



Chatham County, GA

SR 25/US 17 Corridor Study Existing Conditions Report

Prepared for:



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List of Abbreviations

AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
ATS	Average Travel Speed
BFFS	Base Free Flow Speed
CAT	Chatham Area Transit
CORE MPO	Coastal Region Metropolitan Planning Organization
DDHV	Directional Design Hourly Volume
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GCT	Garden City Terminal
GDOT	Georgia Department of Transportation
GPA	Georgia Ports Authority
ECG	East Coast Greenway
HCM	Highway Capacity Manual
HMVMT	Hundred Million Vehicle Miles Traveled
LOS	Level of Service
MOE	Measure of Effectiveness
MPC	Metropolitan Planning Commission
MPH	Miles Per Hour
MTP	Metropolitan Transportation Plan
MUTCD	Manual on Uniform Traffic Control Devices
NMTP	Non-Motorized Transportation Plan
PDO	Property Damage Only
RCUT	Restricted Crossing U-Turn
SCCPS	Savannah-Chatham County Public School System
TADA	Traffic Analysis and Data Application
TIP	Transportation Improvement Program
TMC	Turning Movement Count
TWLTL	Two-Way Left-Turn Lane
TWSC	Two-Way Stop Control
VPD	Vehicles Per Day
VPH	Vehicles Per Hour

1 Introduction

SR 25/US 17 is a critically important principal arterial that runs north-to-south through the state of Georgia from the Florida state line to the interchange with I-516/SR 21 in Chatham County. Locally, the SR 25/US 17/Ogeechee Road (“SR 25/US 17”) corridor serves as a key alternate to I-95 and I-16, provides access to freight routes such as SR 307/Dean Forest Road and to Georgia Ports Authority (GPA) facilities, connects the City of Richmond Hill and Bryan County to Chatham County, and functions as a Georgia State Bicycle Route 95 and vital component of the East Coast Greenway (ECG). The 10.7-mile-long study corridor from the Ogeechee River to I-516/SR 21 includes a diverse mix of commercial, residential, and recreational facilities, and portions of the route are utilized by the Savannah-Chatham County Public School System (SCCPSS) and Chatham Area Transit (CAT). Prioritizing the safe and efficient movement of all modes along this multi-functional route is key to the long-term success of the surrounding area.

The primary goals and objectives of the SR 25/US 17 Corridor Study are:

- Identify and prioritize short term (0-5 years) and long term (5+ years) improvement projects needed for the SR 25/US 17 corridor to operate at an acceptable level of service
- Prioritize recommended improvements to facilitate planning and programming of projects through the Coastal Region Metropolitan Planning Organization’s (CORE MPO) Metropolitan Transportation Plan (MTP) process
- Justify the future programming of projects in the CORE MPO’s Transportation Improvement Program (TIP) and *Moving Forward Together 2050* MTP

As a supporting document to the CORE MPO MTP process, this study’s goals, objectives, and outcomes are intended to align closely with those highlighted in the CORE MPO’s *Mobility 2045* MTP and future *Moving Forward Together 2050* MTP, which is scheduled to be adopted in August 2024. The goals and objectives of the MTP focus on several key performance measures used to inform transportation investment decisions. Some of the measures most relevant to this study include:

- **Safety and Security.** A total of 3,621 crashes occurred along the SR 25/US 17 corridor over the five-year period between 2018 and 2022. During this period, the SR 25/US 17 corridor exhibited overall and fatal crash rates approximately double and triple the statewide average for principal arterials, respectively. Of the 24 fatal crashes occurring on the corridor, 13 (54%) involved a pedestrian or cyclist. A key objective of the subject corridor study is to identify projects that address existing crash trends and provide safe access for all road users.
- **Congestion Reduction and System Performance.** Long peak hour delays are experienced near the intersections of SR 25/US 17 with SR 204/Abercorn Street, Cottonvale Road, and Chatham Parkway. In fact, northbound queues exceed one mile in length at the intersections with SR 204/Abercorn Street and Cottonvale Road during the AM peak period. Similarly, westbound and southbound queues exceed one mile in length at the intersection with Chatham Parkway during the PM peak period. The *Coastal Empire Transportation Study* (GDOT, 2023) recommended geometric and capacity improvements at the intersection of SR 25/US 17 with Chatham Parkway, and a parallel corridor study (PI No. 0019010) is underway for portions of SR 204/Abercorn Street near SR 25/US 17. Reducing congestion and improving system performance are key objectives of the SR 25/US 17 Corridor Study.

- **Accessibility, Mobility, and Connectivity.** Based on 2019 data from the US Census Bureau, approximately 6,000 jobs are located within a one-mile radius of the SR 25/US 17 centerline. Outside of this immediate radius, the SR 25/US 17 corridor serves as a vital connection to and from the Interstate system, Savannah's downtown core, and GPA's operations at the Port of Savannah. SR 25/US 17 plays a significant role in supporting the region's economic vitality and is one of two primary arterials to and from Chatham County and the surrounding area. The existing operations, safety, and access deficiencies along SR 25/US 17 threaten the vitality of these economic centers and the surrounding population.

This document summarizes a comprehensive data collection effort, capacity analysis, and safety analysis conducted to assess existing conditions along the SR 25/US 17 corridor and to identify transportation challenges, needs, and opportunities. The outcomes of this initial task will be used to inform corridor improvements and will be documented in the SR 25/US 17 Corridor Study report.

2 Existing Conditions Assessment

2.1 Study Area, Corridor Characteristics, and Field Observations

The study area for this project is illustrated in **Figure 1** and includes the SR 25/US 17 corridor from the Chatham County/Bryan County line to Plymouth Avenue/Mills Lane east of I-516/SR 21. Across this 10.7-mile-long stretch, a total of 40 intersections were included in traffic analyses, 16 of which are currently signalized, and a diverse set of context areas exist. Surrounding land uses include dispersed single- and multi-family residential communities throughout the corridor, commercial developments concentrated near major intersections, and industrial developments along the northern end of the study area near I-516/SR 21. Six distinct context areas were identified and independently assessed as part of this existing conditions assessment. Key characteristics of each segment identified through data collection and field observations are described on the following pages and in **Figure 2** through **Figure 13**.

2.1.1 Segment 1 – Southern Gateway

Segment 1 constitutes a 2.2-mile-long section of the SR 25/US 17 corridor between the Chatham County/Bryan County line and Chevis Road. This segment is primarily comprised of residential, commercial, and educational land uses and provides access to the Southwest Elementary and Middle School campuses, Kings Ferry Boat Ramp, and the Coastal Botanical Gardens. Key characteristics of this segment are summarized in **Table 1**, and existing geometry, traffic volumes, and field-collected photographs are provided in **Figure 2**. Environmental features along this segment are summarized in **Figure 3**.

Traffic Operations

Daily traffic volumes on this segment of SR 25/US 17 are approximately 85% of the theoretical capacity of a typical four-lane divided facility, with annual average daily traffic (AADT) volumes averaging approximately 33,300 vehicles per day (VPD) and truck percentages ranging between 2% and 8% during the peak periods of travel. Modest congestion was observed during the AM and PM peak hours aside from heavy northbound queues at the SR 204/Abercorn Street interchange during the AM peak hour. These queues occasionally extended through the intersection with Fountain Road, and northbound progression was impeded as far upstream as Canebrake Road during the AM peak period. As illustrated in the photos in **Figure 2**, high travel speeds were observed as the corridor transitions from rural to urban in character. The posted speed limit is 45 miles per hour (MPH) on this segment, and a 35 MPH school zone extends along the Southwest Middle School and Southwest Elementary School frontage; however, observed travel speeds frequently exceeded 50 MPH including during school arrival times of 7:10 AM and 8:55 AM and dismissal times of 2:50 PM and 4:10 PM.

Access to Alta Bradley, a permitted multifamily residential development expected to open in 2025, will form a fourth leg at the intersection of SR 25/US 17 at Canebrake Road. This intersection is expected to continue operating acceptably once planned signal improvements are implemented as documented in the *Alta Bradley Multifamily Site Traffic Impact Analysis* (Thomas & Hutton, 2022).

Roadway Geometry/Access Management

The Segment 1 corridor includes 10 unsignalized driveways, which is equivalent to a spacing of four driveways per mile, as well as a continuous center raised median and auxiliary turn lanes at most intersections. Acceptable traffic operations along this segment are attributable to adequate intersection spacing, reduced conflicts, and access management. Nevertheless, ongoing and future development near Fords Pointe Circle/Bradley Boulevard and south of the study area in Bryan County may necessitate additional geometric and intersection control improvements over the short- and long-term horizons.

Non-Motorist Facilities

CAT operates Route 17 along southbound SR 25/US 17 between Canebrake Road and Chevis Road. There are two bus stops located along this segment; one is located south of Bamboo Lane, and one is south of the Southwest Middle School Driveway. Further, CAT operates Route 6 along Chevis Road and one bus stop is located on Chevis Road east of SR 25/US 17. Striped on-street bike lanes are present from south of Fords Pointe Circle/Bradley Boulevard to Chevis Road, and the bike lanes along SR 25/US 17 from Canebrake Road to Chevis Road comprise part of the East Coast Greenway (ECG). Pedestrian facilities are present at the signalized intersections of Canebrake Road and Chevis Road, and sidewalk starts on the northwest side of SR 25/US 17 at the Southwest Middle School Driveway and continues north to the Chevis Road intersection. The CORE MPO's *Non-Motorized Transportation Plan* (NMTP) highlights Bradley Boulevard to Chevis Road as a Pedestrian Focus Area and recommends a sidewalk along both sides of SR 25/US 17.

Environmental Features

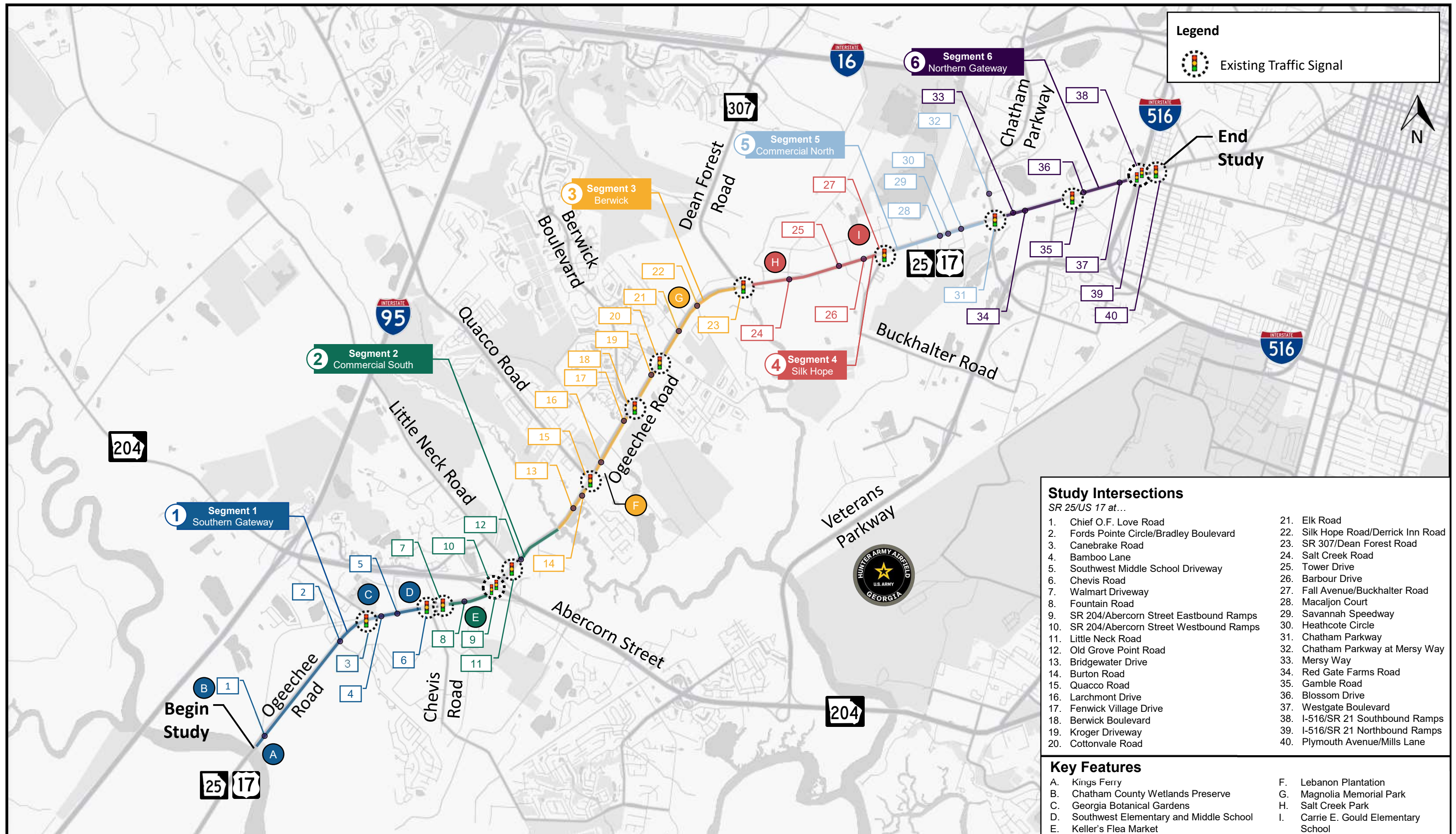
The Ogeechee River is located at the southern end of the study corridor, and the Chatham County Wetlands Preserve (CCWP) runs along the western side of Segment 1 south of the intersection with Fords Pointe Circle/Bradley Boulevard. Freshwater forested/shrub wetlands and a FEMA Flood Zone AE (i.e., 1% annual risk for flooding) are located along SR 25/US 17 south of Fords Pointe Circle/Bradley Boulevard. These environmental features may constrain opportunities for future improvements along Segment 1.

Table 1: Segment 1 – Southern Gateway Corridor Characteristics

Geometric and Functional Characteristics	
<i>Extents</i>	Ogeechee River to Chevis Road (2.2 Miles)
<i>Typical Cross-Section</i>	Typical Section: 4-Lane with Raised Median/Left-Turn Lanes Typical Lane Widths: 12' Travel Lanes, 4' Bike Lanes, 20' Raised Median 4'-10' Outside Shoulder
<i>Speed Limit</i>	55 MPH from Ogeechee River to 1000 ft south of Bradley Blvd 45 MPH from 1000 ft south of Bradley Blvd to Chevis Road 35 MPH school zone from Bamboo Lane to 500 feet south of Chevis Road
<i>Number of Driveways</i>	10 (4 Driveways/Mile)
<i>Number of Median Openings</i>	7
<i>Number of Signalized Intersections</i>	2
Major Intersecting Roadways	
<i>Chevis Road</i>	Cross-Section: Two-Lane Undivided Speed Limit: 40 MPH 2024 AADT: 1,300 VPD (West); 7,500 VPD (East)
Traffic Characteristics	
<i>Existing Traffic Volume Data¹</i>	2024 AADT: 33,300 VPD 2024 DHV: 2,830 VPH K Factor: 8.5% Daily Truck Percentage: 6%
<i>Historic Traffic Volume Data²</i>	5-Year Historic Growth Rate: 2.96% 10-Year Historic Growth Rate: 2.20%

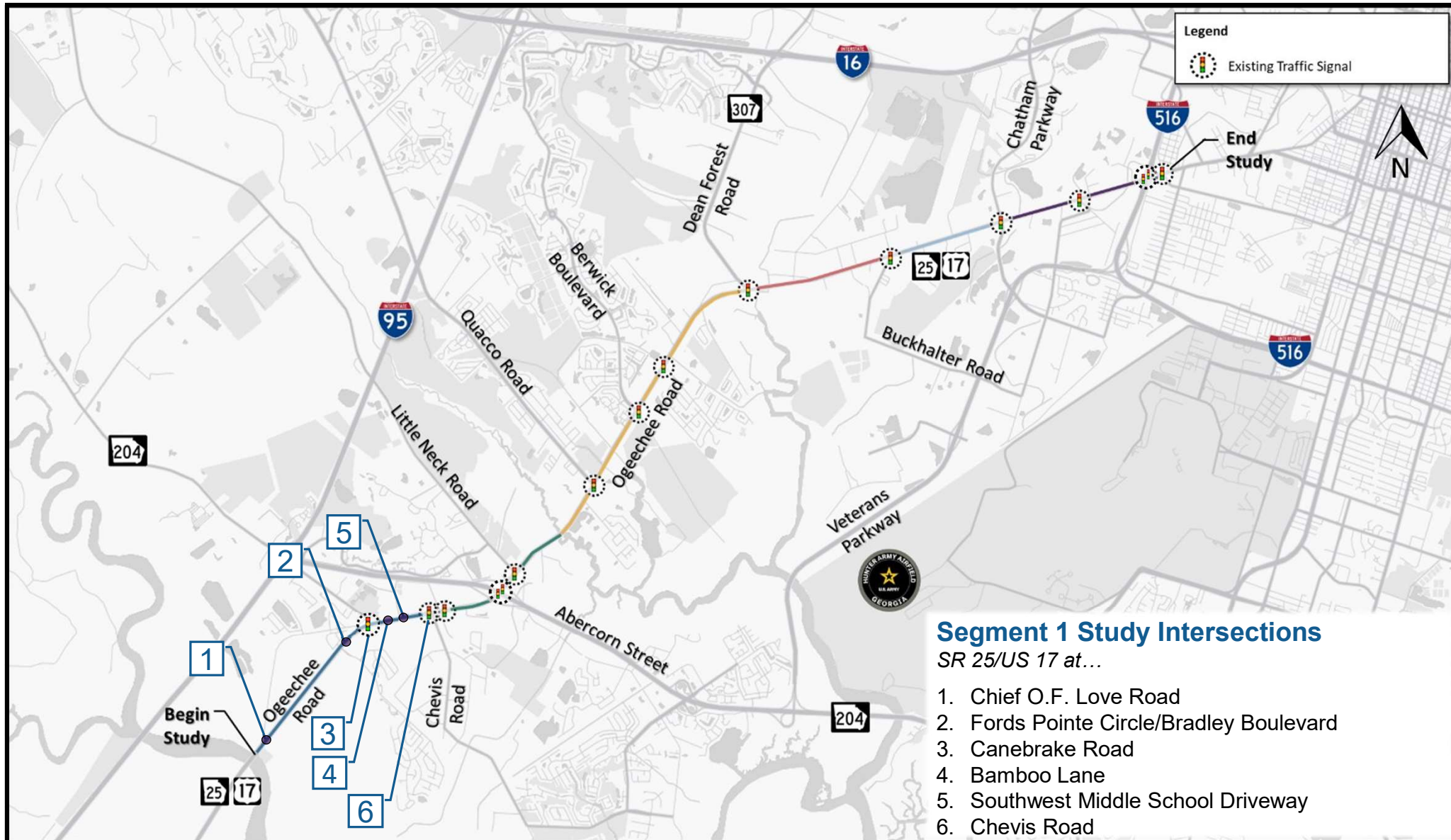
¹ Existing traffic volume data represents an average of the factored AADT volumes calculated from field-collected data on Segment 1

² Historic Traffic Growth based on AADT counts from GDOT TADA



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment

Figure 1 – Corridor Context Areas and Study Intersections



Existing Geometry & Intersection Control

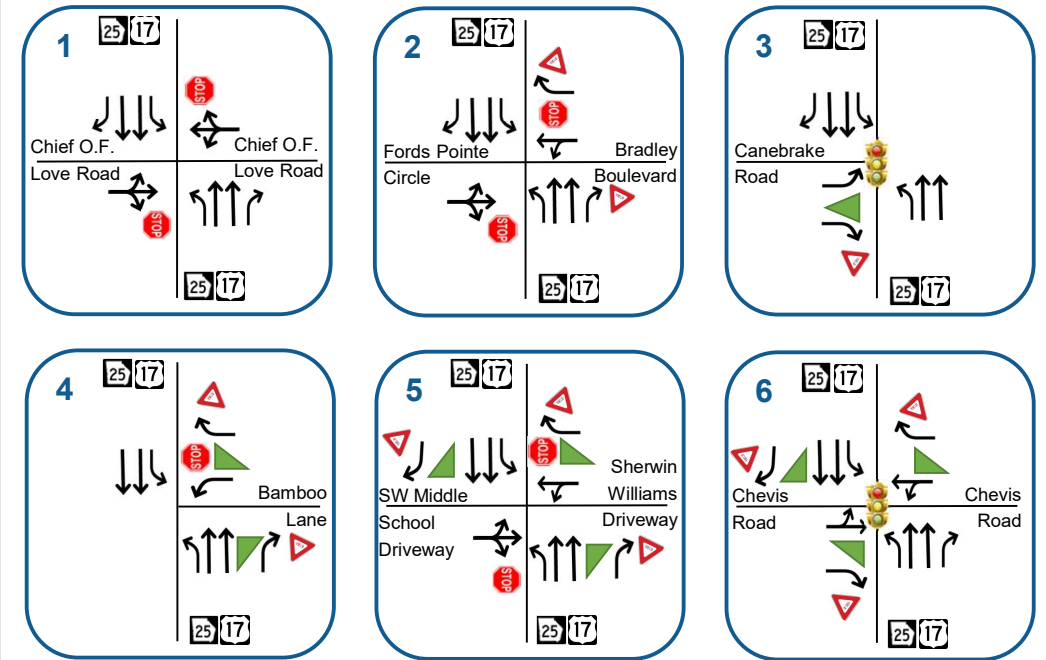


Photo: SR 25/US 17 at Bamboo Lane
(Looking North)



Photo: SR 25/US 17 at Chevis Road
(Looking North)

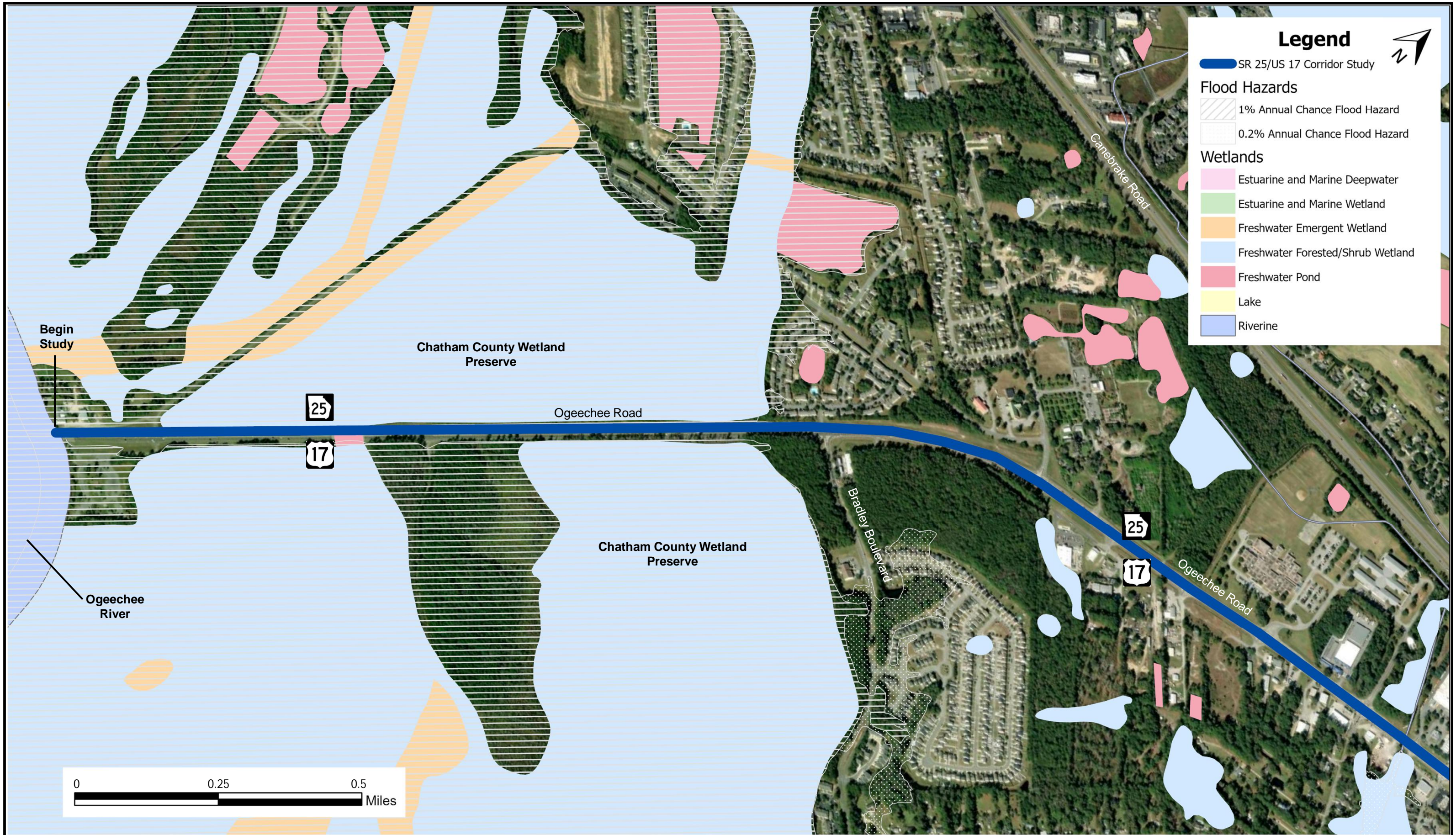


Photo: SR 25/US 17 at Bamboo Lane
(Looking North)

SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment

Figure 2 – Study Intersections and Key Characteristics

Segment 1 – Southern Gateway



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 3 – Environmental Feature Map
 Segment 1 – Southern Gateway

2.1.2 Segment 2 – Commercial South

Segment 2 is approximately 1.5 miles in length and extends from Chevis Road to the Little Ogeechee River. Segment 2 includes the SR 204/Abercorn Street interchange and the intersection with Little Neck Road, both of which are critical nodes along the study corridor. Land uses along this segment are primarily commercial in nature with residential uses and tidal marsh in the surrounding area. Key characteristics of this segment are summarized in **Table 2**, and existing geometry, traffic volumes, and field-collected photographs are provided in **Figure 4**. Environmental features along this segment are summarized in **Figure 5**.

Traffic Operations

Like Segment 1, daily traffic volumes on Segment 2 are approximately 85% of the theoretical capacity of a typical four-lane divided facility, with AADT volumes averaging 33,900 VPD and truck percentages ranging between 2% and 7% during the peak periods of travel. During the AM peak period, field observations indicated that northbound queues at the SR 204/Abercorn Street interchange occasionally extended through the intersection with Fountain Road, and northbound progression was impeded past Chevis Road and as far upstream as Canebrake Road beyond the limits of Segment 2. This congestion is attributable to downstream conditions on SR 204/Abercorn Street, including the merge area from the eastbound on-ramp and capacity constraints at the existing signalized intersection with Don Zipperer Drive. Moderate congestion was also observed in both directions along SR 25/US 17 during the PM peak period, when bidirectional traffic volumes are highest at approximately 2,800 vehicles per hour (VPH).

Field travel time runs corresponded with an average travel speed of approximately 30 MPH and 24 MPH through Segment 2 during the AM and PM peak periods, respectively, which is nearly 20 MPH below the posted speed limit through this segment. Potential improvements along SR 204/Abercorn Street from the SR 25/US 17 interchange to the King George Boulevard interchange are under consideration as part of PI No. 0019010. Further, an additional Chatham County project proposes improvements on Little Neck Road to include widening and new auxiliary lanes at the intersection with SR 25/US 17. In both cases, these improvements are expected to address existing operational constraints over the short-term horizon, but further improvements may be needed on the SR 25/US 17 corridor as growth continues over the long-term horizon.

Roadway Geometry/Access Management

As shown in **Table 2**, 22 unsignalized driveways are present along the Segment 2 corridor, which is equivalent to a spacing of 15 driveways per mile. However, many of these driveways are restricted to right-in/right-out access only. Segment 2 is characterized by auxiliary turn lanes and a raised median along its entire length, but further operational and safety gains could be realized through access management strategies such as driveway consolidation and increased spacing between full-movement intersections.

Non-Motorist Facilities

CAT operates Route 17 along SR 25/US 17 for the entirety of Segment 2. There are two bus stops in each direction (i.e., four total stops) in this segment; one bidirectional pair is located south of the SR 204/Abercorn Street eastbound ramps, and the other pair is north of Little Neck Road.

Provisions for non-motorists are variable along Segment 2. A sidewalk begins on the western side of SR 25/US 17 at Chevis Road and continues to a driveway south of the Walmart Driveway; however, the eastern side of Segment 2 does not include a sidewalk. Striped on-street bike lanes are present along both sides of SR 25/US 17 through Segment 2 and comprise part of the ECG. The CORE MPO's NMTP highlights Segment 2 as a Pedestrian Focus Area and recommends a sidewalk on both sides of SR 25/US 17 from Chevis Road to SR 204/Abercorn Street.

Environmental Features

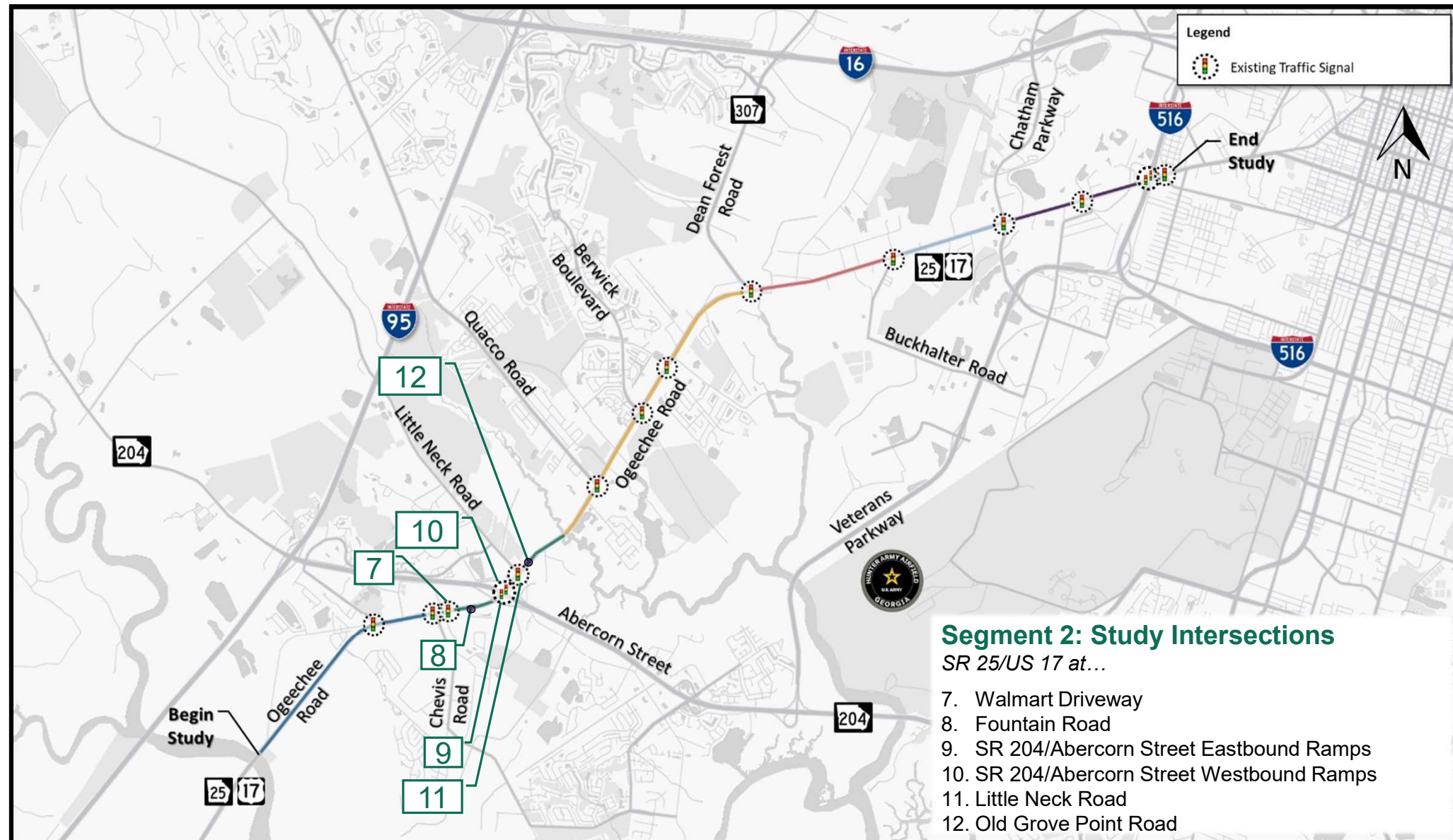
At the northern end of Segment 2, estuarine and marine wetlands surround the Little Ogeechee River, and there are also freshwater forested/shrub wetlands along both sides of this segment. These environmental features may constrain opportunities for future improvements along SR 25/US 17. Further, a portion of the segment from north of Little Neck Road to the Little Ogeechee River is located in a FEMA Flood Zone AE.

Table 2: Segment 2 – Commercial South Corridor Characteristics

Geometric and Functional Characteristics	
<i>Extents</i>	Chevis Road to Little Ogeechee River (1.5 Miles)
<i>Typical Cross-Section</i>	Typical Section: 4-Lane with Raised Medians/Flushed Medians Typical Lane Widths: 12' Travel Lanes, 4' Bike Lanes, 20' Median, Curb and Gutter/6'-10' Outside Shoulder
<i>Speed Limit</i>	45 MPH
<i>Number of Driveways</i>	22 (15 Driveways/Mile)
<i>Number of Median Openings</i>	8
<i>Number of Signalized Intersections</i>	4
Major Intersecting Roadways	
<i>SR 204/Abercorn Street Eastbound/Westbound Ramps</i>	Cross-Section: Four-Lane Divided with Raised Median Speed Limit: 55 MPH 2024 AADT: <ul style="list-style-type: none"> Northbound Off-Ramp: 2,300 VPD Northbound On-Ramp: 15,800 VPD Southbound Off-Ramp: 2,700 VPD Southbound On-Ramp: 14,900 VPD
<i>Little Neck Road</i>	Cross-Section: Two-Lane Undivided Speed Limit: 45 MPH 2024 AADT: 9,900 VPD
Traffic Characteristics	
<i>Existing Traffic Volume Data¹</i>	2024 AADT: 33,900 VPD 2024 DHV: 2,680 VPH K Factor: 7.9% Daily Truck Percentage: 5%
<i>Historic Traffic Volume Data²</i>	5-Year Historic Growth Rate: 2.65% 10-Year Historic Growth Rate: 2.23%

¹ Existing traffic volume data represents an average of the factored AADT volumes calculated from field-collected data on Segment 2

² Historic Traffic Growth based on AADT counts from GDOT TADA



Existing Geometry & Intersection Control

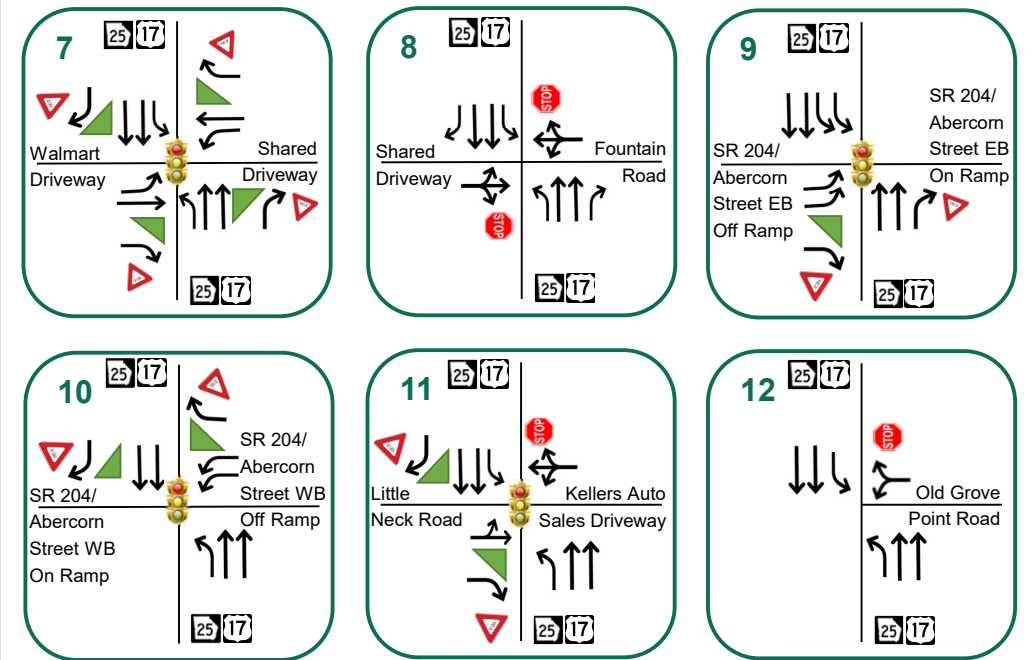


Photo: SR 25/US 17 at SR 204/Abercorn Street Westbound Ramps (Looking South)



Photo: SR 25/US 17 at SR 204/Abercorn Street Eastbound Ramps (Looking North)

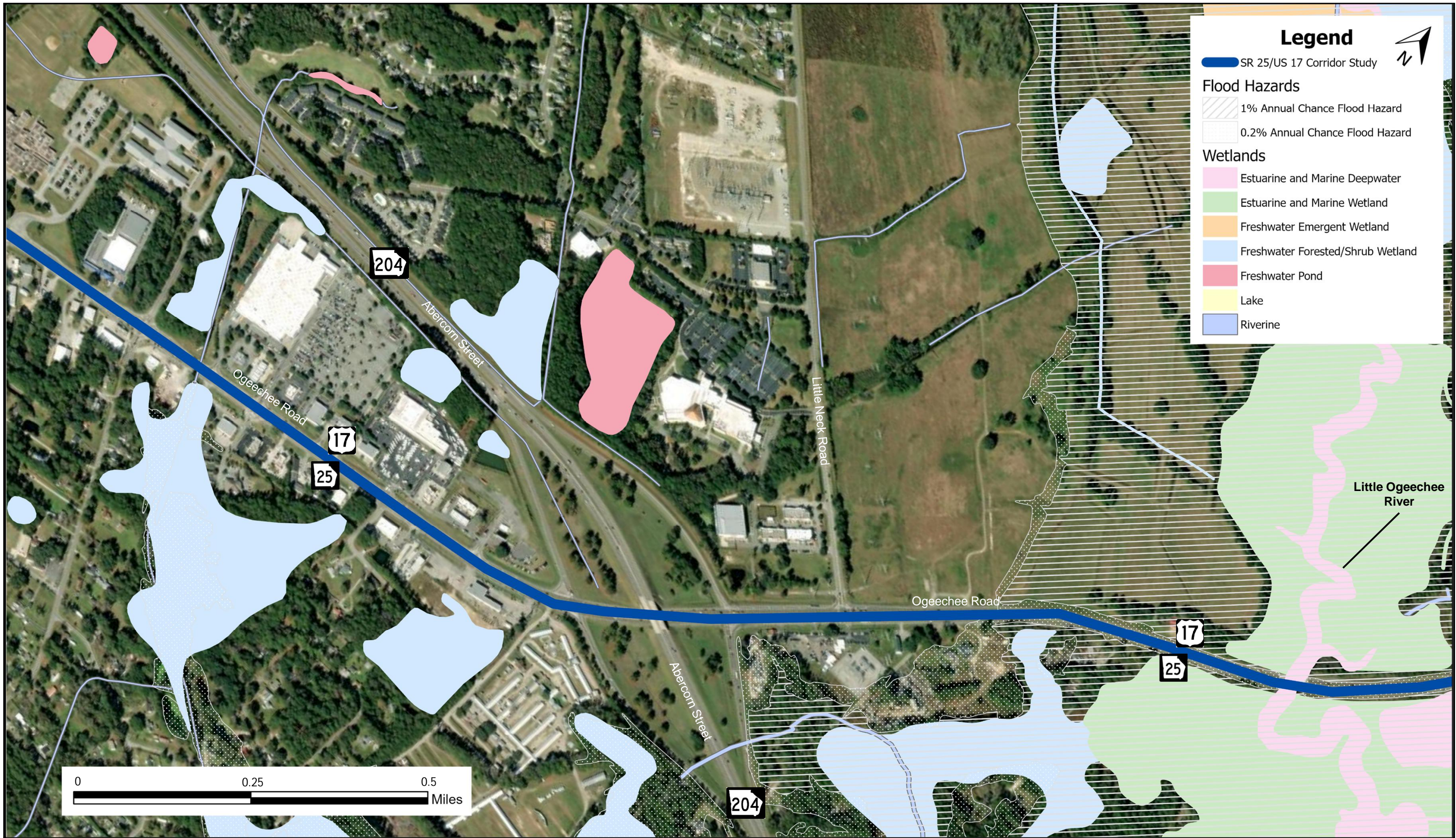


Photo: SR 25/US 17 at Little Neck Road (Looking South)

SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment

Figure 4 – Study Intersections and Key Characteristics

Segment 2 – Commercial South



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 5 – Environmental Feature Map
 Segment 2 – Commercial South

2.1.3 Segment 3 – Berwick

Segment 3 is a 2.9-mile-long section of the SR 25/US 17 corridor that runs between the Little Ogeechee River and SR 307/Dean Forest Road. This segment of SR 25/US 17 is comprised of residential, retail, and restaurant uses and exhibits low average travel speeds during the AM and PM peak hours. Key characteristics of this segment are summarized in **Table 3**, and existing geometry, traffic volumes, and field-collected photographs are provided in **Figure 6**. Environmental features along this segment are summarized in **Figure 7**.

Traffic Operations

Along Segment 3, daily traffic volumes are greater than 90% of the theoretical capacity of a four-lane divided facility, with AADT volumes averaging 34,500 VPD and truck percentages ranging between 2% and 9% during the peak periods of travel. As shown in **Figure 6**, bi-directional volumes are highest during the AM peak period and approach 3,000 VPH. During this period, queues beginning at Cottonvale Road occasionally extended upstream through Berwick Boulevard between 7:00 AM and 8:00 AM. During the PM peak period, southbound queueing was observed beginning at Berwick Boulevard; however, queue lengths were not as substantial as those observed during the AM peak period.

Field travel time runs along Segment 3 yielded an average travel speed of approximately 28 MPH in the northbound direction and 27 MPH in the southbound direction during the AM and PM peak periods, respectively. Existing operations indicate that geometric modifications, signal timing improvements, and access management improvements are likely warranted in the short-term between Berwick Boulevard and Cottonvale Road. Further, as development occurs adjacent to Little Neck Road and future improvements are implemented at the SR 204/Abercorn Street interchange, additional long-term improvements may be needed along Segment 3 to service increased demand and throughput.

Roadway Geometry/Access Management

Segment 3 consists of four travel lanes, a center raised median, and auxiliary turn lanes at most intersections. The center raised median transitions to a two-way left-turn lane (TWLTL) approximately 1,000-feet-south of SR 307/Dean Forest Road. Segment 3 also includes 47 unsignalized driveways, which is equivalent to a spacing of 16 driveways per mile. Most of these driveways are restricted to right-in/right-out access; however, their proximity to critical signalized intersections presents numerous opportunities to reduce conflicts and enhance operations through access management improvements.

Non-Motorist Facilities

CAT operates Route 17 along both directions of SR 25/US 17 for the entirety of Segment 3, and there are a total of 12 bus stops in this segment spaced at approximately half-mile intervals. Striped on-street bike lanes are present on both sides of SR 25/US 17 and end approximately 1,000-feet-south of SR 307/Dean Forest Road. Pedestrian facilities are present at all four signalized intersections in Segment 3, and sidewalk runs along both Quacco Road and Berwick Boulevard; however, sidewalk is not present along SR 25/US 17 in this segment. The CORE MPO's NMTP classifies the sections of SR 25/US 17 from Bridgewater Drive to Quacco Road and from Berwick Boulevard to SR 307/Dean Forest Road as Pedestrian Focus Areas and recommends a sidewalk on both sides of SR 25/US 17 within these locations. Further, improvements recommended by the *SR 25/US 17 at Silk Hope Road/Derrick Inn Road Traffic Engineering Study* (Atkins, 2022) are under consideration at the

intersection of SR 25/US 17 at Silk Hope Road/Derrick Inn Road. Recommended improvements include the installation of a pedestrian hybrid beacon (PHB) mid-block crossing on SR 25/US 17 north of this intersection and enhanced roadway lighting to improve driver visibility.

Environmental Features

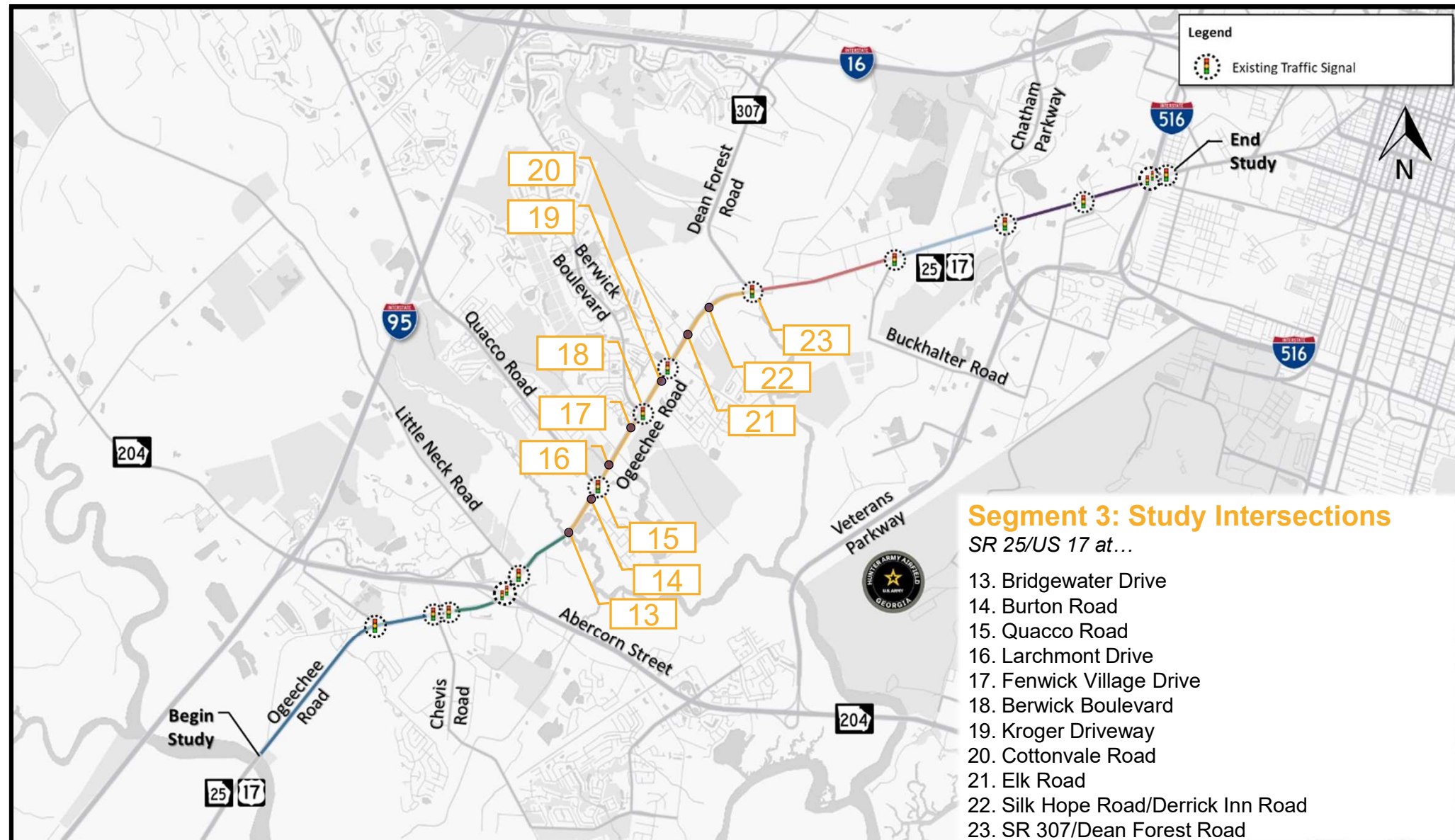
Estuarine and marine wetlands are located near the Little Ogeechee River and Salt Creek. There are also freshwater forested/shrub wetlands throughout Segment 3, notably along the Quacco Canal crossing approximately 1,000-feet-north of Quacco Road and along the west side of SR 25/US 17 at Cottonvale Road. The southern and northern ends of the segment fall within the FEMA Flood Zone AE.

Table 3: Segment 3 – Berwick Corridor Characteristics

Geometric and Functional Characteristics	
<i>Extents</i>	Little Ogeechee River to SR 307/Dean Forest Road (2.9 Miles)
<i>Typical Cross-Section</i>	Typical Section: 4-Lane Divided with a Raised Median/Flush median and Shoulder Typical Lane Widths: 12' Travel Lanes, 4' Bike Lanes, 20" Median, Curb and Gutter/4'-12' Outside Shoulder
<i>Speed Limit</i>	45 MPH
<i>Number of Driveways</i>	47 (16 Driveways/Mile)
<i>Number of Median Openings</i>	10
<i>Number of Signalized Intersections</i>	4
Major Intersecting Roadways	
<i>Quacco Road</i>	Cross-Section: Four-Lane Divided with Raised Median Speed Limit: 40 MPH 2024 AADT: 17,900 VPD
<i>SR 307/Dean Forest Road</i>	Cross-Section: Four-Lane Divided with Raised Median Speed Limit: 45 MPH 2024 AADT: 13,000 VPD
Traffic Characteristics	
<i>Existing Traffic Volume Data¹</i>	2024 AADT: 34,500 VPD 2024 DHV: 2,690 VPH K Factor: 7.8% Daily Truck Percentage: 7%
<i>Historic Traffic Volume Data²</i>	5-Year Historic Growth Rate: 4.1% 10-Year Historic Growth Rate: 3.3%

¹ Existing traffic volume data represents an average of the factored AADT volumes calculated from field-collected data on Segment 3

² Historic Traffic Growth based on AADT counts from GDOT TADA



Existing Geometry & Intersection Control

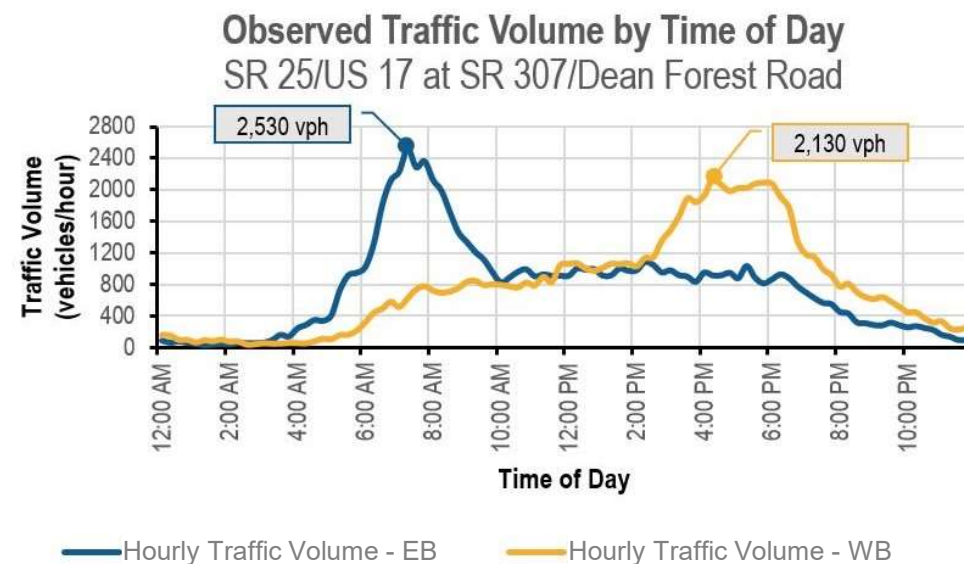
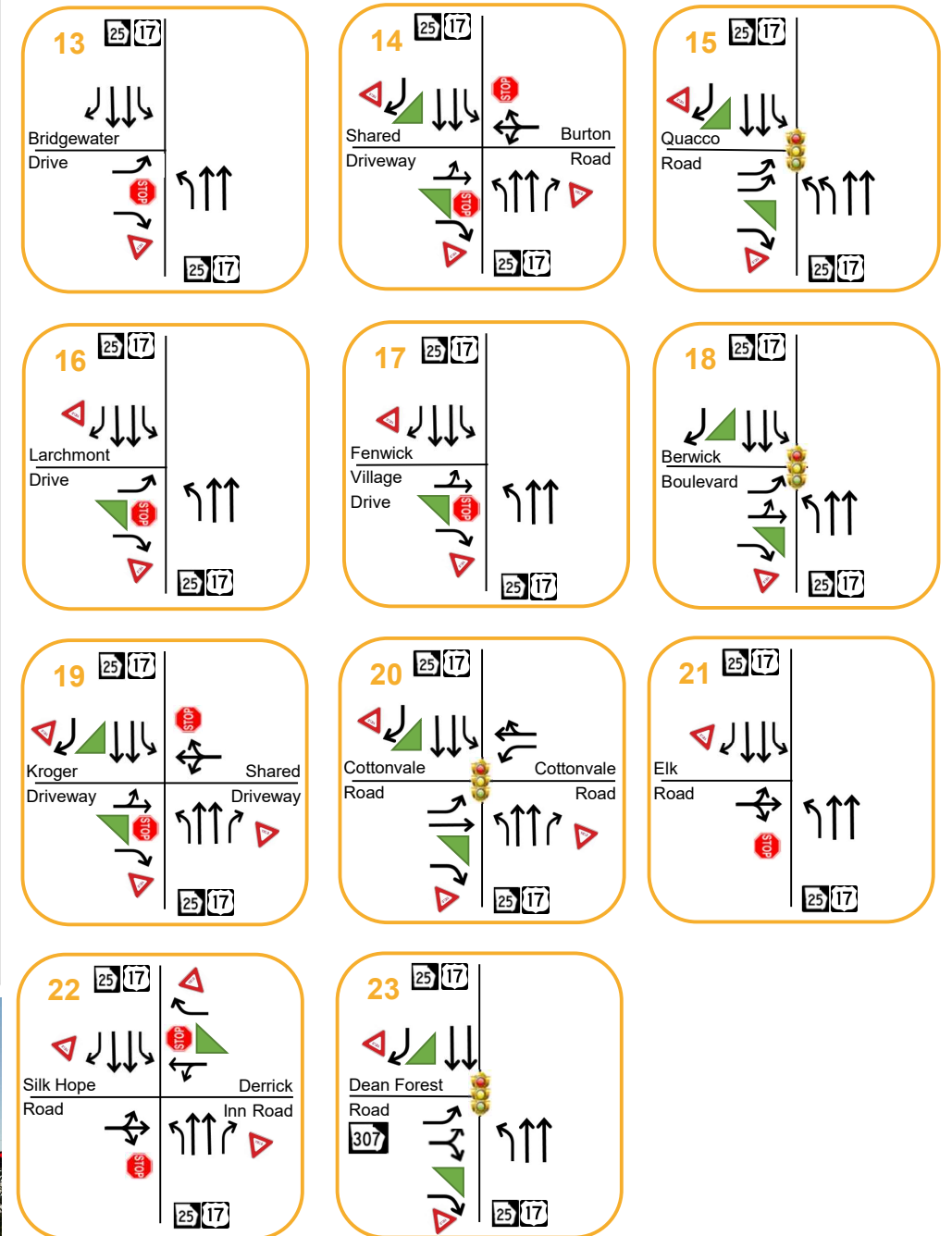


Photo: SR 25/US 17 at Cottonvale Road (Looking South)

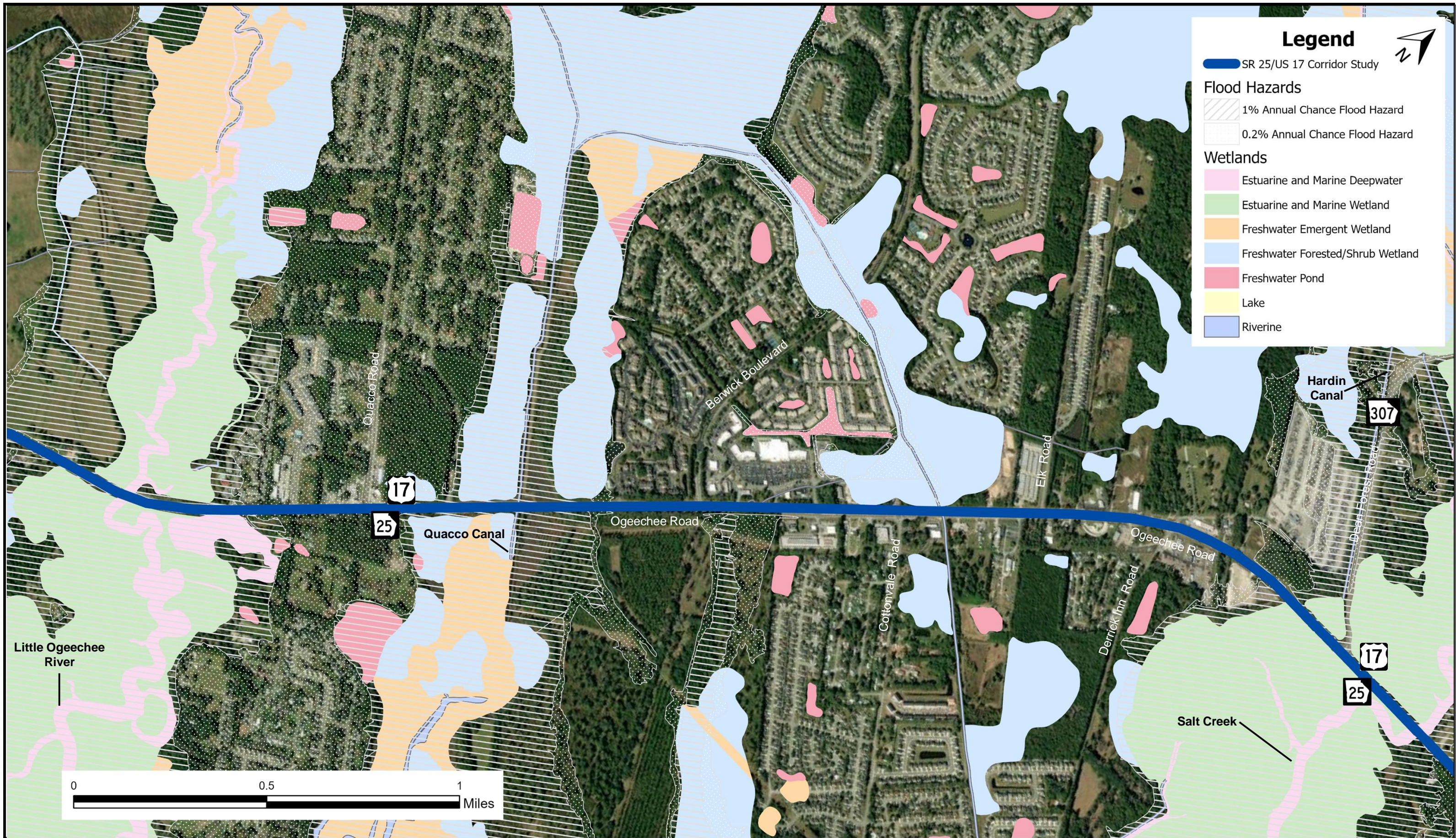


Photo: SR 25/US 17 at SR 307/Dean Forest Road (Looking North)

SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment

Figure 6 – Study Intersections and Key Characteristics

Segment 3 – Berwick



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 7 – Environmental Feature Map
 Segment 3 – Berwick

2.1.4 Segment 4 – Silk Hope

Segment 4 extends approximately 1.4 miles between SR 307/Dean Forest Road and Fall Avenue/Buckhalter Road. This segment is predominantly comprised of single-family residential land uses. Key characteristics of this segment are summarized in **Table 4**, and existing geometry, traffic volumes, and field-collected photographs are provided in **Figure 8**. Environmental features along this segment are summarized in **Figure 9**.

Traffic Operations

Daily traffic volumes on Segment 4 average 31,500 VPD, approximately 85% of the theoretical capacity of a four-lane divided facility, and truck percentages range from 2% to 9% during the peak periods of travel. Field observations indicate that moderate recurring congestion occurs at the Fall Avenue/Buckhalter Road intersection in the northbound and southbound directions during the AM and PM peak periods, respectively. The longest queues were observed during the AM peak period, when northbound traffic extended up to 2,000 feet upstream near the Sandman Motel driveway. During the same period, downstream congestion near the Chatham Parkway intersection occasionally impeded the flow of northbound through traffic.

Field travel time runs yielded an average travel speed of 33 MPH or greater during each peak period. Based on modeled and observed existing operations, access management strategies may offer the most opportunity for operational and safety gains on Segment 4. However, as growth continues along the SR 25/US 17 corridor, additional geometric and intersection control improvements may be needed over the long-term horizon.

Roadway Geometry/Access Management

Segment 4 includes 54 unsignalized driveways, which is equivalent to a spacing of 19 driveways per mile. This segment primarily consists of a five-lane roadway with a center TWLTL and a paved shoulder through Salt Creek Road, at which point a curb and gutter section begins. Driveway density and existing crash history indicate the need for access management strategies (e.g., movement restrictions, center raised median) along this segment of the corridor.

Non-Motorist Facilities

CAT operates Route 17 along both directions of SR 25/US 17 for the entirety of Segment 4, and there are a total of eight bus stops in this segment; one bidirectional pair is located at Salt Creek Road, and three bidirectional pairs are spaced at approximately 1,000-foot-intervals between Old Buckhalter Road and Buckhalter Road/Fall Avenue. No sidewalks are provided along Segment 4, and the narrow shoulder provides limited buffer for pedestrians and cyclists from adjacent motorist traffic that often travels at speeds in excess of 50 MPH based on field observations. Pedestrian crossings are provided at Barbour Drive, Tower Drive, and Fall Avenue/Buckhalter Road, and existing bus stops are provided at Salt Creek Road and Fall Avenue/Buckhalter Road. Further, a worn footpath is present along portions of this segment. Each of these observations are indicative of latent non-motorized demand and suggest the need for linear pedestrian and bicycle facilities. The CORE MPO's NMTP classifies the entirety of Segment 4 as a Pedestrian Focus Area and recommends a shared-use path on both sides of SR 25/US 17 within this segment.

Environmental Features

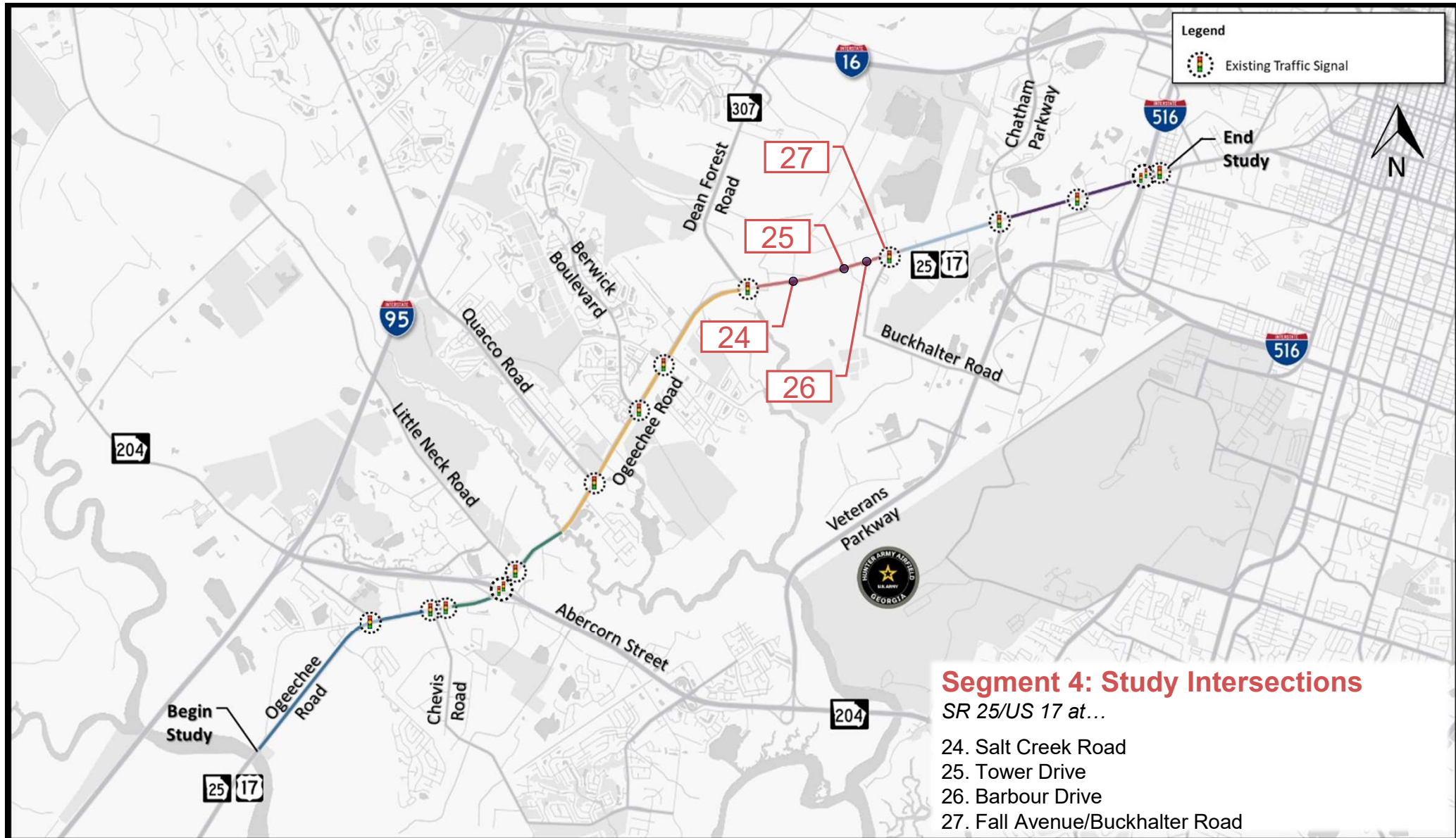
The southern end of Segment 4 is surrounded by estuarine and marine wetlands near Salt Creek. The rest of Segment 4 has minimal adjacent environmental features, and the existing wetlands and storm drainage from SR 25/US 17 outfall to Salt Creek.

Table 4: Segment 4 – Silk Hope Corridor Characteristics

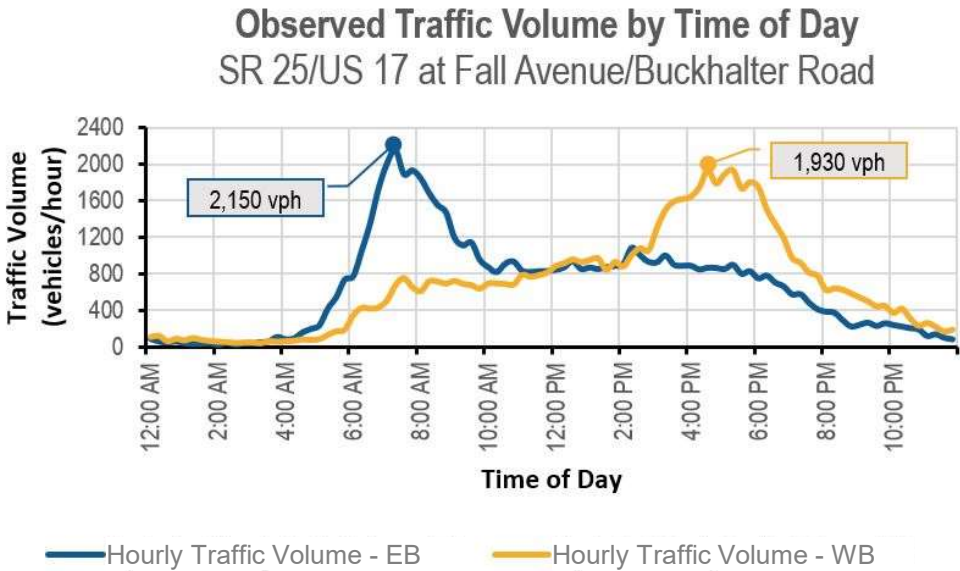
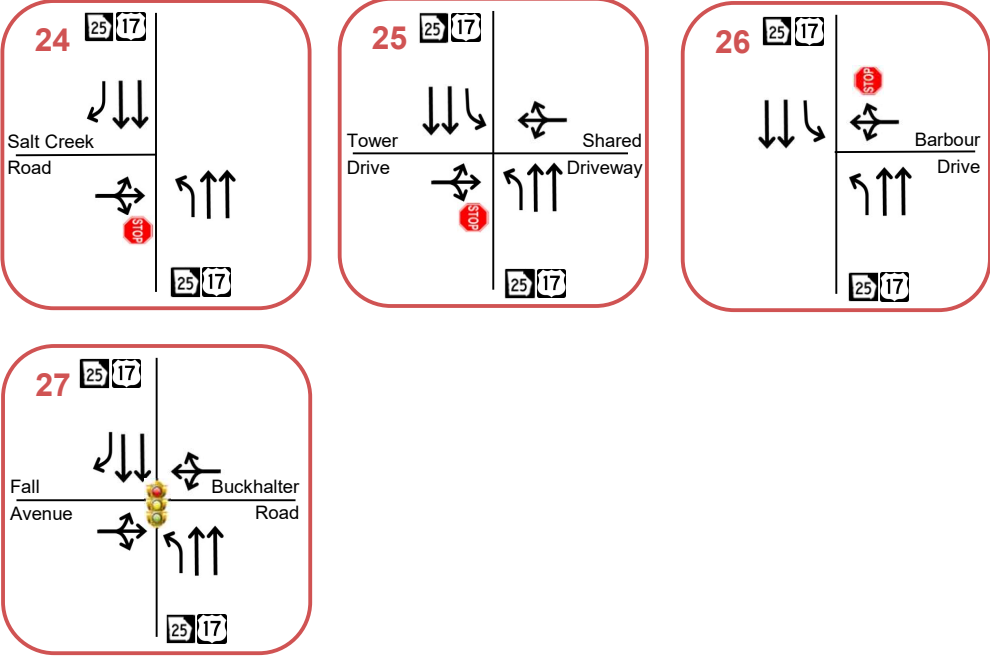
Geometric and Functional Characteristics	
<i>Extents</i>	SR 307/Dean Forest Road to Buckhalter Road (1.4 Miles)
<i>Typical Cross-Section</i>	Typical Section: 5-Lane with Two-Way Left-Turn Lane (TWLTL) Typical Lane Widths: 12' Travel Lanes, 15" TWLTL, Curb and Gutter/ 2'-4' Outside Shoulder
<i>Speed Limit</i>	25 MPH school zone near Buckhalter Road 45 MPH posted speed elsewhere
<i>Number of Driveways</i>	54 (19 Driveways/Mile)
<i>Number of Median Openings</i>	N/A – TWLTL
<i>Number of Signalized Intersections</i>	2
Major Intersecting Roadways	
<i>Fall Avenue/Buckhalter Road¹</i>	Cross-Section: Two-Lane Undivided Speed Limit: 25 MPH/40 MPH 2024 AADT: 1,600 VPD (West); 2,100 VPD (East)
Traffic Characteristics	
<i>Existing Traffic Volume Data¹</i>	2024 AADT: 31,500 VPD 2024 DHV: 2,610 VPH K Factor: 8.3% Daily Truck Percentage: 6%
<i>Historic Traffic Volume Data²</i>	5-Year Historic Growth Rate: 1.8% 10-Year Historic Growth Rate: 3.1%

¹ Existing traffic volume data represents an average of the factored AADT volumes calculated from field-collected data on Segment 4

² Historic Traffic Growth based on AADT counts from GDOT TADA



Existing Geometry & Intersection Control





SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 9 – Environmental Feature Map
 Segment 4 – Silk Hope

2.1.5 Segment 5 – Commercial North

Segment 5 includes the 1.1-mile-long segment of SR 25/US 17 from Fall Avenue/Buckhalter Road to Chatham Parkway. This segment is primarily characterized by commercial development approaching Chatham Parkway and exhibits heavy congestion and low average travel speeds during the AM and PM peak hours of travel. Key characteristics of Segment 5 are summarized in **Table 5**, and existing geometry, traffic volumes, and field-collected photographs are provided in **Figure 10**. Environmental features along this segment are summarized in **Figure 11**.

Traffic Operations

AADT volumes along Segment 5 average 30,800 VPD, approximately 85% of the theoretical capacity of a five-lane roadway, and truck percentages range between 2% and 11% during the peak periods of travel. Field observations indicate that operations at the Chatham Parkway intersection impact corridor-level operations more than theoretical capacity would suggest. For example, queues on northbound SR 25/US 17 extended approximately 0.5 miles upstream to Savannah Speedway during the AM peak period. These queues are likely attributable to spillback from the heavy northbound left-turn movement at Chatham Parkway which exceeds 400 VPH based on collected count data. During the PM peak period, observed queues at Chatham Parkway exceeded 0.25 miles on the eastbound and westbound approaches and exceeded 0.5 miles on the southbound approach. These findings are indicative of significant capacity constraints at this intersection, which currently does not have auxiliary right-turn lanes on the southbound, westbound, or eastbound approaches.

Based on field travel time runs, Segment 5 operates with an average travel speed between 20 MPH and 35 MPH during the peak periods of the day. As noted above, observed delays and queues indicate that the intersection at Chatham Parkway operates poorly during the peak periods and contributes to most of the delay experienced on Segment 5. Accordingly, the *Coastal Empire Transportation Study* recommended geometric improvements and additional auxiliary turn lanes at the intersection of SR 25/US 17 with Chatham Parkway. Existing conditions suggest that additional auxiliary lanes are needed on all approaches at the intersection, and complementary signal upgrades and access management strategies are likely needed along this segment in the short-term. Over the long-term horizon, intersection reconfiguration or other cross-sectional improvements may be needed to support continued traffic growth on the SR 25/US 17 and Chatham Parkway corridors.

Roadway Geometry/Access Management

As shown in **Table 5**, Segment 5 includes 49 existing unsignalized driveways, which is equivalent to a spacing of 44 driveways per mile, the highest of any segment along the corridor. Most of these driveways are commercial driveways, though some residential driveways are present along Segment 5. Given the tight driveway spacing and higher travel speeds prevalent along the long tangent roadway section, access management strategies may be needed to enhance safety and operations at the unsignalized intersections along this segment.

Non-Motorist Facilities

CAT operates Route 17 along both directions of SR 25/US 17 for the entirety of Segment 5, and there are a total of seven bus stops in this segment; one bidirectional pair is located east of Buckhalter Road/

Fall Avenue; one pair is located south of Macaljon Court; one pair is located south of Heathcote Circle; and one southbound stop is located approximately 800-feet-south of Chatham Parkway.

Existing non-motorist facilities on Segment 5 are sparse and inconsistent. No bicycle facilities are provided, even though this portion of the corridor comprises part of the ECG. Isolated and noncongruent sidewalk sections were constructed as part of adjacent developments near Macaljon Court along the west side of SR 25/US 17 and along the east side of SR 25/US 17 south of Chatham Parkway. The CORE MPO's NMTP denotes Segment 5 as a Pedestrian Focus Area and recommends a shared-use path on both sides of SR 25/US 17 along this 1.1-mile-long segment.

Environmental Features

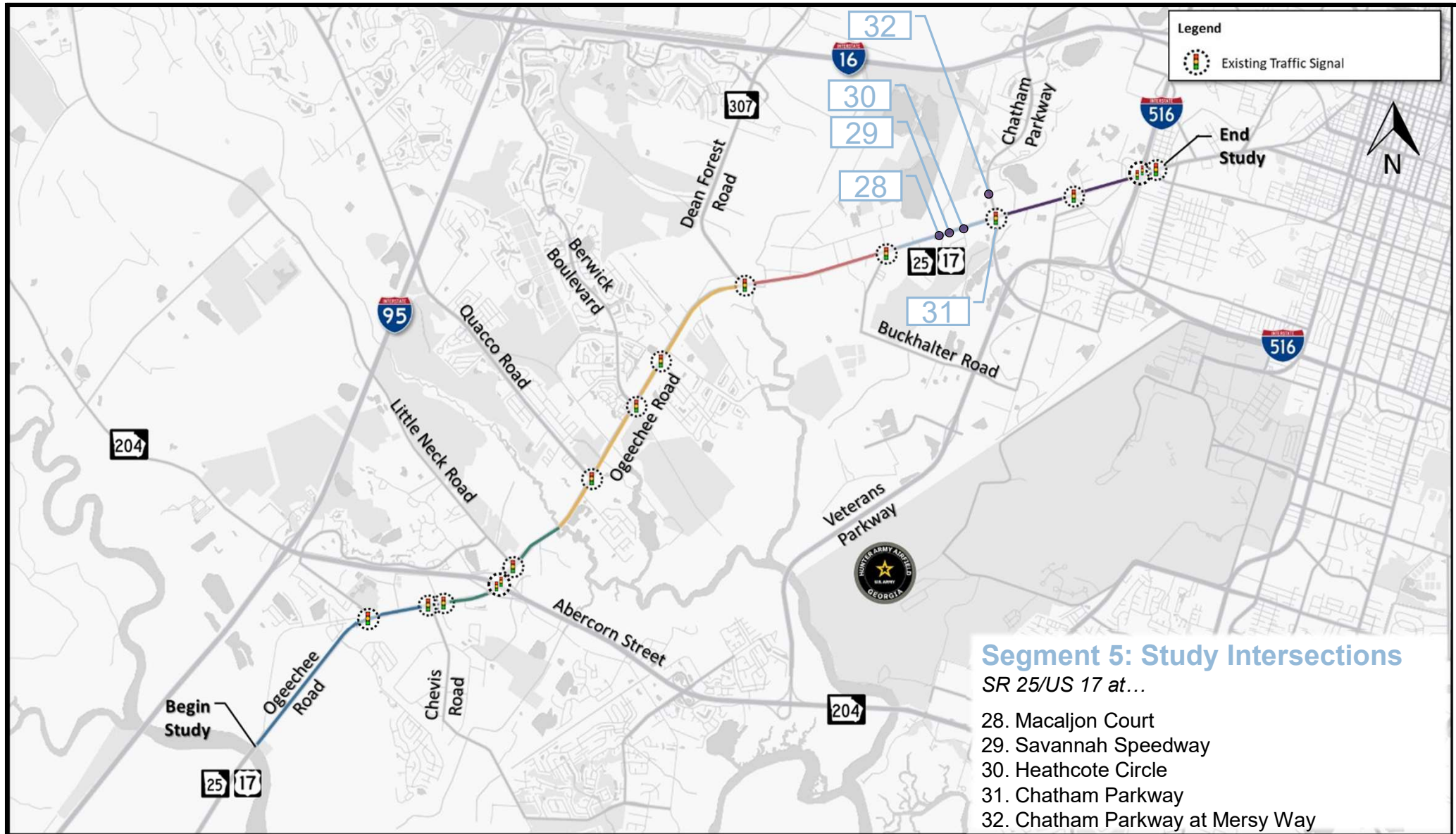
There are minimal environmental features present along Segment 5. Existing features include the freshwater forested/shrub wetlands located near the Chatham Parkway intersection. The small streams and wetlands in Segment 5 ultimately flow to Salt Creek.

Table 5: Segment 5 – Commercial North Corridor Characteristics

Geometric and Functional Characteristics	
<i>Extents</i>	Buckhalter Road to Chatham Parkway (1.1 Miles)
<i>Typical Cross-Section</i>	Typical Section: Five-Lane with Two-Way Left-Turn Lane (TWLTL) Typical Lane Widths: 12' Travel Lanes, 15' TWLTL, Curb and Gutter/ 2'-4' Outside Shoulder
<i>Speed Limit</i>	25 MPH school zone starts in Segment 4 and ends 450 ft after Buckhalter Road 45 MPH posted speed elsewhere
<i>Number of Driveways</i>	49 (44 Driveways/Mile)
<i>Number of Median Openings</i>	N/A – TWLTL
<i>Number of Signalized Intersections</i>	1
Major Intersecting Roadways	
<i>Chatham Parkway¹</i>	Cross-Section: Four-Lane with Raised Median/Flush Median Speed Limit: 45 MPH/35 MPH 2024 AADT: 18,200 VPD (West); 16,600 VPD (East)
Traffic Characteristics	
<i>Existing Traffic Volume Data¹</i>	2024 AADT: 30,800 VPD 2024 DHV: 2,560 VPH K Factor: 8.3% Daily Truck Percentage: 6%
<i>Historic Traffic Volume Data²</i>	5-Year Historic Growth Rate: 1.8% 10-Year Historic Growth Rate: 3.1%

¹ Existing traffic volume data represents an average of the factored AADT volumes calculated from field-collected data on Segment 5

² Historic Traffic Growth based on AADT counts from GDOT TADA



Existing Geometry & Intersection Control

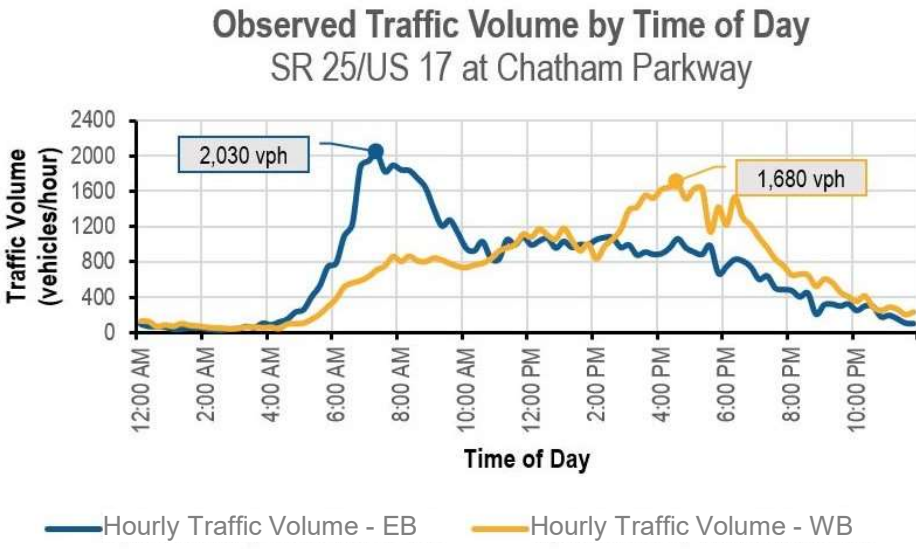
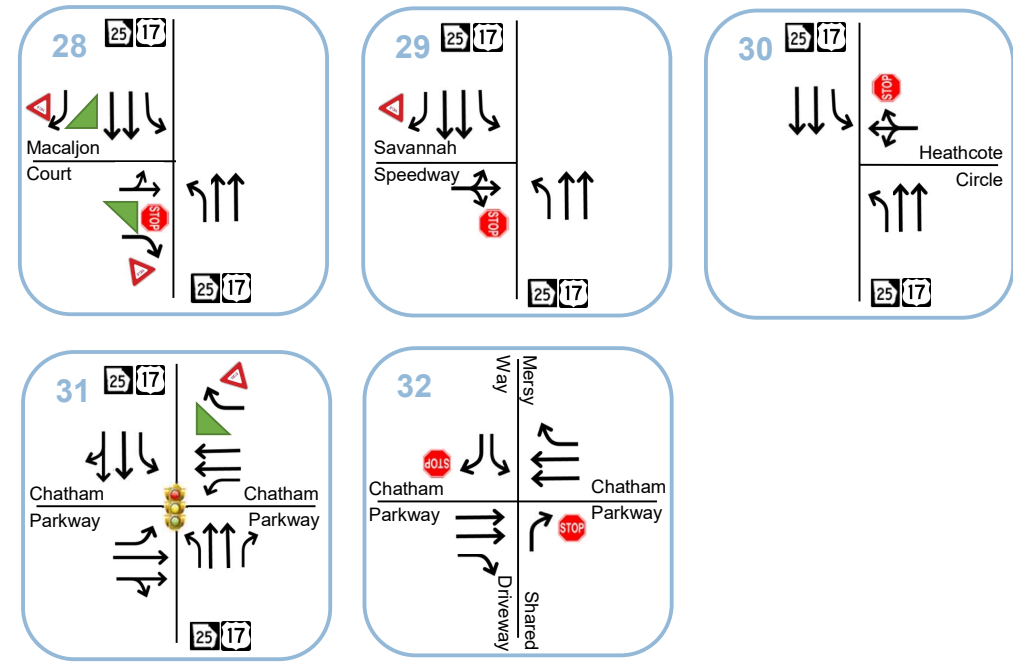


Photo: SR 25/US 17 at Chatham Parkway PM Peak Hour Queuing (Looking East)



Photo: SR 25/US 17 at Heathcote Circle (Looking South)



Photo: SR 25/US 17 at Macaljon Court (Looking North)



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 11 – Environmental Feature Map
 Segment 5 – Commercial North

2.1.6 Segment 6 – Northern Gateway

Segment 6 is a 1.6-mile-long corridor that extends from Chatham Parkway to Plymouth Avenue/Mills Lane. This segment is categorized by commercial and industrial land uses, a grade-separated rail crossing over CSX Transportation (Crossing ID 641165S) railroad lines, and the I-516/SR 21 interchange. Key characteristics of Segment 6 are summarized in **Table 6**, and existing geometry, traffic volumes, and field-collected photographs are provided in **Figure 12**. Environmental features along this segment are summarized in **Figure 13**.

Traffic Operations

Daily traffic volumes along Segment 6 average 27,000 VPD, approximately 75% of the theoretical capacity of a five-lane roadway, and truck percentages range between 2% and 13% during the peak periods of travel. In part due to disruptions in traffic flow attributable to heavy truck volumes, observed average travel speeds were 24 MPH during the AM peak period and 21 MPH during the PM peak period in the northbound and southbound directions, respectively. Observed queues occasionally extended between the I-516/SR 21 ramp termini; this trend appeared to be attributable to heavy turning movement volumes and a downstream bottleneck on SR 25/US 17 in the northbound direction, where the cross section tapers to a two-lane section north of the study area. Intersection improvements along SR 25/US 17 at both I-516/SR 21 ramp termini are currently under construction as part of PI No. S015891. These improvements include increased left-turn storage along SR 25/US 17 and are expected to mitigate queueing along SR 25/US 17 between the ramp termini.

Roadway Geometry/Access Management

Segment 6 includes 62 unsignalized driveways, which is equivalent to a spacing of 39 driveways per mile. Segment 6 is a five-lane roadway with a TWLTL, and as for Segment 4 and Segment 5, access management strategies, including a raised median, could be considered to alleviate existing operations and safety constraints.

Non-Motorist Facilities

CAT operates Route 17 along both directions of SR 25/US 17 for the entirety of Segment 6, and there are a total of eight bus stops in this segment. One bidirectional pair is located north of Chatham Parkway, and the remaining three bidirectional pairs are spaced at approximately 1,000-foot-intervals between Gamble Road and Westgate Boulevard. Further, CAT Route 25 also traverses SR 25/US 17 between Chatham Parkway and Gamble Road but has no bus stops along this segment.

Segment 6 has no bicycle lanes and limited sidewalks which are primarily located near the I-516/SR 21 interchange. The CORE MPO's NMTP highlights this segment of SR 25/US 17 as a Pedestrian Focus Area and recommends a shared-use path south of I-516/SR 21 and bicycle lanes north of I-516/SR 21.

Environmental Features

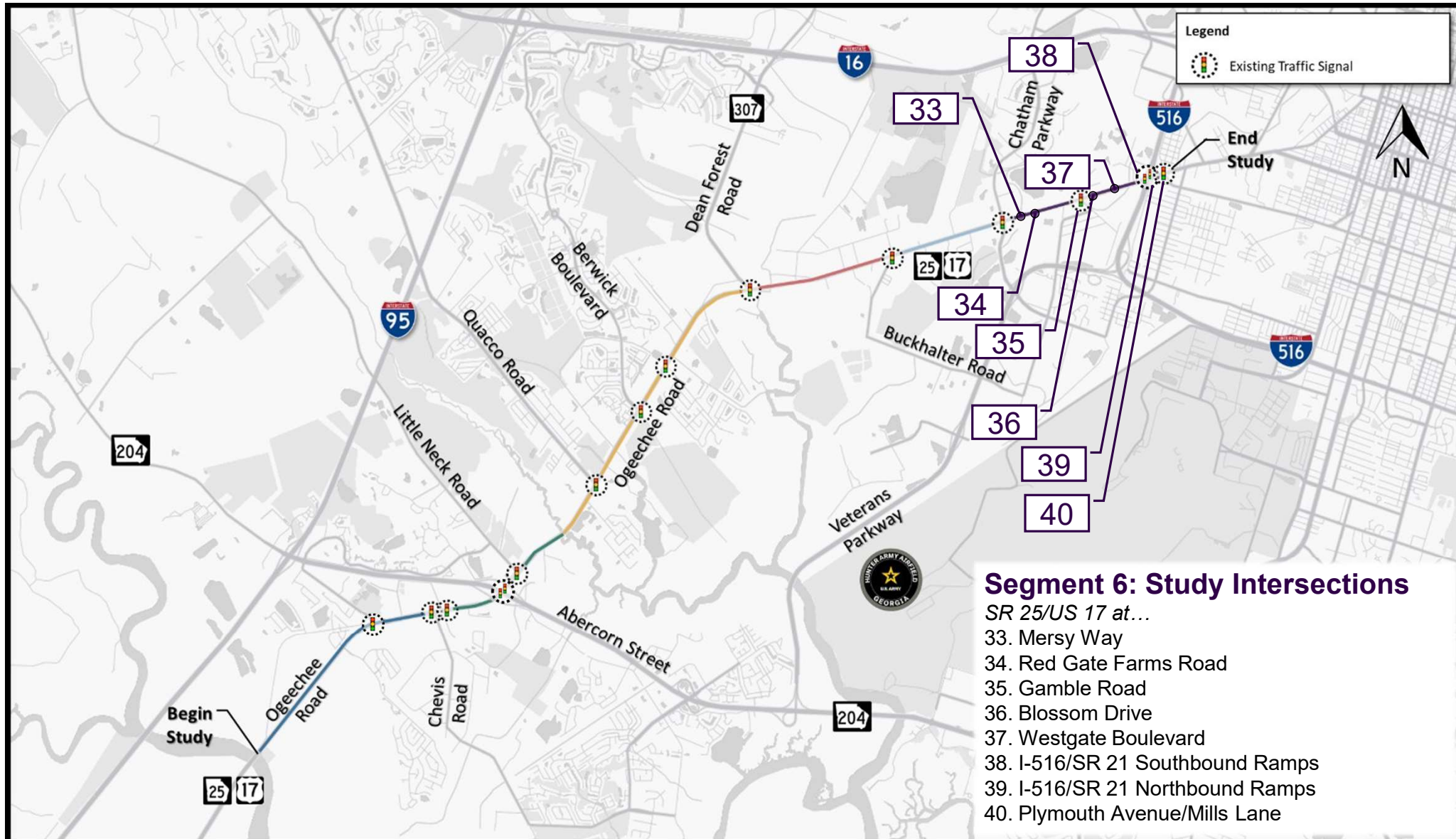
Segment 6 crosses several small streams, and there are freshwater forested/shrub wetlands on both sides of SR 25/US 17. However, these features should not impact opportunities for future roadway improvements or development. Beginning at Gamble Road, the segment lies in the FEMA Flood Zone AE, and the existing wetlands and storm drainage from SR 25/US 17 outfall to either the Little Ogeechee River or Salt Creek.

Table 6: Segment 6 – Northern Gateway Corridor Characteristics

Geometric and Functional Characteristics	
<i>Extents</i>	Chatham Parkway to Plymouth Avenue/Mills Lane (1.6 Miles)
<i>Typical Cross-Section</i>	Typical Section: Five-Lane with Raised Median/Two-Way Left-Turn Lane (TWLTL) Typical Lane Widths: 12' Travel Lanes, 14' TWLTL, Curb and Gutter/ 2'-4' Outside Shoulder
<i>Speed Limit</i>	45 MPH
<i>Number of Driveways</i>	62 (39 Driveways/Mile)
<i>Number of Median Openings</i>	N/A – TWLTL (Chatham Parkway to Westgate Boulevard) 3 openings (Westgate Boulevard to Plymouth Avenue/Mills Lane)
<i>Number of Signalized Intersections</i>	4
Major Intersecting Roadways	
<i>Gamble Road¹</i>	Cross-Section: Two-Lane Undivided Speed Limit: 25 MPH 2024 AADT: 1,000 VPD (West); 4,400 VPD (East)
<i>I-516/SR 21 Northbound/Southbound Ramps¹</i>	Cross-Section: Four-Lane Divided with Depressed Median Speed Limit: 55 MPH <ul style="list-style-type: none"> Northbound Off-Ramp: 4,400 VPD Northbound On-Ramp: 6,100 VPD Southbound Off-Ramp: 8,100 VPD Southbound On-Ramp: 3,500 VPD
<i>Plymouth Avenue/Mills Lane¹</i>	Cross-Section: Two-Lane Undivided Speed Limit: 25 MPH 2024 AADT: 1,000 VPD (West); 10,900 VPD (East)
Traffic Characteristics	
<i>Existing Traffic Volume Data¹</i>	2024 AADT: 27,000 VPD 2024 DHV: 2,160 VPH K Factor: 8.0% Daily Truck Percentage: 7%
<i>Historic Traffic Volume Data²</i>	5-Year Historic Growth Rate: -1.7% 10-Year Historic Growth Rate: -0.6%

¹ Existing traffic volume data represents an average of the factored AADT volumes calculated from field-collected data on Segment 6

² Historic Traffic Growth based on AADT counts from GDOT TADA



Existing Geometry & Intersection Control

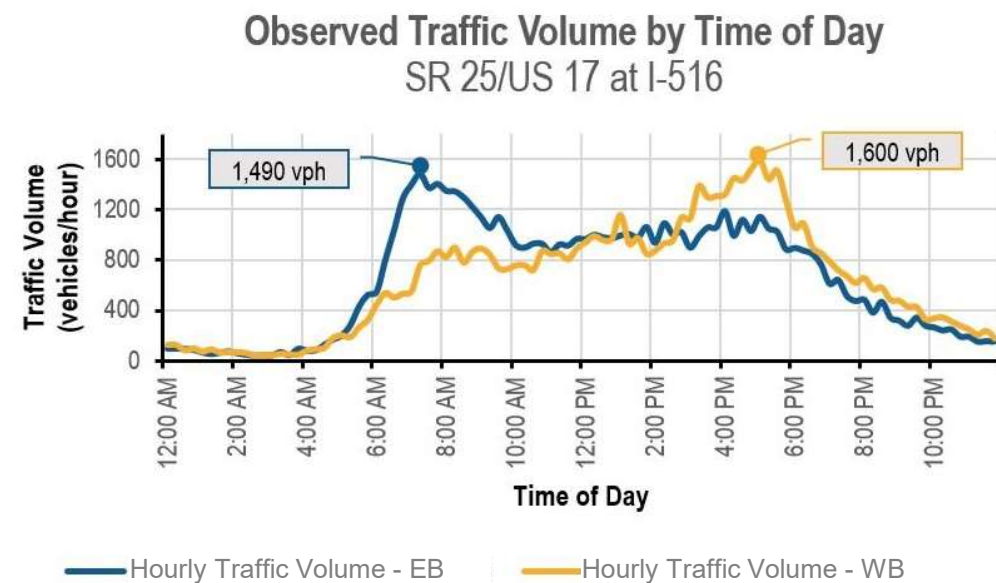
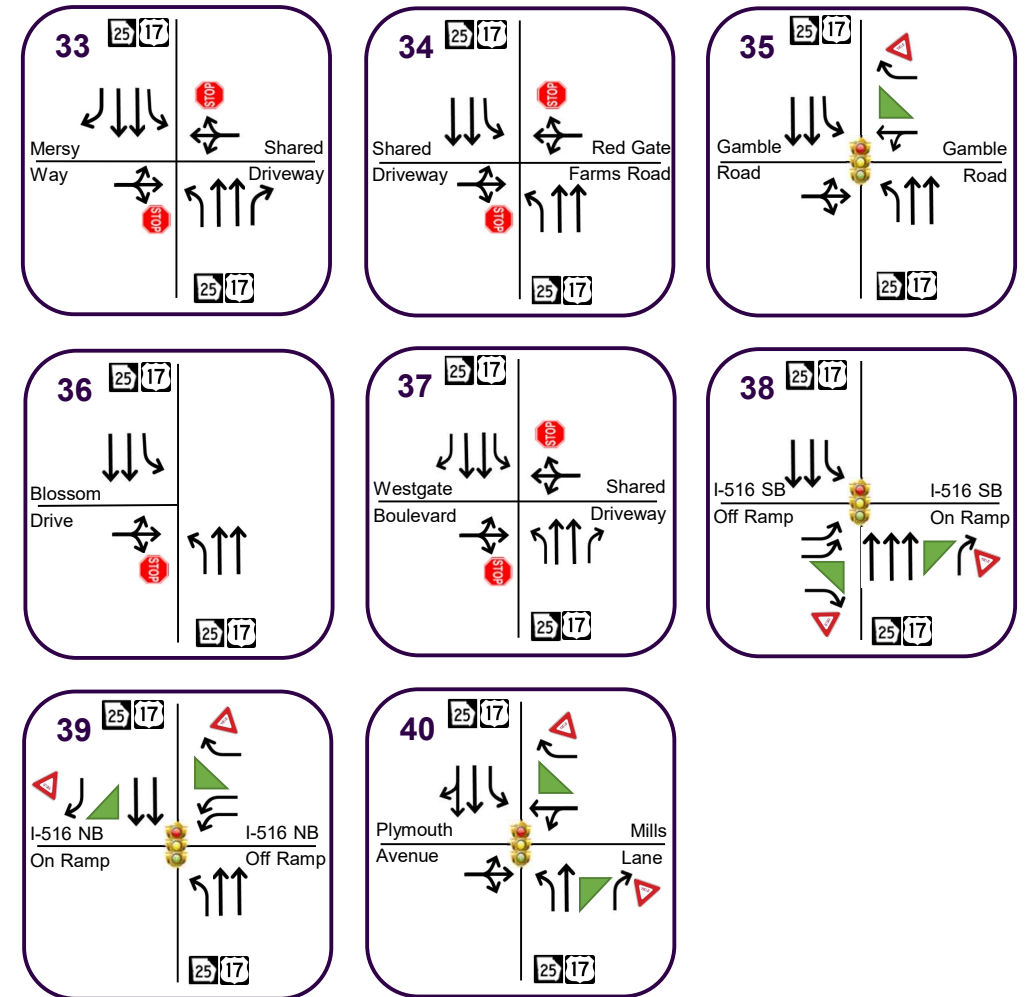


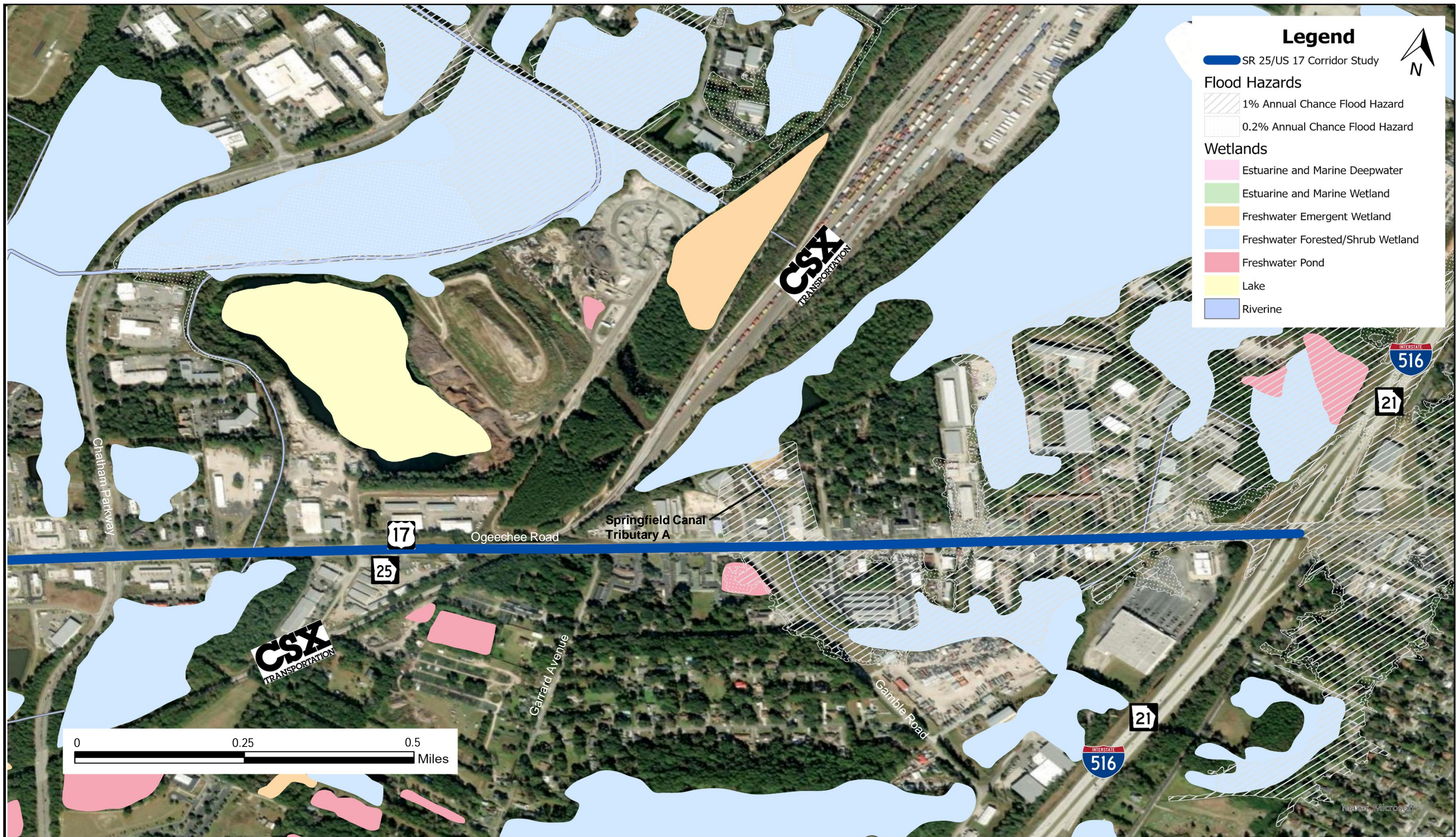
Photo: SR 25/US 17 at Gamble Road (Looking North)



Photo: SR 25/US 17 at I-516/SR 21 (Looking North)



Photo: SR 25/US 17 at Plymouth Avenue/Mills Lane PM Peak Hour Queuing (Looking East)



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 13 – Environmental Feature Map
 Segment 6 – Northern Gateway

2.2 Existing Land Use Summary

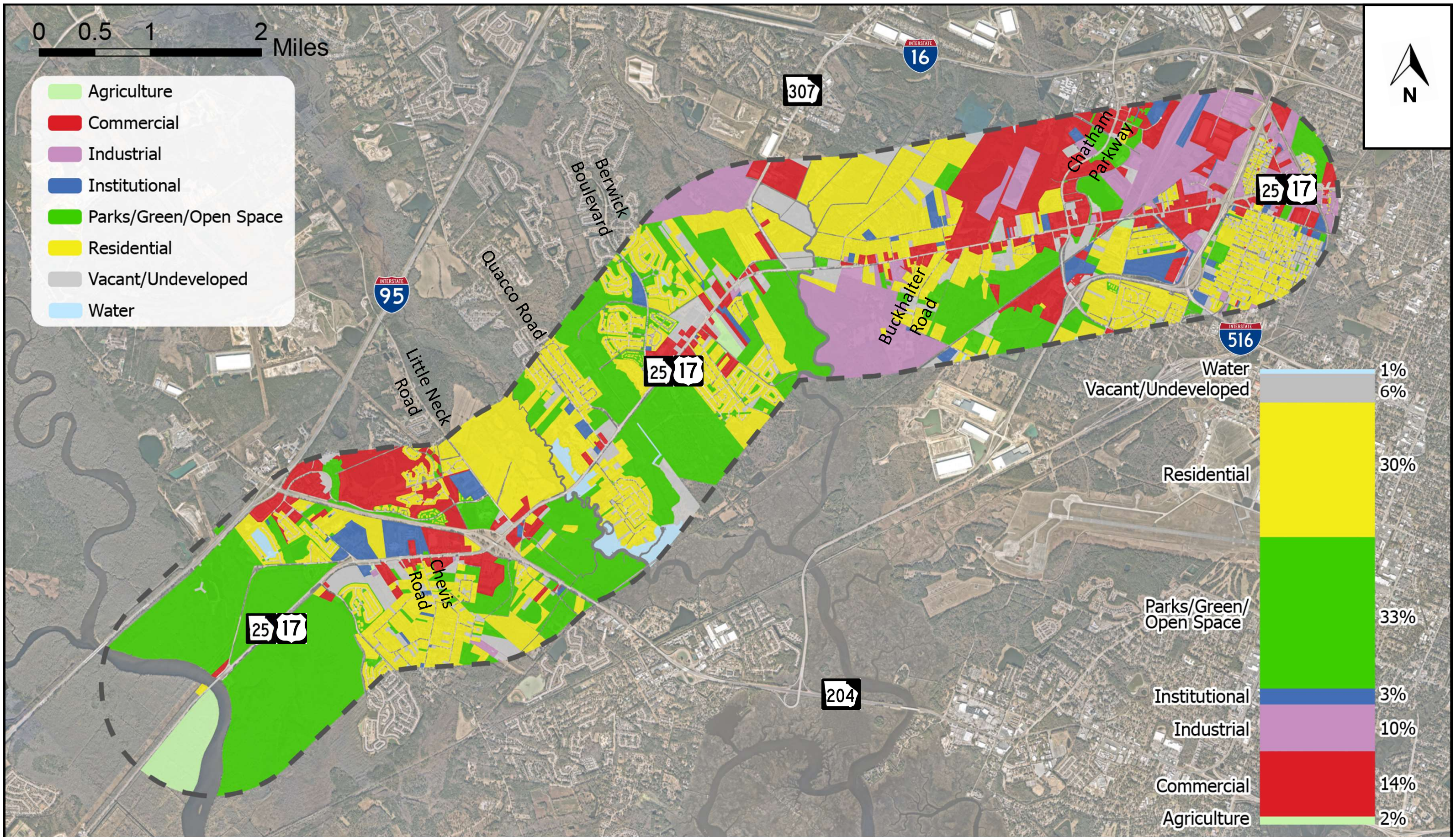
The SR 25/US 17 study corridor traverses the jurisdictional boundaries of Savannah, Garden City, and unincorporated Chatham County. Adjacent parcels are primarily comprised of a mix of residential, commercial, industrial, and green space uses. This corridor serves as a key north-south alternate to I-95 that provides connectivity to and from the City of Savannah, Port of Savannah, and surrounding municipalities. Defining current land use is a critical component in understanding existing travel patterns and development trends and provides a foundation from which to anticipate future growth and changes in needs, opportunities, and constraints along the study corridor.

The existing land use map shown in **Figure 14** was created through an assessment of data sourced from Geographic Information Systems (GIS), current zoning and other parcel information, and a review of zoning history and approved planned urban developments (PUD) provided by the Chatham County-Savannah Metropolitan Planning Commission (MPC). The following PUD or residential development information (listed from south-to-north) was incorporated into **Figure 14** and will be considered in developing future volume projections and project recommendations:

- Bradley Pointe South – April 2023
- Pointe Grand – July 2023
- Hopeton Landing – May 2021
- Hopeton Landing South – May 2021
- Waterford – April 2022
- Lebanon Plantation – October 2022

The approach for evaluating existing and planned land uses as part of this study was reviewed with MPC staff on May 8, 2024. The existing land use map depicts eight land use categories, and Parks/Green/Open Space represents the largest percentage of existing land uses (33%) followed by Residential (30%), Commercial (14%), Industrial (10%), and Vacant/Undeveloped (6%). Institutional, Agricultural, and Water uses each comprise less than 5% of existing land uses adjacent to the SR 25/US 17 corridor.

Green space is primarily concentrated along the southern half of the study corridor in Segment 1 through Segment 3, while residential land uses are dispersed throughout the corridor and comprised of both multi- and single-family uses. Commercial land uses are concentrated at major intersections along the corridor, most notably near SR 204/Abercorn Street, Berwick Boulevard, Chatham Parkway, and I-516/SR 21.



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment

Figure 14 – Existing Land Use Summary Map

2.3 Origin-Destination Analysis

An origin-destination (O-D) analysis was conducted using Replica's Places dataset to evaluate existing travel patterns for passenger car, truck, and non-motorist trips utilizing the SR 25/US 17 corridor. Replica compiles mobile location data from a sample of the population to develop and calibrate an activity-based travel demand model by region across the United States. This data can be used to estimate aggregate travel patterns by geography on an average weekday or weekend day during a given season between 2019 and 2023. For the current study, data from a typical Thursday in Fall 2019 and Spring 2023 were compiled and compared to evaluate travel patterns before and after the COVID-19 pandemic and construction on I-16 associated with GDOT PI No. 0012748. The study corridor was used as a "middle filter" between origins and destinations to isolate this larger database of trips to those using the SR 25/US 17 corridor.

The following subsections summarize the results of the daily and peak hour O-D analyses conducted for passenger car, truck, and bicycle/pedestrian modes for a typical Thursday in Fall 2019 and Spring 2023. The comparisons drawn here are used to define existing O-D patterns on the SR 25/US 17 corridor, determine the potential influence of the COVID-19 pandemic, evaluate regional use of the corridor for trips that start or end outside of Chatham County, and assess the impact of GDOT PI No. 0012748 on the usage of alternate routes to I-16 and I-95 such as SR 25/US 17. The results of these analyses will be considered in developing future volume projections and project recommendations.

2.3.1 Existing O-D Patterns

Existing O-D patterns were analyzed by mode and with consideration to local development and the construction at the I-95 at I-16 interchange. Based on data from Replica's Places dataset, trips passing through the corridor have grown by approximately 11% between 2019 and 2023, or at an average rate of 2.5% annually. For comparison purposes, GDOT historic growth rates have averaged 2.5% and 2.1% annually over the previous five- and 10-year periods, respectively. Passenger car, truck, and non-motorist trip trends are described further in the following subsections.

Passenger Cars

Figure 15 provides a geographic summary of passenger car O-D patterns for a typical weekday during the Fall 2019 and Spring 2023 seasons. As shown in **Figure 15**, passenger car trips passing through the study corridor primarily start or end in immediately adjacent Census Block Groups. This finding is intuitive, as trip duration statistics from Replica indicate that approximately 40% of all existing passenger car trips utilizing the SR 25/US 17 corridor are 20 minutes or less in length. With respect to adjacent routes, most passenger car trips passing through the SR 25/US 17 corridor originate on or are destined for other high-volume arterials and collectors. Among these adjacent corridors, those comprising the highest proportion of all trips passing through the SR 25/US 17 corridor on an average weekday in Spring 2023 include SR 204/Abercorn Street (25%), I-516/SR 21 (18%), and SR 25/US 17 outside of the study area (19%). Comparing 2019 and 2023 data, an increasing share of the corridor's trips are represented by the Census Tracts near SR 204/Abercorn Street and to the south towards Bryan County.

Trucks

Figure 16 provides a geographic summary of truck O-D patterns for a typical weekday during the Fall 2019 and Spring 2023 seasons. As shown in **Figure 16**, most of the truck trips utilizing SR 25/US 17 start or end within the immediately adjacent commercial and industrial areas at the north end of the

corridor, with additional areas of concentration near Rockingham Farms along Veterans Parkway and warehousing uses near the interchange of I-16 with SR 307/Dean Forest Road. With respect to adjacent routes, those most represented among the trips passing through the SR 25/US 17 corridor on an average weekday in Spring 2023 include I-516/SR 21 (17%), SR 307/Dean Forest Road (12%), Chatham Parkway (10%), and SR 25/US 17 outside of the study area (10%). Comparing 2019 and 2023 data, the proportion of truck trips utilizing the SR 25 corridor has generally decreased and shifted towards Census Tracts closer to the corridor's centerline.

Non-Motorists

Figure 17 provides a geographic summary of pedestrian and bicyclist O-D patterns for a typical weekday during the Fall 2019 and Spring 2023 seasons. As shown in **Figure 17**, approximately 30% of all non-motorized travel occurring within the study area was observed within the Census Tracts immediately adjacent to SR 25/US 17 to the south of SR 204/Abercorn Street. These tracts include large residential areas along Fords Pointe Circle/Bradley Boulevard and Canebrake Road as well as the Southwest Elementary School and Southwest Middle School campuses. Elsewhere along the corridor, observed pedestrian and bicyclist activity was minimal and commensurate with the limited existing infrastructure provided for non-motorists.

Across modes, trends from 2019 to 2023 are in line with observed growth on the south end of the corridor and indicate that GDOT PI No. 0012748 has not significantly impacted travel patterns on SR 25/US 17.

Peak Hour Travel Patterns

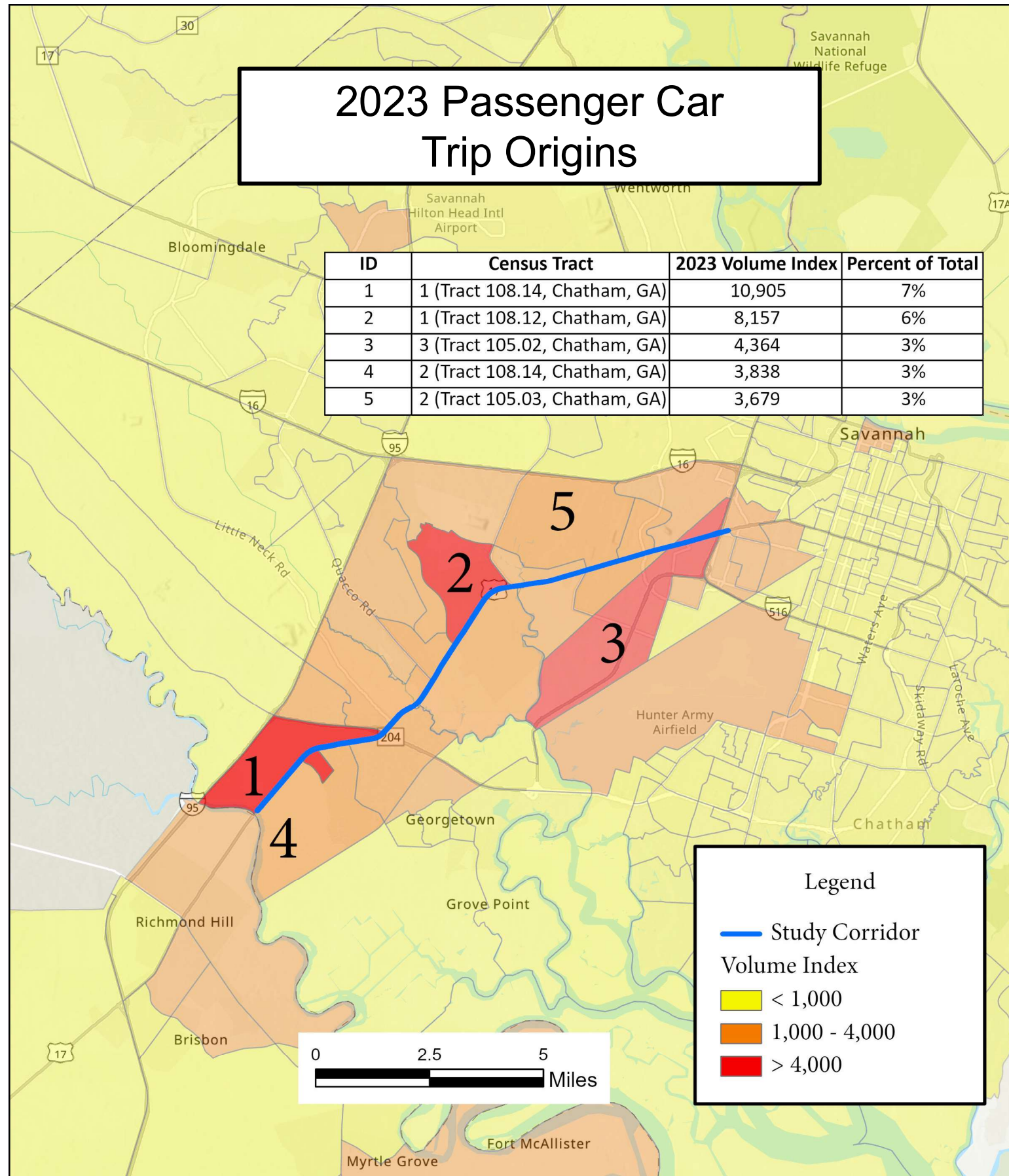
Figure 18 and **Figure 19** provide a geographic summary of AM peak hour and PM peak hour O-D patterns for all modes of travel on a typical weekday during the Spring 2023 season. As shown in these figures, the highest number of AM peak-hour origin and destination trips were observed within the Census Tracts immediately adjacent to SR 25/US 17, and most notably, the Census Tract containing Fords Pointe Circle and Canebrake Road south of SR 204/Abercorn Street. In line with field-observed travel patterns, approximately 22% (10,000 of 44,000) of all trips utilizing the SR 25/US 17 corridor during the AM and PM peak hours of travel originated in or were destined for Census Tracts south of SR 204/Abercorn Street. Among these trips, a significant portion originated in or were destined for Census Tracts in Bryan County, as discussed next.

Bryan County Travel Patterns

Figure 20, **Figure 21** and **Figure 22** provide a geographic summary of AM peak hour, PM peak hour, and daily O-D patterns to and from Bryan County for all modes of travel on a typical weekday during the Spring 2023 season. When looking at trips along the SR 25/US 17 corridor that either originate from or are destined to Bryan County, AM peak-hour trip destinations were concentrated at the Census Tract containing Fords Pointe Circle and Canebrake Road south of SR 204/Abercorn Street as well as beyond the northern end of the corridor and into Downtown Savannah. Intuitively, PM peak-hour trip origins were concentrated in similar locations. Among the 22% of peak hour trips noted for Census Tracts south of SR 204/Abercorn Street in the previous section, approximately 25% of these originate in or are destined for Census Tracts in Bryan County.

2023 Passenger Car Trip Origins

ID	Census Tract	2023 Volume Index	Percent of Total
1	1 (Tract 108.14, Chatham, GA)	10,905	7%
2	1 (Tract 108.12, Chatham, GA)	8,157	6%
3	3 (Tract 105.02, Chatham, GA)	4,364	3%
4	2 (Tract 108.14, Chatham, GA)	3,838	3%
5	2 (Tract 105.03, Chatham, GA)	3,679	3%

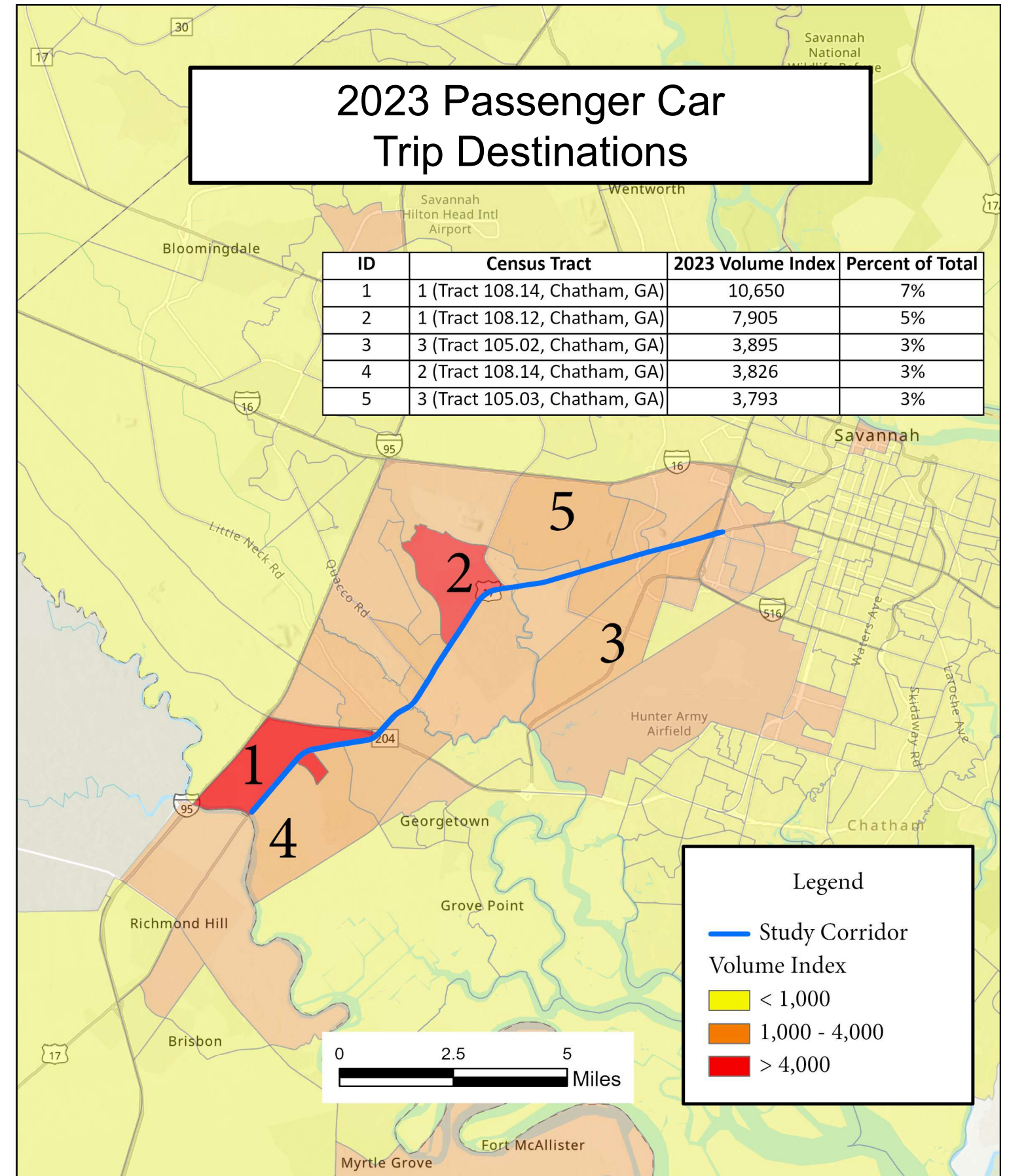


Legend

- Study Corridor
- Volume Index
- < 1,000
- 1,000 - 4,000
- > 4,000

2023 Passenger Car Trip Destinations

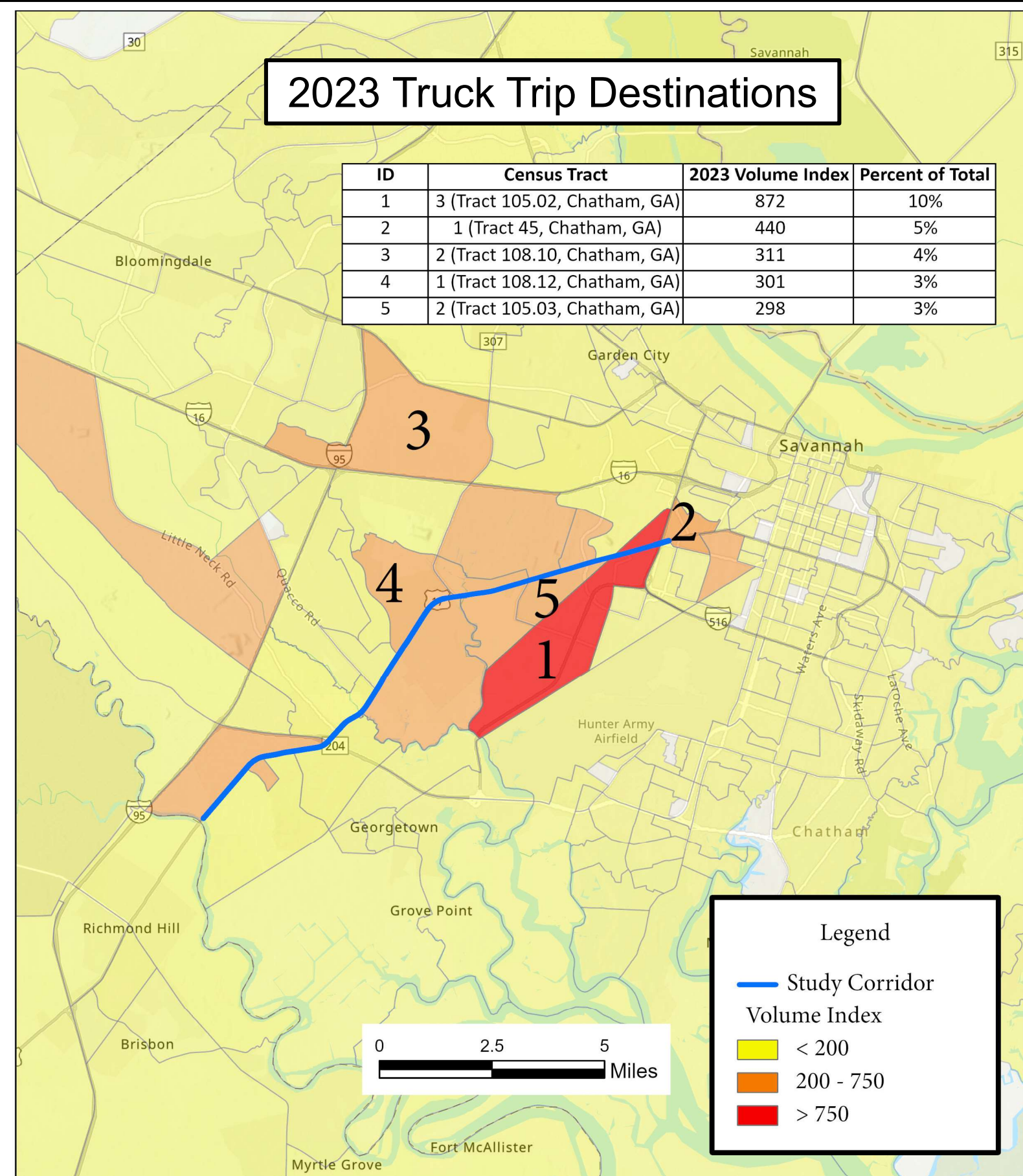
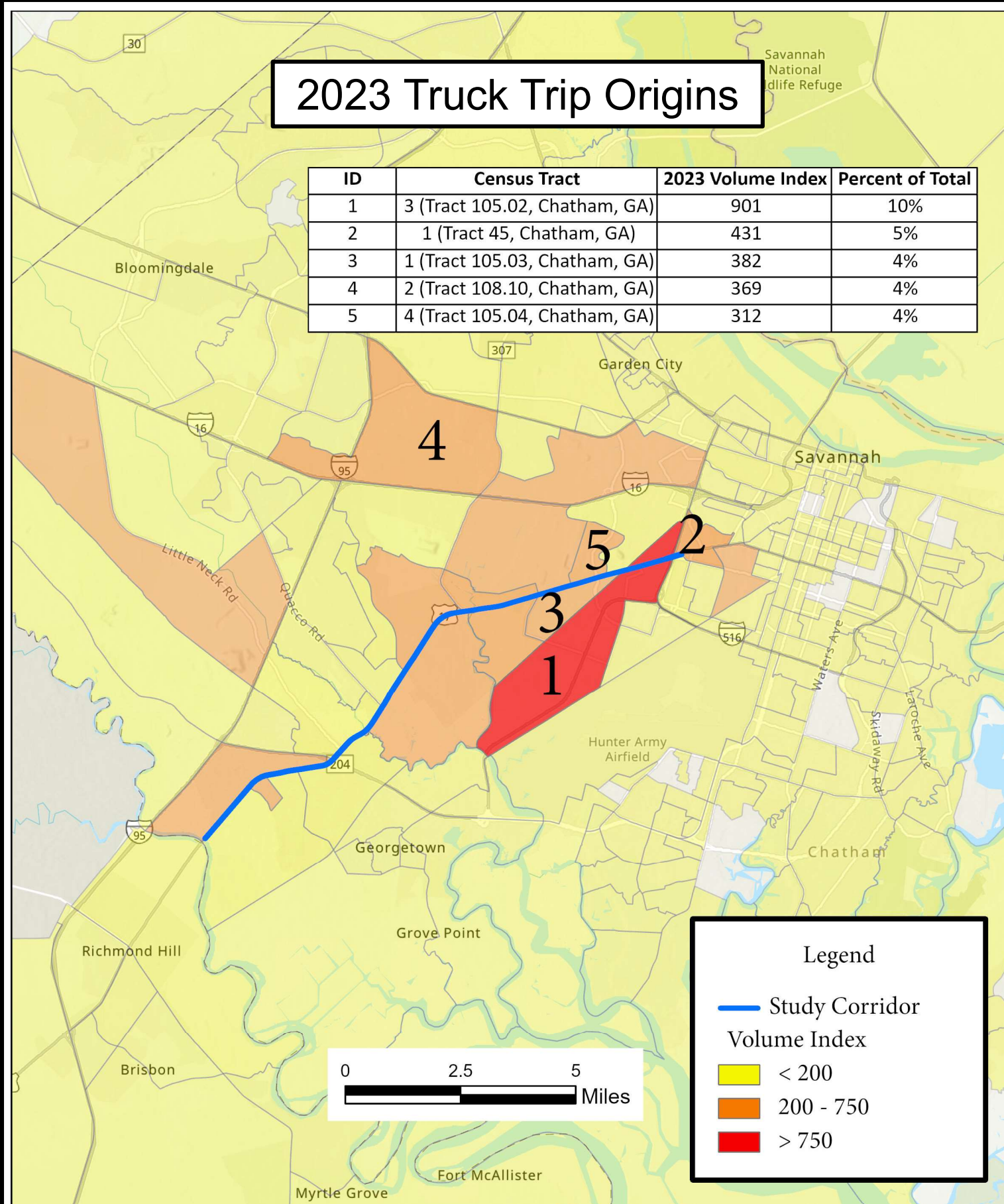
ID	Census Tract	2023 Volume Index	Percent of Total
1	1 (Tract 108.14, Chatham, GA)	10,650	7%
2	1 (Tract 108.12, Chatham, GA)	7,905	5%
3	3 (Tract 105.02, Chatham, GA)	3,895	3%
4	2 (Tract 108.14, Chatham, GA)	3,826	3%
5	3 (Tract 105.03, Chatham, GA)	3,793	3%



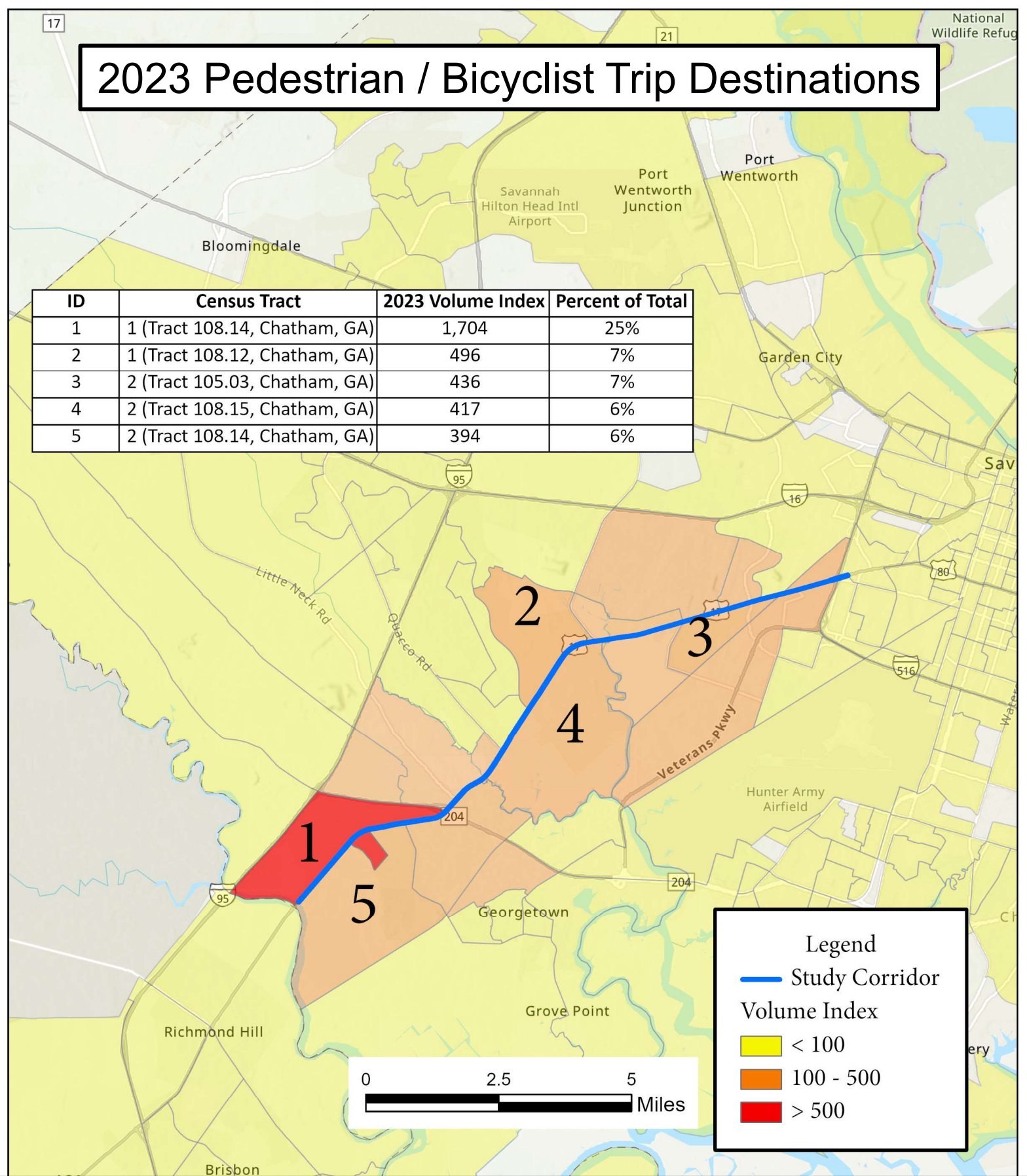
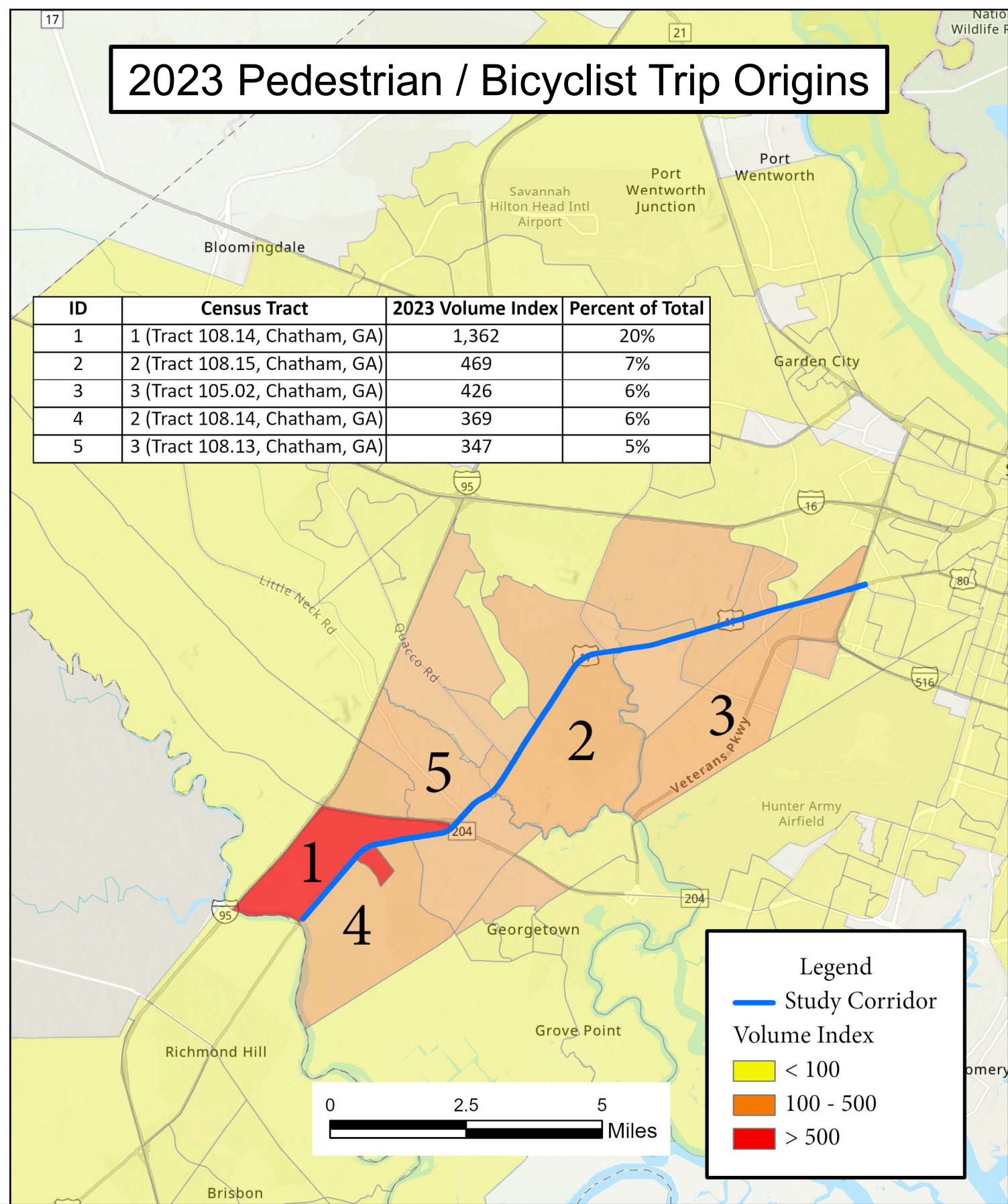
Legend

- Study Corridor
- Volume Index
- < 1,000
- 1,000 - 4,000
- > 4,000

SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
Figure 15 – Existing Origin-Destination Patterns – Passenger Cars



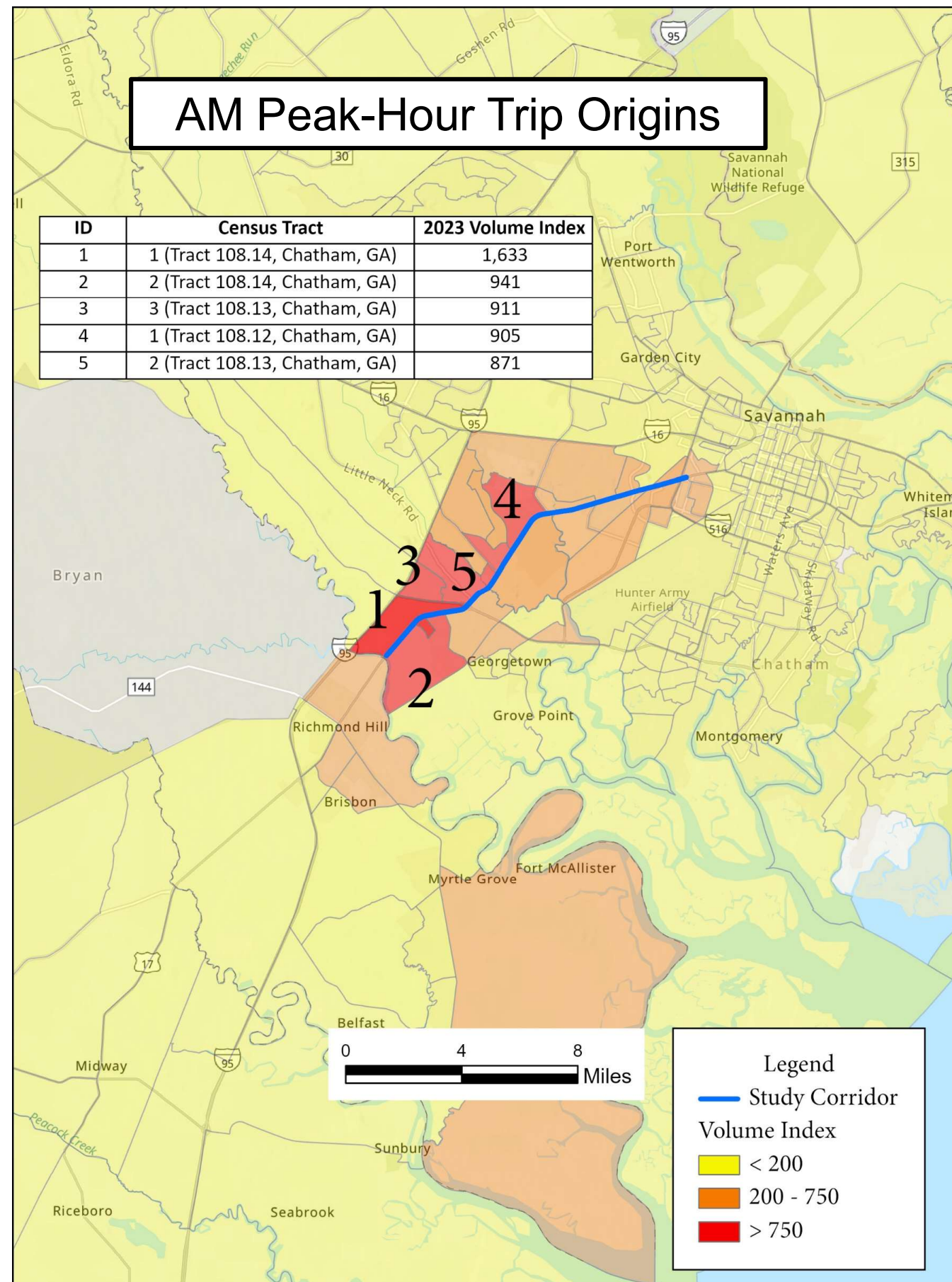
SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
Figure 16 – Existing Origin-Destination Patterns – Trucks



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 17 – Existing Origin-Destination Patterns – Non-Motorists

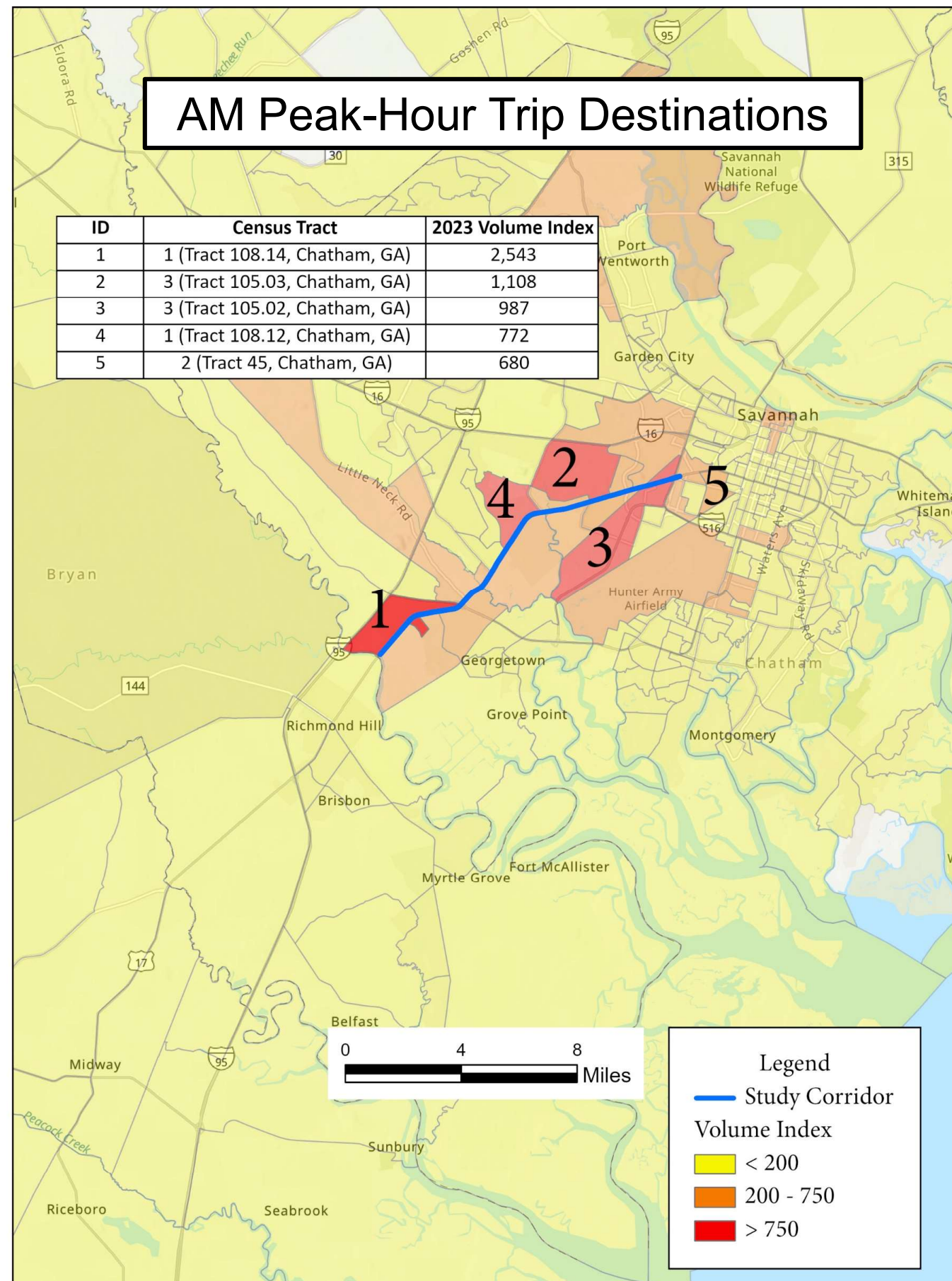
AM Peak-Hour Trip Origins

ID	Census Tract	2023 Volume Index
1	1 (Tract 108.14, Chatham, GA)	1,633
2	2 (Tract 108.14, Chatham, GA)	941
3	3 (Tract 108.13, Chatham, GA)	911
4	1 (Tract 108.12, Chatham, GA)	905
5	2 (Tract 108.13, Chatham, GA)	871



AM Peak-Hour Trip Destinations

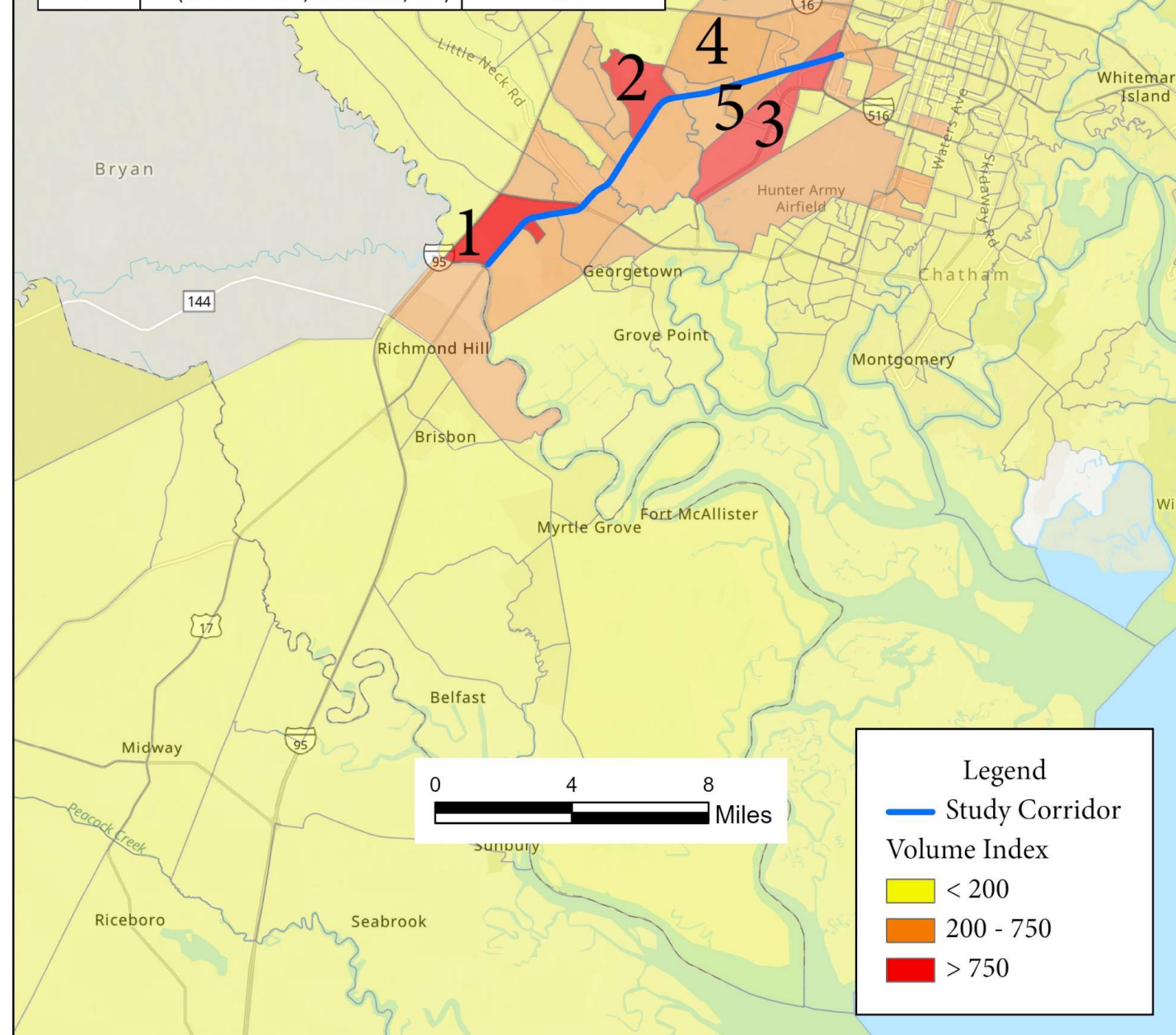
ID	Census Tract	2023 Volume Index
1	1 (Tract 108.14, Chatham, GA)	2,543
2	3 (Tract 105.03, Chatham, GA)	1,108
3	3 (Tract 105.02, Chatham, GA)	987
4	1 (Tract 108.12, Chatham, GA)	772
5	2 (Tract 45, Chatham, GA)	680



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 18 – Existing Origin-Destination Patterns – All Modes AM Peak Hour

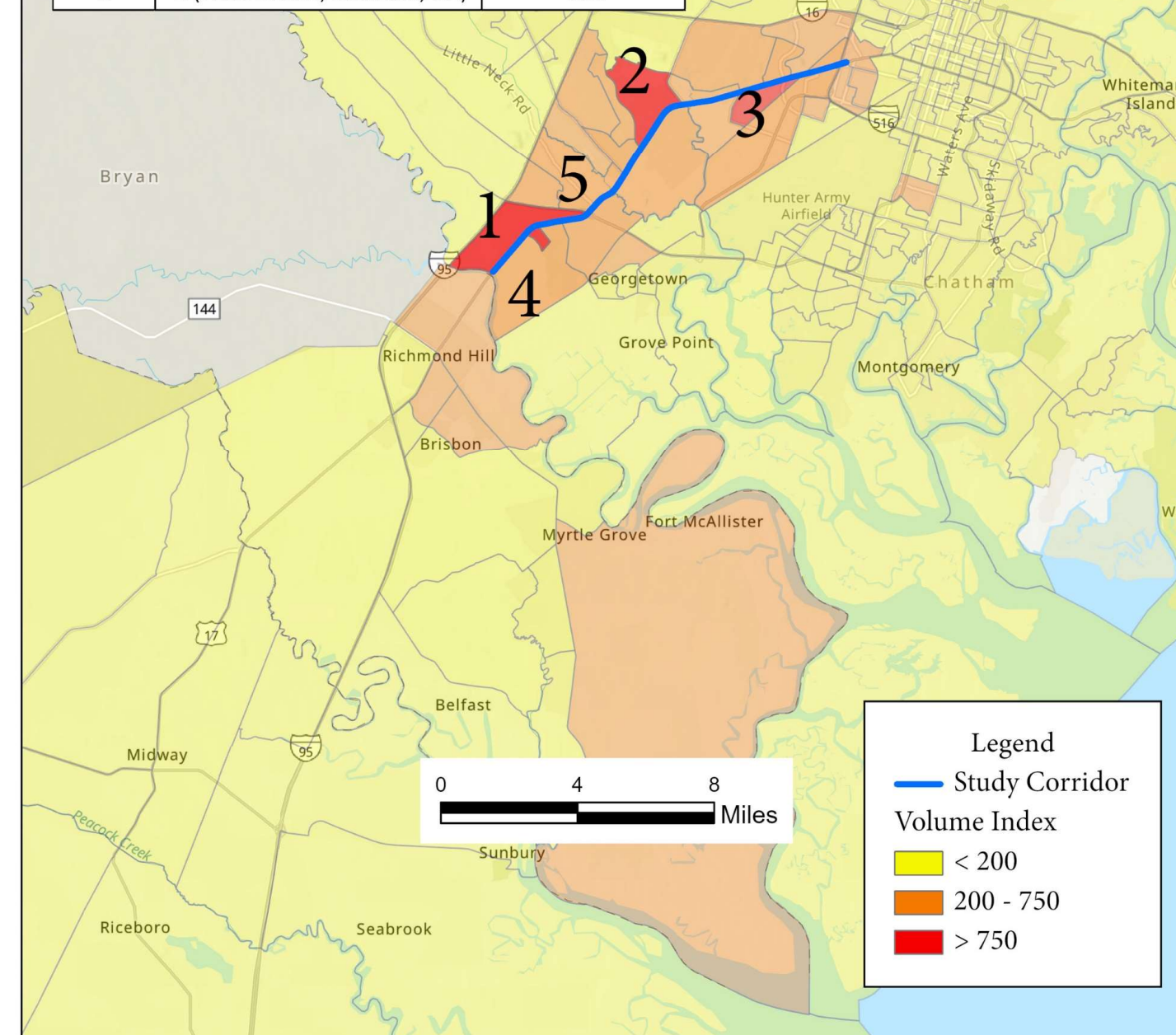
PM Peak-Hour Trip Origins

ID	Census Tract	2023 Volume Index
1	1 (Tract 108.14, Chatham, GA)	1,665
2	1 (Tract 108.12, Chatham, GA)	1,208
3	3 (Tract 105.02, Chatham, GA)	901
4	3 (Tract 105.03, Chatham, GA)	694
5	2 (Tract 105.03, Chatham, GA)	673

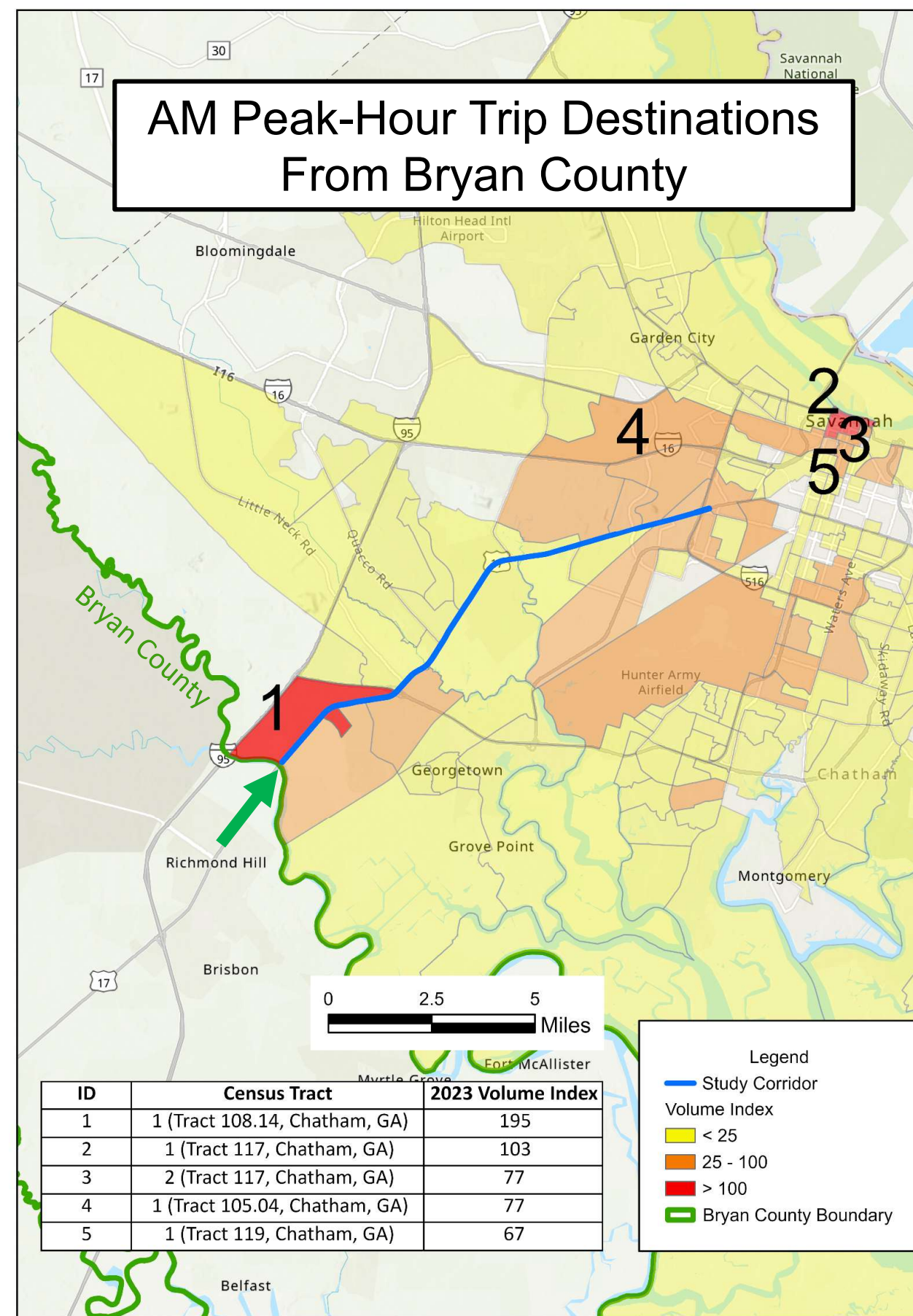
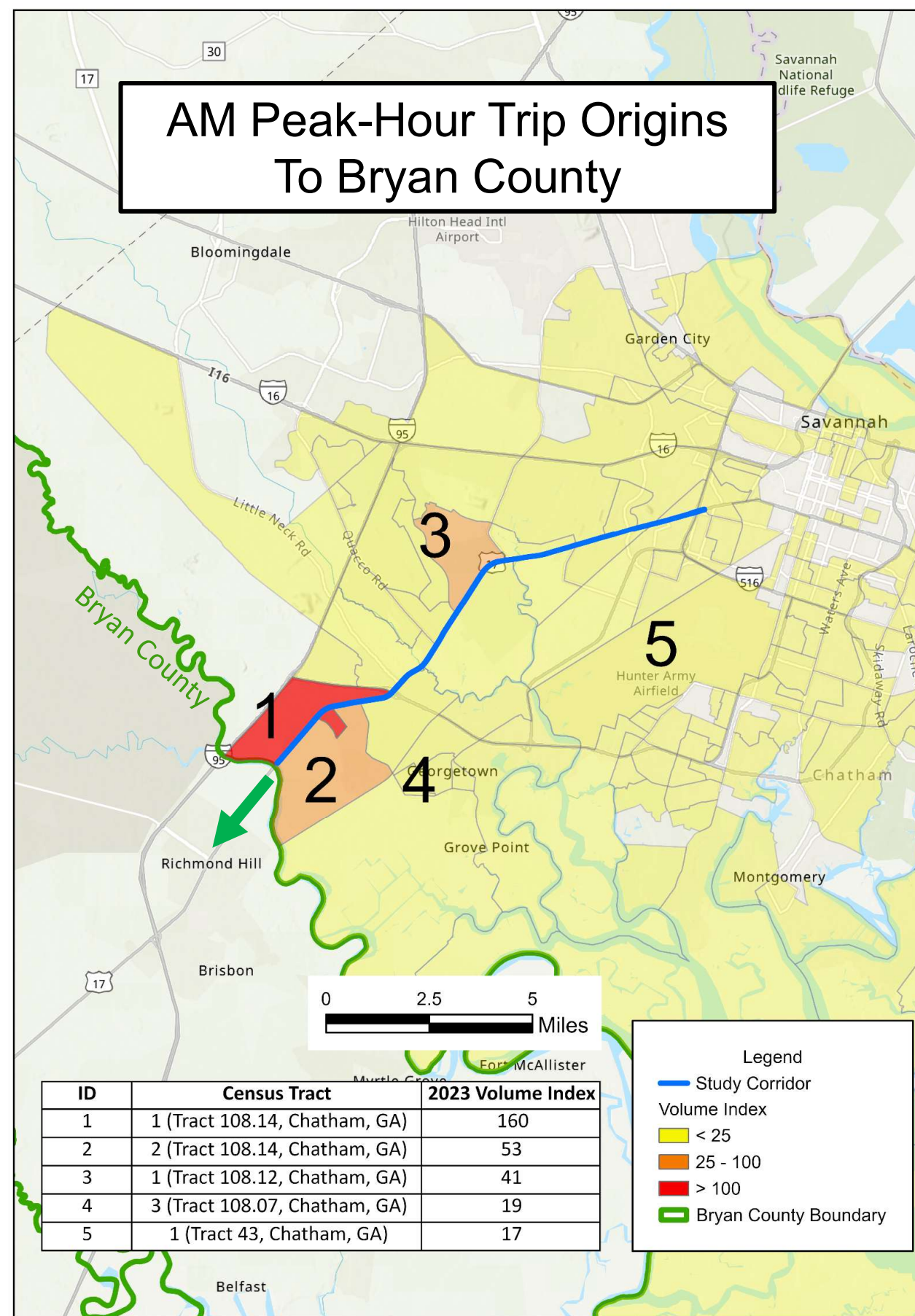


PM Peak-Hour Trip Destinations

ID	Census Tract	2023 Volume Index
1	1 (Tract 108.14, Chatham, GA)	1,763
2	1 (Tract 108.12, Chatham, GA)	1,479
3	2 (Tract 105.03, Chatham, GA)	820
4	2 (Tract 108.14, Chatham, GA)	748
5	2 (Tract 108.13, Chatham, GA)	651

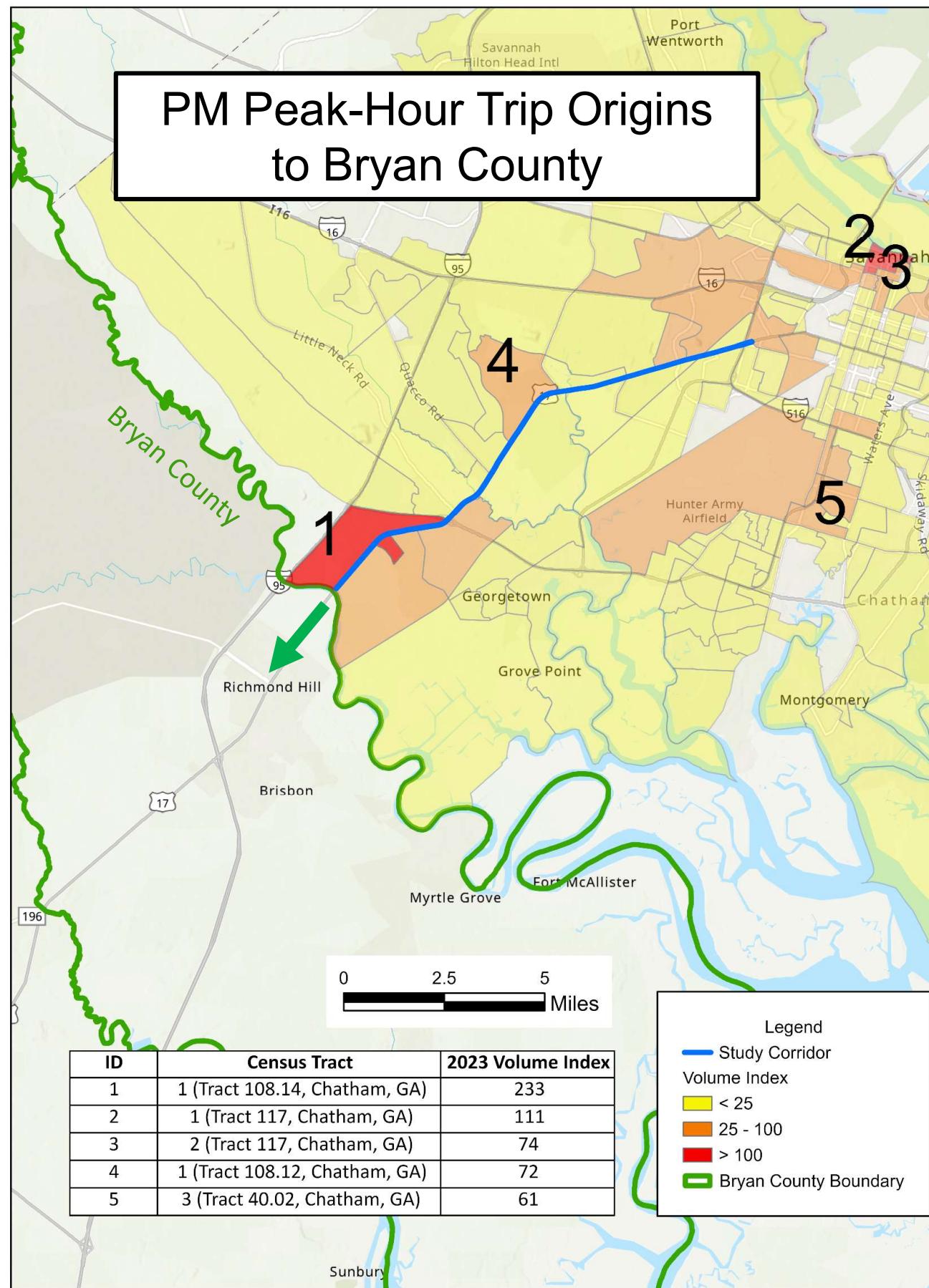


SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 19 – Existing Origin-Destination Patterns – All Modes PM Peak Hour

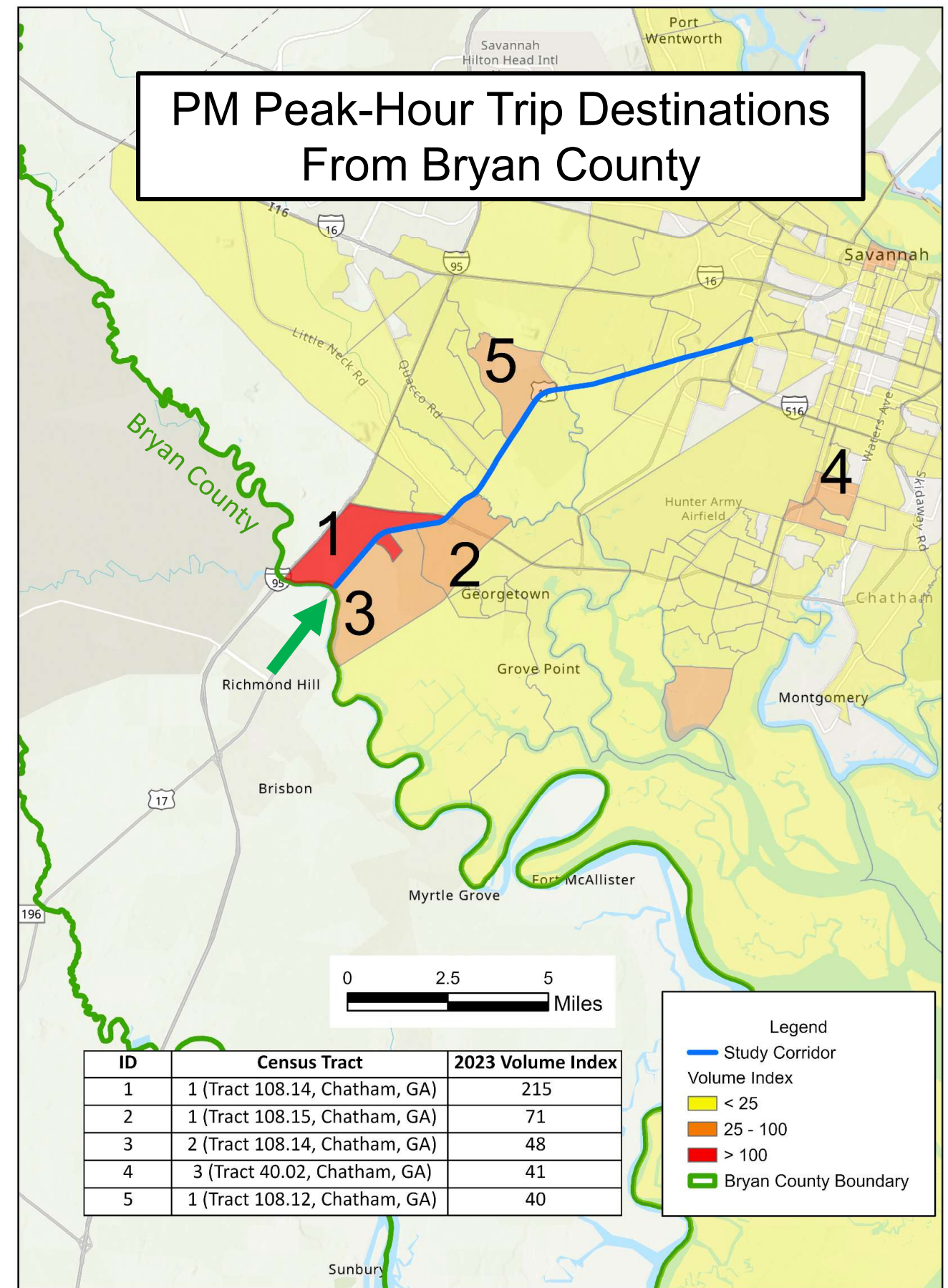


SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 20 – Existing Origin-Destination Patterns – All Modes AM Peak Hour Bryan County

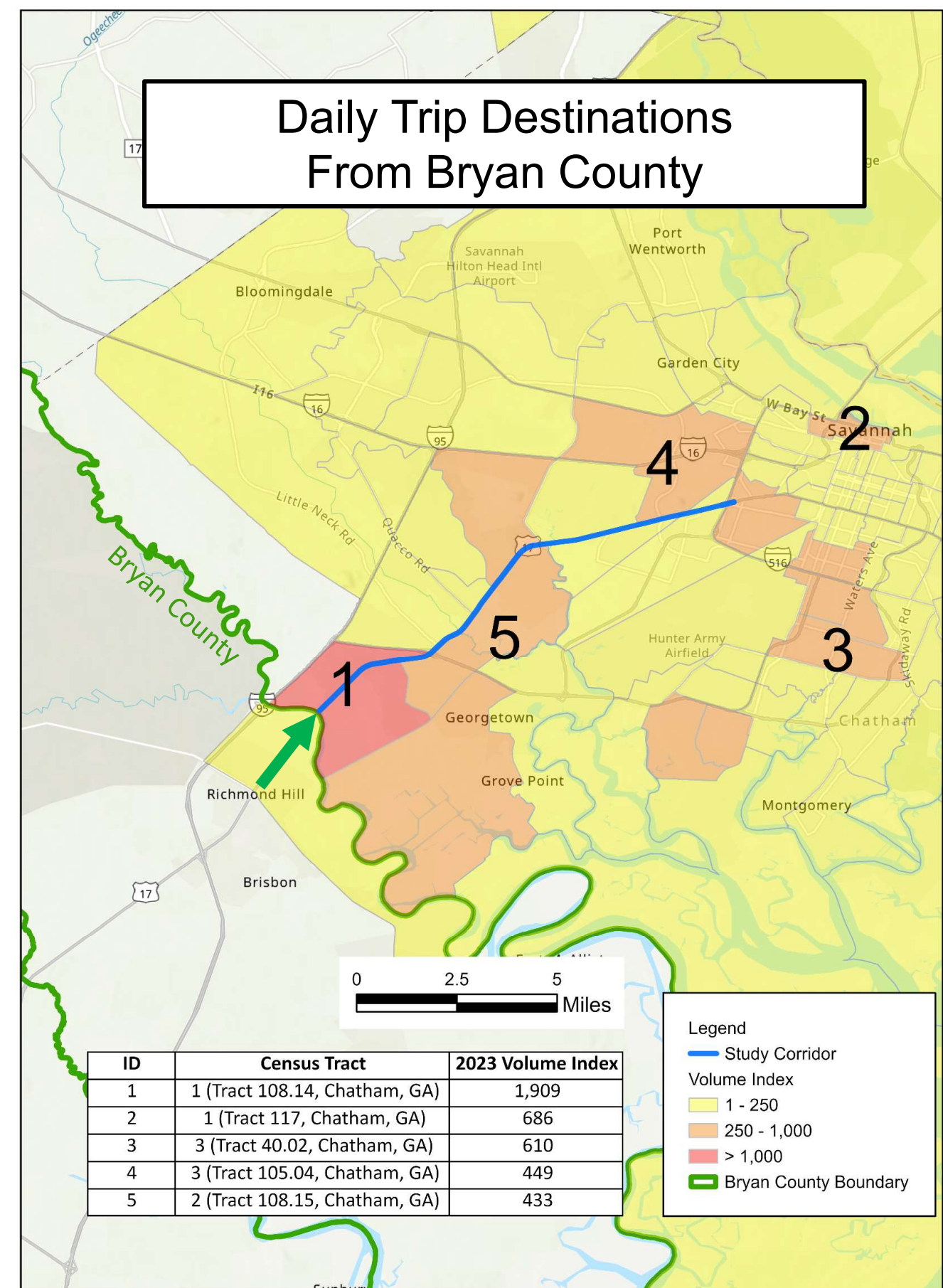
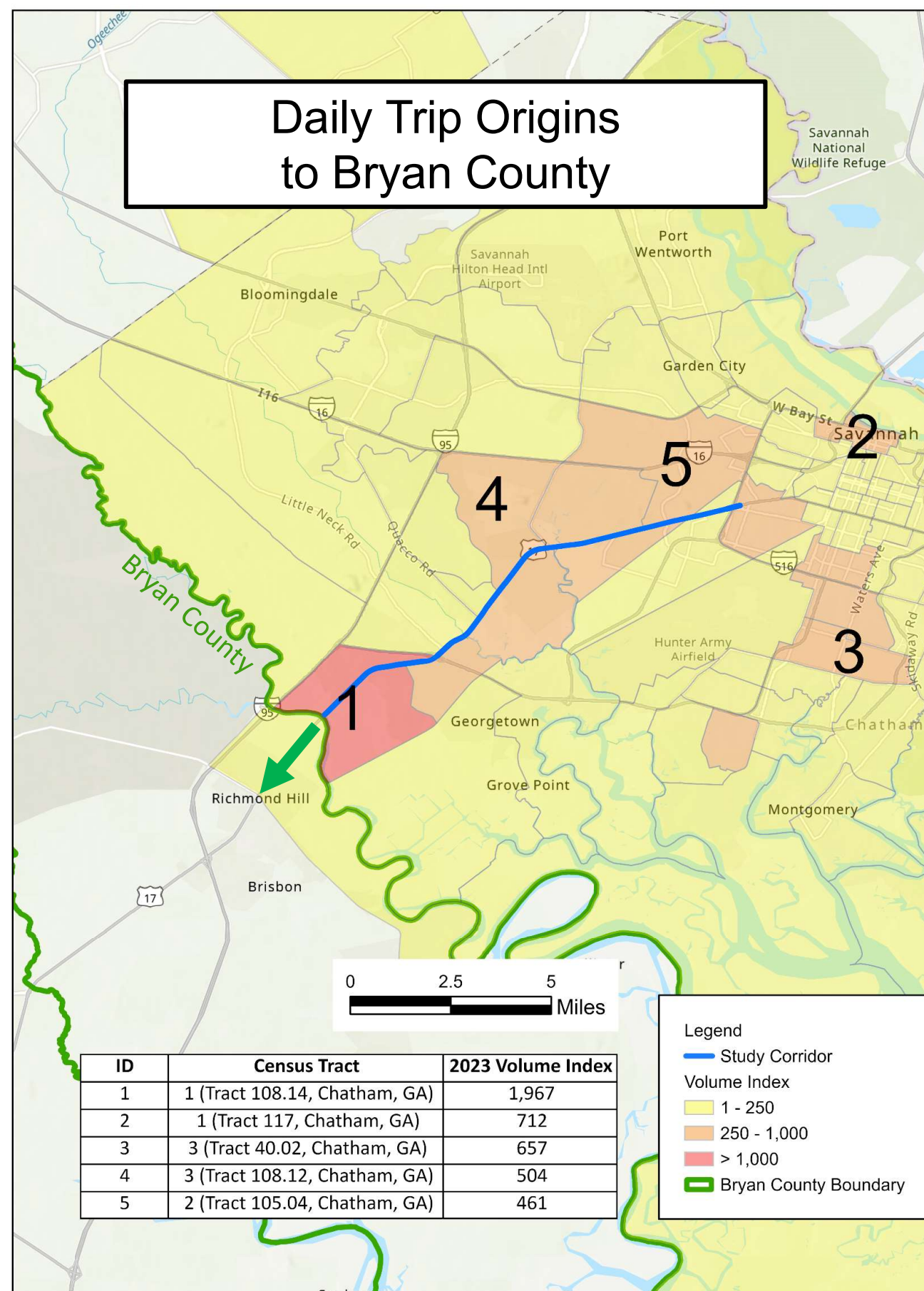
PM Peak-Hour Trip Origins to Bryan County



PM Peak-Hour Trip Destinations From Bryan County



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 21 – Existing Origin-Destination Patterns – All Modes PM Peak Hour Bryan County



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 22 – Existing Origin-Destination Patterns – All Modes Daily Bryan County

2.3.2 Existing Trip Characteristics

Figure 23 summarizes the primary modes of transportation used through the study area based on data from Replica’s Places dataset. Since 2019, freight trips have represented a decreasing proportion of the trips utilizing the SR 25/US 17 corridor and decreased from 11% in 2019 to 5% in 2023. This modal shift may be attributable to increases in residential development immediately adjacent to the study corridor, while industrial growth in Chatham County has been focused in areas outside the study area. Among the passenger car trips observed, approximately 70% consisted of single occupancy vehicle trips. Trips made via cycling, walking, and transit each constitute less than 5% of all trips made on the SR 25/US 17 corridor.

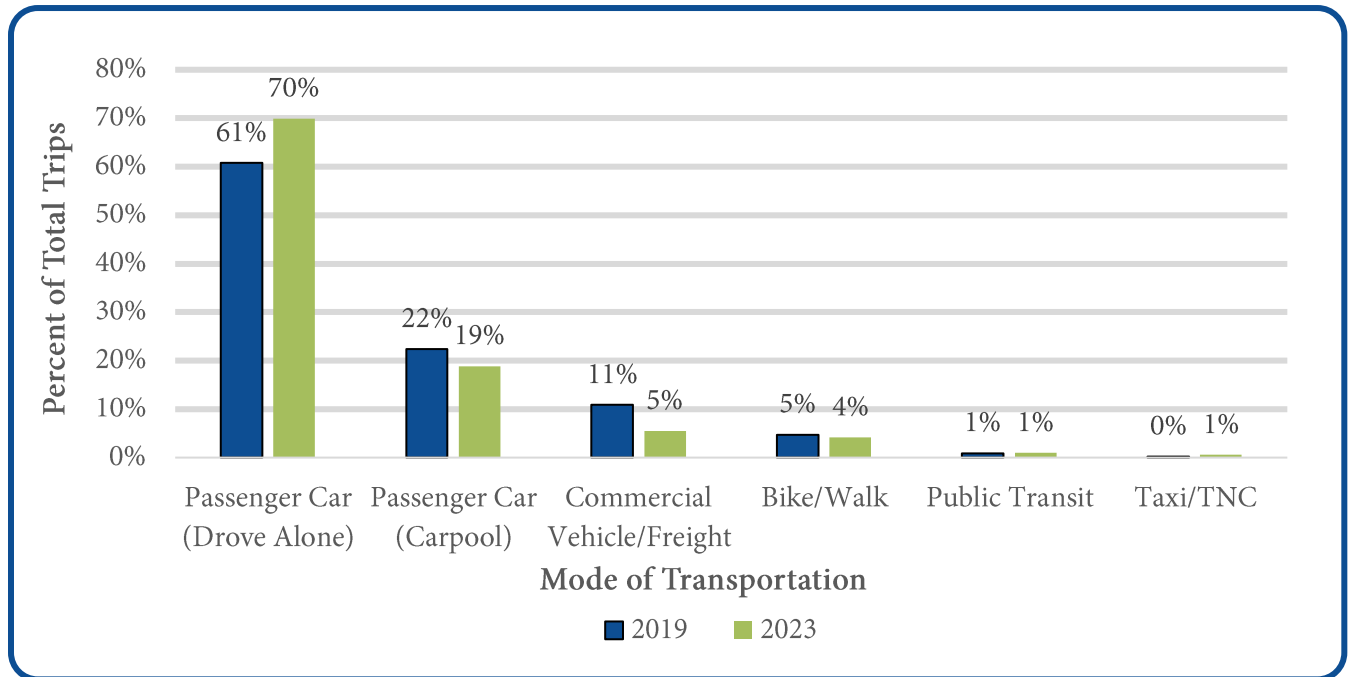


Figure 23: Existing Trip Characteristics – Mode of Transportation

Figure 24 summarizes the trip purposes represented among travel through the SR 25/US 17 corridor. These trip purposes are defined as follows:

- **Home/Work** – Trips that ended at the trip maker’s home or place of work, regardless of origin
- **Utilitarian** – Trips that ended at restaurant, retail, or school uses, regardless of origin
- **Commercial** – Trips made by a commercial vehicle or heavy truck
- **Social and Recreation** – Trips made for social or recreational purposes
- **Other** – All other trip purposes

As shown in **Figure 24**, approximately half of all trips made on the SR 25/US 17 corridor are for travel to and from home and work (i.e., commuting), while approximately one-third of all trips have a utilitarian purpose (i.e., pick up/drop off at school, dining, or errands). The SR 25/US 17 corridor is currently used minimally for all other trip purposes. These trends are reflective of the surrounding land use on the corridor, which is predominantly residential with pockets of dense commercial development. As an alternate route to I-95 and I-16, the corridor serves a significant number of commuters to and from downtown Savannah, including those living in Bryan County.

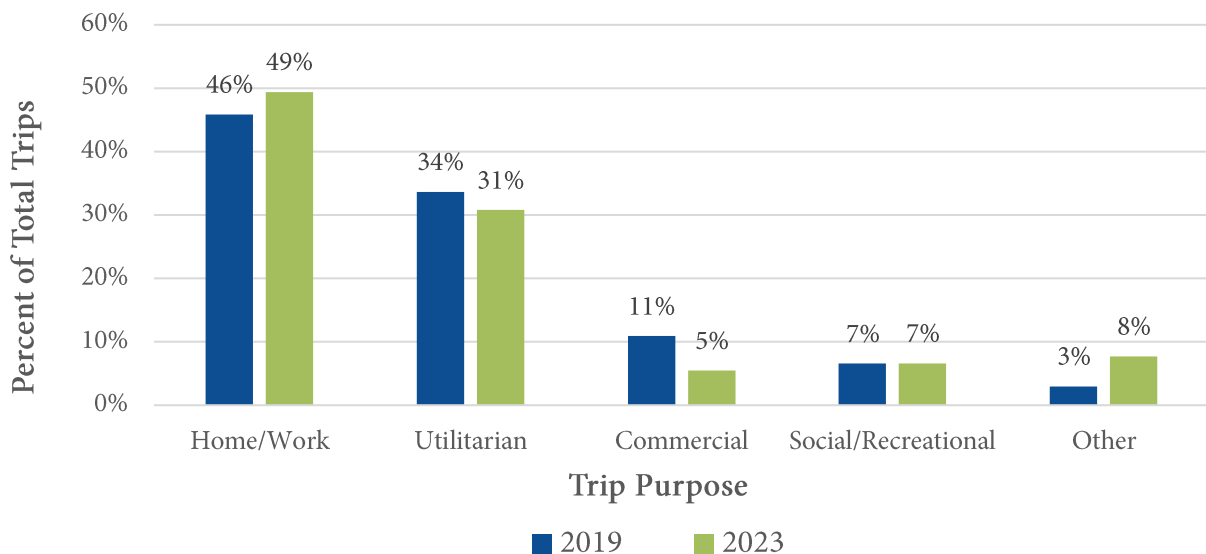


Figure 24: Existing Trip Characteristics – Trip Purpose

Figure 25 shows the time-of-day distribution for trips utilizing the SR 25/US 17 corridor. The trends depicted in **Figure 25** generally mirror those of the collected traffic count data and summarized in **Section 2.1**. For example, a sharp peak is observed during the AM peak period, then followed by a decrease in demand through the middle of the day and an elongated PM peak period between 3:00 PM and 6:00 PM. Comparing 2019 data to 2023 data, peak trip-making periods have generally decreased, and trips made during the evening hours do not substantially decrease until after 8:00 PM. These trends may be attributable to growth along the corridor and shifts in travel behavior following the COVID-19 pandemic.

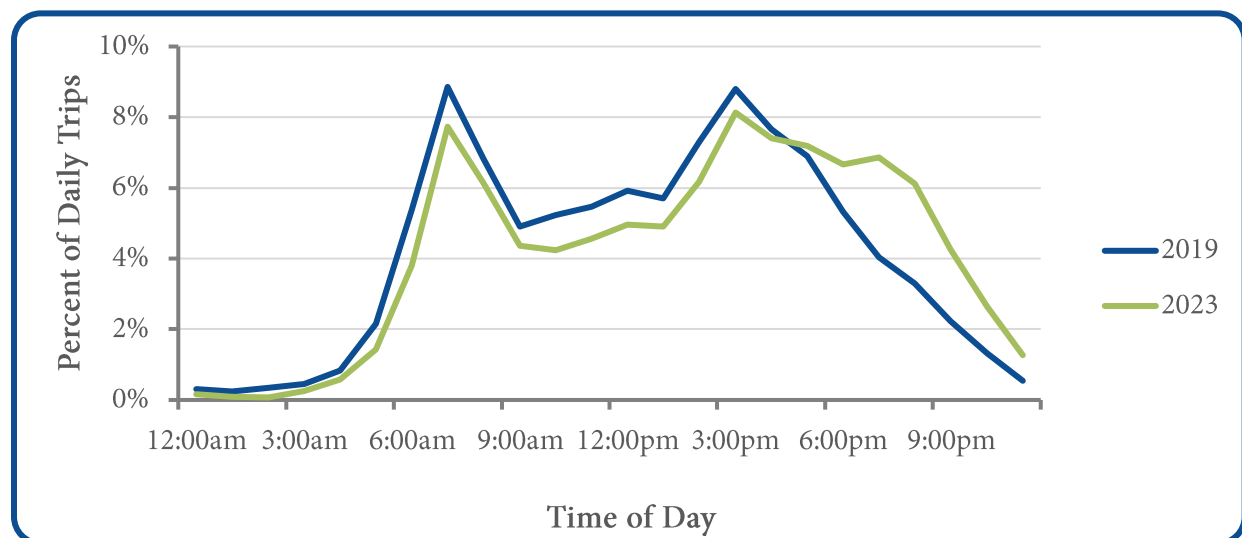


Figure 25: Existing Trip Characteristics – Trips by Time of Day

Figure 26 shows the distribution of the typical duration of trips utilizing the SR 25/US 17 corridor. The majority (43%) of trips occurring in Spring 2023 had a duration between 20 and 40 minutes, while 38% of all trips had a duration less than 20 minutes and 19% had a duration greater than 40 minutes. Comparing 2019 data to 2023 data, trip duration has remained nearly consistent, with a slight uptick in trip durations between 20 and 40 minutes. These trends may be attributable to increases in delay on the

SR 25/US 17 corridor but are also reflective of growth trends in the region; as noted earlier, the SR 25/US 17 corridor is one of two primary north-south routes between the City of Richmond Hill in Bryan County and the City of Savannah. Based on Replica's Places dataset, approximately 20% of all trips occurring on the SR 25/US 17 corridor traversed its entire length from the Ogeechee River to I-516/SR 21, which indicates that such long-distance trips from Bryan County are occurring at a relatively high frequency.

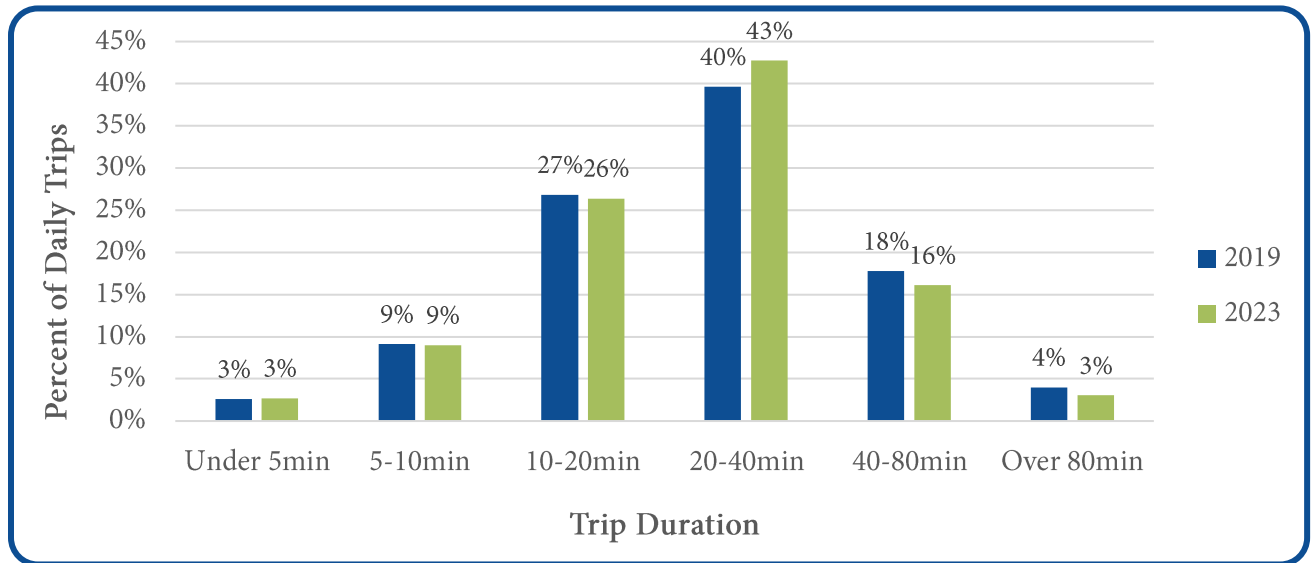


Figure 26: Existing Trip Characteristics – Trip Duration

2.3.3 Origin-Destination Analysis Summary

An origin-destination (O-D) analysis was conducted using Replica's Places dataset to evaluate existing daily travel patterns for passenger car, truck, and non-motorist trips utilizing the SR 25/US 17 corridor, as well as all modes of transportation during the AM peak hour, PM peak hour, and to and from Bryan County. The findings from this analysis indicate the following:

- Passenger car trip-making characteristics are reflective of growth along the southern portion of the SR 25/US 17 corridor and into Bryan County; approximately 30% of all trips that start on, end on, or pass through the SR 25/US 17 corridor begin or end in Census Tracts to the south of SR 204/Abercorn Street, including those in Bryan County.
- Truck trip-making along the SR 25/US 17 corridor has generally decreased in proportion to passenger car trips since 2019; in 2019, approximately 11% of all trips on the study corridor were made by commercial vehicles, while only 5% fit this category in 2023. These trends reflect growth patterns that are largely residential in nature along the SR 25/US 17 corridor.
- Few trips are made by walking, biking, or transit on the SR 25/US 17 corridor; each category constitutes less than 5% of all trips made on the study corridor in Spring 2023. Low usage for these modes of transportation is attributable to the lack of existing facilities, and investment is recommended to serve the latent demand.
- Approximately 25% of peak-hour trips that utilize at least a portion of the SR 25/US 17 corridor originate in or are destined for tracts south of SR 204/Abercorn Street in Chatham and Bryan counties. To help manage growth along the SR 25/US 17 corridor, travel time information could be communicated via dynamic message signs to encourage the use of other corridors.

2.4 Capacity Analysis

The segment characteristics and field observations summarized previously were supplemented with existing traffic data to develop a model of the 10.7-mile-long SR 25/US 17 corridor in Synchro Version 11 software. This model was used to assess existing traffic operations at the intersection- and segment-level throughout the study area based on measures of effectiveness (MOEs) such as speed, travel time, control delay, and queue length. The existing capacity analyses described in this section are critical for establishing a baseline for the evaluation of short- and long-term improvements. Combined with field observations, these analyses provide an estimate of typical traffic conditions throughout the corridor. The following subsections detail the analysis methodology, existing traffic volume development, intersection-level capacity analysis results, segment-level capacity analysis results, and key findings from these efforts.

2.4.1 Analysis Methodology

The evaluations presented throughout the remainder of this section are based on methodologies contained within the *Highway Capacity Manual, 6th Edition* (HCM6), which evaluates the operating characteristics of intersections and segments under given geometric, intersection control, and traffic demand scenarios. Traffic operations are defined by HCM6 in terms of level of service (LOS) grades that range from LOS A to LOS F and are directly related to the average traveler's perception of the operating efficiency of a facility as defined by delay at intersections or travel speed on segments. However, the underlying complexity of traffic flow cannot be fully distilled to a letter grade, nor is achieving LOS A an objective in designing roadways. Rather, roadways are designed such that some decline in LOS is to be expected during the peak periods of travel, and MOEs related to a variety of factors including operations, safety, environment, and cost are considered in right-sizing transportation infrastructure.

Intersection Capacity Analysis

As noted above, intersection-level traffic analyses were performed in Synchro Version 11 software, which applies methodologies prescribed by HCM6. The LOS thresholds published in HCM6 for signalized and unsignalized intersections are presented in **Table 7**.

Table 7: HCM6 LOS Thresholds for Signalized and Unsignalized Intersections

Level of Service	Control Delay (Seconds/Vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

Segment-Level Analysis

Segment-level capacity analysis was performed by applying the Urban Street Facilities methodology provided in Chapter 16 of HCM6 to SimTraffic simulation outputs and field travel time data. The LOS of an urban street facility is defined based on a comparison of Average Travel Speed (ATS) to the Base Free Flow Speed (BFFS) of each segment, where segments are typically delineated by major boundary intersections and changes in corridor context. The ATS is calculated from the segment length, running time (i.e., time to traverse the distance between boundary intersections without considering control delay), and control delay experienced at each boundary intersection. Running time and control delay may be determined through field observations or traffic simulation software such as SimTraffic. The BFFS of a given segment is estimated based on Equation 18-3 and Exhibit 18-11 in HCM6, each of which are calibrated to nationwide data that relates free flow speed to median type, cross-section, access point density, presence of on-street parking, and traffic signal spacing.

The LOS thresholds published in HCM6 for urban street segments are provided in **Table 8**. The LOS for an urban street facility comprised of multiple segments is estimated based on a length-weighted average of the ATS and BFFS of each segment. As noted in the table, and not unlike the conditions described for unsignalized intersections, urban street segments operating at LOS C or better typically exhibit short delays at the boundary intersections and stable conditions overall. At LOS D or LOS E, an urban street segment operates with less stability and may be susceptible to large increases in delay under even slight fluctuations in traffic demand. At LOS F, an urban street segment is operating over capacity which is likely due to bottleneck conditions and long delays experienced at one of its boundary intersections.

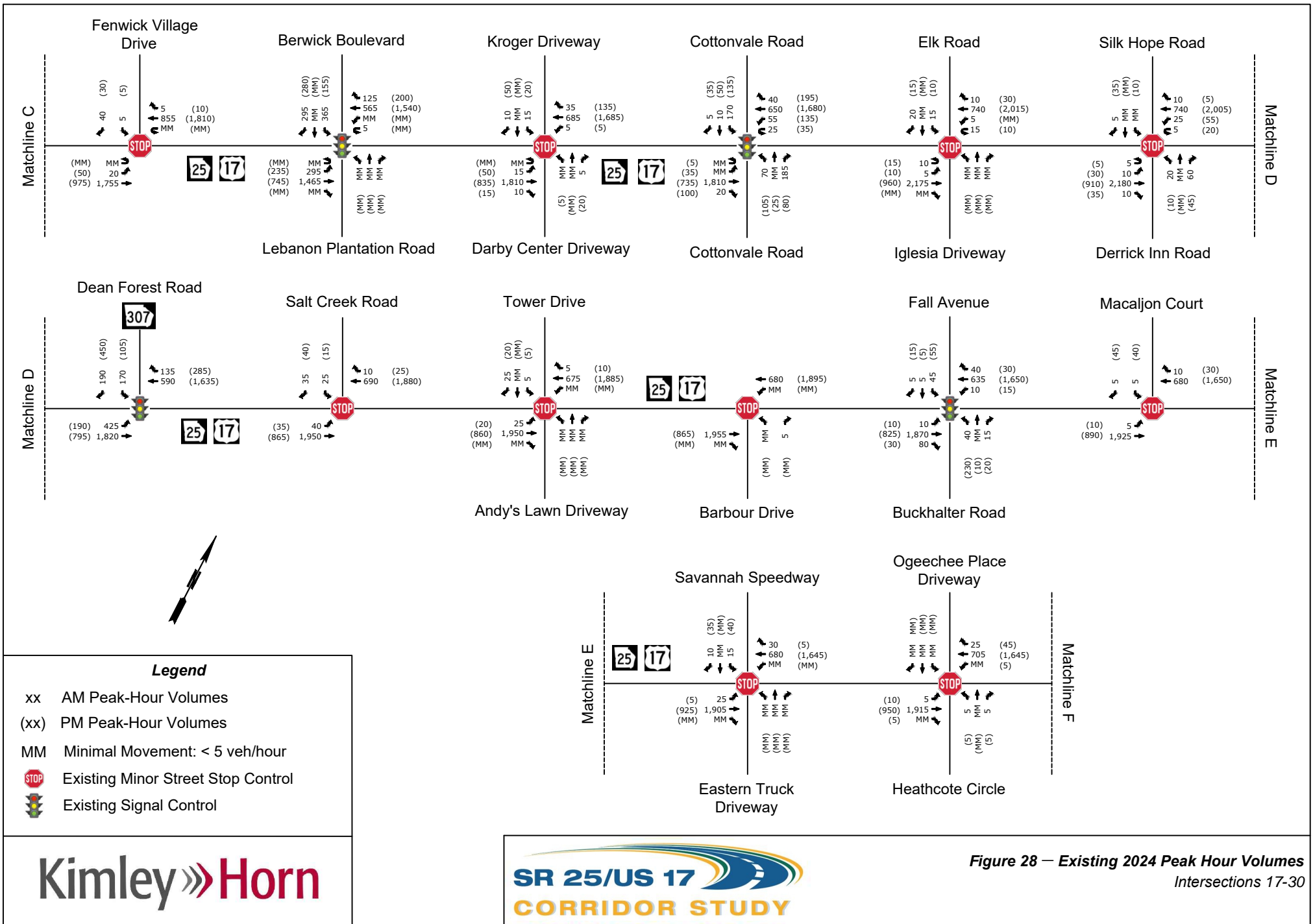
Table 8: HCM6 LOS Thresholds for Urban Street Segments

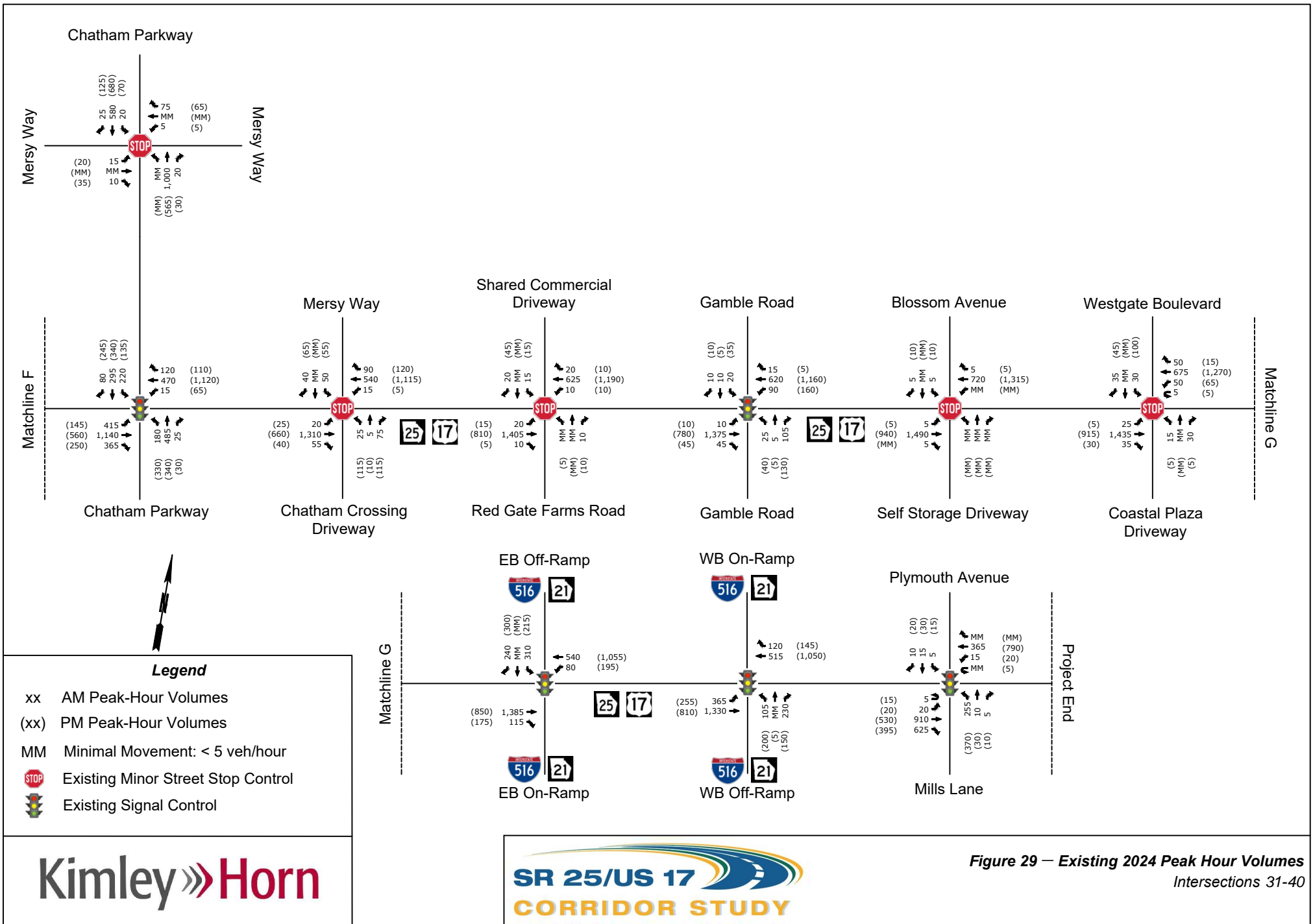
Level of Service	Average Travel Speed (% of Base Free Flow Speed)	
A	≥ 80%	Stable Flow
B	67% - 80%	
C	50% - 67%	
D	40% - 50%	Unstable Flow
E	30% - 40%	
F	< 30%	Congested Flow

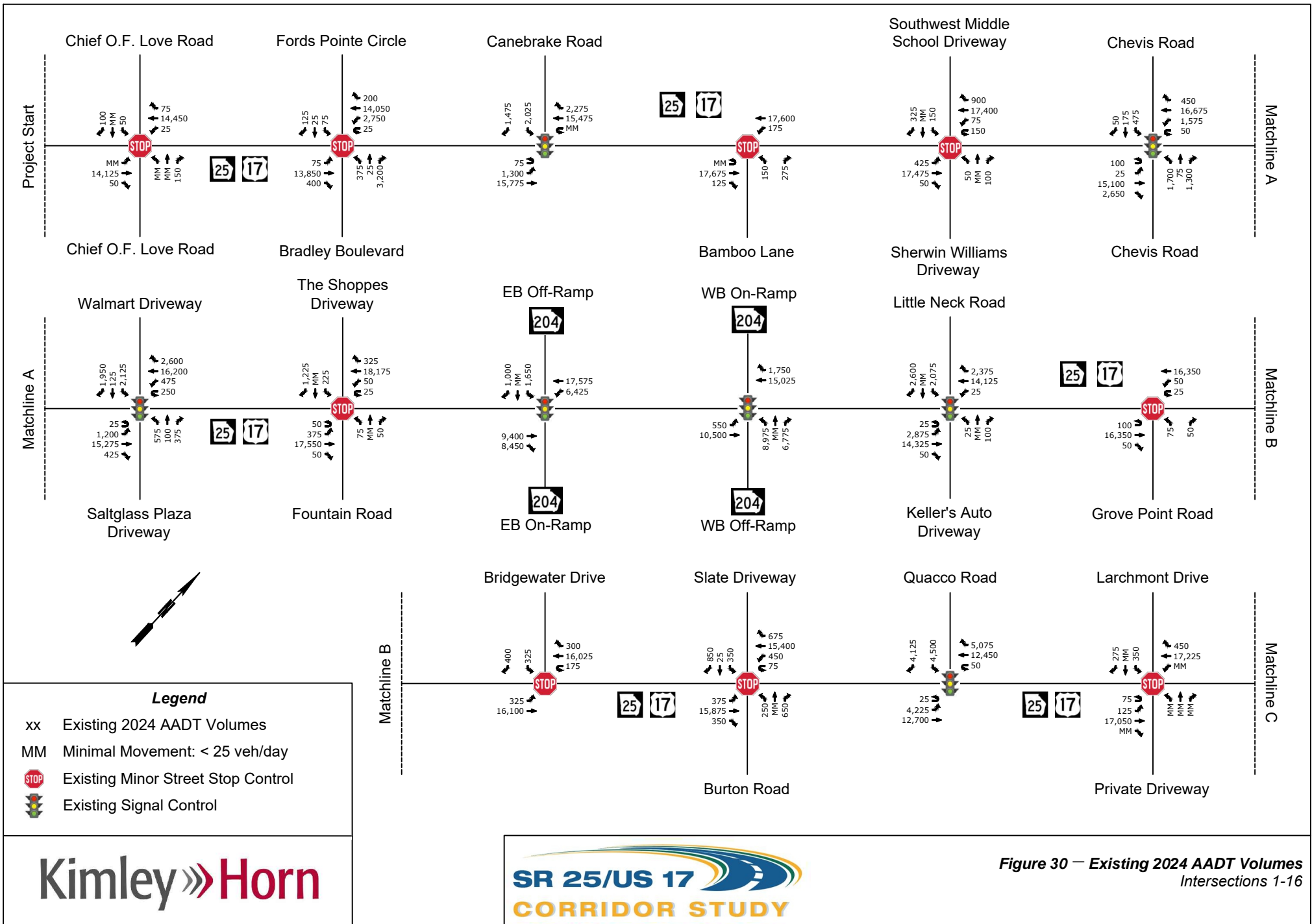
2.4.2 Traffic Volume Development

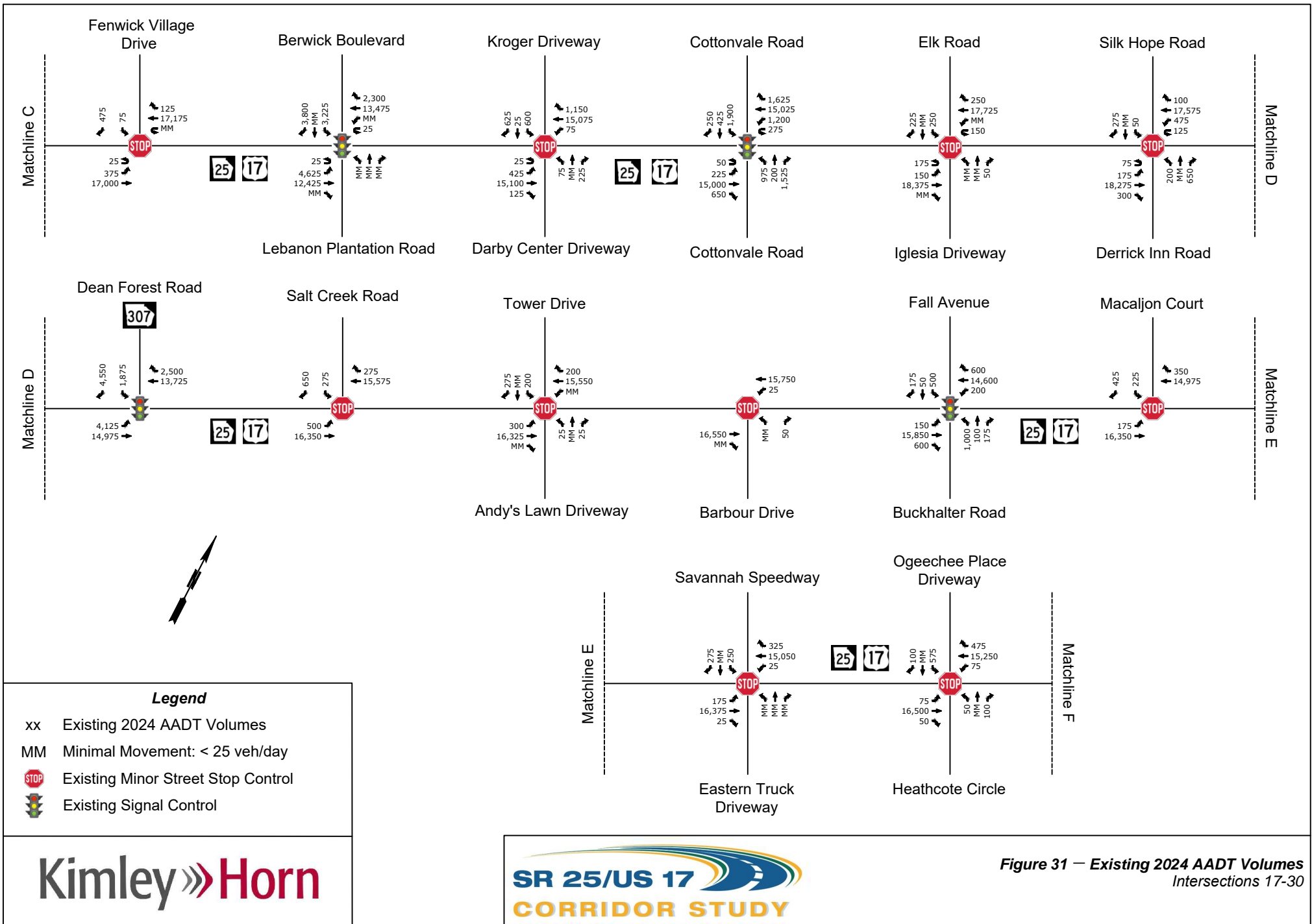
Existing turning movement counts (TMCs) were collected at 36 of the 40 intersections listed in **Section 2.1** during the AM (6:00 AM to 9:00 AM) and PM (3:30 PM to 6:30 PM) peak periods of travel on Wednesday, January 24, 2024. The TMCs for the remaining four intersections were collected from previous traffic studies completed in 2022 and 2023. In accordance with guidelines set forth in the *GDOT Design Traffic Forecasting Manual*, 48-hour classification counts were also collected at 105 locations on Wednesday, January 24, 2024, and Thursday, January 25, 2024 to facilitate the development of 2024 AADT estimates and establish an understanding of the distribution of traffic volumes and vehicle classes over the course of a typical day.

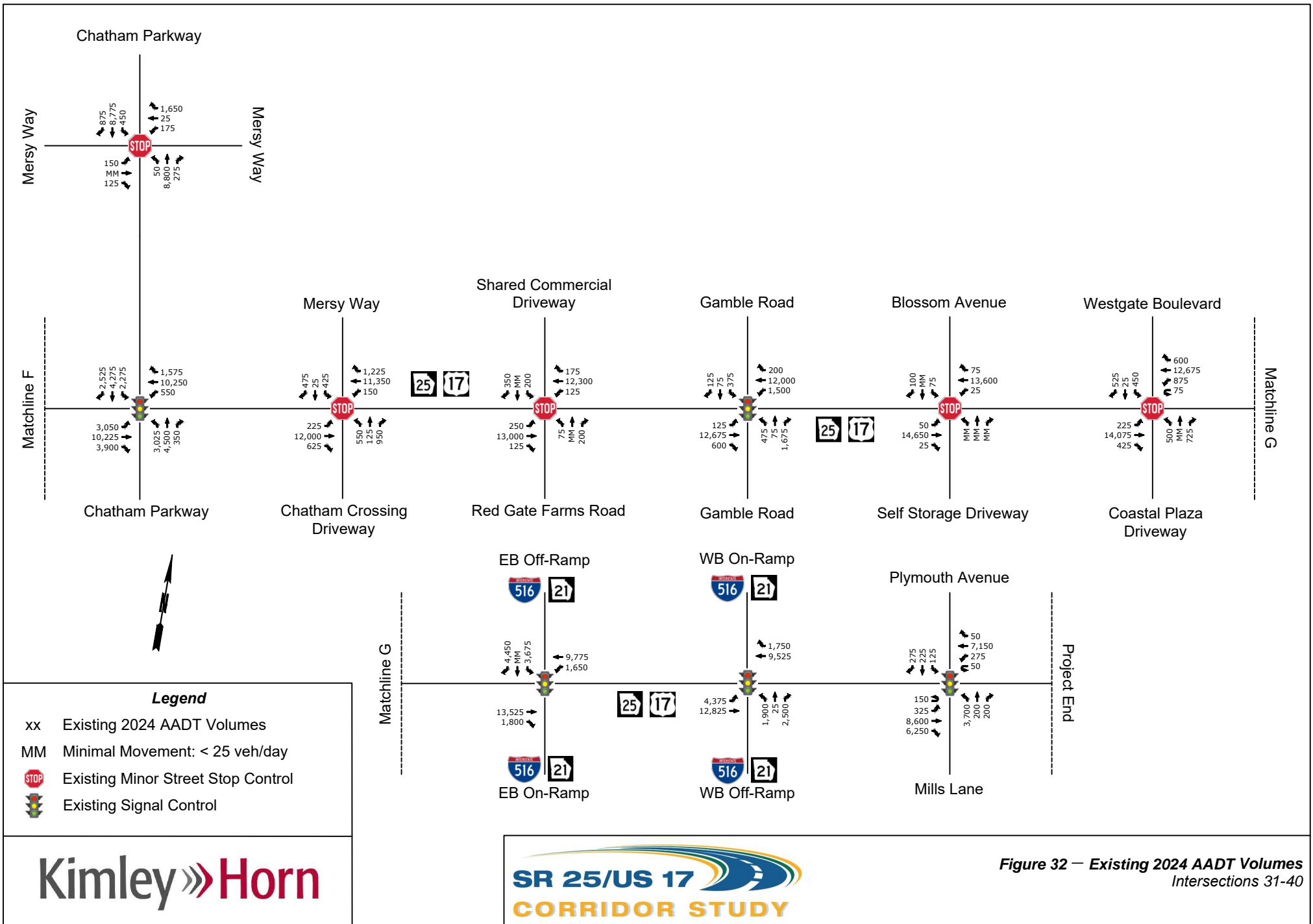
Further detail regarding the development of 2024 existing directional design hourly volume (DDHV) and AADT estimates will be provided as part of traffic forecasting documentation included in the SR 25/US 17 Traffic Forecasting Technical Memorandum. Existing peak hour traffic volumes used as part of the subject capacity analyses are summarized in **Figure 27**, **Figure 28**, and **Figure 29**, and existing AADT traffic volumes are summarized in **Figure 30**, **Figure 31**, and **Figure 32**.











2.4.3 Intersection Analysis Results

Capacity analysis results for each of the 40 study intersections are summarized by contextual segment in **Table 9** (AM Peak Hour) and **Table 10** (PM Peak Hour). The methodologies prescribed by HCM6 consider each intersection in isolation and do not account for the potential for queues to persist and propagate between intersections across multiple periods under oversaturated conditions. As such, corridor operations were also simulated in SimTraffic Version 11 software to identify existing deficiencies at the network level. Key findings are discussed below with a focus on intersections exhibiting significant delay during one or both peak periods. All references to delay and LOS refer to calculated, not observed, values.

Segment 1 – Southern Gateway

As noted in **Section 2.1.1**, Segment 1 extends from the Chatham County/Bryan County line to Chevis Road and includes six study intersections. Segment 1 includes two signalized intersections with Canebrake Road and Chevis Road which both operate at LOS B during the AM and PM peak hours of travel. The four other unsignalized intersections operate under two-way stop control (TWSC), and most of these serve fewer than 50 vehicles per hour (VPH) on the minor street approaches. The TWSC intersections in Segment 1 operate at LOS C or worse during the AM peak hour and at LOS E or worse during the PM peak hour.

The unsignalized intersection of SR 25/US 17 at Fords Pointe Circle/Bradley Boulevard operates at LOS F in both peak hours. During both peak hours, the minor street approaches of this intersection experience delays exceeding five minutes. Further, the TWSC intersection at the Southwest Middle School driveway operates at LOS F during the AM peak hour, which is comparable to observations made in the field during the school start period. Other unsignalized intersections that operate at LOS F during one or both peak periods exhibited minimal queues based on field observations, and existing median space offers opportunities for two-stage crossing maneuvers that reduce minor street delays throughout Segment 1. Therefore, the control delay estimates that are shown in **Table 9** and **Table 10** may overestimate field-observed delay.

Traffic volumes at three of the four TWSC intersections are not expected to meet signal warrants prescribed by the *Manual on Uniform Traffic Control Devices* (MUTCD), but monitoring may be needed in the future as development progresses along the corridor. A traffic signal warrant analysis was conducted for the intersection of SR 25/US 17 at Fords Pointe Circle/Bradley Boulevard due to the high minor street volumes and associated delays. Notably, signal warrants were met, and this underscores the need for improvements to alleviate the delays experienced at this intersection during the peak periods of travel. As mentioned in **Section 2.1.1**, access to the Alta Bradley residential development will form a fourth leg at the intersection of SR 25/US 17 at Canebrake Road, and the intersection is expected to continue operating acceptably once signal improvements are constructed as documented in the *Alta Bradley Multifamily Site Traffic Impact Analysis*. This development will also include an access point on Bradley Boulevard which further supports the need to signalize the intersection of SR 25/US 17 with Fords Pointe Circle/Bradley Boulevard.

Table 9: Existing Intersection Capacity Analysis Results – AM Peak Hour

ID	Intersection Name	Intersection Control Type	Approach LOS (Delay, sec/veh) ¹				Intersection Delay (sec/veh) ²
			EB	WB	NB	SB	
Segment 1 — Southern Gateway							
1	SR 25/US 17 at Chief O.F. Love Road	Stop	C (24.3)	D (33.1)	A (9.2) ¹	B (13.3) ¹	D (33.1) ²
2	SR 25/US 17 at Fords Pointe Circle/Bradley Boulevard	Stop	F (\$) ³	F (94.5)	A (9.1) ¹	C (17.5) ¹	F (\$) ^{2,3}
3	SR 25/US 17 at Canebrake Road	Signal	E (74.4)	-	A (6.6)	A (7.9)	B (11.1)
4	SR 25/US 17 at Bamboo Lane	Stop	-	D (33.7)	B (14.1) ¹	C (17.5) ¹	D (33.7) ²
5	SR 25/US 17 at Southwest Middle School Driveway	Stop	E (47.0)	F (50.0)	B (10.0) ¹	D (26.8) ¹	F (50.0) ²
6	SR 25/US 17 at Chevis Road	Signal	E (67.3)	E (69.7)	A (9.3)	A (2.9)	B (10.9)
Segment 2 — Commercial South							
7	SR 25/US 17 at Walmart Driveway	Signal	E (68.8)	E (65.7)	A (3.2)	A (3.3)	A (5.7)
8	SR 25/US 17 at Fountain Road	Stop	C (19.4)	E (38.5)	B (12.8) ¹	B (12.8) ¹	E (38.5) ²
9	SR 25/US 17 at SR 204/Abercorn Street Eastbound Ramps	Signal	E (68.8)	-	A (0.8)	C (24.7)	B (19.5)
10	SR 25/US 17 at SR 204/Abercorn Street Westbound Ramps	Signal	-	E (65.3)	A (1.6)	A (1.0)	B (12.9)
11	SR 25/US 17 at Little Neck Road	Signal	E (72.1)	-	A (1.7)	B (15.7)	B (14.4)
12	SR 25/US 17 at Old Grove Point Road	Stop	-	D (25.8)	D (28.0) ¹	B (13.2) ¹	D (28.0) ²
Segment 3 — Berwick							
13	SR 25/US 17 at Bridgewater Drive	Stop	C (24.5)	-	B (11.6) ¹	D (30.4) ¹	D (30.4) ²
14	SR 25/US 17 at Burton Road	Stop	C (22.4)	F (54.9)	B (11.0) ¹	B (13.3) ¹	F (54.9) ²
15	SR 25/US 17 at Quacco Road	Signal	F (160.6)	-	C (20.2)	B (17.4)	E (62.6)
16	SR 25/US 17 at Larchmont Drive	Stop	C (23.3)	-	B (12.2) ¹	E (46.5) ¹	E (46.5) ²
17	SR 25/US 17 at Fenwick Village Drive	Stop	B (11.2)	-	A (9.9) ¹	E (44.7) ¹	E (44.7) ²
18	SR 25/US 17 at Berwick Boulevard	Signal	D (44.6) ⁴	E (57.4) ⁴	B (17.8) ⁴	B (14.7) ⁴	C (23.0) ⁴
19	SR 25/US 17 at Kroger Driveway	Stop	D (29.1)	F (52.1)	A (9.1) ¹	C (19.2) ¹	F (52.1) ²
20	SR 25/US 17 at Cottonvale Road	Signal	F (113.4) ⁴	D (49.9) ⁴	C (28.1) ⁴	B (10.0) ⁴	C (30.6) ⁴
21	SR 25/US 17 at Elk Road	Stop	D (25.9)	-	B (12.2) ¹	F (110.1) ¹	F (110.1) ²
22	SR 25/US 17 at Silk Hope Road/Derrick Inn Road	Stop	F (81.9)	F (122.8)	B (10.9) ¹	F (70.6) ¹	F (122.8) ²
23	SR 25/US 17 at SR 307/Dean Forest Road	Signal	D (50.2)	-	A (7.2)	B (11.2)	B (11.3)

ID	Intersection Name	Intersection Control Type	Approach LOS (Delay, sec/veh) ¹				Intersection Delay (sec/veh) ²
			EB	WB	NB	SB	
Segment 4 — Silk Hope							
24	SR 25/US 17 at Salt Creek Road	Stop	C (19.3)	-	A (9.3) ¹	A (0.0) ¹	C (19.3) ²
25	SR 25/US 17 at Tower Drive	Stop	C (23.0)	F (66.4)	A (9.1) ¹	C (18.3) ¹	F (66.4) ²
26	SR 25/US 17 at Barbour Drive	Stop	-	E (40.5)	A (0.0) ¹	C (18.3) ¹	E (40.5) ²
27	SR 25/US 17 at Fall Avenue/Buckhalter Road	Signal	E (72.0)	E (72.7)	A (5.3)	A (2.2)	A (7.3)
Segment 5 — Commercial North							
28	SR 25/US 17 at Macaljon Court	Stop	C (19.1)	-	A (9.7) ¹	A (0.0) ¹	C (19.1) ²
29	SR 25/US 17 at Savannah Speedway	Stop	D (27.2)	-	A (9.7) ¹	A (0.0) ¹	D (27.2) ²
30	SR 25/US 17 at Heathcote Circle	Stop	D (34.0)	F (58.3)	A (9.2) ¹	C (17.9) ¹	F (58.3) ²
31	SR 25/US 17 at Chatham Parkway	Signal	E (69.1)	F (92.6)	C (21.8)	D (37.9)	D (44.2)
32	Chatham Parkway at Mersy Way	Stop	B (10.9)	A (0.0)	B (10.8) ¹	B (14.4) ¹	B (14.4) ²
Segment 6 — Northern Gateway							
33	SR 25/US 17 at Mersy Way	Stop	D (28.5)	E (43.7)	A (9.0) ¹	B (14.2) ¹	E (43.7) ²
34	SR 25/US 17 at Red Gate Farms Road	Stop	D (30.9)	D (30.6)	B (11.3) ¹	B (13.4) ¹	D (30.9) ²
35	SR 25/US 17 at Gamble Road	Signal	C (31.3)	C (30.9)	C (24.1)	A (6.1)	B (18.4)
36	SR 25/US 17 at Blossom Drive	Stop	D (25.0)	D (34.2)	A (9.2) ¹	B (13.6) ¹	D (34.2) ²
37	SR 25/US 17 at Westgate Boulevard	Stop	E (36.5)	E (36.2)	A (9.2) ¹	C (16.6) ¹	E (36.5) ²
38	SR 25/US 17 at I-516/SR 21 Eastbound Ramps	Signal	D (43.6) ⁴	-	A (9.7) ⁴	A (9.8) ⁴	B (16.7) ⁴
39	SR 25/US 17 at I-516/SR 21 Westbound Ramps	Signal	-	C (26.0) ⁴	B (10.1) ⁴	B (12.8) ⁴	B (12.8) ⁴
40	SR 25/US 17 at Plymouth Avenue/Mills Lane	Signal	D (48.3)	E (66.8)	A (3.0)	A (7.8)	B (15.5)

¹ Approach delay reported for the left-turn movement only on the major street at unsignalized intersections

² Overall intersection delay reported as the worst approach at unsignalized intersections

³ \$ Approach delay exceeds five minutes

⁴ Outputs from Synchro were used in lieu of those from HCM6 based on existing conditions

Table 10: Existing Intersection Capacity Analysis Results – PM Peak Hour

ID	Intersection Name	Intersection Control Type	Approach LOS (Delay, sec/veh) ¹				Intersection Delay (sec/veh) ²
			EB	WB	NB	SB	
Segment 1 — Southern Gateway							
1	SR 25/US 17 at Chief O.F. Love Road	Stop	E (35.9)	C (24.0)	B (13.7) ¹	A (9.9) ¹	E (35.9) ²
2	SR 25/US 17 at Fords Pointe Circle/Bradley Boulevard	Stop	F (\$) ³	E (42.3)	B (13.8) ¹	B (13.2) ¹	F (\$) ^{2,3}
3	SR 25/US 17 at Canebrake Road	Signal	F (90.9)	-	A (4.3)	A (10.0)	B (11.7)
4	SR 25/US 17 at Bamboo Lane	Stop	-	C (15.7)	F (71.9) ¹	B (12.3) ¹	F (71.9) ²
5	SR 25/US 17 at Southwest Middle School Driveway	Stop	E (39.4)	E (40.3)	C (16.5) ¹	B (11.1) ¹	E (40.3) ²
6	SR 25/US 17 at Chevis Road	Signal	E (67.0)	F (84.8)	B (11.0)	A (1.3)	B (11.5)
Segment 2 — Commercial South							
7	SR 25/US 17 at Walmart Driveway	Signal	E (78.5)	E (69.3)	A (9.5)	A (7.1)	B (12.8)
8	SR 25/US 17 at Fountain Road	Stop	E (41.7)	F (53.6)	C (18.5) ¹	B (11.7) ¹	F (53.6) ²
9	SR 25/US 17 at SR 204/Abercorn Street Eastbound Ramps	Signal	F (83.4)	-	A (0.3)	B (14.9)	B (14.7)
10	SR 25/US 17 at SR 204/Abercorn Street Westbound Ramps	Signal	-	E (67.9)	D (37.9)	B (15.0)	D (35.3)
11	SR 25/US 17 at Little Neck Road	Signal	F (84.7)	-	A (3.8)	B (10.4)	B (10.5)
12	SR 25/US 17 at Old Grove Point Road	Stop	-	C (20.7)	E (36.3) ¹	B (14.3) ¹	E (36.3) ²
Segment 3 — Berwick							
13	SR 25/US 17 at Bridgewater Drive	Stop	D (33.8)	-	B (14.5) ¹	C (17.2) ¹	D (33.8) ²
14	SR 25/US 17 at Burton Road	Stop	F (66.4)	D (28.5)	B (14.3) ¹	B (12.4) ¹	F (66.4) ²
15	SR 25/US 17 at Quacco Road	Signal	F (\$) ³	-	C (28.0)	B (16.8)	F (85.6)
16	SR 25/US 17 at Larchmont Drive	Stop	F (50.4)	-	D (26.9) ¹	C (16.7) ¹	F (50.4) ²
17	SR 25/US 17 at Fenwick Village Drive	Stop	C (18.3)	-	C (18.7) ¹	C (16.3) ¹	C (18.7) ²
18	SR 25/US 17 at Berwick Boulevard	Signal	E (68.8) ⁴	E (71.1) ⁴	C (22.1) ⁴	C (33.3) ⁴	C (34.9) ⁴
19	SR 25/US 17 at Kroger Driveway	Stop	E (45.4)	D (28.3)	C (16.9) ¹	A (9.7) ¹	E (45.4) ²
20	SR 25/US 17 at Cottonvale Road	Signal	D (50.0) ⁴	E (63.0) ⁴	C (21.1) ⁴	B (14.3) ⁴	C (21.5) ⁴
21	SR 25/US 17 at Elk Road	Stop	F (63.4)	-	F (64.9) ¹	C (16.9) ¹	F (64.9) ²
22	SR 25/US 17 at Silk Hope Road/Derrick Inn Road	Stop	F (123.0)	E (45.6)	D (34.7) ¹	B (13.5) ¹	F (123.0) ²
23	SR 25/US 17 at SR 307/Dean Forest Road	Signal	E (68.9)	-	A (7.2)	B (11.9)	B (12.4)

ID	Intersection Name	Intersection Control Type	Approach LOS (Delay, sec/veh) ¹				Intersection Delay (sec/veh) ²
			EB	WB	NB	SB	
Segment 4 — Silk Hope							
24	SR 25/US 17 at Salt Creek Road	Stop	E (49.9)	-	C (20.4) ¹	A (0.0) ¹	E (49.9) ²
25	SR 25/US 17 at Tower Drive	Stop	E (45.8)	E (40.9)	C (19.3) ¹	A (9.8) ¹	E (45.8) ²
26	SR 25/US 17 at Barbour Drive	Stop	-	C (19.2)	A (0.0) ¹	A (9.9) ¹	C (19.2) ²
27	SR 25/US 17 at Fall Avenue/Buckhalter Road	Signal	E (56.3)	E (75.9)	A (9.4)	B (14.8)	B (19.7)
Segment 5 — Commercial North							
28	SR 25/US 17 at Macaljon Court	Stop	E (43.6)	-	C (15.3) ¹	A (0.0) ¹	E (43.6) ²
29	SR 25/US 17 at Savannah Speedway	Stop	F (66.4)	-	B (14.9) ¹	A (0.0) ¹	F (66.4) ²
30	SR 25/US 17 at Heathcote Circle	Stop	E (46.2)	E (40.5)	C (18.2) ¹	B (10.2) ¹	E (46.2) ²
31	SR 25/US 17 at Chatham Parkway	Signal	E (73.4)	D (54.3)	C (27.4)	E (56.1)	D (51.7)
32	Chatham Parkway at Mersy Way	Stop	A (9.0)	A (0.0)	B (10.9) ¹	B (11.3) ¹	B (11.3) ²
Segment 6 — Northern Gateway							
33	SR 25/US 17 at Mersy Way	Stop	E (41.3)	F (62.6)	B (12.0) ¹	A (9.0) ¹	F (62.6) ²
34	SR 25/US 17 at Red Gate Farms Road	Stop	D (25.4)	C (21.5)	C (16.3) ¹	A (9.6) ¹	D (25.4) ²
35	SR 25/US 17 at Gamble Road	Signal	F (80.4)	E (79.9)	A (7.4)	A (3.7)	A (8.3)
36	SR 25/US 17 at Blossom Drive	Stop	D (34.5)	D (27.4)	B (12.7) ¹	B (10.4) ¹	D (34.5) ²
37	SR 25/US 17 at Westgate Boulevard	Stop	F (274.0)	D (31.4)	B (14.8) ¹	B (11.5) ¹	F (274.0) ²
38	SR 25/US 17 at I-516/SR 21 Eastbound Ramps	Signal	D (44.2) ⁴	-	A (4.6) ⁴	B (11.1) ⁴	B (14.8) ⁴
39	SR 25/US 17 at I-516/SR 21 Westbound Ramps	Signal	-	D (46.0) ⁴	B (15.4) ⁴	C (21.0) ⁴	C (22.1) ⁴
40	SR 25/US 17 at Plymouth Avenue/Mills Lane	Signal	C (20.8)	C (32.3)	B (10.9)	B (14.6)	B (17.5)

¹ Approach delay reported for the left-turn movement only on the major street at unsignalized intersections

² Overall intersection delay reported as the worst approach at unsignalized intersections

³ \$ Approach delay exceeds five minutes

⁴ Outputs from Synchro were used in lieu of those from HCM6 based on existing conditions

Segment 2 – Commercial South

As described in **Section 2.1.2**, Segment 2 extends from Chevis Road to the Little Ogeechee River and includes the SR 25/US 17 at SR 204/Abercorn Street interchange. Segment 2 consists of six intersections, four of which are signalized. Fountain Road and Old Grove Point Road are both unsignalized and operate at LOS D or worse during both peak hours; notably, the intersection with Fountain Road operates at LOS F during the PM peak hour. Like other unsignalized intersections along the corridor, it is expected that two-stage crossing maneuvers that utilize the median break reduce field-observed delays relative to those obtained through traffic analyses. The minor street approaches for both of these TWSC intersections mostly serve fewer than 50 VPH and are not expected to meet signal warrants prescribed by the MUTCD.

Among the signalized intersections along Segment 2, the intersection of SR 25/US 17 at the SR 204/Abercorn Street westbound ramps operates worst, and modeled and observed queues extend beyond the available westbound off-ramp storage during the PM peak hour. Model outputs suggest that the other signalized intersections along Segment 2 operate at LOS B or better; however, the eastbound queues for the intersection of SR 204/Abercorn Street at Don Zipperer Drive extend through the eastbound on-ramp at SR 25/US 17 and approximately 2,000-feet-south along SR 25/US 17 during the AM peak hour. This queueing contributes to an observed LOS worse than indicated in the model, and improvements to the intersection of SR 204/Abercorn Street at Don Zipperer Drive will be evaluated as part of PI No. 0019010.

Segment 3 – Berwick

As described in **Section 2.1.3**, Segment 3 includes 11 intersections, four of which are signalized, and extends from the Little Ogeechee River to SR 307/Dean Forest Road. The signalized intersection of SR 25/US 17 and Quacco Road operates at LOS E and LOS F during the AM and PM peak hours of travel, respectively. Synchro model outputs suggest that delays often exceed five minutes during the PM peak on the eastbound approach. Further, field observations indicate queues exceeding available storage of newly constructed auxiliary turn lanes during both peak periods. The remaining signalized intersections along Segment 3 operate at LOS C or better during both peak periods.

The intersection of SR 25/US 17 at Cottonvale Road operates at LOS B and LOS C overall in the AM and PM peak hours, respectively, but the actual delay incurred by through traffic on SR 25/US 17 is not fully captured within Synchro and SimTraffic software. Field observations indicate that northbound queues extended past the Kroger Driveway during the AM peak hour. Similarly, field observations recorded heavy southbound queueing at the SR 25/US 17 and Berwick Boulevard intersection that extended beyond the Kroger Driveway during the PM peak hour. Although model outputs showed the intersection of SR 25/US 17 at SR 307/Dean Forest Road operating at LOS B during both peak hours, field observed queues frequently exceeded available northbound left-turn storage on SR 25/US 17. These observations are supported by the intersection improvements recommended by the *SR 307 Corridor Study Final Report* (Kimley-Horn, 2022), which included the construction of dual northbound left-turn lanes on SR 25/US 17 and signal upgrades.

The existing unsignalized intersections on Segment 3 each operate at LOS D or worse in the AM peak hour, and six out of the seven operate at LOS D or worse during the PM peak hour. Notably, four of the

seven unsignalized intersections operate at LOS F during both peak hours. Most of the minor street approaches serve 50 VPH or less and are not expected to meet signal warrants prescribed by the MUTCD. Like other unsignalized intersections along the corridor, it is expected that two-stage crossing maneuvers that utilize the median break reduce field-observed delays relative to those obtained through Synchro and SimTraffic analyses.

Segment 4 – Silk Hope

Segment 4 includes four intersections and extends from SR 307/Dean Forest Road to the signalized intersection at Fall Avenue/Buckhalter Road as described in **Section 2.1.4**. SR 25/US 17 at Fall Avenue/Buckhalter Road operates at LOS A during the AM peak hour and at LOS B during the PM peak hour based on model results, but field observations recorded northbound queueing over 1,500 feet in length during the AM peak hour. These findings may be attributable to northbound queue spillback originating at Chatham Parkway. Additionally, diverted trips that utilize Garrard Avenue to access Fall Avenue/Buckhalter Road and avoid westbound congestion on Chatham Parkway likely increase the westbound left-turn volumes from Buckhalter Road onto SR 25/US 17 during the PM peak hour. This surge in left-turn volume necessitates additional green time on the minor street approaches at this intersection and exacerbates delay in both directions on SR 25/US 17.

The three TWSC intersections in Segment 4 operate at LOS C or worse during the AM and PM peak hours, and the intersection of SR 25/US 17 at Tower Drive operates at LOS F during the AM peak hour. As in other segments, most of the minor street approaches serve less than 50 VPH and are not expected to meet signal warrants prescribed by the MUTCD. Further, the existing TWLTL provides opportunities for two-stage crossing maneuvers that may reduce actual delay relative to the results shown in **Table 9** and **Table 10**. Field observations confirm that these maneuvers are common throughout the corridor.

Segment 5 – Commercial North

As described in **Section 2.1.5**, Segment 5 includes five intersections including the signalized intersection at Chatham Parkway. Three of the four existing unsignalized intersections operate at LOS C or worse during the AM peak hour and at LOS E or worse during the PM peak hour. Notably, the TWSC intersection at Heathcote Circle operates at LOS F during the AM peak hour while SR 25/US 17 at Savannah Speedway operates at LOS F during the PM peak hour. As in other segments, field observations showed a two-stage crossing maneuver utilizing the TWLTL at unsignalized intersections; accordingly, modeled intersection delays may be overestimated as compared to field observations.

Capacity analysis results show that the signalized intersection of SR 25/US 17 at Chatham Parkway operates at LOS D during both peak periods, but field observations and SimTraffic simulation runs indicate that actual delay and queueing are more significant. During the PM peak hour, field-observed southbound queues extended beyond the grade-separated rail crossing located 0.5-miles-north of Chatham Parkway, and northbound queues exceeded available left-turn storage during both peak hours. Further, westbound queues on Chatham Parkway extended to Red Gate Farms Trail during the PM peak hour. As noted in **Section 2.1.5**, GDOT's *Coastal Empire Transportation Study* recommended geometric improvements and additional auxiliary turn lanes at the intersection of SR 25/US 17 at Chatham Parkway, and the findings presented herein suggest similar improvements could be effective to mitigate queueing and enhance traffic operations.

Segment 6 – Northern Gateway

Segment 6 consists of eight intersections including the I-516/SR 21 interchange ramp termini. This segment consists of four signalized intersections which operate at LOS D or better during both peak periods. However, the ramp termini at I-516/SR 21 operate with extensive queueing during the PM peak period, and field observations similarly indicated that long queues persist along both off-ramps. As noted in **Section 2.1.6**, intersection improvements at both ramp termini are currently under construction as part of PI No. S015891. These improvements include increased left-turn storage along SR 25/US 17 and are expected to mitigate queueing along SR 25/US 17 between the ramp termini.

During the PM peak hour, the unsignalized intersections at Westgate Boulevard and Mersy Way both operate at LOS F which corresponds to field-observed queues on the eastbound approach at Westgate Boulevard and on the westbound approach at Mersy Way. Accordingly, the calculated delay is slightly less than five minutes and exceeds one minute for these two approaches, respectively, which is primarily due to the high volume of left-turning vehicles. Traffic signal warrants prescribed by the MUTCD were evaluated for both intersections, but MUTCD warrants were not met. Access management strategies and movement restrictions may be warranted due to intersection spacing constraints.

2.4.4 Segment Analysis Results

The existing traffic volumes and capacity analysis results presented in this report are intended to capture typical conditions along the SR 25/US 17 corridor during an average weekday while school is in session. However, “typical” conditions are difficult to capture with a single set of model inputs, and intersection capacity analysis results alone are not adequate for describing corridor operations holistically. Accordingly, this section describes segment-level capacity analysis conducted using both SimTraffic Version 11 simulation software and field-collected travel time data.

Corridor travel time outputs from SimTraffic are aggregated by contextual segment and are shown in **Table 11** and **Table 12** for the AM and PM peak hours, respectively. These travel time outputs were converted to average travel speed (ATS) and compared to the theoretical base free flow speed (BFFS) to calculate the vehicular LOS as defined by the HCM6 Urban Street Facilities methodology. The results of the analysis generally reflect those presented in **Section 2.2.3** for the major crossings along the study corridor, whereas known bottlenecks throughout the corridor do not produce as much delay in Synchro and SimTraffic software as that observed in the field. On the contrary, there are also cases where the simulation calculated more delay than what was observed in the field. This may be attributable to the model inputs not being fully capable of replicating the complexity of real-world traffic flow. Modeled traffic volumes are also intended to represent an average day, whereas what was observed in the field was one specific set of volumes/conditions. The field travel time runs were conducted on Tuesday, January 23, 2024, and were compiled and post-processed to determine the HCM-based vehicular LOS. Raw travel time data and LOS estimates are presented in **Table 13** and **Table 14** for the AM and PM peak periods, respectively. Both SimTraffic analysis and field travel time data provided an overall corridor LOS of LOS C in the northbound direction and LOS B in the southbound direction during the AM peak hour. Similarly, during the PM peak hour, SimTraffic and field travel time data provided an overall corridor LOS of LOS B in the northbound direction and LOS C in the southbound direction.

Table 11: SimTraffic Corridor Travel Time and LOS by Segment – AM Peak Hour

Segment	Length (mi)	Minimum Travel Time (mm:ss)	Maximum Travel Time (mm:ss)	Average Travel Time (mm:ss)	BFFS (mph)	Average Travel Speed (mph)	LOS
Northbound							
1	2.2	03:28	03:34	03:31	50.2	37.6	B
2	1.5	03:35	03:51	03:40	46.7	24.5	C
3	2.9	05:26	05:39	05:30	47.2	31.6	B
4	1.4	02:15	02:18	02:17	46.1	36.7	A
5	1.1	02:07	02:22	02:15	45.8	29.4	C
6	1.6	03:51	05:38	04:32	45.7	21.2	D
Total	10.7	20:41	23:21	21:45	46.9	29.5	C
Southbound							
1	2.2	03:09	03:14	03:10	50.1	41.6	A
2	1.5	02:53	03:01	02:57	47.2	30.5	C
3	2.9	05:15	05:25	05:19	46.9	32.7	B
4	1.4	02:14	02:19	02:17	46.1	36.8	A
5	1.1	01:40	01:44	01:42	46.1	38.8	A
6	1.6	03:23	03:38	03:30	45.8	27.4	C
Total	10.7	18:33	19:20	18:56	46.9	33.9	B

Table 12: SimTraffic Corridor Travel Time and LOS by Segment – PM Peak Hour

Segment	Length (mi)	Minimum Travel Time (mm:ss)	Maximum Travel Time (mm:ss)	Average Travel Time (mm:ss)	BFFS (mph)	Average Travel Speed (mph)	LOS
Northbound							
1	2.2	03:14	03:18	03:16	50.2	40.4	A
2	1.5	02:50	03:11	03:02	46.7	29.7	C
3	2.9	04:41	04:50	04:45	47.2	36.6	B
4	1.4	02:10	02:14	02:12	46.1	38.3	A
5	1.1	02:09	02:15	02:12	45.8	29.9	C
6	1.6	03:11	03:59	03:40	45.7	26.2	C
Total	10.7	18:15	19:47	19:07	46.9	33.6	B
Southbound							
1	2.2	03:16	03:24	03:21	50.1	39.3	B
2	1.5	03:08	03:26	03:19	47.2	27.1	C
3	2.9	05:30	05:42	05:36	46.9	31.1	B
4	1.4	02:24	02:31	02:27	46.1	34.3	B
5	1.1	01:56	02:03	02:00	46.1	33.1	B
6	1.6	04:08	05:00	04:38	45.8	20.7	D
Total	10.7	20:23	22:07	21:21	46.9	30.1	C

Table 13: Average Field Travel Time and LOS – January 23, 2024 – AM Peak Period

Segment	Direction	Length (mi)	Base Free Flow Speed (mph)	Run 1 Travel Time (mm:ss)	Run 2 Travel Time (mm:ss)	Average Travel Time (mm:ss)	Average Travel Speed (mph)	LOS
Ogeechee River to Chevis Road	NB	2.2	50.2	02:44	03:17	03:00	43.8	A
	SB		50.1	02:51	03:12	03:01	43.5	A
Chevis Road to Little Ogeechee River	NB	1.5	46.7	03:12	01:59	02:36	34.6	B
	SB		47.2	03:31	03:12	03:22	26.7	C
Little Ogeechee River to SR 307/ Dean Forest Road	NB	2.9	47.2	07:04	05:12	06:08	28.4	C
	SB		46.9	04:09	04:12	04:10	41.6	A
SR 307/Dean Forest Road to Buckhalter Road	NB	1.4	46.1	01:55	01:58	01:57	43.4	A
	SB		46.1	01:48	01:51	01:50	46.2	A
Buckhalter Road to Chatham Parkway	NB	1.1	45.8	02:53	03:29	03:11	20.7	D
	SB		46.1	01:48	02:08	01:58	33.6	B
Chatham Parkway to Plymouth Avenue/Mills Lane	NB	1.6	45.7	03:45	04:25	04:05	23.5	C
	SB		45.8	03:40	02:39	03:39	30.3	B
Overall	NB	10.7	46.9	21:33	20:20	20:56	30.7	C
	SB		46.9	17:47	17:14	17:30	36.7	B

Table 14: Average Field Travel Time and LOS – January 23, 2024 – PM Peak Period

Segment	Direction	Length (mi)	Base Free Flow Speed (mph)	Run 1 Travel Time (mm:ss)	Run 2 Travel Time (mm:ss)	Average Travel Time (mm:ss)	Average Travel Speed (mph)	LOS
Ogeechee River to Chevis Road	NB	2.2	50.2	03:00	02:27	02:44	48.3	A
	SB		50.1	02:45	02:47	02:46	47.7	A
Chevis Road to Little Ogeechee River	NB	1.5	46.7	03:53	03:37	03:45	24.0	C
	SB		47.2	03:44	03:57	03:51	23.4	C
Little Ogeechee River to SR 307/Dean Forest Road	NB	2.9	47.2	03:40	03:42	03:41	47.2	A
	SB		46.9	07:25	05:38	06:31	26.7	C
SR 307/Dean Forest Road to Buckhalter Road	NB	1.4	46.1	02:17	01:50	02:03	41.0	A
	SB		46.1	02:12	02:50	02:31	33.4	B
Buckhalter Road to Chatham Parkway	NB	1.1	45.8	02:41	01:47	02:14	29.6	C
	SB		46.1	02:10	01:32	01:51	35.7	B
Chatham Parkway to Plymouth Avenue/Mills Lane	NB	1.6	45.7	03:52	02:26	03:09	30.5	B
	SB		45.8	03:54	05:22	04:38	35.7	B
Overall	NB	10.7	46.9	19:23	15:49	17:36	36.5	B
	SB		46.9	22:10	22:06	22:08	29.0	C

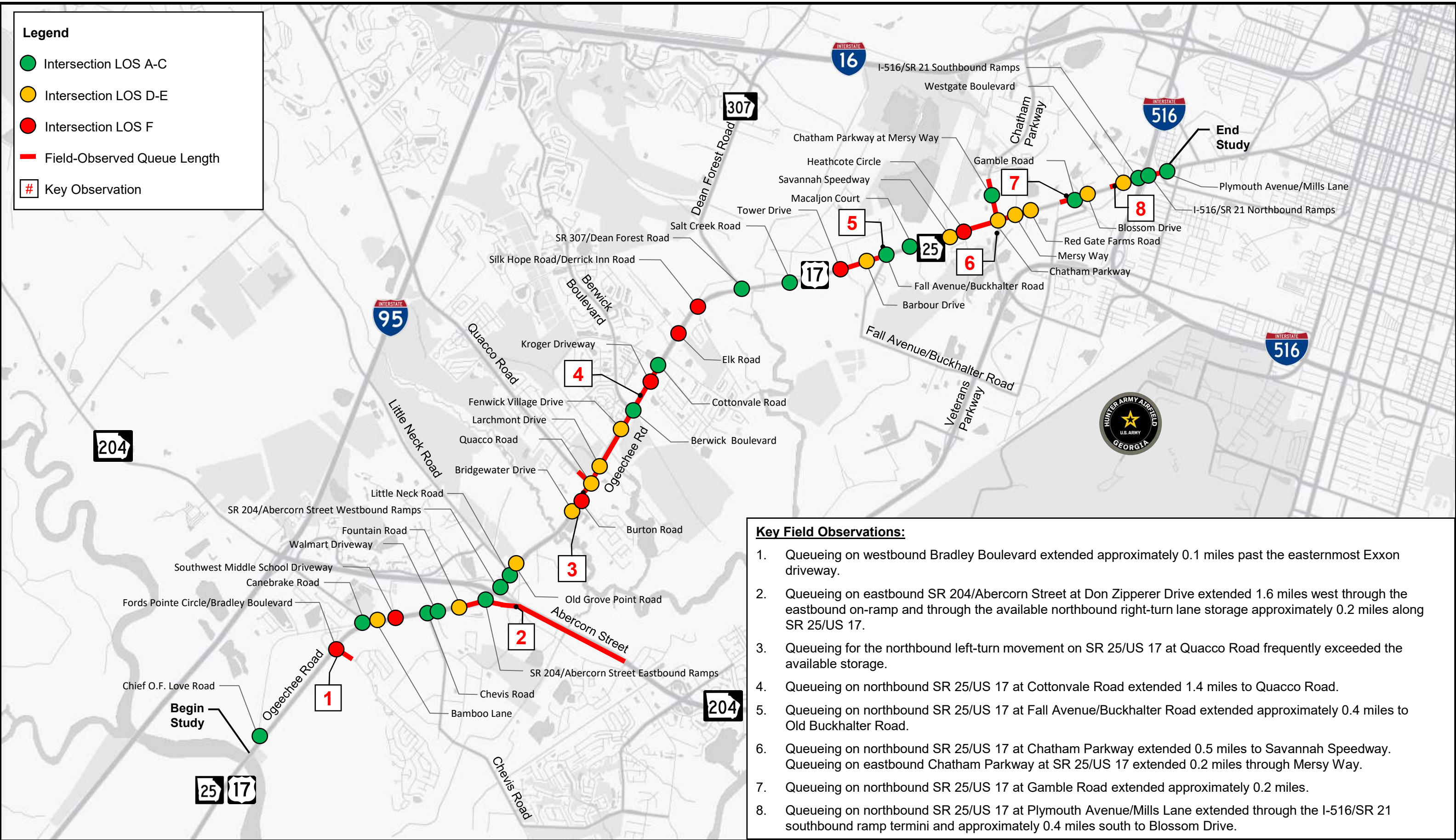
As shown in **Table 13** and **Table 14**, field travel time runs and associated LOS estimates were generally comparable to the data obtained from SimTraffic analysis. Differences were most pronounced on northbound SR 25/US 17 during the AM peak hour in Segment 5 where an ATS of approximately 20 MPH (i.e., representative of LOS D conditions) was observed through field travel time runs between Fall Avenue/Buckhalter Road and Chatham Parkway as compared to the LOS C conditions predicted by SimTraffic. Field observations reported northbound queue lengths that extended over 1,000 feet at the intersection with Chatham Parkway. Further, SimTraffic calculated an average northbound travel speed of over 21 MPH (i.e., representative of LOS D conditions) on Segment 6 during the AM peak hour as compared to a field-measured LOS C.

Southbound SR 25/US 17 along Segment 6 operated with an ATS of just over 20 MPH (i.e., representative of LOS D conditions) in both the simulation and field-measured data during the PM peak hour. Within Segment 6, field observations reported that the longest queues occurred at the I-516/SR 21 interchange and the Chatham Parkway intersection. Segment 1 through Segment 4 operated at LOS C or better during both peak hours according to simulation outputs; however, Synchro and SimTraffic outputs for Segment 2 differed from field observations, specifically at the SR 25/US 17 and SR 204/Abercorn Street interchange, as outlined in **Section 2.2.3**. This interchange was modeled to operate at LOS C or better during both peak hours, but field observations suggested that heavier delays occurred. This discrepancy may be attributable to the SimTraffic model not accounting for queues originating outside the study area on SR 204/Abercorn Street. Further, despite Segment 3 operating at LOS C or better during both peak hours, field observations confirmed congestion between the intersections of Quacco Road and Cottonvale Road; notably, northbound queueing for Cottonvale Road extended south of Quacco Road during the AM peak hour. The calculated delay for this segment may be underestimated due to the northern portion of Segment 3 from Cottonvale Road to SR 307/Dean Forest Road generally having speeds closer to the BFFS calculated for this segment.

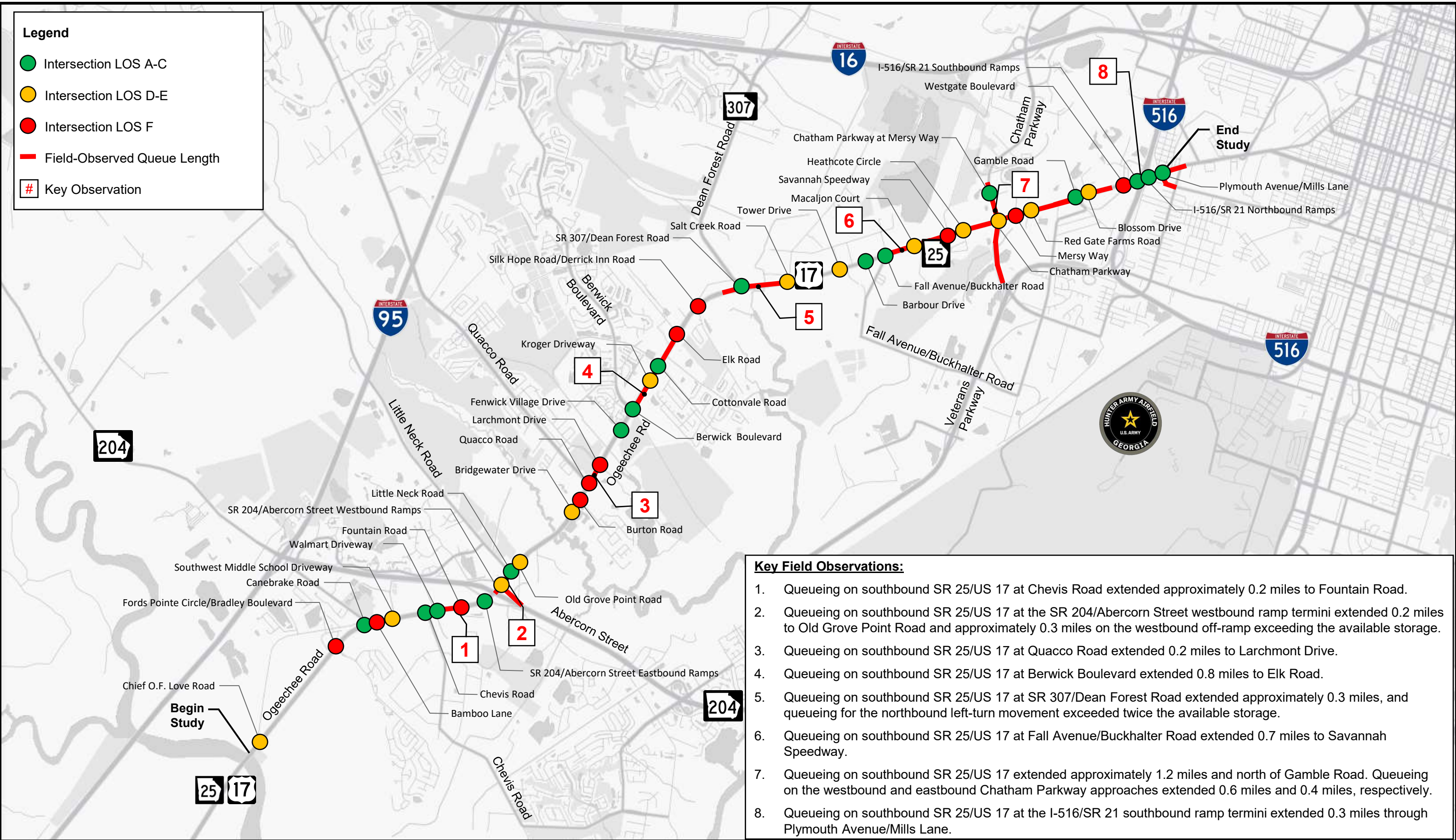
When considering whether field observations were typical of an “average” weekday over the course of the year, comparisons of field observations with supplemental data available from Google typical traffic conditions suggest that traffic conditions are variable along the corridor. Likewise, the segment analysis results presented herein demonstrate that Segment 5 and Segment 6 operate near the LOS D threshold that defines “unstable flow” and are therefore susceptible to substantial variability in traffic conditions under even minor changes in demand. These findings are critical to understanding existing and potential operational deficiencies along the study corridor and informing future improvements.

2.4.5 Capacity Analysis Summary

The intersection and segment analysis results presented in this section demonstrate that the southern end of the SR 25/US 17 corridor near the Chatham County/Bryan County line operates with minimal disruptions under existing conditions. However, bottlenecks and congestion in Segment 2 through Segment 6 lead to significant delays throughout the corridor. Planned or active improvements along SR 25/US 17 at the intersections of Canebrake Road, Little Neck Road, and the I-516/SR 21 ramp termini are expected to enhance the operational performance of these intersections; however, as development continues along the corridor and contributes to increasing traffic volumes, further improvements will likely be needed to ensure the SR 25/US 17 corridor operates acceptably. The maps shown in **Figure 33** and **Figure 34** graphically summarize existing operations along the study corridor as defined by capacity analysis, SimTraffic outputs, and field observations.



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
Figure 33 – Existing Corridor Operations Summary – AM Peak Hour



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
Figure 34 – Existing Corridor Operations Summary – PM Peak Hour

2.5 Safety Analysis

2.5.1 Introduction and Corridor Descriptive Statistics

The primary objective of this study is to identify and prioritize short- and long-term improvement projects needed for the SR 25/US 17 corridor to operate at an acceptable LOS; however, both operations and safety are critical to achieving this goal. This section is focused on evaluating trends in crash history along each contextual segment of the study corridor based on the most recent five years of data (2018-2022) from GDOT's Numetric dashboard. Based on these trends, potential mitigation measures and their associated benefits are identified for consideration as part of future corridor improvements.

As shown in **Table 15**, 3,621 total crashes occurred on the SR 25/US 17 corridor during the five-year period between 2018 and 2022 including 24 fatal crashes and 555 non-fatal injury crashes. The 10.7-mile-long study corridor exhibited just over 338 crashes per mile over this period at a comprehensive crash cost of \$850.7 million, or \$170.1 million per year (GDOT, 2023). The segments of SR 25/US 17 from Chevis Road to the Little Ogeechee River (Segment 2) and Buckhalter Road/Fall Avenue to Plymouth Avenue/Mills Lane (Segment 5 and Segment 6, respectively) each exhibited an average crash rate more than double the statewide average per hundred million vehicle miles traveled (HMVMT) on principal arterials over the study period. Overall, the study corridor exhibited a crash rate approximately double the statewide average and a fatal crash rate approximately three times the statewide average over the study period, which underscores the need for safety-focused investments.

GDOT conducted a Safety Screening Analysis in February 2024 along SR 25/US 17 from Berwick Boulevard to the I-516/SR 21 interchange based on the frequency and severity of pedestrian-involved crashes. Between December 2012 and December 2022, there were 3,659 total crashes, 24 of which were fatal; notably, of the 60 reported pedestrian-involved crashes, 14 resulted in fatalities. Based on these findings, several safety improvements were recommended which included additional roadway lighting; sidewalks on both sides of SR 25/US 17; pedestrian hybrid beacons at five locations; and raised medians to provide pedestrian refuge opportunities.

The five-year crash history for each segment is annualized in **Table 15** along with comparing crash rates against the statewide average for principal arterials. The average crash rate over the entire study period is graphically summarized in **Figure 35**.

Table 15: Corridor Crash Data Summary – 2018 to 2022

Segment	Crash Frequency by Severity					Crash Rate Per HMVMT				
	Fatal	Serious Injury	Visible Injury	PDO	Total	(Comparison to Statewide Average)				
						2018	2019	2020	2021	2022
1	4	15	40	322	381	294.2 (-25.7%)	350.2 (-8.3%)	397.2 (+18.6%)	411.8 (+10.1%)	437.0 (+17.5%)
2	3	8	55	900	966	1020.7 (+157.7%)	902.9 (+136.4%)	930.4 (+177.7%)	1182.2 (+216.1%)	1212.5 (+225.9%)
3	6	28	121	834	989	555.3 (+40.2%)	497.7 (+30.3%)	636.7 (+90.1%)	759.0 (+102.9%)	645.4 (+73.5%)
4	4	9	15	259	287	328.4 (-17.1%)	357.5 (-6.4%)	381.7 (+13.9%)	365.4 (-2.3%)	405.9 (+9.1%)
5	2	16	40	354	412	388.3 (-2.0%)	554.5 (+45.2%)	504.6 (+50.6%)	770.2 (+105.9%)	785.2 (+111.1%)
6	5	16	192	373	586	829.8 (+109.5%)	570.8 (+49.4%)	732.8 (+118.7%)	1344.8 (+259.6%)	1125.2 (+202.5%)
Total	24	92	463	3042	3621	564.3 (+42.5%)	535.4 (+40.2%)	607.5 (+81.3%)	775.7 (+107.4%)	730.9 (+96.5%)

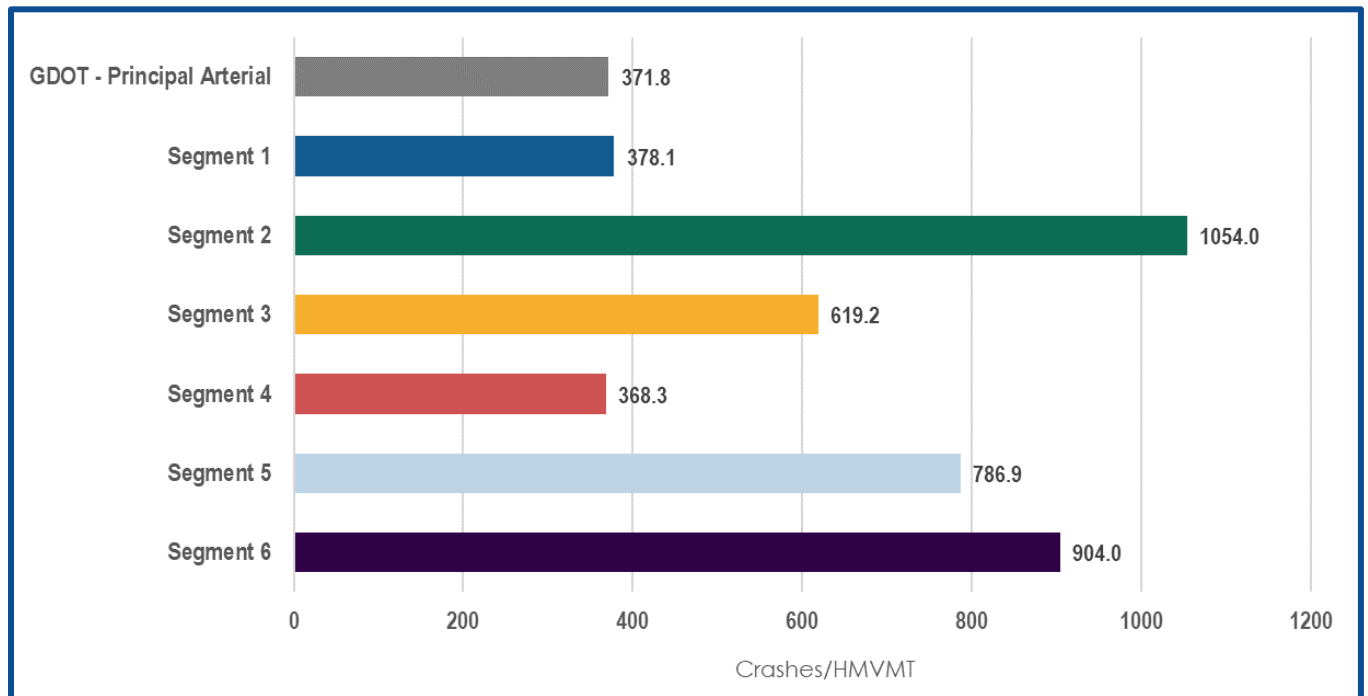
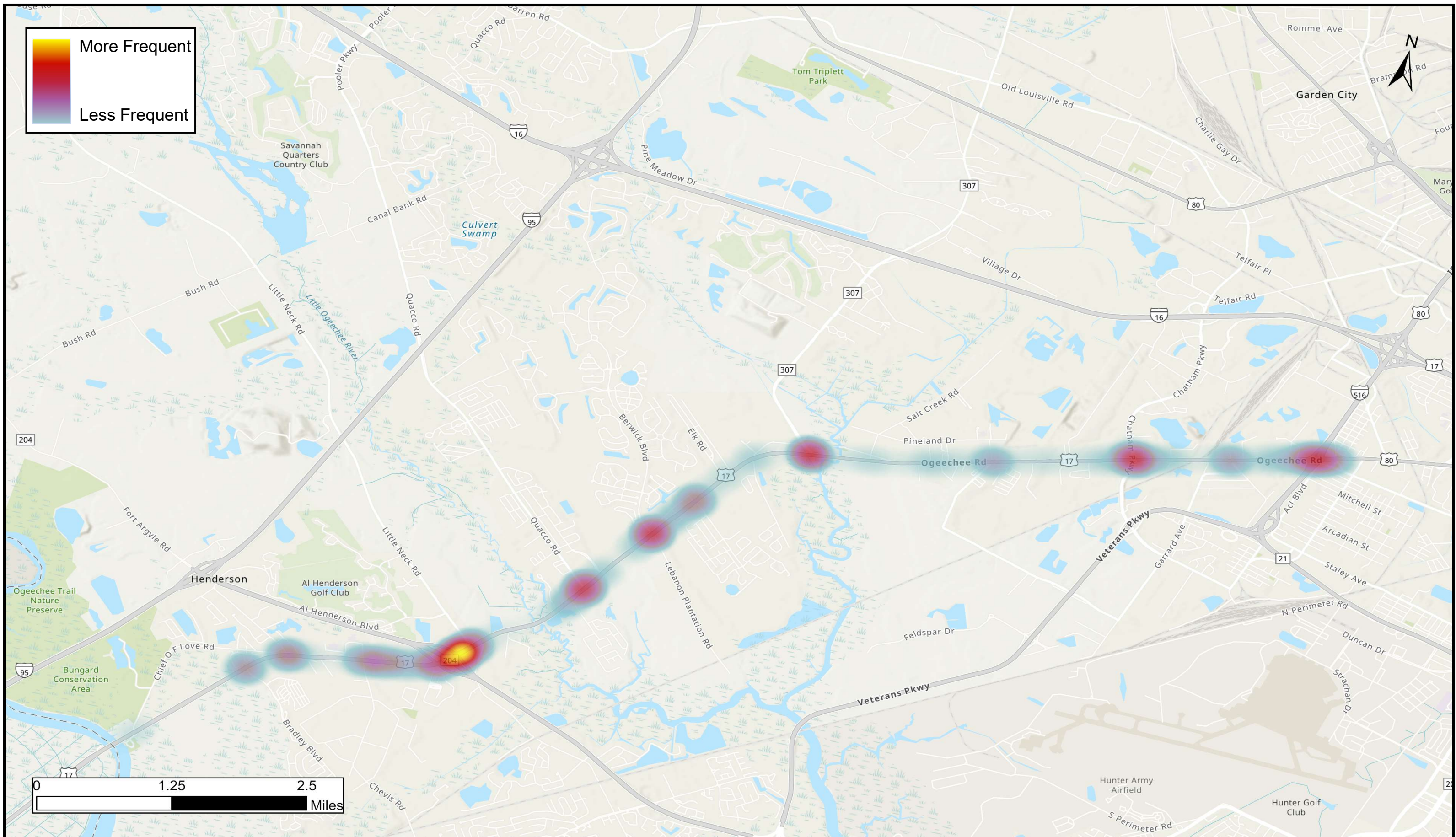


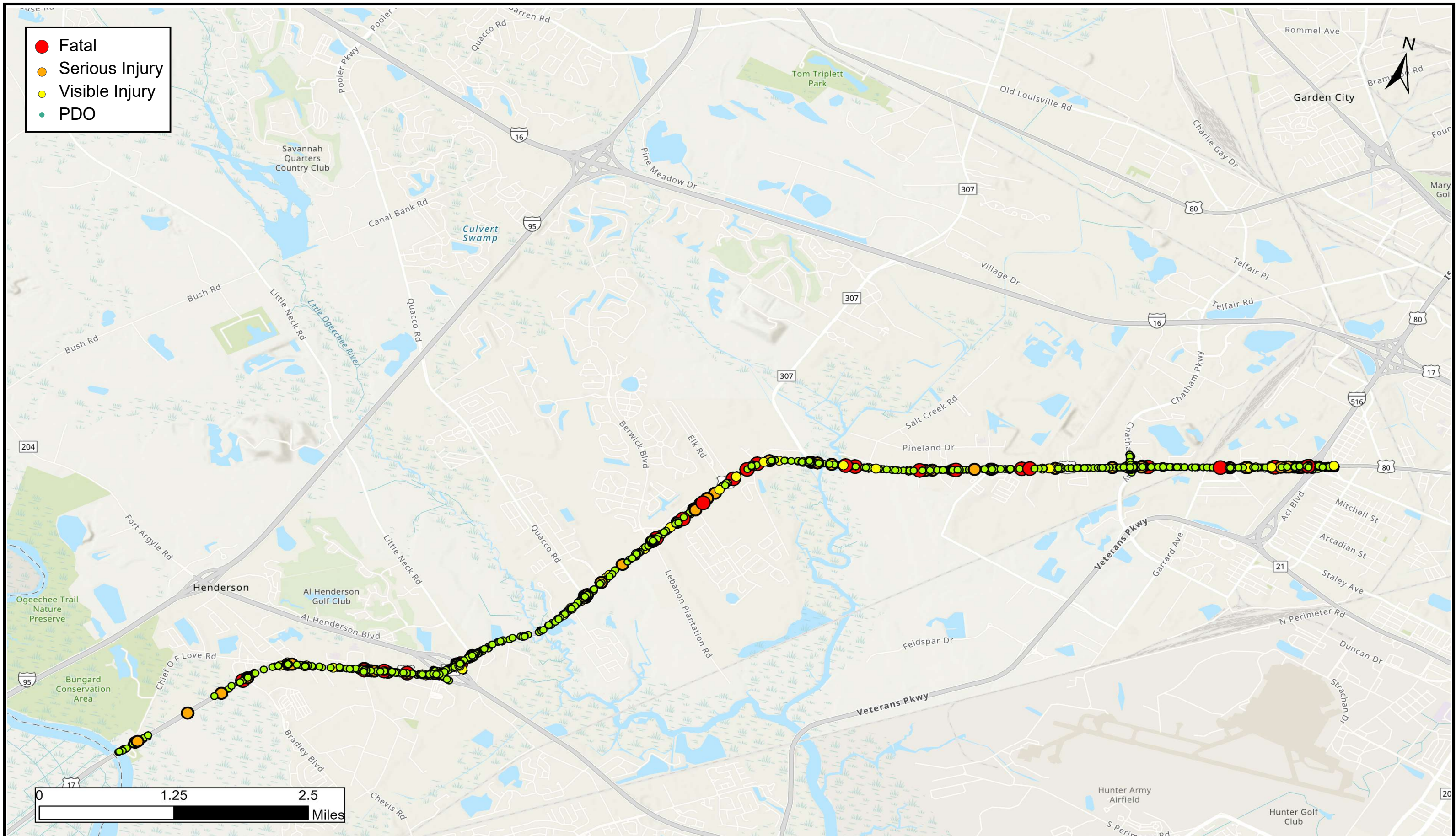
Figure 35: 5-Year Average Crash Rate Comparison by Segment

As illustrated in **Figure 35**, Segment 4 exhibited a five-year average crash rate lower than the statewide average for principal arterials, while all other segments exhibited a higher rate. Segment 2 experienced the highest crash frequency on the corridor, and 29% of all reported crashes occurred within this segment. Further, the crash rate in Segment 2 is nearly triple the statewide average, and crashes were primarily concentrated near the SR 204/Abercorn Street interchange. However, Segment 3 included the greatest number of fatalities (6/24, or 25%), serious injuries (28/92, or 30%), and pedestrian-involved crashes (11/34, or 32%).

The following figures graphically display all crashes occurring between 2018 and 2022 on the SR 25/US 17 corridor. **Figure 36** presents all crashes in a “heat map” that highlights locations with the highest frequency of crashes, and **Figure 37** presents all crashes by severity.



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 36 – Crash Frequency Heat Map – 2018 to 2022



SR 25/US 17 Corridor Study – Existing Conditions/Needs Assessment
 Figure 37 – Crash Severity Map – 2018 to 2022

2.5.2 Segment 1 Crash History

Segment 1 extends approximately 2.2 miles between the Ogeechee River at the Chatham County/Bryan County line and Chevis Road. Segment 1 crash frequency by severity and manner of collision over the five-year period between 2018 and 2022 is summarized in **Figure 38**.

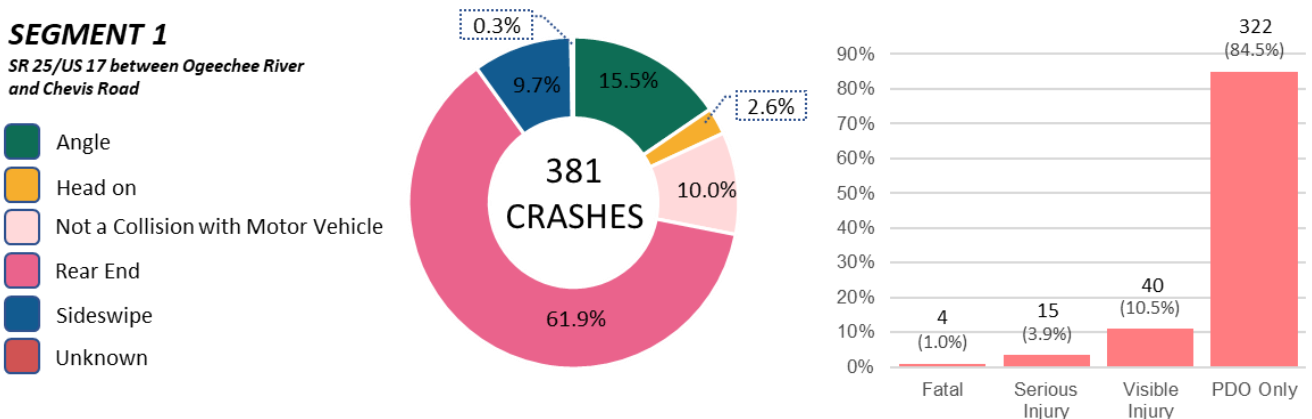


Figure 38: Segment 1 Crash Profile

As shown in **Figure 38**, rear-end crashes (61.9%) were the predominant crash type observed in Segment 1 over the study period followed by angle crashes (15.5%) and single-vehicle crashes (10.0%). Most crashes were property damage only (PDO) (84.5%). This segment exhibited 15 serious injury crashes and four fatal crashes, one of which involved a pedestrian crossing the intersection of SR 25/US 17 with Chevis Road during dark conditions. Crashes occurring along Segment 1 over the five-year study period are displayed in **Figure 39**.

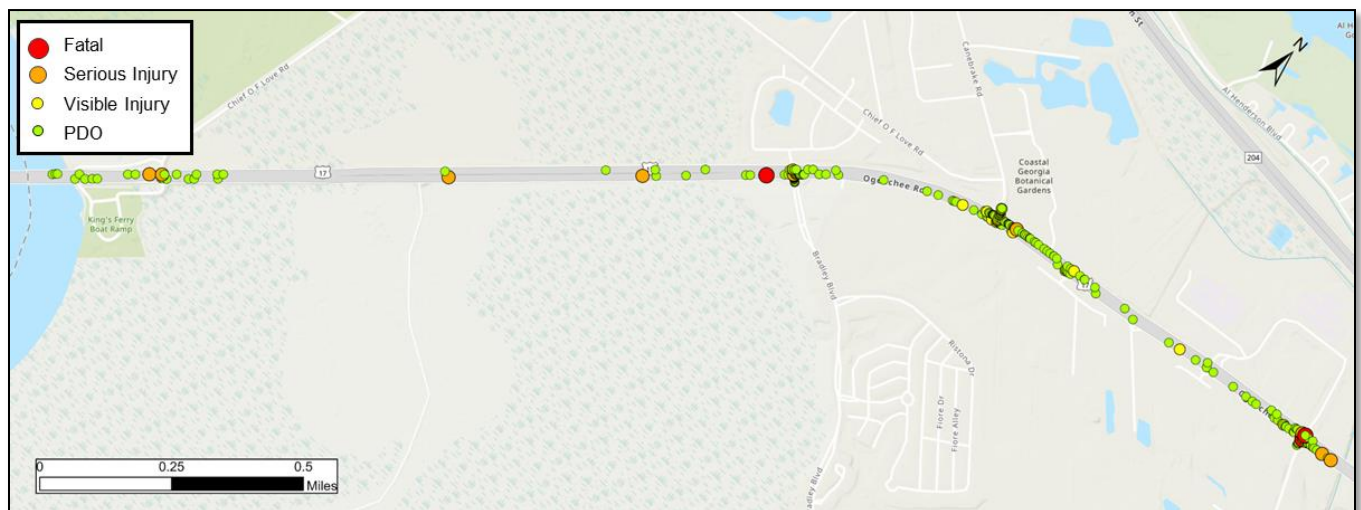


Figure 39: Segment 1 Crash Severity Map

As shown in **Figure 38** and **Figure 39**, 381 crashes were observed throughout Segment 1, primarily at the SR 25/US 17 intersections with Fords Pointe Circle/Bradley Boulevard, Canebrake Road, and Chevis Road. This segment had the highest percentage of single-vehicle crashes among the six

contextual segments with 38 crashes occurring between 2018 and 2022. This is likely attributable to the lower density of driveways and intersecting streets to the south of Bradley Boulevard. Two of four fatal crashes and 60 (16%) of all crashes on Segment 1 occurred at the intersection with Chevis Road, which serves as the primary access point for Southwest Elementary School.

2.5.3 Segment 2 Crash History

Segment 2 extends approximately 1.5 miles between Chevis Road and the Little Ogeechee River. Segment 2 crash frequency by severity and manner of collision over the five-year period between 2018 and 2022 is summarized in **Figure 40**.

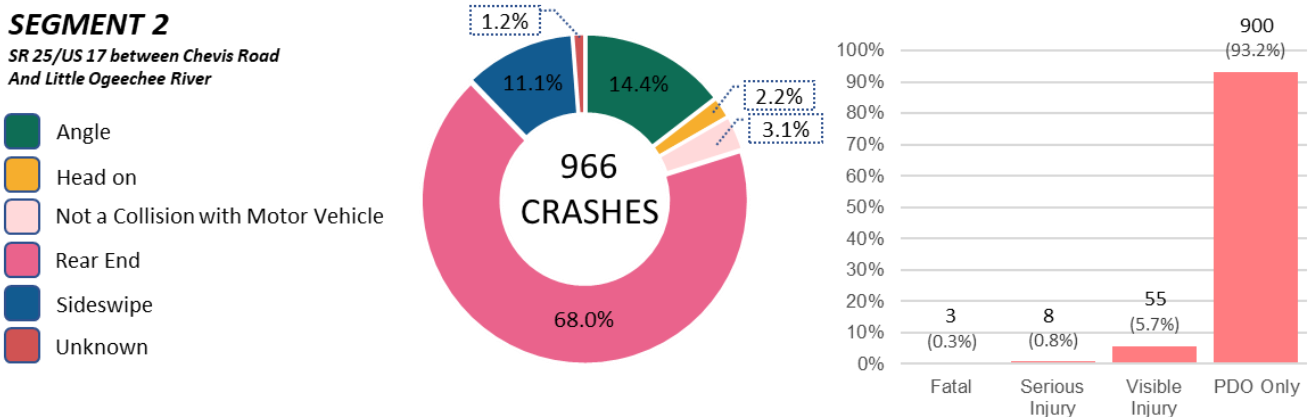


Figure 40: Segment 2 Crash Profile

As shown in **Figure 40**, rear-end crashes (68.0%) were the predominant manner of collision observed in Segment 2 followed by angle crashes (14.4%) and sideswipe crashes (11.1%). This segment exhibited the highest proportion of sideswipe, same direction crashes and rear-end crashes among the studied segments. These trends are likely attributable to the high density of unsignalized driveways, most of which are not served by right-turn lanes, and driver lane-changing behavior related to the heavy northbound right-turn movement from SR 25/US17 to SR 204/Abercorn Street. Of the rear-end crashes observed, those with reported contributing factors were primarily related to inattention and following too closely, both of which may be related to the stop-and-go traffic present on Segment 2 during the peak periods of the day.

As displayed in **Figure 41**, clusters of crashes are present throughout Segment 2 but are concentrated near the Walmart driveway and the SR 204/Abercorn Street ramp termini. Although most crashes (93.2%) observed along Segment 2 were PDO, there were eight serious injury crashes and three fatal crashes, one of which involved a pedestrian crossing SR 25/US 17 at the intersection with Fountain Road during day light hours.

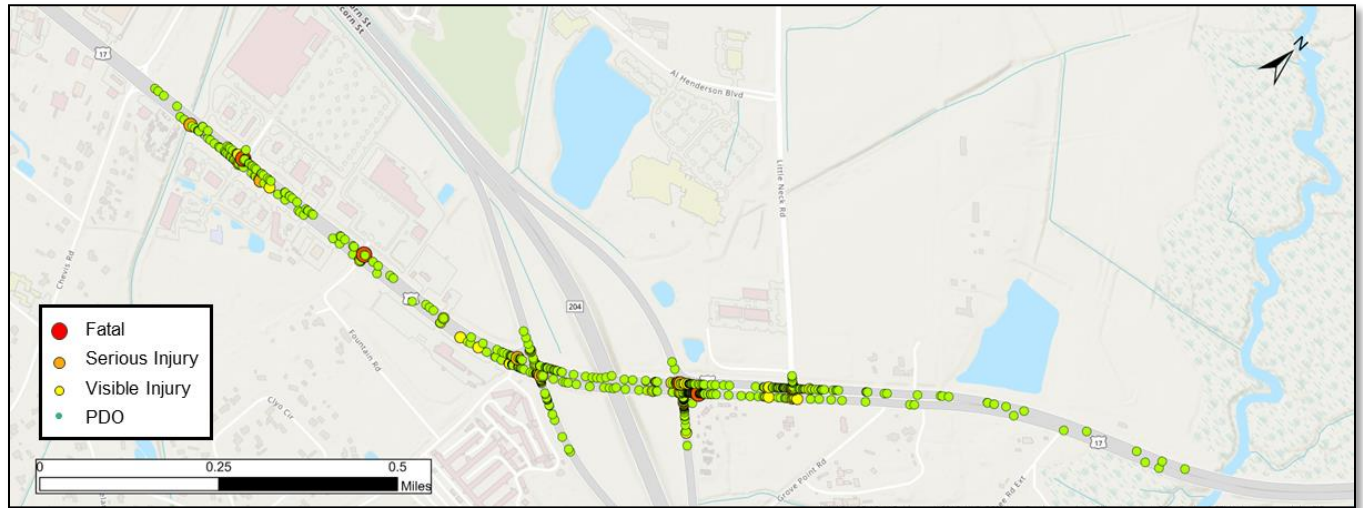


Figure 41: Segment 2 Crash Severity Map

2.5.4 Segment 3 Crash History

Segment 3 extends approximately 2.9 miles between the Little Ogeechee River and SR 307/Dean Forest Road. Segment 3 crash frequency by severity and manner of collision over the five-year period between 2018 and 2022 is summarized in **Figure 42**.

SEGMENT 3

SR 25/US 17 between Little Ogeechee River
and SR 307/Dean Forest Road

- Angle
- Head on
- Not a Collision with Motor Vehicle
- Rear End
- Sideswipe
- Unknown

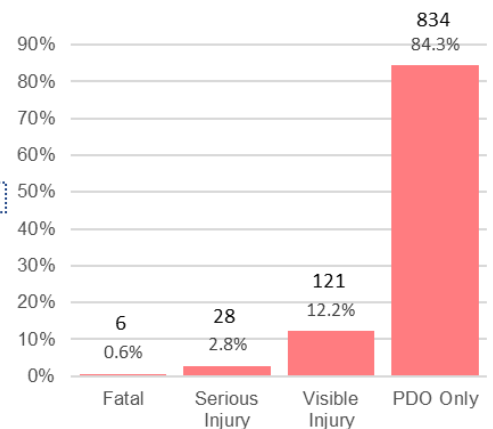
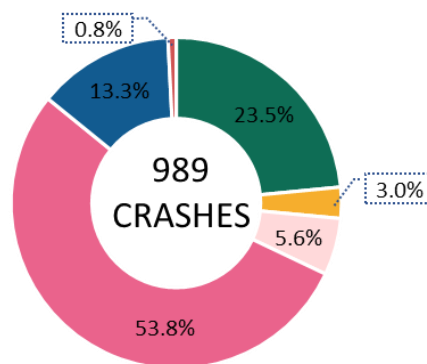


Figure 42: Segment 3 Crash Profile

As shown in **Figure 42**, rear-end crashes (53.8%) were the predominant manner of collision in Segment 3 followed by angle crashes (23.5%) and sideswipe crashes (13.3%). Segment 3 included the greatest number of fatalities (6/24, or 25%), serious injuries (28/92, or 30%), and pedestrian-involved crashes (11/34, or 32%) among the studied segments. This is likely attributable to higher traffic volumes and limited pedestrian facilities along Segment 3.

As shown in **Figure 43**, crashes are generally clustered at the major intersections along this segment, including Quacco Road, Larchmont Drive, Berwick Boulevard, Cottonvale Road, and SR 307/Dean Forest Road. Most crashes occurring in Segment 3 were PDO (84.3%); however, there were 28 serious injury crashes, three of which involved pedestrians and one that involved a bicycle. All of the

serious injury crashes occurred during dark conditions. There were also six fatal crashes observed along this section, two of which involved pedestrians at night in non-lit areas. These trends indicate the need to enhance pedestrian and bicycle accommodations and to improve lighting, particularly at intersections and areas with non-motorist demand.

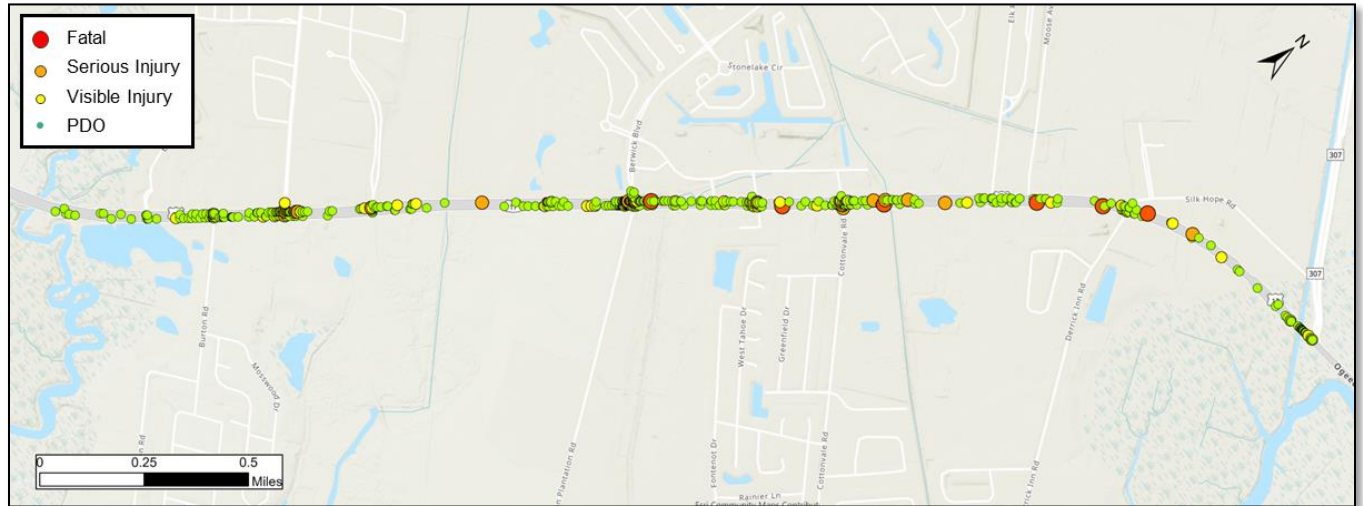


Figure 43: Segment 3 Crash Severity Map

2.5.5 Segment 4 Crash History

Segment 4 extends approximately 1.4 miles between SR 307/Dean Forest Road and Fall Avenue/Buckhalter Road. Segment 4 crash frequency by severity and manner of collision over the five-year period between 2018 and 2022 is summarized in **Figure 44**.

SEGMENT 4

SR 25/US 17 between SR 307/Dean Forest Road and Buckhalter Road

- Angle
- Head on
- Not a Collision with Motor Vehicle
- Rear End
- Sideswipe
- Unknown

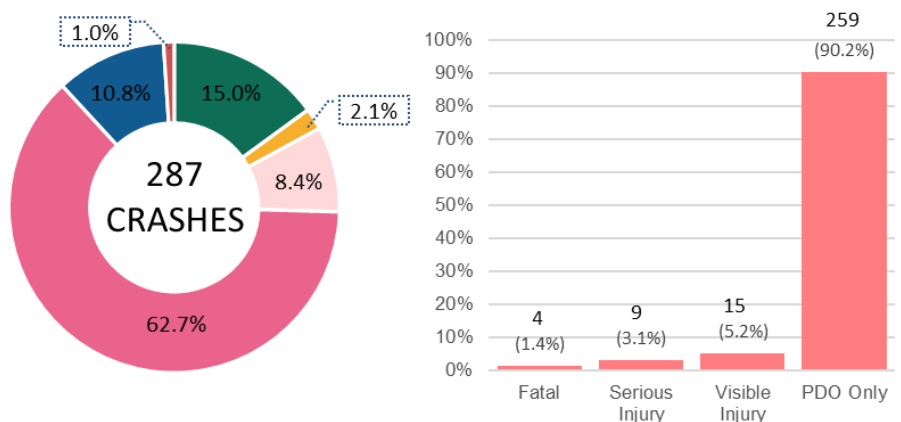


Figure 44: Segment 4 Crash Profile

As shown in **Figure 44**, rear-end crashes (62.7%) were the predominant manner of collision in Segment 4 followed by angle crashes (15.0%) and sideswipe crashes (10.8%). The majority of the crashes along Segment 4 happened at or near intersections as illustrated in **Figure 45**.

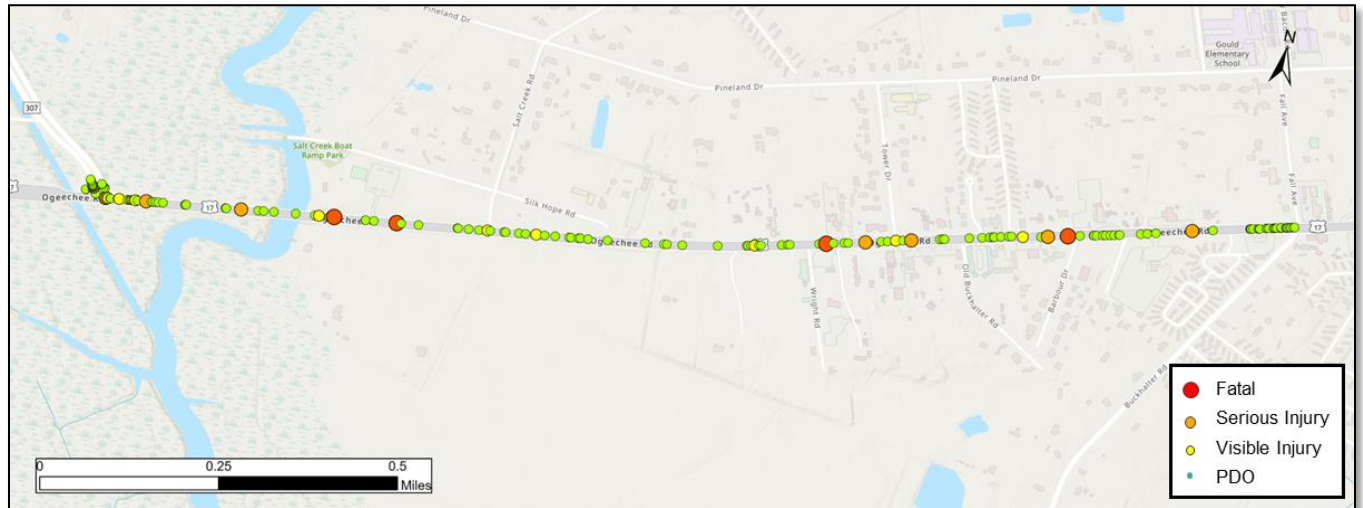


Figure 45: Segment 4 Crash Severity Map

Segment 4 exhibited the lowest total number of crashes (287) over the study period, and most crashes were PDO (90.2%). Four fatal crashes occurred along this segment over the five-year study period, each of which involved pedestrians at night in non-lit areas. These trends indicate the need to improve pedestrian and bicycle accommodations along this segment, which is particularly important given that Segment 4 provides access to and from a mix of land uses, including parks, schools, residential areas, and businesses.

2.5.6 Segment 5 Crash History

Segment 5 extends approximately 1.1 miles between Buckhalter Road and Chatham Parkway. Segment 5 crash frequency by severity and manner of collision over the five-year period between 2018 and 2022 is summarized in **Figure 46**.

SEGMENT 5

SR 25/US 17 between Buckhalter Road and Chatham Parkway

- Angle
- Head on
- Not a Collision with Motor Vehicle
- Rear End
- Sideswipe
- Unknown

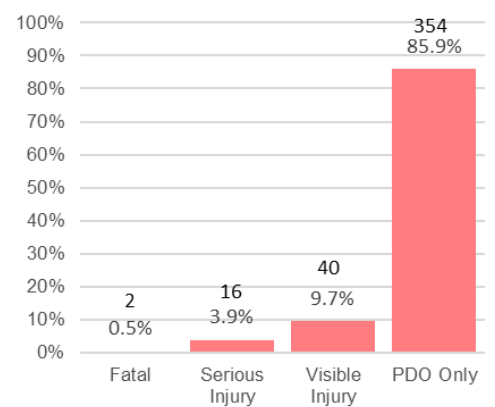
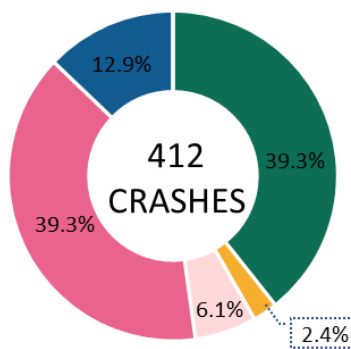


Figure 46: Segment 5 Crash Profile

As shown in **Figure 46**, rear-end crashes (39.3%) were the predominant manner of collision in Segment 5, but this segment also exhibited the highest proportion of angle crashes (39.3%) among the six contextual segments. As shown in **Figure 47**, approximately half of all crashes observed in Segment 5

occurred at or near the Chatham Parkway intersection. Most crashes were PDO (85.9%); however, 16 serious injury crashes occurred on Segment 5, five of which happened near the intersection with Chatham Parkway. There were also two fatal crashes that occurred along this segment, one of which involved a pedestrian at night in a non-lit area. These trends may be attributable to recurring congestion at Chatham Parkway intersection during peak periods of travel and poor access management throughout the segment.

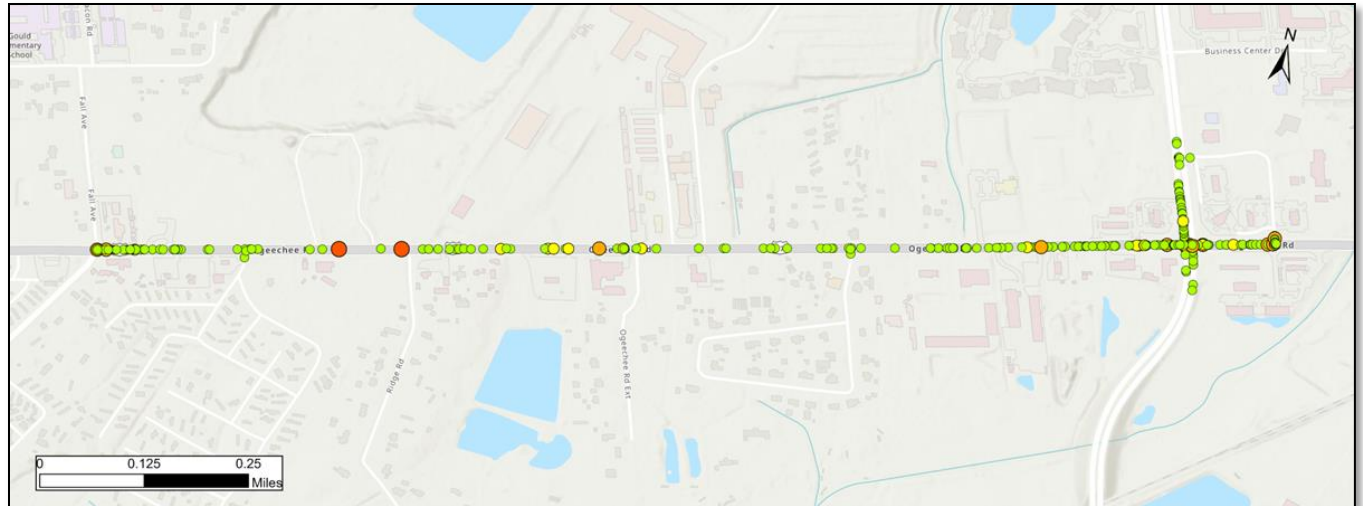


Figure 47: Segment 5 Crash Severity Map

2.5.7 Segment 6 Crash History

Segment 6 extends approximately 1.6 miles between Chatham Parkway to Plymouth Avenue/Mills Lane. Segment 6 crash frequency by severity and manner of collision over the five-year period between 2018 and 2022 is summarized in **Figure 48**.

SEGMENT 6

*SR 25/US 17 between Chatham Parkway
and Plymouth Avenue/Mills Lane*

- Angle
- Head on
- Not a Collision with Motor Vehicle
- Rear End
- Sideswipe
- Unknown

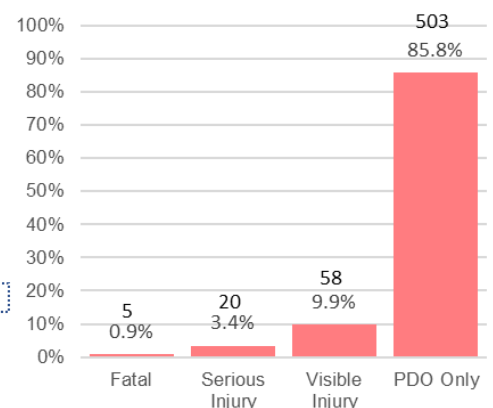
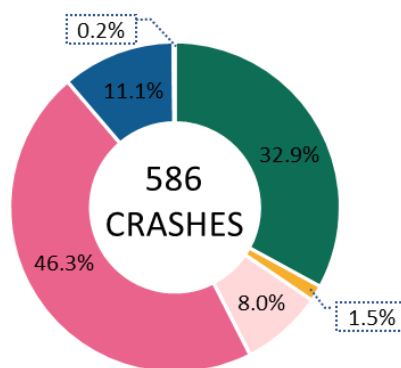


Figure 48: Segment 6 Crash Profile

As shown in **Figure 48**, rear-end crashes (46.3%) were the predominant manner of collision in Segment 6 over the study period, and this segment exhibited a high proportion of angle crashes (32.9%). The map shown in **Figure 49** demonstrates that more than half of the crashes reported in this segment occurred

at the intersections of SR 35/US 17 with Gamble Road and with the I-516/SR 21 ramp termini. Most crashes were PDO (85.8%), but five fatalities occurred along this section, four of which involved pedestrians. There were 20 serious injury crashes that occurred along this section, five of which occurred at the intersections of SR 25/US 17 at Gamble Road and at the I-516/SR 21 ramp termini.

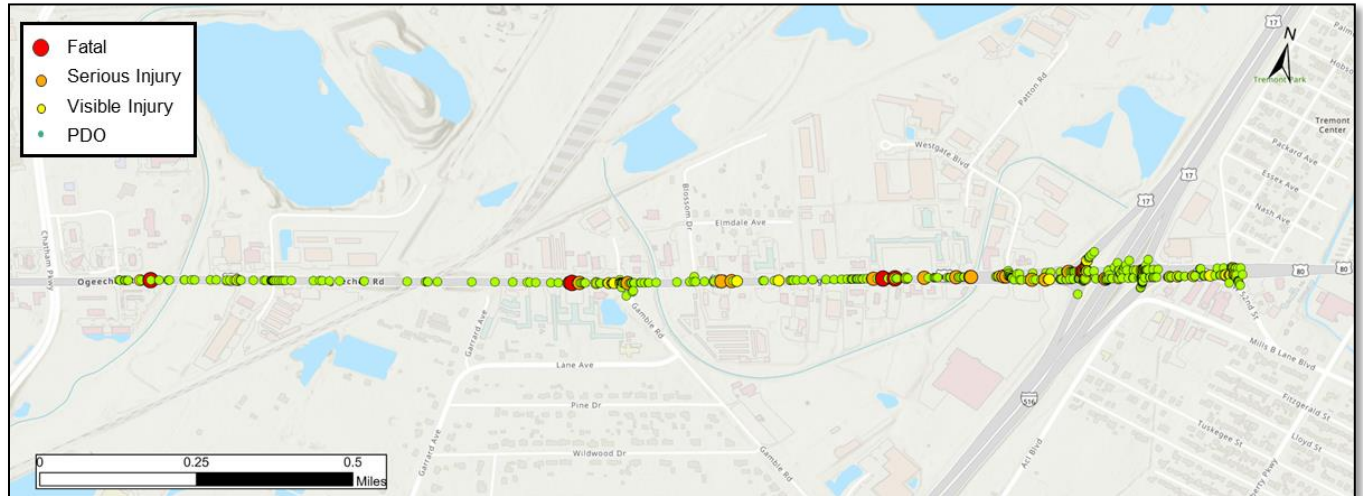


Figure 49: Segment 6 Crash Severity Map

2.5.8 Pedestrian/Bicycle Involvement

As shown in **Figure 50**, 50 pedestrian-involved and 17 bicycle-involved crashes occurred along the corridor between 2018 and 2022; of the 50 pedestrian-involved incidents, 13 resulted in fatalities, 13 resulted in serious injuries, and 56% of all incidents occurred at night in non-lit areas which may be attributable to a lighting deficiency throughout the corridor.

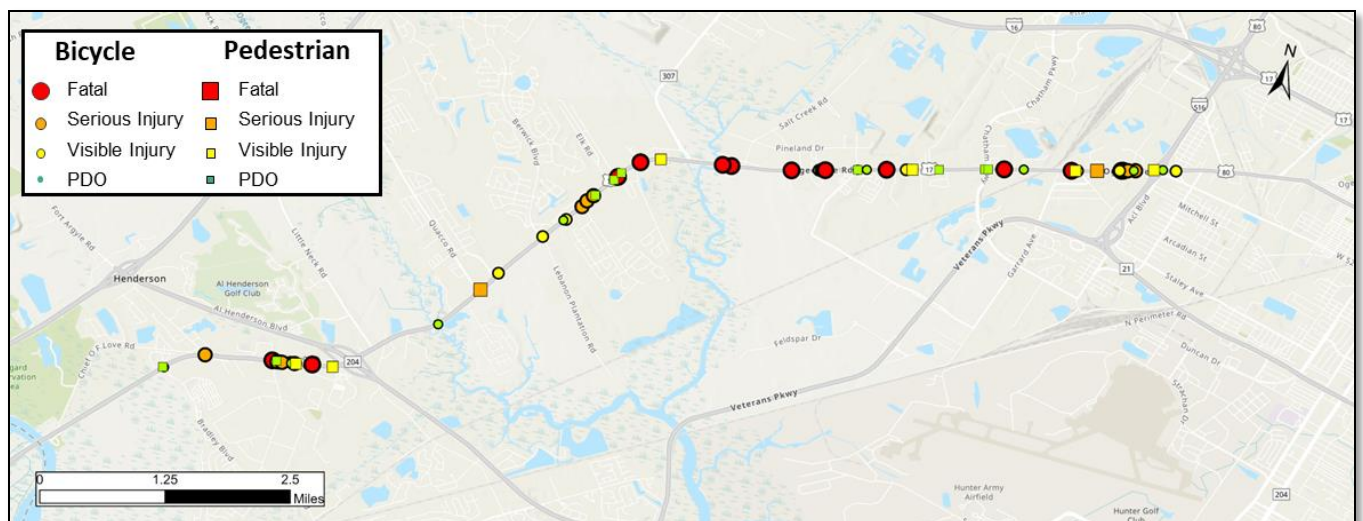


Figure 50: Summary of Bicycle and Pedestrian Crashes

Georgia State Bicycle Route 95 runs along the entire SR 25/US 17 study corridor, and the ECG traverses SR 25/US 17 from south of the Bryan County/Chatham County line to Chief O.F. Love Road and from Canebrake Road to Salt Creek Road. The corridor's cross-section alternates between an urban section

with curb and gutter and a rural section with varying shoulder widths, and this creates a general disjointedness that is not conducive to effective pedestrian or bicycle connectivity. In fact, the ECG labels SR 25/US 17 as a “High-Stress Road,” which is nomenclature for facilities on which greenway users are advised to exercise caution. During field observations, moderate pedestrian and cycling activity was noted throughout the corridor but was most prevalent along residential and commercial areas in Segment 2 through Segment 6. Bicycle lanes are present along the corridor from south of Fords Pointe Circle/Bradley Boulevard to SR 307/Dean Forest Road, but sidewalks are sparse, and most of the study corridor has no sidewalks.

2.5.9 Safety Analysis Summary

The corridor and segment safety analyses presented in the previous subsections illustrate that trends in existing crash history are a product of the SR 25/US 17 corridor characteristics, specifically:

- ***The SR 25/US 17 corridor exhibited a fatal crash rate nearly triple the statewide average and an overall crash rate approximately double the statewide average for principal arterials.*** Much of these trends may be attributable to a lack of pedestrian and bicycle facilities throughout the corridor despite apparent demand. Of the 24 fatal crashes that occurred over the study period, 13 (54%) involved a pedestrian or cyclist, and 10 (42%) occurred at night in non-lot areas which may be attributable to a lighting deficiency throughout the corridor.
- ***This study corridor includes approximately 244 unsignalized driveways, which is equivalent to an average spacing of 23 driveways per mile.*** Full-movement, unsignalized driveways are most heavily concentrated between Fall Avenue/Buckhalter Road and Plymouth Avenue/Mills Lane (Segment 5 and Segment 6). Unsurprisingly, 355 (43%) of all angle crashes occurred in these segments despite comprising just 25% of the study corridor by length.
- ***Congested conditions at major intersections along the study corridor likely contribute to an increased frequency of rear-end crashes.*** Approximately 2,038 (56%) of all crashes in the study database were rear-end crashes; 1,189 (33%) of these occurred between the intersections with Chevis Road and SR 307/Dean Forest Road, particularly near the SR 204/Abercorn Street interchange, where congested conditions are prevalent. Elsewhere, significant congestion was observed near the intersection with Chatham Parkway, particularly during the PM peak period.

These findings suggest that access management improvements are needed across the corridor, particularly on Segment 5 and Segment 6, which include approximately 41 unsignalized driveways per mile. Implementation of raised median sections and reduced conflict intersection designs have the potential to mitigate these trends and reduce disruptions to traffic operations during the peak hours of travel. Second, studies have shown that a positive correlation exists between congestion and crash rates. The need for geometric and intersection control upgrades near the SR 204/Abercorn Street interchange and the intersection with Chatham Parkway is evident based on crash trends. Finally, the high frequency of pedestrian-involved crashes during dark conditions and limited existing non-motorist infrastructure on the SR 25/US 17 corridor indicate that corridor-wide investments in non-motorized facilities and improved lighting could be effective safety countermeasures.

3 Conclusions and Next Steps

This Existing Conditions Report summarizes a comprehensive data collection effort, capacity analysis, and safety analysis conducted to assess existing conditions along the SR 25/US 17 corridor and to identify transportation challenges, needs, and opportunities to be considered throughout the remainder of the study. The SR 25/US 17 corridor from the Chatham County/Bryan County line to Plymouth Avenue/Mills Lane east of I-516/SR 21 serves as a key alternate to I-95 and I-16, provides access to freight routes such as SR 307/Dean Forest Road and to GPA facilities, connects the City of Richmond Hill and Bryan County to Chatham County, and comprises parts of Georgia State Bicycle Route 95 and the ECG. The 10.7-mile-long study corridor includes a diverse mix of commercial, residential, and recreational facilities, and portions of the route are utilized by the SCCPSS and CAT. Prioritizing the safe and efficient movement of all modes along this multi-functional route is key to the long-term success of the surrounding area. To satisfy the goals and objectives of the CORE MPO's MTP and complementary transportation planning initiatives, the findings summarized in this report suggest the following:

- **Capacity improvements should be prioritized at the corridor's critical bottlenecks.** Approximately 56% of all crashes in the study database were rear-end crashes, and 33% of these occurred between the intersections with Chevis Road and SR 307/Dean Forest Road, particularly near the SR 204/Abercorn Street interchange, where congestion is prevalent during the peak periods of travel. Potential improvements along SR 204/Abercorn Street are under consideration as part of PI No. 0019010, and an additional Chatham County project proposes improvements on Little Neck Road near the intersection with SR 25/US 17. Potential geometric upgrades have also been recommended at Chatham Parkway as part of GDOT's *Coastal Empire Transportation Study*. These improvements would enhance existing operational constraints, but further improvements may be needed on SR 25/US 17 as growth occurs over the long-term horizon.
- **Non-motorist facilities should be considered throughout the SR 25/US 17 corridor.** The corridor exhibited a fatal crash rate nearly triple the statewide average for principal arterials, and of the 24 fatal crashes that occurred over the study period, 13 (54%) involved a pedestrian or cyclist. The corridor's alternating cross section and inconsistent provisions for non-motorists discourage walking and cycling activity and create a "High-Stress Road" environment as classified by the ECG. Providing new multimodal facilities and new or upgraded crossings would address recommendations from the CORE MPO's NMTP as well as a recent Safety Screening completed by GDOT. Further, these facilities would better serve alternative travel modes while mitigating the risk of future pedestrian-involved fatal and serious injury crashes.
- **Access management strategies should be implemented throughout the SR 25/US 17 corridor to reduce conflicts, manage speeds, and plan for future growth.** The study corridor includes approximately 244 unsignalized driveways, equal to an average spacing of 23 driveways per mile. The 2.7-mile-long segment between Fall Avenue/Buckhalter Road and Plymouth Avenue/Mills Lane exhibits a density of approximately 41 driveways per mile and accounts for nearly half of all angle crashes along the entire corridor. Proactive access management planning, including identifying locations for raised medians and reduced conflict intersections, will likely provide opportunities to enhance safety and mitigate congestion, especially along the southern portion of the corridor where extensive residential development is anticipated between Fords Pointe Circle/Bradley Boulevard and Berwick Boulevard.

The outcomes of this initial task will be used to inform alternatives development and form a portion of the final SR 25/US 17 Corridor Study report.