 has an average daily traffic volume of 13,500 vehicles per day. There are no pedestrian or bicycle facilities on the roadways in the vicinity of the school. Approximately 15-20 students walk or bike to school.

Table 1.15: Orange High School Characteristics

Grades Serviced	9th-12th
Total Enrollment	1200
Number of Buses	22
Number of Students Riding the Bus	470 in the AM; 472 in the PM
Number of Students Walking	15
Number of Students Cycling	2
Number of Students Driven	730
Special Needs Population	Yes (# unknown)
Land Uses Surrounding School	Residential, Commercial
Presence of Bike Racks	Yes
No Walk Zones	None
Crossing Guards	No
Policies that Restrict Walking or Bicycling	No
Bicycle/Pedestrian Safety Taught to Students	Yes
Existing Parking Capacity	600 spaces
Presence of Car Waiting Zones	Yes
Number of Staff Managing Drop off/Pick up	3

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for Orange Middle School. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.5.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are approximately 15-20 Orange High students walking or cycling to school. On-site observations noted several high school pedestrians walking through the practice football field to the nearby neighborhood. Field staff noted the following travel norms for Orange High:

- Motorist behavior was observed as poor. Many drivers park on the side of the road to avoid the afternoon car queue and make illegal U-turns in the road, creating safety concerns for students and other drivers. Parents also cut into the car queue, park in visitor spots, and park in the woods causing a lot of potential for accidents. Other traffic speeds through the school zone.

- The car queue in the morning is short with relatively little to no queuing. Sometimes traffic turning left into the school causes a small back up of no more than 5 cars, but clears quickly.
- The car queue in the afternoon is heavier, however, there is no backup onto Orange High School Road.
- Approximately 10-15 cars park on the side of Orange High School to avoid waiting in the car queue. Cars park on both sides of the road and make a U-turn in the road to leave. Students walk out to the cars, sometimes crossing the street. Field staff observed a near miss between a vehicle and student.
- Students walking to and from school cut across the practice football field to walk from the nearby neighborhood.

Existing Infrastructure - Strengths

Few strengths were noted due to the lack of pedestrian and bicycle facilities. The following observations were noted as existing system strengths:

- Sidewalks in the immediate vicinity of the school are adequate.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- The high speeds and high traffic volume along US 70 presents a serious safety threat for pedestrians and bicyclists.
- There are no crosswalks or pedestrian signage in the vicinity of the school.
- There are no pedestrian or bicycle facilities found on adjacent roadways and there is no sidewalk connectivity to nearby neighborhoods. Table 2.8 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.16: Key Infrastructure Gaps at Orange High

Road	Orientation	Gap
Orange High School Road	Both sides	No sidewalk or bike lanes
US 70	Both sides	No sidewalk or bike lanes
Ann Road	Both sides	No sidewalk or bike lanes
Joyce Road	Both sides	No sidewalk or bike lanes
Harold Latta Road	Both sides	No sidewalk or bike lanes
Gwen Road	Both sides	No sidewalk or bike lanes

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

Orange High School Road and US 70: Orange High School Road ends at US 70 as a signalized intersection. However, due to high speeds coupled with high traffic volumes along US 70, this intersection is very difficult for pedestrians to cross. There are no sidewalks or pedestrian

treatments at this location. Orange High School Road provides the primary access to the school, so any student walking from US 70 must utilize this intersection. Students living south of US 70 will have to cross this very busy 3-lane roadway.

Gwen Road and US 70: Gwen Road ends at US 70 at a stop sign-controlled intersection. Due to high speeds coupled with high traffic volumes along US 70, this intersection is very difficult for pedestrians to cross. There are no sidewalks or pedestrian treatments at this location.

N Scotswood Boulevard and US 70: N Scotswood Boulevard provides access to the Churton Grove Community, a 330-acre residential area. Scotswood Boulevard currently ends at US 70 at an unsignalized intersection. There are no sidewalks or pedestrian treatments at this location. High traffic speeds and volumes along US 70 make this intersection difficult for pedestrians to cross. Due to the lack of east-west connectivity in the Churton Grove area, many of the students living in this community might choose US 70 as their preferred route if walking or bicycling to school.

Orange High School Road and Harold Latta Road: Orange High School Road meets Harold Latta Road at a stop sign-controlled intersection. Students living in this neighborhood may choose to use this intersection to access the school via Orange High School Road. There are currently no sidewalks or pedestrian treatments at this intersection. Due to the unusual geometry, pedestrian paths should be clearly defined at this intersection.

Photos

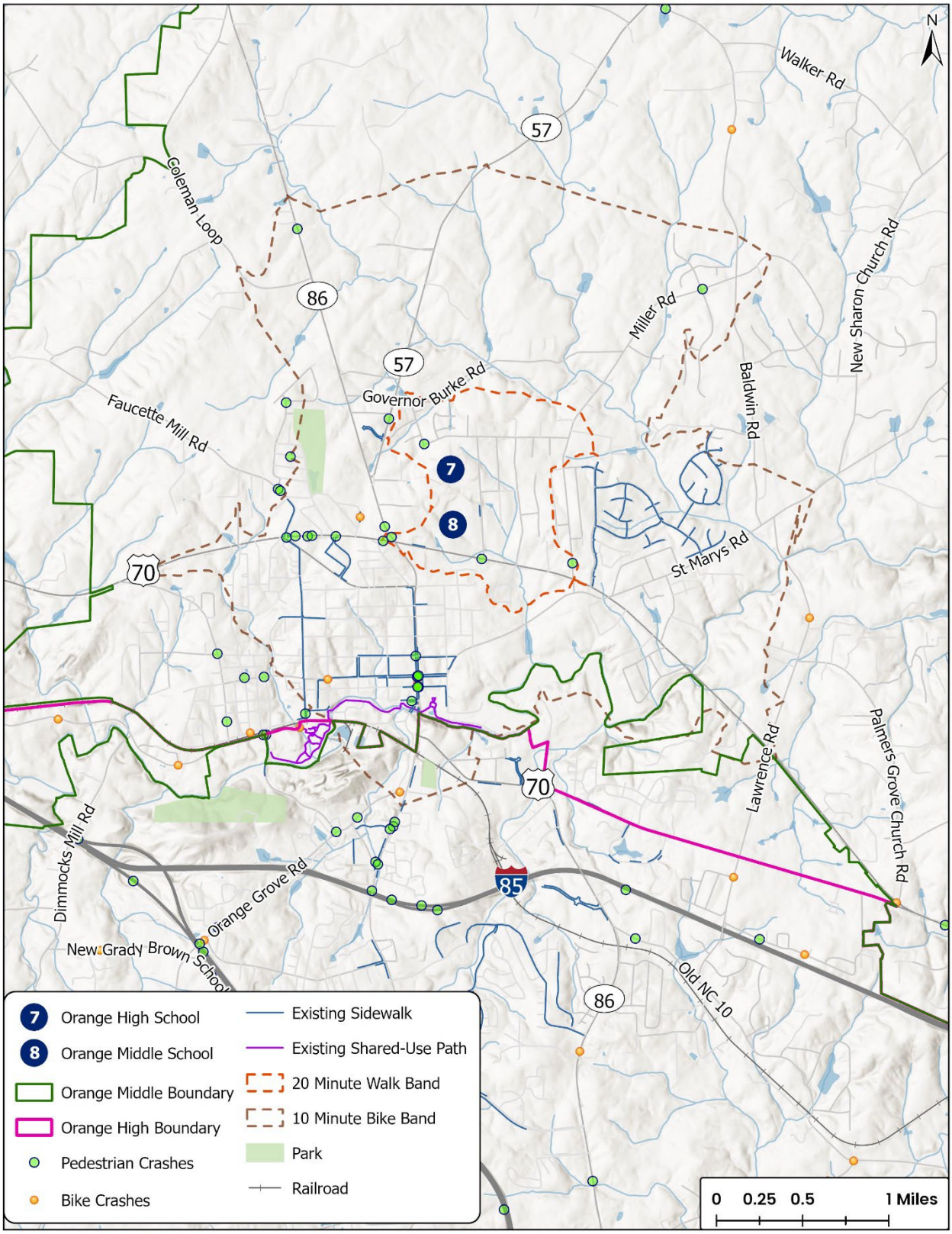
Looking north along Orange High School Road at school entrance

Students walking on the opposite side of the road to get to a car

Traffic passing on both sides while cars are pulled off to the side

Cars pulled off to the side to avoid the car queue. A bus is passing the cars partially in the left lane

Figure 2.5: Orange Middle School and Orange High School Overview



9 - Efland Cheeks Global Elementary School

Efland Cheeks Global Elementary serves grades Kindergarten to 5 and has a total enrollment of 561 students. It is located in west Efland along Fuller Road just off of US 70 and the surrounding land use is mostly residential and undeveloped. Traffic volumes are low on Fuller Road and School House Road, while US 70 has an average daily traffic volume of 7,600 vehicles per day. The school is currently overcapacity based on projected land use in the area and future residential development projections. There are no pedestrian or bicycle facilities on the roadways in the vicinity of the school. Approximately 15 students walk to school.

Table 1.17: Efland Cheeks Global Elementary School Characteristics

Grades Serviced	K-5th
Total Enrollment	561
Number of Buses	8
Number of Students Riding the Bus	275 in the AM; 320 in the PM
Number of Students Walking	15
Number of Students Cycling	0
Number of Students Driven	292
Special Needs Population	5 (1%)
Land Uses Surrounding School	Rural residential
Presence of Bike Racks	No
No Walk Zones	None
Crossing Guards	Sheriff directing traffic
Policies that Restrict Walking or Bicycling	No
Bicycle/Pedestrian Safety Taught to Students	No
Existing Parking Capacity	81 spaces
Presence of Car Waiting Zones	Yes
Number of Staff Managing Drop off/Pick up	10

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for Efland Cheeks Global Elementary School. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.6.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are approximately 15 Efland Cheeks students walking or cycling to school. On-site observations noted several elementary school pedestrians walking from School House Road, Lucia Lane, Tinnin Road, and Fuller Road. Field staff noted the following travel norms for Efland Cheeks:

- Motorist behavior was observed as good. Drivers are respectful and obey speed limits.
- In the morning, traffic backs up onto Fuller Road and School House Road. Cars must queue east of the school on Fuller Road and then onto School House Road. Cars are not allowed to access Fuller Road from US 70. They must enter the car line on Tinnin Road from US 70.

- In the afternoon, traffic backs up to Tinnin Road. Cars block driveways of residences along School House Road.
- Security officer was observed directing exiting traffic out to US 70 during the morning drop off. Once traffic started backing up the officer directed exiting traffic back to Fuller Road.
- In the afternoon, several students walkers were observed using School House Road and Fuller Road. Parents walk to the school to pick students up. There is an obsolete driveway parents and students use to cut from School House Road to the school.
- Safety concerns include blind curves along School House Road and Fuller Road.
- Traffic is significant, especially during school start up and end times, along the Highway US 70 E which is a primary route to enter the school. Traffic along School House Road and Fuller Road is calm and slow.

Existing Infrastructure - Strengths

Few strengths were noted due to the lack of pedestrian and bicycle facilities. The following observations were noted as existing system strengths:

- There is one school zone sign along the section of Fuller Road entering the school from US 70. There is clear school zone signage along US 70.
- There are on-campus sidewalks along the building front, adjacent to the carpool drop-off line.
- Traffic is relatively slow and calm and there is no through traffic.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- Richmond Road connecting to Fuller Road is currently 45 mph.
- There is limited school zone signage along Fuller Road entering the school from the east where Fuller Road connects with Tinnin Road.
- There are multiple two-lane roadways that pose safety barriers for school-age cyclists and pedestrians.
- There are no pedestrian or bicycle facilities found on adjacent roadways. Table 2.9 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.18: Key Infrastructure Gaps at Efland Cheeks Global Elementary

Road	Orientation	Gap
Fuller Road	Both sides	No sidewalk or bike lanes
School House Road	Both sides	No sidewalk or bike lanes
Tinnin Road	Both sides	No sidewalk or bike lanes
Richmond Road	Both sides	No sidewalk or bike lanes
US 70	Both sides	No sidewalk or bike lanes

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

Fuller Road and US 70: Fuller Roads ends at US 70 as a stop sign-controlled intersection. Due to high speeds coupled with high traffic volumes along NC 70, this intersection is very difficult for pedestrians to cross. There are no sidewalks or pedestrian crossings at this location.

Fuller Road and School House Road: Fuller Road and School House Road meet at a stop sign-controlled intersection. The dense vegetation at this intersection creates a blind corner when turning left onto School House Road from Fuller Road and when turning onto Fuller Road from School House Road, making it difficult for pedestrians to cross safely. There are no sidewalks or pedestrian crossings at this location.

Richmond Road and School Side Entrance: The side driveway of Efland Cheeks ends at Richmond Road as a stop sign-controlled intersection. The speed limit on Richmond Road is 45 mph, making it difficult for pedestrians to cross safely. In addition, cars coming off of US 70 may be travelling quickly. There are no sidewalks or pedestrian crossings at this location.

Photos

Blind corner at School House Road and Fuller Road

Standing on Fuller Road looking north at the school entrance

Afternoon pick-up line on School House Road. Several parents walking to pick up students.

Afternoon pick-up line on School House Road

11 - Gravelly Hill Middle School

Gravelly Hill Middle serves grades 6 to 8 and has a total enrollment of 418 students. It is located in west Efland along W Ten Road and the surrounding land use is a mix of rural residential, commercial, industrial, and undeveloped. Traffic volumes along W Ten Road range from 1,100 to 3,000 vehicles per day in the vicinity of the school. There are no pedestrian or bicycle facilities on the roadways in the vicinity of the school, other than a sidewalk along W Ten Road on the school's property and a crosswalk. Approximately 2 students walk to school.

Table 1.19: Gravelly Hill Middle School Characteristics

Grades Serviced	6th-8th
Total Enrollment	418
Number of Buses	9
Number of Students Riding the Bus	175 in the AM and PM
Number of Students Walking	2
Number of Students Cycling	0
Number of Students Driven	250
Special Needs Population	116 (28%)
Land Uses Surrounding School	Rural residential, Commercial, Industrial, Undeveloped
Presence of Bike Racks	No
No Walk Zones	Yes
Crossing Guards	No
Policies that Restrict Walking or Bicycling	No
Bicycle/Pedestrian Safety Taught to Students	Yes
Existing Parking Capacity	50 spaces
Presence of Car Waiting Zones	Yes
Number of Staff Managing Drop off/Pick up	4-6

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for Gravelly Hill School. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.6.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are approximately 2 Gravelly Hill students walking or cycling to school. On-site observations noted one middle school pedestrian walking from W Ten Road to houses across the street. Field staff noted the following travel norms for Gravelly Hill:

- Motorist behavior was observed as good. Drivers are respectful and obey speed limits. Cars do occasionally block the crosswalk, but there are no pedestrians around.
- There is one entrance to the school and left and right turn exit lanes out of the school.
- There is light traffic along W Ten Road during the morning and light to moderate traffic in the afternoon.

- During the afternoon pick up, vehicles back up to W Ten Road. Traffic backs up past the right turn lane—cars do pull over on the shoulder. Traffic backs up to the end of the left turn lane.
- Through traffic will use the center turn lane to pass. Traffic is able to safely pass in both directions.
- One walker was observed in the afternoon.
- There are no crossing guards or sheriffs present to direct traffic.
- Safety concerns include limited sight distance for cars exiting left out of the school due to the vehicles backed up along W Ten Road. Additionally, vehicles must pull into the crosswalk to see around the cars in the right turn lane.

Existing Infrastructure - Strengths

The following observations were noted as existing system strengths:

- Clear school zone and pedestrian crossing signage is found along W Ten Road.
- There are on-campus sidewalks along the building front, adjacent to the carpool drop-off line.
- There is sidewalk on the section of school property adjacent to W Ten Road.
- There is a crosswalk at the school entrance along W Ten Road.
- There is a bike rack located at the school.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- There are multiple two-lane, rural roadways that pose safety barriers for school-age cyclists and pedestrians.
- W Ten Road presents a serious safety threat for pedestrians and bicyclists because of its lacking infrastructure, high speeds, traffic volume, and hilly terrain. Either side of W Ten Road presents engineering challenges for sidewalk or trails since there is no curb and gutter.
- The speed limit within the school zone is 45 mph.
- There are no pedestrian or bicycle facilities found on adjacent roadway, other than the sidewalk on school property. Table 2.10 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.20: Key Infrastructure Gaps at Gravelly Hill Middle

Road	Orientation	Gap
W Ten Road	Both sides	No sidewalk outside of school property. No bike lanes

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

W Ten Road and School Entrance: The main entrance to Gravelly Hill Middle is located on W Ten Road. While there is a crosswalk at this location, it does often get blocked by cars exiting and entering the school driveway, making it a difficult location for pedestrians to cross. Additionally, the speed limit in the school zone is 45 mph, making it dangerous for pedestrians to cross across W Ten Road.

Photos

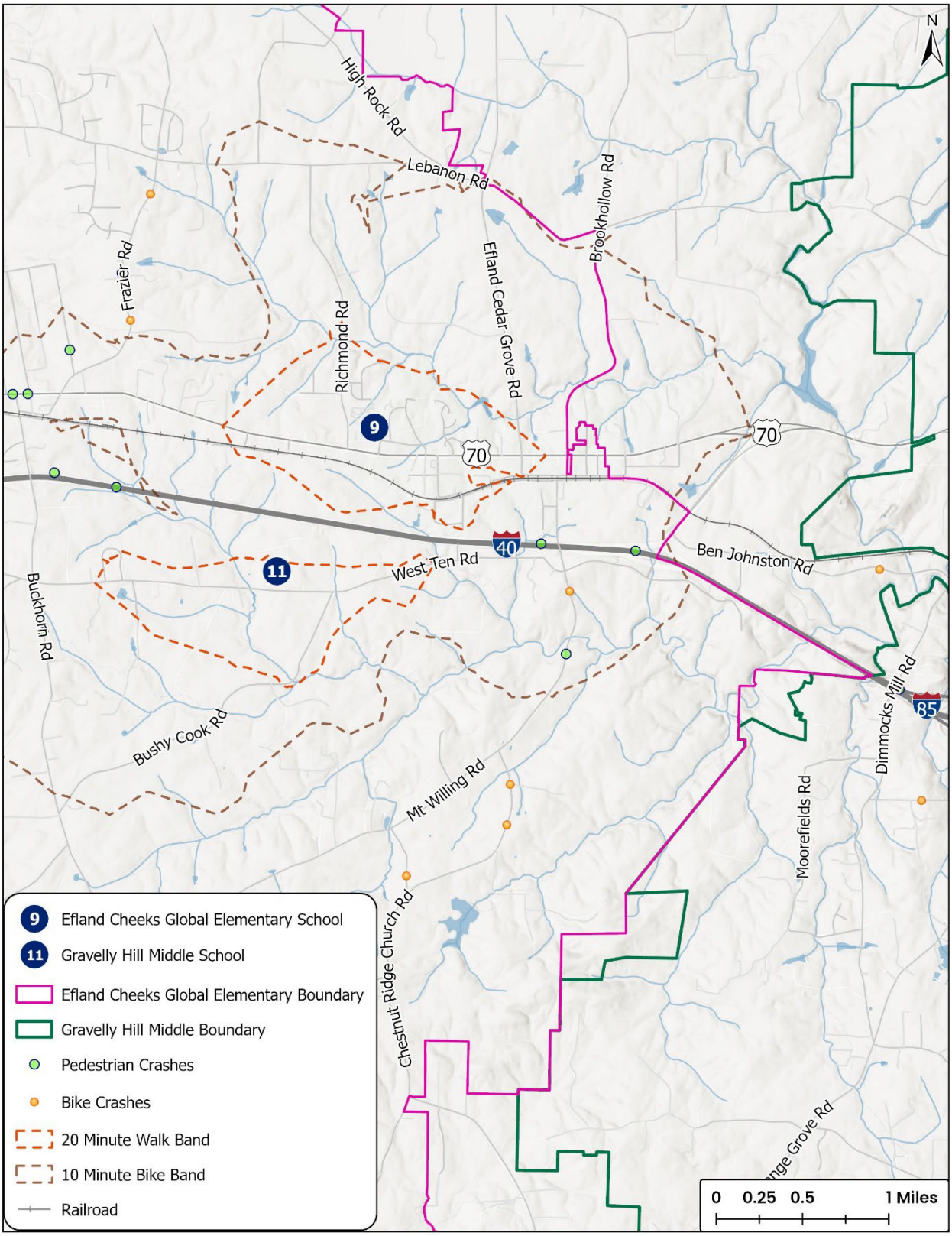
Crosswalk at school entrance

Sidewalk along W Ten Road in front of school

Cars blocking the crosswalk during afternoon pick up

Traffic in the left-turn lane during the afternoon pick up

Figure 2.6: Efland Cheeks Global Elementary and Gravelly Hill Middle School Overview



10 - Partnership Academy High School

Partnership Academy serves grades 9 to 12 and has a total enrollment of 54 students. It is located in east Hillsborough along Corporate Drive just off of US 70 Alternate and the surrounding land use is mostly residential and commercial. Traffic volumes are low on Meadowlands Drive and Corporate Drive, while US Highway 70A has an average daily traffic volume of 6,400 vehicles per day. There are some sidewalks in the vicinity around the school along Meadowlands Drive and US Highway 70A. No students walk or bike to school.

Table 1.21: Partnership Academy High School Characteristics

Grades Serviced	9th-12th
Total Enrollment	54
Number of Buses	4
Number of Students Riding the Bus	28 in the AM; 31 in the PM
Number of Students Walking	0
Number of Students Cycling	0
Number of Students Driven	20
Special Needs Population	50%
Land Uses Surrounding School	Residential, Commercial
Presence of Bike Racks	No
No Walk Zones	None
Crossing Guards	No
Policies that Restrict Walking or Bicycling	No
Bicycle/Pedestrian Safety Taught to Students	No
Existing Parking Capacity	23 spaces
Presence of Car Waiting Zones	Yes
Number of Staff Managing Drop off/Pick up	7

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for Partnership Academy. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.7.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are no Partnership Academy students walking or cycling to school. On-site observations noted no pedestrians or cyclists walking in the vicinity of the school. Field staff noted the following travel norms for Partnership Academy:

- Motorist behavior was observed as good. Drivers obey speed limits and are respectful of other traffic.
- No students were observed walking or cycling during the site visit.
- Due to the small school size, there is no traffic back up. The morning car line is never more than 2-3 cars and the afternoon car line is never more than 4-5 vehicles at peak times.
- There are no crossing guards or sheriffs directing traffic.

Existing Infrastructure - Strengths

The following observations were noted as existing system strengths:

- Clear school zone and pedestrian crossing signage is found along Corporate Drive and US 70A.
- There are crosswalks along US 70A at the intersections with Prestwood Dr and Quincy Cottage Road.
- There are on-campus sidewalks along the building front, adjacent to the carpool drop-off line.
- There are sidewalks along portions of Meadowlands Drive, US 70A, and nearby neighborhood roads.
- There is no through traffic on Corporate Drive or Meadowlands Drive making these roads safer for walking.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- Traffic is significant along US 70A and poses a safety barrier for school-age cyclists and pedestrians.
- There are no bicycle racks on campus.
- Within the surrounding the area, there is no curb and gutter. Drainage ditches and right-of-way are an obstacle to further sidewalk or side path development.
- There are no sidewalks or sidewalk gaps on adjacent roadways. There are no bicycle facilities on adjacent roadways. Table 2.11 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.22: Key Infrastructure Gaps at Partnership Academy

Road	Orientation	Gap
Corporate Drive	Both sides	No sidewalk or bike lanes.
US 70A	Both sides	No sidewalk from Meadowlands Dr to 650 feet west. No sidewalk east of Orange County SportsPlex.

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

Corporate Drive and Meadowlands Drive: There is currently no pedestrian crossing treatment from Corporate Drive across Meadowlands Drive to connect to the sidewalk. Corporate Drive is stop controlled and the traffic along Meadowlands Drive coming from US 70 is free flowing at the intersection.

Photos

School campus and parking lot

Cars entering school entrance during morning drop off

School entrance

Cul-de-sac at the end of Corporate Drive

12 - River Park Elementary School

River Park Elementary, previously known as Cameron Park, serves grades Kindergarten to 5 and has a total enrollment of 558 students. It is located near downtown Hillsborough along St Mary's Road and the surrounding land use is mostly residential and commercial. The traffic volume along St Mary's Road is 3,100 vehicles per day in the vicinity of the school. The school is currently overcapacity based on projected land use in the area and future residential development projections. There are no pedestrian or bicycle facilities on the roadways in the vicinity of the school, other than a small sidewalk directly in front the school. Approximately 25-30 students walk to school.

Table 1.23: River Park Elementary School Characteristics

Grades Serviced	K-5th
Total Enrollment	558
Number of Buses	7
Number of Students Riding the Bus	220 in the AM; 351 in the PM
Number of Students Walking	25-30
Number of Students Cycling	0
Number of Students Driven	350-400
Special Needs Population	11 (2%)
Land Uses Surrounding School	Residential, Commercial
Presence of Bike Racks	No
No Walk Zones	None
Crossing Guards	Sheriff directing traffic and serving as crossing guard occasionally
Policies that Restrict Walking or Bicycling	No
Bicycle/Pedestrian Safety Taught to Students	No
Existing Parking Capacity	78 spaces
Presence of Car Waiting Zones	No
Number of Staff Managing Drop off/Pick up	5-10

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for River Park Elementary. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.7.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are approximately 25-30 students walking or cycling to school. On-site observations noted 24 students walking to school mainly from Lydia Lane. A few students walked from St Mary's Road west of the school. Field staff noted the following travel norms for River Park Elementary:

- Motorist behavior was observed as fair. School traffic was respectful of other drivers, but did not always yield to pedestrians.
- In the morning, traffic is backed up moderately in both directions. There is a high volume of school traffic.

- In the afternoon, traffic is backed up significantly in both directions. Some through traffic passes in the left lane from both directions, while some through traffic waits in the car line. Some through traffic turns down Lydia Lane and E Tryon Street to avoid waiting in the queue.
- Due to the long queues on St. Mary's Road, several dangerous maneuvers were witnessed during the observation period. One car was observed turning left out of the school while families were crossing the crosswalk. Vehicles were observed turning out of the school while traffic is going by on St Mary's. Multiple vehicles were observed making a U-turn on St. Mary's Road to get out of the school carpool line.
- Most of the 24 students that walked to school came from from Lydia Lane and 3-4 families walked from the west along St Marys Road. Families were observed using the crosswalk to cross St Mary's Road.
- Traffic backs up into the crosswalk during the morning and afternoon, which limits the line of sight for pedestrians, creating safety concerns.
- A sheriff was observed directing traffic and serving as crossing guard in the morning. The sheriff did not arrive until 7:33AM after several students had already walked to school. A sheriff directed traffic in the afternoon but did not assist with pedestrians crossing.

Existing Infrastructure - Strengths

River Park Elementary's location near downtown Hillsborough makes it a prime location for students to walk or bicycle to school. The following observations were noted as existing system strengths:

- Clear school zone and pedestrian crossing signage is found along St Mary's Road.
- There are on-campus sidewalks along the building front and side. There is a small section of sidewalk along St Mary's Road at the school front.
- There is a crosswalk with crossing signage across St. Mary's Road at the intersection with Lydia Lane.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- There are multiple roadways in the area that pose safety barriers for elementary student pedestrians and bicyclists.
- Neighborhoods to the north of US 70 do not have a safe crossing to the roads that lead to the school.
- Besides the crossing on St. Mary's Road at the intersection of Lydia Lane, there are no other marked crosswalks within the vicinity of the school.
- There are no pedestrian or bicycle facilities found on adjacent roadways. Table 2.12 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.24: Key Infrastructure Gaps at River Park Elementary

Road	Orientation	Gap
St. Mary's Road	Both sides	No sidewalk or bike lanes.
Lydia Lane	Both sides	No sidewalk or bike lanes.
East Queen Street	Both sides	No sidewalk or bike lanes.
North Cameron Street	Both sides	No sidewalk or bike lanes.
South Cameron Street	East side	No sidewalk or bike lanes.
East Tryon Street	North side	No sidewalk or bike lanes.

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

St Marys Road and Lydia Lane: Lydia Lane ends at St Marys Road at a stop sign-controlled intersection. While there is already a crosswalk at this location, the high volume of traffic along St Marys Road still creates safety concerns for pedestrians. In addition, the crosswalk is located next to the left-turn lane out of the school, creating potential conflicts for turning traffic and pedestrians crossing.

St Marys Road and E Tryon Road: E Tryon Road ends at St Marys Road at a stop sign-controlled intersection. E Tryon Road meets St Marys Road as it comes out of a curve, creating a dangerous location for pedestrians. There is a sidewalk on the south side of E Tryon Road, but no pedestrian crossings at this location.

St Marys Road, Cameron Street, and E King Street: St Marys Road, Cameron Street, and E King Street meet at a stop sign-controlled skewed intersection. Due to the unusual geometry of this intersection, is very difficult for pedestrians to cross. There is a crosswalk at E King Street and sidewalks along both sides of E King Street, the west side of St Marys Road, and the west side of S Cameron Street.

Photos

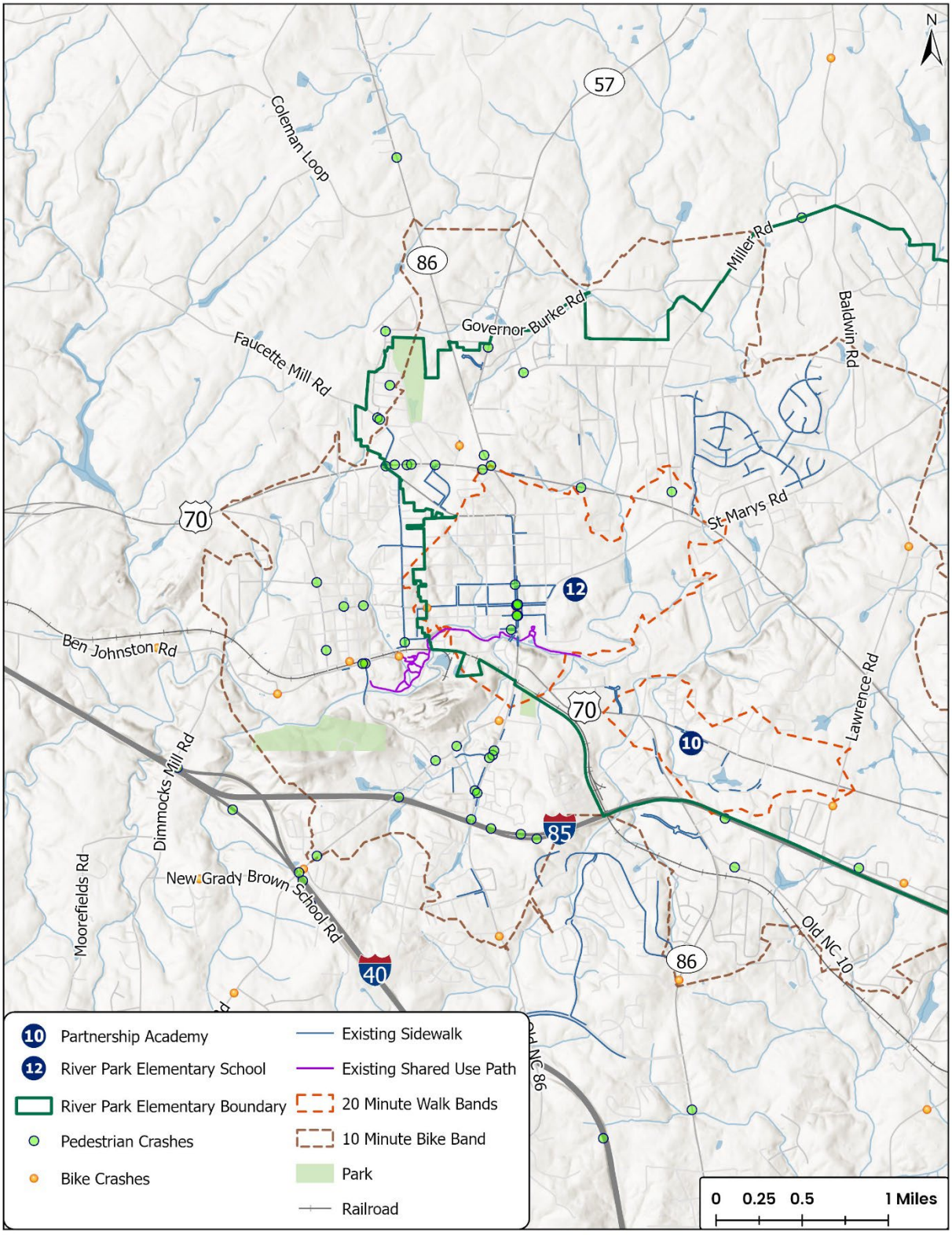
Exit lanes out of school. Left-turn lane is right next to crosswalk

Morning traffic backed up on St Marys Road

Sidewalk in front of River Park Elementary

Crosswalk on St Marys Road

Figure 2.7: Partnership Academy and River Park Elementary Overview



13 - Pathways Elementary School

Pathways Elementary serves grades Pre-Kindergarten to 5 and has a total enrollment of 370 students. It is located in north Hillsborough along Strouds Creek Road just off of NC 57 and the surrounding land use is mostly agricultural and residential. Traffic volumes are low on Strouds Creek Road, while NC 70 has an average daily traffic volume of 6,400 vehicles per day. There are no pedestrian or bicycle facilities on the roadways in the vicinity of the school, other than a small section of sidewalk along Strouds Creek Road. Approximately 8 students walk to school.

Table 1.25: Pathways Elementary School Characteristics

Grades Serviced	Pre-K-5th
Total Enrollment	370
Number of Buses	5
Number of Students Riding the Bus	105 in the AM; 126 in the PM
Number of Students Walking	8
Number of Students Cycling	0
Number of Students Driven	130
Special Needs Population	0
Land Uses Surrounding School	Residential, Agricultural
Presence of Bike Racks	No
No Walk Zones	None
Crossing Guards	No
Policies that Restrict Walking or Bicycling	No
Bicycle/Pedestrian Safety Taught to Students	No
Existing Parking Capacity	94 spaces
Presence of Car Waiting Zones	Yes
Number of Staff Managing Drop off/Pick up	16

The following pages highlight the data collected pertaining to the strengths and weaknesses of the existing pedestrian environment for Pathways Elementary. An overview map showing the bicycle and pedestrian crashes, existing infrastructure, a 20-minute walking radius, and a 10-minute biking radius is included in Figure 2.8.

Behavioral Components of Vehicular and Pedestrian Traffic Patterns

There are approximately 8 students walking to school. On-site observations noted several elementary school pedestrians walking from the Stroud's Creek neighborhood adjacent to the school. Field staff noted the following travel norms for Pathways Elementary:

- Motorist behavior was observed as fair to good. Traffic appears to go faster than the posted speed limit of 25mph along Strouds Creek Road, but drivers are respectful overall.
- There are separate drop-off and pick-up zones for the Pre-K and K-5 grades.
- There were no backups of traffic during the morning drop off. Traffic for the K-5 pick up does backup onto Strouds Creek Road past Village Grove Court.
- Cars and buses were observed passing in the left lane to get into the school entrance. A few cars traveling to Tumbling Brook Lane also had to pass on the left.

- Parents were observed walking from the neighborhood to pick up students. A few students were observed walking home alone, which is not allowed according to school staff.
- Safety concerns include vehicles passing in the left lane while vehicles are exiting the school at the same time and cars turning left out of Tumbling Brook Lane having limited sight distance due to the line of cars.
- Other safety concerns include no crosswalks across the Pre-K car entrance where students were observed crossing.

Existing Infrastructure - Strengths

Pathways Elementary's location on a dead-end road makes it a viable location for walking and biking to school from nearby residences. The following observations were noted as existing system strengths:

- Clear school zone signage is found along Strouds Creek Road and NC 57 as well as school zone pavement markings on NC 67.
- There are on-campus sidewalks along the building front, adjacent to the carpool drop-off line.
- There is a sidewalk connection from Village Grove Court to the first school driveway entrance.
- There is no through traffic on Strouds Creek Road and Tumbling Brook Lane is a gated community with no through traffic.

Existing Infrastructure - Deficiencies

There are multiple issues related to infrastructure deficiency and traffic issues that warrant improvement, create safety hazards, and prevent children from walking and cycling to school safely. Key weaknesses, barriers, and obstacles include the following:

- Traffic is significant along the primary route to school NC 57.
- There are no crosswalks or curb ramps located on adjacent roadways.
- There is no on campus sidewalk connecting from Strouds Creek Road to the school.
- There are no pedestrian or bicycle facilities found on adjacent roadways. Table 2.13 summarizes key locations where insufficient infrastructure creates barriers to pedestrians and bicyclists.

Table 2.26: Key Infrastructure Gaps at Pathways Elementary

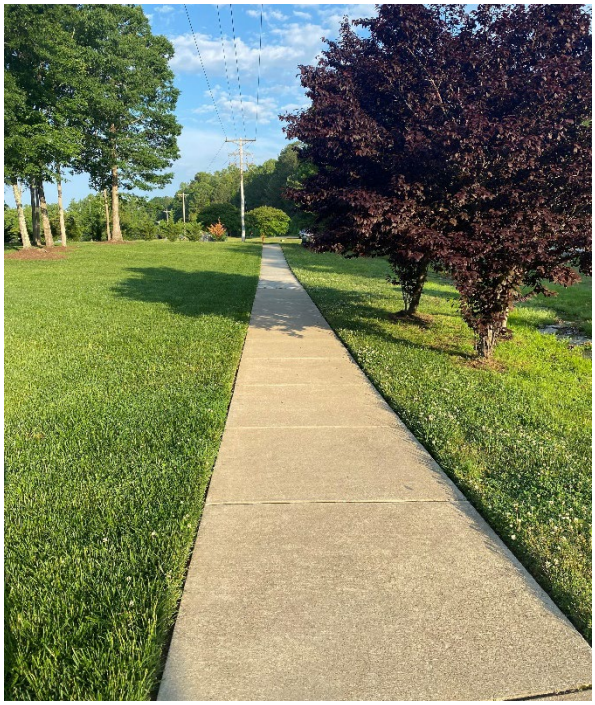
Road	Orientation	Gap
Strouds Creek Road	Both sides	No sidewalk or bike lanes.
Tumbling Brook Lane	Both sides	No sidewalk or bike lanes.
Village Grove Court	Both sides	No sidewalk or bike lanes.

Key Crossing Issues

The following crossings are barriers to safety and prevent children from walk and cycling to school safely:

Strouds Creek Road and School Eastern Entrance: The eastern driveway to Pathways Elementary meets Strouds Creek Road a stop sign-controlled intersection. Pedestrians walking from the Stroud's Creek neighborhood use this crossing to walk to and from school. Due to number of vehicles turning in and out of this driveway, this intersection difficult for pedestrians to cross. There is a sidewalk coming from the Stroud's Creek neighborhood, but there are no sidewalks along the western side of the intersection. There are no pedestrian crossings at this location.

Photos



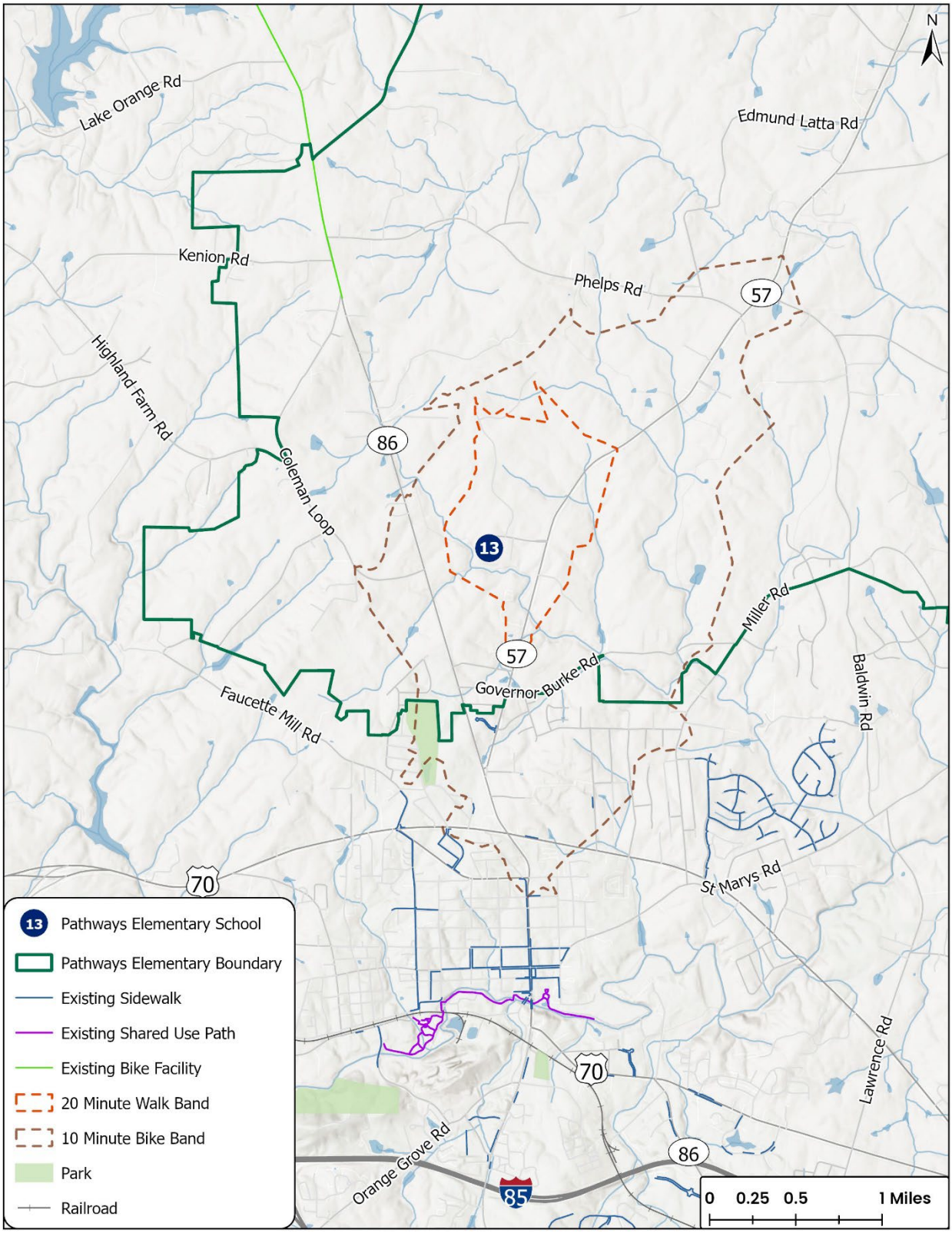
Sidewalk in front of Stroud's Creek neighborhood

End of sidewalk at the eastern driveway

Bus passing in the left lane to get into the bus lot

Afternoon pick-up line

Figure 2.8: Pathways Elementary School Overview



3. Preliminary Recommendations

This section discusses preliminary recommendations based on initial field visits and data collection. These recommendations focus on schools where students are already biking and walking in order to increase safety for those who most need it. Recommendations should be refined through additional public and stakeholder engagement.

Cedar Ridge High School

Preliminary recommendations to increase safety for students who are walking or biking to Cedar Ridge High including the following:

- Decrease speed limits along New Grady Brown School Road and Orange Grove Road. Additionally, implement speed enforcement mechanisms to prevent the current traffic from speeding.
- Install no parking signs along New Grady Brown School Road to deter parents from parking on the side of the road during afternoon pick up.
- Construct sidewalks or a multi-use path on New Grady Brown School Road and Orange Grove Road.
- Construct a pedestrian bridge adjacent to Orange Grove Road that crosses over I-40 to provide safe passage.
- Add a crosswalk and pedestrian signage on New Grady Brown School Road at Grady Brown Elementary.

Central Elementary School

Preliminary recommendations to increase safety for students who are walking or biking to Central Elementary including the following:

- Extend the sidewalk along Hayes Street further west past the school.
- Construct sidewalks along Latimer Street and W King Street.

Hillsborough Elementary School

Preliminary recommendations to increase safety for students who are walking or biking to Hillsborough Elementary including the following:

- Construct sidewalks along N Occoneechee Street.
- Extend the sidewalk along W Union Street further east.
- Install flashing pedestrian signage at the crosswalks on W Union Street, N Nash Street, and Hayes Street.

Orange Middle School

Preliminary recommendations to increase safety for students who are walking or biking to Orange Middle including the following:

- Construct multi-use paths from Harold Latta Drive and Holman Drive to the school side entrance.

Orange High School

Preliminary recommendations to increase safety for students who are walking or biking to Orange High including the following:

- Install no parking signs along Orange High School Road to deter parents from parking on the side of the road during afternoon pick up.
- Construct sidewalks along Harold Latta Road, Governor Drive, and Dairy Farm Drive.

Efland Cheeks Global Elementary School

Preliminary recommendations to increase safety for students who are walking or biking to Efland Cheeks Global Elementary including the following:

- Construct sidewalks along Fuller Road, School House Road, and Tinnin Road.

Gravelly Hill Middle School

Preliminary recommendations to increase safety for students who are walking or biking to Gravelly Hill Middle including the following:

- Install a “do not block crosswalk” sign at the crosswalk at the school driveway entrance.
- Install pedestrian crossing signage on W Ten Road.

River Park Elementary School

Preliminary recommendations to increase safety for students who are walking or biking to River Park Elementary including the following:

- Add a HAWK signal to the current crosswalk to increase pedestrian visibility.
- Construct sidewalks along St Mary’s Road and Lydia Lane to connect to the school.
- Decrease speed limit along St Mary’s Road. Additionally, implement speed enforcement mechanisms to prevent the current traffic from speeding.

Pathways Elementary School

Preliminary recommendations to increase safety for students who are walking or biking to Pathways Elementary including the following:

- Decrease speed limit along Strouds Creek Road. Additionally, implement speed enforcement mechanisms to prevent the current traffic from speeding.
- Construct a sidewalk along Strouds Creek Road to the school entrance.
- Add a crosswalk and pedestrian signage at the easternmost driveway entrance to the school.

4. Resources

Greene Transportation Solutions & Greenways Incorporated. Safe Routes to School Strategic Action Plan for Orange County, North Carolina. 2013. Retrieved from https://www.orangecountync.gov/DocumentCenter/View/4119/Adopted-Safe-Routes-to-School-SRTS-Plan-large-file-PDF

North Carolina Department of Transportation. NCDOT Annual Average Daily Traffic (AADT) Mapping Application [map]. Last updated November 9, 2023. https://www.arcgis.com/apps/webappviewer/index.html?id=964881960f0549de8c3583bf46ef5ed4 (accessed June 12, 2024).

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