



Tyrone Road - Palmetto Road Corridor Study Existing Conditions Report



Fayette County Public Works
2017 SPLOST No. 17 TAE



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Mission Statement:

The Tyrone Road - Palmetto Road corridor study recognizes the regional and local importance of the corridor. The primary goal of the study is to address, in cooperation with our state, regional and local stakeholders, issues and concerns related to safety, connectivity and capacity; and formulate multi-modal mobility concepts, proposals, recommendations and projects. Additionally, the study will develop proposals and recommendations to protect the human and natural environment as Fayette County and its cities continue to grow. The projects will formulate a complementary infrastructure improvement plan that will improve the corridor aesthetics and enhance the quality of life of the adjoining neighborhoods.



Chapter 1: Existing Conditions Report

1.1 Introduction - Page 6

This section of the report introduces the transportation corridor in focus and discusses the location and extents of the corridor.

1.2 Demographics - Page 8

The socio-economic demographics of the corridor are described in this section of the report.

1.3 Land Use & Zoning - Page 12

This segment discusses the land use character within a 1-mile buffer of the corridor and highlights the zoning classes within this limit.

1.4 Roadway Infrastructure & Facilities - Page 13

Existing roadway infrastructure which includes intersections, medians and sidewalks, as well as existing multi-modal facilities along the corridor are presented in this section.

1.5 Existing Traffic Conditions - Page 15

This report component analyses traffic conditions and operations and presents safety considerations along the corridor.

1.6 Environmental Due Diligence - Page 22

This segment of the report identifies sensitive environmental conditions that may provide corridor improvement opportunities and/or constraints.

1.7 Utilities - Page 23

This part of the report presents an inventory of existing utilities along the corridor.

1.8 Summary - Page 25

Highlights of the existing conditions and a summary of the chapter is presented in this section.



1.1 Introduction

The Fayette County Transportation Corridor Study is a collaborative project between Fayette County, Atlanta Regional Commission - the metropolitan planning organization, and Croy Engineering, LLC - the consultant firm.

The aim of the study is to identify traffic and transportation solutions from a holistic perspective to:

- Ensure safety
- Provide solutions for congestion and delay
- Identify prospects for multi-modal uses
- Create sustainable infrastructure improvements
- Promote economic development

The four corridors identified for the study are -

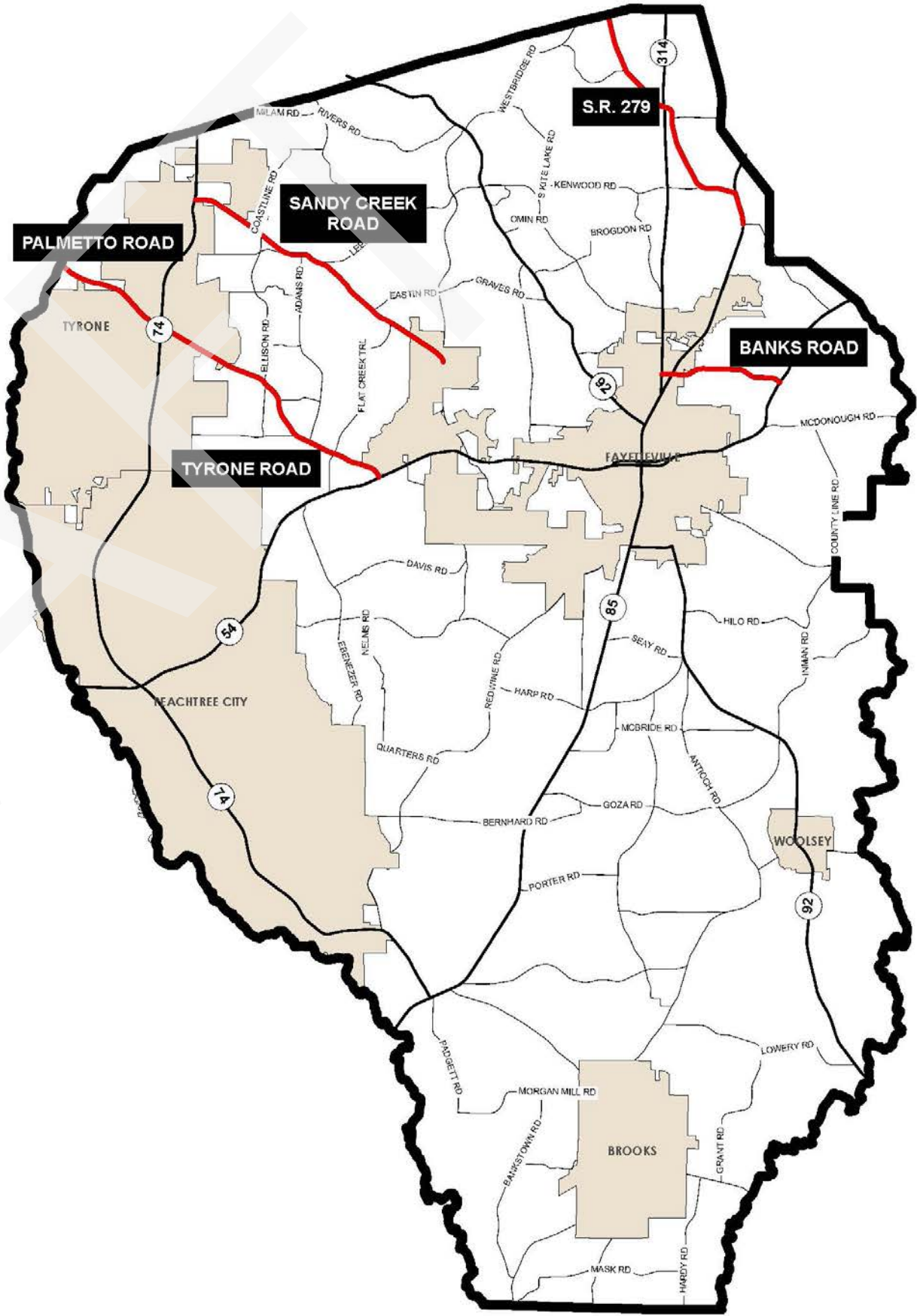
- Tyrone Road - Palmetto Road
- Sandy Creek Road
- Banks Road
- State Route 279

The Timeline for this study is divided into 4 tasks and is spread over a period of 12 months.

Table 1 - Project Timeline												
TASK	TIMELINE OVER 12 MONTHS											
	1	2	3	4	5	6	7	8	9	10	11	12
REVIEW OF EXISTING CONDI- TIONS & TECHNICAL ANALYSIS												
PUBLIC INVOLVEMENT												
CONCEPTUAL PLAN & DRAFT CONCEPT PLAN												
PREPARATION OF PROJECT DELIVERABLES												

Map 1 is a vicinity map of Fayette County, representing the 4 study corridors. This document will look at the Tyrone Road - Palmetto Road corridor and describe the existing conditions of the roadway.

Map 1 - Vicinity Map

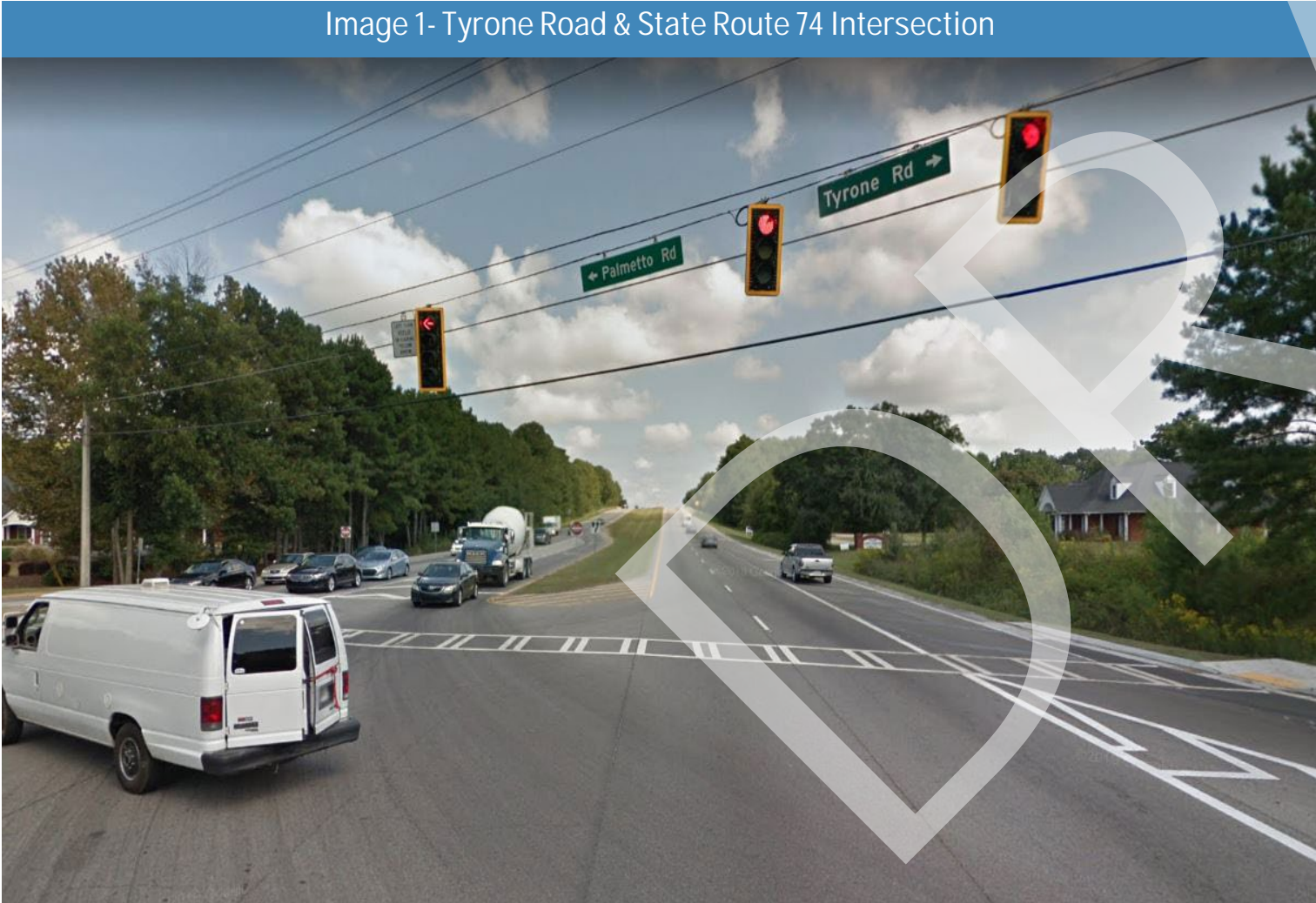


The study focuses on Tyrone Road and Palmetto Road. Tyrone Road is a 4.5-mile major road extending from State Route 54 to Senoia Road in Tyrone. Palmetto Road is a 1.7 mile roadway starting from Senoia Road to the Coweta County border.

The study is an investigative foundation to implementing improvements that will enable Tyrone Road - Palmetto Road to be a well-functioning roadway that accommodates the transportation needs of the residents, adds value to the communities, and enhances mobility and safety in the area.

The purpose of the study is to to develop short and long-range projects that improve safety, mobility and access to all roadway users, while also preparing them for full design and implementation, possibly with federal aid.

Image 1 is a photograph of the Tyrone Road intersection approach from State Route 74. Map 2 depicts the location and extent of the corridor study.



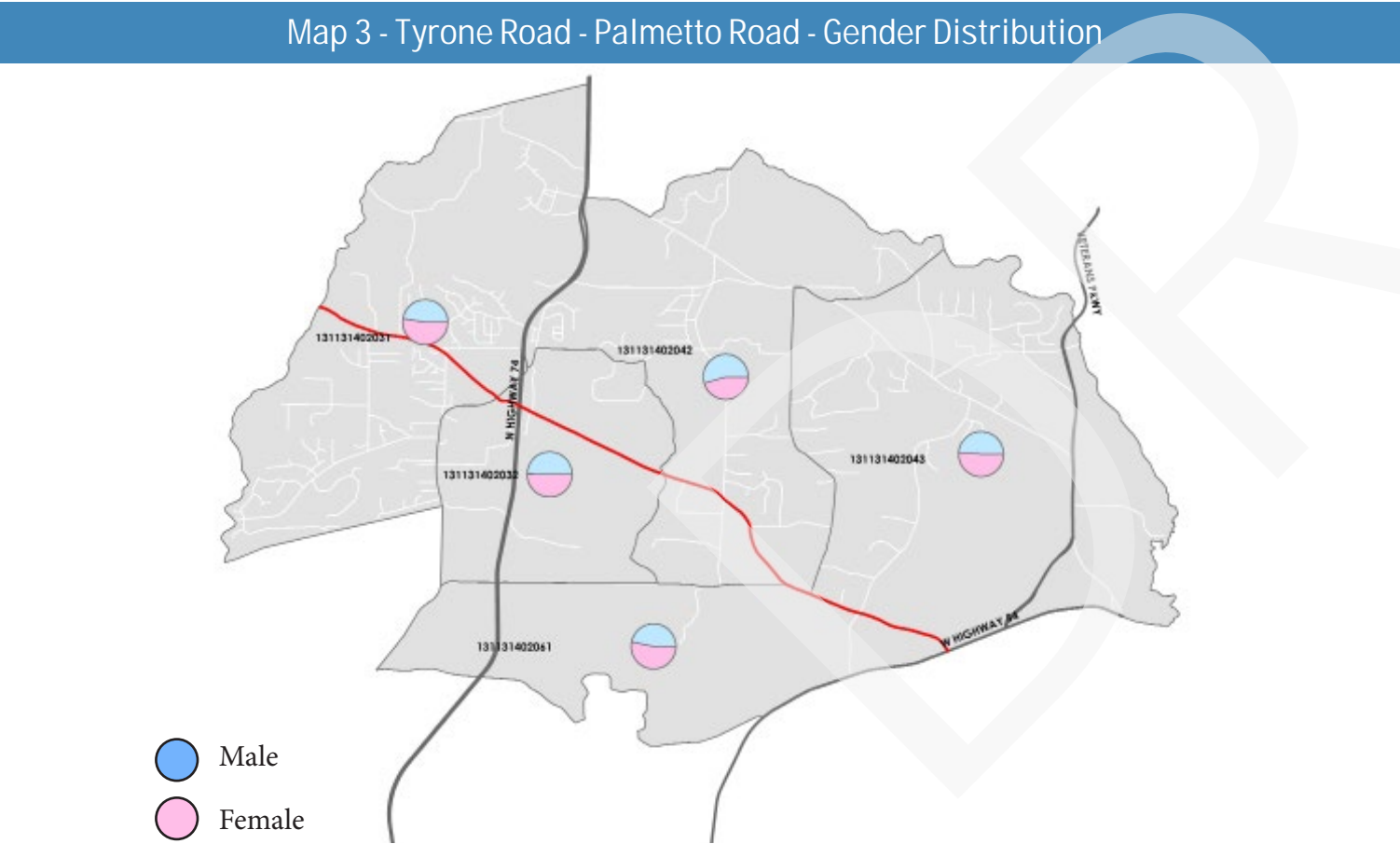
1.2 Demographics -

Understanding the demographic character of the corridor is an important factor in identifying the key stakeholders and the influence on their travel demands. This information along with other components will be used when developing alternative transportation improvements.

For this analysis, the 2016 American Community Survey (ACS) – 5 year estimates data was used at the block group level, which is the smallest scale of data availability. ACS¹ is conducted every year and provides the most current information about the social and economic needs of the community. The census is conducted once every 10 years to provide an official population count. All data presented are estimates and do have a margin of error value associated with it.

Block groups that abut the corridor were analyzed.

The population encompassing the analysis zone around the Tyrone Road - Palmetto Road Corridor is approximately 12,711, with 6,250 [49.2 %] being male and 6,461[50.8 %] being female. Map 3 represents a male to female distribution in the block groups along the corridor.



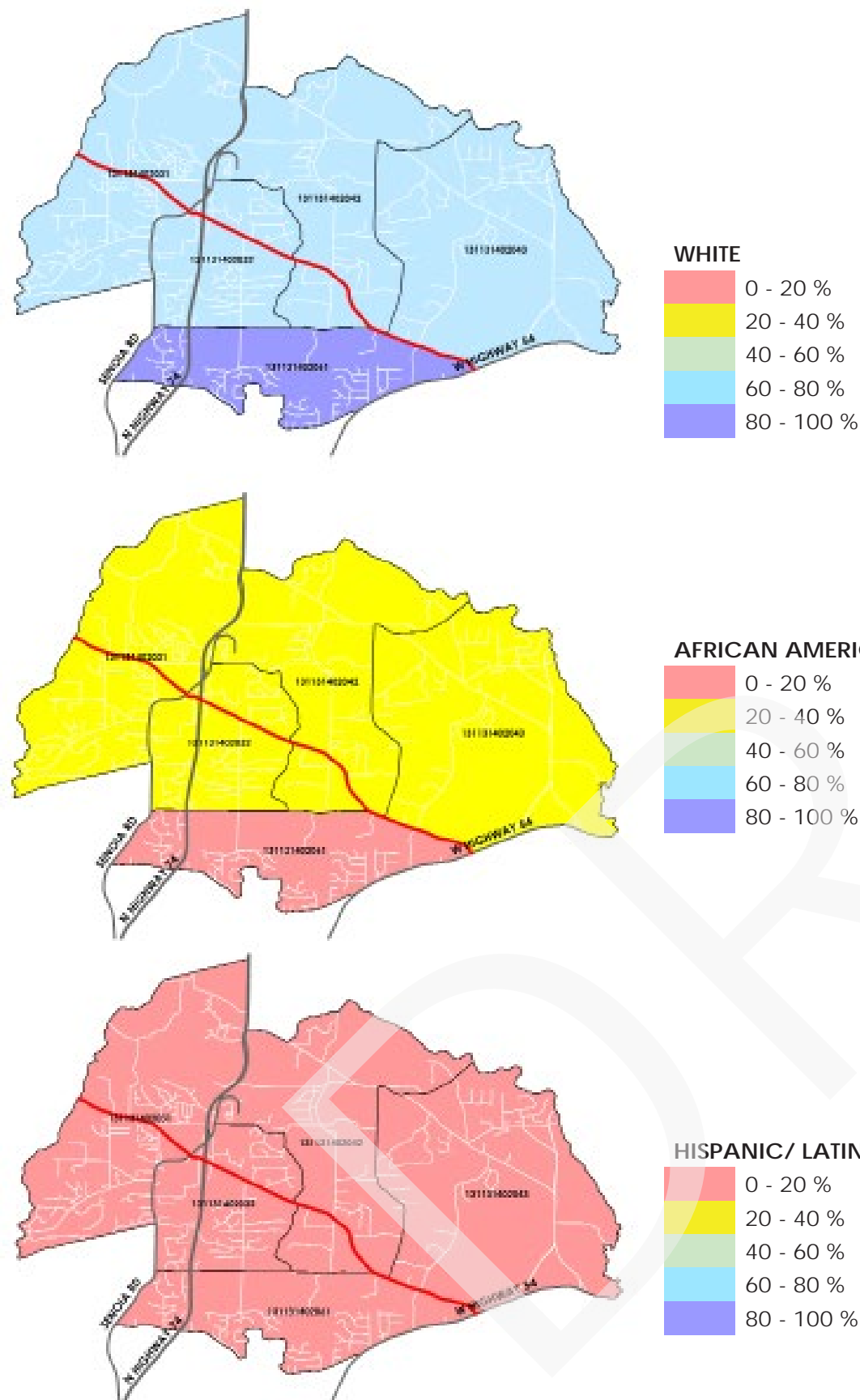
Analyzing the racial composition along the corridor, it is seen that approximately 8,952 citizens [70.4%] are white, 3,074 [24.1%] are African American and 1,073 [8.4%] are Hispanic or Latino.

Table 2 and Map 4 represent racial distribution in the four block groups along the corridor.

Table 2- Racial Distribution						
ID	131131402031	131131402042	131131402043	131131402061	131131402032	TOTAL
Block Group Population	3,308	2,286	2,104	2,921	2,092	12,711
White	2,240	1,486	1,333	2,527	1,366	8,952
% White	67.7%	65.0%	63.3%	86.5%	65.2%	70.4%
African American	862	694	771	116	631	3,074
% African American	26.0%	30.3%	36.6%	3.97%	30.1%	24.18%
Hispanic/ Latino	230	213	230	198	202	1,073
% Hispanic/ Latino	6.95%	9.3%	10.9%	6.7%	9.6%	8.4%
NOTE - All values are estimates and do have associated margins of error.						

¹ - ACS is based on the decennial U.S.Census, however, its updates occur annually. Five-year estimates includes 60 months of collected data and is the most reliable when analyzing very small populations

Map 4 - Tyrone Road - Palmetto Road - Racial Distribution



Education attainment for population aged 25 years and over was analyzed for the block groups along the corridor. Four categories were used –

- No schooling completed
- Regular high school diploma
- Some college, less than a year
- Bachelor's degree

Map 5 represents educational attainment for the population in the block groups along the corridor. The scatter plot is a random distribution and does not indicate specific locations of the population.

Map 5 - Tyrone Road - Palmetto Road - Educational Attainment

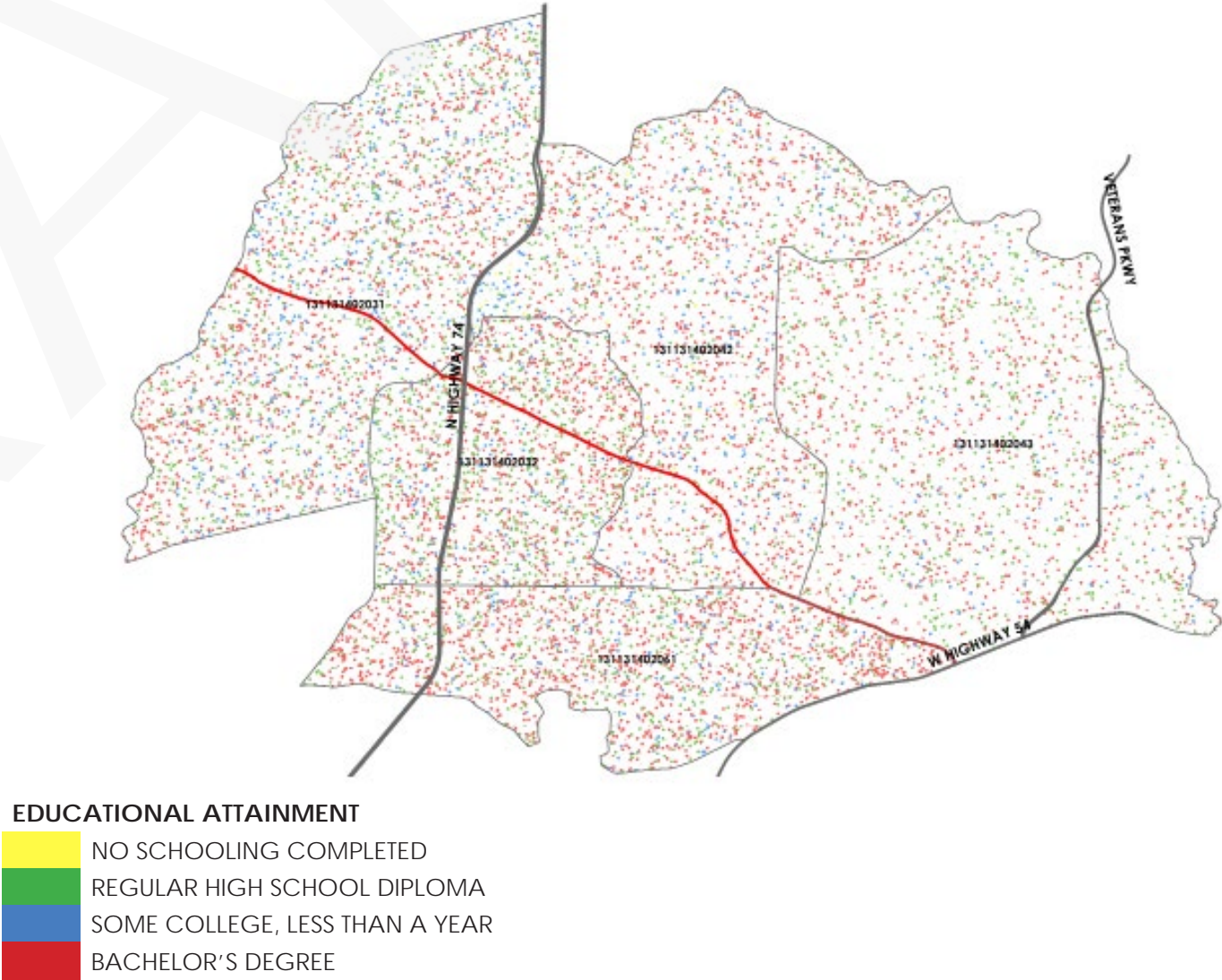


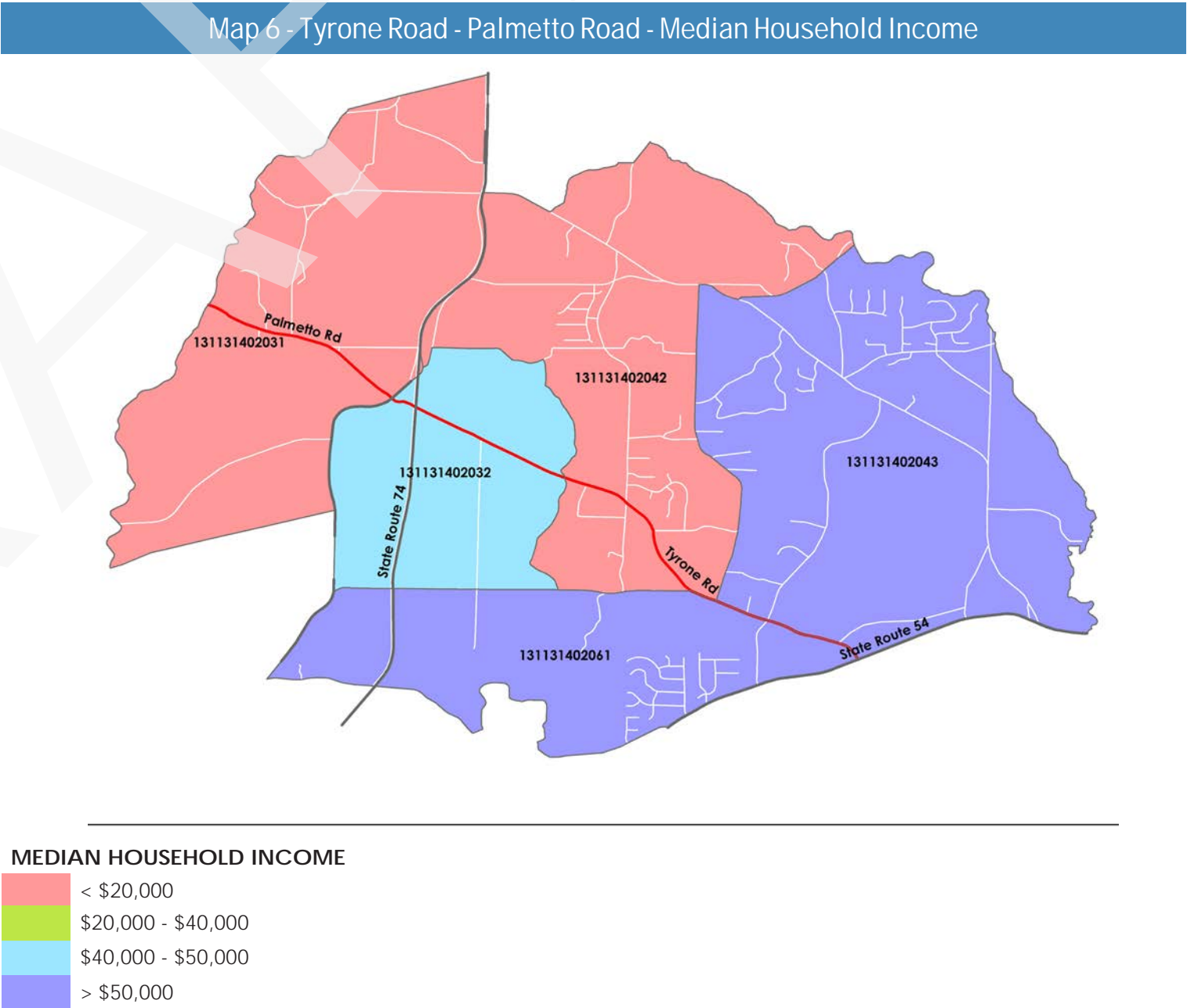
Table 3 - Educational Attainment						
ID	131131402031	131131402042	131131402043	131131402061	131131402032	TOTAL
Block Group Population (25 Years & Older)	3,308	2,286	2,104	2,921	2,092	12,711
No School Completed	2,240	1,486	1,333	2,527	1,366	8,952
% No School Completed	67.7%	65.0%	63.3%	86.5%	65.2%	70.4%
Regular High School Diploma	862	694	771	116	631	3,074
% Regular High School Diploma	26.0%	30.3%	36.6%	3.97%	30.1%	24.1%
Some College, Less Than A Year	230	213	230	198	202	1,073
% Some College, Less Than A Year	6.95%	9.3%	10.9%	6.7%	9.6%	8.4%
Bachelor's Degree	519	490	390	510	355	2,264
% Bachelor's Degree	15.6%	21.4%	18.5%	17.4%	16.9%	17.8%
NOTE - All values are estimates and do have associated margins of error.						

Table 3 represents the counts and percentages of the population in the block group with a certain level of education. The analyses depicts that 30% of the population of the block groups has completed school. While 24.1% has a regular high school diploma, 8.4% has attended some college for less than a year and 17.8% has a bachelor's degree.

Household income is a measure of the combined incomes of all people sharing a particular household or place of residence. It includes every form of income. Median Household income for all the block groups abutting Tyrone Road - Palmetto Road was analyzed.

The minimum median household income in the area is approximately \$16,350, while the maximum median income is approximately \$68,350, the mean median household income in the area is \$40,310.

Map 6 represents the median household income in the block groups along the corridor.



The Protected Classes Model

Title VI of the Civil Rights Act identifies 9 population categories that must be protected. These include Ethnic Minority: Hispanic or Latino Origin by Race; Females; Foreign Born individuals; persons with Limited English Proficiency; Low-Income populations; Older Adults; People with Disabilities; Racial Minority; and Youth.

The Protected Classes Model is an analysis index created by Atlanta Regional Commission, to help counties, governments and private organizations ensure inclusion and equity for these 9 population groups.

The model uses American Community Survey 5-Year population estimates for 2012-2016. Percentage of each of the protected population groups is calculated at the census tract level. A cumulative numeric score of 0 to 36 is calculated based on the concentration of a population identified across all nine criteria, 0 being a low score and 36 being a high score.

Racial Minority, Ethnic Minority, and Low-Income Model

The Racial Minority, Ethnic Minority, and Low-Income Model is an adaptation of the Equitable Target Areas (ETA) model, with an index methodology similar to the Protected Classes Model. ARC considers these 3 inputs to be indicators of the greatest potential inequality in the Atlanta region.

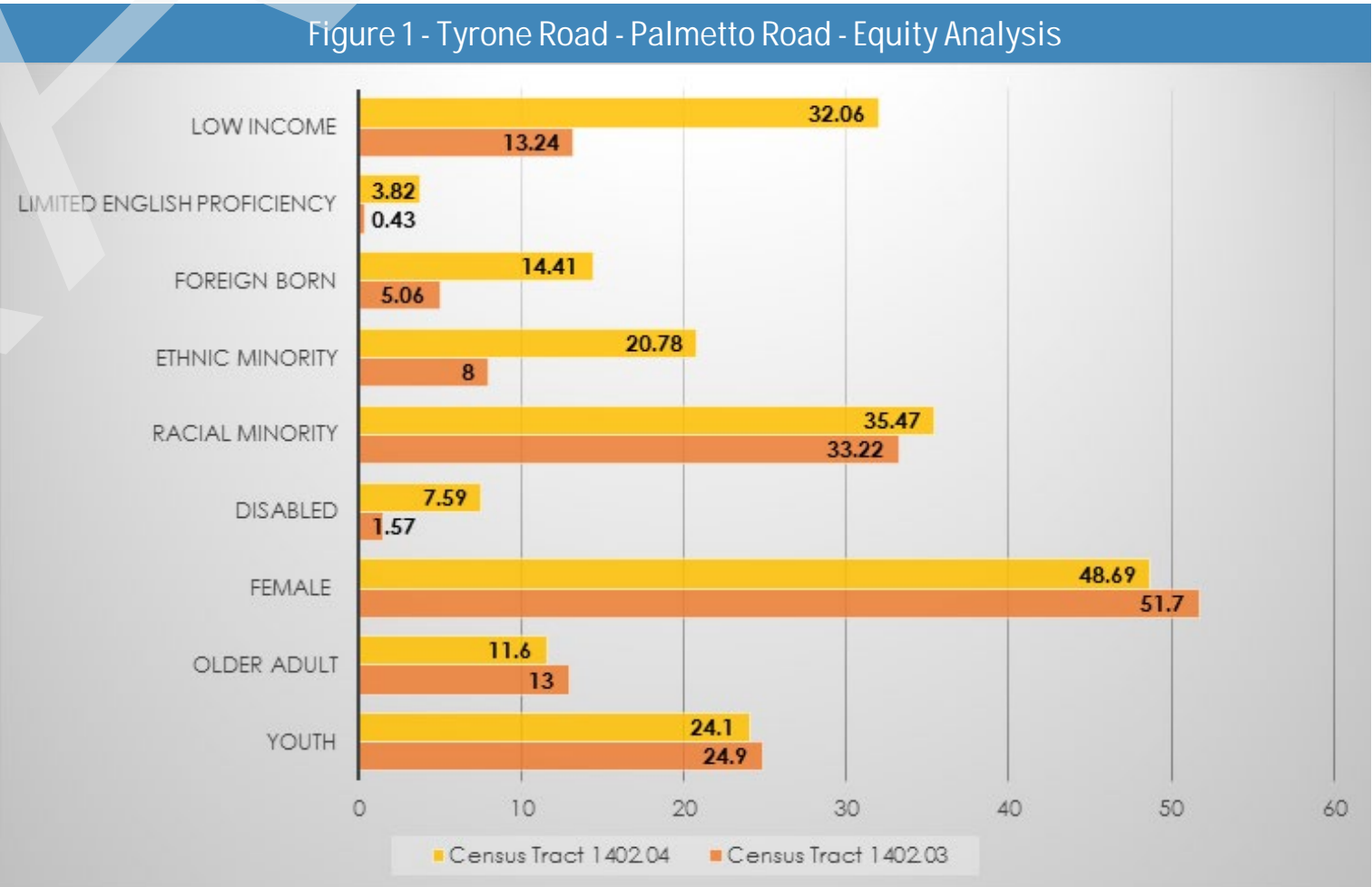
This updated model is used by the ARC Transportation Improvement Program (TIP) Project Evaluation Framework to conduct equity analysis and rank proposed projects. The model also uses American Community Survey 5-Year population estimates for 2012-2016. Percentage of each of the protected population groups is calculated at the census tract level. The cumulative numeric score ranges from 0 to 12, and is calculated based on the three input criterion. The low score is 0 and 12 is a high score.

Corridor Analysis

The Tyrone Road - Palmetto Road corridor lies majorly in Fayette County’s census tract 1402.03 and trail into census tract 1402.04. Census tract 1402.03 has an average cumulative score of 14 for the Protected Classes Model and an equity score of 4 for the Racial Minority, Ethnic Minority, and Low-Income Model. Census tract 1402.04 has an average cumulative score of 17 for the Protected Classes Model and an equity score of 7 for the Racial Minority, Ethnic Minority, and Low-Income Model.

Census tract 1402.03 –
Residents in the tract under 18 years of age are 24.9 %, while 13 % of residents are 65 years or older. Females are 51.7 % of residents. Residents with disabilities account for 7.57 % of the population in the tract. While 33.22 % of residents identify as one or more racial minority, only 8 % of residents identified themselves as being of Hispanic or Spanish origin. The tract has a small population of foreign born nationals, with only 5.06 % of residents being born outside of the United States and 0.43 % of residents report having English proficiency below “very well.” 13.24 % live in households with an income below 200% of the national poverty level.

Census tract 1402.04 –
Residents in the tract under 18 years of age represent 24.1%, while 11.6 % of residents are 65 years or older. 48.69 % of residents are female. Residents with disabilities account for 7.59 % of the population in the tract. While 35.47 % of residents identify as one or more racial minority, only 20.78 % of residents identified themselves as being of Hispanic or Spanish origin. The tract has a small population of foreign born nationals, with 14.41 % of residents being born outside of the United States and only 3.82 % of residents report having English proficiency below “very well.” Households with an income below 200% of the national poverty level represents 32.06%.



1.3 Land Use & Zoning -

A 1-mile buffer of the Tyrone Road - Palmetto Road corridor encompasses a total of approximately 2,957 parcels, both residential and nonresidential.

Residential Usage

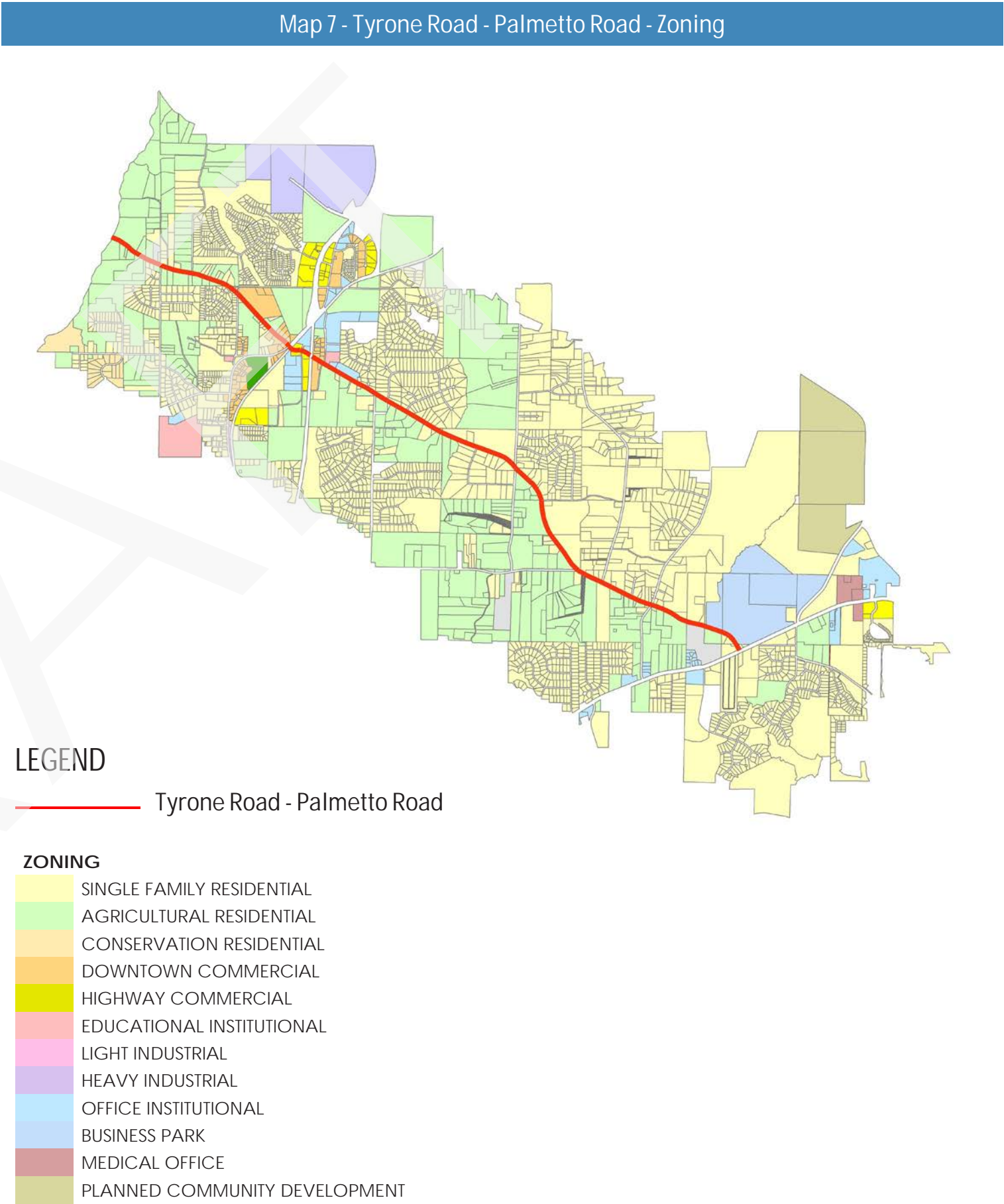
Approximately 2,751 parcels or 93% of the study area are residential. The three major types of residential uses along the corridor are:

Table 4 - Residential Zoning		
CATEGORY	ZONING ENTITY	NO. OF PARCELS
• SINGLE FAMILY RESIDENTIAL	FAYETTE COUNTY / TOWN OF TYRONE / CITY OF FAYETTEVILLE	2436
• AGRICULTURAL RESIDENTIAL	FAYETTE COUNTY / TOWN OF TYRONE	297
• CONSERVATION RESIDENTIAL	FAYETTE COUNTY / TOWN OF TYRONE	18

Commercial Usage

Commercial zoning is clustered at the intersection of the two roadways at SR 74 and at the end of the Tyrone Road, 206 parcels are zoned commercial. The zoning designations for the area are:

Table 5 - Commercial Zoning		
CATEGORY	ZONING ENTITY	NO. OF PARCELS
• DOWNTOWN COMMERCIAL	FAYETTE COUNTY / TOWN OF TYRONE	88
• HIGHWAY COMMERCIAL	TOWN OF TYRONE / CITY OF FAYETTEVILLE	37
• EDUCATIONAL INSTITUTIONAL	TOWN OF TYRONE	3
• HEAVY INDUSTRIAL	FAYETTE COUNTY	3
• LIGHT INDUSTRIAL	FAYETTE COUNTY	2
• OFFICE INSTITUTIONAL	FAYETTE COUNTY / TOWN OF TYRONE / CITY OF FAYETTEVILLE	56
• OPEN SPACE	TOWN OF TYRONE	2
• SPECIAL ZONE	FAYETTE COUNTY	3
• PLANNED COMMUNITY DEVELOPMENT	CITY OF FAYETTEVILLE	3
• MEDICAL OFFICE	CITY OF FAYETTEVILLE	4
• BUSINESS PARK	CITY OF FAYETTEVILLE	5



1.4 Roadway Infrastructure and Facilities

Per the Georgia Department of Transportation (GDOT) road classifications, Tyrone Road - Palmetto Road is classified as a minor arterial. The Tyrone Road – Palmetto Road corridor from the Fayette-Coweta County Line to SR 54 is approximately 6.2 miles. The land use along Palmetto Road-Tyrone Road is primarily single-family and agricultural residential. Moreover, there is an office/commercial node between Senoia Road and SR 74.

There is one travel lane in each direction, which is generally 11 feet wide, but varies depending on the precise location. There are turn lanes on Tyrone Road at SR 74. The average right-of-way along Tyrone Road-Palmetto Road varies. According to Fayette County’s Thoroughfare Plan, minor arterials such as Tyrone Road-Palmetto Road will have future right-of-way requirement of 100 feet. This information is used by Fayette County to require right-of way donations (typically 50-ft from center) as land is subdivided and/or developed.

Intersections

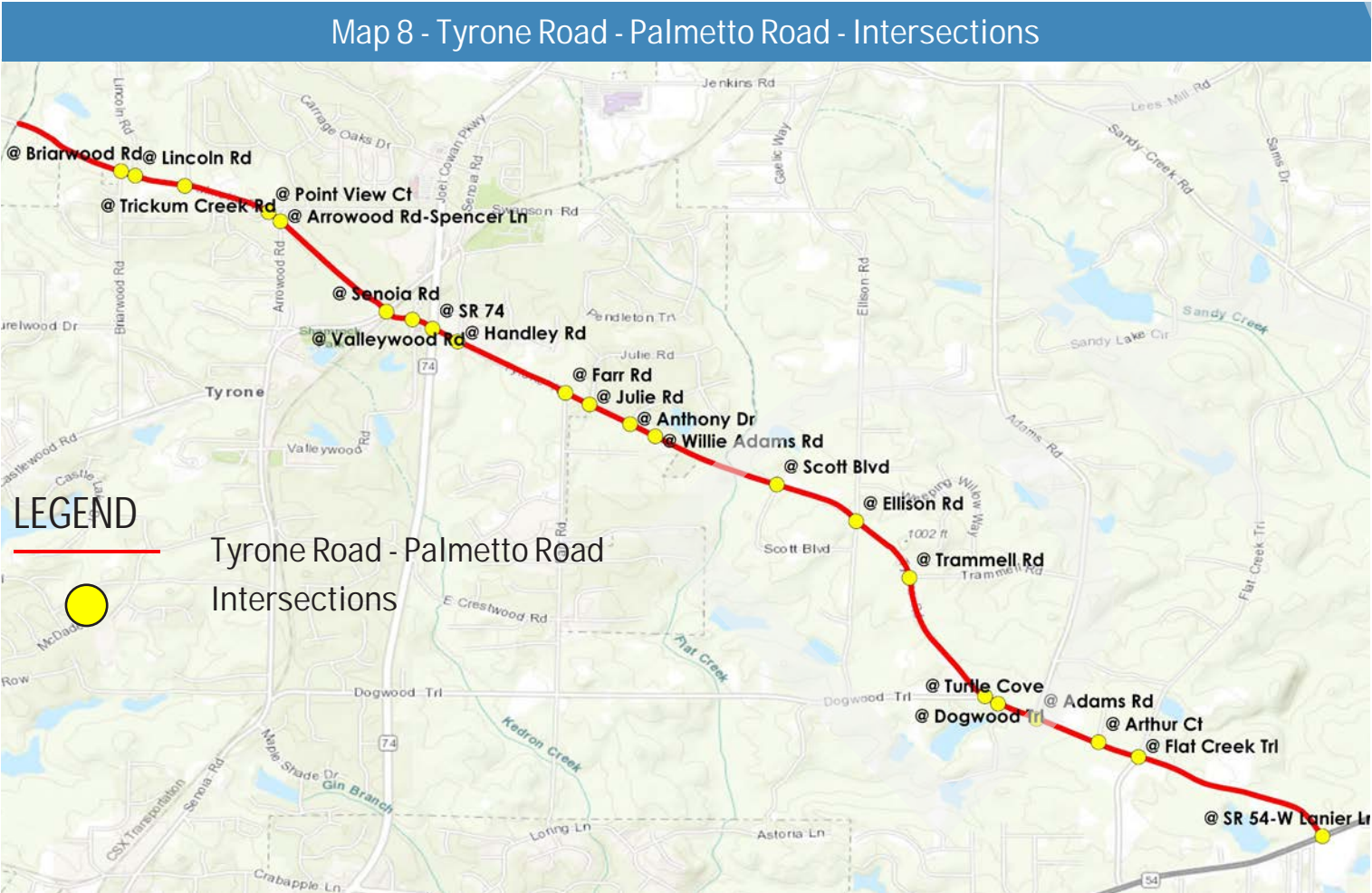


Table 6 - Tyrone Road - Palmetto Road Intersections		
INT. NO	TYRONE ROAD-PALMETTO ROAD	TRAFFIC CONTROL
1	AT BRIARWOOD ROAD	T - INTERSECTION(NB) ¹
2	AT LINCOLN ROAD	T - INTERSECTION (SB) ¹
3	AT TRICKUM CREEK ROAD	T - INTERSECTION (SB) ¹
4	AT POINT VIEW COURT	T - INTERSECTION(NB) ¹
5	AT ARROWOOD ROAD-SPENCER LANE	ALL-WAY STOP CONTROL
6	AT SENOIA ROAD	ALL-WAY STOP CONTROL
7	AT VALLEYWOOD ROAD	TWSC (NB/ SB) ¹
8	AT SR 74/JOEL COWAN PARKWAY	TRAFFIC SIGNAL
9	AT HANDLEY ROAD	T - INTERSECTION (SB) ¹
10	AT FARR ROAD	T - INTERSECTION(NB) ¹
11	AT JULIE ROAD	T - INTERSECTION (SB) ¹
12	AT ANTHONY DRIVE	T - INTERSECTION (SB) ¹
13	AT WILLIE ADAMS ROAD	T - INTERSECTION(NB) ¹
14	AT SCOTT BOULEVARD	T - INTERSECTION(NB) ¹
15	AT ELLISON ROAD	TWSC (NB/ SB) ¹
16	AT TRAMMELL ROAD	T - INTERSECTION (SB) ¹
17	AT DOGWOOD TRAIL	T - INTERSECTION(NB) ¹
18	AT TURTLE COVE	T - INTERSECTION(NB) ¹
19	AT ADAMS ROAD	T - INTERSECTION (SB) ¹
20	AT ARTHUR COURT	T - INTERSECTION (SB) ¹
21	AT FLAT CREEK TRAIL	ALL-WAY STOP CONTROL
22	AT SR 54-W LANIER AVENUE	TRAFFIC SIGNAL
1. DENOTES WHICH MANEUVERS ARE RESTRICTED TO RIGHT-TURN ONLY.		

There are a total of 22 intersections along Tyrone Road-Palmetto Road. There are two signalized intersections along the corridor, at SR 74/Joel Cowan Parkway and at SR 54/W Lanier Avenue. Palmetto Road at Arrowwood Road-Spencer Road and at Senoia Road are both all-way stop controlled (AWSC). Tyrone Road at Flat Creek Trail is AWSC as well.

All other unsignalized intersections are side street stop controlled with Tyrone Road-Palmetto Road being the major road and the side streets being the minor (stopped) roads. The intersections are listed in Table 6 and are shown in Map 8.

Bike/Pedestrian Facilities

There are no sidewalks along Tyrone Road-Palmetto Road. There is a small stretch of cart path from Senoia Road to SR 74. Fayette County is currently in the process of completing the Master Path Plan.

Transit Facilities

There are no fixed routes that serve Fayette County. The closest GRTA Park & Ride lots (using driving distance and measured from the center of the corridor) are:

- Newnan Park & Ride – approximately 13.9 miles*
- Union City Park & Ride – approximately 11.0 miles*
- Jonesboro Park & Ride – approximately 15.9 miles*

[* - Measured from the midpoint of the corridor (Tyrone Road at Anthony Drive)]

Fairburn and the South Fulton Community Improvement District (CID) are in the process of constructing a Park-n-Ride lot along the east side of SR 74 between Harris Road and Milam Road. Fayette Senior Services, Inc. provides inexpensive, flexible transportation for Fayette County’s disabled (18 - 59 years) and older citizens (60 years & above). The organization provides two types of transportation options: Voucher Transportation and Non-emergency Medical Transportation. Services are available Monday through Friday, 6:00 AM to 6:00 PM.

Field Observations

- Traffic was constant along the corridor including significant truck traffic.
- Speed limit is 35 mph and some intersections face limited sight distance challenges.
- At SR 54, the corridor begins with turn lanes and transitions into a two lane road with residential street intersections.
- There is approximately 50-60 feet right of way and the utilities cross back and forth from north to south side of road.
- The pavement at the intersection of Flat Creek Trail is rutting and bleeding.
- Dogwood Trail is a Y intersection in a downhill grade with limited sight distance.
- Continuing west, approaching the Town of Tyrone limits, there is limited sight distance with a visible sign discouraging “Jake brakes” indicating noticable truck traffic.

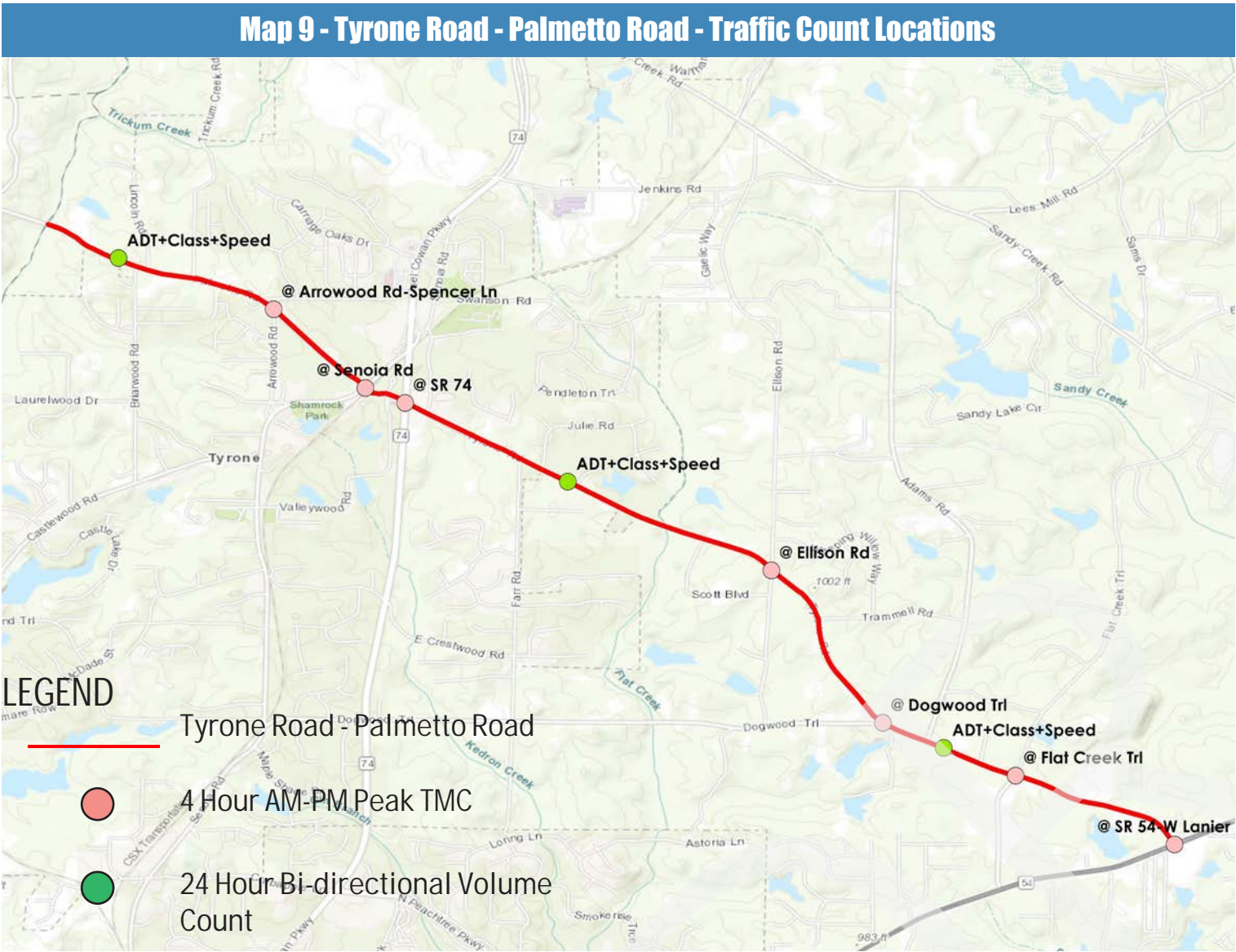
- Approaching SR 74 the road widens to 36-48’, including turn lanes. The intersection has ADA compliant ramps and pedestrian signal with a cart path on the south side extending from SR 74 to Senoia Rd. The corridor transitions from residential to commercial zoning. Approaching the “SCL” Rail Road (operated by CSX), there is a divided road with an island containing “Crepe myrtles”.
- At the intersection of Senoia Road, there is a constant flow of traffic turning and there is little storage room for traffic proceeding east after the tracks.
- There are small drainage structures that are in need of upgrades or require maintenance.
- At the intersection at Spencer Lane-Arrowood Road, longitudinal and transverse cracks are consistent.
- There appears to be ample room for future widening, with the exception of area coming out of Tyrone going west in commercial area.

Images 2 & 3 - Tyrone Road - Palmetto Road - Field Observations



1.5 Existing Traffic Conditions

Traffic counts were conducted in April 2018 at the locations described below. The count locations are shown in Map 9.



- Weekday 24-hour Bidirectional Volume Count with Vehicle Classification and Speed:
1. Palmetto Road east of Fayette-Coweta County Line
 2. Tyrone Road east of Julie Road
 3. Tyrone Road east of Dogwood Trail

- Weekday 4-hour AM and PM Peak Period (7-9 AM and 4-6 PM) Turning Movement Count (TMC):
1. Palmetto Road at Arrowood Road-Spencer Lane
 2. Palmetto Road at Senoia Road
 3. Tyrone Road at SR 74/Joel Cowan Parkway
 4. Tyrone Road at Dogwood Trail
 5. Tyrone Road at Flat Creek Trail
 6. Tyrone Road at SR 54-W Lanier Avenue

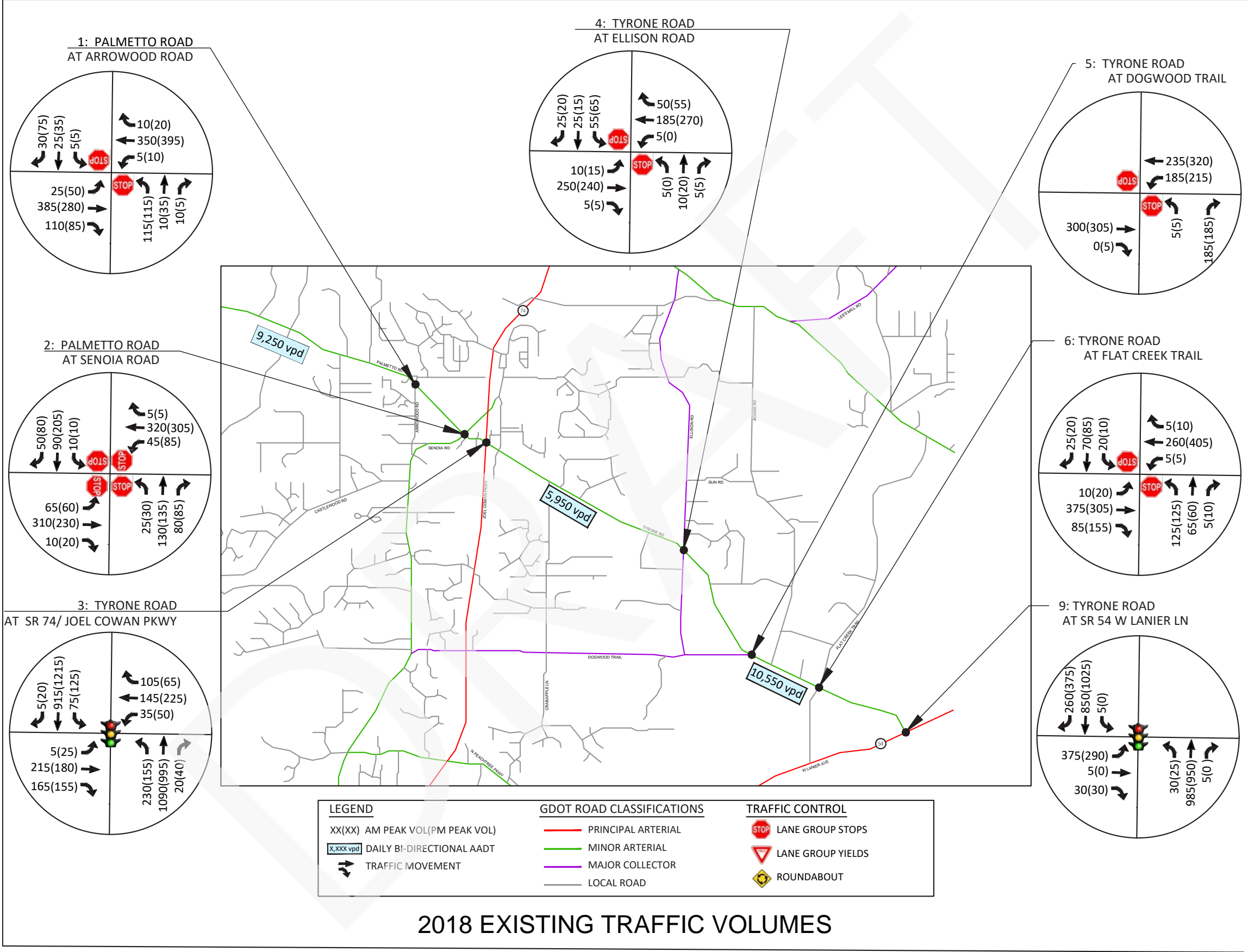
From the County line to SR 74, the average ADT is 10,141 vehicles. Between SR 74 and Dogwood Trail, the average ADT is 6,520 vehicles. Between Dogwood Trail to SR 54, the average ADT is 11,569 vehicles. Adjusting the April counts for daily and seasonal factors per GDOT standards, the Average Annual Daily Traffic (AADT) for the three aforementioned segments, are 9,250 vehicles, 5,950 vehicles, and 10,550 vehicles, respectively. Table 7 describes daily truck percentages along the corridor.

The morning and afternoon peak period counts collected indicate that the average AM peak hour is 7:00 am to 8:00 am and the average PM peak hour is 5:00 pm to 6:00 pm. For continuity between the study intersections, a uniform average peak hour was used for each time period.

The 2018 existing traffic volumes along the corridor are shown in Figure 2.

Table 7 - Daily Truck Percentages			
TYRONE ROAD - PALMETTO ROAD	SINGLE UNIT	COMBO	TOTAL
FROM COUNTY LINE TO SR 74	5.2 %	0.7 %	5.9 %
FROM SR 74 TO DOGWOOD TRAIL	6.6 %	0.5 %	7.1 %
FROM DOGWOOD TRAIL TO SR 54	4.5 %	0.0 %	4.5 %

Figure 2 - Tyrone Road-Palmetto Road - 2018 Existing Traffic Volumes



Traffic Volumes Projection Sources

GDOT Historic Traffic Volumes

GDOT’s count program, Traffic Analysis and Data Application (TADA), provides a source of data for assessing traffic volume trends over a sustained period of time. Data at the following count stations on minor arterials within the vicinity of Tyrone Road-Palmetto Road was collected:

- 1. Tyrone Road east of Farr Road
- 2. Tyrone Road east of Flat Creek Trail
- 3. Palmetto Road west of Spencer Lane
- 4. Collinsworth Road east of I-85
- 5. Senoia Road south of Palmetto Road

Historical counts were also collected for the following corridors, which are principal arterials:

- 1. SR 54 north of Tyrone Road
- 2. SR 54 south of Tyrone Road
- 3. SR 74 south of Tyrone Road
- 4. SR 74 north of Tyrone Road

Historical traffic data was used to establish traffic trends in the region and predict future traffic growth along the corridor.

Regional Travel Demand Model

The Atlanta Regional Commission travel demand model (ARC TDM) was reviewed and traffic projections at pertinent locations were selected and analyzed to determine future growth rates of traffic along the corridor and the surrounding roadway network.

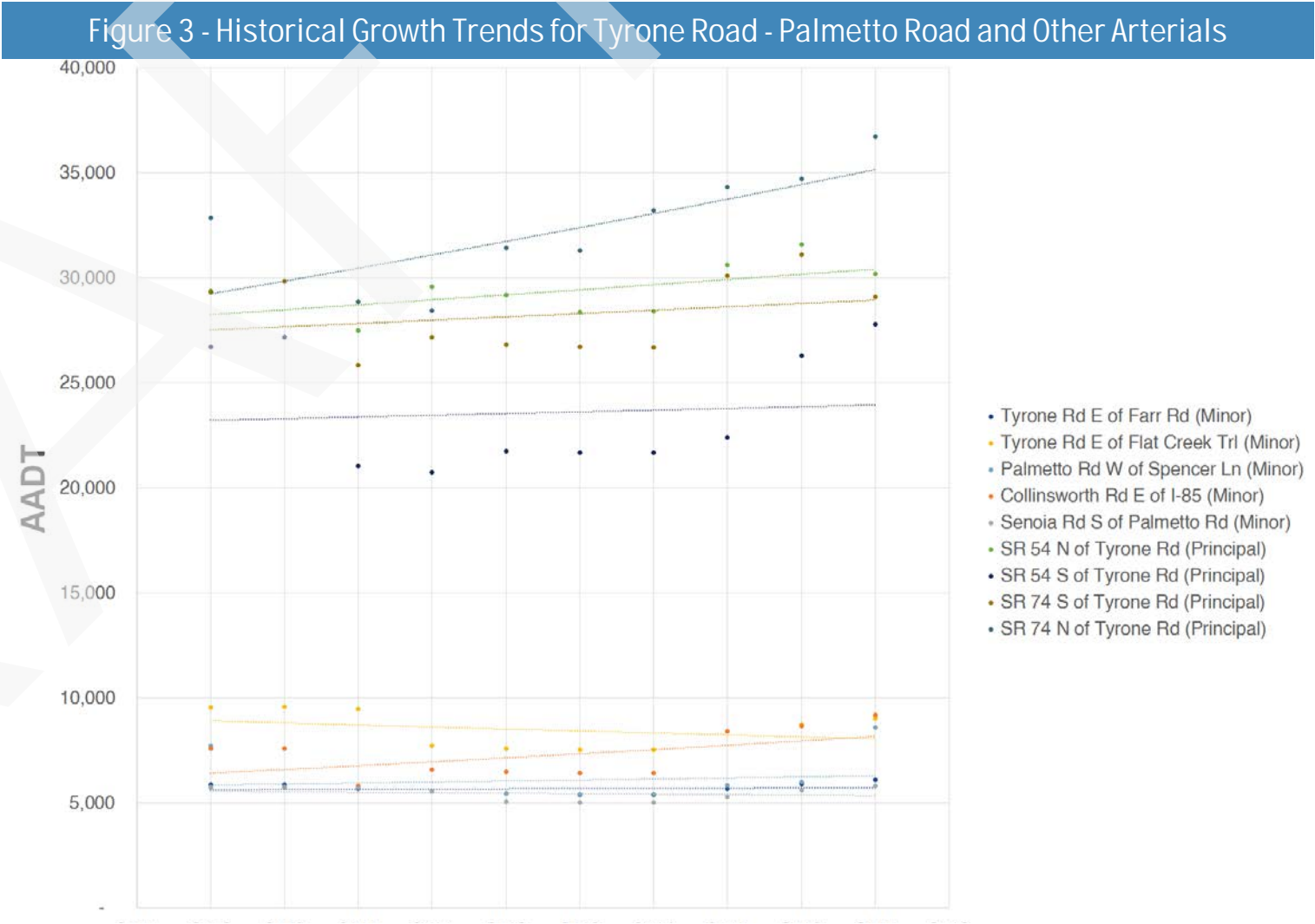
Traffic Growth Methodology

Historical Growth Regression

An exponential regression analysis was performed using historical traffic count data collected from GDOT’s TADA online mapping to determine annual growth factors. Roadways deemed key in determining the overall traffic trends in the region were selected and segments with corresponding traffic counters were plotted for each year.

Per GDOT’s Design Traffic Forecasting Manual, traffic counts that were deemed irregular were omitted to “eliminate erroneous counts and reflect general trend.” Using the exponential regression line’s R2 value as a measurement of accuracy, the equation for the data was used to calculate ADT for 2019, 2020, and 2040.

These volumes were then used to calculate annual growth rates (AGR) based on the historical 5 and 10 year periods. The average annual growth rate over the past 10 years for the area was 0.85%. Figure 3, shows the Historical Growth Trends for Minor and Principal Arterials in the area.



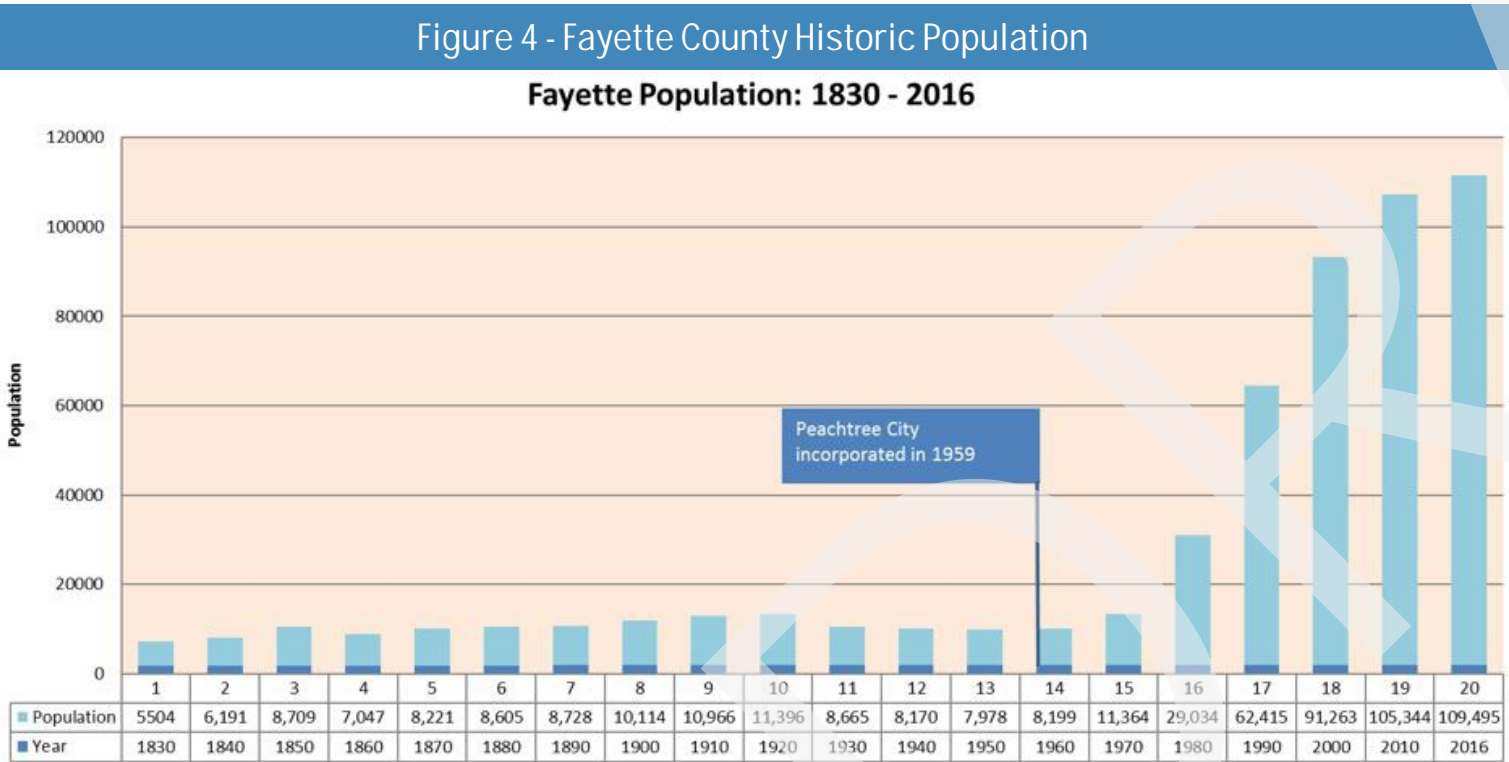
• [ARC Travel Demand Model](#)

Since roadway improvements and socio-economic factors, such as population and employment change are incorporated into regional TDM, they provide realistic projections of future traffic volumes for a region. The ARC TDM forecasts data for 2015, 2020, 2030, and 2040 was used in the growth rate analysis.

Roadway segments with corresponding traffic data were selected for each year and the AGR from 2015 – 2020 and 2020 – 2040 were calculated. The average annual growth rate for the 2020 to 2040 projection was 1.1%.

• [County Population and Growth Forecasts](#)

In step with the rest of the metropolitan Atlanta area, Fayette County has experienced significant growth in population over the past few decades. Figure 4 shows the total population from 1830 to 2016 based on the latest estimates from the American Community Survey (ACS).



In 2017, Fayette County adopted a new Comprehensive Plan, which included a population project based on the ARC’s population projections. The data extracted from ARC’s models showed that Fayette County’s population will increase from 110,975 to 143,255 between 2015 and 2040. This projection represents a 29 percent increase of 32,280 people, an annual growth rate of 1.16 percent.

• [Proposed Future Annual Growth Rates](#)

During the development of concepts for the Tyrone Road-Palmetto Road corridor, AGR will be used to project the existing traffic volumes to a future base year and design year to determine the viability of recommendations. Based on the review of GDOT historic data and the ARC 2015, 2020, 2030, and 2040 models, the proposed AGR for the 2020 and 2040 traffic projections were rounded to 1.5% in order to conduct a conservative future analysis and account for any additional traffic factors that may arise.

[Traffic Operations Analysis](#)

Capacity analyses for Tyrone Road-Palmetto Road were conducted based on the procedures defined by the Transportation Research Board’s Highway Capacity Manual, 2010 edition (HCM 2010) methodology using Synchro™ (Version 9) and HCS 2010™ software. The HCM 2010 was used to define the overall Level of Service of the corridor and the individual study intersections.

Level of Service (LOS) is defined as a qualitative measure that describes operational conditions and motorists’ perceptions within a traffic stream. Level A represents the best quality of traffic where the motorist has the freedom to drive with free flow speed and level F represents the worst quality of traffic when the traffic flow breaks down. For metropolitan areas, an acceptable Level of Service during peak hours is LOS D, which indicates a tolerable delay for the average road user.

Level of service is defined based on the measure of effectiveness (MOE). Typically, three parameters are used under this and they are speed and travel time, density, and delay. One of the important measures of service quality is the amount of time spent in travel. Therefore, speed and travel time are considered to be more effective in defining LOS of a facility. Density gives the proximity of other vehicles in the stream. Since it affects the ability of drivers to maneuver in the traffic stream, it is also used to describe LOS. Delay is a term that describes excess or unexpected time spent in travel.

For highway capacity, the LOS is defined by density. In the case of two-lane highways, the roadway LOS is defined based on its classification, average travel speed, time-spend-following, and free-flow speed. For intersections, the LOS is defined by controlled delay. LOS for unsignalized intersections, with stop control on the minor street only, are reported for the side street approaches. The LOS criteria for signalized, unsignalized, and roundabout intersections are based on average controlled delay and are given in Table 8.

Table 8- Level of Service Criteria for Intersections			
	SIGNALIZED	UNSIGNALIZED	ROUNDBOUT
LEVEL OF SERVICE	CONTROL DELAY (SEC)	CONTROL DELAY (SEC)	CONTROL DELAY (SEC)
A	≤ 10	≤ 10	≤ 10
B	> 10 AND ≤ 20	> 10 AND ≤ 15	> 10 AND ≤ 15
C	> 20 AND ≤ 35	> 15 AND ≤ 25	> 15 AND ≤ 25
D	> 35 AND ≤ 55	> 25 AND ≤ 35	> 25 AND ≤ 35
E	> 55 AND ≤ 80	> 35 AND ≤ 50	> 35 AND ≤ 50
F	> 80	> 50	> 50

Operational conditions were evaluated for the 2018 Existing conditions during the morning and afternoon peak hours. The Levels of Service (LOS) and delay per intersection are shown in Table 9, and the roadway LOS and volume-to-capacity ratio (V/C) are shown in Table 10. As shown, under the 2018 existing traffic conditions, all of the study intersections are operating at an acceptable LOS during the morning peak hour.

Table 9- 2018 Existing Intersection Level of Service (LOS)				
	TYRONE ROAD-PALMETTO ROAD	TRAFFIC CONTROL	AM PEAK	PM PEAK
1	AT ARROWOOD ROAD - SPENCER LANE	AWSC	C (24.7 S)	D (29.1 s)
2	AT SENOIA ROAD	AWSC	A (8.0 S)	A (9.0 S)
3	AT SR 74/JOEL COWAN PARKWAY	TRAFFIC SIGNAL	C (33.4 S)	D (38.0 S)
4	AT ELLISON ROAD	SSSC*	B (13.7 S) C (15.0 S)	B (14.1 S) C (17.6 S)
5	AT DOGWOOD TRAIL	SSSC*	B (13.4 S)	B (12.4 S)
6	AT FLAT CREEK TRAIL	AWSC	D (26.5 S)	E (41.6 S)
7	AT SR 54/W LANIER AVENUE	TRAFFIC SIGNAL	C (27.6 S)	C (20.8 S)
1. FOR ENTIRE CORRIDOR TYRONE ROAD-PALMETTO ROAD ORIENTATION IS EB/WB AND SIDE STREETS ARE NB/SB. 2. AWSC – ALL WAY STOP CONTROLLED. 3. FOR SIDE STREET STOP CONTROLLED (SSSC) INTERSECTIONS, LOS ARE REPORTED FOR THE SIDE STREET APPROACHES ONLY.				

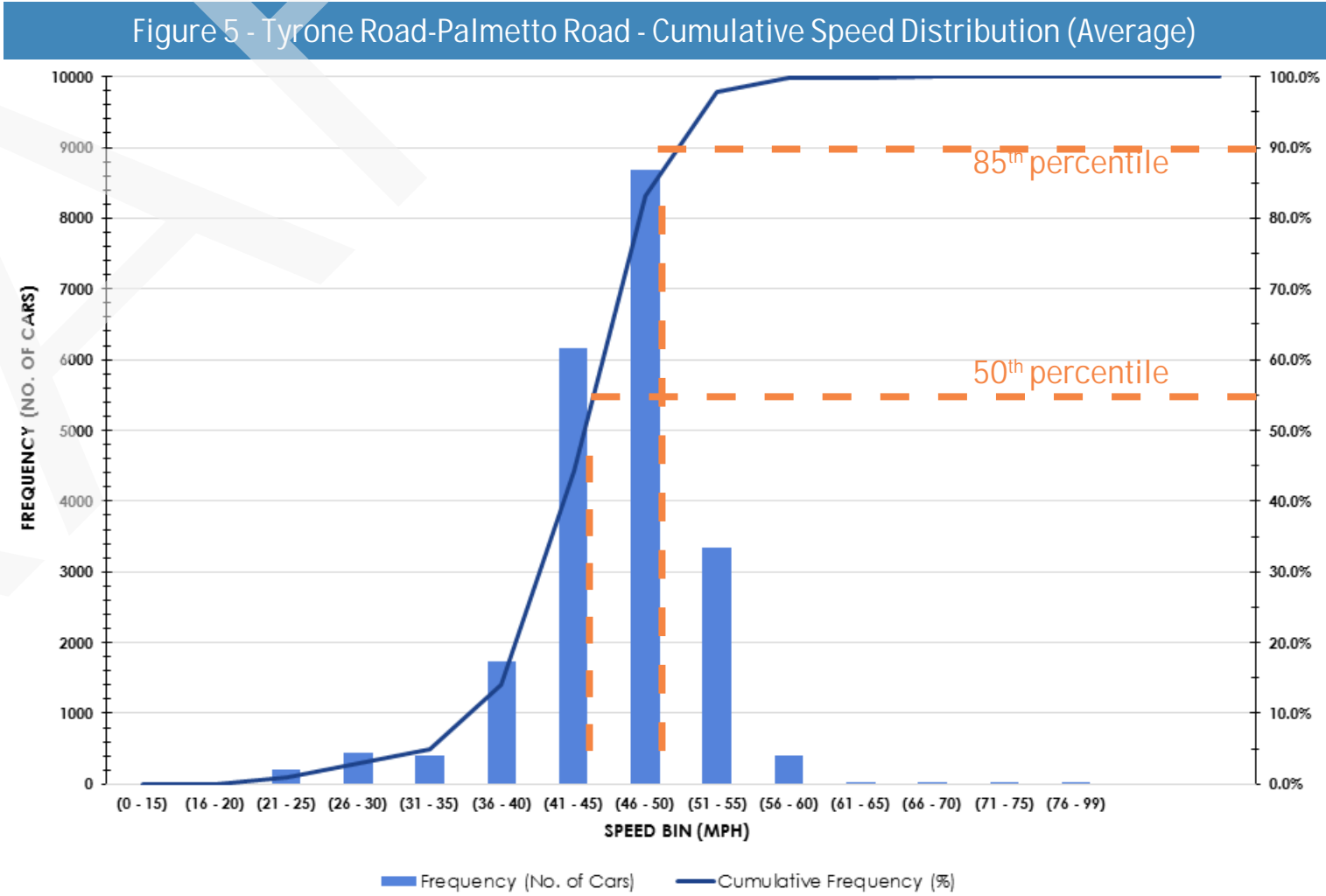
Table 10 - 2018 Existing Peak Hour Roadway Capacity Level of Service (LOS)				
TYRONE ROAD-PALMETTO ROAD	AM PEAK		PM PEAK	
	LOS	V/C ¹	LOS	V/C ¹
BETWEEN FAYETTE-COWETA COUNTY LINE AND SR 74	D	0.35	D	0.37
BETWEEN SR 74 AND DOGWOOD TRAIL	C	0.19	C	0.24
BETWEEN DOGWOOD TRAIL AND SR 54	D	0.35	D	0.34
1. V/C - VOLUME TO CAPACITY RATIO				

In the afternoon peak hour, all of the study intersections are operating at an acceptable LOS except at Flat Creek Trail. In terms of roadway capacity, Tyrone Road between SR 74 and Dogwood Trail is operating at LOS C during both peak hours. From the county line to SR 74 and from Dogwood Trail to SR 54, Tyrone Road-Palmetto Road is operating at LOS D during both the morning and afternoon peak hour.

Safety Analysis

- Speed Study -

Vehicle speeds were obtained for Tyrone Road-Palmetto Road eastbound and westbound travel directions in April 2018 at three points along the corridor. Figure 5 shows the average cumulative speed distribution along Tyrone Road Palmetto Road.



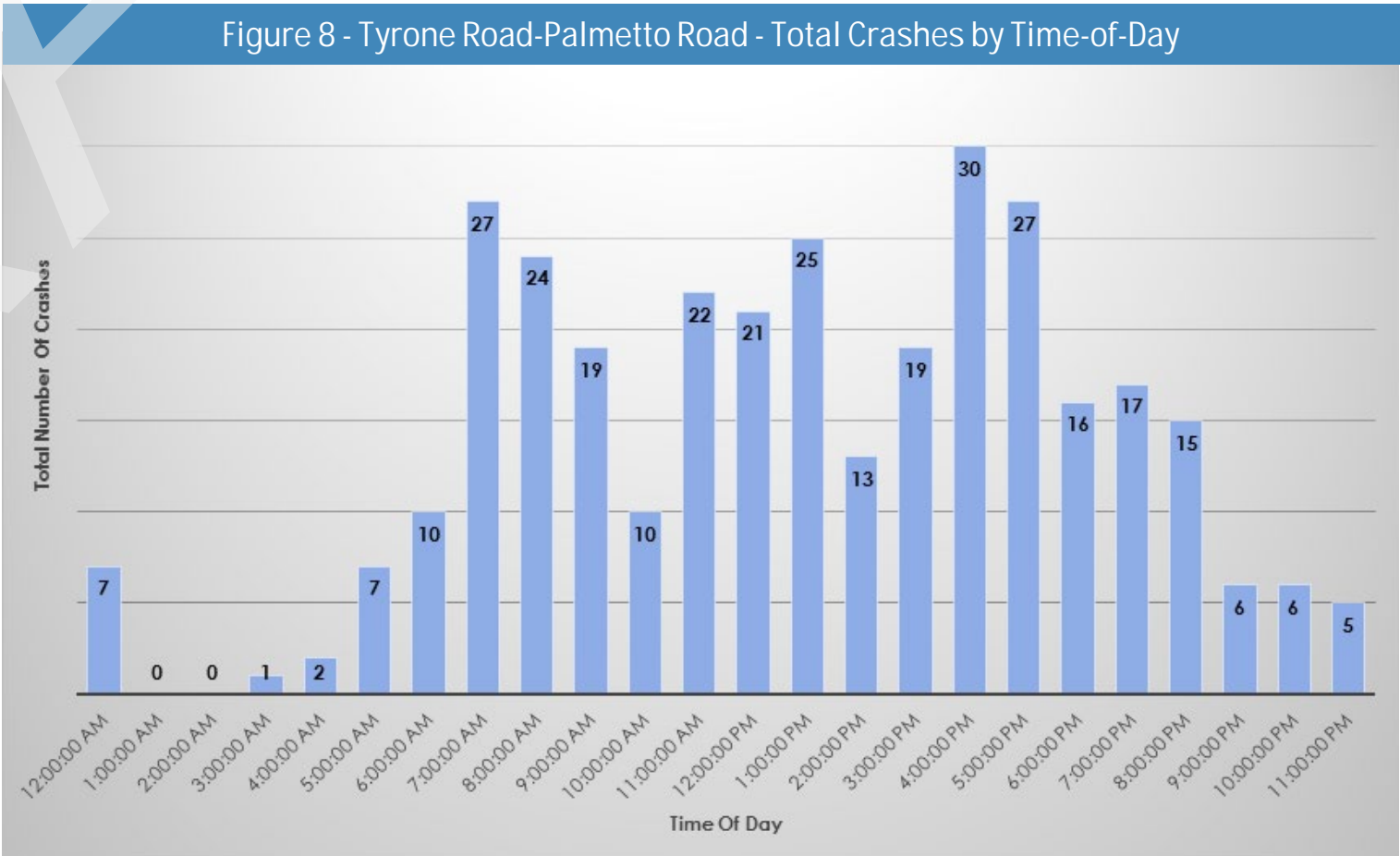
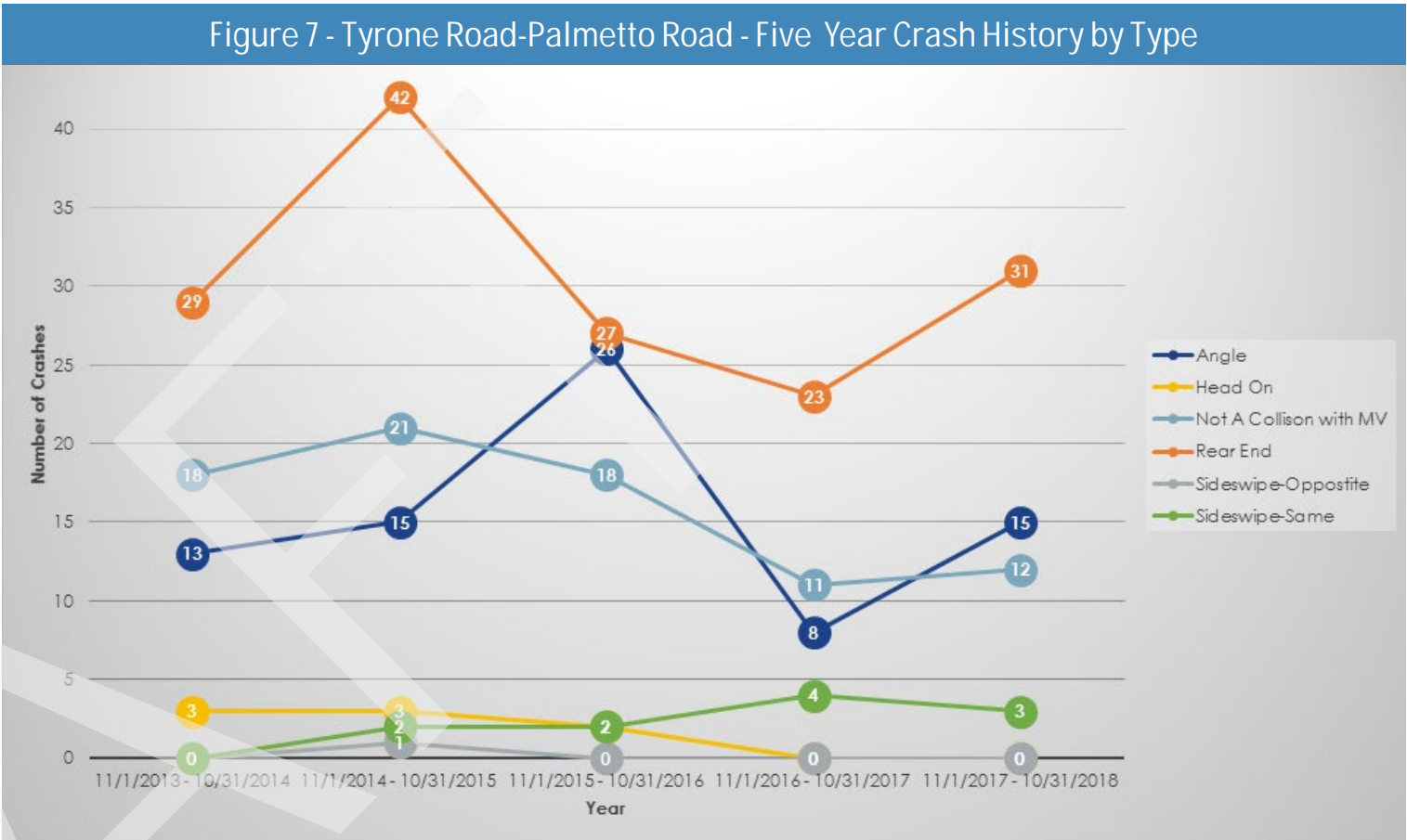
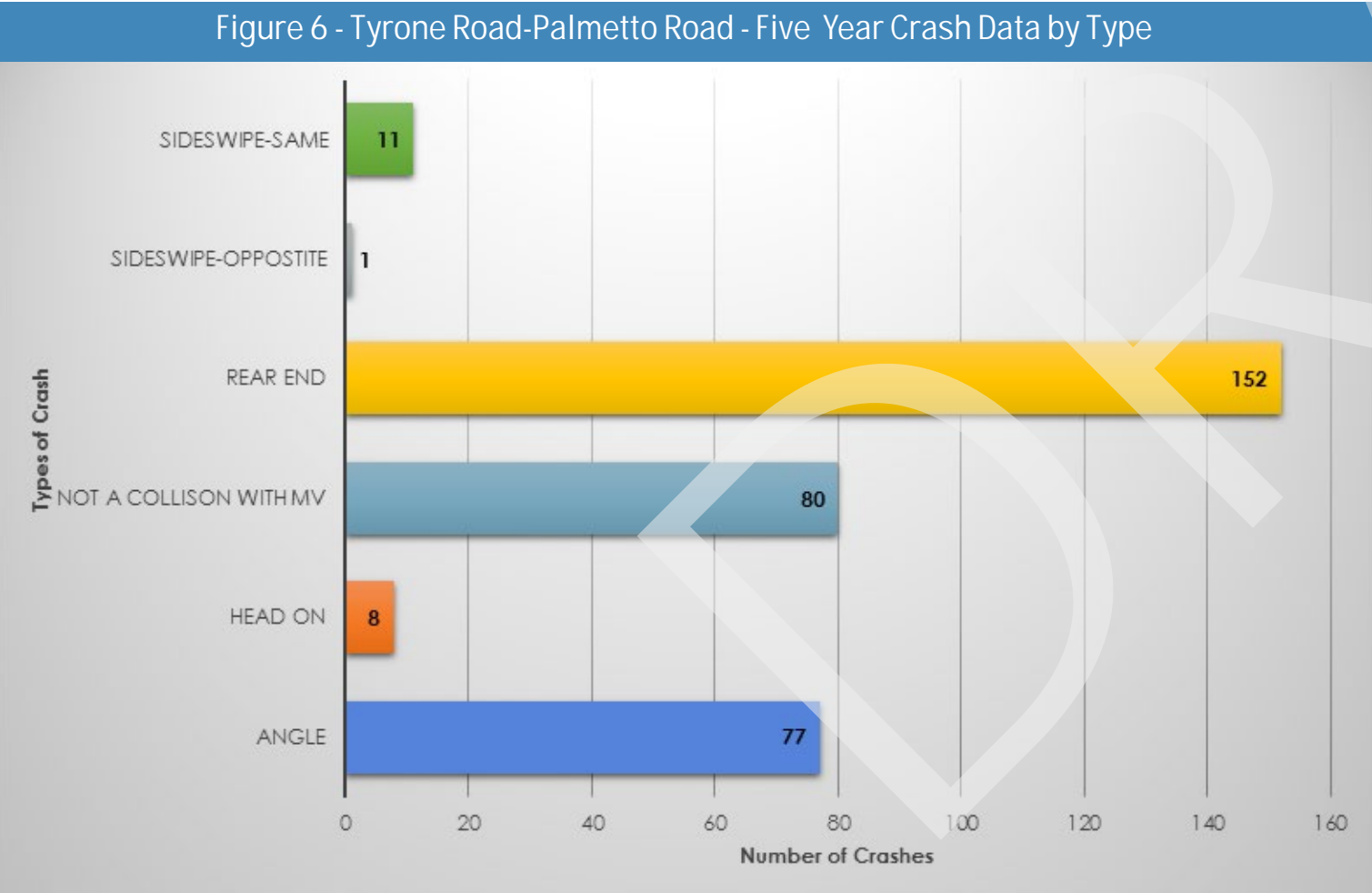
As shown, the 85th percentile speed along Tyrone Road-Palmetto Road is approximately 50 mph. The 10 mph pace along the corridor was 41 mph to 51 mph. Given the posted speed limit along Tyrone Road – Palmetto Road ranges from 30 mph to 40 mph, these results indicate that vehicles along the corridor are typically exceeding the speed limit which creates a safety concern.

• [Crash Data -](#)

In order to identify crash trends and safety characteristics for the corridor, crash data was obtained from the Georgia Electronic Accident Reporting System (GEARS) database. Crash records were collected along Tyrone Road-Palmetto Road between November 2013 and October 2018.

Crash Data by Type, Five-Year Crash History, and Time-of-Day are shown in Figure 6, Figure 7 and Figure 8, respectively. Figure 9 shows the total number of crashes per intersection. Property Damage Only (PDO), injuries, and fatalities resulting from car crashes along Tyrone Road-Palmetto Road for this Five-year period are shown in Table 11.

This data demonstrates Tyrone Road-Palmetto Road’s crash rate is lower in every category when compared to the statewide average for minor arterials. Approximately 24% of the crashes during this time period resulted in one or more injuries. There was one fatality just east of the Fayette-Coweta County line resulting from a vehicle going off road in January 2017. The average number of crashes occurring on Tyrone Road-Palmetto Road is 66 crashes per year.



The majority of the crashes are contributed to rear end and non-motor vehicle collisions. These findings indicate that there is a recognizable need to implement techniques to reduce the frequency and severity of crashes along the corridor, as well as measures to reduce vehicles from going off-road.

As expected, the signalized intersections along the corridor have the higher number of crashes for the five-year period. Controlling for signalized intersections, the five unsignalized intersections with the highest number of crashes in order from highest to lowest are Flat Creek Trail, Dogwood Trail, Adams Road, Handley Road, and Senoia Road.

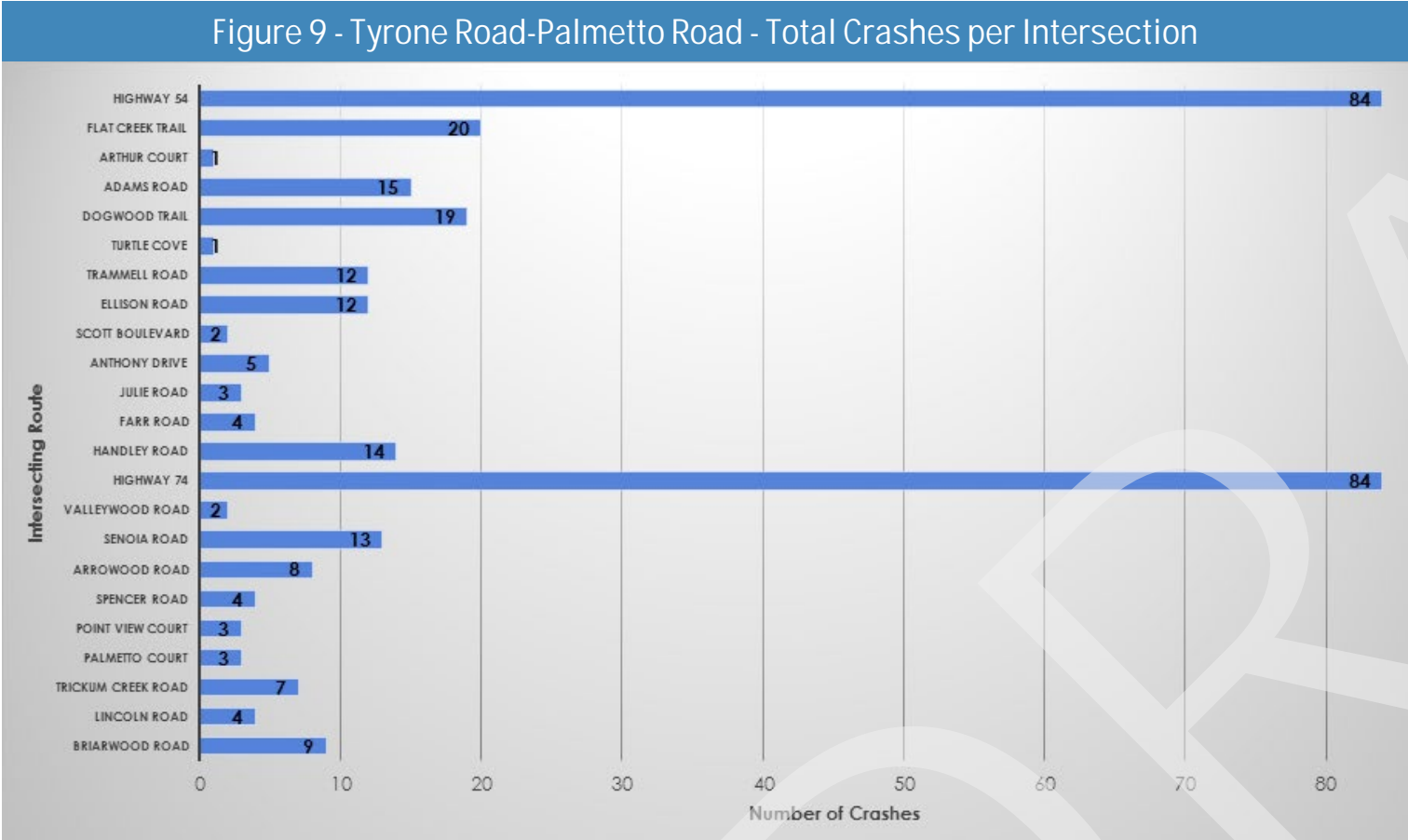
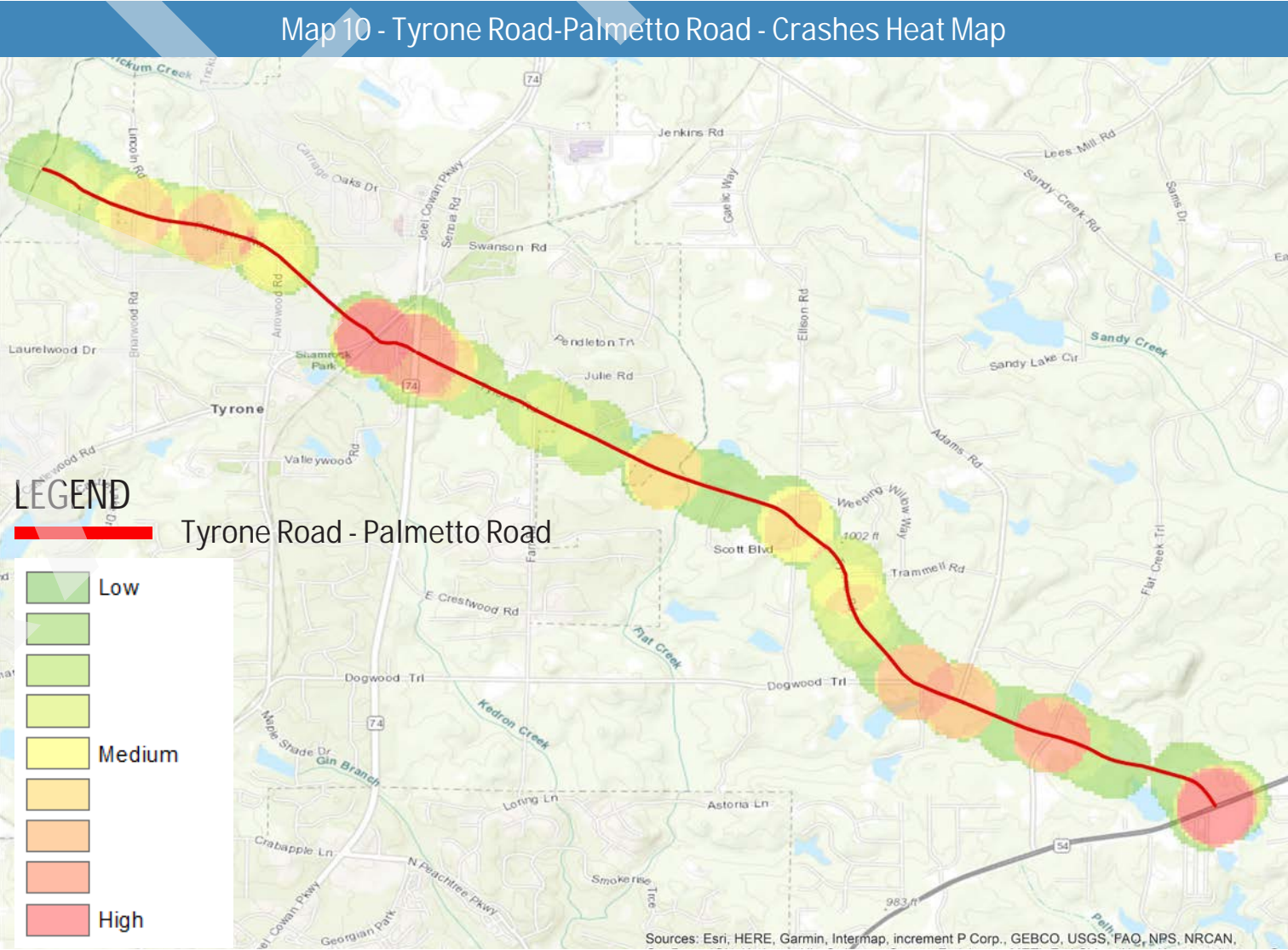


Table 11 - Tyrone Road-Palmetto Road Crash Rates Relative To State Averages			
	TOTAL CRASHES (5 YEARS)	CRASH RATE ¹	STATEWIDE AVG. (2016) ¹
TOTAL CRASHES	329	309	506
TOTAL INJURY ACCIDENTS	80	75	124
TOTAL INJURIES	110	103	186
TOTAL FATAL ACCIDENTS	1	1	1.72
TOTAL FATALITIES	1	1	1.86
1. Crashes per 100 million vehicle-miles of travel.			

Rural-two lane typical sections, such as Tyrone Road-Palmetto Road, typically results have higher frequency of rear end crashes, with contributing factors being the number of access points along the corridor, high turning volumes from a single shared lane, and restricted sight distance. Contributing factors to crashes not involving other motor vehicles or vehicles going off road include excessive speed, poor visibility or lack of curve warning signs, or inadequate shoulders.

Map 10 represents a heat map of crashes along Tyrone Road-Palmetto Road. The intersections are considered hot-spots for crashes with higher number occurring in the red zones.



1.6 Environmental Due Diligence

The purpose of the survey was to identify sensitive environmental land uses that may provide corridor improvement opportunities and/or constraints. The survey included agency database research, as well as on site reconnaissance of the corridor. Sensitive environmental land uses were surveyed including natural, cultural, community, and physical resources in the general vicinity of the Palmetto Road - Tyrone Road study corridor.

In the study corridor, Tyrone Road extends from Senoia Road to SR 54. The roadway consists of two travel lanes with rural shoulders. Land use along the Tyrone Road portion of the study corridor is primarily residential and agricultural with some commercial and institutional use. A sample of sensitive environmental land uses that were identified along the Sandy Creek Road study corridor are shown in Image 4, Image 5, and Image 6.

Prior to design and construction in the area, coordination with appropriate approval agencies would be needed to determine type of environmental and historic resources that need to be protected in the jurisdiction. The Palmetto Road - Tyrone Road Due Diligence report along with the Environmental Resources Location map are attached in the appendix.

Image 4 - Line Creek



Image 6 - Potential Historic Resource



Image 5 - Little Vine Baptist Church



1.7 Utilities

This section of the report presents an inventory of existing utilities along the corridor. Map 11 represents the location, description and photos of these utilities are presented below. Prior to design and construction in the area, coordination with appropriate approval agencies would be needed to determine type of utilities that need to be protected.

A
Large Drainage Culvert



E
AGL Gas Marker



I
Looking Northeast at
Utility Facilities for AGL



M
Looking Northwest William National Gas
Pipeline Crossing



B
Wood & Metal Distribution/
Transmission Lines



F
Power/ Telephone Cabinets Off Railway



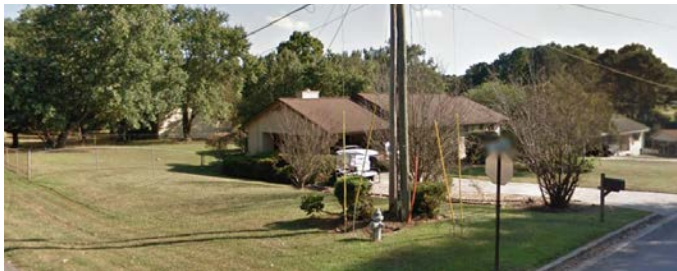
J
Gas Pipeline Marker



N
Major Utility Cabinet Grouping
for AT&T U.G. at Ellison Road



C
Fire Hydrant



G
Railroad Crossing Looking North



K
Utility Equipment Cabinets
AT&T Underground Cable



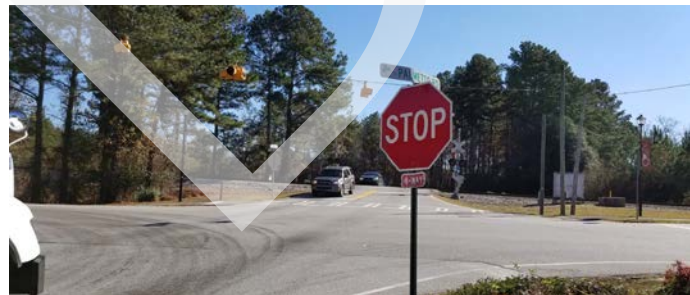
O
Looking Northwest AGL Facilities Group



D
Gasline Along North Side of the Road



H
Looking South East towards
Railroad Crossing



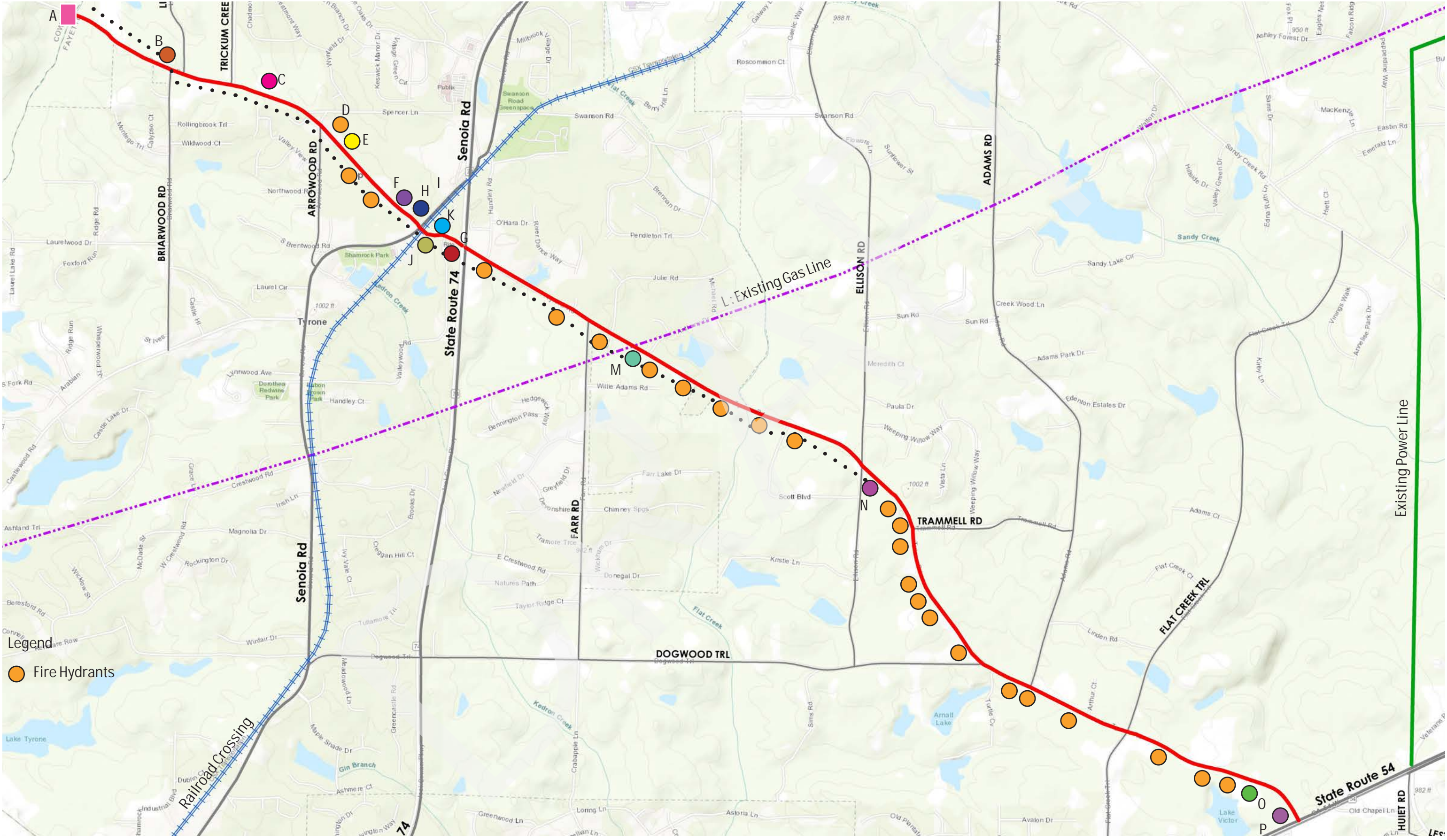
L
Existing Gas Line



P
Looking South Intersection at SR 54
Pedestrian Signals



Map 11 - Tyrone Road - Palmetto Road - Utilities



1.8 Summary

Tyrone Road and Palmetto Road are important corridors in the northwestern quadrant of Fayette County. Tyrone Road provides mobility between State Route 54 and Senoia Road in Tyrone extending into Palmetto Road, a 1.7 mile roadway starting from Senoia Road to the I-85 Interchange. It also provides connectivity for the abutting property owners and intersecting local streets. The corridor has one through lane, typically 11 feet wide for each direction of travel (with turn lanes on Tyrone Road at SR 74); has a posted speed limit ranging from 30 mph to 40 mph and a total of 22 intersections (two signalized, all other unsignalized intersections are side street stop controlled). The corridor has no sidewalks, however there is a small stretch of cart path from Senoia Road to SR 74. There are no fixed transit routes that serve Fayette County. The only transit service is demand responsive provided by Senior Services and different private carriers.

There is one railroad at-grade crossing near the Tyrone Road and Palmetto Road intersection near Senoia Road. The abutting land use is primarily residential with an office/commercial node between Senoia Road and SR 74. An investigation of the demographic make-up of the citizens within 1-mile of the corridor (data source was the 2016 American Community Survey at the block grant level) reveals that the male to female ratio is close to 50%; approximately 70% of the citizens are white; approximately 24% have completed high school; and the mean median household income is \$40,310.

The average annual daily traffic along Tyrone Road – Palmetto Road ranges from 5,950 vehicles to 10,550 vehicles, and the daily truck percentage along the corridor ranges from 4.5% to 7.1%. The morning and afternoon peak hours begin at 7 AM and 5 PM, respectively. Under the existing traffic conditions, only the intersection of Tyrone Road at Flat Creek Trail during the afternoon peak hour is operating at an undesirable LOS, LOS E. In terms of roadway capacity, the corridor itself is operating at an acceptable LOS. From collected speed data, the 85th percentile speed is 50 mph, approximately 10 mph over the posted speed limit.

For the recent 5-year period ending October 2018, an analysis of crash records from GEARS revealed 329 crashes with one resulting in a fatality. The most crash occurrences were rear-ends and the second most being a single vehicle collision not with another motor vehicle. The majority of the crashes are clustered at the Highway 54 and Highway 74 intersections. Approximately 24% of the crashes resulted in an injury. Tyrone Road-Palmetto Road's crash rate is lower in every category when compared to the statewide average for minor arterials.

An environmental survey revealed that the corridor is located within the Line Creek Watershed, a High Priority Watershed. There are three streams crossing the corridor with two potential regulatory wetlands or floodplains identified. There are two special flood hazard areas crossing the study corridor. Preferred habitats of federal and state protected species were identified. In addition to two churches, one cemetery, thirteen potential historic resources were recognized. Investigation of the corridor has identified no other community resources. Four underground storage tanks (USTs) were identified. No potential contamination sites such as landfills or potential hazardous waste sites were identified. Ultimately, prior to any construction activities detailed studies would need to be conducted and coordination completed with the appropriate environmental reviewing agencies.