Chatham County, GA

SR 307 Corridor Study
Existing Conditions Report

Prepared for:

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1 Introduction

The SR 307 corridor extends approximately 8.5 miles through the heart of Chatham County, Georgia between SR 25/US 17/Ogeechee Road to the south and SR 25/Coastal Highway at the Port of Savannah's Garden City Terminal to the north. As a Georgia Statewide Designated Freight Corridor that serves as a primary artery to the Georgia Ports Authority's (GPA) Garden City Terminal (GCT) and as a connection to more than 18,000 jobs within a one-mile radius of its centerline, SR 307 is a critical component of the region's economic and community vitality. Moreover, Georgia Department of Transportation (GDOT) Annual Average Daily Traffic (AADT) data suggests that as many as 117,000 vehicles per day (VPD) cross the SR 307 corridor on intersecting routes. As a result, the corridor serves not just as a gateway to the Port of Savannah and adjacent activity centers, but also as a required point of passage to and from downtown Savannah. Maintaining mobility and safety along and across this multi-jurisdictional corridor—which traverses the boundaries of the cities of Savannah, Pooler, Port Wentworth, and Garden City—is key to the long-term success of the surrounding area.

Sustained safe and efficient movement of people and goods hinges on effective transportation planning. As such, the primary goals and objectives of the SR 307 Corridor Study are:

- Identify and prioritize short-term (0-5 Years) and long-term (5+ Years) improvement projects needed for the SR 307 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 (CORE MPO) Metropolitan Transportation Plan (MTP) process.
- Justify the future programming of projects in the CORE MPO's Transportation Improvement Program (TIP) and Total Mobility Plan.

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. The goals and objectives of the MTP focus on the safety, security, resiliency, accessibility, mobility, and sustainability of transportation options available to people and freight. Based on the Federal Highway Administration's (FHWA) Transportation Performance Management (TPM) strategy, the MTP outlines several key performance measures used to inform transportation investment decisions. Some of the measures most relevant to this study include:

- **Reduce the frequency and severity of crashes involving motorized and non-motorized road users.** A total of 1,466 crashes occurred along the SR 307 corridor over the five-year period from 2015-2019. Of these, 339 (23%) involved at least one injury.
- **Reduce the number of at-grade railroad crossings.** The corridor includes four highway-rail at-grade crossings, three of which are located in a 0.7-mile-long segment between SR 21/Augusta Road and Robert B Miller Road. Per data from the Federal Railroad Administration (FRA) Highway-Rail Crossing Inventory, 59 trains cross the corridor daily, and 25 (42%) of these crossings occur between 6AM and 6PM.
- **Improve emergency response time and hurricane evacuation routes.** According to data from the Chatham Emergency Management Agency, I-16, SR 26/US 80/Louisville Road, and SR 21/Augusta Road are three of the major hurricane evacuation routes for the region. Both

SR 26/US 80/Louisville Road and SR 21/Augusta Road must traverse at-grade intersections with SR 307 that exhibit long peak hour delays. The 2016 CORE MPO *Congestion Management Process (CMP) Report Card* cited the segments of SR 21/Augusta Road passing through SR 307 as top 15 among the most congested roadway segments in Chatham County.

- **Minimize work and freight trip congestion by improving efficient access to job centers and maximizing truck travel time reliability.** The GPA supports more than 369,000 jobs and $20.4 billion in personal income annually, and Savannah/Hilton Head International Airport is the second busiest commercial airport in Georgia, serving as world headquarters for Gulfstream Aerospace. Numerous existing at-grade railroad crossings, intersection bottlenecks, and access management deficiencies act as impediments to maintaining these economic engines.

This document summarizes a comprehensive data collection effort, capacity analysis, and safety analysis conducted to assess existing conditions along the SR 307 corridor and identify transportation challenges, needs, and opportunities to be considered throughout the remainder of the study. The outcomes of this initial task will be used to inform alternatives development and form a portion of the final SR 307 Corridor Study report.

2 Existing Conditions Assessment

2.1 Study Area, Corridor Characteristics, & Field Observations

The study area for this project is summarized in **Figure 1** and includes the entirety of the SR 307 corridor, from SR 25/US 17/Ogeechee Road to the south to SR 25/Coastal Highway at GPA's GCT Gate 4 to the north. Across this 8.5-mile-long stretch, a total of 27 intersections were included in traffic analyses, 13 of which are currently signalized. The SR 307 corridor segments bisect the heart of Chatham County and include the major intersecting roadways that serve downtown historic Savannah and the surrounding area. Consequently, a diverse set of context areas exist along the corridor—from the residential communities south of I-16, to the industrial activity hub that surrounds SR 26/US 80/Louisville Road, to the truck-centered port gateway near the GCT. 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 **Figures 2-14**.

2.1.1 Segment 1 – Community Gateway

Segment 1 constitutes a 2.4-mile-long section of SR 307 between SR 25/US 17/Ogeechee Road and I-16. Truck volumes are notably lower on this segment relative to the rest of the corridor as surrounding land uses are predominantly residential and municipal, including the Southbridge community, Garden City's City Hall, and Chatham Emergency Services Station 12. Key characteristics of this segment are summarized in **Table 1**, and existing geometry, traffic volume by time of day, and field-collected photographs are provided in **Figure 2**. Environmental features along this segment are summarized in **Figure 3**.

Traffic Characteristics

Daily traffic volumes on this segment of SR 307 are significantly less than the theoretical capacity of a typical four-lane divided roadway, with 2021 AADT estimates ranging from 11,000 to 15,000 VPD and truck percentages ranging between 2% and 4% from 6:00AM to 6:00PM. Field conditions are reflective of this finding, as little to no congestion was observed during the AM and PM peak hours of travel, and only minor queues were observed at the segment's major traffic generators (i.e., Southbridge Boulevard/Town Center Drive) and the primary intersecting arterial (SR 25/US 17/Ogeechee Road). As shown in **Table 1**, approximately 54 driveways exist along Segment 1; however, the 2015 widening of SR 307 from two to four lanes introduced a raised median and turn bays, leaving only eight median openings and providing for efficient corridor operations.

Non-Motorist Facilities

A sidewalk is present along both sides of SR 307 between Southbridge Boulevard and Landfill Road. Approximately 1500 feet south of Landfill Road, the sidewalk transitions to a bike shoulder (6'-10' outside shoulder) and continues south to the intersection with SR 25/US 17/Ogeechee Road. At this intersection, pedestrian accommodations (e.g., pedestrian signal heads and marked crosswalks) are provided without a supporting sidewalk or shared use path as shown in **Figure 2**. Field observations confirmed little pedestrian activity at this location. In contrast to the available facilities, the CORE MPO *Non-Motorized*

Transportation Plan highlights the segment of SR 307 near Southbridge Boulevard as a Pedestrian Focus Area and recommends a shared use path along the entire length of the SR 307 corridor.

Environmental Features

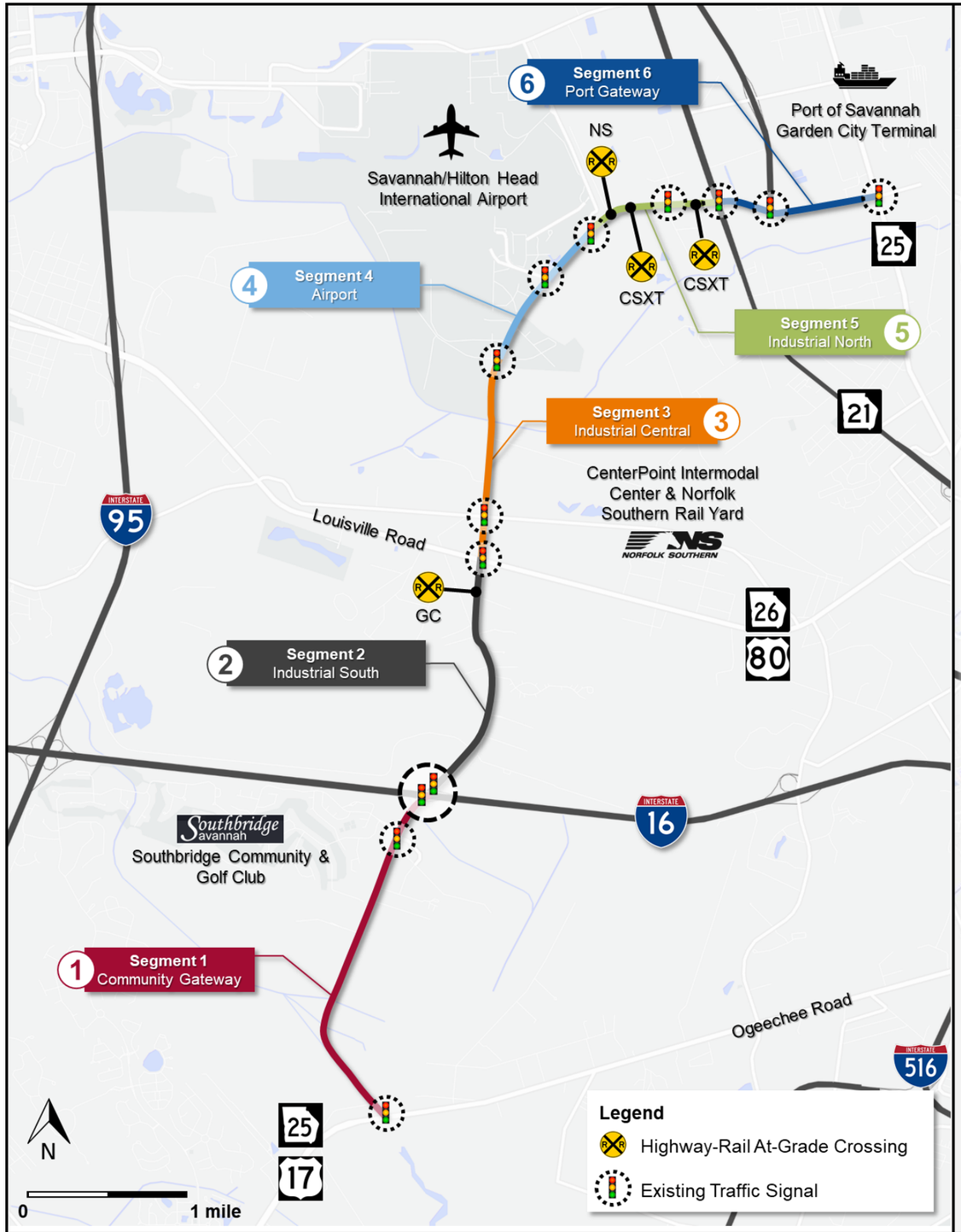
The Hardin Canal, which serves a drainage area of approximately 18 square miles, runs parallel to SR 307 from just south of Landfill Road to SR 25/US 17/Ogeechee Road. This resource feeds the Little Ogeechee River and abuts an estuarine and marine wetland. These features provide critical flood control but leave limited developable land along Segment 1 south of Landfill Road.

Table 1: Segment 1 – Community Gateway Corridor Characteristics

Geometric and Functional Characteristics	
Extents	SR 25/US 17/Ogeechee Road to I-16 Interchange (2.4 Miles)
Typical Cross Section	**Typical Section:** Four-Lane Divided with a Raised Median and Sidewalk/Bike Shoulders **Typical Lane Widths:** 12' Travel Lanes, Curb and Gutter/6'-10' Outside Shoulder
Speed Limit	45 MPH (35 MPH within 1/8 mile of SR 25/US 17/Ogeechee Road)
Number of Driveways	54 (23 Driveways/Mile)
Number of Median Openings	8
Number of Signalized Intersections	2
Major Intersecting Roadways	
SR 25/US 17/Ogeechee Road	**Cross Section:** Five-Lane with Flush Median and Bike Shoulders **Speed Limit:** 45 MPH **2021 AADT[1]:** 30,500 VPD west of SR 307 and 25,500 VPD east of SR 307
Traffic Characteristics	
Existing Traffic Volume Data[1]	**2021 AADT[1]:** 11,100 VPD south to 14,500 VPD north **Bi-Directional Peak Hour Volume:** 950 VPH south to 1,250 VPH north **K Factor:** 8.6% **Daily Truck Percentage:** 3.9%
Traffic Growth Projections[2]	**10-Year Historic Growth Rate:** 4.5% **30-Year Travel Demand Model Growth Rate:** 0.5%

[1] Existing traffic volume data represents an average across the 48-hour classification counts collected along the study segment; seasonal and COVID-19 adjustment factors were applied to these AADTs

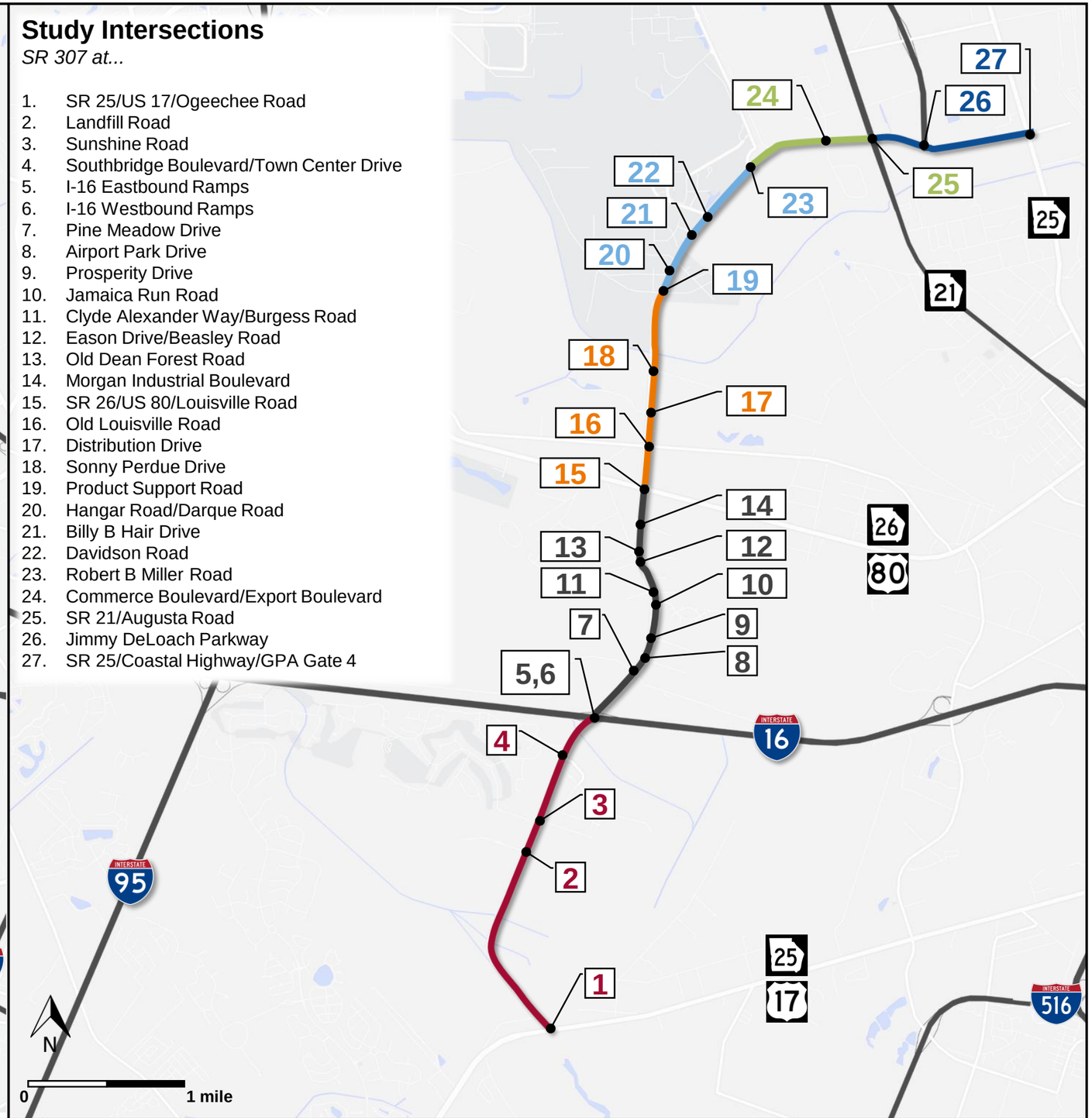
[2] Traffic growth projections were derived from GDOT historic AADT and CORE MPO Travel Demand Model Outputs (2015 Base Year – 1st Network vs. 2045 Financially Constrained – 6th Network)



Study Intersections

SR 307 at...

1. SR 25/US 17/Ogeechee Road
2. Landfill Road
3. Sunshine Road
4. Southbridge Boulevard/Town Center Drive
5. I-16 Eastbound Ramps
6. I-16 Westbound Ramps
7. Pine Meadow Drive
8. Airport Park Drive
9. Prosperity Drive
10. Jamaica Run Road
11. Clyde Alexander Way/Burgess Road
12. Eason Drive/Beasley Road
13. Old Dean Forest Road
14. Morgan Industrial Boulevard
15. SR 26/US 80/Louisville Road
16. Old Louisville Road
17. Distribution Drive
18. Sonny Perdue Drive
19. Product Support Road
20. Hangar Road/Darque Road
21. Billy B Hair Drive
22. Davidson Road
23. Robert B Miller Road
24. Commerce Boulevard/Export Boulevard
25. SR 21/Augusta Road
26. Jimmy DeLoach Parkway
27. SR 25/Coastal Highway/GPA Gate 4



SR 307 Corridor Study – Existing Conditions/Needs Assessment

Figure 1 – Corridor Context Areas & Study Intersections

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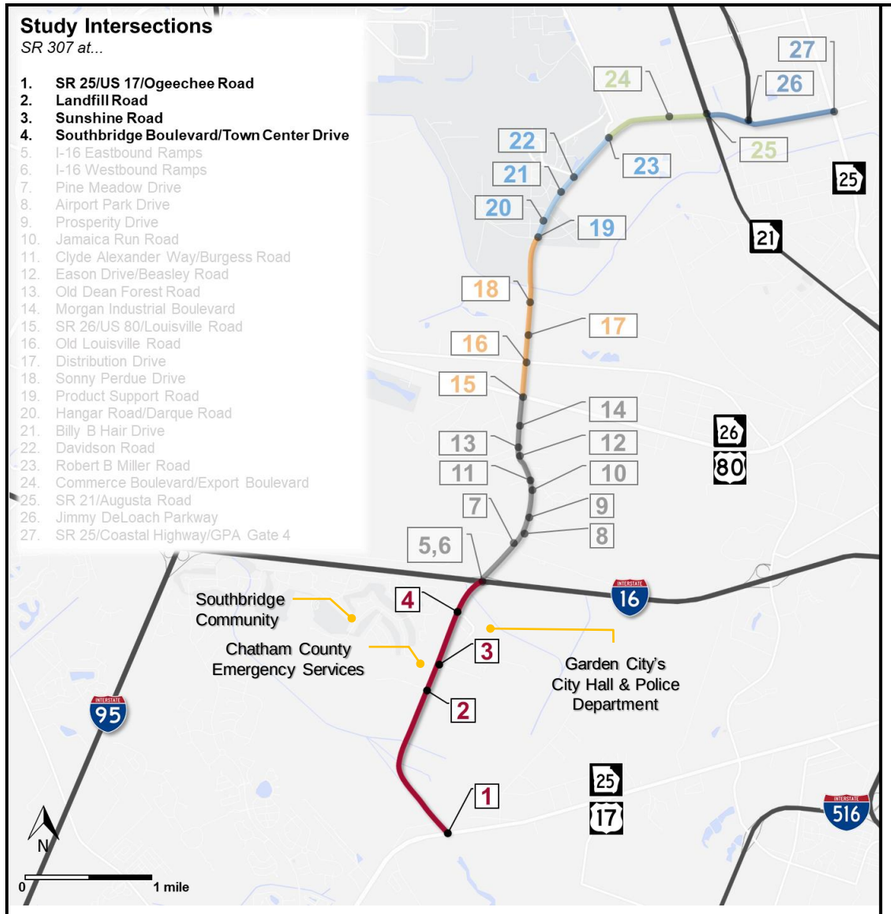
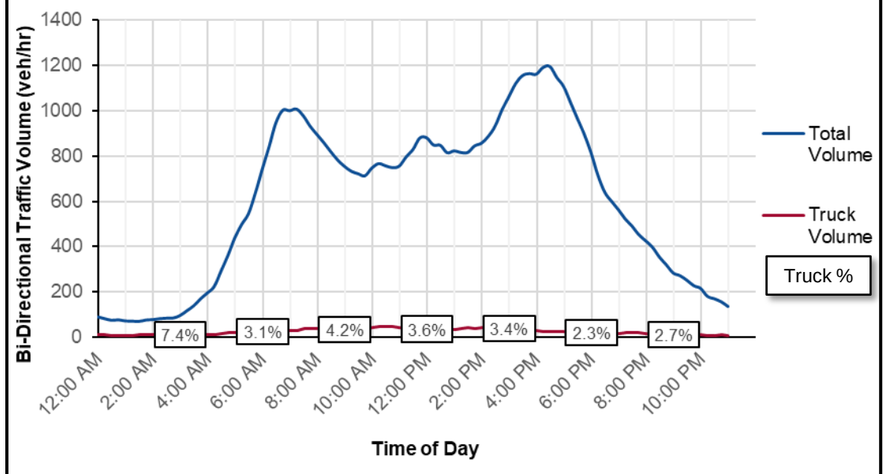
Study Intersections

SR 307 at...

1. **SR 25/US 17/Ogeechee Road**
2. **Landfill Road**
3. **Sunshine Road**
4. **Southbridge Boulevard/Town Center Drive**
5. I-16 Eastbound Ramps
6. I-16 Westbound Ramps
7. Pine Meadow Drive
8. Airport Park Drive
9. Prosperity Drive
10. Jamaica Run Road
11. Clyde Alexander Way/Burgess Road
12. Eason Drive/Beasley Road
13. Old Dean Forest Road
14. Morgan Industrial Boulevard
15. SR 26/US 80/Louisville Road
16. Old Louisville Road
17. Distribution Drive
18. Sonny Perdue Drive
19. Product Support Road
20. Hangar Road/Darque Road
21. Billy B Hair Drive
22. Davidson Road
23. Robert B Miller Road
24. Commerce Boulevard/Export Boulevard
25. SR 21/Augusta Road
26. Jimmy DeLoach Parkway
27. SR 25/Coastal Highway/GPA Gate 4



Segment Average Traffic Volume & Truck % by Time of Day



Existing Intersection Geometry & Traffic Control

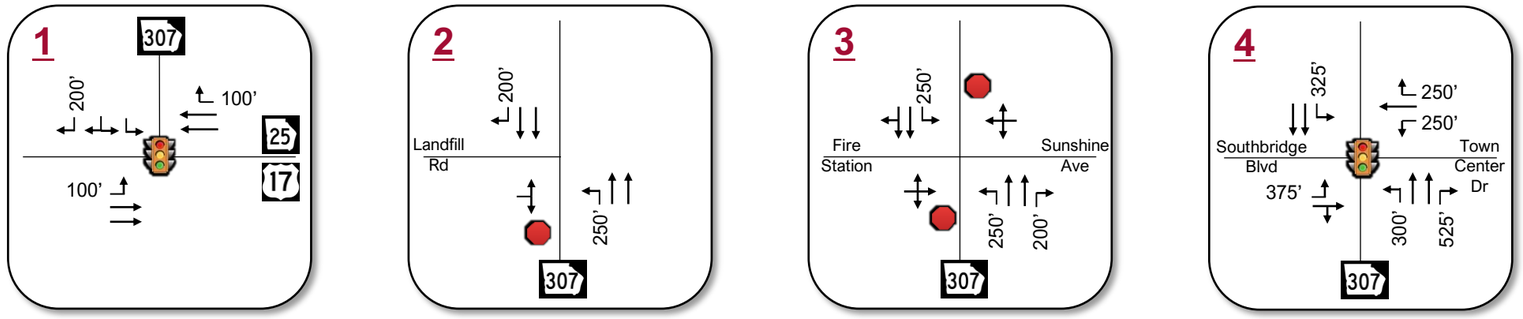


Photo: Hardin Canal at SR 307 Intersection with SR 25/US 17/Ogeechee Road

Photo: SR 307 at Southbridge Boulevard (Looking South)

Photo: Pedestrian Facilities at SR 307 Intersection with SR 25/US 17/Ogeechee Road

Photo: SR 307 at Southbridge Boulevard (Looking North)

SR 307 Corridor Study – Existing Conditions/Needs Assessment

Figure 2 – Study Intersections & Key Characteristics: Segment 1 – Community Gateway

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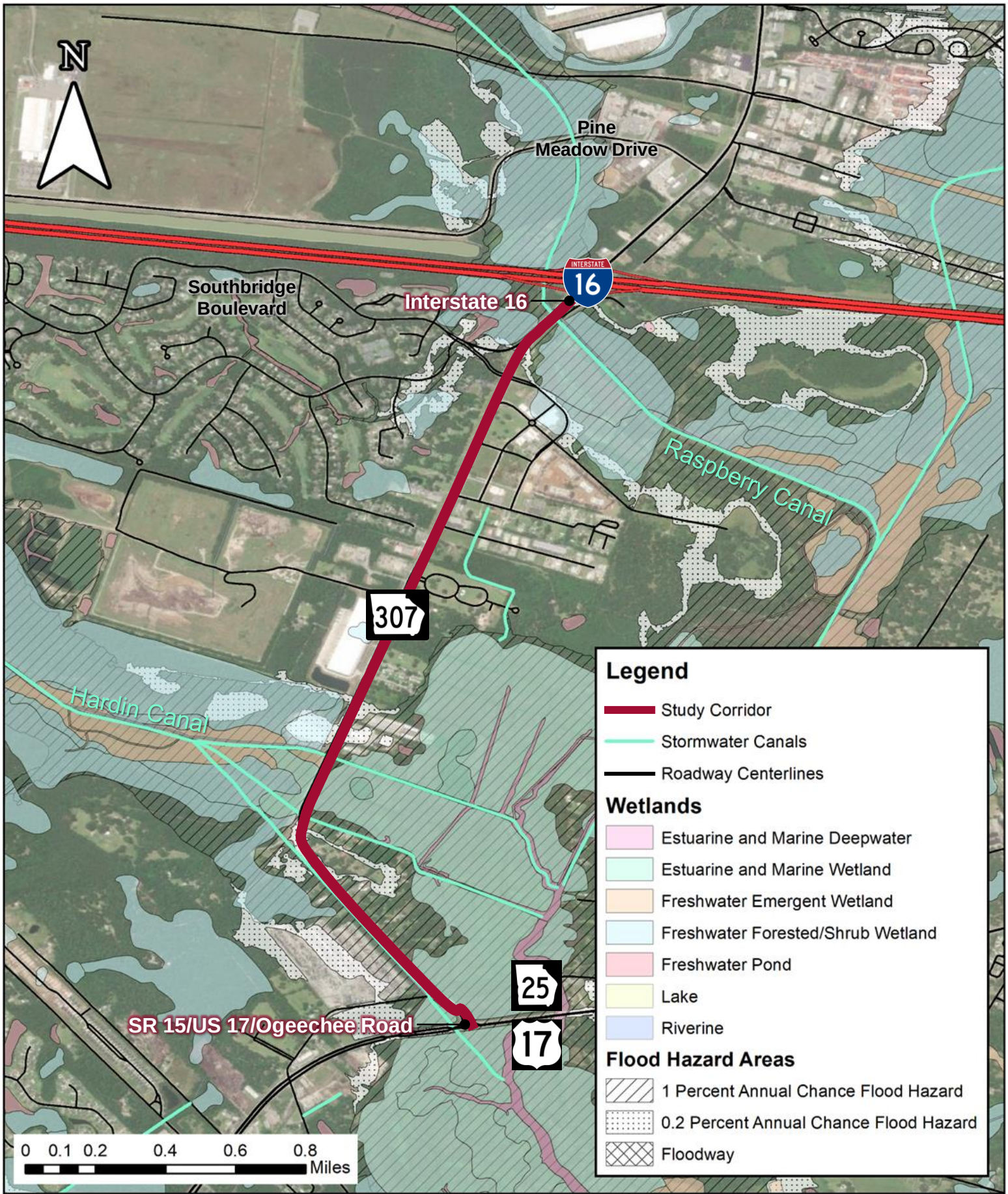

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Figure 3

Segment 1 – Community Gateway

Environmental Features Map

2.1.2 Segment 2 – Industrial South

Segment 2 is approximately 1.8 miles in length, extending from I-16 to SR 26/US 80/Louisville Road. Land uses along this segment are commercial in nature near I-16 but predominantly heavy industrial elsewhere. Two mobile home parks, Savannah Pines and Nassau Woods, are located along the eastern frontage of SR 307 between Pine Meadow Road and Clyde Alexander Way. Key characteristics of this segment are summarized in **Table 2**, and existing geometry, traffic volume by time of day, and field-collected photographs are provided in **Figure 4**. Environmental features along this segment are summarized in **Figure 5**.

Traffic Characteristics

Like Segment 1, daily traffic volumes on Segment 2 are less than the theoretical capacity of a typical five-lane/flush median roadway, with 2021 AADT estimates ranging from 17,000 VPD to 23,000 VPD and truck percentages ranging between 9% and 18% from 6:00 AM to 6:00 PM. However, the endpoints of the segment, I-16 and SR 26/US 80/Louisville Road, each function as bottlenecks during the AM and PM peak periods of travel. The bottleneck at I-16 is the most significant of these, with a maximum queue length of 0.25 miles and 0.60 miles observed on southbound SR 307 during the AM and PM peak periods, respectively. During the PM peak period, this queue was observed to extend from the I-16 westbound ramps to just beyond Prosperity Drive due to heavy demand for the southbound right-turn movement to westbound I-16.

Accompanying field travel time runs indicated an average travel speed of 26 MPH on Segment 2 between 4:30 PM and 5:30 PM, which is nearly 20 MPH below the posted speed limit. Congestion at the I-16 ramp terminals is partially attributable to constrained geometry on the existing bridge structure, which is only wide enough to accommodate a total of four travel lanes and a single left-turn lane in each direction over its 350-foot length. Consequently, field observations indicated that left-turn queues frequently exceeded the existing turn bay storage length. GDOT PI No. 0013727 will widen the existing bridge and convert the I-16 at SR 307 interchange to a diverging diamond configuration. This project is under construction with a substantial completion date of July 2023. Additionally, GDOT PI No. 0012758 is currently under construction and will widen I-16 to a six-lane Interstate facility between I-95 and I-516, with a collector-distributor roadway in the northbound direction that should benefit travel to and from the study corridor via I-16.

At SR 26/US 80/Louisville Road, northbound right-turn movements on SR 307 share one of two northbound through lanes, and heavy trucks often inhibit through progression while making wide turns onto SR 26/US 80/Louisville Road. Additionally, a Georgia Central Railway (Genesee & Wyoming) highway-rail at-grade crossing is located approximately 900 feet south of the intersection. According to data from FRA, only four trains cross SR 307 at this location daily, and none were noted during the field observations conducted as part of this study. As such, it is expected that this at-grade crossing has minimal impact on peak hour traffic operations.

Roadway Geometry/Access Management

As shown in **Table 2**, approximately 45 full-movement driveways are present along the Segment 2 corridor, which is equivalent to a spacing of 25 driveways per mile. According to AAHSTO's *A Policy on Geometric Design of Highways and Streets*, 7th Edition, or "*Green Book",* and research conducted as part

of National Cooperative Highway Research Program (NCHRP) Report 420: *Impacts of Access Management Techniques*, each additional access point per mile increases the expected crash rate per million vehicle miles of travel by 3%. As such, the Segment 2 corridor may provide opportunities to enhance safety and facilitate smoother operations through driveway consolidation or other access management strategies. Multiple offset T-intersections and examples of atypical intersection approach geometry also exist along the corridor, as depicted in the photos in **Figure 4**.

Non-Motorist Facilities

There are currently no pedestrian or bicycle facilities along the Segment 2 corridor, which exhibits a pedestrian/bicycle level of service (LOS) of F according to the CORE MPO *Non-Motorized Transportation Plan*. This plan also identified the section near SR 26/US 80/Louisville Road as a Pedestrian Focus Area.

Table 2: Segment 2 – Industrial South Corridor Characteristics

Geometric and Functional Characteristics	
Extents	I-16 Interchange to SR 26/US 80/Louisville Road (1.8 Miles)
Typical Cross Section	**Typical Section:** Five-Lane with Flush Median/Two-Way Left-Turn Lane (TWLTL) **Typical Lane Widths:** 12' Travel Lanes, 14' TWLTL, Curb and Gutter
Speed Limit	45 MPH
Number of Driveways	45 (25 Driveways/Mile)
Number of Median Openings	N/A – TWLTL
Number of Signalized Intersections	3
Major Intersecting Roadways	
I-16 Eastbound/Westbound Ramps	**2021 AADT[1]:** • I-16 Eastbound Off-Ramp: 7,500 VPD • I-16 Eastbound On-Ramp: 6,500 VPD • I-16 Westbound Off-Ramp: 7,000 VPD[2] • I-16 Westbound On-Ramp: 7,200 VPD
Traffic Characteristics	
Existing Traffic Volume Data[1]	**2021 AADT[1]:** 17,000 VPD north to 23,500 VPD south **Bi-Directional Peak Hour Volume:** 1,200 VPH north to 1,650 VPH south **K Factor:** = 7.0% **Daily Truck Percentage:** 15.1%
Traffic Growth Projections[3]	**10-Year Historic Growth Rate:** -1.0% **30-Year Travel Demand Model Growth Rate:** 0.1%

[1] Existing traffic volume data represents an average across the 48-hour classification counts collected along the study segment; seasonal and COVID-19 adjustment factors were applied to these AADTs

[2] Ongoing construction on I-16 may have influenced traffic counts at this location

[3] Traffic growth projections were derived from GDOT historic AADT and CORE MPO Travel Demand Model Outputs (2015 Base Year – 1st Network vs. 2045 Financially Constrained – 6th Network)

Study Intersections

SR 307 at...

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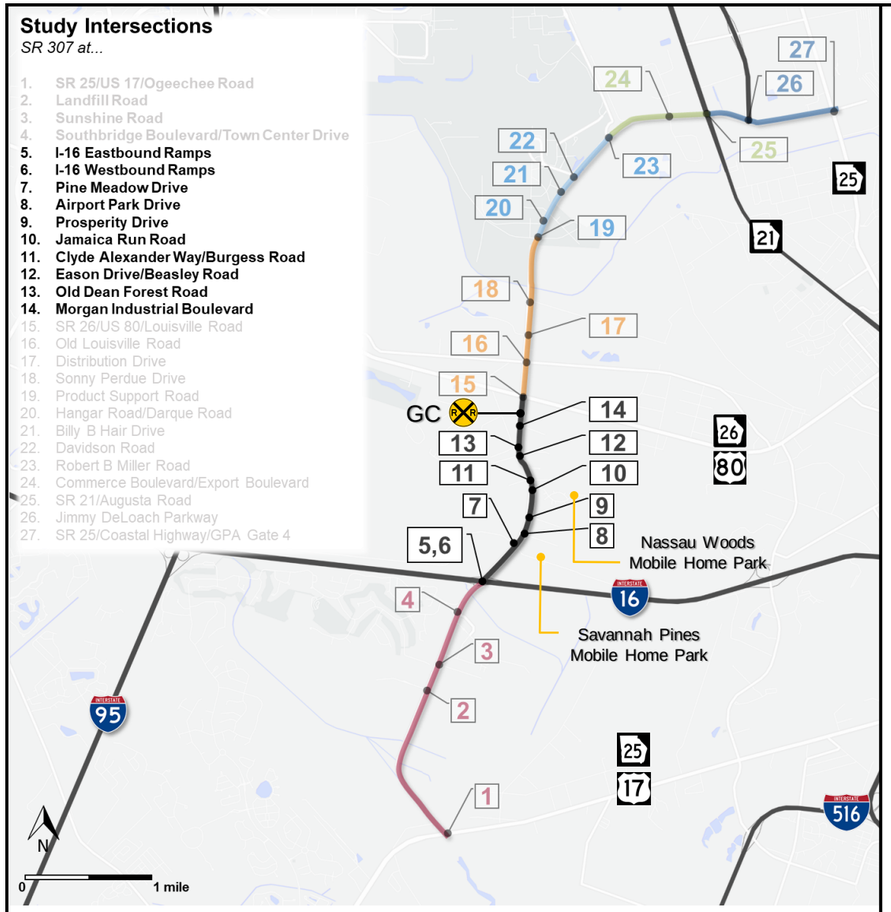
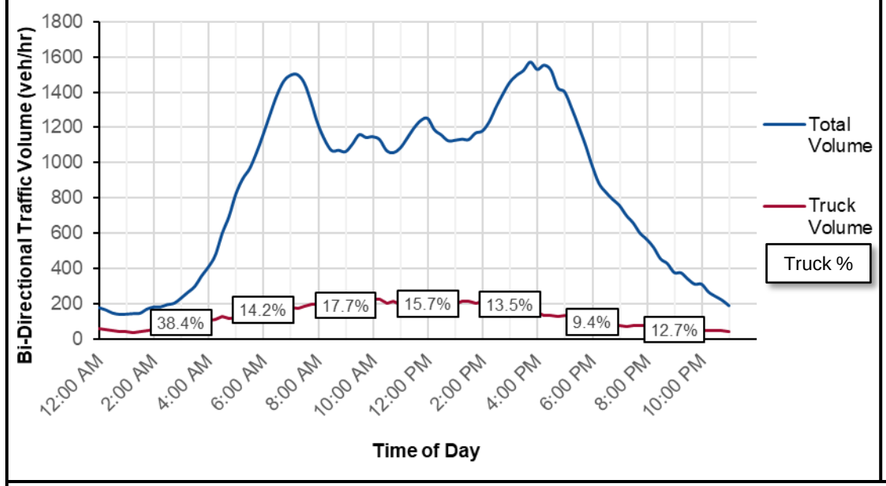
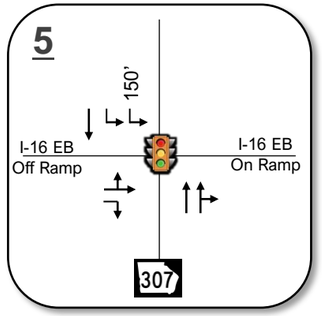
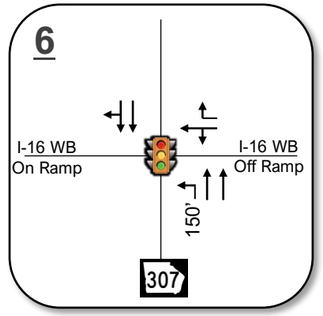


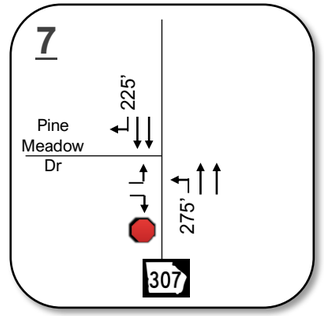
Segment Average Traffic Volume & Truck % by Time of Day



Existing Intersection Geometry & Traffic Control







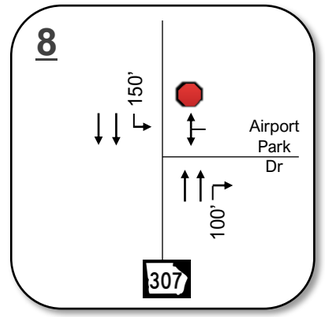
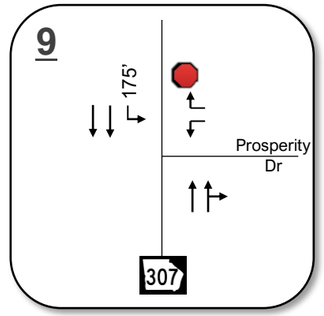
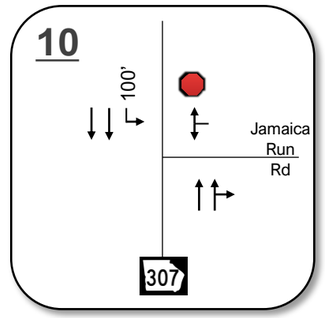
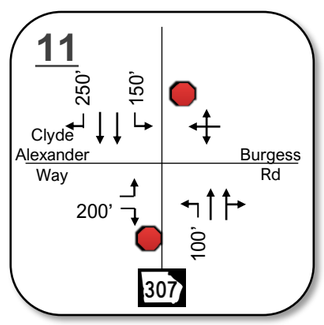


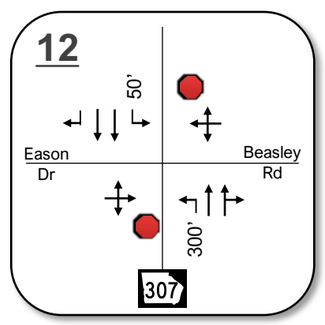
Photo: Constrained Geometry and Queueing at I-16 Interchange

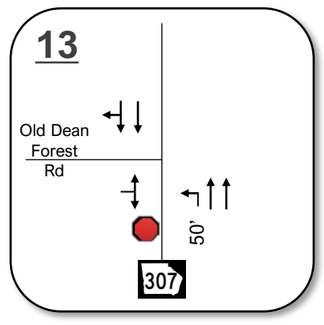
Photo: Offset T-Intersection at Eason Drive/Beasley Road

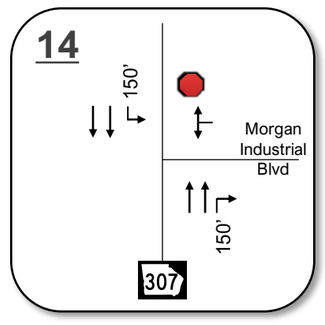












SR 307 Corridor Study – Existing Conditions/Needs Assessment

Figure 4 – Study Intersections & Key Characteristics: Segment 2 – Industrial South

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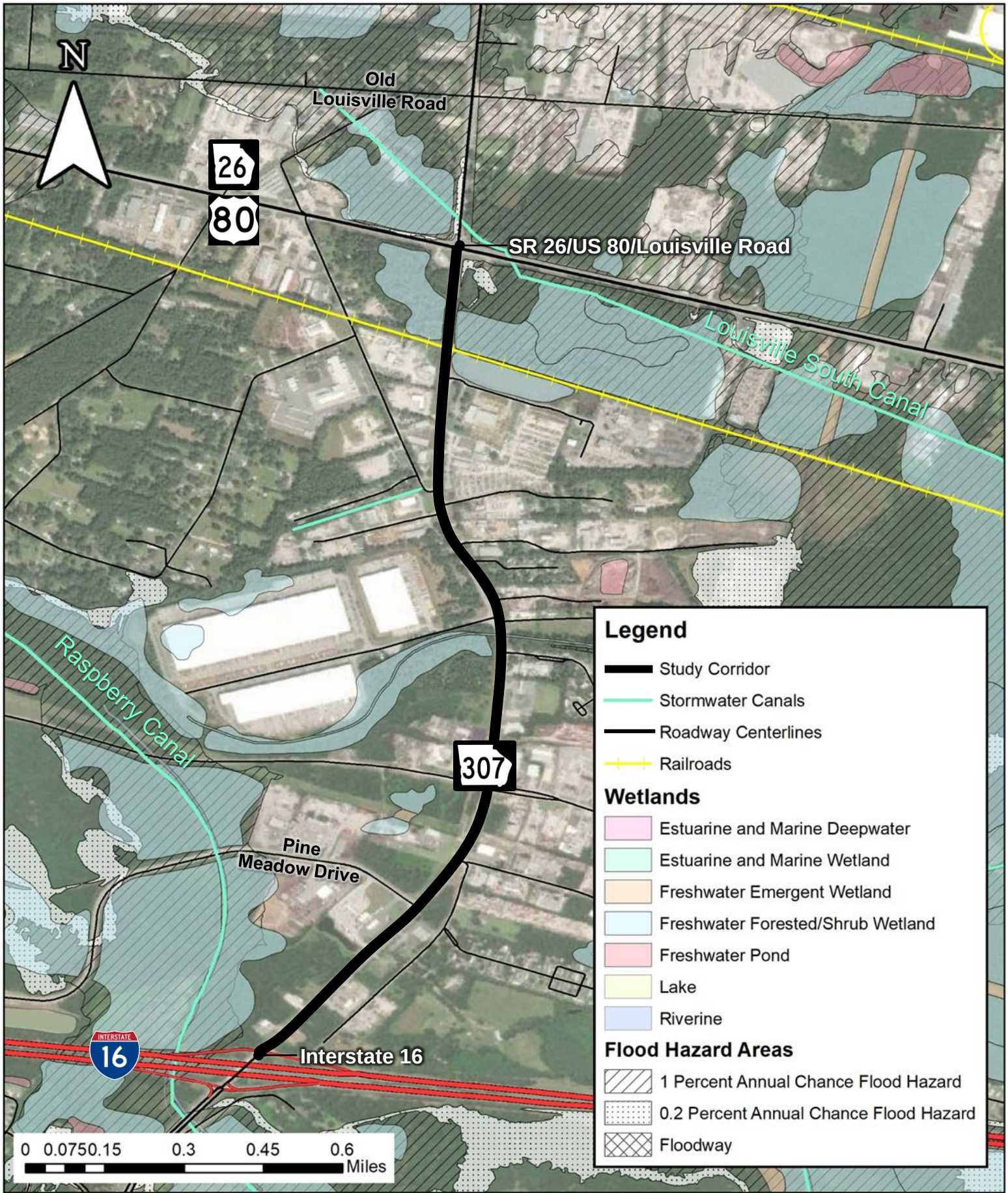

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Figure 5

Segment 2 – Industrial South

Environmental Features Map

2.1.3 Segment 3 – Industrial Central

Segment 3 is a 1.3-mile-long segment that runs between SR 26/US 80/Louisville Road and Product Support Road. The CenterPoint Intermodal Center and Norfolk Southern Savannah Yard are accessible from Sonny Perdue Drive and Old Louisville Road, with additional heavy industrial centers located adjacent to SR 26/US 80/Louisville Road to the east and west. Key characteristics of this segment are summarized in **Table 3**, and existing geometry, traffic volume by time of day, and field-collected photographs are provided in **Figure 6**. Environmental features along this segment are summarized in **Figure 7**.

Traffic Operations

Along Segment 3, 2021 AADT estimates range between 17,500 VPD and 20,000 VPD, and truck percentages range between 12% and 30% from 6:00 AM to 6:00 PM. As shown in **Figure 6**, approximately one in every five vehicles on SR 307 is a heavy truck during the peak periods. A similar proportion is observed on SR 26/US 80/Louisville Road at the segment's southern terminus. The combination of heavy truck traffic and peak hour commuting passenger car traffic leads to significant queueing on SR 26/US 80/Louisville Road during both peak periods and on southbound SR 307 during the PM Peak period. Field observations indicated that queues on eastbound SR 26/US 80/Louisville Road extend as far as Triplett Park Drive (approximately 0.9 miles west of SR 307) during the AM peak period and through the Florida Rock and Tank Lines commercial driveway (approximately 0.4 miles east of SR 307) during the PM peak period.

While congestion was observed at its maximum after 5:00 PM on SR 26/US 80/Louisville Road, field observations indicated that queues form and dissipate sooner on southbound SR 307. By 4:15 PM, queueing was observed through the intersection with Distribution Drive on SR 307 (approximately 0.5 miles north of SR 26/US 80/Louisville Road). These queues seemed to align with large exiting passenger car flows from the CenterPoint Intermodal facility on Sonny Perdue Drive and with increased heavy truck activity at the Port of Savannah. Field travel time runs conducted during the same period yielded an average travel speed of 14 MPH between Jimmy DeLoach Parkway and SR 26/US 80/Louisville Road, with most of the delay occurring as part of congestion observed on this segment. Based on field observations, congestion on southbound SR 307 begins to dissipate just after 5:00PM, coinciding with a moderate decrease in truck traffic along the corridor.

Heavy truck traffic plays a prominent role in existing operational issues along Segment 3. The photos in **Figure 6** highlight the significant truck presence on both SR 307 and SR 26/US 80/Louisville Road during the peak periods of travel, which is commensurate with the surrounding land use and overall corridor context. A survey of 887 truck trips to/from the GCT, including 411 accessing Gate 3 and 476 accessing Gate 4 (located at the northern terminus of SR 307), was conducted as part of the most recent *Georgia State Freight and Logistics Plan* (GDOT, 2018). This survey concluded that 63% of the sample originated in or were destined for locations within Chatham County, with most within a few miles of the Port of Savannah. Approximately 80% of all truck trips to/from the GCT access via Gate 3 and Gate 4. The heavy industrial centers located along SR 26/US 80/Louisville Road, Old Louisville Road, Sonny Perdue Drive, and SR 307 represent a significant portion of the warehousing origins and destinations in Chatham County and are most accessible via the SR 307 corridor. As a result, high truck turning movement volumes are observed along Segment 3 throughout the day. At SR 26/US 80/Louisville Road, field

observations indicated that wide, southbound right-turn movements made by heavy trucks in the shared through/right-turn lane on SR 307 are a major contributor to congestion. Where queue storage is available, each tractor-trailer utilizes the same amount of turn bay storage as approximately three passenger cars, which increases the likelihood of queue spillback issues. The presence of a center two-way left-turn lane (TWLTL) reduces impacts of these queues to the major street traffic streams.

Table 3: Segment 3 – Industrial Central Corridor Characteristics

Geometric and Functional Characteristics	
Extents	SR 26/US 80/Louisville Road to Product Support Road (1.3 Miles)
Typical Cross Section	**Typical Section:** Five-Lane with Flush Median/Two-Way Left-Turn Lane (TWLTL) **Typical Lane Widths:** 12' Travel Lanes, 14' TWLTL, Curb and Gutter
Speed Limit	45 MPH
Number of Driveways	22 (17 Driveways/Mile)
Number of Median Openings	N/A – TWLTL
Number of Signalized Intersections	2
Major Intersecting Roadways	
SR 26/US 80/Louisville Road	**Cross Section:** Five-Lane with Flush Median/Two-Way Left-Turn Lane (TWLTL) **Speed Limit:** 45 MPH **2021 AADT[1]:** 24,000 VPD west of SR 307 to 19,000 VPD east of SR 307
Old Louisville Road	**Cross Section:** Two-Lane Undivided **Speed Limit:** 25 MPH west of SR 307 and 35 MPH east of SR 307 **2021 AADT[1]:** 1,500 VPD west of SR 307 to 3,500 VPD east of SR 307
Traffic Characteristics	
Existing Traffic Volume Data[1]	**2021 AADT[1]:** 17,500 VPD north to 20,000 VPD south **Bi-Directional Peak Hour Volume:** 1,240 VPH north to 1,450 VPH south **K Factor:** = 7.3% **Daily Truck Percentage:** 22.0%
Traffic Growth Projections[2]	**10-Year Historic Growth Rate:** 1.7% **30-Year Travel Demand Model Growth Rate:** 0.5%

[1] Existing traffic volume data represents an average across the 48-hour classification counts collected along the study segment; seasonal and COVID-19 adjustment factors were applied to these AADTs

[2] Traffic growth projections were derived from GDOT historic AADT and CORE MPO Travel Demand Model Outputs (2015 Base Year – 1st Network vs. 2045 Financially Constrained – 6th Network)

Roadway Geometry/Access Management

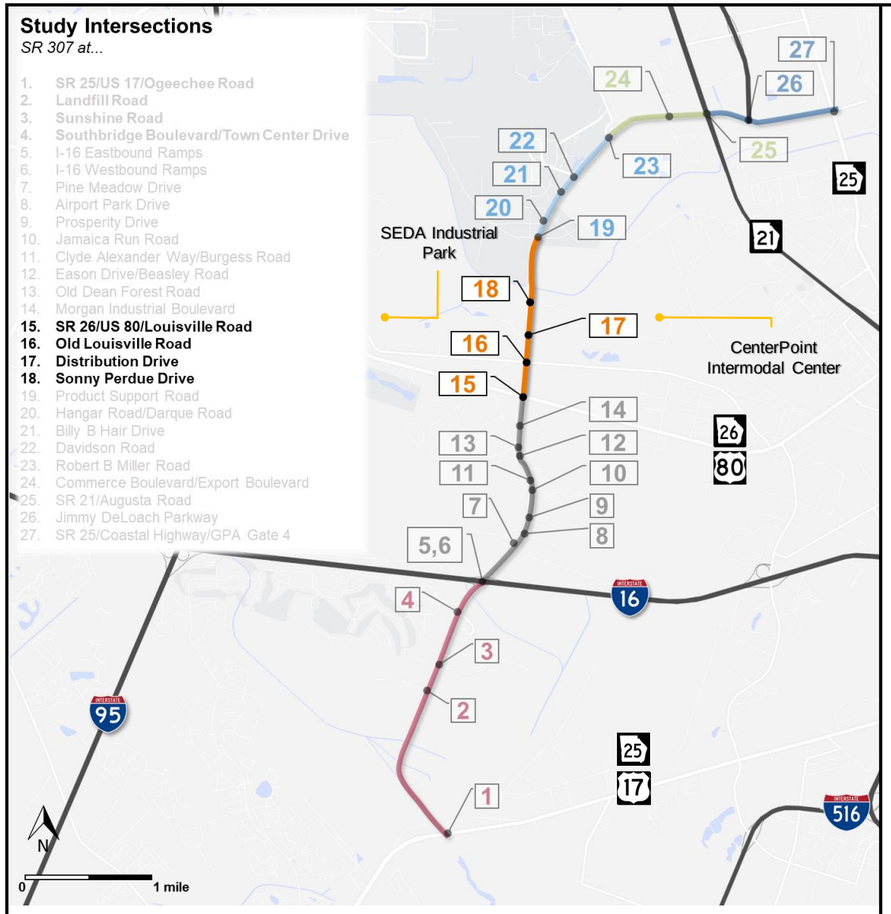
Like Segment 2, Segment 3 exhibits a relatively high driveway density, with approximately 17 driveways per mile. Segment 3 also includes a continuous, center TWLTL. Though the access characteristics of this segment offer opportunities for safety and operational improvements through various access management strategies, geometry constraints for heavy truck traffic present greater challenges under existing conditions. The operational issues discussed previously along with photos presented in **Figure 6** provide a few examples of locations where existing roadway laneage and/or turning radii are not appropriate given the heavy truck volumes observed at the major and minor street approaches along the corridor. As such, intersection-level improvements may also be warranted along this segment.

Non-Motorist Facilities

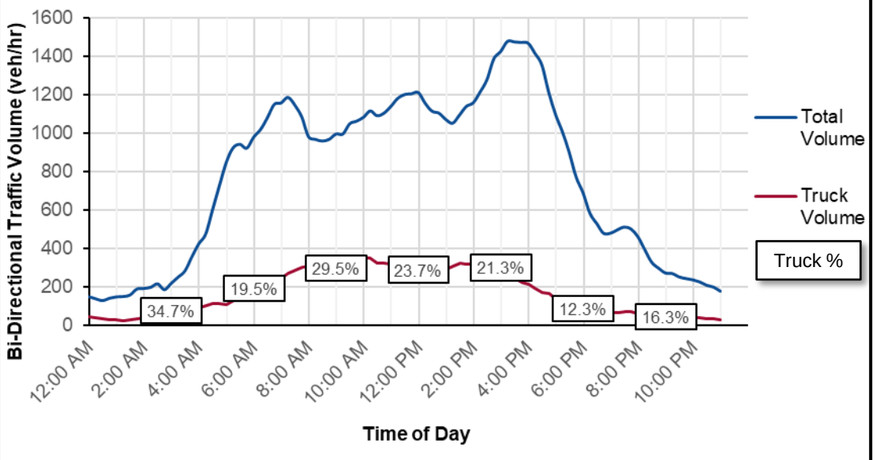
There are no existing pedestrian or bicycle facilities along the Segment 3 corridor, which exhibits a pedestrian/bicycle level of service (LOS) of F according to the CORE MPO *Non-Motorized Transportation Plan*. This plan also identified the section near SR 26/US 80/Louisville Road as a Pedestrian Focus Area.

Environmental Features

As shown in **Figure 7**, Pipemakers Canal crosses the SR 307 corridor between Sonny Perdue Drive and Product Support Road. The original Pipemakers Creek was converted to a canal in 1930, and a multi-phase improvement project, including bridge crossing improvements and canal widening, has been completed for the entirety of the canal's length between SR 26/US 80/Louisville Road in Pooler to the Savannah River in Garden City. This canal is a vital component of the Savannah area's drainage infrastructure and is surrounded by freshwater forested/shrub wetland spanning east-to-west between the Savannah/Hilton Head International Airport and SR 21/Augusta Road.



Segment Average Traffic Volume & Truck % by Time of Day



Existing Intersection Geometry & Traffic Control

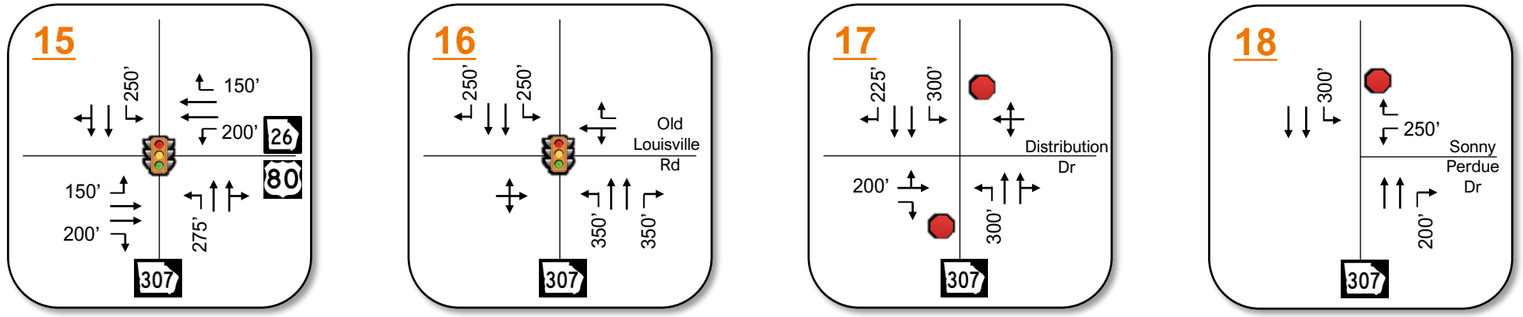


Photo: Damaged Stop Sign at SR 307 Intersection with Distribution Drive

Photo: Queueing on Eastbound SR 26/US 80/Louisville Road (AM Peak

Photo: Queueing on Westbound SR 26/US 80/Louisville Road (PM Peak Period)

Photo: Queueing on Southbound SR 307 at SR 26/US 80/Louisville Road (PM Peak Period)

SR 307 Corridor Study – Existing Conditions/Needs Assessment

Figure 6 – Study Intersections & Key Characteristics: Segment 3 – Industrial Central

SR 307 CORRIDOR STUDY

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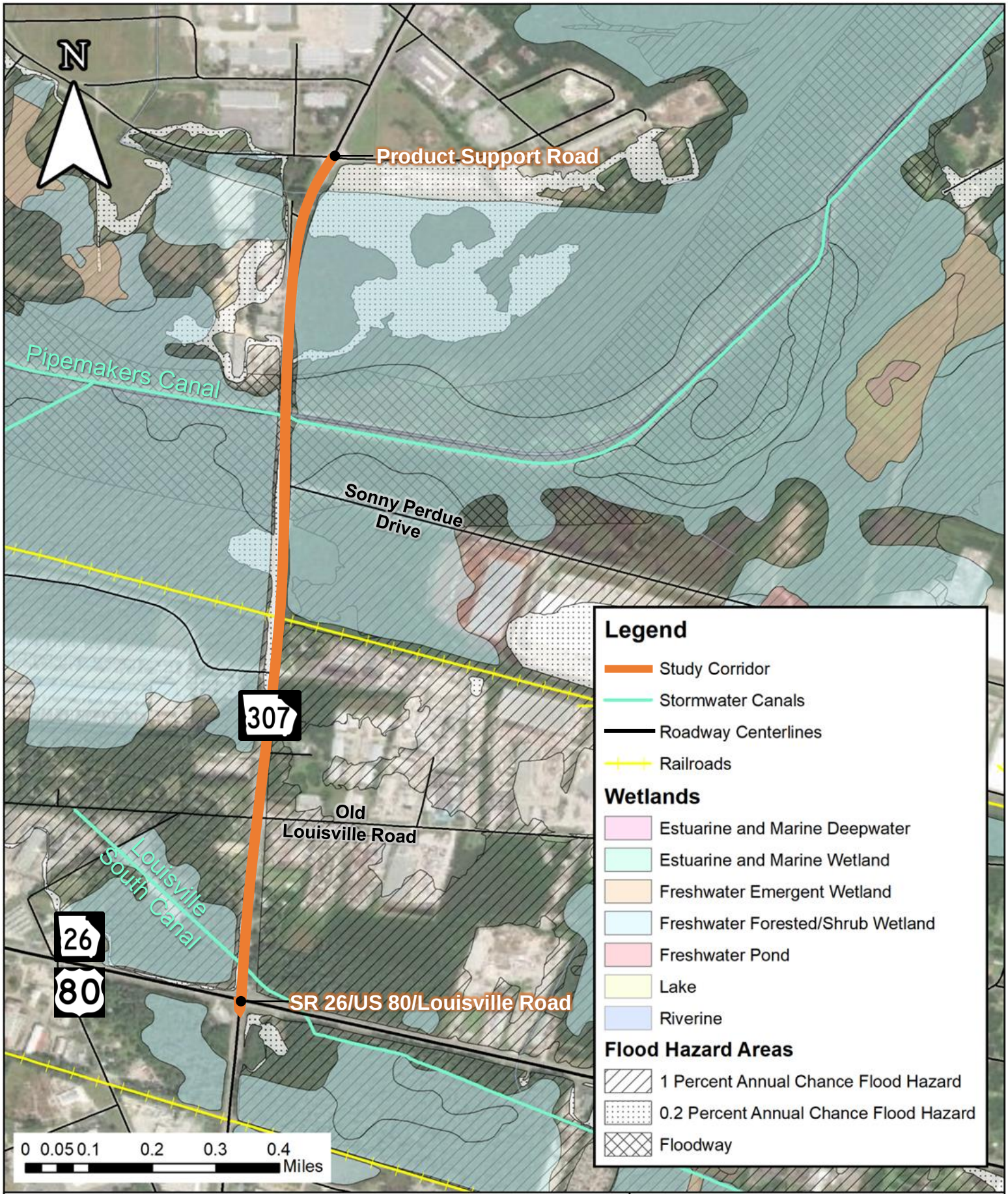


SR 307 CORRIDOR STUDY

Kimley»Horn

Figure 7

Segment 3 – Industrial Central

Environmental Features Map

2.1.4 Segment 4 – Airport

Segment 4 includes the entirety of the Savannah/Hilton Head International Airport and Georgia Air National Guard frontage on SR 307. This 1-mile-long segment is comprised of largely vacant land opposite the airport and extends through Robert B Miller Road, which provides connectivity to Gulfstream Road, Pooler Parkway, and I-95. Key characteristics of this segment are summarized in **Table 4**, and existing geometry, traffic volume by time of day, and field-collected photographs are provided in **Figure 8**. Environmental features along this segment are summarized in **Figure 9**.

Table 4: Segment 4 – Airport Corridor Characteristics

Geometric and Functional Characteristics	
Extents	Product Support Road to Robert B Miller Road (1 Mile)
Typical Cross Section	**Typical Section:** Five-Lane with Flush Median/Two-Way Left-Turn Lane (TWLTL) **Typical Lane Widths:** 12' Travel Lanes, 14' TWLTL, Curb and Gutter
Speed Limit	45 MPH
Number of Driveways	8 (8 Driveways/Mile)
Number of Median Openings	N/A – TWLTL
Number of Signalized Intersections	3
Major Intersecting Roadways	
Robert B Miller Road	**Cross Section:** Four-Lane Undivided **Speed Limit:** 25 MPH **2021 AADT[1]:** 6,000 VPD
Traffic Characteristics	
Existing Traffic Volume Data[1]	**2021 AADT[1]:** 17,000 VPD (Average) **Bi-Directional Peak Hour Volume:** 1,300 VPH (Average) **K Factor:** = 7.6% **Daily Truck Percentage:** 22.7%
Traffic Growth Projections[2]	**10-Year Historic Growth Rate:** 0.6% **30-Year Travel Demand Model Growth Rate:** 0.6%

[1] Existing traffic volume data represents an average across the 48-hour classification counts collected along the study segment; seasonal and COVID-19 adjustment factors were applied to these AADTs

[2] Traffic growth projections were derived from GDOT historic AADT and CORE MPO Travel Demand Model Outputs (2015 Base Year – 1st Network vs. 2045 Financially Constrained – 6th Network)

Traffic Operations

Segment 4 AADT estimates for 2021 average approximately 17,000 VPD, and truck percentages range between 19% and 32% from 6:00 AM to 6:00 PM. Field observations indicated no major operational issues along this segment of SR 307 as the corridor's major intersecting roadway, Robert B Miller Road, forms a T-intersection with SR 307 and functions efficiently under signal control. Moderate eastbound left- and right-turn volumes were observed on Product Support Road during the PM peak period but yielded only minor delay and queueing on each approach. Nonetheless, maintaining adequate traffic conditions on Segment 4 is critical to supporting business operations at the airport and surrounding facilities into the future.

Non-Motorist Facilities

There are currently no pedestrian or bicycle facilities along the Segment 4 corridor. However, as shown in **Figure 8**, pedestrian accommodations (e.g., pedestrian signal heads and marked crosswalks) are provided at multiple intersections without a supporting sidewalk or shared use path. The CORE MPO *Non-Motorized Transportation Plan* recommends a shared use path along the entire length of the SR 307 corridor.

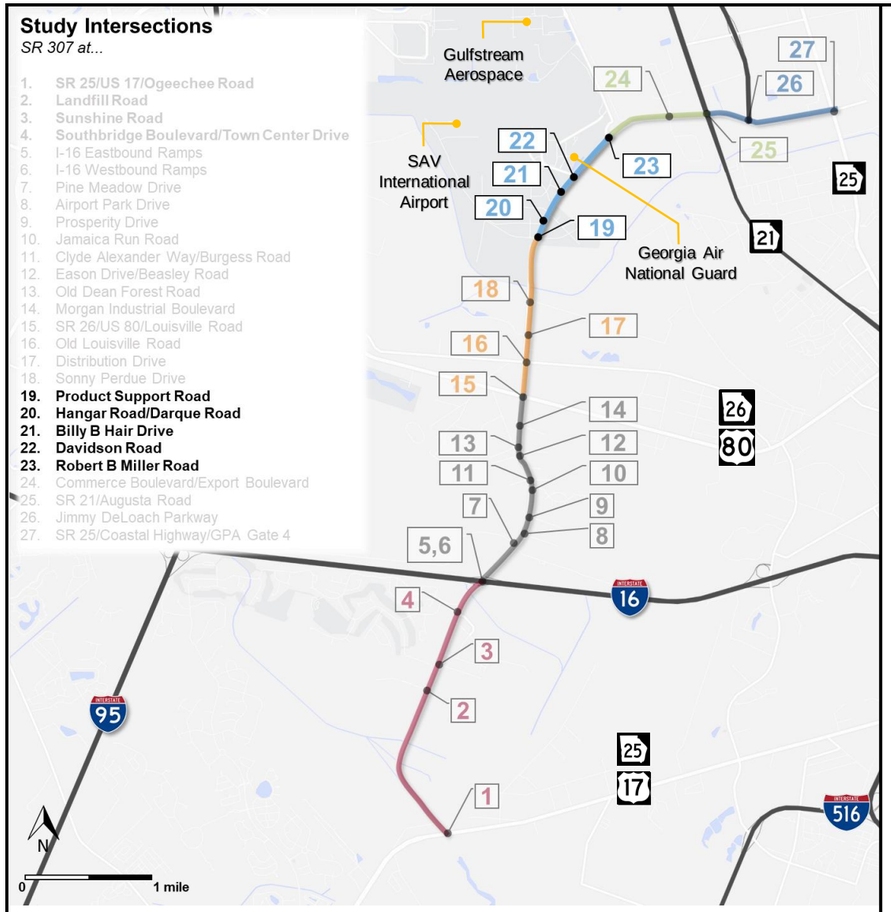
Environmental Features

As shown in **Figure 9**, a freshwater forested/shrub wetland spans the length of Segment 4 along the eastern frontage of SR 307 limits development potential throughout the 1-mile-long stretch beyond that which already exists. Nevertheless, the study team has learned of plans for a new industrial development with access to SR 307 via Davidson Road.

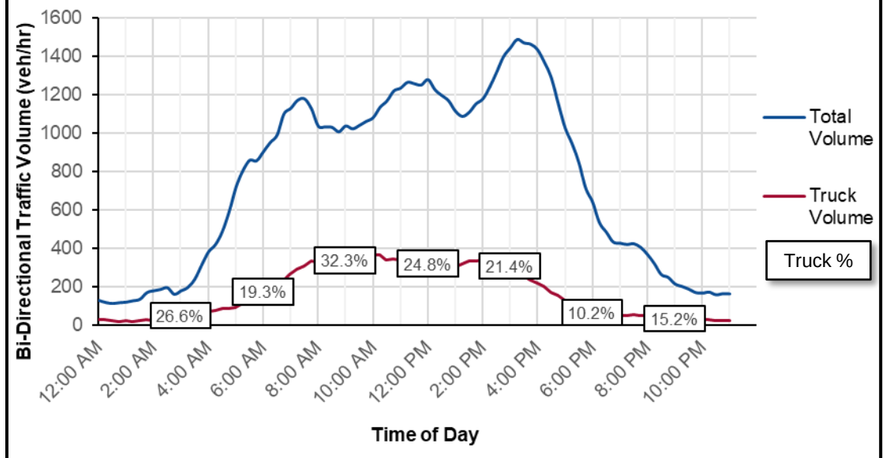
Study Intersections

SR 307 at...

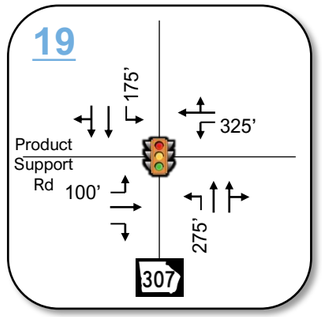
1. SR 25/US 17/Ogeechee Road
2. Landfill Road
3. Sunshine Road
4. Southbridge Boulevard/Town Center Drive
5. I-16 Eastbound Ramps
6. I-16 Westbound Ramps
7. Pine Meadow Drive
8. Airport Park Drive
9. Prosperity Drive
10. Jamaica Run Road
11. Clyde Alexander Way/Burgess Road
12. Eason Drive/Beasley Road
13. Old Dean Forest Road
14. Morgan Industrial Boulevard
15. SR 26/US 80/Louisville Road
16. Old Louisville Road
17. Distribution Drive
18. Sonny Perdue Drive
19. **Product Support Road**
20. **Hangar Road/Darque Road**
21. **Billy B Hair Drive**
22. **Davidson Road**
23. **Robert B Miller Road**
24. Commerce Boulevard/Export Boulevard
25. SR 21/Augusta Road
26. Jimmy DeLoach Parkway
27. SR 25/Coastal Highway/GPA Gate 4

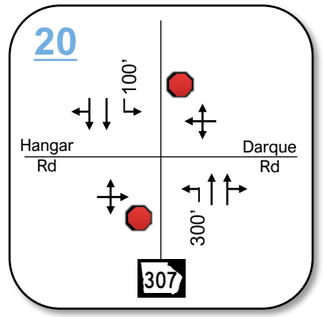


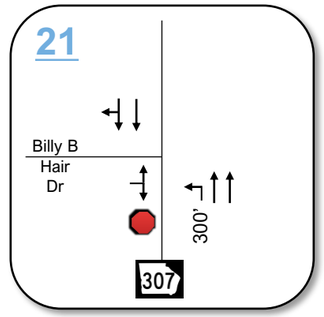
Segment Average Traffic Volume & Truck % by Time of Day

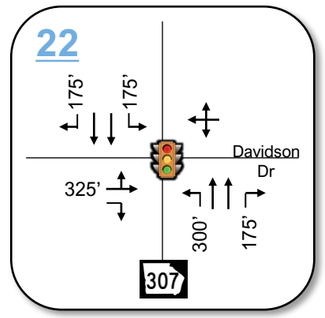


Existing Intersection Geometry & Traffic Control









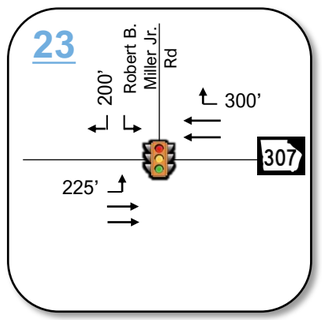


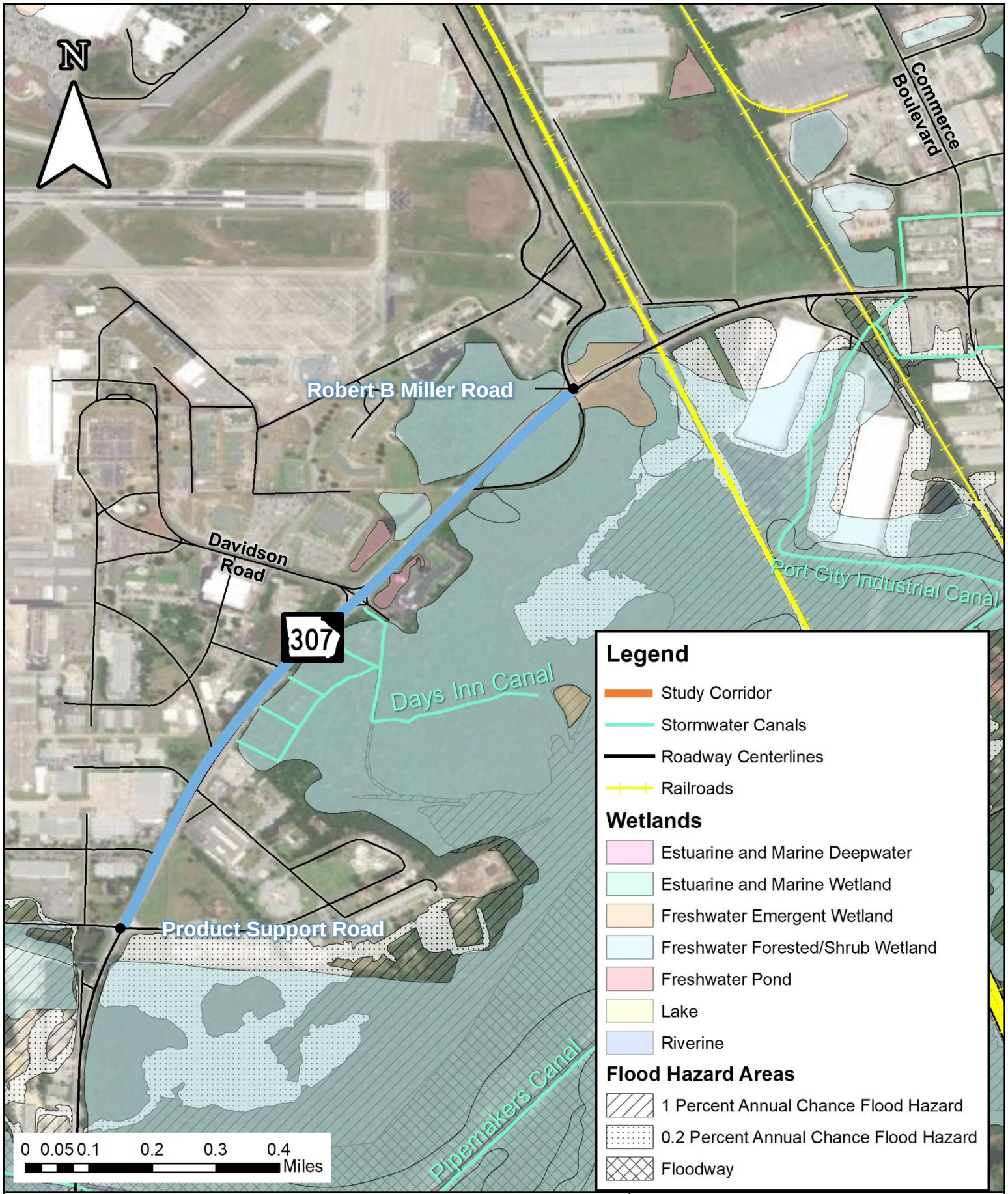
Photo: Pedestrian Facilities at SR 307 Intersection with Davidson Road

Photo: SR 307 at Hangar Road/Darque Road Adjacent to Gulfstream Facility

Photo: Pedestrian Signage at SR 307 Intersection with Robert B Miller Road

SR 307 Corridor Study – Existing Conditions/Needs Assessment

Figure 8 – Study Intersections & Key Characteristics: Segment 4 – Airport



SR 307 CORRIDOR STUDY

Kimley»Horn

Figure 9

Segment 4 – Airport

Environmental Features Map

2.1.5 Segment 5 – Industrial North

Segment 5 includes the 0.9-mile-long segment of SR 307 from Robert B Miller Road to SR 21/Augusta Road. Despite this relatively short length, this segment exhibits unique characteristics relative to the rest of the SR 307 corridor, including three highway-rail at-grade crossings and dense industrial development along its frontage. Key characteristics of this segment are summarized in **Table 5**, and existing geometry, traffic volume by time of day, and field-collected photographs are provided in **Figure 10**. Environmental features along this segment are summarized in **Figure 11**.

Traffic Operations

Segment 5 AADT estimates for 2021 range between 14,000 VPD and 17,000 VPD with truck percentages between 12% and 47% from 6:00 AM to 6:00 PM. Field observations confirm that truck volumes and traffic operations along this segment of the SR 307 corridor are heavily influenced by activity at the GCT. As evidenced in the photos in **Figure 10**, the initial spike in early-morning port activity coincides with heavy commuting traffic on southbound SR 21/Augusta Road, which leads to significant queueing on the southbound approach to the intersection with SR 307. By 7:50 AM, field-observed queues extended beyond Grange Road (approximately 0.6 miles north of SR 307) on southbound SR 21/Augusta Road. On eastbound SR 307, queues consistently spilled back to the crossbuck pavement markings (approximately 700 feet west of SR 21/Augusta Road) due to the large volume of heavy truck traffic and available green time provided during the signal cycle.

Nearly 75 feet of vehicle storage is lost on all lanes of the eastbound approach on SR 307 due to the proximity of a CSXT highway-rail at-grade crossing located just under 150 feet west of the intersection with SR 21/Augusta Road. As a result, there is only enough space for two tractor-trailers to store at the stop line of the main intersection, and the saturation flow rate (i.e., maximum number of vehicles that can be processed on this approach when operating at capacity) is reduced due to the slowing of vehicles as they traverse the at-grade railroad crossing. Furthermore, from a passenger car's perspective, the signal heads at the main intersection are difficult to see when stopped behind a tractor trailer, creating a tendency to accelerate across the railroad tracks and through the intersection with SR 21/Augusta Road more cautiously.

As demonstrated through field observations, capacity analysis, and existing crash history, the intersection of SR 21/Augusta Road with SR 307 is likely the most critical node within the study network. A few noteworthy considerations include:

- SR 21/Augusta Road serves as a major hurricane evacuation route and commuting corridor.
- SR 307 serves as a gateway to the Port of Savannah, servicing GPA Gate 4 – one of the two busiest truck access points by volume – and connects to heavy industrial land uses near SR 26/US 80/Louisville Road.
- Daily truck percentages exceed 55% on this segment of SR 307, while SR 21/Augusta Road exhibits a daily truck percentage of only 9% based on data from GDOT count station 051-0118.
- Between 2015 and 2019, three of the nine fatal crashes along the SR 307 study corridor occurred at or near the intersection with SR 21/Augusta Road. Of these, two involved a collision between a tractor-trailer and a passenger car.

Each of these bullet points underscores a primary need and opportunity along this segment of the SR 307 corridor: separation of passenger car and heavy truck traffic. Existing data shows that the interaction between the passenger car and truck traffic streams during the peak periods is a hindrance to both operations and safety. Minimizing this interaction and otherwise improving the efficiency of the corridor's bottleneck at SR 21/Augusta Road are integral to supporting continued growth at the Port of Savannah while maintaining the utility of SR 307 as a vital connecting route and SR 21/Augusta Road as a key regional arterial.

Roadway Geometry/Access Management

As noted for Segment 3, heavy truck origin-destination patterns drive much of the operational characteristics of the SR 307 corridor between SR 26/US 80/Louisville Road and the GCT. Within the past five years, Jimmy DeLoach Parkway was extended to SR 307, and it provides access to I-95 via a limited access facility (completed in 2016). Interestingly, the dual southbound left-turn lanes on SR 21/Augusta Road do not appear necessary based on field observations, as trucks now have a more advantageous route for accessing GCT Gate 4 from I-95 and other origins north of the corridor. A reduction from two to one southbound left-turn lane would provide additional right-of-way for future widening of SR 21/Augusta Road to tie into the existing six-lane section that begins at Smith Avenue to the south. Roadway widening, grade separation, or alternative intersection designs at the intersection with SR 307 could improve operational efficiency and reduce vehicular conflict points.

Three highway-rail at-grade crossings traverse SR 307 within a 0.7-mile-long section, and two of these railways are highly trafficked during the heart of an average workday:

- USDOT Crossing ID 855067U (approximately 0.12 miles east of Robert B Miller Road)
  - Operated by Norfolk Southern
  - 13 Day Through Trains (6 AM – 6 PM)
  - 3 Night Through Trains (6 PM – 6 AM)
  - 12 Switching Trains
- USDOT Crossing ID 635113L (approximately 0.4 miles east of Robert B Miller Road)
  - Operated by CSX Transportation with joint Amtrak service
  - 2 Day Through Trains (6AM – 6PM)
  - 4 Night Through Trains (6PM – 6AM)
  - 3 Switching Trains
- USDOT Crossing ID 632473Y (approximately 150 feet west of SR 21/Augusta Road)
  - Operated by CSX Transportation with joint Amtrak service
  - 8 Day Through Trains (6AM – 6PM)
  - 9 Night Through Trains (6PM – 6AM)
  - 1 Switching Train

The crossing nearest Robert B Miller Road, USDOT Crossing ID 855067U, averages one train per hour, between 6AM and 6PM, while the crossing nearest SR 21/Augusta Road, USDOT Crossing ID 632473Y, serves approximately one train every 1.5 hours during the same period. The USDOT Crossing Inventory Form for the latter also notes that the average speed of trains crossing SR 307 is between 60 MPH and

80 MPH. Though only one through train was observed in the field, at USDOT Crossing ID 855067U, these frequent interruptions to through traffic during peak periods of the day likely exacerbate existing operational deficiencies along this segment of the SR 307 corridor. Additionally, the limited spacing between USDOT Crossing ID 632473Y and SR 21/Augusta Road has the potential to present safety concerns, especially in the context of substantial heavy truck traffic.

Table 5: Segment 5 – Industrial North Corridor Characteristics

Geometric and Functional Characteristics	
Extents	Robert B Miller Road SR 21/Augusta Road (0.9 Miles)
Typical Cross Section	**Typical Section:** Four-Lane Divided with a Raised Median **Typical Lane Widths:** 12' Travel Lanes, Curb and Gutter
Speed Limit	45 MPH
Number of Driveways	7 (8 Driveways/Mile)
Number of Median Openings	5
Number of Signalized Intersections	2
Major Intersecting Roadways	
SR 21/Augusta Road	**Cross Section:** Four-Lane Divided with Depressed Median **Speed Limit:** 45 MPH **2021 AADT[1]:** 31,000 VPD north of SR 307 to 37,000 VPD south of SR 307
Traffic Characteristics	
Existing Traffic Volume Data[1]	**2021 AADT[1]:** 14,000 VPD south to 17,000 VPD north **Bi-Directional Peak Hour Volume:** 1,000 VPH south to 1,200 VPH north **K Factor:** = 7.1% **Daily Truck Percentage:** 31.4%
Traffic Growth Projections[2]	**10-Year Historic Growth Rate:** N/A **30-Year Travel Demand Model Growth Rate:** 0.0%

[1] Existing traffic volume data represents an average across the 48-hour classification counts collected along the study segment; seasonal and COVID-19 adjustment factors were applied to these AADTs

[2] Traffic growth projections were derived from GDOT historic AADT and CORE MPO Travel Demand Model Outputs (2015 Base Year – 1st Network vs. 2045 Financially Constrained – 6th Network)

Non-Motorist Facilities

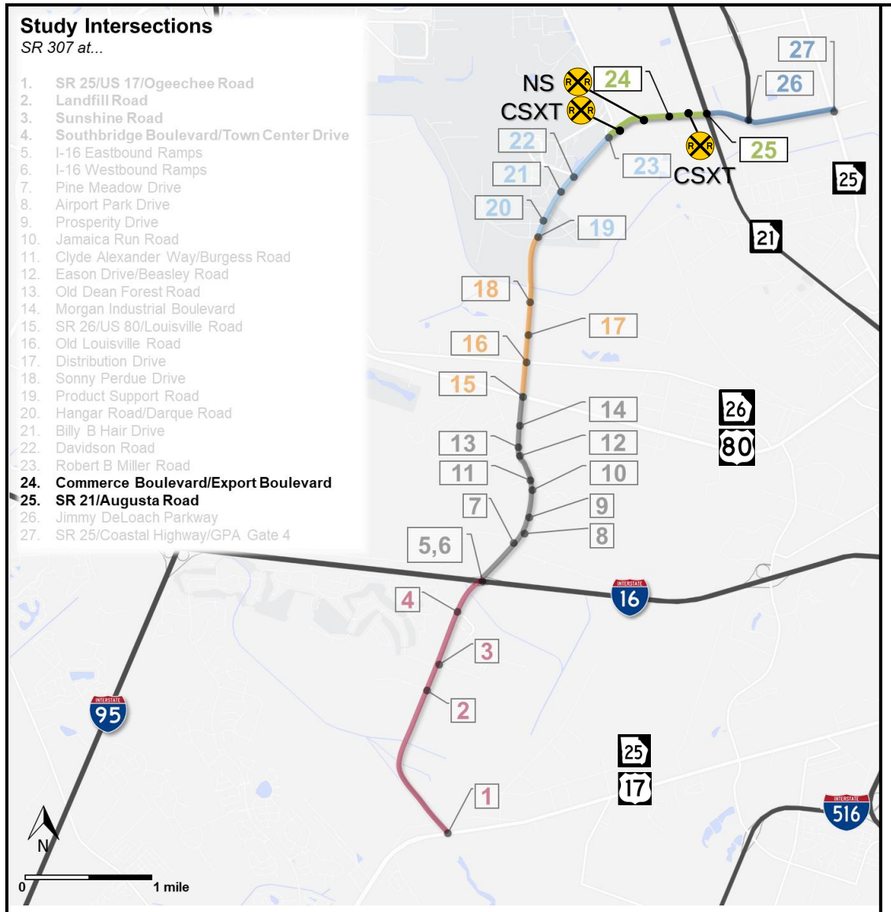
There are currently no pedestrian or bicycle facilities parallel to the Segment 5 corridor. However, as is commonplace across the entire SR 307 study corridor, pedestrian accommodations (e.g., pedestrian signal heads and marked crosswalks) are provided at the intersections of SR 307 with Export Boulevard/Commerce Boulevard and with SR 21/Augusta Road without a supporting sidewalk or shared use path. The CORE MPO *Non-Motorized Transportation Plan* recommends a shared use path along the entire length of the SR 307 corridor.

Environmental Features

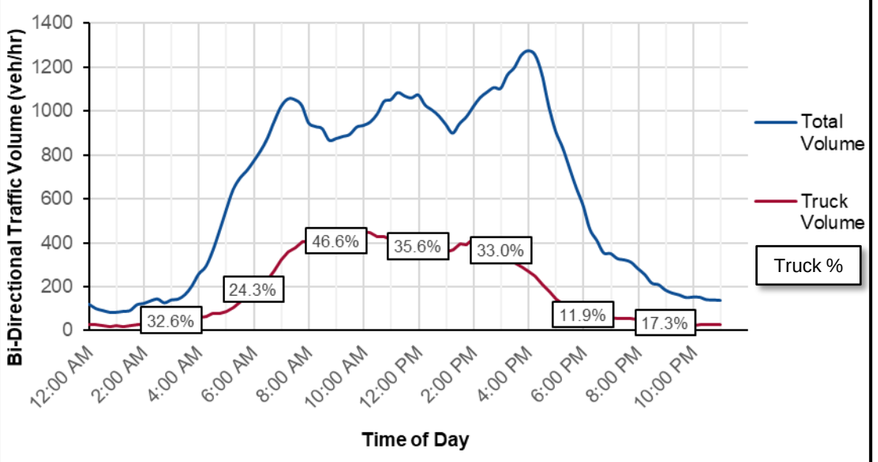
As shown in **Figure 11**, a freshwater forested/shrub wetland exists along the south frontage of the Segment 5 corridor beginning just west of the highway-rail at-grade crossing adjacent to the Westport development. Pipemakers Canal crosses SR 21/Augusta Road just south of SR 307 before terminating at the Savannah River.

Study Intersections
SR 307 at...

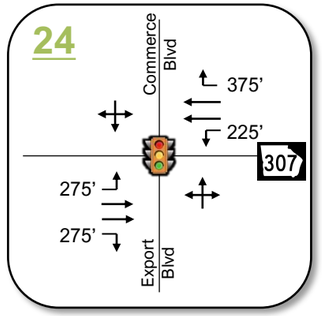
1. SR 25/US 17/Ogeechee Road
2. Landfill Road
3. Sunshine Road
4. Southbridge Boulevard/Town Center Drive
5. I-16 Eastbound Ramps
6. I-16 Westbound Ramps
7. Pine Meadow Drive
8. Airport Park Drive
9. Prosperity Drive
10. Jamaica Run Road
11. Clyde Alexander Way/Burgess Road
12. Eason Drive/Beasley Road
13. Old Dean Forest Road
14. Morgan Industrial Boulevard
15. SR 26/US 80/Louisville Road
16. Old Louisville Road
17. Distribution Drive
18. Sonny Perdue Drive
19. Product Support Road
20. Hangar Road/Darque Road
21. Billy B Hair Drive
22. Davidson Road
23. Robert B Miller Road
24. **Commerce Boulevard/Export Boulevard**
25. **SR 21/Augusta Road**
26. Jimmy DeLoach Parkway
27. SR 25/Coastal Highway/GPA Gate 4



Segment Average Traffic Volume & Truck % by Time of Day



Existing Intersection Geometry & Traffic Control



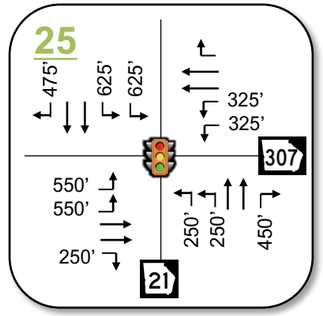


Photo: SR 307 at SR 21/Augusta Road Highway-Rail Grade Crossing (Looking West)

Photo: Queueing at SR 307 Intersection with SR 21/Augusta Road (AM Peak Period)

Photo: Queueing through Highway-Rail Grade Crossing at SR 307 Intersection with SR 21/Augusta Road (AM Peak Period)

Photo: Queueing at SR 307 Intersection with SR 21/Augusta Road (PM Peak Period)

SR 307 Corridor Study – Existing Conditions/Needs Assessment

Figure 10 – Study Intersections & Key Characteristics: Segment 5 – Industrial North

SR 307 CORRIDOR STUDY

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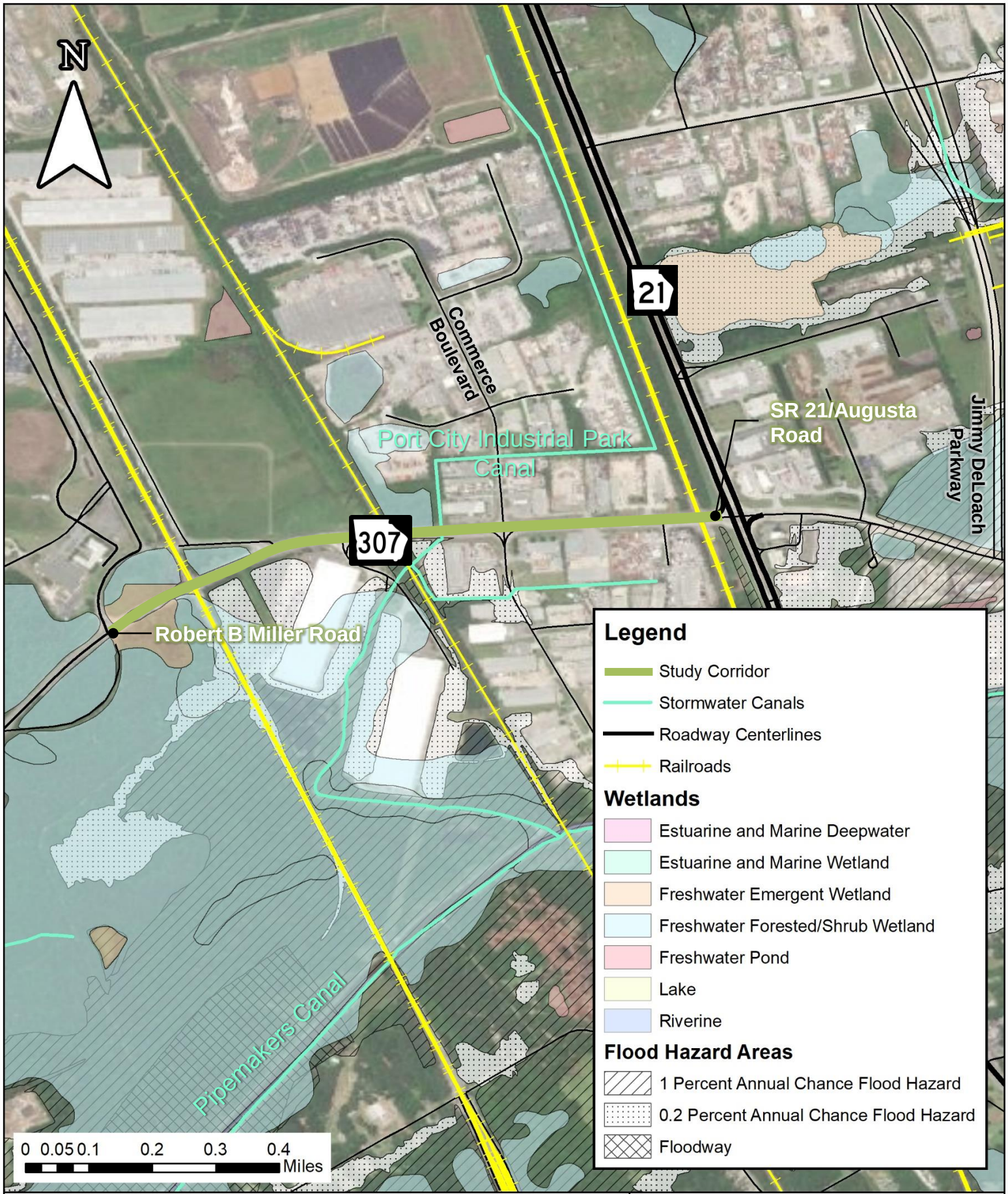


SR 307 CORRIDOR STUDY

Kimley»Horn

Figure 11

Segment 5 – Industrial North

Environmental Features Map

2.1.6 Segment 6 – Port Gateway

Segment 6 is approximately 1.1 miles in length, and it serves as the "last mile" for thousands of freight trips originating from or bound for the Port of Savannah's Garden City Terminal each day. East of SR 21/Augusta Road, this segment intersects Jimmy DeLoach Parkway, a freight-focused facility recently extended (2016) to provide a direct, limited access connection between I-95 and the Port of Savannah. Key characteristics of Segment 6 are summarized in **Table 6**, and existing geometry, traffic volume by time of day, and field-collected photographs are provided in **Figure 12**. Environmental features along this segment are summarized in **Figure 13**.

Traffic Operations

Segment 6 AADT estimates for 2021 range between 6,000 VPD entering/exiting GCT Gate 4 and 13,000 VPD east of SR 21/Augusta Road, with significant heavy truck traffic along the segment between 6:00 AM and 6:00 PM. Based on count data collected as part of this study, the portion of trucks in the traffic stream on this segment plateaus at 80% between 7:00 AM and 5:00 PM before rapidly decreasing to an average of 15% outside this time period. As noted for Segment 5, surges of truck traffic to and from the GCT coincide with elevated commuting traffic volumes on SR 21/Augusta Road and at nearby commercial activity centers (e.g., Circle K gas station and convenience store). Consequently, delay to freight and passenger car traffic on Segment 6 is focused at the intersection with SR 21/Augusta Road – particularly during the PM peak period – where field observations indicated that queues on the westbound approach of SR 307 occasionally extended upwards of 1,000 feet. During this same period, through traffic on westbound SR 307 sometimes requires more than one signal cycle to proceed through the intersection with SR 21/Augusta Road.

Similar operations were observed mid-afternoon between 1:00 PM and 3:00 PM, as indicated by the sharp initial "spike" in traffic volumes on Segment 6 beginning around 2:00 PM illustrated in **Figure 12**. At 2:30 PM, field-observed queues extended from SR 21/Augusta Road to nearly Jimmy DeLoach Parkway on westbound SR 307. Farther east, moderate congestion was observed at GCT Gate 4 during the AM peak period, during which queues briefly extended beyond the SR 307 grade-separated crossing over the Mason Mega-Rail at 7:45AM. This grade separation is located approximately 1,700 feet west of the signalized intersection with SR 25/Coastal Highway. These queues quickly dissipated by 8:00 AM, and minimal operational issues were observed elsewhere on Segment 6.

Roadway Geometry/Access Management

A raised, concrete median is present along Segment 6 between SR 21/Augusta Road and the GCT. Both commercial driveways serving the fast-food and hotel land uses in the southeast quadrant of the intersection of SR 307 with SR 21/Augusta Road are restricted to right-in/right-out only. Accordingly, all associated traffic bound for southbound SR 21/Augusta Road must make a U-turn on either SR 21/Augusta Road (to the north) or SR 307 (to the east). On SR 307, an unsignalized median opening exists approximately 800 feet east of SR 21/Augusta Road, but field observations indicate that queues on westbound SR 307 may often extend beyond this location. Alternatively, signalized U-turns may occur at the intersection with Jimmy DeLoach Parkway. In general, existing retail land uses near the western terminus of Segment 6 and potential for future infill development west of the grade-separated Mason Mega-Rail are limited by access constraints.

Table 6: Segment 6 – Port Gateway Corridor Characteristics

Geometric and Functional Characteristics	
Extents	SR 21/Augusta Road to SR 25/Coastal Highway (1.1 Miles)
Typical Cross Section	**Typical Section:** Four-Lane Divided with a Raised Median **Typical Lane Widths:** 12' Travel Lanes, 6'-10' Outside Shoulder
Speed Limit	45 MPH
Number of Driveways	8 (8 Driveways/Mile)
Number of Median Openings	4
Number of Signalized Intersections	2
Major Intersecting Roadways	
Jimmy DeLoach Parkway	**Cross Section:** Four-Lane Divided with Depressed Median **Speed Limit:** 55 MPH **2021 AADT[1]:** 11,000 VPD near SR 307
SR 25/Coastal Highway	**Cross Section:** Two-Lane Undivided **Speed Limit:** 35 MPH south of SR 307 and 45 MPH north of SR 307 **2021 AADT[1]:** 8,000 VPD north of SR 307 and 7,000 VPD[2] south of SR 307
Traffic Characteristics	
Existing Traffic Volume Data[1]	**2021 AADT[1]:** 6,000 VPD at GCT Gate 4 to 13,000 VPD east of SR 21/Augusta Road **Bi-Directional Peak Hour Volume:** 500 VPH GCT Gate 4 to 1,250 VPH west **K Factor:** = 9.7% **Daily Truck Percentage:** 57.6%
Traffic Growth Projections[3]	**10-Year Historic Growth Rate:** 3.0% **30-Year Travel Demand Model Growth Rate:** 0.1%

[1] Existing traffic volume data represents an average across the 48-hour classification counts collected along the study segment; seasonal and COVID-19 adjustment factors were applied to these AADTs

[2] Ongoing construction on I-16 influenced traffic counts at this location

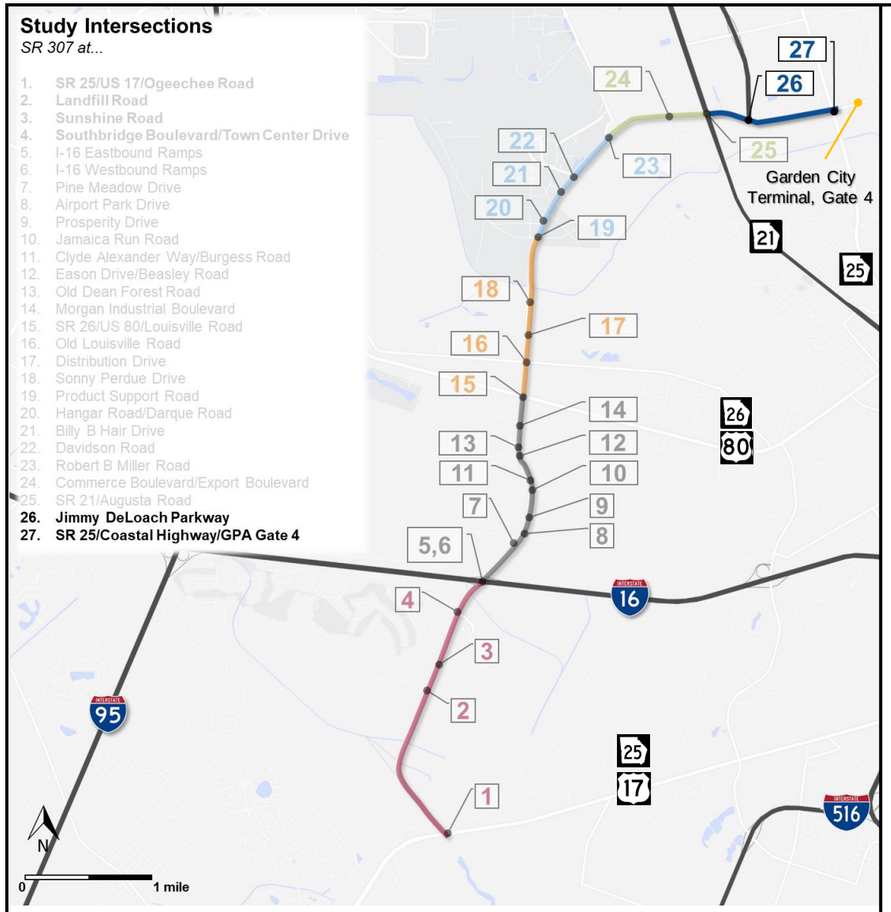
[3] Traffic growth projections were derived from GDOT historic AADT and CORE MPO Travel Demand Model Outputs (2015 Base Year – 1st Network vs. 2045 Financially Constrained – 6th Network)

Non-Motorist Facilities

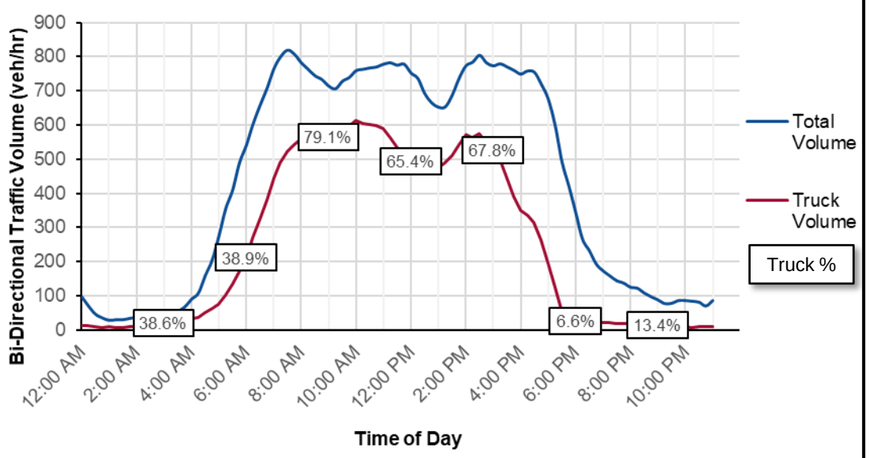
No pedestrian and bicycle facilities are present along Segment 6. As shown in **Figure 12**, pedestrian accommodations (e.g., pedestrian signal heads and marked crosswalks) are provided at the intersection with Jimmy DeLoach Parkway without a supporting sidewalk or shared use path.

Environmental Features

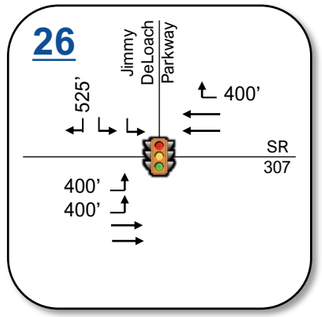
Most of the undeveloped land along Segment 6 is characterized by freshwater forested/shrub wetland that drains to the Pipemakers Canal located approximately 0.25 miles south of the corridor. The majority of the 1.1-mile-long segment lies within the AE flood zone (i.e., 1% annual risk for flooding).



Segment Average Traffic Volume & Truck % by Time of Day



Existing Intersection Geometry & Traffic Control



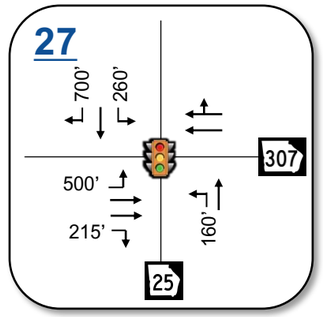


Photo: Pedestrian Facilities at SR 307 Intersection with Jimmy DeLoach Parkway

Photo: Queueing at SR 307 Intersection with Jimmy DeLoach Parkway

Photo: Queueing at SR 307 Intersection with SR 25/Coastal Highway/GCT Gate 4

Photo: SR 307 at Garden City Terminal/GCT Gate 4

SR 307 Corridor Study – Existing Conditions/Needs Assessment

Figure 12 – Study Intersections & Key Characteristics: Segment 6 – Port Gateway

SR 307 CORRIDOR STUDY

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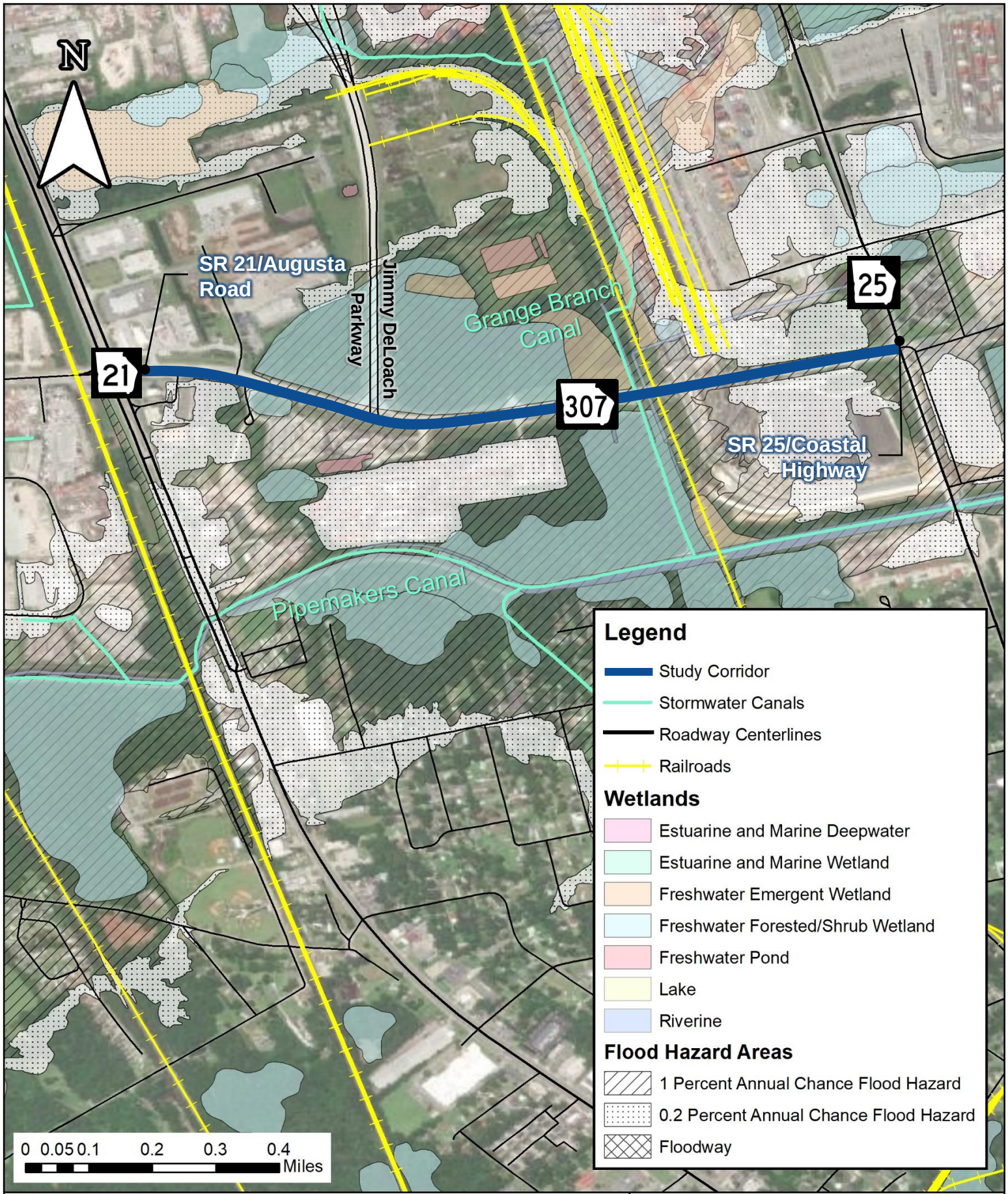

SR 307 CORRIDOR STUDY

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Figure 13

Segment 6 – Port Gateway

Environmental Features Map

2.2 Capacity Analysis

The segment characteristics and field observations summarized previously were supplemented with existing traffic data to develop a model of the 8.5-mile-long SR 307 corridor in Synchro Version 11 software. This model was utilized 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. Though the goal of this study is to identify and prioritize future improvement projects in support of the CORE MPO MTP process, the existing capacity analyses described in this section are critical for establishing a baseline for horizon year alternatives evaluation. Combined with field observations, these analyses provide an estimate of typical traffic conditions throughout the corridor (i.e., those likely to be observed on an average weekday while school is in session). The subsections that follow detail the analysis methodology, existing traffic volume development, intersection-level capacity analysis results, segment-level capacity analysis results, and key findings from these efforts.

2.2.1 Analysis Methodology

The evaluations presented throughout the remainder of this section make frequent reference to the level of service (LOS) of a given segment or intersection approach. As defined by the *Highway Capacity Manual, 6th Edition* (HCM6), LOS is used to convert numeric performance measures into a letter grade-based system representative of the average traveler's perception of the operating efficiency of a transportation facility or intersection. HCM6 defines six letter grades, LOS A through LOS F, where LOS A represents the best operating conditions from the traveler's perspective, and LOS F represents the worst. However, it should be noted that the underlying complexity of traffic flow cannot be reduced to a single letter grade, and comparative analysis involves a variety of other variables, such as control delay, travel speeds, and queue length. Furthermore, roadways are not typically designed to provide operations commensurate with LOS A throughout the entirety of the day. Rather, roadways are designed, constructed, and operated such that some decline in LOS is to be expected during the peak periods of travel. In urbanized areas, LOS D is a typical target utilized by agencies.

Intersection-Level Analysis

Intersection-level traffic analyses were performed in Synchro Version 11 software, which applies methodologies prescribed by HCM6 to evaluate the operating characteristics of an intersection under given geometric, traffic control, and traffic demand scenarios. The LOS for two-way stop-controlled (TWSC) intersections is determined based on control delay on the minor street approaches and for the major street left-turn movements during the AM and PM peak hours of travel. It should be noted that it is typical for the minor street approaches of a TWSC intersection—particularly left-turn movements onto the major street—to experience long delays during the peak hours of travel. However, most of the traffic moving through the intersection (i.e., major street through movements) experiences minimal delay. The HCM6 methodology considers the possibility of two-stage turning movements via storage of up to two vehicles within a TWLTL, when present.

Table 7 lists the control delay-based LOS thresholds published in HCM6 for unsignalized intersections, along with the nomenclature used to describe each LOS grouping herein.

Table 7: Vehicular LOS Control Delay Thresholds for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle [sec/veh]	
A	≤ 10	Short Delays
B	> 10 – 15	
C	> 15 – 25	
D	> 25 – 35	Moderate Delays
E	> 35 – 50	
F	> 50	Long Delays

At signalized intersections, all movements and approaches are likely to experience some delay during the peak hours of travel, and drivers are more likely to accept longer delays as they await their "turn" to proceed through the intersection. As a result, the control delay threshold bins are larger for signalized intersections, and LOS is typically reported by approach and for the overall intersection. During the peak hours of travel, one or more movements may operate poorly even while the overall intersection operates at a satisfactory LOS. **Table 8** summarizes the control delay-based LOS thresholds published in HCM6 for signalized intersections.

Table 8: Vehicular LOS Control Delay Thresholds for Signalized Intersections

Level of Service	Average Control Delay per Vehicle [sec/veh]
A	≤ 10
B	> 10 – 20
C	> 20 – 35
D	> 35 – 55
E	> 55 – 80
F	> 80

Segment-Level Analysis

Segment-level capacity analysis was performed by applying the methodology described in Chapter 16/Urban Street Facilities 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 subsegment, 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 Version 11. The BFFS of a given segment is estimated based on Equation 18-3 and Exhibit 18-11 in HCM6, each 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 9**. The LOS for an urban street facility composed of multiple subsegments 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, likely due to bottleneck conditions and long delays experienced at one of its boundary intersections.

Table 9: Vehicular LOS Thresholds for Urban Street Segments (adapted from HCM6 Exhibit 16-3)

Level of Service	ATS as % of BFFS	
A	≥ 80%	Stable Flow
B	67% - 80%	
C	50% - 67%	
D	40% - 50%	Unstable Flow
E	30% - 40%	
F	< 30%	Congested Flow

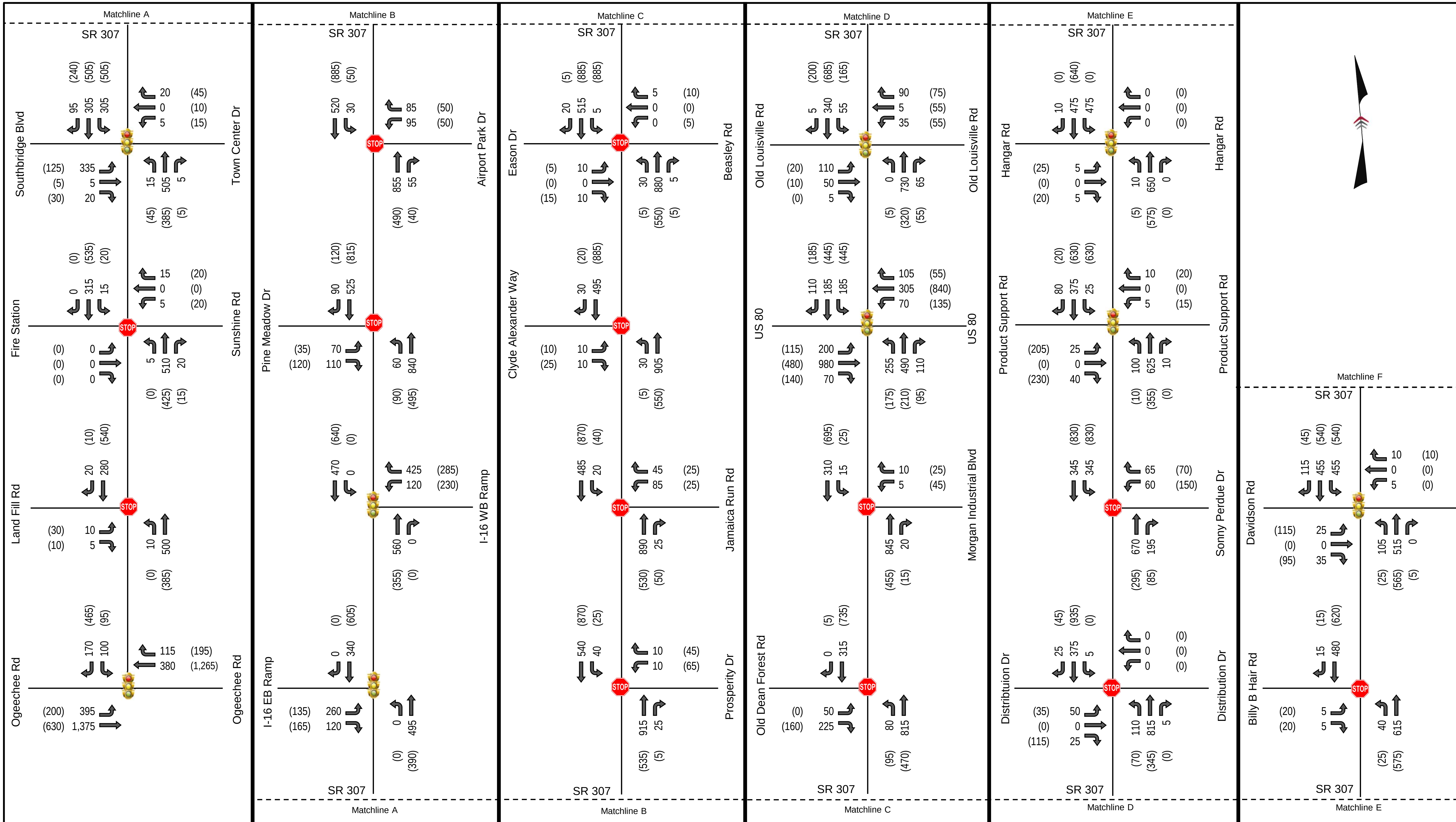
2.2.2 Traffic Volume Development

Existing turning movement counts (TMCs) were collected at each of the 27 study intersections listed in **Section 2.1** during the AM (6:00 AM to 9:00 AM) and PM (3:00 PM to 6:00 PM) peak periods of travel on Tuesday, March 23, 2021. In accordance with guidelines set forth in the GDOT *Design Traffic Forecasting Manual*, 48-hour classification counts were also collected at 127 locations, including 26 locations outside of the core project study area, on Tuesday, March 23, 2021 and Wednesday, March 24, 2021 to facilitate the development of 2021 AADT estimates and establish an understanding of the distribution of traffic volumes and vehicle classes over the course of a typical day. To account for the continued influence of COVID-19 on travel patterns, these multi-day counts were adjusted using GDOT 2019 Traffic Factors and compared to historic, continuous count station data, where available. Based on this comparison, the adjustment factors listed in **Table 10** were applied to the raw daily and peak hour traffic volumes.

Table 10: COVID-19 Adjustment Factors

Roadway Segment	Adjustment Factor
SR 307 south of I-16	1.03
I-16 Eastbound Off-Ramp	1.33
I-16 Eastbound On-Ramp	1.12
I-16 Westbound On-Ramp	1.35
I-16 Westbound Off-Ramp	1.14
SR 307 between I-16 and Old Dean Forest Road	1.08
SR 307 between Old Dean Forest Road and Mikkel Avenue	1.13
SR 307 between Mikkel Avenue and Robert B Miller Road	1.19
SR 307 east of Robert B Miller Road	1.13
SR 26/US 80/Louisville Road	1.08
SR 21/Augusta Road	1.06
SR 25/Coastal Highway north of SR 307	1.00
SR 25/Coastal Highway south of SR 307	1.00
Local Roadways	1.00

Further detail regarding the development of 2021 Existing AADT and directional design hourly volume (DDHV) estimates will be provided as part of traffic forecasting documentation included in the SR 307 Corridor Study final report. Existing peak hour traffic volumes used as part of the subject capacity analyses are summarized in **Figure 14** and **Figure 15**.



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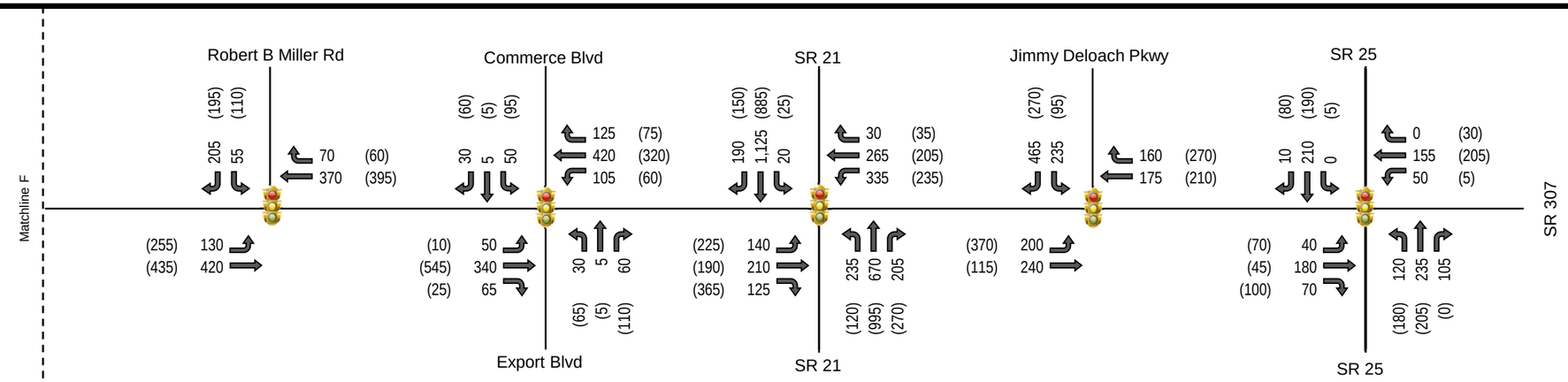
Legend

xx	AM Peak-Hour Traffic Volumes
(xx)	PM Peak-Hour Traffic Volumes

SR 307 CORRIDOR STUDY

Figure 14 - 2021 Existing Peak Hour Traffic Volumes

Intersections 1-22



Kimley»Horn

Legend

xx	AM Peak-Hour Traffic Volumes
(xx)	PM Peak-Hour Traffic Volumes

SR 307 CORRIDOR STUDY

Figure 15 - 2021 Existing Peak Hour Traffic Volumes

Intersections 23-27

2.2.3 Intersection Analysis Results

Capacity analysis results for each of the 27 study intersections are summarized by contextual segment in **Table 11** (AM Peak Hour) and **Table 12** (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 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 – Community Gateway

Each of the intersections along Segment 1 operate at LOS C or better overall during the AM and PM peak hours of travel. As noted in **Section 2.1.1**, SR 307 was widened from a two-lane, undivided cross section to a four-lane, divided cross section with a raised median and turn bays in 2015. Based on existing traffic volume data, capacity analysis, and field observations, this segment currently operates under capacity. However, moderate delays and queueing were observed at the intersection of SR 307 with SR 25/US 17/Ogeechee Road. The southbound approach of this intersection operates at LOS F during the AM and PM peak hours of travel with a maximum queue length of just under 250 feet for the southbound right-turn lane as estimated in SimTraffic software. Field observations conducted during the PM peak hour indicate that queues in the southbound right-turn lane may reach up to 350 feet on occasion, which exceeds the available storage for the rightmost (yield-controlled) right-turn lane.

Likewise, the maximum simulated queue length for the eastbound left-turn lane on SR 25/US 17/ Ogeechee Road is greater than 200 feet, and field observations indicate that available storage for this turn bay is frequently exceeded during both peak periods. In each case, a long signal cycle length, 150 seconds during the AM peak period and 170 seconds during the PM peak period, is a potential contributor to existing operational deficiencies at the intersection.

Segment 2 – Industrial South

Like Segment 1, most of the intersections along Segment 2 operate at LOS C or better overall during the AM and PM peak hours of travel based on capacity analysis results. Of the stop-controlled minor street intersection approaches in this segment, Airport Park Drive exhibits the highest peak hour delay, operating at LOS D during the AM peak hour with a maximum queue length of approximately 230 feet as estimated in SimTraffic software. This intersection provides direct access to industrial development on Airport Park Drive, and it currently serves as the only access to SR 307 for Savannah Pines Mobile Home Park via Old Dean Forest Road. Based on capacity analysis results, the northbound approach of Old Dean Forest Road is likely to be frequently blocked by queues on westbound Airport Park Drive during the AM peak hour. However, an active construction project will signalize the intersection of SR 307 and Pine Meadow Drive and extend a fourth leg from the intersection to the Savannah Pines Mobile Home Park. Also, Airport Park Drive will become a right-in/right-out intersection at SR 307 as part of the construction project.

Table 11: 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]
			NB	*SB*	*EB*	*WB*	
Segment 1 – Community Gateway							
1	SR 307 at SR 25/US 17/Ogeechee Road	Signalized	-	F (80.8)	A (3.5)	A (6.7)	A (7.1)
2	SR 307 at Landfill Road	TWSC	A (8.0)	A (0.0)	B (11.6)	-	B (11.6)
3	SR 307 at Sunshine Avenue	TWSC	A (8.0)	A (8.6)	A (0.0)	B (12.3)	B (12.3)
4	SR 307 at Southbridge Boulevard	Signalized	C (28.4)	B (17.4)	C (30.4)	D (45.0)	C (26.2)
Segment 2 – Industrial South							
5	SR 307 at I-16 EB Ramps	Signalized	B (19.1)	D (40.7)	D (45.7)	-	C (31.5)
6	SR 307 at I-16 WB Ramps	Signalized	B (17.9)	B (18.8)	-	B (17.8)	B (18.2)
7	SR 307 at Pine Meadow Drive	TWSC	A (9.0)	A (0.0)	C (22.2)	-	C (22.2)
8	SR 307 at Airport Park Drive	TWSC	A (0.0)	B (10.3)	-	D (26.4)	D (26.4)
9	SR 307 at Prosperity Drive	TWSC	A (0.0)	B (10.6)	-	C (16.2)	C (16.2)
10	SR 307 at Jamaica Run Road	TWSC	A (0.0)	B (10.3)	-	C (24.4)	C (24.4)
11	SR 307 at Clyde Alexander Way	TWSC	A (8.8)	A (0.0)	C (24.6)	A (0.0)	C (24.6)
12	SR 307 at Eason Drive	TWSC	A (8.7)	B (10.0)	C (21.4)	B (11.7)	C (21.4)
13	SR 307 at Old Dean Forest Road	TWSC	A (8.1)	A (0.0)	B (14.1)	-	B (14.1)
14	SR 307 at Morgan Industrial Boulevard	TWSC	A (0.0)	A (9.8)	-	B (13.8)	B (13.8)
Segment 3 – Industrial Central							
15	SR 307 at SR 26/US 80/Louisville Road	Signalized	D (40.2)	D (43.7)	D (37.4)	D (38.4)	D (39.2)
16	SR 307 at Old Louisville Road	Signalized	A (5.3)	A (4.9)	C (22.3)	B (19.6)	A (7.7)
17	SR 307 at Distribution Drive	TWSC	A (8.7)	A (9.6)	F (54.4)	A (0.0)	F (54.4)
18	SR 307 at Sonny Perdue Drive	TWSC	A (0.0)	B (10.8)	-	C (18.3)	C (18.3)
Segment 4 – Airport							
19	SR 307 at Product Support Road	Signalized	B (10.1)	A (9.3)	C (27.6)	C (27.2)	B (10.7)
20	SR 307 at Hangar Road	TWSC	A (8.6)	A (0.0)	C (16.2)	A (0.0)	C (16.2)
21	SR 307 at Billy B Hair Drive	TWSC	A (8.7)	A (0.0)	B (12.6)	-	B (12.6)
22	SR 307 at Davidson Drive	Signalized	A (4.4)	A (9.2)	C (22.6)	C (22.1)	A (6.9)
23	SR 307 at Robert B. Miller Road	Signalized	-	C (27.3)	A (7.9)	B (15.7)	B (14.6)
Segment 5 – Industrial North							
24	SR 307 at Commerce Blvd/Export Blvd	Signalized	D (35.9)	D (37.6)	A (8.4)	B (16.4)	B (15.1)
25	SR 307 at SR 21/Augusta Road	Signalized	D (47.2)	D (45.4)	F (121.4)	F (89.5)	E (63.6)
Segment 6 – Port Gateway							
26	SR 307 at Jimmy DeLoach Parkway	Signalized	-	D (40.8)	B (18.2)	B (11.3)	C (23.0)
27	SR 307 at SR 25/Coastal Highway	Signalized	C (31.3)	C (33.3)	B (19.1)	E (57.6)	C (33.2)

[1] Approach delay reported for left-turn movement only on the major street at unsignalized intersections
[2] Overall intersection delay reported as the worst minor street approach at unsignalized intersections

Table 12: 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]
			NB	*SB*	*EB*	*WB*	
Segment 1 – Community Gateway							
1	SR 307 at SR 25/US 17/Ogeechee Road	Signalized	-	F (90.8)	A (4.2)	A (8.3)	B (10.3)
2	SR 307 at Landfill Road	TWSC	A (8.7)	A (0.0)	B (14.5)	-	B (14.5)
3	SR 307 at Sunshine Avenue	TWSC	A (8.7)	A (8.4)	A (0.0)	C (15.7)	C (15.7)
4	SR 307 at Southbridge Boulevard	Signalized	C (21.8)	B (15.1)	C (22.7)	C (30.2)	B (19.4)
Segment 2 – Industrial South							
5	SR 307 at I-16 EB Ramps	Signalized	B (17.7)	C (29.8)	C (24.2)	A (0.0)	C (24.9)
6	SR 307 at I-16 WB Ramps	Signalized	B (16.1)	C (20.0)	A (0.0)	C (25.0)	C (20.2)
7	SR 307 at Pine Meadow Drive	TWSC	B (10.8)	A (0.0)	C (24.5)	-	C (24.5)
8	SR 307 at Airport Park Drive	TWSC	A (0.0)	A (9.0)	-	C (15.2)	C (15.2)
9	SR 307 at Prosperity Drive	TWSC	A (0.0)	A (9.3)	-	C (15.3)	C (15.3)
10	SR 307 at Jamaica Run Road	TWSC	A (0.0)	A (9.0)	-	B (14.6)	B (14.6)
11	SR 307 at Clyde Alexander Way	TWSC	B (12.4)	A (0.0)	D (26.3)	A (0.0)	D (26.3)
12	SR 307 at Eason Drive	TWSC	B (10.3)	A (9.7)	C (19.6)	C (17.4)	C (19.6)
13	SR 307 at Old Dean Forest Rd	TWSC	B (10.5)	A (0.0)	B (14.0)	-	B (14.0)
14	SR 307 at Morgan Industrial Blvd	TWSC	A (0.0)	A (8.6)	-	B (14.8)	B (14.8)
Segment 3 – Industrial Central							
15	SR 307 at SR 26/US 80/Louisville Road	Signalized	D (35.8)	D (45.9)	D (38.1)	D (40.8)	D (40.6)
16	SR 307 at Old Louisville Road	Signalized	A (3.6)	A (4.4)	C (21.1)	C (23.3)	A (5.9)
17	SR 307 at Distribution Drive	TWSC	B (13.4)	A (0.0)	F (70.6)	A (0.0)	F (70.6)
18	SR 307 at Sonny Perdue Drive	TWSC	A (0.0)	A (9.1)	-	C (21.2)	C (21.2)
Segment 4 – Airport							
19	SR 307 at Product Support Road	Signalized	B (14.4)	B (18.2)	D (37.2)	D (39.1)	C (23.1)
20	SR 307 at Hangar Road	TWSC	A (9.5)	A (0.0)	D (27.5)	A (0.0)	D (27.5)
21	SR 307 at Billy B. Hair Drive	TWSC	A (9.5)	A (0.0)	C (15.3)	-	C (15.3)
22	SR 307 at Davidson Drive	Signalized	A (5.2)	A (9.7)	C (23.9)	A (0.0)	A (8.9)
23	SR 307 at Robert B. Miller Road	Signalized	-	C (30.3)	A (8.6)	B (17.7)	B (16.0)
Segment 5 – Industrial North							
24	SR 307 at Commerce Blvd/Export Blvd	Signalized	F (81.9)	F (93.9)	A (5.5)	A (0.7)	B (16.7)
25	SR 307 at SR 21/Augusta Road	Signalized	C (32.7)	C (28.5)	F (89.0)	F (104.1)	D (50.5)
Segment 6 – Port Gateway							
26	SR 307 at Jimmy DeLoach Parkway	Signalized	-	D (36.3)	C (29.4)	B (14.1)	C (26.2)
27	SR 307 at SR 25/Coastal Highway	Signalized	C (34.1)	D (50.2)	C (24.4)	E (74.1)	D (46.5)

[1] Approach delay reported for left-turn movement only on the major street at unsignalized intersections
[2] Overall intersection delay reported as the worst minor street approach at unsignalized intersections

The I-16 interchange is an existing bottleneck constrained by a narrow bridge approximately 60 feet in width, which provides enough space to accommodate five total travel lanes on SR 307. Based on capacity analysis results derived from HCM6, the eastbound and westbound ramp terminals each operate at LOS C or better overall during the AM and PM peak hours of travel. However, simulation runs conducted in SimTraffic software indicate the following:

- SR 307 at I-16 Eastbound Ramps
    - A maximum simulated queue length of approximately 170 feet and 200 feet for the southbound left-turn movement during the AM and PM peak hours, each of which exceeds available storage
    - A maximum simulated queue length of approximately 320 feet for the southbound through movement during the PM peak hour, which spans nearly the entire length of the bridge
- SR 307 at I-16 Westbound Ramps
    - A maximum simulated queue length of approximately 190 feet and 200 feet for the northbound left-turn movement during the AM and PM peak hours, each of which exceeds available storage
    - A maximum simulated queue length of approximately 1,400 feet for the shared southbound through/right-turn lane, extending beyond the Parker's gas station driveway near Pine Meadow Drive

Though not reflected in HCM6 and SimTraffic results, queues on the eastbound off-ramp to SR 307 occasionally extended to mainline I-16 during the AM peak hour. GDOT PI No. 0013727 will widen the existing bridge and convert the I-16 at SR 307 interchange to a diverging diamond configuration. This project is under construction with a substantial completion date of July 2023. Associated improvements are expected to improve operations on SR 307 and will be incorporated in analysis of future conditions.

Segment 3 – Industrial Central

Along Segment 3, the intersection of SR 307 with SR 26/US 80/Louisville Road is a critical node connecting two major freight corridors. Given the heavy volume of turning truck traffic throughout the day, capacity analysis results suggest that each approach of this intersection operates at LOS D with moderate delay during the AM and PM peak hours. Maximum simulated queue lengths from SimTraffic exceed the striped left-turn storage on all approaches of the intersection during one or both peak periods, but a continuous TWLTL provides space for queues to spill back without hampering through traffic progression. As noted earlier in this report and discussed in the next section, field-observed congestion was worse than that reported in **Table 11**, **Table 12**, and SimTraffic outputs.

The stop-controlled eastbound approach of Distribution Drive operates with long delays during the AM and PM peak hours in Segment 3. However, maximum simulated queue lengths are less than 175 feet, which is equivalent to seven passenger car lengths or 2.5 tractor-trailer lengths.

Segment 4 – Airport

On Segment 4, each intersection operates at LOS C or better overall during the AM peak hour of travel. While Product Support Road and Hangar Road exhibit elevated delays during the PM peak hour, each

with one or more approaches operating at LOS D, maximum simulated queue lengths do not exceed available turn bay storage on any individual approach, and field observations identified no major operational issues.

Segment 5 – Industrial North

As mentioned previously, the intersection of SR 21/Augusta Road with SR 307 represents the most operationally critical node along the study corridor. This segment of SR 307 is essential to freight movement to and from the Port of Savannah's Garden City Terminal. However, as stated in **Section 1**, SR 21/Augusta Road also functions as a vital commuting corridor, Chatham Area Transit (CAT) bus route, and hurricane evacuation route. The capacity analysis results summarized in **Table 11** and **Table 12** indicate poor operations on both approaches of SR 307 during the AM and PM peak hours of travel with each approach operating at LOS F and exhibiting long delays. SimTraffic outputs indicate that queues consistently exceed the distance between the stop line and adjacent highway-rail at-grade crossing on eastbound SR 307 and approach the extents of available storage for the eastbound left-turn movement. Based on field observations, and considering that SimTraffic does not adequately capture the influence of the adjacent highway-rail at-grade crossing on queue length and the saturation flow rate, queues are likely to exceed available storage for the eastbound left-turn movement during the peak hours of travel. Additionally, the maximum simulated queue length exceeds 290 feet during the PM peak hour for the westbound left-turn movement on SR 307, which is greater than the available turn bay storage. As a result, queue spillback issues were observed at the upstream Circle K driveway in the field.

On SR 21/Augusta Road, capacity analysis results indicate only moderate delay and queueing on the northbound and southbound approaches of the intersection. However, as noted earlier in this report and discussed in the next section, field-observed congestion was worse than that reported in **Table 11**, **Table 12**, and SimTraffic outputs.

Segment 6 – Port Gateway

Capacity analysis results on Segment 6 show short to moderate delay and queues at the intersections of SR 307 with Jimmy DeLoach Parkway and SR 25/Coastal Highway. The worst conditions occur at GCT Gate 4, where the westbound approach exiting the GCT operates at LOS E during the AM and PM peak hours with queues extending approximately four tractor-trailer lengths east of the intersection. These operations are primarily attributable to the sheer volume of truck activity at the port as the aggregate truck percentage at the intersection with SR 307 is 73%. On the eastbound approach of SR 307, SimTraffic outputs and field observations suggest that queues are likely to block passenger vehicle access to the right-turn lane to southbound SR 25/Coastal Highway.

As noted earlier in this report and discussed in the next section, field-observed congestion along Segment 6 was worse than that reported in **Table 11**, **Table 12**, and SimTraffic outputs.

2.2.4 Segment Analysis Results

The existing traffic volumes and capacity analysis results presented in this report are intended to be representative of typical conditions along the SR 307 corridor during an average weekday while school is in session. Because travel patterns differ from day-to-day and month-to-month throughout the year and produce a range of traffic conditions, typical conditions are difficult to capture with a single set of model

inputs. Furthermore, local conditions, such as location-specific geometry constraints and driving behavior, are likely to yield slightly different results than those attainable through HCM6 methodology, which is calibrated to nationwide data. Finally, intersection capacity analysis results alone are not adequate for describing corridor operations holistically. Accordingly, this section describes segment-level capacity analysis conducted using SimTraffic Version 11 simulation software and field-collected travel time data.

Corridor travel time outputs from SimTraffic are aggregated by contextual segment in **Table 13** and **Table 14** 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), which is the 45 MPH posted speed limit in most cases, to calculate the vehicular LOS as defined by the HCM6 Urban Street Facilities methodology.

Table 13: SimTraffic Corridor Travel Time and LOS by Segment (AM Peak Hour)

Segment	Length (mi)	Maximum Travel Time (s)	Average Travel Time (s)	Maximum Travel Time (mm:ss)	Average Travel Time (mm:ss)	BFFS (MPH)	Average Travel Speed (MPH)	LOS
Northbound								
1	2.4	219	210	3:39	3:30	45.1	41.1	A
2	1.8	178	173	2:57	2:52	45.3	37.5	A
3	1.3	148	138	2:28	2:17	45.6	33.9	B
4	1.0	102	99	1:42	1:39	46.0	36.3	B
5	0.9	98	94	1:37	1:34	45.0	34.5	B
6	1.1	213	195	3:33	3:15	45.0	20.3	D
Total	***8.5***	***958***	***910***	***15:58***	***15:09***	***45.3***	***33.6***	***B***
Southbound								
1	2.4	297	284	4:56	4:43	45.1	30.4	B
2	1.8	164	163	2:44	2:42	45.3	39.8	A
3	1.3	167	156	2:46	2:35	45.6	30.0	B
4	1.0	107	103	1:46	1:43	46.0	35.0	B
5	0.9	95	90	1:35	1:29	45.0	36.1	A
6	1.1	182	165	3:02	2:45	45.0	24.0	C
Total	***8.5***	***1012***	***960***	***16:51***	***16:00***	***45.3***	***31.9***	***B***

The results shown in **Table 13** and **Table 14** generally mirror the capacity analysis results presented previously, which indicates that most of the study corridor operates at LOS C or better during both peak periods. Only Segment 6 operates at LOS D or worse based on SimTraffic outputs, with northbound (port-bound) and southbound travel speed averaging 20 to 25 MPH across the segment.

Table 14: SimTraffic Corridor Travel Time and LOS by Segment (PM Peak Hour)

Segment	Length (mi)	Maximum Travel Time (s)	Average Travel Time (s)	Maximum Travel Time (mm:ss)	Average Travel Time (mm:ss)	BFFS (MPH)	Average Travel Speed (MPH)	LOS
Northbound								
1	2.4	206	201	3:26	3:21	45.1	42.9	A
2	1.8	171	166	2:51	2:46	45.3	38.9	A
3	1.3	128	122	2:08	2:02	45.6	38.3	A
4	1	109	105	1:49	1:44	46.0	34.4	B
5	0.9	100	96	1:39	1:35	45.0	33.8	B
6	1.1	200	186	3:20	3:06	45.0	21.3	D
Total	***8.5***	***916***	***876***	***15:15***	***14:36***	***45.3***	***34.9***	***B***
Southbound								
1	2.4	307	292	5:06	4:52	45.1	29.5	C
2	1.8	337	243	5:36	4:02	45.3	26.7	C
3	1.3	160	158	2:39	2:38	45.6	29.6	C
4	1	109	106	1:49	1:46	46.0	34.0	B
5	0.9	95	90	1:34	1:30	45.0	36.0	A
6	1.1	187	174	3:07	2:54	45.0	22.7	D
Total	***8.5***	***1195***	***1064***	***19:54***	***17:43***	***45.3***	***28.8***	***C***

Given the disparity between field-observed traffic conditions and those modeled in SimTraffic, field travel time runs conducted during the PM peak period on Tuesday, May 25, 2021 between Jimmy DeLoach Parkway and I-16 were compiled and post-processed to determine the HCM-based vehicular LOS. Raw travel time data is presented in **Table 15**, and LOS estimates are provided in **Table 16**.

As shown in **Table 16**, field travel time runs and associated LOS estimates are indicative of substantially more congestion than that predicted by the SimTraffic model. Based on the field runs, SR 307 between I-16 and Jimmy DeLoach Parkway operated at LOS D or worse in both directions between approximately 4:30 PM and 5:30 PM. In fact, southbound SR 307 between Jimmy DeLoach Parkway and SR 26/US 80/Louisville Road operated at LOS F, with a maximum travel time of 15 minutes and minimum speed of 9 MPH. The results are also reflective of the dependency of corridor operations on activity at the GCT, as speeds increase sharply on southbound SR 307 between Jimmy DeLoach Parkway and SR 26/US 80/Louisville Road between 5:30 PM and 5:45 PM after truck traffic exiting the GCT diminishes.

Table 15: Raw Field Travel Time Data – May 25, 2021 (PM Peak Period)

Segment	Travel Time Run ID	Timestamp	Travel Time (mm:ss)
I-16 to SR 26/US 80/Louisville Road (Northbound)	1	4:29 PM	3:39
	2	5:00 PM	3:39
	3	5:27 PM	4:25
	Average Travel Time:		**3:54**
SR 26/US 80/Louisville Road to Jimmy DeLoach Parkway (Northbound)	1	4:35 PM	9:35
	2	5:01 PM	8:20
	3	5:34 PM	6:36
	4	5:59 PM	6:47
	Average Travel Time:		**7:49**
Jimmy DeLoach Parkway to SR 26/US 80/Louisville Road (Southbound)	1	4:23 PM	14:57
	2	4:50 PM	14:58
	3	5:24 PM	11:44
	4	5:47 PM	6:18
	Average Travel Time:		**11:59**
SR 26/US 80/Louisville Road to I-16 (Southbound)	1	4:22 PM	2:06
	2	4:47 PM	3:57
	3	5:09 PM	4:08
	4	5:37 PM	3:36
	Average Travel Time:		**3:26**

Table 16: Average Field Travel Time and LOS – May 25, 2021 (PM Peak Period)

Segment	Length (mi)	BFFS (MPH)	Average Travel Time (mm:ss)	Average Travel Speed (MPH)	LOS
I-16 to SR 26/US 80/Louisville Road (Northbound)	1.3	45.3	3:54	20.0	D
SR 26/US 80/Louisville Road to Jimmy DeLoach Parkway (Northbound)	2.3	45.0	7:49	17.7	E
Overall:	**3.6**	**45.1**	**11:43**	**18.5**	**D**
Jimmy DeLoach Parkway to SR 26/US 80/Louisville Road (Southbound)	2.3	45.3	11:59	11.5	F
SR 26/US 80/Louisville Road to I-16 (Southbound)	1.3	45.0	3:26	22.7	D
Overall:	**3.6**	**45.2**	**15:26**	**15.6**	**E**

The segment summaries in **Section 2.1** highlighted the key sources of congestion along this stretch of SR 307, which are:

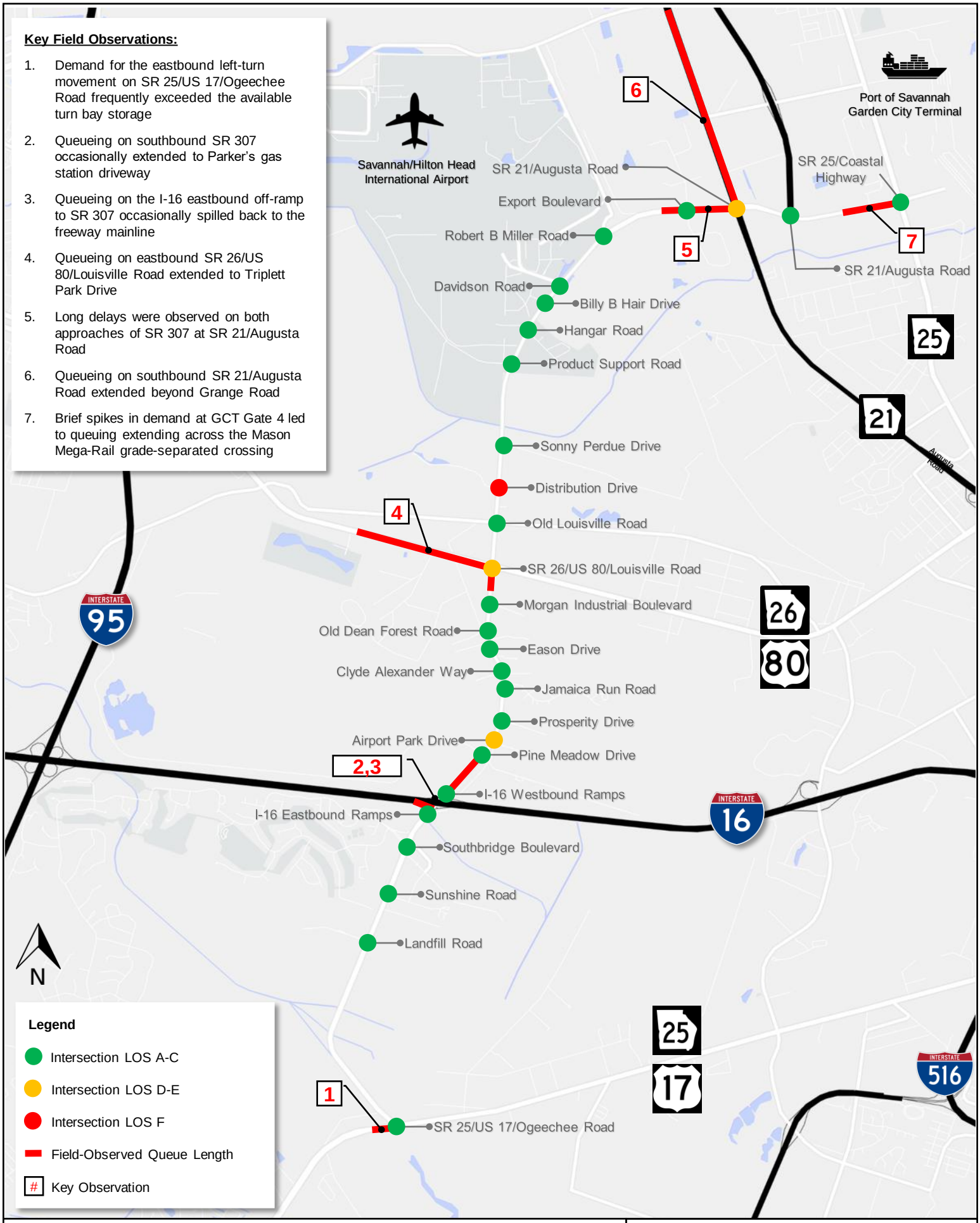
- Excessive delay and queue spillback on the eastern approach of SR 307 at SR 21/Augusta Road, with a maximum field-observed queue length of approximately 900 feet during the PM peak period
- Significant delays on SR 307 northbound at SR 21/Augusta Road, with left-turn queues frequently exceeding available storage length during the PM peak period

- Queueing on SR 307 southbound at SR 26/US 80/Louisville Road that extends approximately ½ mile north of the intersection during the PM peak through the intersection with Old Louisville Road
- Stop-and-go conditions on northbound SR 307 north of the I-16 westbound ramps with queues extending beyond Pine Meadow Drive during the PM peak period

In considering whether field observations were typical of an "average" weekday over the course of the year, comparisons of anecdotal observations with supplemental data available from GDOT and Google typical traffic conditions suggest that traffic operations are variable along the corridor. Likewise, the segment analysis results presented here demonstrate that various segments of SR 307 operate near the LOS D/LOS E 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 alternatives development.

2.2.5 Capacity Analysis Summary

The intersection- and segment-level results presented in this section demonstrate that the majority of the SR 307 corridor operates acceptably under existing conditions. However, existing bottlenecks at three major nodes – I-16, SR 26/US 80/Louisville Road, and SR 21/Augusta Road – lead to a lack of travel time reliability for freight and passenger car trips traversing the segments between the GCT and Southbridge community to the south of I-16. Ongoing projects such as the I-16 at SR 307 Interchange Reconstruction and SR 21 Access Management Study aim to improve conditions at two of these locations, but further improvements will be needed to ensure that the corridor continues to operate at an acceptable level of service over the next 20 years. The maps shown in **Figure 16** and **Figure 17** graphically summarize existing operations along the study corridor as defined by capacity analysis, SimTraffic outputs, and field observations.

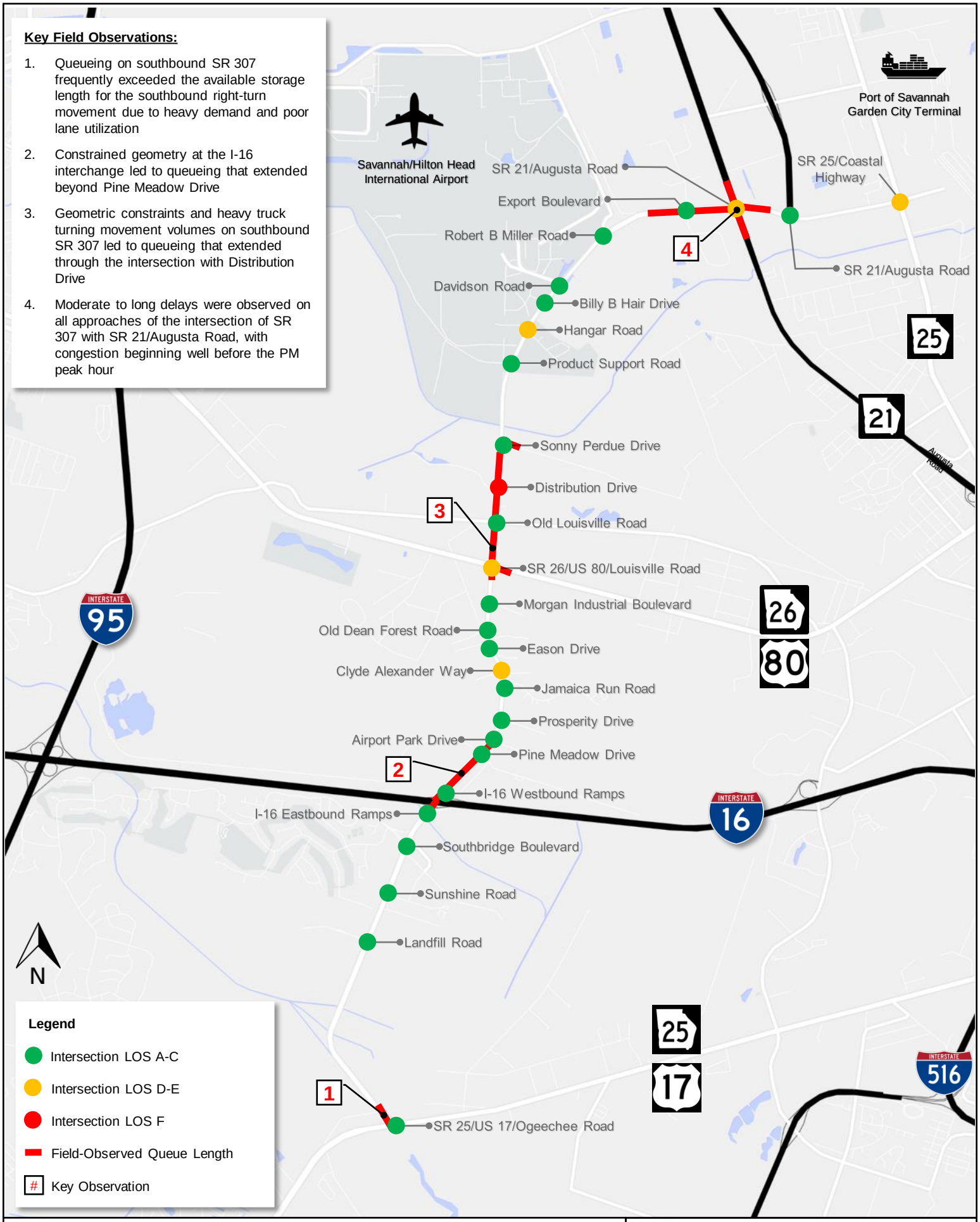


SR 307 Corridor Study – Existing Conditions/Needs Assessment

Figure 16 – Existing Corridor Operations Summary - AM Peak Hour

SR 307 CORRIDOR STUDY

Kimley»Horn



SR 307 Corridor Study – Existing Conditions/Needs Assessment

Figure 17 – Existing Corridor Operations Summary - PM Peak Hour

SR 307 CORRIDOR STUDY

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2.3 Safety Analysis

2.3.1 Introduction & Corridor Descriptive Statistics

Although the primary objective of this study is to identify and prioritize short- and long-term improvement projects needed for the SR 307 corridor to *operate* at an acceptable level of service, 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 (2015-2019) from the Georgia Electronic Accident Reporting System (GEARS). Based on these trends, potential mitigation measures and their associated benefits are identified for consideration as part of future alternatives analysis.

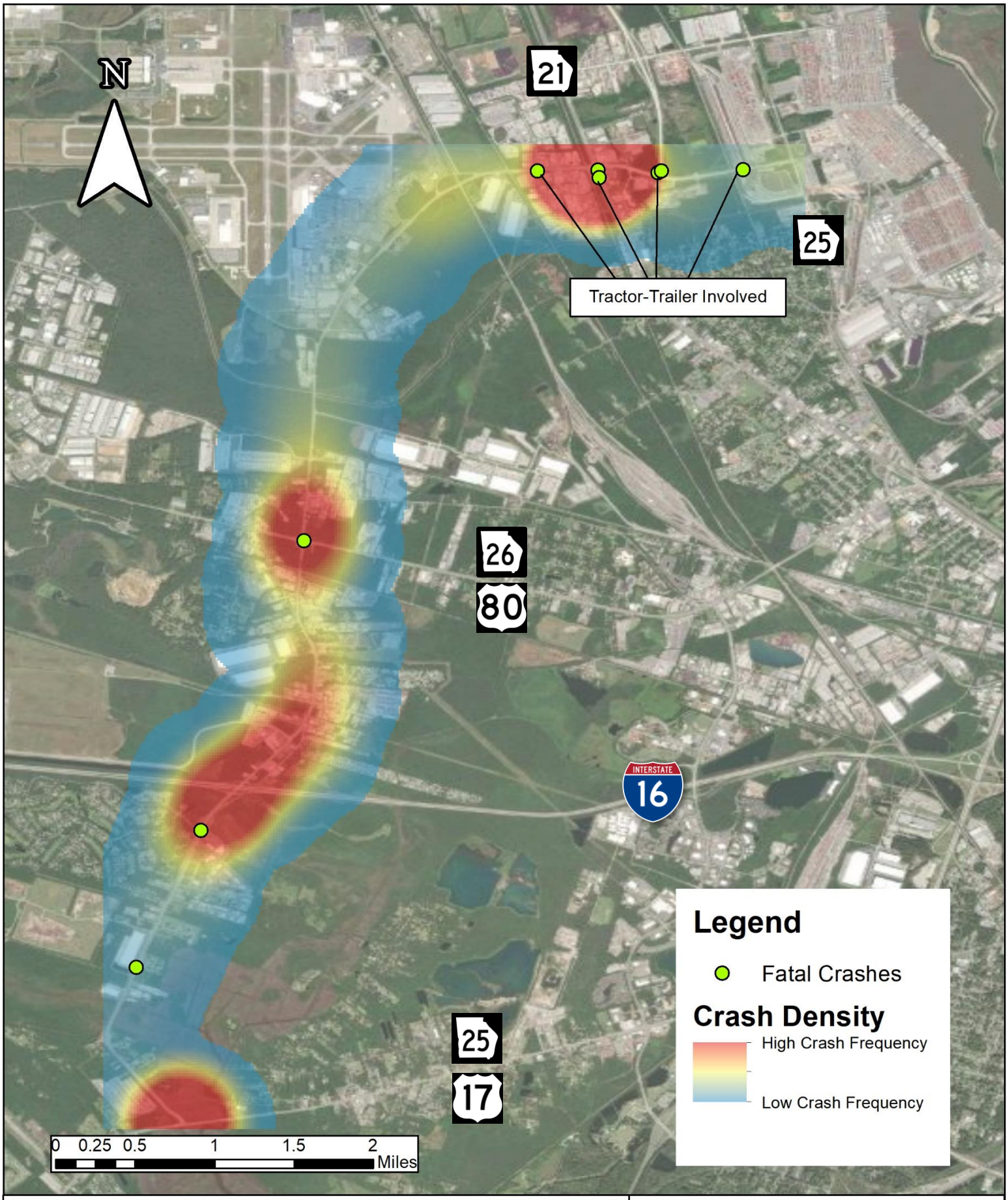
As shown in **Table 17**, nearly 1,500 total crashes occurred on the SR 307 corridor from 2015 to 2019, including nine fatal crashes and 330 non-fatal injury crashes. At 8.5 miles long, the study corridor exhibited just under 175 crashes per mile over this period at a state-adjusted comprehensive crash cost of $144 million, or $28.8 million per year (FHWA, 2018). When compared to the statewide average crash rate per hundred million vehicle miles traveled (HMVMT) on similarly classified facilities, the SR 307 corridor exhibited an aggregate crash rate approximately 125% higher. Accordingly, the need for safety-focused investment along the corridor is evident. The results summarized in **Table 17** are described by the KABCO scale, which assigns each crash a severity level as follows:

- K = Fatal
- A = Incapacitating Injury
- B = Non-Incapacitating Injury
- C = Possible Injury
- O = Property Damage Only

Table 17: Corridor Crash Data Summary (2015 to 2019)

Segment	Crash Frequency by Severity						Crash Rate (Crashes/HMVMT)	Comparison to Statewide Average Crash Rate (Crashes/HMVMT)
	K	A	B	C	O	Total		
1	2	4	14	74	321	415	729.4	+439.4 (+152%)
2	1	11	21	60	260	353	669.3	+379.3 (+131%)
3	0	1	5	24	87	117	298.9	+8.9 (+3.1%)
4	0	0	7	8	68	83	284.2	-5.8 (-2.0%)
5	3	0	5	72	278	358	1,384.7	+1,094.7 (+377%)
6	3	2	7	15	113	140	669.0	+379 .0 (+131%)
Total	**9**	**18**	**59**	**253**	**1,127**	**1,466**	**652.2**	**+362.2 (+125%)**

The heat map presented in **Figure 18** summarizes crash frequency along the SR 307 corridor over the five-year study period and highlights the location of the nine fatal crashes that occurred during this time period. Five of the fatal crashes (56%) involved at least one heavy vehicle, and most of these occurred near the intersection of SR 307 with SR 21/Augusta Road. Crash frequency is otherwise highest at the four major intersections along the corridor, which include SR 307 at SR 25/US 17 Ogeechee Road, I-16, SR 26/US 80/Louisville Road, and SR 21/Augusta Road. The overall corridor crash frequency is summarized by manner of collision, truck involvement, and non-motorist involvement in **Figure 19**.



SR 307 CORRIDOR STUDY

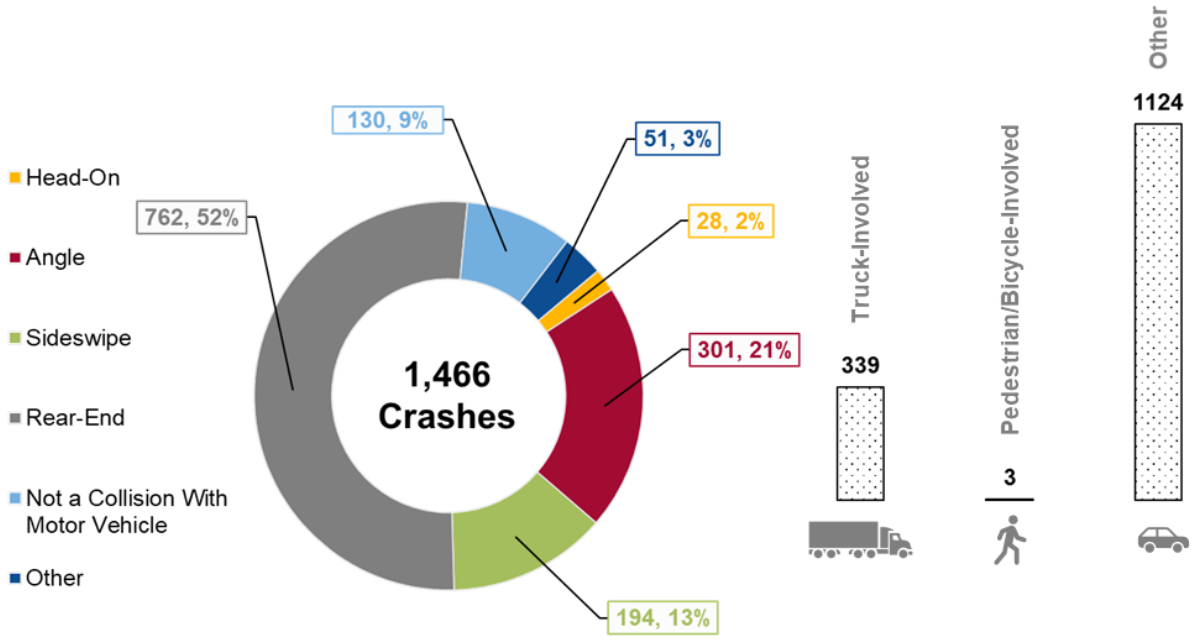
Kimley»Horn

Figure 18

Crash Frequency Heat Map

(2015 to 2019)

Figure 19: SR 307 Crash Frequency by Manner of Collision and Vehicle Involvement (2015 to 2019)



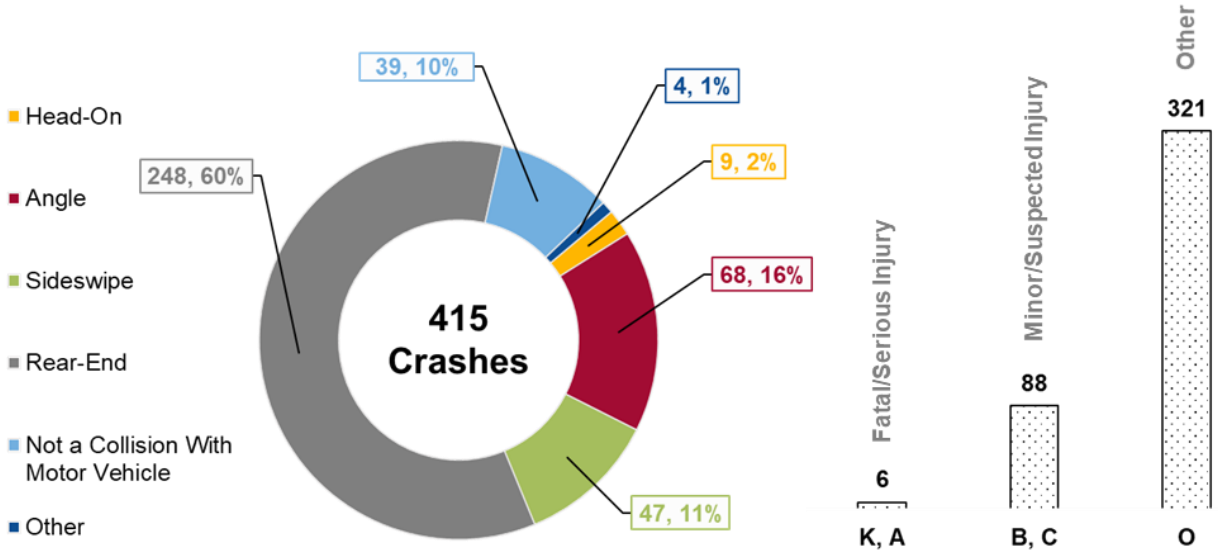
As indicated in the summary data presented in **Figure 19**, 762 (52%) of all crashes occurring over the five-year study period along the SR 307 corridor were rear-end crashes. While such crashes are typically less likely to lead to injuries and fatalities, the overrepresentation of truck-involved crashes, which comprise 23% of the entire database, may lead to an increase in the baseline severity of a given crash, particularly when involving a tractor-trailer and passenger car. Approximately one in three crashes occurring along the corridor were angle or sideswipe collisions which are symptomatic of the flush median/TWLTL configuration combined with high driveway density throughout the corridor. Finally, the database includes few head-on collisions and crashes involving non-motorists, each of which are more likely to lead to injuries and fatalities than other crash types. One pedestrian/bicycle crash was recorded during the five-year study period. Considering the low non-motorist demand observed along the corridor, this fatality may be directly related to a lack of pedestrian/bicycle facilities.

The remainder of this section summarizes crash frequency by severity and manner of collision along each of the six contextual segments. Each of the major intersections noted previously are also highlighted, as applicable.

2.3.2 Segment 1 Crash History

Segment 1 crash frequency over the five-year period from 2015 to 2019 is summarized by severity and manner of collision in **Figure 20**.

Figure 20: Segment 1 Crash Frequency by Severity and Manner of Collision (2015 to 2019)



As shown in **Figure 20**, rear-end crashes are the predominant type on Segment 1, and all other crash type frequencies are underrepresented in comparison. Considering the 2015 SR 307 corridor improvements in Segment 1, it is unsurprising that 77% of all crashes reported in the study database were property damage only (PDO) crashes, with the vast majority of these occurring at the intersection of SR 307 with SR 25/US 17/Ogeechee Road. Only two of the 415 crashes occurring along Segment 1 were fatal, including the following:

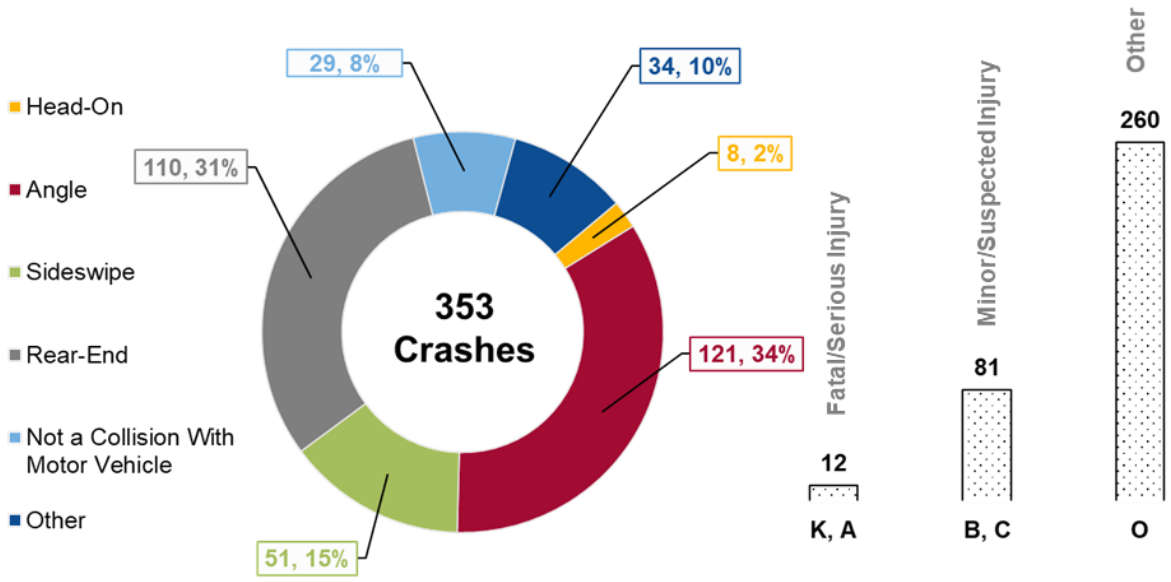
- One single-vehicle crash at Bryce Industrial Drive involving a vehicle striking a utility pole during the mid-afternoon period
- One nighttime angle collision at the intersection of SR 307 with Southbridge Boulevard, with the at-fault driver under the influence

Based on these trends, and evidenced by the heat map in **Figure 18**, few correctible safety constraints were identified along the Segment 1 corridor. The intersection of SR 307 with SR 25/US 17/Ogeechee Road accounts for 217 (52%) of all crashes and 177 (71%) of all rear-end crashes occurring on Segment 1 in the study database. Given the existing queue spillback issues on the eastbound and southbound approaches of the intersection discussed in **Section 2.2**, mitigation measures that alleviate existing operational deficiencies may also reduce the likelihood of frequent rear-end crashes occurring at this intersection.

2.3.3 Segment 2 Crash History

Segment 2 crash frequency over the five-year period from 2015 to 2019 is summarized by severity and manner of collision in **Figure 21**.

Figure 21: Segment 2 Crash Frequency by Severity and Manner of Collision (2015 to 2019)



As shown in **Figure 21**, angle crashes are significantly overrepresented on Segment 2, with a lower proportion of rear-end crashes than Segment 1. Approximately 40% of all angle crashes and 40% of all fatal and serious injury crashes in the entire study database occurred on Segment 2. Furthermore, 21% of all crashes occurring on this segment involved at least one tractor-trailer, which is more than double the rate for Segment 1. These trends align with the high density of unsignalized driveways (25 driveways per mile) and heavy industrial land uses found on the Segment 2 corridor. Other key factors to note include:

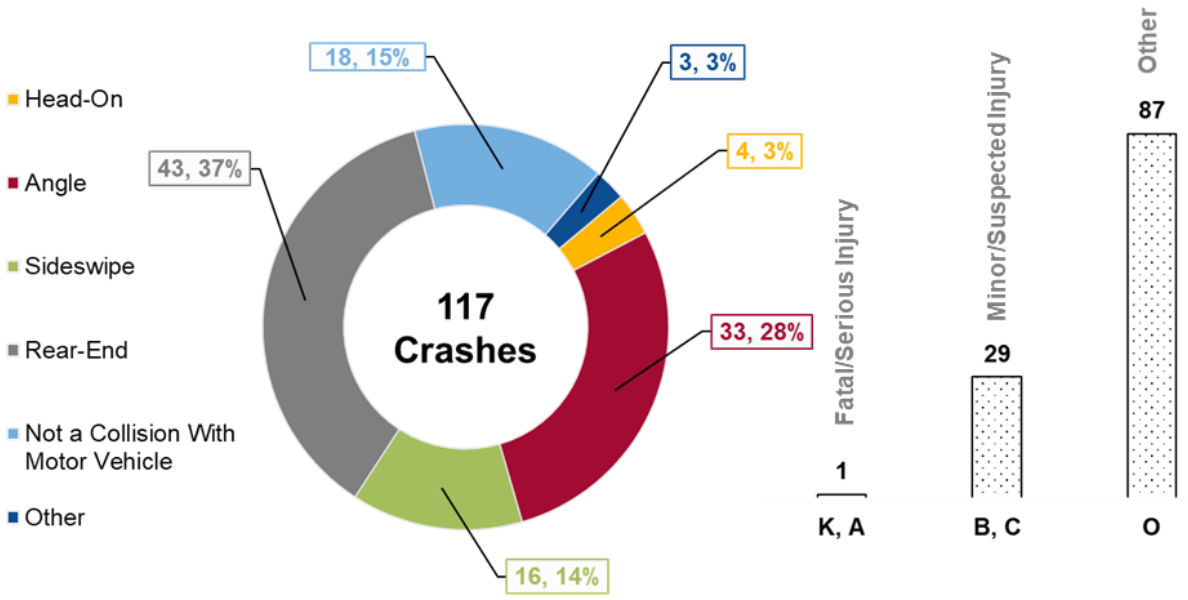
- The number of crashes reported at the I-16 interchange is equivalent to 33% of the total for Segment 2, including 27% of the total number of angle crashes occurring on the segment
- One fatality was recorded at the intersection of SR 307 with SR 26/US 80/Louisville Road, and it involved an elderly driver who failed to yield while making a left-turn during mid-afternoon

Based on these trends, and the swath of crashes shown in the heat map in **Figure 18,** access management strategies should be explored along the Segment 2 corridor. GDOT PI No. 0013727 will convert the I-16 interchange to a diverging diamond configuration. This project is under construction with a substantial completion date of July 2023. Associated improvements are expected to improve safety on SR 307 and will be incorporated into the analysis of future conditions.

2.3.4 Segment 3 Crash History

Segment 3 crash frequency over the five-year period from 2015 to 2019 is summarized by severity and manner of collision in **Figure 22**.

Figure 22: Segment 3 Crash Frequency by Severity and Manner of Collision (2015 to 2019)



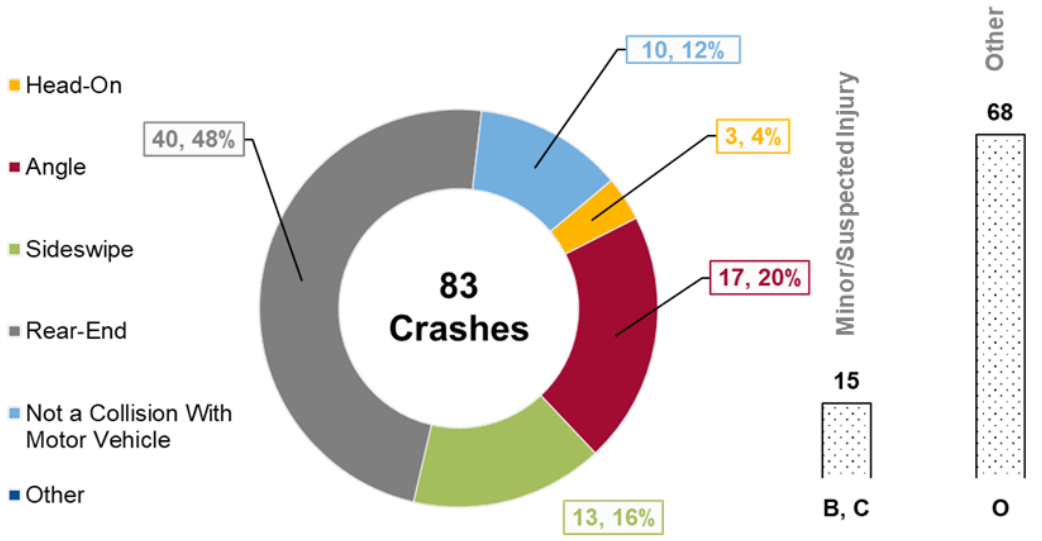
The moderate density of unsignalized driveways found on Segment 3 (17 driveways per mile) leads to similar trends as those found for Segment 2. Notably, angle crashes are the predominant crash type, and the rear-end crash frequency is lower than that of other segments. However, as shown in **Figure 22**, the total number of crashes occurring on Segment 3 and the corresponding crash rate are the second lowest among the six contextual segments. In fact, the crash rate on this segment is just 3% higher than that of the statewide average for collector facilities.

Accordingly, few correctible safety constraints were identified along the Segment 3 corridor. Much of the crash history along this segment is centered at the intersection of SR 307 with SR 26/US 80/Louisville Road, which exhibited the same number of crashes (117) over the five-year study period as the entirety of Segment 3. It should be noted that the total number of crashes occurring at this intersection (117) is reflective of those assigned to either Segment 2 or Segment 3. Despite the modest existing crash history along this segment, approximately 32% of all collisions involved at least one tractor-trailer, which is the highest rate among the six contextual segments.

2.3.5 Segment 4 Crash History

Segment 4 crash frequency over the five-year period from 2015 to 2019 is summarized by severity and manner of collision in **Figure 23**.

Figure 23: Segment 4 Crash Frequency by Severity and Manner of Collision (2015 to 2019)



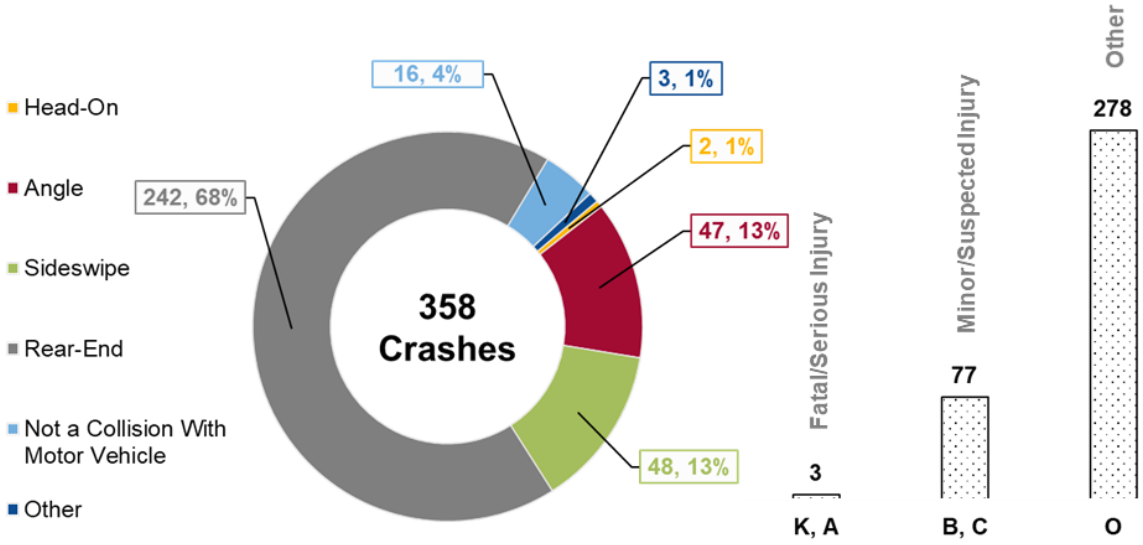
As shown in **Figure 23**, the relative proportion of each crash type occurring on Segment 4 is nearly equivalent to that for the entire study database. Furthermore, the total number of crashes occurring on this segment is the lowest of the six contextual segments, and the corresponding crash rate is 2% less than the statewide average for collector facilities. Lastly, no fatal or serious injury crashes were recorded along Segment 4 over the five-year study period.

These findings are intuitive given the sparse driveway density (8 driveways per mile) and limited activity centers adjacent to this segment. As such, no apparent safety constraints were identified along Segment 4.

2.3.6 Segment 5 Crash History

Segment 5 crash frequency over the five-year period from 2015 to 2019 is summarized by severity and manner of collision in **Figure 24**.

Figure 24: Segment 5 Crash Frequency by Severity and Manner of Collision (2015 to 2019)



The summary shown in **Figure 24** emphasizes that rear-end crashes, particularly those involving heavy trucks, are overrepresented on Segment 5. Based on the heat map in **Figure 18**, most of the crashes recorded on this 0.7-mile-long segment over the five-year study period were centered at the intersection of SR 307 with SR 21/Augusta Road. In fact, crashes occurring at this intersection comprise 25% (363) of all 1,466 crashes along SR 307 in the study database. It should be noted that the total number of crashes occurring at this intersection (363) is reflective of those assigned to either Segment 5 (eastbound approach) or Segment 6 (westbound approach).

Although 72% of the crashes occurring at the intersection of SR 307 with SR 21/Augusta Road were rear-end collisions that typically lead to fewer injuries than other crash types, two fatalities occurred at this intersection, and three fatalities were observed on Segment 5 in total. These fatal crashes included:

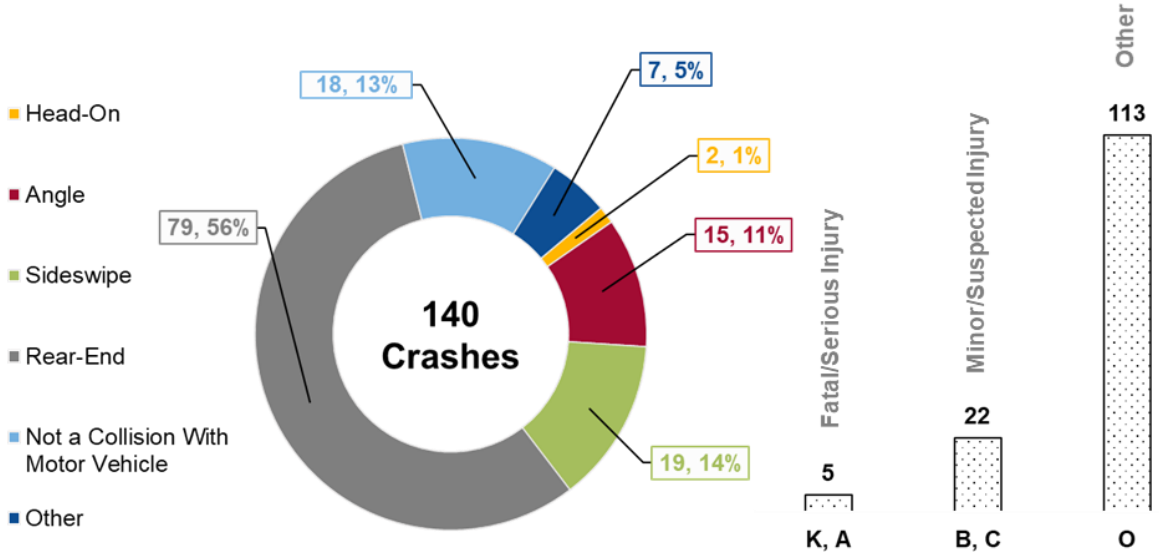
- Two rear-end collisions at the intersection with SR 21/Augusta Road, one of which involved a collision between a tractor-trailer and passenger car, occurring between 9:00 PM and 6:00AM
- One sideswipe collision occurring near the intersection with Export Boulevard involving a tractor-trailer and a piece of farm equipment

These trends suggest that the passenger car- and tractor-trailer-dominated traffic streams found on SR 21/Augusta Road and SR 307, respectively, should be separated to the extent possible. As noted previously, the *SR 21 Access Management Study* aims to improve safety along the corridor from Grange Road to I-516. The outcomes of this effort will be incorporated into the current study, where applicable, but this SR 307 Corridor Study will govern the improvement recommendations at the SR 21/Augusta Road intersection.

2.3.7 Segment 6 Crash History

Segment 6 crash frequency over the five-year period from 2015 to 2019 is summarized by severity and manner of collision in **Figure 25**.

Figure 25: Segment 6 Crash Frequency by Severity and Manner of Collision (2015 to 2019)



Like Segment 5, rear-end and truck-involved crashes are overrepresented on Segment 6 relative to the rest of the study database, while angle crashes are underrepresented on this segment. Each of these findings are unsurprising given the proximity of Segment 6 to the GCT and that each of the three study intersections along this corridor are signalized. As expected for a segment with truck percentages that approach 80% throughout the day, approximately 43% of all crashes occurring on this segment involved at least one tractor-trailer. This increased truck involvement presents elevated safety risks, particularly for occupants of passenger cars. Three fatal crashes were observed on this segment over the five-year study period, including:

- One rear-end collision between two passenger cars occurring at the intersection with Jimmy DeLoach Parkway during the mid-afternoon hours
- Two collisions between a tractor-trailer and passenger car, including one rear-end crash and one sideswipe crash, each occurring during the mid-morning hours

Though excessive speed was cited as a contributing factor in one of the three fatal crashes, these trends again underscore the challenges of combining large volumes of heavy trucks and passenger cars within the same traffic stream. Future improvement alternatives that mitigate congestion near the intersection with SR 21/Augusta Road may reduce the likelihood of additional injury crashes.

2.3.8 Safety Analysis Summary

The corridor- and intersection-level safety analyses presented in the previous subsections illustrate that trends in existing crash history follow the primary characteristics of the SR 307 corridor, specifically:

- **Nearly 60% of the SR 307 corridor consists of a five-lane, flush median/TWLTL section.** The overall, 8.5-mile-long corridor includes approximately 150 driveways, most of which are full-movement, unsignalized access points to heavy industrial land uses. Expectedly, 34% of all crashes occurring on the study corridor over the five-year period from 2015 to 2019 were angle or sideswipe collisions.
- **Truck percentages along some segments of the SR 307 corridor approach 80% during the peak periods of the day.** Due to the large volumes of heavy truck traffic on the study corridor, which intersects with four corridors exhibiting large volumes of commuting passenger car traffic, nearly one in four crashes occurring over the five-year period from 2015 to 2019 involved at least one tractor-trailer. On the six contextual segments presented in this study, truck-involved crashes represented as many as 43% of all crashes occurring on a given segment.
- **Congested conditions at major intersections along the SR 307 corridor contribute to a high frequency of rear-end crashes.** More than 50% of all crashes in the study database were rear-end collisions. In fact, rear-end collisions occurring at the intersections of SR 307 with SR 25/US 17/Ogeechee Road and SR 21/Augusta Road comprise 30% of all crashes in the study database.

Given these findings, future improvement alternatives should consider existing crash history while harmonizing operations and safety along the SR 307 corridor. As noted previously, these efforts are likely to be focused at four major intersections – SR 25/US 17/Ogeechee Road, I-16, SR 26/US 80/Louisville Road, and SR 21/Augusta Road – each of which exhibits peak hour congestion. Recent studies have confirmed the positive correlation between congestion and crash rates, and the *Highway Safety Manual* states the same: safety is enhanced as congestion is reduced.

Potential alternatives should also consider corridor-level access management strategies along undivided segments. Studies of access management strategies (e.g., implementation of a raised median in place of a TWLTL) suggest that such solutions may decrease the frequency of crashes by as much as 30%. Finally, separating heavy truck and passenger car traffic to the extent possible will likely reduce the frequency *and* severity of crashes occurring along the SR 307 corridor.

3 Conclusions & 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 307 corridor and identify transportation challenges, needs, and opportunities to be considered throughout the remainder of the study. As a Georgia Statewide Designated Freight Corridor that serves as a primary artery to the Georgia Ports Authority's (GPA) Garden City Terminal (GCT), which supports more than 369,000 jobs and $20.4 billion in personal income annually, SR 307 is a critical component of Georgia's economy and the national freight network. To satisfy the goals and objectives of the *Mobility 2045* MTP while maintaining safe, efficient passage for well over 100,000 motorists and non-motorists per day, the findings included in this report suggest the following:

- **Non-motorist facilities should be incorporated in future improvement projects.** The SR 307 corridor includes less than one mile of sidewalk along its 8.5-mile length and no dedicated bicycle facilities. Numerous signalized intersections are equipped with pedestrian signal heads, crosswalks, and signage despite a lack of connecting facilities or adjacent activity centers. As such, existing infrastructure is disjointed and arguably inappropriately placed. Though only three non-motorist collisions were observed from 2015 to 2019, providing new pedestrian and bicycle facilities would satisfy the CORE MPO Non-Motorized Transportation Plan recommendations and provide opportunities for latent non-motorist demand to be realized in a safe manner.
- **Existing geometry should be improved for consistency with corridor passenger car and heavy truck volumes.** Field observations indicated that many existing intersections currently lack the geometry needed to support slow, wide turning movements made by heavy trucks. Where these turning movements are made with greater frequency, existing geometry creates bottlenecks that produce congestion during the peak periods of the day.
- **Future improvement alternatives should seek to minimize the interaction of the passenger car, rail, and heavy truck traffic streams.** Near the intersection with SR 21/Augusta Road, SR 307 traverses three at-grade railroad crossings in a 0.7-mile-long stretch. Collectively, these at-grade crossings carry 55 trains per day, which presents challenges for safety and operations, contributing to a peak hour bottleneck at the intersection with SR 21/Augusta Road. At this intersection, more than 5,000 tractor-trailers per day on SR 307 conflict with approximately 30,000 passenger cars per day on SR 21/Augusta Road. Over the five-year crash reporting period, this has contributed to 363 crashes, including 262 rear-end collisions, 66 collisions between tractor-trailers and passenger cars, and two fatalities. Improvement alternatives that separate these hazards are needed.
- **Access management strategies should be explored throughout the SR 307 corridor.** As mentioned previously, the study corridor includes a total of nearly 150 access points and five miles of five-lane section with a flush median/TWLTL across its 8.5-mile length. Existing crash history and examples of successful implementation along the southern portion of the SR 307 corridor indicate that driveway consolidation and the construction of a raised median should be considered along the balance of the corridor.

The outcomes of this initial task will be used to inform alternatives development and form a portion of the final SR 307 Corridor Study report.