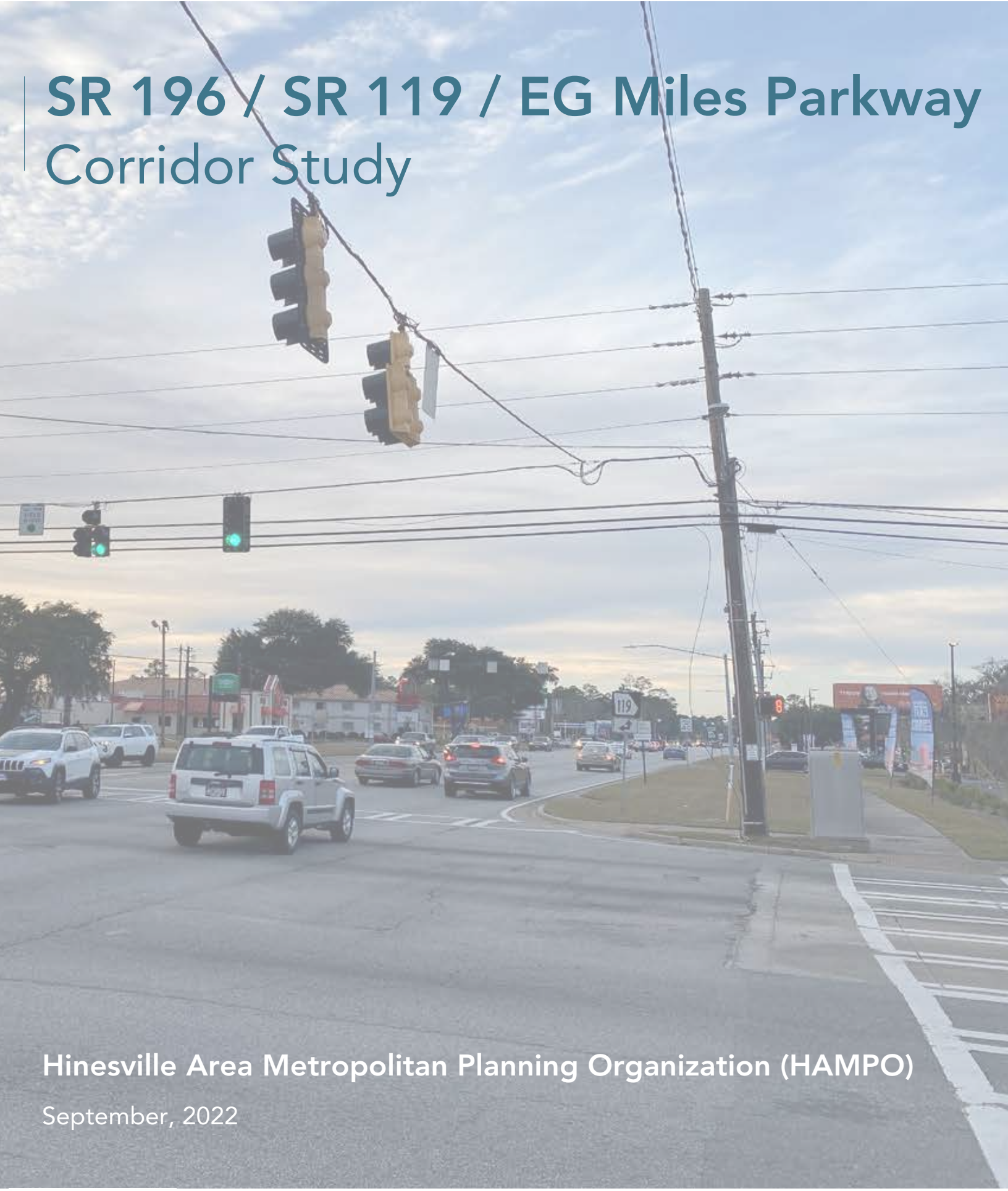
SR 196 / SR 119 / EG Miles Parkway
Corridor Study



Hinesville Area Metropolitan Planning Organization (HAMPO)

September, 2022

HAMPO

ATLAS

AE ENGINEERING, INC.
Civil Engineering • CEI • Construction Management

transport STUDIO

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Introduction

Background and Purpose

This study's goal is to assess the SR 119/E.G. Miles Parkway corridor in Hinesville, Georgia, which runs between General Screven Way and SR 119/Airport Road. The main entrance to the Liberty Regional Medical Center, commercial shopping centers, residential communities, the city of Hinesville Public Works Department, and the headquarters of Liberty Transit are all located along this corridor, which is also about a mile from the main access gate to the Fort Stewart Military Installation. With multiple at-grade junctions, business driveways, and cross sections ranging from 4 lanes with unchanneled medians to 4 lanes without any existing center median infrastructure, the route handles 17,000 to 21,700 AADT.

The corridor was also included in the HAMPO Freight Study as a freight route, acting as a facility for linking to the Fort Steward Freight Access on 15th Street. In October 2020, the 2045 HAMPO Metropolitan Transportation Plan was established, and it designated this route as a high accident corridor and an area slated for significant land development. The local rezoning and engineering processes for two planned projects in this study region are presently underway, and it has been determined that specific conditions necessitate conducting traffic effects analyses. The MTP suggested three operational enhancement projects for the MPO region that would increase capacity, safety, and freight support. Additionally, the Liberty County T-SPLOST vote that was successfully approved in 2020 recognized this.

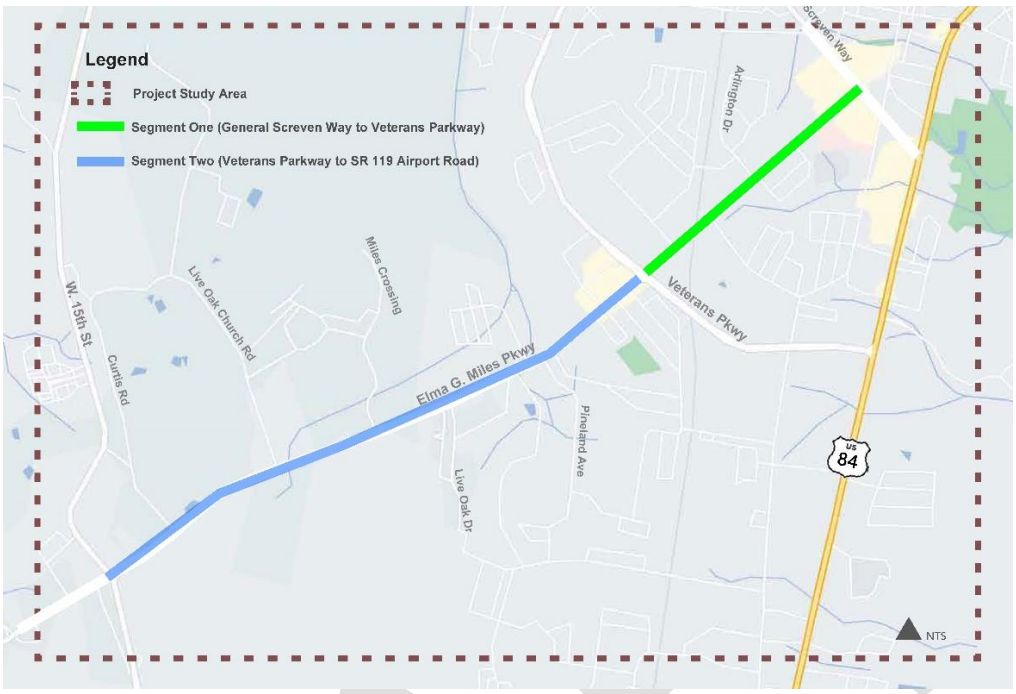
Since the MTP's implementation, GDOT District 4 has conducted a signal warrants study inside this corridor and found that operational changes are required to accommodate the current AADT traffic volumes. It also suggests that a safety analysis be carried out for the whole route. It was decided at a coordination meeting with local and state elected officials, GDOT partners, business leaders, and local MPO leadership that a thorough corridor analysis is required to comprehend current and future transportation issues and to determine the best way to use the various public and private transportation funds available for capital improvements for the corridor.

While the entire corridor will be examined to ensure consistency for the improvements suggested by the mid- to long-range MTP, special attention will be given to examining and creating recommendations that are ready for implementation for the segment that is currently under development pressure and has a high crash rate. Supporting the findings of the performance based analysis recommended improvements and the overall study has been divided into segment one (1) and segment two (2) study sections as follows:

- Segment 1: General Screven Way to Veterans Parkway
- Segment 2: Veterans Parkway to W 15th St

The following figure (Figure 1) highlights the study boundaries and the extents of the Segment 1 and Segment 2 roadway sections.

FIGURE 1: HAMPO E.G. MILES CORRIDOR REFERENCE MAP



Review of Existing Plans and Documents

Our approach led us to reviewing local regional and state initiatives for road safety in order to better understand local desires and recommendations that reflected local outcomes. The following list includes all reports that were reviewed. The technical memo site specific considerations related to the GDOT safety audit and updated traffic data.

All plans and findings require the two sections of this corridor to be addressed. By and large, connectivity and access has not been a factor in the previous planning studies. This is not due to negligence rather the scopes of those plans and studies did not include items such as transit, commerce, or specifically addressing a particular mode of operation. The data supports federal programs that have been recently accepted at the national level. The concepts that follow from this review deliverables outlined specific considerations as this project moves through public stakeholders and local official meetings towards recommending corridor improvement projects.

The existing plans were also reviewed at the site level with both engineering and GIS departments to brainstorm cause and effect to understand how to achieve outcomes across various modes while respecting and upholding the intent of each corridor to accommodate vehicle traffic and freight delivery services. More detailed information regarding improvement project recommendations are listed in the Conclusions and Recommendations section of this report. The list of plans and documents which were reviewed as part of this effort included:

- GDOT Safety Audit Data and Recommendations
- GDOT Design policy manual
- GDOT Context Sensitive Design Manual
- Hinesville Municipal Code
- Liberty County LDC
- Permitting and Planning
- AASHTO Recommendations for Urban Context

- Walk, Thrive Bike Report, Atlanta Regional Commission
- Local Government and Law Enforcement Programs
- Traffic Data, collected and observed
- Demographic information
- Technical Memorandum of review of GDOT safety audit

Review of the GDOT Safety Audit with Suggestions

The review took an in-depth look at the safety audit performed by the state in 2017. This study will provide additional recommendations based on the initial conclusions of the 2017 safety audit. The 2017 study identified the various high collision points that are well-known to both the state and local community. With the access and majority of collisions at intersections and in commercial areas an initial suggestion is to provide the opportunity for more modes of transportation to have safe access as well as treatments that provide for enhanced pedestrian safety.

Another observation for that particular study is that is not taken into context the emerging multifamily development nor desire of the local community to improve access through transit and commercial development densification. While the data review still supports design updates including turning lanes and intersection improvements with raised medians, access management should be considered as part of the solution in order to better understand the potential impacts of changing one intersection with the effects to another intersection nearby.

Thus, this will also require consideration of context based solutions to address approach design speed while entering into commercial corridors from the rural highway corridor sections. Managing the corridor as a whole versus spot treatments at high collision intersections should assist in the overall reduction of collisions with vehicles, pedestrians and property. Access management can be a difficult concept at the local level and should be vetted with local stakeholders to understand impacts as well as find common ground to achieve a better comprehensive outcome.

Plan Review Comments and Understanding

The following points are overarching themes to address as this study moves into the future analysis and concept planning phases. Overall, the GDOT study still remains relevant, improving capacity, lighting, addressing geometry at intersections, and adding pedestrian crossing facilities will improve the public space and should improve safety for vehicles and pedestrians. However, looking forward at the area growth in housing, the expansion of services with the hospital, and improved regional transit opportunities, the study area's affordability factor may rise due to an increase in population and migration to the area. The potential increase could impact the transportation operations and safety within the corridor. Thus, the potential growth along the corridor, should be a consideration in any design to address future needs such as more urbanized cross-sections, addressing approach design speed into commercial and neighborhood areas as well as to continue to focus on a safe and equitable transportation system for all modes within the study area and the greater Hinesville city limits.

Stakeholder Engagement

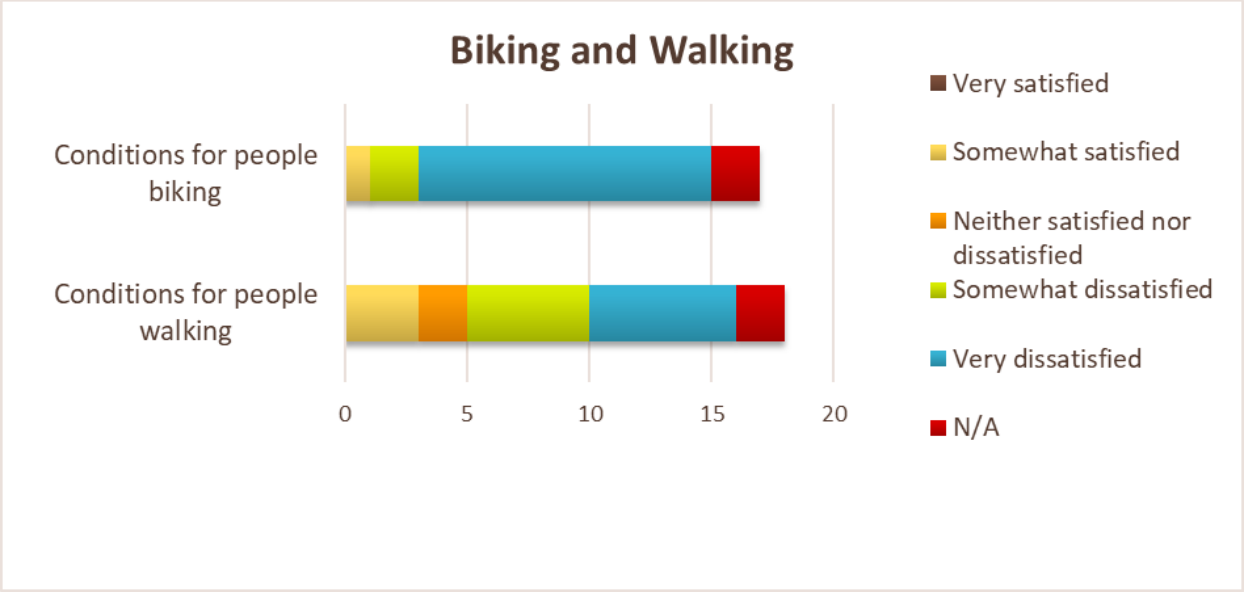
A central pillar of the E.G. Miles Corridor study was to gather appropriate and useable feedback from the general public, stakeholders, and other important participants using a variety of resources and tools to better understand the needs and constrains of the E.G. Miles Corridor and the greater study area roadway network. Thus, the stakeholder engagement and outreach strategy developed at the onset of the study was used to establish the means and methods of conveying information with, and encouraging and incorporating input from the general public, stakeholders, property owners, and elected officials. Both traditional in-person outreach in addition to web and online based outreach mechanisms were employed to engage the public through public meetings, outreach events, online surveys and questionnaires.

A focus group presentation and discussions regarding the E.G. Miles Parkway issues were carried out in March 2022 in addition to regular committee presentations. Two public meetings were conducted on April 14, 2022 and May 12, 2022 where concept layouts, factual summary sheets, and additional corridor study materials were presented as a way to inform stakeholders and provide a baseline for further discussion. Comprehensively, the stakeholder and public involvement included the following participants:

- Various Business and Property Owners
- Chamber of Commerce
- Development Authority Representatives
- Sheriff's Office, Fire, EMS
- Police Departments
- Fort Stewart
- Liberty Transit
- Liberty Regional Medical Center
- GDOT and HAMPO Committee Members

A summary of the stakeholder survey results is presented in the following figures;

FIGURE 2: STAKEHOLDER SURVEY FEEDBACK (EXISTING BICYCLE AND WALKING CONDITIONS)*



* Survey results shown in the figure above included 19 survey respondents.

FIGURE 3: STAKEHOLDER SURVEY FEEDBACK (CORRIDOR IMPROVEMENT NEEDS)*

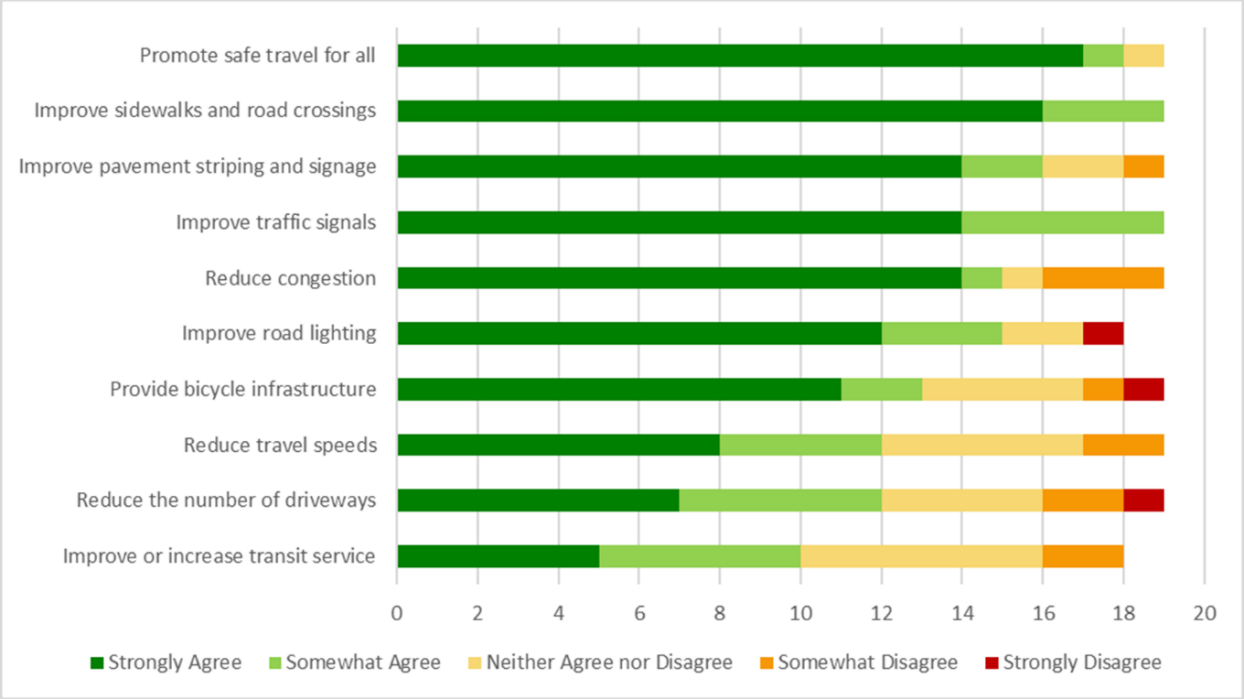


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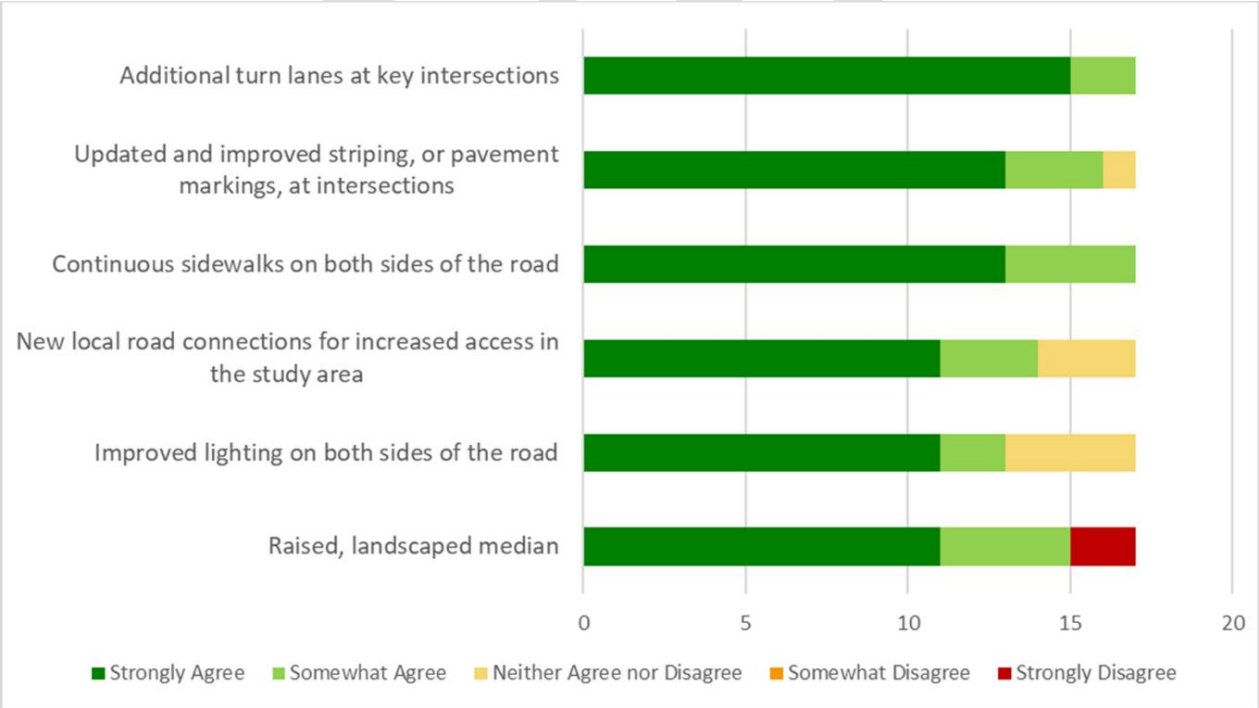
FIGURE 4: STAKEHOLDER SURVEY FEEDBACK (CORRIDOR IMPROVEMENT NEEDS)*



* Survey results shown in the figure above included 19 survey respondents.

After the stakeholder feedback was collected and analyzed, a summary of priority stakeholder concerns specific to the E.G. Miles corridor and the greater study area road network was developed from online surveys and in-person feedback. Each issue was categorized based on its location of impact either along the E.G. Miles Parkway study corridor or within the greater study area. The summary of concerns and suggestions is as follows:

Concerns and Suggestions – E.G. Miles Parkway Corridor Needs

- Cut-through traffic in neighborhoods where there is limited access from EG Miles.
- Walking on this high speed corridor will still not be comfortable. The distance between the sidewalk and the roadway is too narrow.
- Speeding will not be reduced despite improvements on corridor.
- Maintenance might still be an issue. Sidewalks will need to be maintained.
- The manhole covers are an ongoing issue because tires drop into the holes or drivers swerve at high speeds to miss the holes.

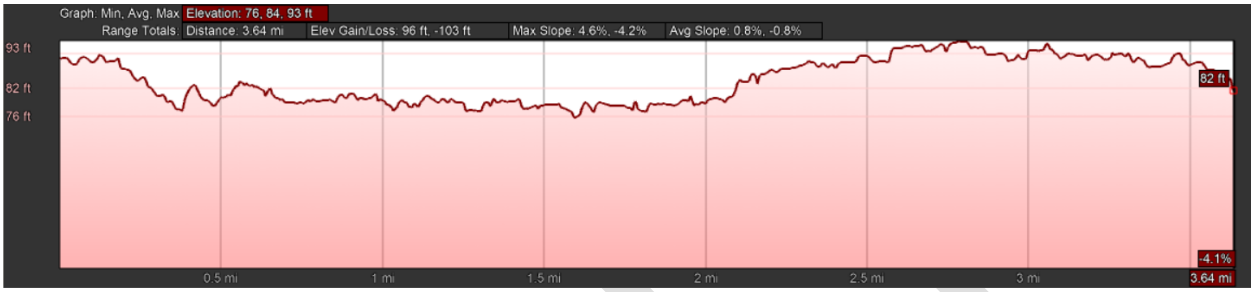
Concerns and Suggestions – Study Area Network Needs

- The corridor has no alternate routes. We need another route to Fort Stewart from the west to disperse traffic.
- Congestion on EG Miles will only increase as more homes are built in the area. We need more local roads for through traffic.

Existing Conditions

To evaluate the existing roadway conditions, traffic counts and subsequent analysis was conducted along E.G. Miles Parkway and at the major intersections that were observed to potentially be impacted by future design decisions. Since existing traffic data was somewhat limited to the E.G. Miles Parkway corridor, trip generation was conducted to estimate traffic coming in and out from major traffic generating establishments. Inventorying the existing roadway was done in addition to looking at crash history, speed data, existing intersection traffic control.

FIGURE 5: E.G. MILES PARKWAY ELEVATION PROFILE



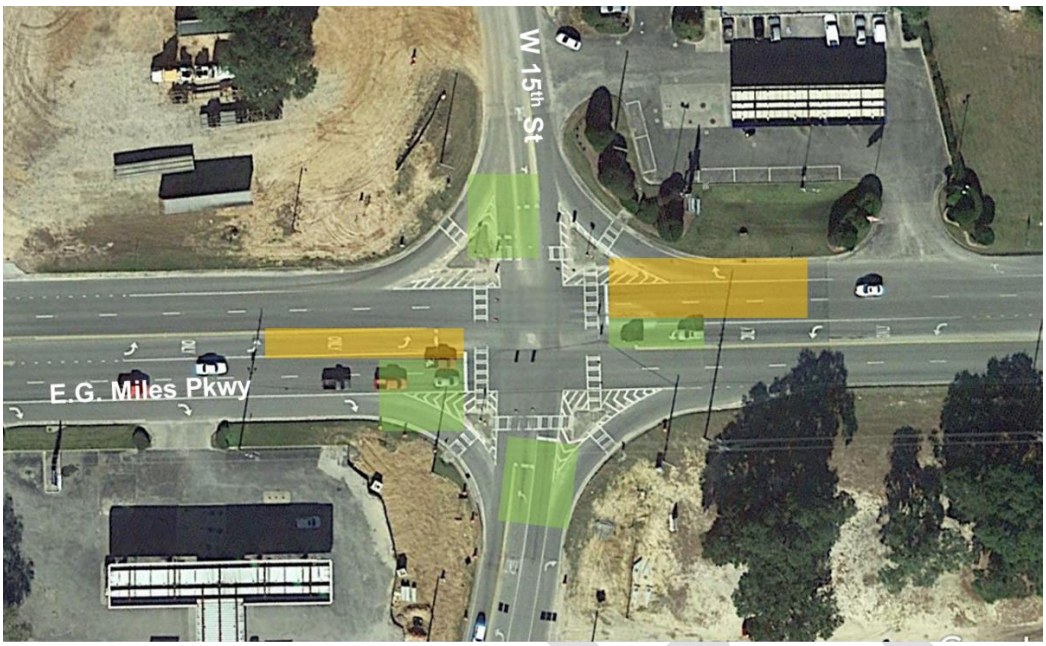
Site Visits and Field Observations

To obtain a better understanding of the existing roadway conditions including operational and safety aspects, a site inventory along the E.G. Miles Corridor was conducted during the AM and PM peak commute time on Tuesday February 9, 2022. The site visit focused on the existing corridor constraints and the approximate intersection vehicle queuing at the following three intersections:

- E.G. Miles Parkway at W 15th Street
- E.G. Miles Parkway at Veterans Parkway
- E.G. Miles Parkway at General Screven Way

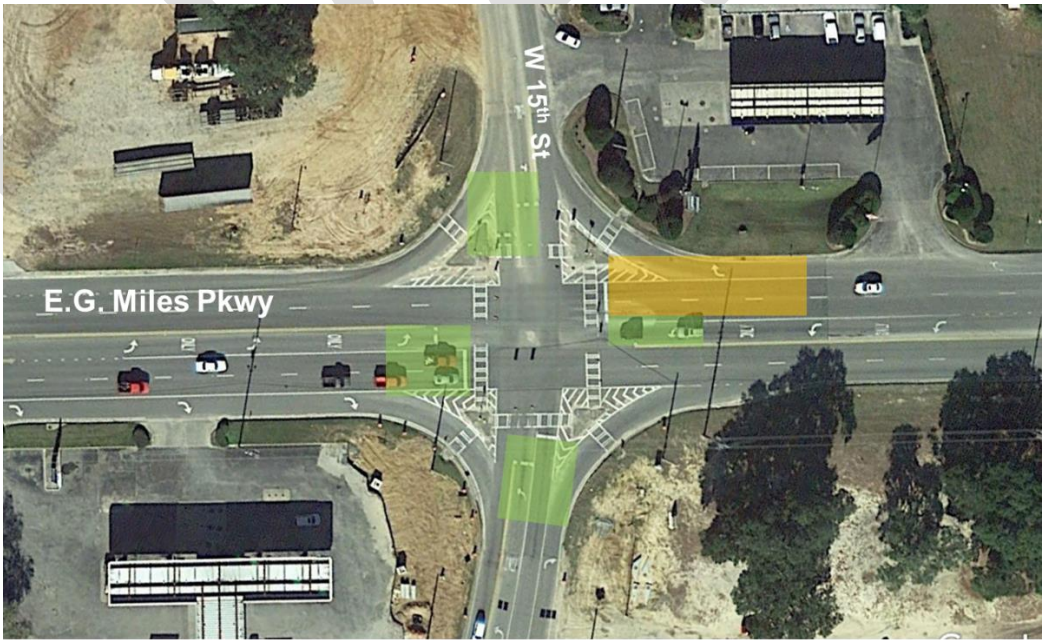
The proceeding figures show the approximate morning and evening peak traffic queuing at three intersection locations along the E.G. Miles Parkway study corridor. Each intersection approach was highlighted based on the observed amount of vehicle queueing. Green highlights minimal vehicle queuing (less than 10 cars), moderate queuing (approximately 10 to 20 vehicles) is shown in orange highlights, and extensive intersection queuing (more than 20 vehicles) is shown in red.

FIGURE 6: E.G. MILES PARKWAY AT W 15TH ST MORNING PEAK PERIOD INTERSECTION QUEUING



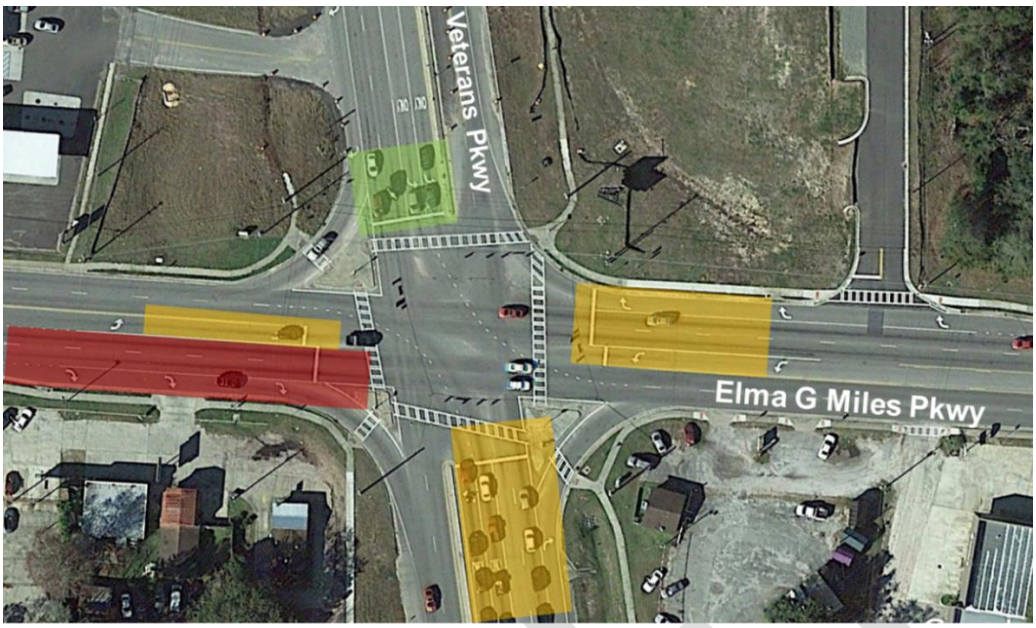
Minimal Intersection Queuing (approx. <10 cars*)
Moderate Intersection Queuing (approx. 10-20 cars*)
Extensive Intersection Queuing (approx. >20 cars*)
*Intersection queuing was measured by observing the average number of cars that line up per approach during the red light cycle phase.

FIGURE 7: E.G. MILES PARKWAY AT W 15TH ST EVENING PEAK PERIOD INTERSECTION QUEUING



Minimal Intersection Queuing (approx. <10 cars*)
Moderate Intersection Queuing (approx. 10-20 cars*)
Extensive Intersection Queuing (approx. >20 cars*)
*Intersection queuing was measured by observing the average number of cars that line up per approach during the red light cycle phase.

FIGURE 8: E.G. MILES PARKWAY AT VETERANS PARKWAY MORNING PEAK PERIOD INTERSECTION QUEUING



Minimal Intersection Queuing (approx. <10 cars*)
Moderate Intersection Queuing (approx. 10-20 cars*)
Extensive Intersection Queuing (approx. >20 cars*)
*Intersection queuing was measured by observing the average number of cars that line up per approach during the red light cycle phase.

FIGURE 9: E.G. MILES PARKWAY AT VETERANS PARKWAY EVENING PEAK PERIOD INTERSECTION QUEUING

Minimal Intersection Queuing (approx. <10 cars*)
Moderate Intersection Queuing (approx. 10-20 cars*)
Extensive Intersection Queuing (approx. >20 cars*)
*Intersection queuing was measured by observing the average number of cars that line up per approach during the red light cycle phase.

FIGURE 10: E.G. MILES PARKWAY AT GEN SCREVEN WAY MORNING PEAK PERIOD INTERSECTION QUEUING

Minimal Intersection Queuing (approx. <10 cars*)
Moderate Intersection Queuing (approx. 10-20 cars*)
Extensive Intersection Queuing (approx. >20 cars*)
*Intersection queuing was measured by observing the average number of cars that line up per approach during the red light cycle phase.

FIGURE 11: E.G. MILES PARKWAY AT GEN SCREVEN WAY EVENING PEAK PERIOD INTERSECTION QUEUING

Minimal Intersection Queuing (approx. <10 cars*)
Moderate Intersection Queuing (approx. 10-20 cars*)
Extensive Intersection Queuing (approx. >20 cars*)
*Intersection queuing was measured by observing the average number of cars that line up per approach during the red light cycle phase.

Traffic Data

Existing traffic counts were collected on December 7, 2021 and December 8, 2021. Turning Movement Counts (TMCs) were conducted at the intersections of Airport Road/ W 15th Street and E.G. Miles Parkway, Veterans Parkway at E.G. Miles Parkway, and W General Screven Way at E.G. Miles Parkway during three peak hour periods:

- AM peak (7 AM to 9 AM),
- Noon peak (11 AM to 1 AM)
- PM peak (4 PM to 6 PM)

48-hour bi-directional counts were conducted at the following locations: Curtis Road, Live Oak Church Road, Miles Crossing, Live Oak Drive, Pineland Ave, and Arlington. The two 48 hour bi-directional counts (G and H) that were collected on E.G. Miles Parkway also included vehicle classification counts, meaning both vehicle and truck specific data was collected. Previous data collection was conducted for a traffic impact study at the intersection of Deal Street and E.G. Miles Parkway which was taken into account. The figures below show the locations of the traffic counts within the study area and the existing turning movement and ADT counts per direction at each collected location. Detailed counts can be found in the appendices of this report.

FIGURE 12: TRAFFIC COUNT LOCATION MAP

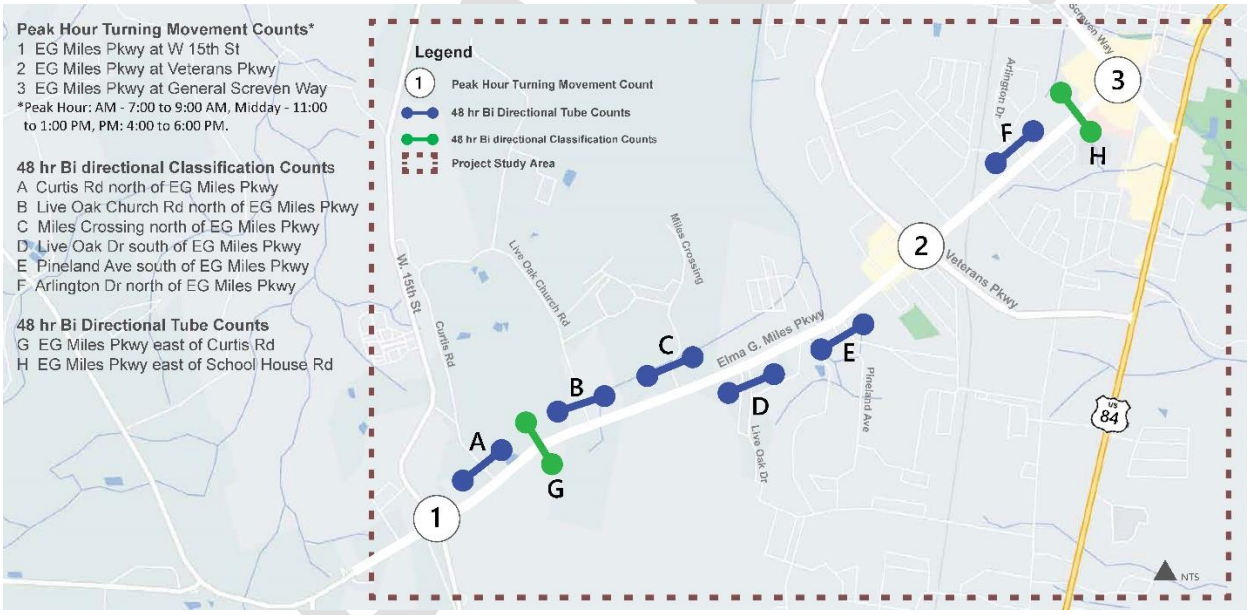


FIGURE 13: EXISTING TURNING MOVEMENT TRAFFIC COUNTS (2021)

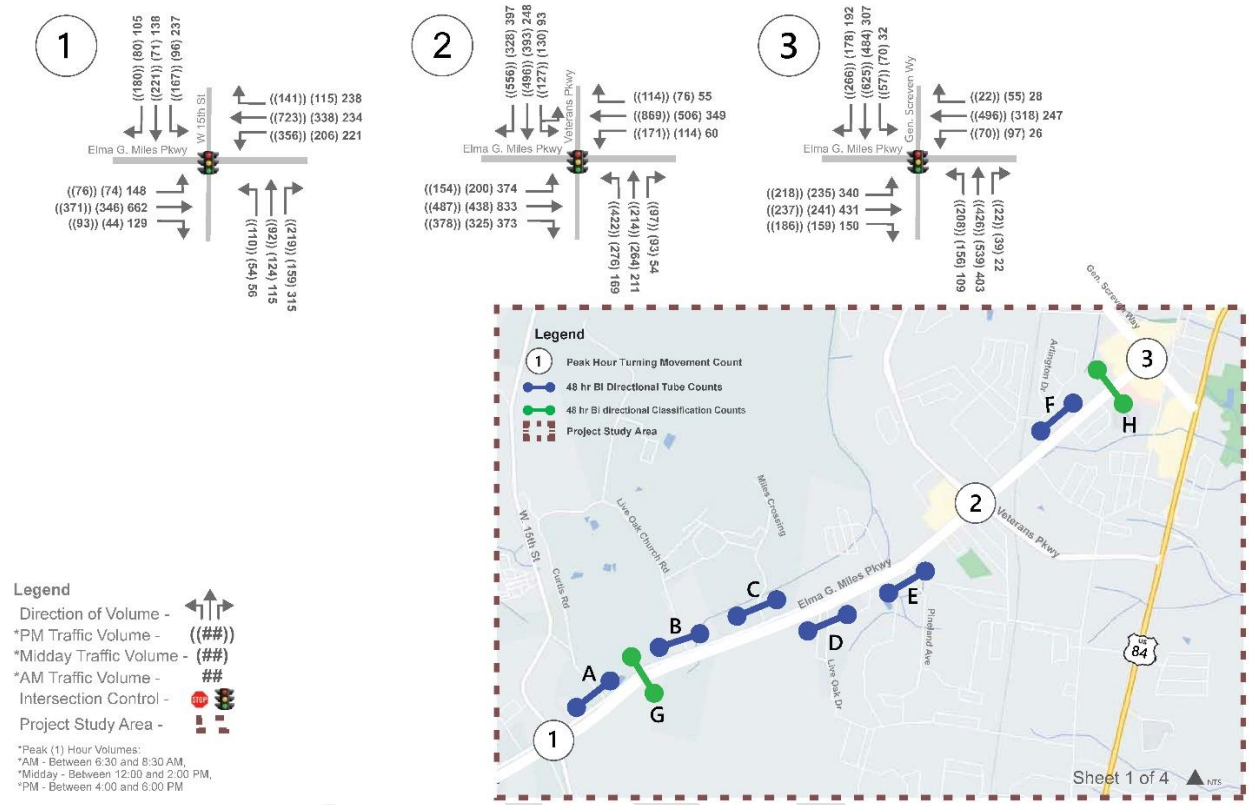
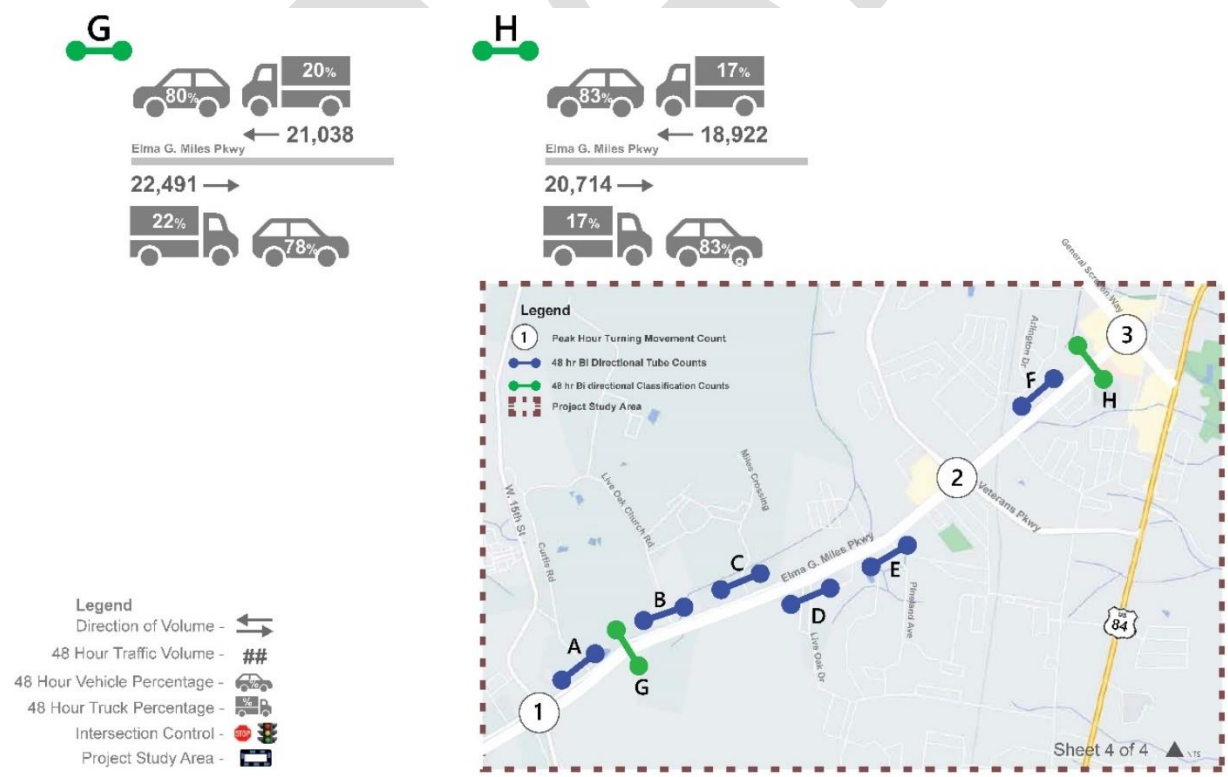


FIGURE 14: EXISTING BI-DIRECTIONAL TRAFFIC COUNTS (2021)

FIGURE 15: EXISTING BI-DIRECTIONAL TRAFFIC COUNTS (2021)

FIGURE 16: EXISTING BI-DIRECTIONAL CLASSIFICATION COUNTS (2021)



GDOT Count Stations

In addition to the collected data, there are existing GDOT count stations along corridor. Count station 179-0121 is located on E.G. Miles Parkway west of Live Oak Church Road. Count station 179-0123 is located on E.G. Miles Parkway east of Palm Drive. Although the Traffic Analysis and Data Application (TADA) contains data for the last 10 years, not all data is field collected meaning some year's traffic data is estimated based on previous field data collection. Thus, only actual counts were looked at for the purposes of this study. The following table shows the actual counts available for these stations.

TABLE 1: HISTORICAL GDOT COUNT STATION DATA

Year	E.G. Miles Parkway Pkwy GDOT TC 079-0121 AADT	E.G. Miles Parkway Pkwy GDOT TC 079-0123 AADT
2015	16,900	-
2017	-	19,900
2018	-	16,900
2019	21,700	-
2020	-	17,000

Safety Analysis:

Historical Crash Data

Collision and Safety Data

Crash history data was collected from the Georgia Electronic Accident Reporting System (GEARS). The findings can be found in the tables below. To see how the crash data stood in relation to statewide averages, it was compared to the state crash rates. To analyze the two, crash rates per 100 million vehicles miles (100Mvm) were looked at. Throughout the entire corridor, the crash rate was observed to be higher than the state average. Crash history from 2016 to 2020 was used for the comparison timeframe. The following tables show the statewide crash data versus the E.G. Miles Parkway corridor.

TABLE 2: E.G. MILES PARKWAY SEGMENT 1: CORRIDOR VS STATE CRASH DATA

Year	AADT	Crash Rate (per 100Mvm)	Statewide Average Crash Rate	Injury Crash Rate (per 100Mvm)	Fatal Crash Rate
2016	17000	1413.7	655	452.4	0.0
2017	17000	1102.7	623	410.0	0.0
2018	16900	1223.0	540	312.9	0.0
2019	19900	1171.4	480	350.2	0.0
2020	19700	878.4	n/a	219.6	12.2

TABLE 3: E.G. MILES PARKWAY SEGMENT 2: CORRIDOR VS STATE CRASH DATA

Year	AADT	Crash Rate (per 100Mvm)	Statewide Average Crash Rate	Injury Crash Rate (per 100Mvm)	Fatal Crash Rate
2016	19600	830.8	655	241.4	5.6
2017	21700	978.6	623	304.2	5.1
2018	17400	980.1	540	328.8	0.0

2019	17500	1200.9	480	326.9	0.0
2020	17400	986.5	n/a	297.2	6.3

In addition to the data above, the historical intersection crash data from the 5 latest years was inventoried. The crash data from the previous 5 years was compiled and separated into 6 separate crash types: angle, head-on, rear end, sideswipe-same direction of travel, sideswipe opposite direction of travel. Additionally, the crashes were separated by crash severity: no apparent injury (O), possible injury or complaint (B), suspected minor or visible injury (B), suspected serious injury (A), fatal injury (K). The following tables show the crash data from the previous 5 years for each intersection.

TABLE 4: AIRPORT DR/W 15TH ST AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% Of Total
	K	A	B	C	O	
Angle	0	0	9	17	48	32%
Head-on	1	0	3	6	2	5%
Rear End	0	0	1	25	84	47%
Sideswipe- Same	0	0	0	0	17	7%
Sideswipe- Opposite	0	0	0	0	8	3%
Not Collision w/ Motor Veh	0	0	1	1	11	6%
Totals	1	0	14	49	170	234

TABLE 5: CURTIS RD AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% Of Total
	K	A	B	C	O	
Angle	0	0	0	2	0	14%
Head-on	0	0	0	0	0	0%
Rear End	0	0	0	0	1	7%
Sideswipe- Same	0	0	0	0	4	29%
Sideswipe- Opposite	0	0	0	0	1	7%
Not Collision w/ Motor Veh	0	0	0	0	6	43%
Totals	0	0	0	2	12	14

TABLE 6: LIVE OAK CHURCH RD AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% of Total
	K	A	B	C	O	
Angle	0	0	0	0	4	15%
Head-on	0	0	0	0	0	0%
Rear End	0	0	2	4	4	37%
Sideswipe- Same	0	0	0	0	6	22%
Sideswipe- Opposite	0	0	0	0	1	4%
Not Collision w/ Motor Veh	0	0	0	2	4	22%
Totals	0	0	2	6	19	27

TABLE 7: MILES XING AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% of Total
	K	A	B	C	O	
Angle	0	1	0	3	4	42%
Head-on	0	0	0	0	2	11%
Rear End	0	0	0	1	4	26%
Sideswipe- Same	0	0	0	0	0	0%
Sideswipe- Opposite	0	0	0	0	0	0%
Not Collision w/ Motor Veh	0	0	0	0	4	21%
Totals	0	1	0	4	14	19

TABLE 8: LIVE OAK DR AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% of Total
	K	A	B	C	O	
Angle	**0**	**0**	**1**	**5**	**13**	**40%**
Head-on	0	0	0	2	2	8%
Rear End	0	1	0	2	8	23%
Sideswipe- Same	0	0	0	0	9	19%
Sideswipe- Opposite	0	0	0	1	2	6%
Not Collision w/ Motor Veh	0	0	0	0	2	4%
Totals	0	1	1	10	36	48

TABLE 9: PINELAND AVE AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% of Total
	K	A	B	C	O	
Angle	0	0	2	11	29	59%
Head-on	0	0	0	0	1	1%
Rear End	0	0	1	5	11	24%
Sideswipe- Same	0	0	0	0	6	8%
Sideswipe- Opposite	0	0	0	0	1	1%
Not Collision w/ Motor Veh	0	0	0	0	4	6%
Totals	0	0	3	16	52	71

TABLE 10: WILLOWBROOK DR/ SHARON ST AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% of Total
	K	A	B	C	O	
Angle	0	0	3	5	14	37%
Head-on	0	0	1	0	0	2%
Rear End	0	0	3	8	13	41%
Sideswipe- Same	0	0	0	0	6	10%

Sideswipe- Opposite	0	0	1	0	2	5%
Not Collision w/ Motor Veh	0	0	1	0	2	5%
Totals	0	0	9	13	37	59

TABLE 11: VETERANS PKWY AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% of Total
	K	A	B	C	O	
Angle	0	0	8	12	36	25%
Head-on	0	0	2	1	2	2%
Rear End	0	0	4	26	103	59%
Sideswipe- Same	0	0	0	1	21	10%
Sideswipe- Opposite	0	0	0	1	0	0%
Not Collision w/ Motor Veh	0	0	0	1	7	4%
Totals	0	0	14	42	169	225

TABLE 12: DEAL ST AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% of Total
	K	A	B	C	O	
Angle	0	0	3	5	14	37%
Head-on	0	0	1	0	0	2%
Rear End	0	0	3	8	13	41%
Sideswipe- Same	0	0	0	0	6	10%
Sideswipe- Opposite	0	0	1	0	2	5%
Not Collision w/ Motor Veh	0	0	1	0	2	5%
Totals	0	0	9	13	37	59

TABLE 13: ARLINGTON DR/ SURREY RD AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% of Total
	K	A	B	C	O	
Angle	0	1	0	4	5	26%
Head-on	0	0	0	1	0	3%
Rear End	0	0	0	4	19	61%
Sideswipe- Same	0	0	0	2	1	8%
Sideswipe- Opposite	0	0	0	0	0	0%
Not Collision w/ Motor Veh	0	0	0	0	1	3%
Totals	0	1	0	11	26	38

TABLE 14: LIBERTY REGIONAL MEDICAL CENTER AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% of Total
	K	A	B	C	O	
Angle	0	0	0	2	3	26%
Head-on	0	0	0	0	0	0%
Rear End	0	0	0	3	5	42%
Sideswipe- Same	0	0	0	0	2	11%
Sideswipe- Opposite	0	0	0	0	1	5%
Not Collision w/ Motor Veh	1	0	0	0	2	16%
Totals	1	0	0	5	13	19

TABLE 15: W GENERAL SCREVEN WAY AND E.G. MILES PARKWAY CRASH DATA

Crash Type	Crash Severity					% of Total
	K	A	B	C	O	
Angle	0	0	4	12	52	42%
Head-on	0	1	0	1	2	2%
Rear End	0	0	1	10	66	48%
Sideswipe- Same	0	0	0	1	8	6%
Sideswipe- Opposite	0	0	0	0	2	1%
Not Collision w/ Motor Veh	0	0	0	0	1	1%
Totals	0	1	5	24	131	161

Pedestrian Corridor Conditions

Along the E.G. Miles Parkway corridor, immense improvements have been made to implement sidewalks along both sides of E.G. Miles Parkway, especially along Segment 2 (Veterans Parkway to W 15th St) where new sidewalks have been constructed to provide connected pedestrian access. While the pedestrian sidewalk links have improved in recent years, there are still some areas which lack safe pedestrian crossing conditions at both mid-block locations and at specific intersection approaches. For example, the northbound approach on General Screven way at E.G. Miles Parkway is missing crosswalk striping. This is an important safety element as it provides a visible crossing path for pedestrians and drivers.

FIGURE 17: EXISTING MISSING PEDESTRIAN CROSSWALK AT E.G. MILES PARKWAY AND GENERAL SCREVEN WAY

Speed Data

Speed data was collected from GDOT's Traffic Analysis and Data Application (TADA) database. Speed data was collected from two count station locations along E.G. Miles Parkway. One location (179-0121) is located between W 15th Street and Veterans Parkway the other station (179-0123) is located between Veterans Parkway and General Screven Way. Speed data is only available for a couple of days at each count station. The following range of dates in 2021 had speed data associated with station 179-0121: August 3, 2021 to August 5, 2021. The following range of dates in 2021 had speed data associated with station 179-0123: November 8,2021 to November 10, 2021. It was observed that at station location (179-121), the average speed of travel was above the posted speed limit. The following graphs shows the observed GDOT speed information.

FIGURE 18: WEEKLY SPEED PROFILE FOR COUNT STATION 179-0121

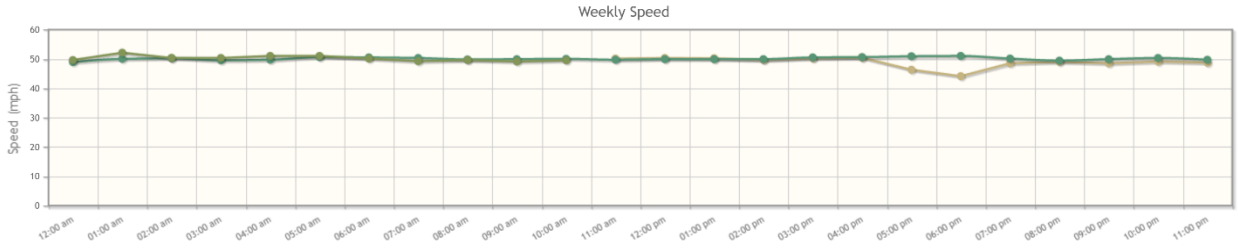
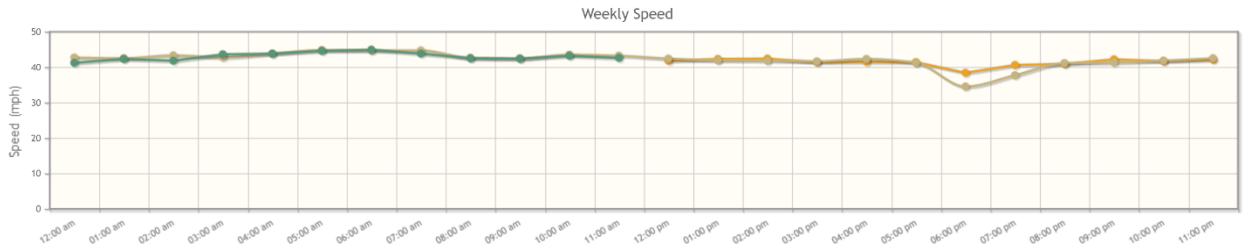


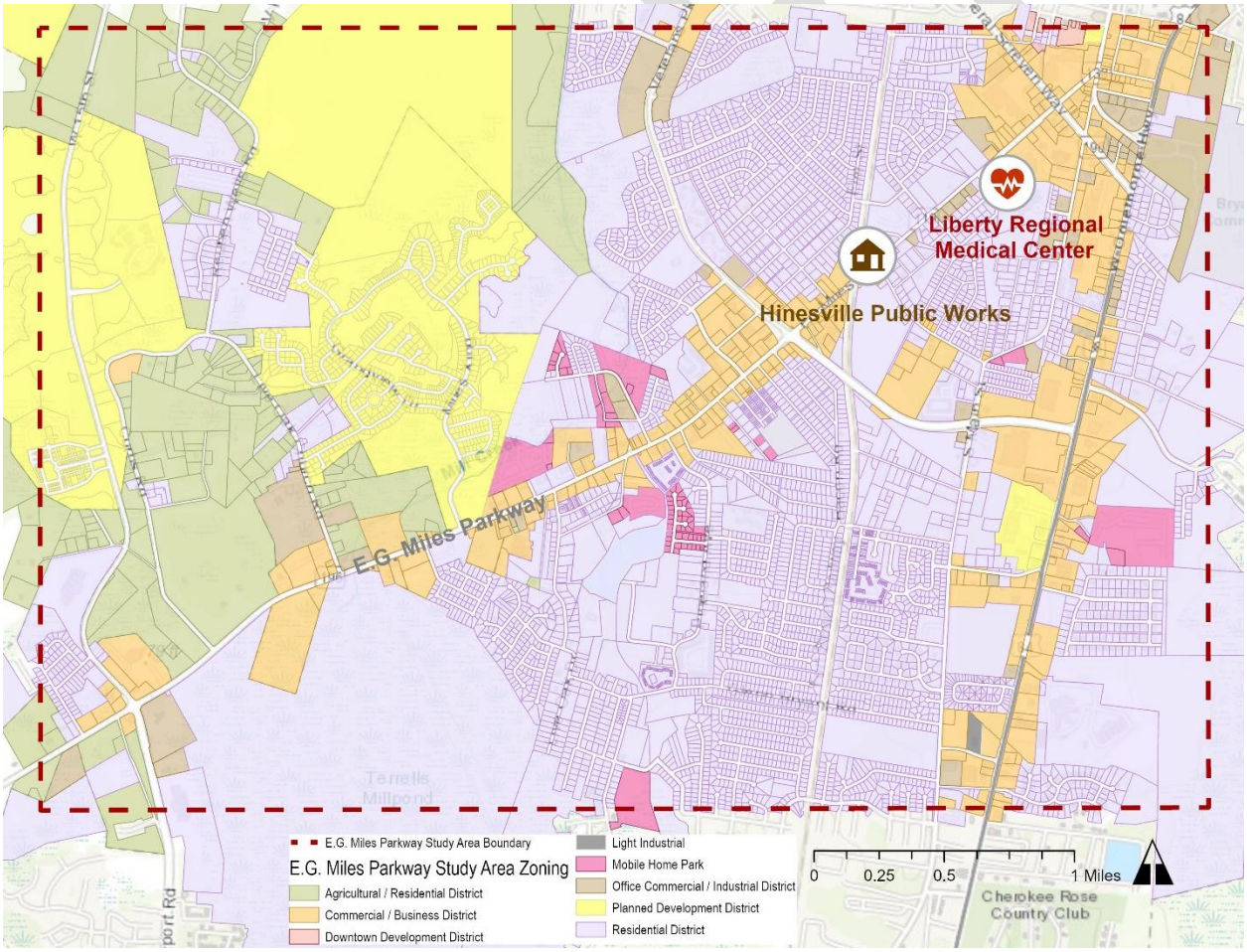
FIGURE 19: WEEKLY SPEED PROFILE FOR COUNT STATION 179-0123



Zoning and Land Use

The existing land use pattern within the E.G. Miles Parkway study area can be characterized by its mature residential mixed housing stock with commercial, office, and light industrial parcels located mainly along major roadway corridors such as E.G. Miles Parkway and US 84. The figure below shows the existing zoning per "district" within the study area, and several key locations located along the E.G. Miles Parkway corridor which are the Hinesville Public Works Department, and the Liberty Regional Medical Center.

FIGURE 20: E.G. MILES PARKWAY STUDY AREA EXISTING ZONING



For the purpose of the study, each zoning district for Hinesville and the greater Liberty County were consolidated and visualized in the existing zoning map shown above. The individual land uses per each zoning type is shown in the following tables for Liberty County and the City of Hinesville.

TABLE 16: LIBERTY COUNTY SPECIFIC ZONING DISTRICTS

Zoning Code	Zoning District
"A-1"	Agricultural districts
"AR-1"	Agricultural Residential districts
"R-1"	Single-Family Residential districts
"R-2"	Two-Family Residential districts
"R-2A"	One- and Two-Family Residential districts
"R-3"	Multifamily Residential districts
"R-4"	Mobile Home Park Residential districts
"B-1"	Neighborhood Commercial districts
"B-2"	General Commercial districts
"I-1"	Industrial districts
"PUD"	Planned Unit Development districts
"DM-1"	Dunes and Marshland districts

TABLE 17: CITY OF HINESVILLE SPECIFIC ZONING DISTRICTS

Zoning Code	Zoning District
R-1	Single-Family Dwelling District
R-2	Single-Family Dwelling District
R-3	Single-Family Dwelling District
R-4	Single-Family Dwelling District
R-A-1	Multifamily Dwelling District
R-TH	Townhouse Dwelling District
MH	Manufactured Home Park Dwelling District
MH-2	Single-Family Manufactured Home Dwelling District
PUD	Planned Unit Development District
O-I	Office—Institutional District
O-C	Office—Commercial District
C-1	Central Business District
C-2	General Commercial District
C-3	Highway Commercial District
D-D	Downtown Development District
L-I	Light Industrial District
	Special Districts
FH	Flood Hazard District
MR	Military Reservation District

Transportation Network and Operations

SR 110/ Elma G Miles Parkway (E.G. Miles Parkway) is a 4-lane minor arterial road in Hinesville, Georgia. The roadway has a posted speed limit of 45 MPH and 40 MPH, depending on the location. The surrounding area is primarily residential with some commercial and some retail, depending on the area. The corridor also provides access to Fort Stewart and as previously stated, E.G. Miles Parkway is considered a freight corridor.

Along the southern section of the corridor, there exists a middle turning lane. Along many of the intersections with minor streets, there exists right turn bays. All minor streets only have 1 approach lane. In addition to the minor streets, E.G. Miles Parkway has 3 major intersections: E.G. Miles Parkway at W 15th Street/ Airport Road, E.G. Miles Parkway at SR Veterans Parkway, and E.G. Miles Parkway at W General Screven Way. E.G. Miles Parkway is characterized with rolling terrain. The following figure shows the elevation change along E.G. Miles Parkway from W 15th Street to W General Screven Way. The following figures depict the existing intersection control with current lane geometry along the E.G. Miles Parkway study corridor.

FIGURE 21: SECTION 1 (W 15TH ST TO VETERANS PKWY) EXISTING INTERSECTION CONTROL WITH LANE GEOMETRY

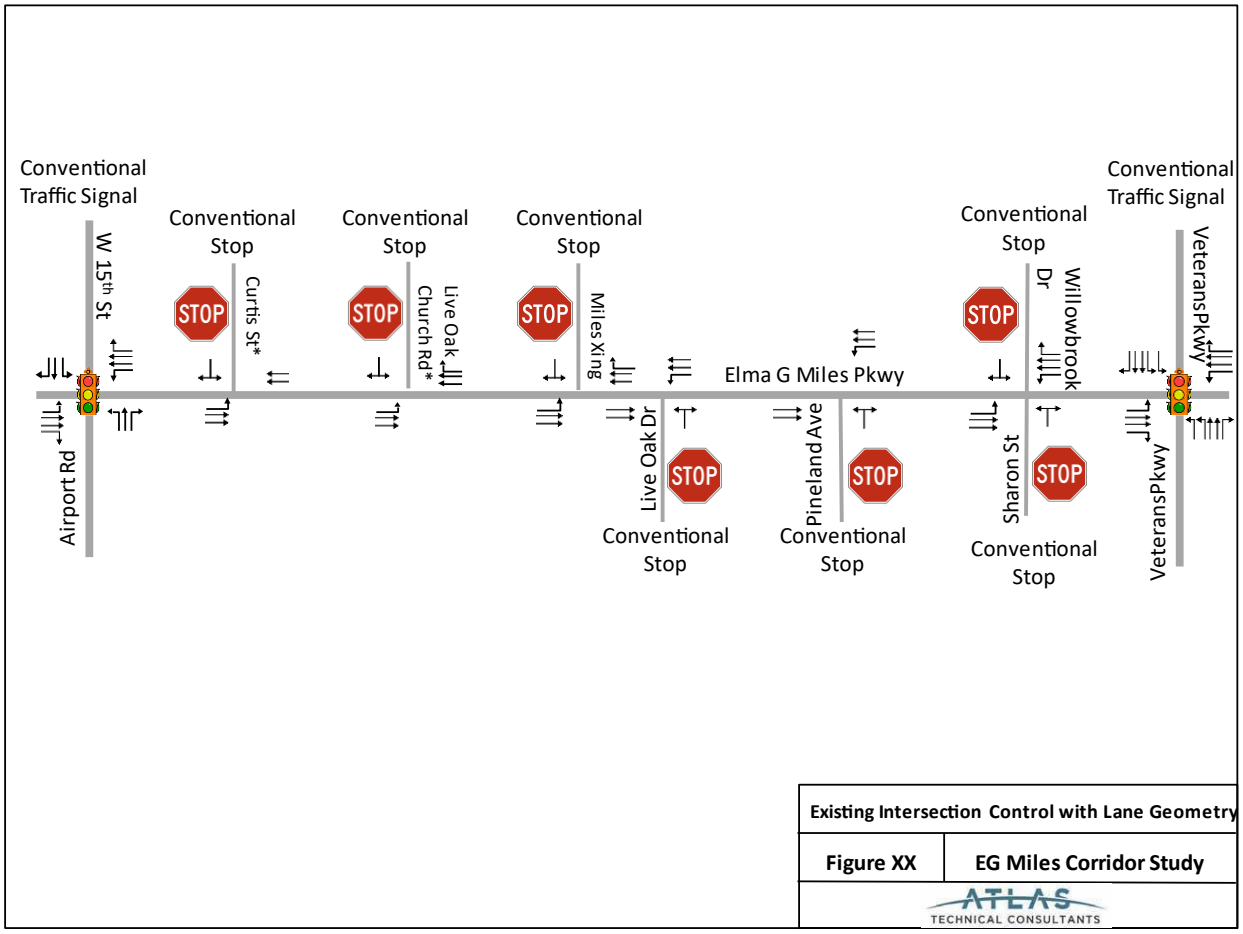
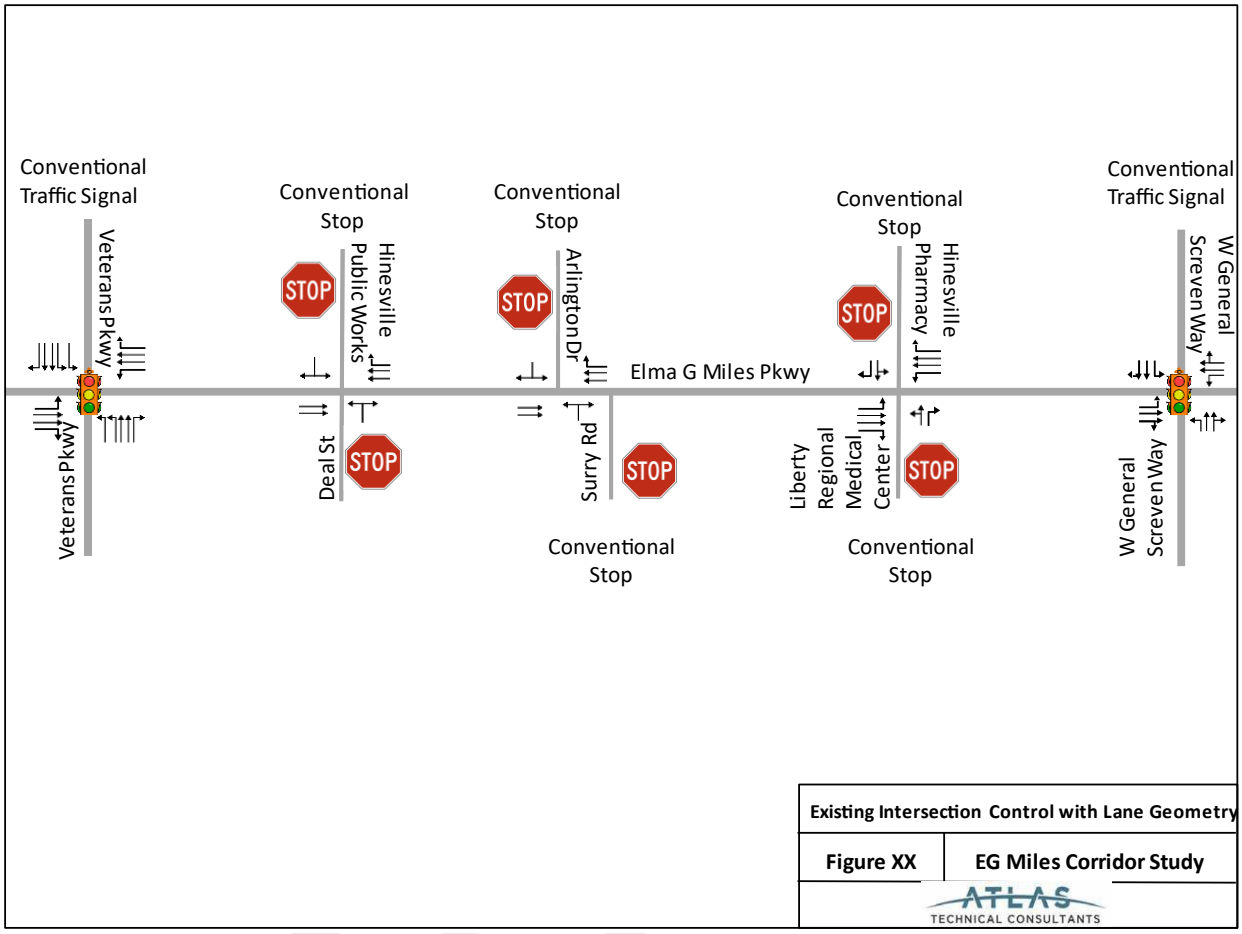


FIGURE 22: SECTION 1 (VETERANS PKWY W GEN SCREVEN WAY) EXISTING INTERSECTION CONTROL WITH LANE GEOMETRY



Traffic Capacity Analysis

Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a set time duration. Level-of-service (LOS) is used to describe the operating characteristics of a road segment or intersection in relation to its capacity. LOS is defined as a qualitative measure that describes operational conditions and motorists' perceptions within a traffic stream. The *Highway Capacity Manual* (HCM) defines six levels of service, LOS A through LOS F, with A being the best and F the worst. When capacity analysis is conducted on a convectional stop intersection, LOS and delay is only LOS is regarded on the main street left turns and minor street approach. The signalized capacity analysis looks at overall intersection LOS and delay. The existing traffic conditions were analyses based on the tube count and Turning Movement Counts (TMCs).

Capacity analysis was conducted on the intersections that were deemed to be median opening. Capacity analysis was conducted for the AM, Noon, and PM Peaks. Intersections that did not have any data collection used vehicle trip generation. Trip generation rates published in *Institute of Transportation Engineers (ITE) Trip Generation Manual; Tenth Edition* were used to determine the existing traffic. Each peak was determined on a per intersection bases to grasp the worse traffic conditions at each intersection. For unsignalized intersections, HCM 2010 Unsignalized Intersection Analysis was used for all unsignalized intersections. Synchro 11 Analysis was used to analyze the three signalized intersections.

Because TMC were not conducted at every intersection and capacity analysis requires TMCs, the following assumptions were used to determined TMCs: the hourly distribution of the tube counts of E.G. Miles Parkway were used to distribute the traffic coming from side streets, and the hourly distribution for each direction would determine how many vehicles were turning into the side street. The tube counts on the minor streets were used to determine the total traffic entering and exiting the minor streets. This distribution was done at each of the peaks. Because only two tube counts were conducted on E.G. Miles Parkway, the southern intersections (south of Veterans Parkway) were analysis with the tube count conducted on E.G. Miles Parkway north of Curtis Road and the northern intersections (north of veterans Parkway) were analysis with the tube count conducted on E.G. Miles Parkway north of Deal Street.

For the purposes of the traffic analysis, E.G. Miles Parkway is said to run East/West and the side street to run North/South.

The traffic analysis concluded that given the existing volumes, most unsignalized intersections suffer unreasonable delays on the side streets. All three signalized intersections were deemed to have an operationally fit with the existing conditions. The following figures summarize the LOS and delays for all the intersections analysis under the existing condition.

FIGURE 23: EXISTING LOS AND DELAY RESULTS (W 15TH ST TO MILES CROSSING)

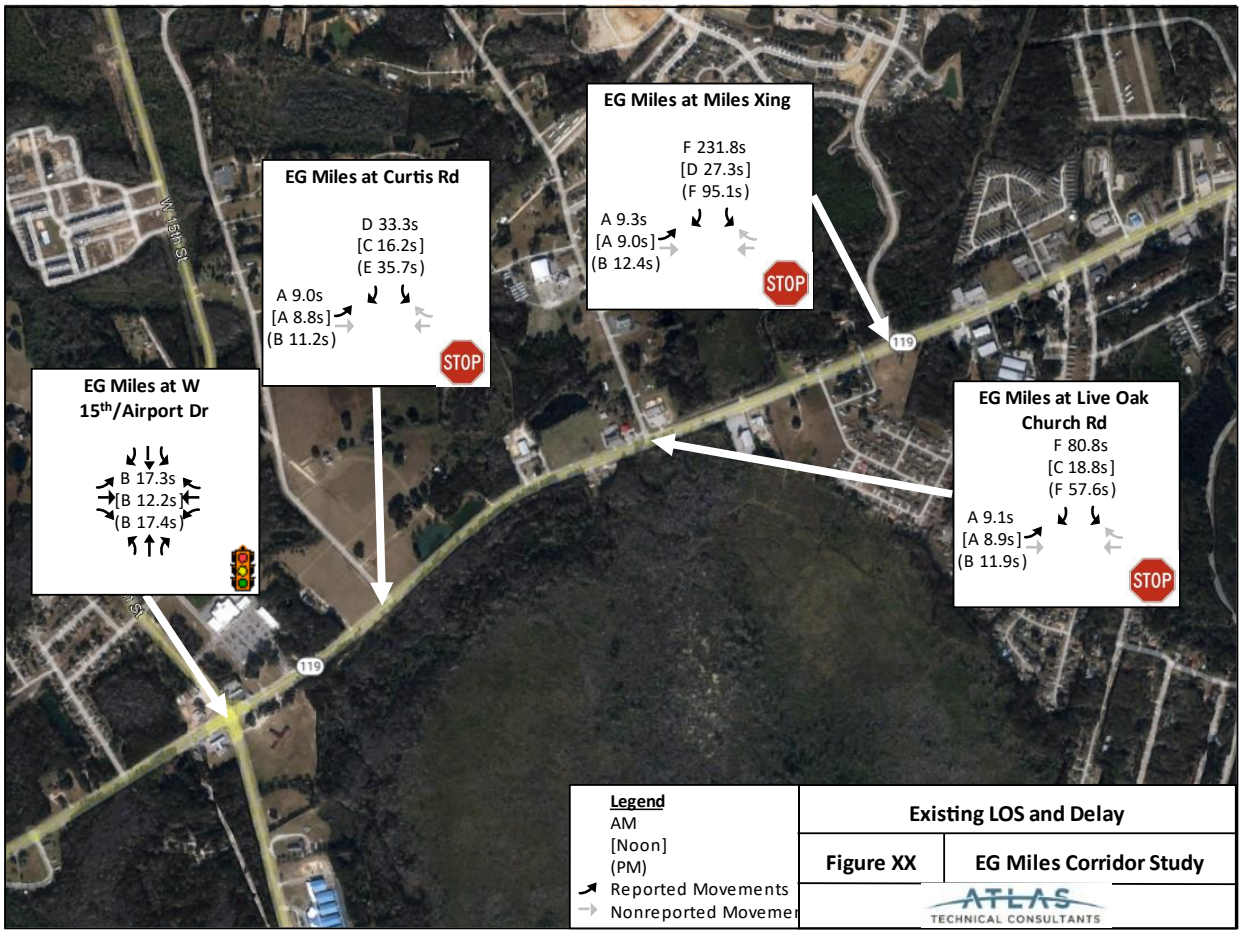


FIGURE 24: EXISTING LOS AND DELAY RESULTS (LIVE OAK DRIVE TO VETERANS PARKWAY)

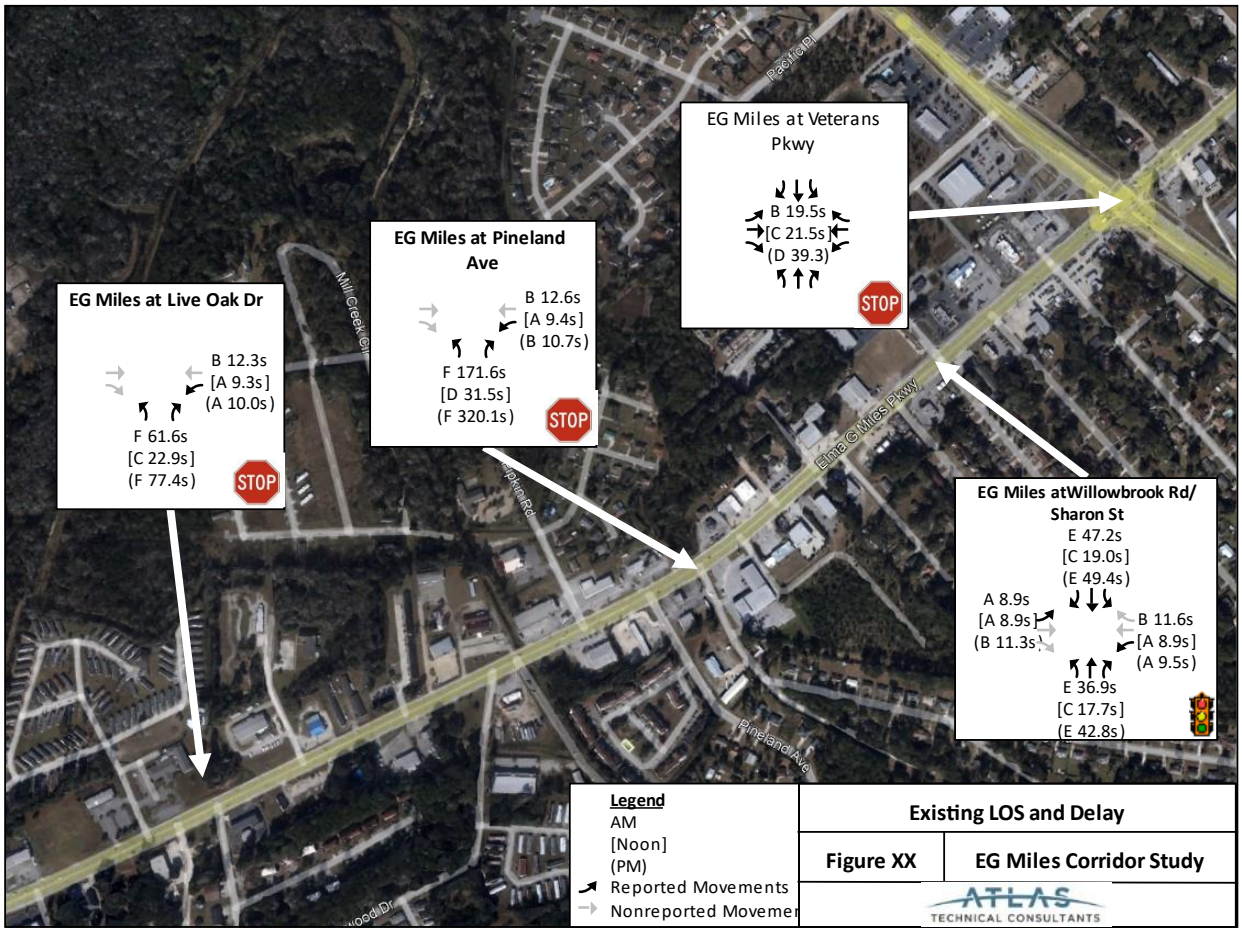
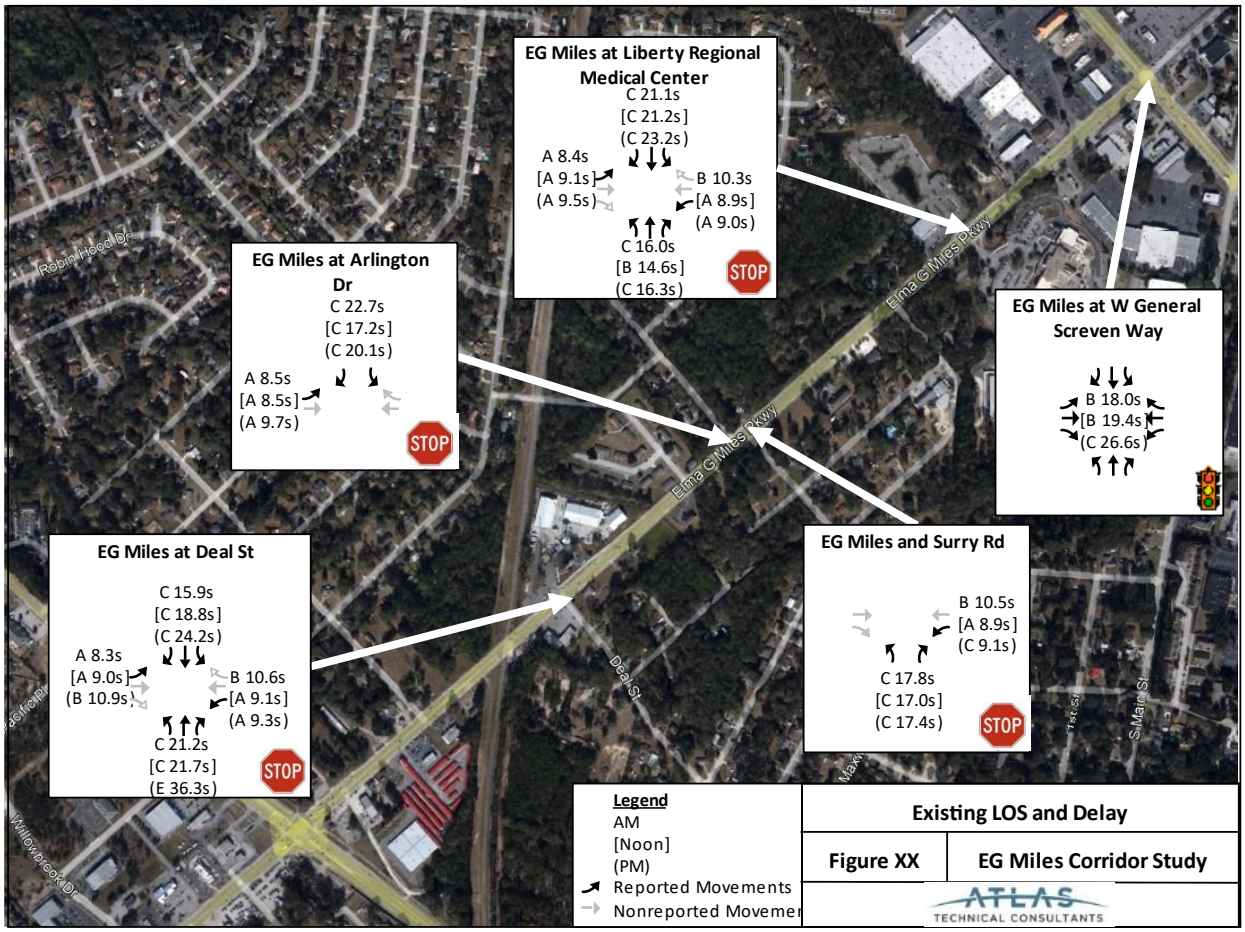


FIGURE 25: EXISTING LOS AND DELAY RESULTS (DEAL STREET TO W GENERAL SCREVEN WAY)



Future Conditions

Transportation and Development Projects

Within the E.G. Miles Parkway study area there are several planned transportation and development projects with some already under construction. Within the study area boundary there are three GDOT transportation improvement projects with two already under construction and one project planned to be constructed in the long range (>10 years). Additionally, there are multiple commercial and residential development projects within the study area. There are 11 commercial developments within the study area with two already under construction and 8 planned residential developments with all 8 residential developments designated as single family. The transportation and development projects are shown by location in the two figures on the proceeding page.

FIGURE 26: GDOT PROJECTS WITHIN THE STUDY AREA

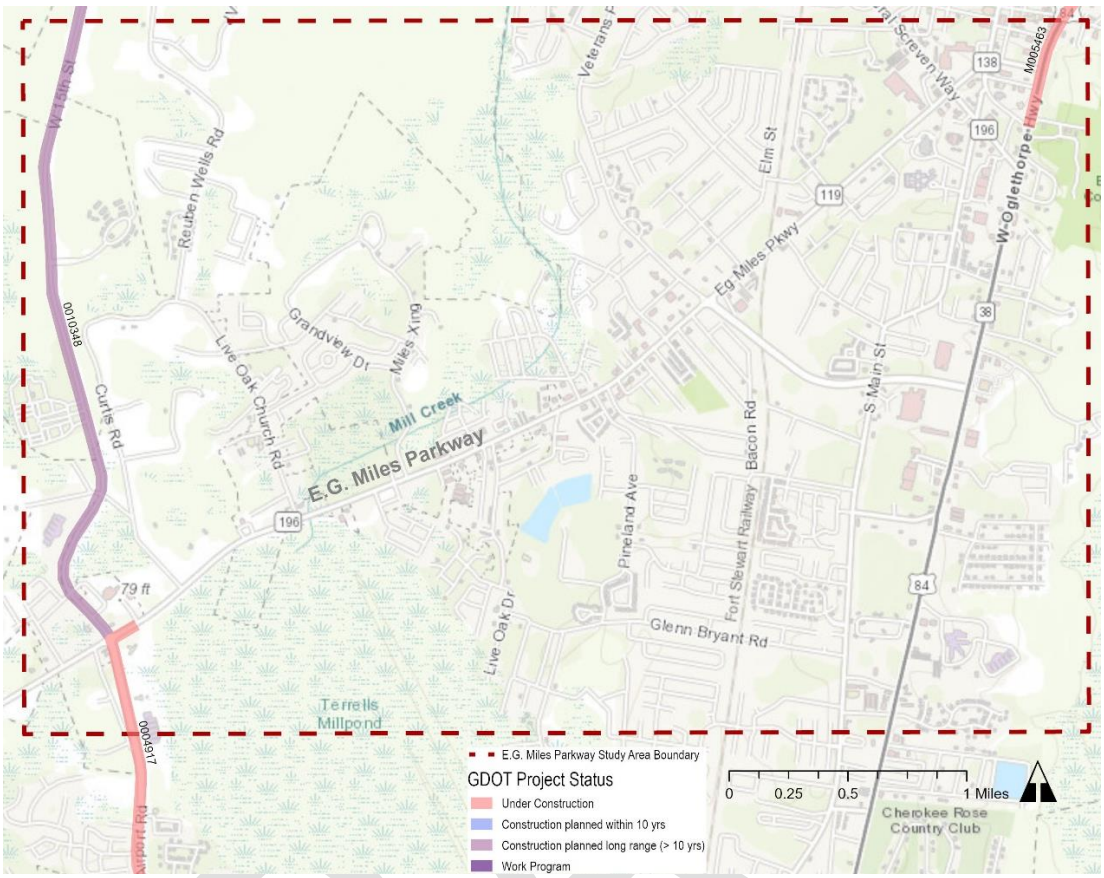
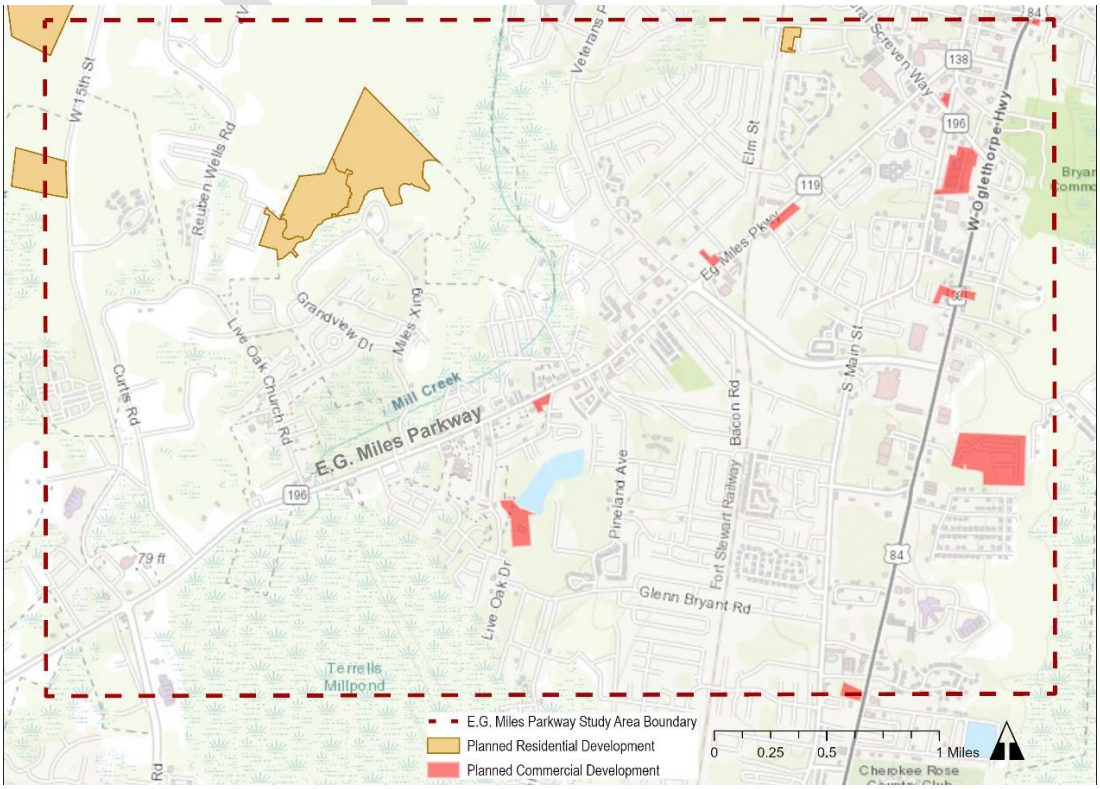


FIGURE 27: DEVELOPMENT PROJECTS WITHIN THE STUDY AREA



Future Traffic Projections Methodology

Future traffic conditions were assessed and analyzed in relation with the existing traffic analysis. For the purposes of this study, 2025 was designated to be the opening year and 2045 was chosen to be the design year. To better analyze the future traffic, the existing baseline traffic volumes were grown by an appropriate future growth rate and then used as the future volumes for various future traffic analyses. Synchro 11 software was the main tool used for the future traffic analysis for signalized intersections and HCM 2010 Unsignalized Analysis was used for the future analysis at unsignalized intersections.

After 2025 and 2045 scenarios for the build and no build scenarios were analyzed, each unsignalized median opening location went through an extensive Signal Warrant Analysis and ICE assessment. This was done to determine the future recommendations per location along the study corridor.

Intersection improvements were first assessed and analyzed as stand-alone improvements per intersection location. Since the ICE analysis does not factor in adjacent intersections when analyzing an individual intersection, a second iteration of ICE was conducted to make sure the alternatives from the first iteration still stand as the preferred alternatives through the study corridor. The second iteration considers trips that would be rerouted on a corridor-wide level.

Growth Rate

Future traffic conditions were based on the existing and the projected growth rate for each studied roadway. The growth rate for the area was determined using information from the following GDOT count stations: 179-0125 (on E.G. Miles Parkway/W Hendry St), 179-0092 (on W General Screven Way south of E.G. Miles Parkway), 179-0094 (on W General Screven north of E.G. Miles Parkway), 179-0123 (on E.G. Miles Parkway north of Veterans Parkway), 179- 0121 (on E.G. Miles Parkway North of Curtis Road), and 179-0221 (on Veterans Parkway north of E.G. Miles Parkway).

Only actual count data from the GDOT count stations were used to determine the growth rate. The developed growth rate also takes into consideration US Census data and subsequent projections. US Census data shows that Hinesville has a growth rate of less than 0.5% per year. Then this growth rate was only applied to the through-movement volumes along E.G. Miles Parkway, Veterans Parkway, 15th Street/ Airport Road, and General Screven Way.

The growth rate was not applied to the minor streets since it is assumed that local traffic will not significantly change unless a new development is proposed in close proximity to the minor study streets. For the purposes of this traffic analysis, based on actual GDOT count station data and US Census data, the growth rate was assumed to be 0.5%. The following table summarizes the growth rate at each GDOT count station.

TABLE 18: GDOT COUNT STATION GROWTH RATE

Station ID	179-0125	179-0092	179-0094	179-0123	179-0121	179-0221
Growth Rate	0.32%	0.27%	-2.00%	-2.00%	-1.20%	2.63%

Trip Generation for U-Turns

Since data collection was not conducted for all driveways, trip generation calculations were used to determine the estimate number of trips that would be rerouted due to the proposed center roadway median along E.G. Miles Parkway. The generated trips resulting in U-Turns would then be implemented into the build scenarios.

The *Institute of Transportation Engineers (ITE) Trip Generation Manual; Tenth Edition* trip generation rates were used to estimate the traffic generated by the major traffic generators. Trip generation was only conducted for the southern portion of the study corridor since it was determined that establishments in the northern section would not have a major operational impacts on U-turn movements.

The generated trips were group into major 7 major sections between median openings. Each section was categorized and allocated to either the northern or southern sections. With the hourly directional distribution determined on E.G. Miles Parkway, the trips that are intended to take a left turn can be determined. These trips would be rerouted as U-turns at the next median opening.

Future No-Build Scenario

The future no-build scenario considered only a change in volumes determined by the proposed growth rate. This scenario did not consider any intersection improvements and it does not consider any potential developments or land use changes on or near the corridor. This scenario was analyzed in the 2025 opening year and 2045 design year. The traffic analysis level of service (LOS) and subsequent delay results can be found in the following figures for the 2025 and 2045 scenarios.

FIGURE 28: 2025 NO BUILD LOS AND DELAY RESULTS (W 15TH ST TO MILES CROSSING)

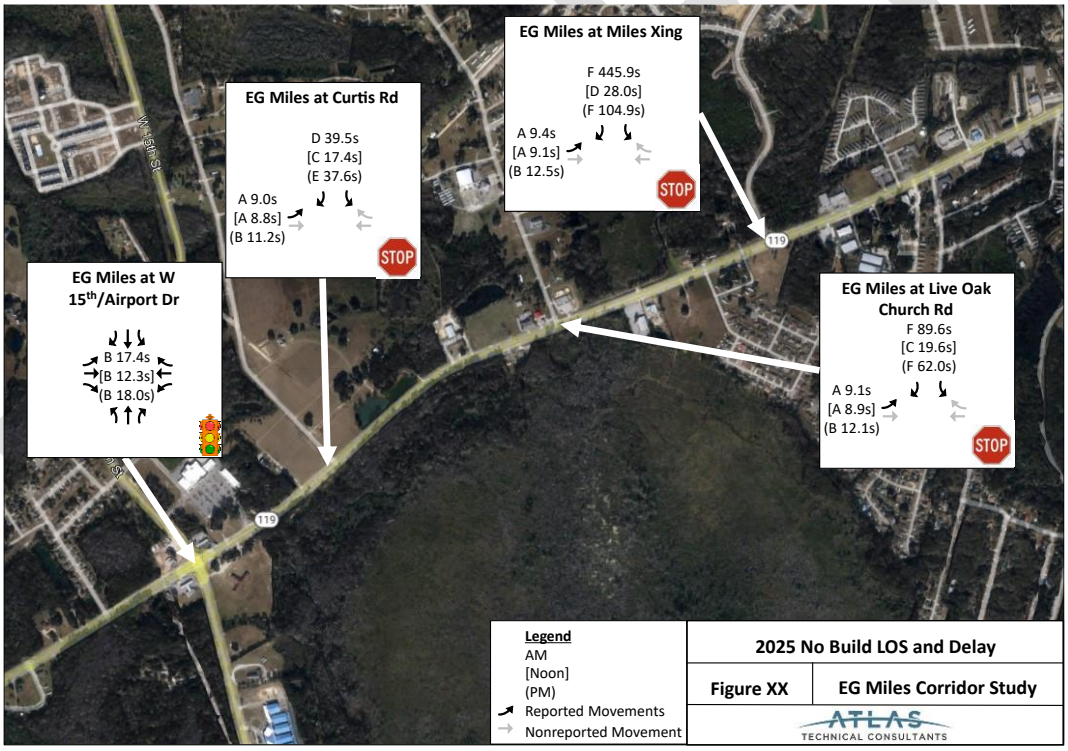


FIGURE 29: 2025 NO BUILD LOS AND DELAY RESULTS (LIVE OAK DR TO VETERANS PKWY)

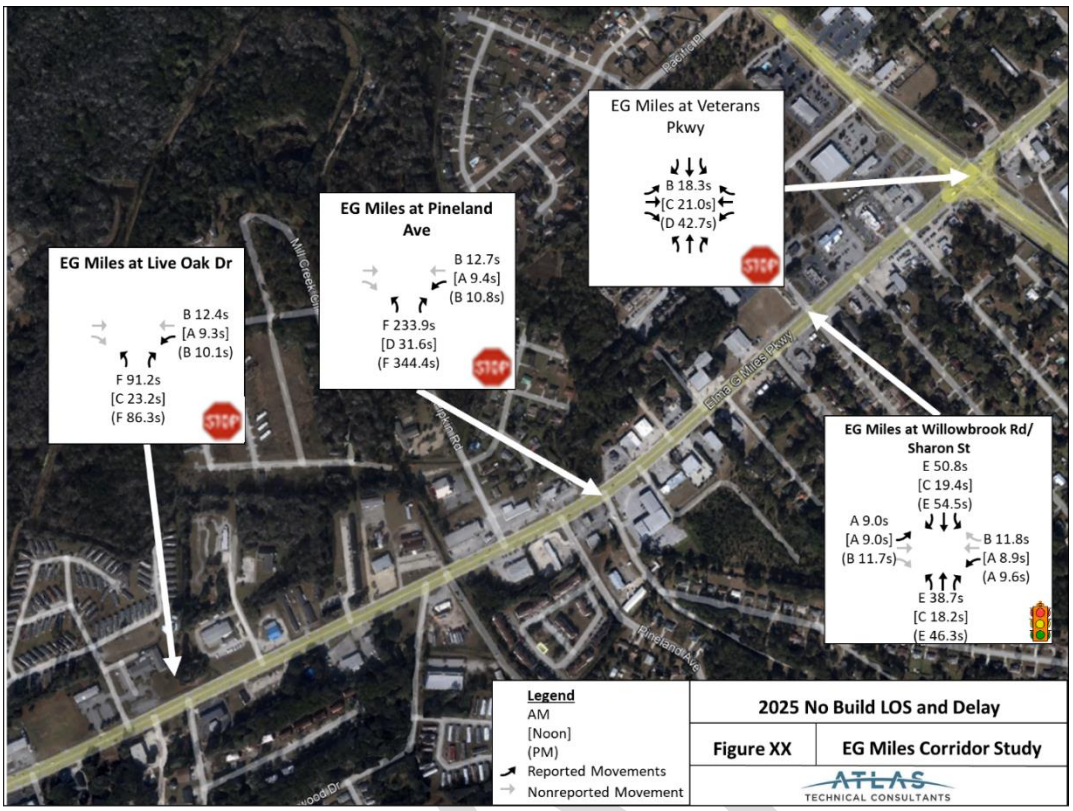


FIGURE 30: 2025 NO BUILD LOS AND DELAY RESULTS (DEAL ST TO W GENERAL SCREVEN WAY)

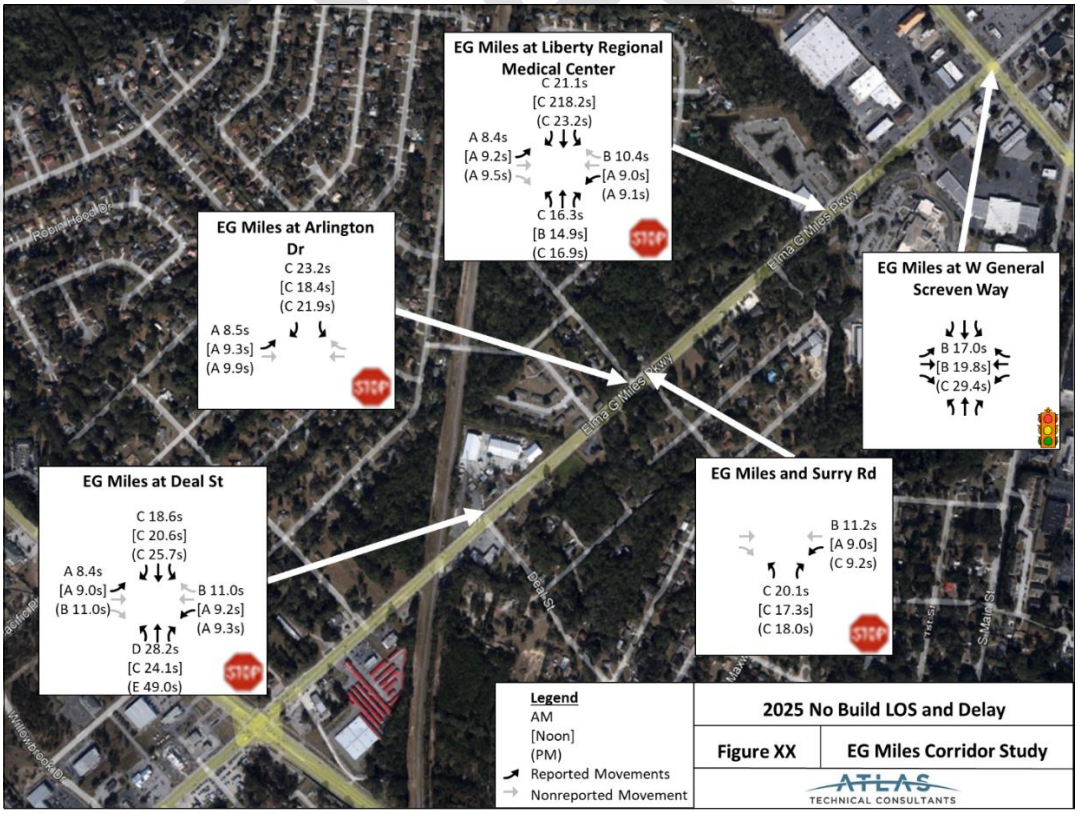


FIGURE 31: 2045 NO BUILD LOS AND DELAY RESULTS (W 15TH ST TO MILES CROSSING)

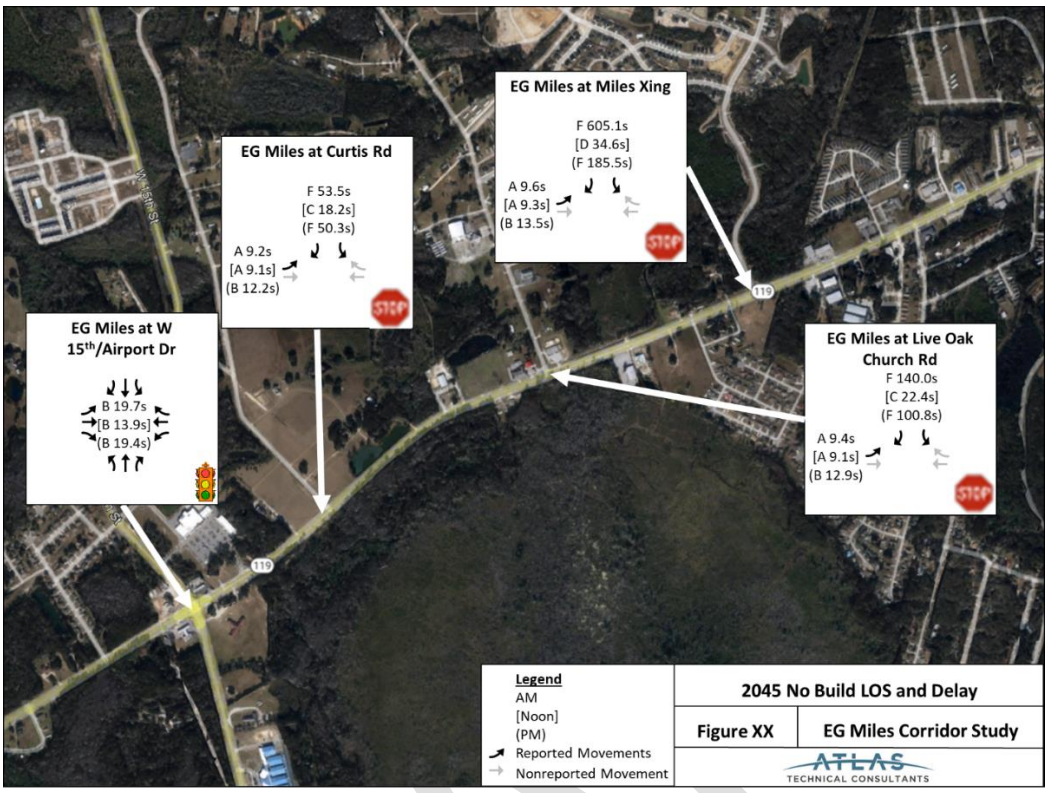


FIGURE 32: 2045 NO BUILD LOS AND DELAY RESULTS (LIVE OAK DR TO VETERANS PKWY)

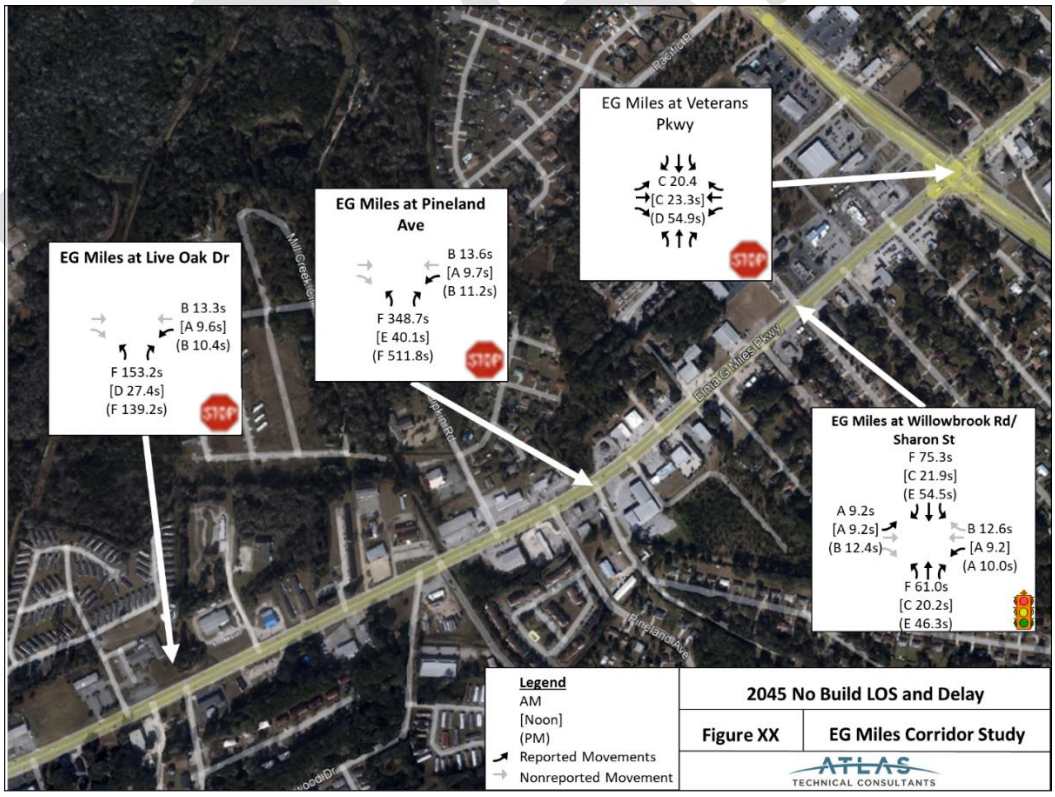
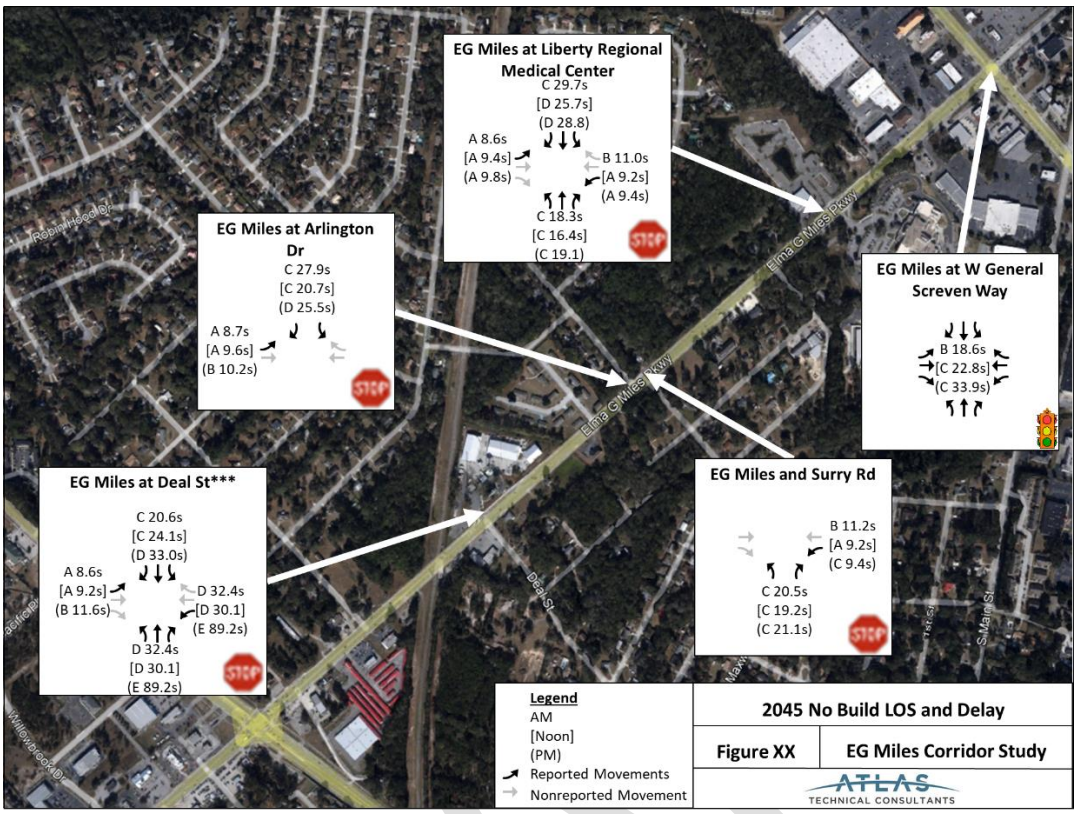


FIGURE 33: 2045 NO BUILD LOS AND DELAY RESULTS (DEAL ST TO W GENERAL SCREVEN WAY)



Observations

With the future no-build scenarios, it was observed that traffic operations worsen for the most part. Several intersections such as Miles Crossing, had a significant impact on delay, while other intersections such as Curtis Road, had a only a slight increase in delay time. All the signalized intersections had only a nominal impact on delay, only increasing by less than 5 seconds.

E.G. Miles Parkway at Veterans Parkway had heavy westbound left turn traffic in the AM peak hour and heavy southbound right turn traffic in the PM peak hour. This reflects the travel patterns to and from Fort Stewart. Because of the heavy traffic and existing lane geometry, these movements are experiencing excessive delay. To combat these delays, signal timing operations were conducted, as an additional simulation tool however this was not sufficient enough to improve overall delay. Since the signal optimizations were not comprehensive enough, lane geometry at the intersection would have to be improved. A second left turn, and right turn lane were added since GDOT considers a second left turn lane when left turning volume exceeds 300 VPH in the peak hours. For safety concerns, the phasing of the left turn was changed to protected only.

Future Build Scenario

The future build scenario was done in two phases. The first phase looked at the addition of the U-Turns generated by the proposed center median along E.G. Miles Parkway. This would give a baseline for the improvement that could be made and would allow for ICE to be conducted appropriately. The second part involved looking at the AM and PM peak hour of the design year to determine if certain intersection improvement would make a justified difference in safety and congestion measures. The following figures show the LOS and vehicle results per study intersection for the 2025 and 2045 build scenarios.

FIGURE 34: 2025 BUILD LOS AND DELAY RESULTS (W 15TH ST TO MILES CROSSING)

FIGURE 35: 2025 BUILD LOS AND DELAY RESULTS (LIVE OAK DR TO VETERANS PKWY)

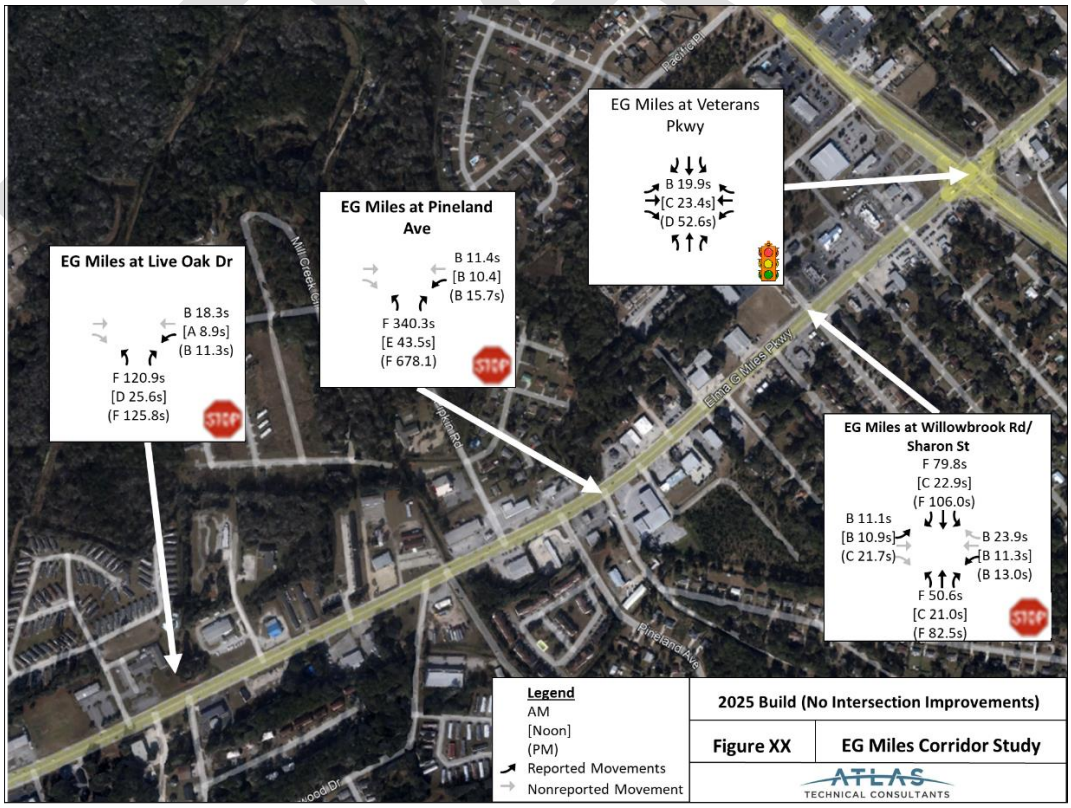


FIGURE 36: 2025 BUILD LOS AND DELAY RESULTS (DEAL ST TO W GENERAL SCREVEN WAY)

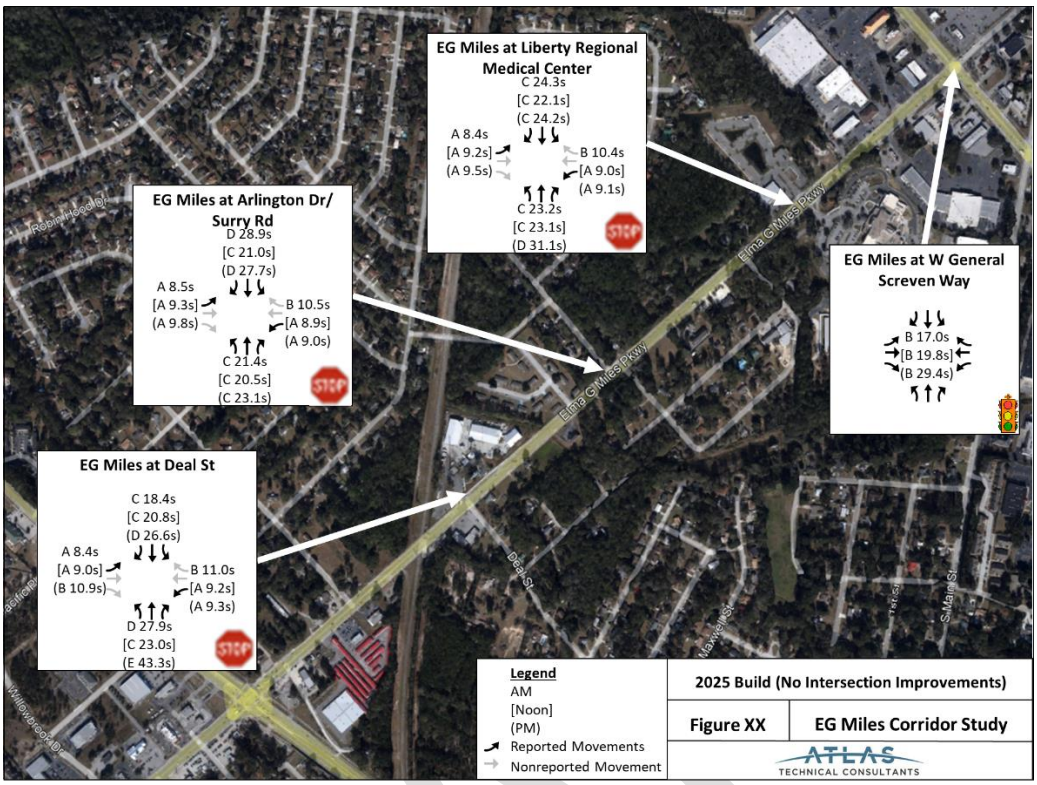


FIGURE 37: 2045 BUILD LOS AND DELAY RESULTS (W 15TH ST TO MILES CROSSING)

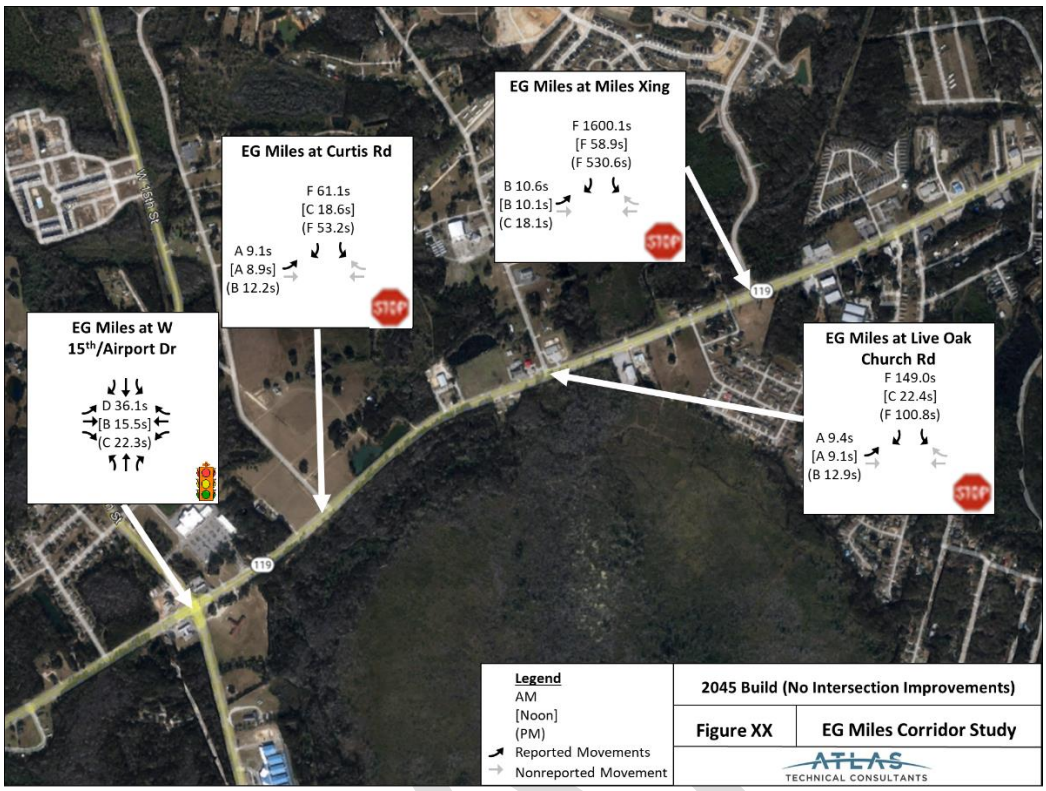


FIGURE 38: 2045 BUILD LOS AND DELAY RESULTS (LIVE OAK DR TO VETERANS PKWY)

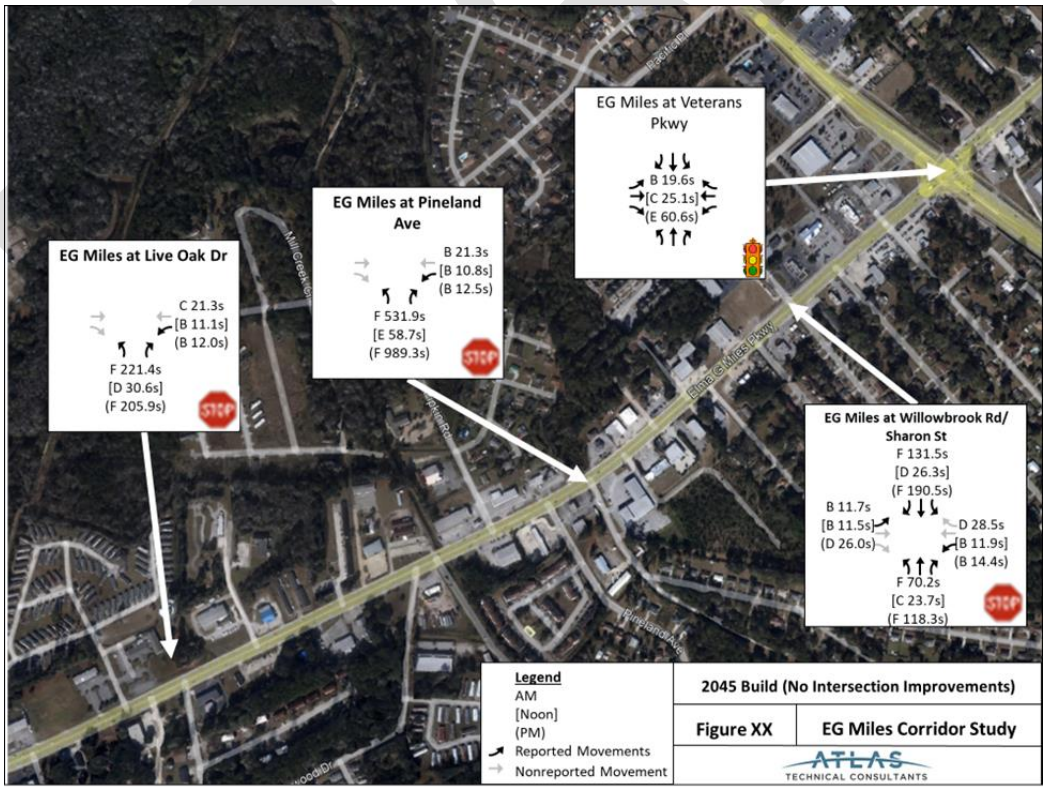
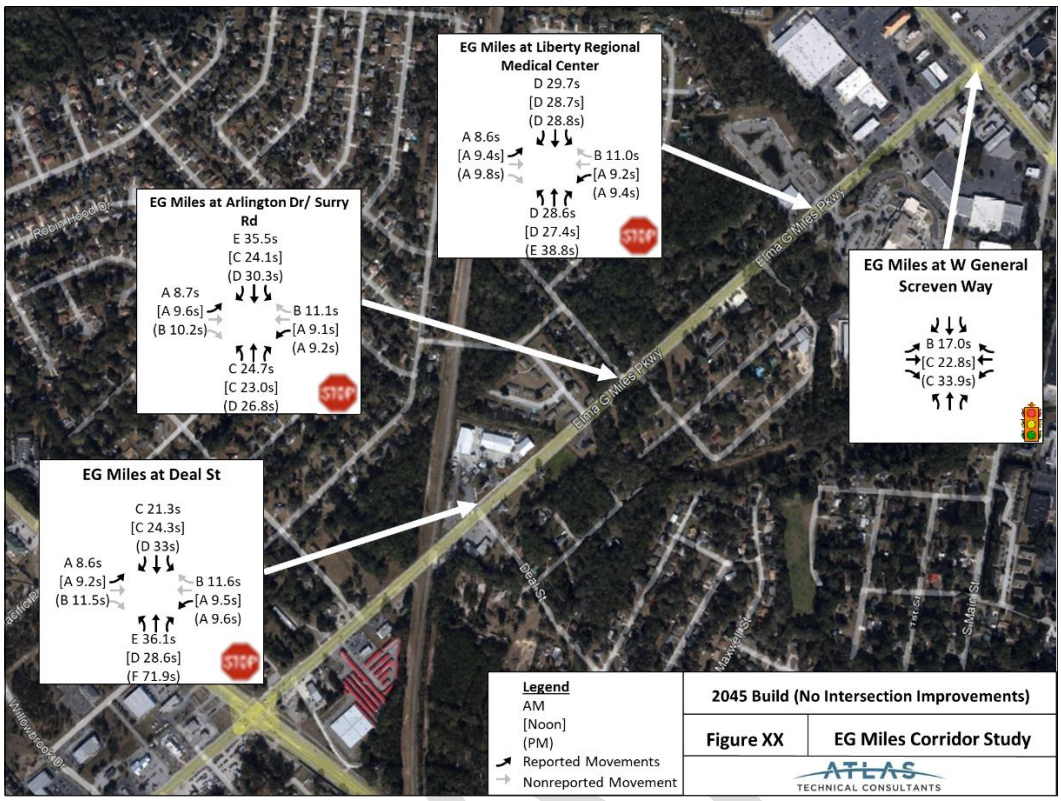


FIGURE 39: 2045 BUILD LOS AND DELAY RESULTS (DEAL ST TO W GENERAL SCREVEN WAY)



The intersection that would consider medians openings were determined by the presence of higher volumes that other cross streets and GDOT policy. GDOT Policy states that the minimum spacing between 2 median opens is 1000 feet. All median openings meet this minimum. Below shows the preferred design concept of the of median opening locations along E.G. Miles Parkway.

FIGURE 40: PROPOSED CENTER MEDIAN OPENINGS (W 15TH ST TO MILES CROSSING)

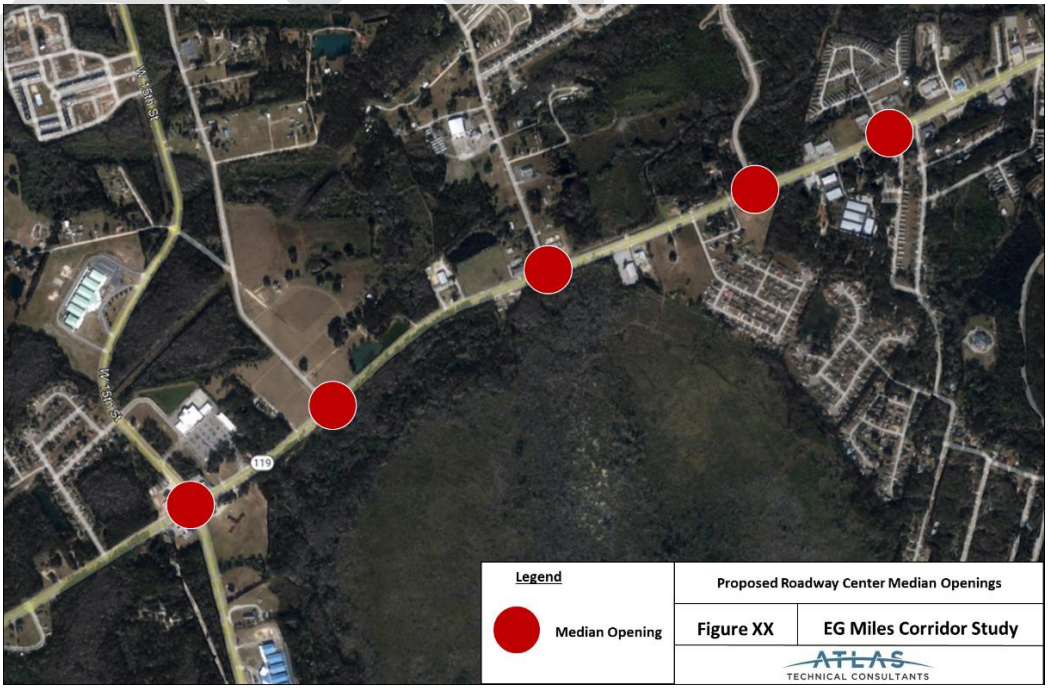


FIGURE 41: PROPOSED CENTER MEDIAN OPENINGS (LIVE OAK DR TO VETERANS PKWY)

FIGURE 42: PROPOSED CENTER MEDIAN OPENINGS (DEAL ST TO W GENERAL SCREVEN WAY)

To determine the improvements that should be made to E.G. Miles Parkway corridor, the GDOT Intersection Control Evaluation (ICE) and Signal Warrant tools along with HCM 2010 and Synchro Analysis was conducted. Signal warrant screening will give guidance on whether or a not a signal is justified. The results from the signal warrant analysis are not the sole justification for a signal. ICE will look at a variety of feasible alternatives and given operational and safety data, will provide guidance on a recommendation. ICE was used in conjunction with Signal Warrant screening to determine whether signals should be installed. Capacity analysis is used to evaluate the operation of the different alternatives.

Signal Warrant Summary

The *Manual on Uniform Traffic Control Devices* (MUTCD), 2009 edition, provides signal warrant guidance to evaluate whether a traffic signal is justified or not at an existing unsignalized intersection. These warrants are based on various traffic and roadway factors including recent crash data, traffic volumes, pedestrian volumes, and roadway network characteristics. The warrant analysis process looks at the total mainline volume and the greatest side street approach volume. The following warrants were determined to apply at all locations: Warrant 1A, Warrant 1B, Warrant 1 (Combine warrant), Warrant 2, and Warrant 7.

- Warrant 1 Condition A (Minimum Vehicular Volume) is intended for locations where a large number of vehicles approach the intersection from the minor road.
- Warrant 1 Condition B (Interruption of Continuous Traffic) is intended for locations where the volume on the major road is so heavy, that traffic on the minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.
- When the warranting criteria is not met for neither warrant 1A or 1B, and any other measures to improve traffic flow have failed, an evaluation can be performed to determine if conditions A and B combined are met when the required volumes are decreased to 80% (Warrant 1 A and B, Combination of Warrants).
- Warrant 2 (Four Hour Volumes) is applied when the traffic volume on the minor street is the principal reason to consider installing a traffic control signal.
- Warrant 7 (Crash Experience) requires a minimum of five crashes of the type that could be corrected by the installation of a traffic signal, to have occurred within the most recent 12-month period of available data and meet 80% of the volume warrants.

The signal warrant analysis underwent a process called right turn reductions. According to NCHRP 457, right turns do not yield the same benefit from signalization as through or left turn movements. Consequently, including right turns in a warrant analysis could falsely warrant a signal; thus more intersections would warrant a signal. To conduct right turn reductions, the number of right turns that can be reduced is determined by NCHRP 457. This number is determined by the lane configuration, speed limit, and conflicting traffic movements. It was determined that for all the intersections, there would be a 100% right turn reduction on all approaches. The number of right turns is determined by the hourly directional distribution of E.G. Miles Parkway. A summary of the Warrant Analysis is provided in the proceeding table.

TABLE 19: SIGNAL WARRANT ANALYSIS SUMMARY

Warrant	Curtis Rd	Live Oak Church Rd	Miles Xing	Live Oak Dr	Pineland Ave	Willowbrook Rd/ Sharon St	Deal St	Surrey Rd/ Arlington Dr	Liberty Regional Medical Center
1A	No	No	No	No	No	No	No	No	No
1B	No	No	No	No	**Yes**	No	No	No	No
1AandB	No	No	No	No	No	No	No	N	No
2	No	No	**Yes**	No	**Yes**	No	No	No	No
7	No	No	No	No	No	N	No	No	No

ICE Analysis Summary

GDOT Intersection Control Evaluation (ICE) analysis is a requirement when planning intersection improvements or enhanced driveway access on state routes. ICE looks at a variety of different intersection designs while weighing in factors such as cost, Crash Reduction Factors (CRFs), and operational metrics such as delay and Volume to Capacity Ratio (V/C). It requires capacity analysis on the various intersection control options. While a variety of intersection controls are considered, it is up to the analyst to determine which options would be feasible given the project conditions. Based on the project corridor conditions, the following intersection controls were analyzed:

- Two Way Stop Control
- Unsignalized High-T
- Restricted Crossing U-Turn Intersection (RCUT)
- Traffic Signal
- Signalized RCUT
- Continuous Green-T

Although Roundabouts were a point of interest, it was determined that roundabouts would not be feasible given that the E.G. Miles Parkway accounts for more than 90% of the ADT. Right-In/Right-Out (RIRO) intersections were not considered due to concerns about the impact that rerouted trips can have on the adjacent intersections since all left turns would be rerouted.

Each unsignalized intersection was analyzed with ICE. Although most of the time the preferred ICE alternative coincides with the recommendation, this is not necessarily the case. The ICE result can be disputed with engineering judgement. The recommendations will be discussed in further detail later in report. The summarized ICE results can be found in the table below.

TABLE 20: ICE RESULTS SUMMARY

Location	Curtis Rd	Live Oak Church Rd	Miles Xing	Live Oak Dr	Pineland Ave	Willowbrook Rd/ Sharon St	Deal St	Surrey Rd/ Arlington Dr	Liberty Regional Medical Center
ICE Result	**High-T**	**High-T**	**Traffic Signal**	**RCUT**	**Traffic Signal**	**RCUT**	**RCUT**	**RCUT**	TWSC

Conventional Minor Street/ Two-Way Stop Control (TWSC)

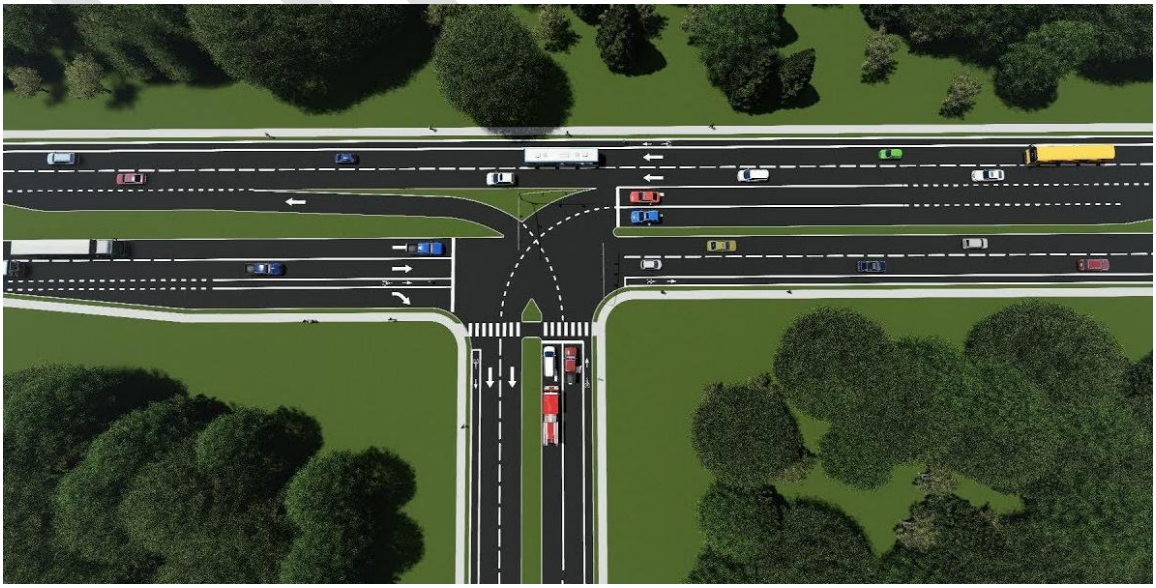
An intersection with a conventional minor street (TWSC for four way intersection) is an intersection where the minor street is controlled by a stop sign. A convention minor street intersection allows for full access to all turns and does not limit any turn.

FIGURE 43: EXAMPLE OF A CONVENTIONAL MINOR STREET/ TWO-WAY STOP CONTROL (TWSC) INTERSECTION

High-T

A High-T intersection is an intersection that channelizes multiple movements and frees the “top” through lanes which allows it to operate continuously. The channelization of multiple movements provides added safety benefits. Also, by allowing to have a through movement free from the intersection control, can benefit the overall traffic operations. It allows left turns from the side street to safely make a left turn without have an immediate conflict with the through movement.

FIGURE 44: EXAMPLE OF A HIGH-T INTERSECTION



Restricted Crossing U-Turn (RCUT)

A RCUT intersection forces all traffic from the minor street to make a right turn onto the major cross street. Minor street left turns are redirected to make a right turn then a right turn at a median opening along the major cross street. An RCUT allows for major street left turns. Since Multiple movements are channelized and there is a reduction in conflict points, a RCUT provides enhanced safety benefits.

FIGURE 45: EXAMPLE OF A RESTRICTED CROSSING U-TURN (RCUT) INTERSECTION

Conventional Traffic Signal

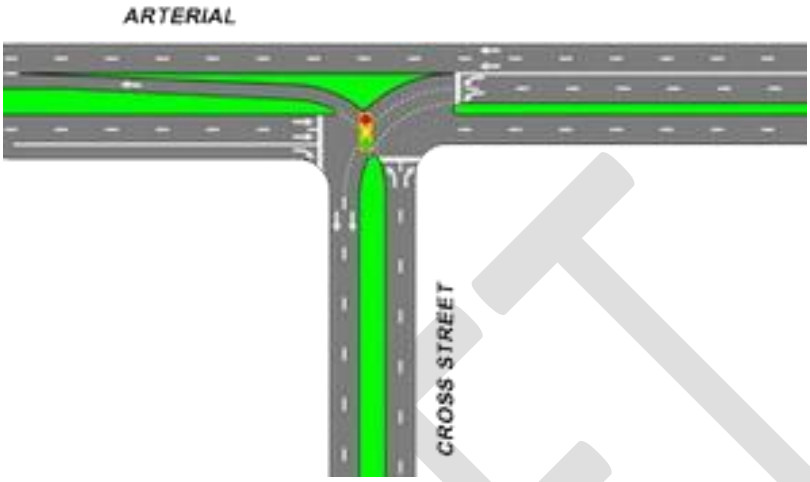
A conventional traffic signal is the most common type of signalized intersection. This involves splitting timings between the mainline and side street. This has an improved safety benefit in that the side street has dedicated time to enter the intersection safely.

FIGURE 46: EXAMPLE OF A CONVENTIONAL TRAFFIC SIGNAL INTERSECTION

Continuous Green Intersection

A continuous green intersection is the signalized version of the High-T intersection. The "top" of the T operates under a continuous green. This intersection design has the benefits of a signalized intersection and the benefits of a High-T intersection.

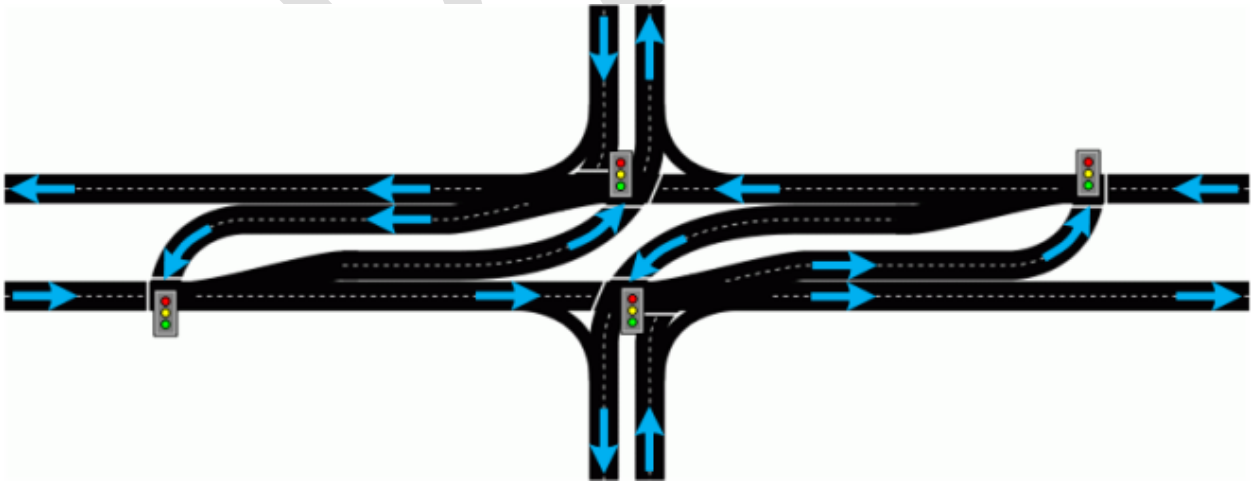
FIGURE 47: EXAMPLE OF A CONTINUOUS GREEN INTERSECTION



Signalized RCUT

A signalized RCUT is the signalized version of the RCUT. This intersection design keeps all the same design highlights as an RCUT but add signalization, which can provide a safety and operational benefits to side street right turns and mainline left turns.

FIGURE 48: EXAMPLE OF A SIGNALIZED RCUT INTERSECTION



Observations

The introduction of U-turns in the build scenarios introduce significant delay into all the intersection that had failing LOS or high levels of delay. U-turns require more space and time, so an increase in delay is anticipated. After the preferred intersection improvements, the entire study corridor operated in an acceptable manner, with vehicle delays, vehicle queuing, and LOS all improving. The preferred intersection improvements are listed in the two tables under the Conclusions and Recommendations section on the following page.

Conclusions and Recommendations

Preferred Intersection Design

With the traffic analysis results coupled with the feedback from the local community and stakeholders, the preferred chosen design concept for each unsignalized intersection within the E.G. Miles study corridor is shown in the table below. Additionally, Table 22 shows the recommended improvements to the already existing signalized intersections within the study corridor.

TABLE 21: UNSIGNALIZED INTERSECTIONS PREFERRED DESIGN

Location	Curtis Rd	Live Oak Church Rd	Miles Xing	Live Oak Dr	Pineland Ave	Willowbrook Rd/ Sharon St	Deal St	Surrey Rd/ Arlington Dr	Liberty Regional Medical Center
Preferred Design	High-T	High-T	Traffic Signal	RCUT	Traffic Signal	RCUT	RCUT	Traffic Signal	TWSC

TABLE 22: SIGNALIZED INTERSECTIONS RECOMMENDED IMPROVEMENTS

E.G. Miles Parkway Intersections	15th Street/ Airport Road	Veterans Parkway	West General Screven Way
Intersection Improvement	Add FYAs	Add FYAs Add Southbound Right Turn Lane (Dual Rights) Add Westbound Left Turn Lane (Dual Lefts)	Add FYAs

Most of the recommendations coincide with the ICE results. The intersection of Surrey Road/ Arlington Drive and E.G. Miles Parkway recommendation does not match with the ICE analysis given the potential future development adjacent to this intersection. Although a signal is not and will not be required if the current conditions continue without development, several noted developments in the area could cause a signal to be warranted in future conditions. Traffic impact studies conducted near the intersection should determine when and if a signal shall be warranted. Given the number of proposed developments, it is expected that a signal will be warranted under future conditions.

Operational Benefits

A driving factor behind the preferred alternatives is the improved LOS and delay. The traffic analysis found that most of the intersections on E.G. Miles Parkway did not have acceptable LOS and delay. All the intersection would have an improvement on LOS and delay. The traffic analysis under the future build scenario with intersection improvements showed significant reduction in delay and increases in LOS. This allows the roadway design to be adequate for the future development and resultant traffic.

Safety Benefits

Proposed intersection improvements were analyzed with safety in mind. All the intersection designs have Crash Reduction Factors (CMFs). CMFs are number that are used to calculate the number of crashes after the implementation of a roadway improvement project. Based on published reports, all intersection improvements result in a reduction of crashes and fatalities.

Recommended Phasing

With the introduction of several signalized intersections and improvements on several existing signals, there are proposed changes to improve operations and safety. Changes include permissive/protective phases changing to protective only, addition of Flashing Yellow Arrows (FYAs), and new phasing plans.

Existing Signalized Intersections

At the three existing signalized intersections, Atlas recommends the addition of FYAs at the intersections in left turn phases that operate under permissive/protected operation. In 2003, NCHRP Report 493 determined that FYAs are a better alternative to a green circle as an indication of permissive operation, they are better understood by driver, and they can avoid the "yellow trap." The FYA upgrades would provide both safety and operational benefits.

At the EG Miles at Veterans Parkway, Atlas recommends the removal of the permissive/protected operation of the northeast left turn. This is because of the addition of a left turn has the potential to make the turn more dangerous. For safety reason, this phase should be changed to protected only.

Proposed Signalized Intersection

At each of the new intersection, the warrant process for determining phases was conducted. This involved calculating the cross product, left turn volumes, and crash data. All proposed phasing was determined with the peak hours of the intersection. The greater hour determined the phasing. Since U-turns are prevalent, U-turns were analyzed in the same way as left turns to determine left turn phasing.

The cross product is a number calculated from the number of left turns, the opposing through traffic, and number of opposing through lanes. A cross product greater than 50,000 warrants a leading left turn phase and a cross product greater than 30,000 warrants a lagging phase. In addition to the cross products, left turns volumes were looked at. For volumes greater than 125, a leading left turn is warranted. For volumes greater than 75, a lagging left run is warranted. The equation and resulting cross products can be found below.

$$Cross\ Product = left\ turn\ volume \left(\frac{opposing\ through\ \ volume}{number\ of\ opposing\ through\ lanes}\right)$$

TABLE 23: LEFT TURN PHASING RECOMMENDATIONS

Intersection	Approach	Peak Hour	Cross Product	LT+UT Volume	Recommendation
EG Miles @ Miles Xing	WB	AM	44,330	65	Lagging
	EB	PM	71,675	123	Leading
EG Miles @Pineland Ave	WB	PM	80,800	200	Leading
	EB	PM	57,034	99	Leading
EG Miles @Arlington Dr/ Surrey Rd	WB	PM	3,600	10	Permissive Only
	EB	PM	36,279	87	Lagging

Priority Improvement Project Recommendations

Based on the operations and safety data, proposed project recommendations were categorized into three different categories: short term, mid-term, and long-term recommendation. The following tables show the proposed projects for the short, mid, and long term planning scenarios, with estimated costs per project.

Table 24: Short Term Project Recommendations

Project	Location(s)	Implementation Timeframe	Project Funding Category	Estimated Planning Level Cost
Flashing Yellow Arrow (FYA) Signal Upgrades	EG Miles Pkwy (SR 196/119) at 15th St EG Miles Pkwy (SR 196/119) at Veterans Pkwy EG Miles Pkwy at General Screven Way	Short Range	Pedestrian Safety	$15k - $30k (Per Intersection)
Traffic Signal Installation	EG Miles Pkwy (SR 196/119) at Miles Crossing EG Miles Pkwy (SR 196/119) at Pineland Ave EG Miles Pkwy (SR 196/119) at Arlington Dr	Short Range	Intersection Safety and Operations	$200k - $300k (Per Intersection)
Signalized (PHB) Mid-Block Pedestrian Crossing	East of EG Miles Pkwy at Hearn Rd	Short Range	Pedestrian Safety	$200K - $300k
Signal Timing Optimization	Signalized Intersections (From 15th St to General Screven Way)	Short Range	Intersection Operations	$8k (Per intersection)

Table 25: Mid-Term Project Recommendations

Project	Location(s)	Implementation Timeframe	Project Funding Category	Estimated Planning Level Cost
Intersection Lane Improvements	EG Miles Pkwy (SR 196/119) at Veterans Pkwy	Mid Range	Intersection Safety and Operations	$1 - $2 million
	EG Miles Pkwy (SR 196/119) at Liberty Regional Medical Center			$500k - $800k
Roadway Lighting Installation	EG Miles Pkwy (From 15th St to Veterans Pkwy)	Mid Range	Roadway Safety	$2k - $4k (Per Light)
Sidewalk Installation / Repair	EG Miles Pkwy (From 15th St to General Screven Way)	Mid Range	Pedestrian Safety	$100 - $500 (Per Linear Foot)

Table 26: Long-Term Project Recommendations

Project	Location(s)	Implementation Timeframe	Project Funding Category	Estimated Planning Level Cost
R-CUT (Restricted Crossing U-Turn) Intersection Installation	EG Miles Pkwy (SR 196/119) at Live Oak Dr EG Miles Pkwy (SR 196/119) at Sharon St EG Miles Pkwy at Deal St	Long Range	Intersection Safety and Operations	$300k - $1m (Per Location)
Hight-T Intersection Installation	EG Miles Pkwy (SR 196/119) at Curtis St EG Miles Pkwy (SR 196/119) at Live Oak Church Rd	Long Range	Intersection Safety and Operations	$300k - $1m (Per Location)
Center Median Installation	EG Miles Pkwy (From 15th St to General Screven Way)	Long Range	Roadway Safety	$2 - $5 million (Per Mile)
Multi-Use Path Construction	EG Miles Pkwy (From 15th St to General Screven Way)	Long Range	Pedestrian and Bicycle Safety	$500 (Per Linear Foot)

Potential Funding Sources

As part of this corridor study, potential funding options from federal, state, and local sources are summarized below. One funding option at the federal level is the US DOT Highway Safety Improvement Program (HSIP). This is a Federal Aid program with the purpose of reducing fatalities and serious roadway injuries on all public roads. Given the aforementioned safety conditions on the corridor, HSIP could potentially help with some of the cost associated with these types of improvements.

Other potential federal funding sources which may be applicable include the FHWA's Surface Transportation Block Grant Program, FHWA's Transportation Alternatives Program, US DOT's Congestion Mitigation and Air Quality Improvement (CMAQ) Program, and US DOT's Safe Streets and Roads for All (SS4A) Grant Program. The Transportation Block Grant Program provides grants to maintain and improve for bridges and tunnels, pedestrian and bicycle facilities, and transit capital projects. The Transportation Alternative Program (TAP) focuses on providing funds for pedestrian facilities, bicycle facilities, and pedestrian streetscape enhancements. This funding program has the potential to also be used for the multiuse path construction and sidewalk repairs.

The Congestion Mitigation and Air Quality Improvement Program provides funding for reducing traffic congestion improving active transportation (biking and walking) facilities in places where the air quality is not at national air standards. Additionally, another potential useful grant program is the Safe Streets and Roads for All (SS4A) which comes from the bipartisan Infrastructure Bill and it provides funds to regional and local projects which help to reduce roadway injuries and fatalities through safety enhancements such as a center roadway median which is proposed as part of this study. Given the scope of the project, these funding sources may be appropriate for several parts of the proposed improvements.

SigOps is GDOT's regional management program. This program expands its reach to actively manage traffic signals in the state of Georgia. Included in this program are the maintenance and upgrades to signals throughout the state of Georgia. Hinesville is in SigOps's Southeast region, which is comprised of GDOT districts 2 and 5. Funds for the signal upgrades, for example, could possibly be used to improve the three existing signalized intersections and future signalized locations along the E.G. Miles Parkway study corridor. In addition, these funds could help with the ongoing maintenance of all the signals along the corridor.

Other state funding sources include the Georgia Transportation Infrastructure Bank (GTIB) Grant, Local Maintenance, and Improvement Grant (LMIG), and the Transportation Funding Act of 2015 (HB 170). The Georgia Transportation Infrastructure Bank (GTIB) Grant provides funding in the state of Georgia in the form of a grant that can cover up to $2 million or one-third of the project value. In 2015, the Georgia Legislature passed a sweeping reform of the Motor Vehicle Fuel Tax (MVFT) system under House Bill (HB) 170. The previous method of a 7.5 cents/gallon plus a 4 percent excise tax rate was replaced with a single motor fuel excise tax. It was initially established at 26 cents per gallon for gasoline plus 29 cents per gallon for diesel, with provisions to increase in relation to inflation. As of January 1, 2021, the State Excise Tax was established as 28.7 cents per gallon for gasoline and 32.2 cents per gallon for diesel. It is recommended that further financial planning as it applies to specific improvement projects and matching those projects with similarly aligned funding sources should be carried out in future planning efforts.

General Recommendations

Recommendations To Local Jurisdiction For Adoption

Of significant importance to any improvement in the transportation system will be jurisdictional concurrency amongst the various stakeholders in the study area. The City of Hinesville and Liberty

County may consider local design and policy that supports the type of community they want to see built. This can include rural, urban, commercial, and recreational considerations to create a safe and equitable network. This also could support the local communities' vision for how transportation is managed locally when it reaches the state systems. Concepts such as complete streets policies, active transportation in transit connectivity plans, or mobility plans, are a great way to start this process and garner public participation and support for long-term funding needs.

Consideration Of Transit Improvements And Access

We recommend all concepts should consider the transit plan or future transit access points when approaching commercial areas including the hospital and shopping. While currently this may be difficult since stops may not exist, logical termini based on development can support decisions to reduce lane with, speed limits and establish reason to improve non-motorized facilities adjacent to roadway facilities.

Midblock Conditions To Manage Design Speed

Existing state related guidance and local design guidelines focus on intersections and collision concentrated areas. A focus on the midblock crossing not just for pedestrian crossings but also as a way to manage approach speeds between two intersections should be considered. This can support better radius at the intersection reducing speed by up to 15 mph through an intersection allowing more time for drivers to make better decisions and avoid vehicle or pedestrian related collisions at the mid-block locations.