



Banks Road Corridor Study Existing Conditions Report



Fayette County Public Works

2017 SPLOST No. 17 TAE



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Mission Statement:

The Banks 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 the City of Fayetteville continue to grow. The projects will formulate a complementary infrastructure improvement plan that will improve the corridor aesthetics, support the adjacent economic development, 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 along 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 -

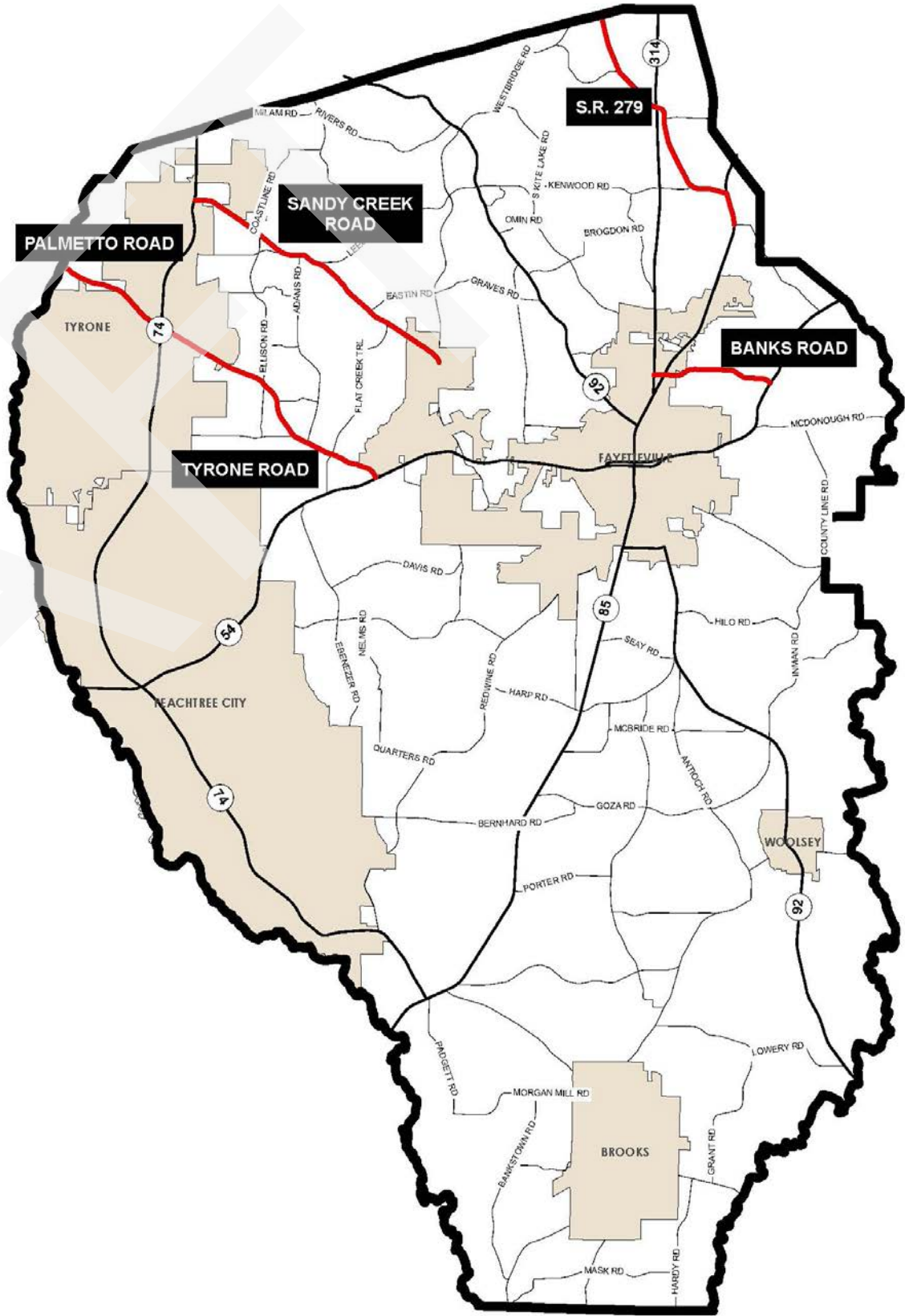
- Tyrone Road - Palmetto Road
- Sandy Creek Road
- Banks Road
- State Route 279

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 Banks Road corridor and describe the existing conditions of the roadway.

Map 1 - Vicinity Map

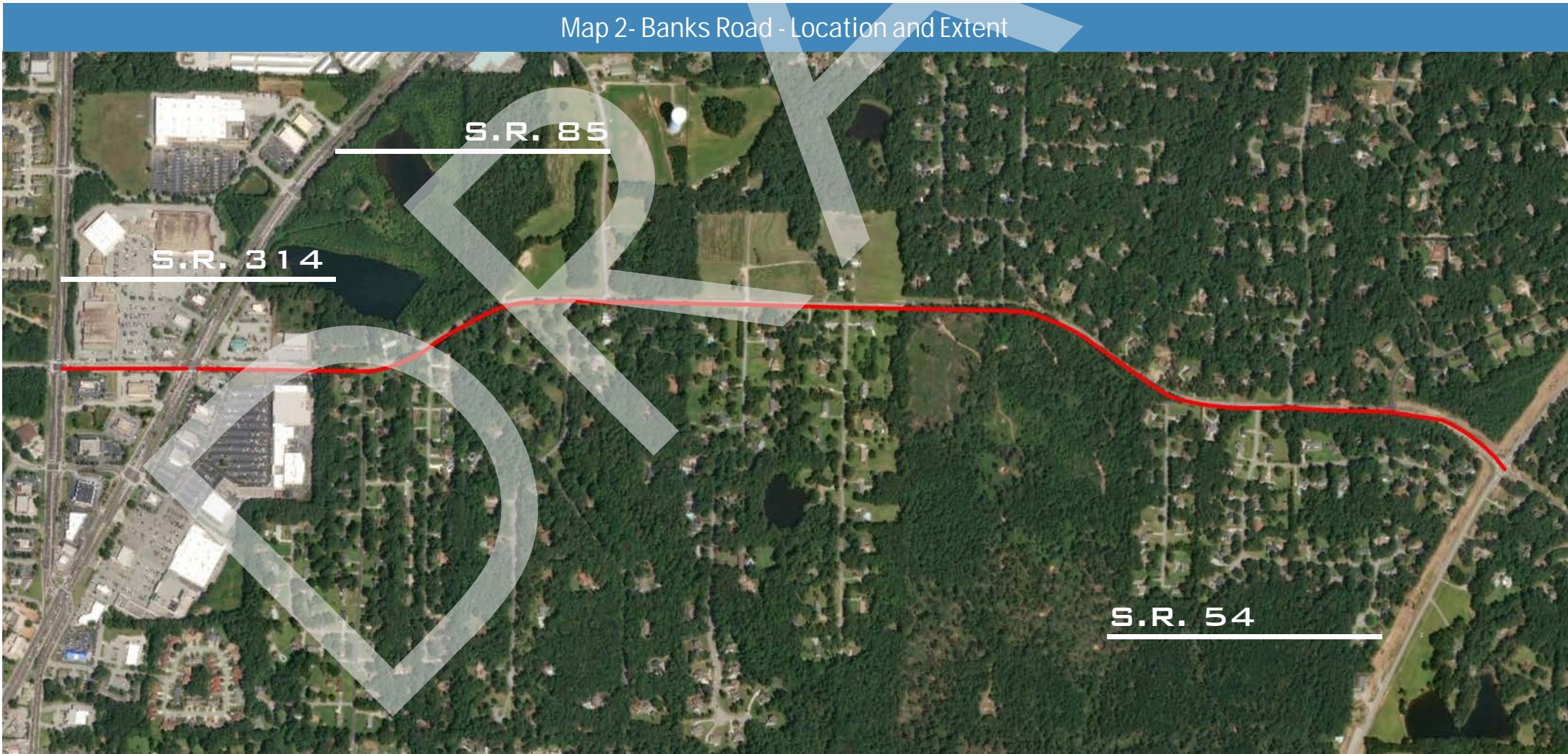
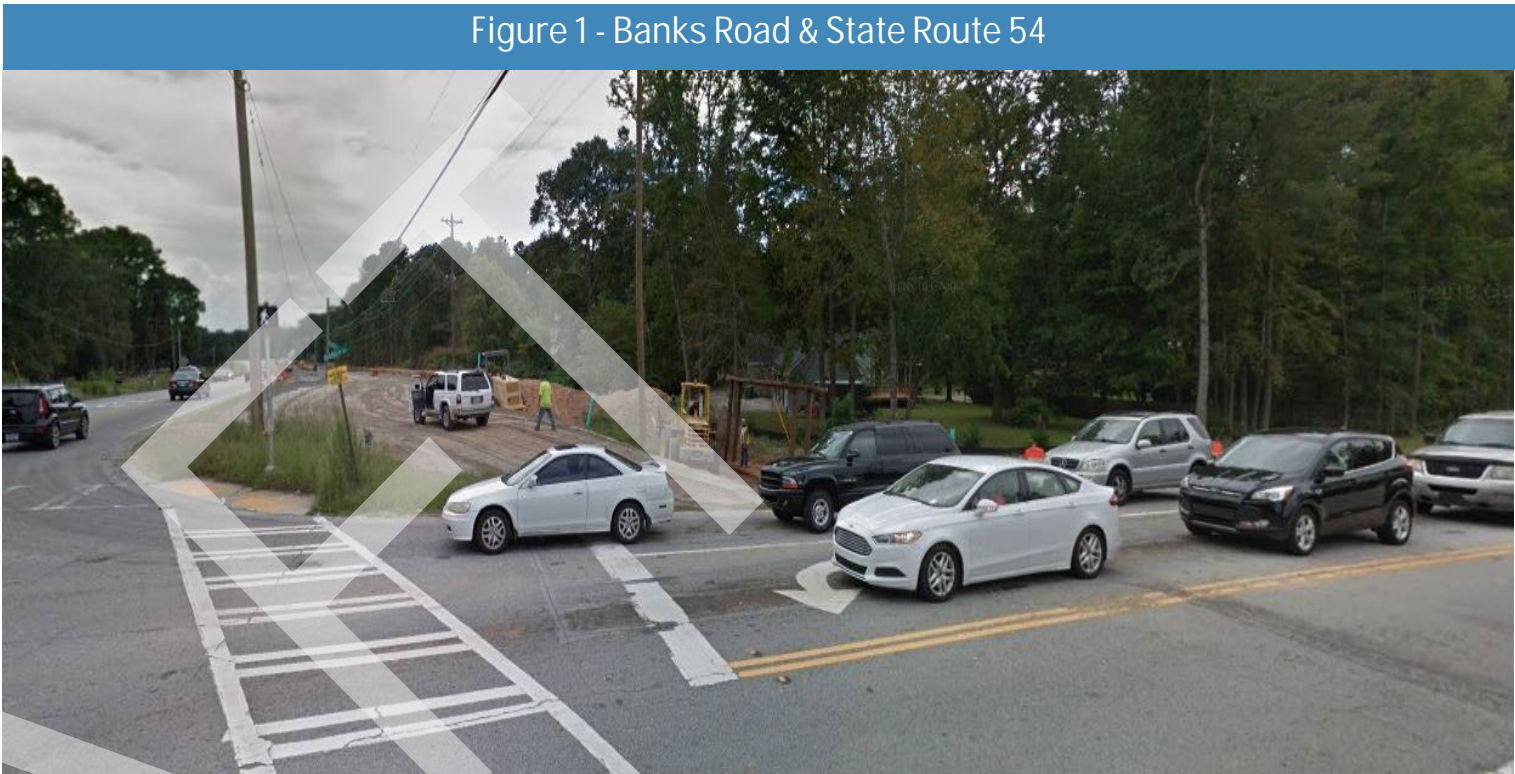


Banks Road is a 1.7-mile major road with the study length extending from State Route 54 to State Route 314. The western end of the corridor encompassing about 0.38 miles lies within the City of Fayetteville. In addition to providing access for abutting neighborhoods, Banks Road is used as a cut-thru between SR 314, SR 85 and SR 54. However, the road lacks adequate design and capacity for current and future traffic volumes and pedestrian demands.

The study is an investigative foundation to implementing improvements that will enable Banks 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.

Figure 1 is an image of the Banks Road approaching State Route 54. Map 2 depicts the location and extent of the Banks Road corridor study.



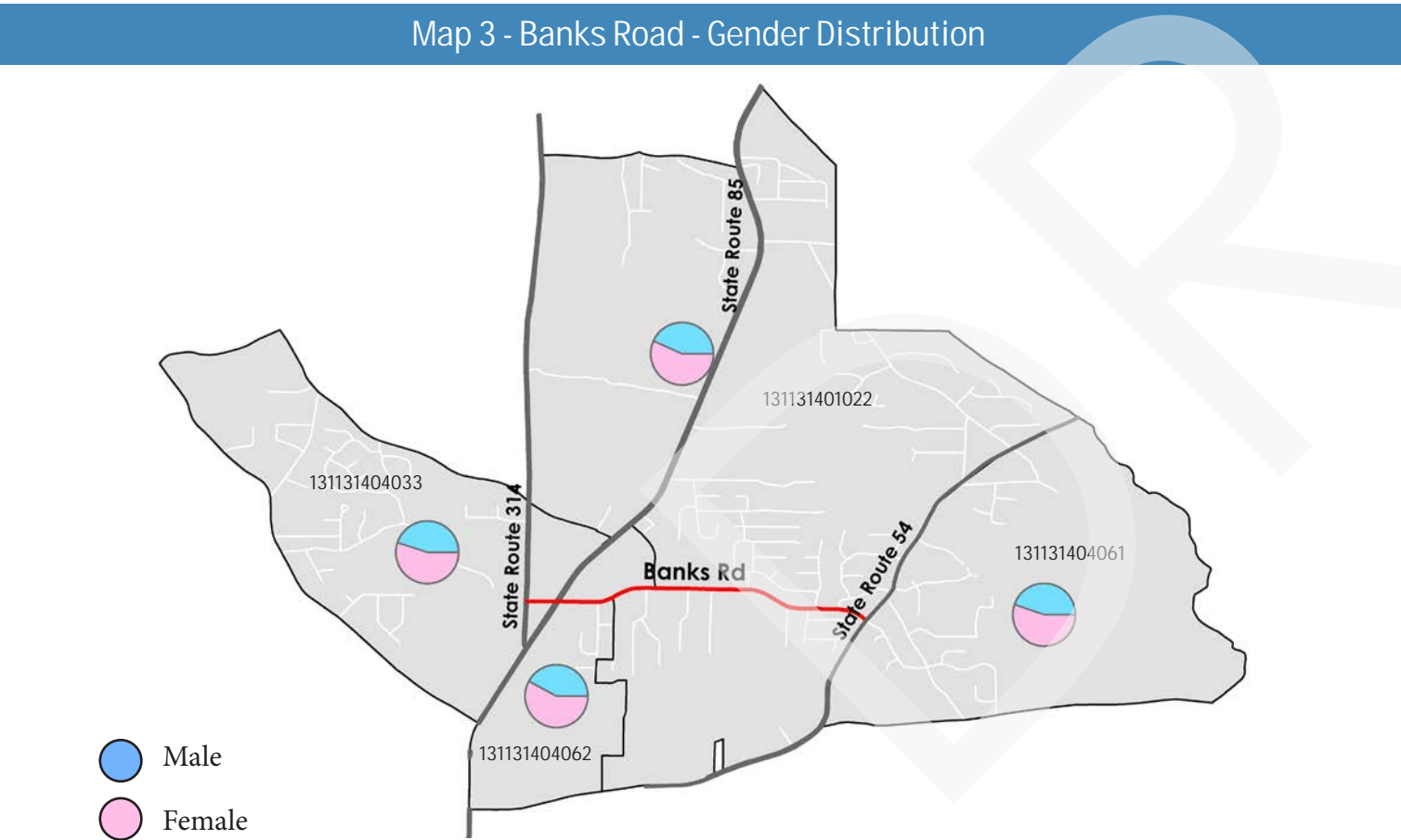
1.2 Demographics -

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 Banks Road Corridor is approximately 9,202, with 4,059 [44.1 %] being male and 5,143 [55.9%] being female. Map 3 represents a male to female distribution in the block groups along the corridor.



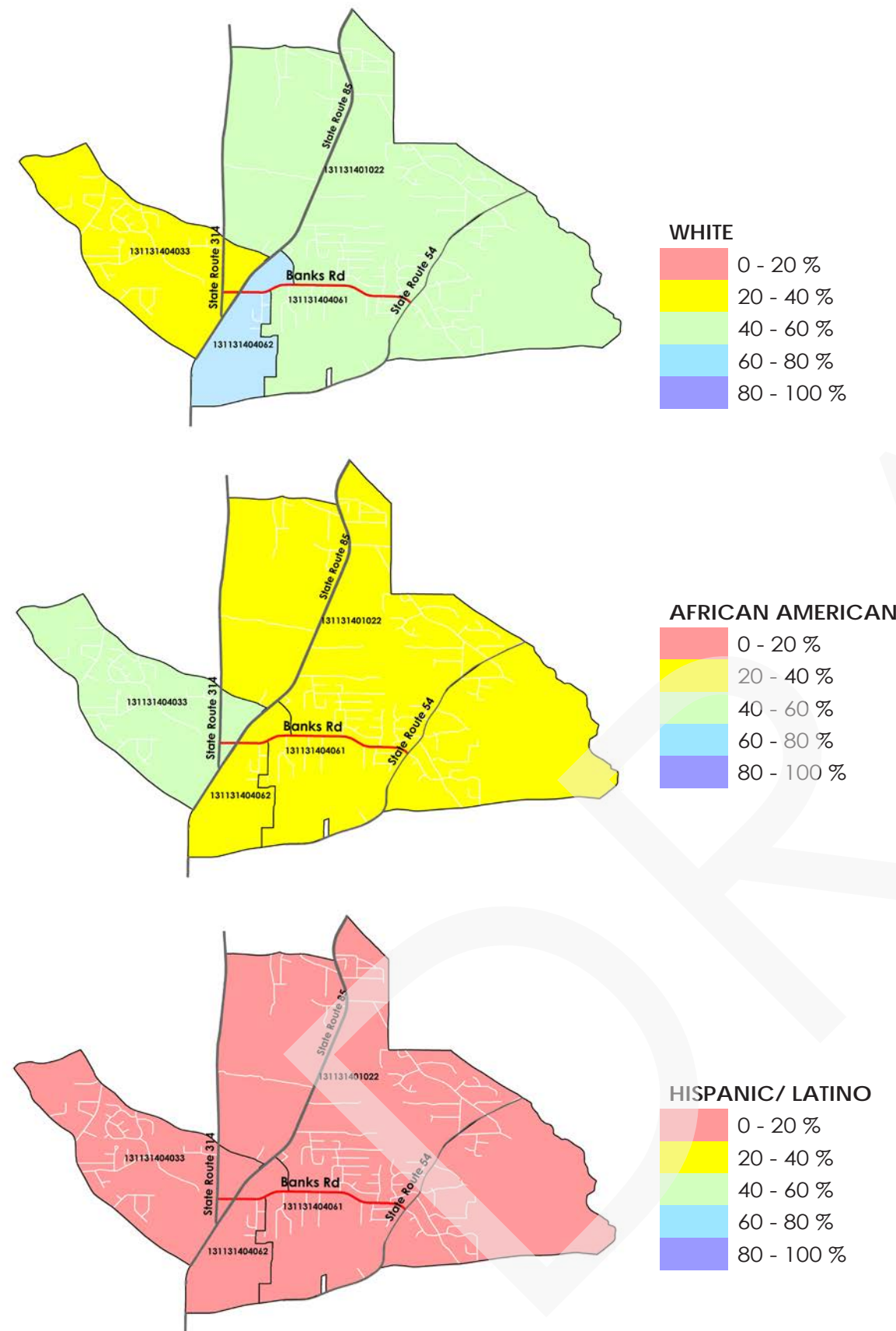
Analyzing the racial composition along the corridor, it is seen that approximately 4,302 citizens [46.7%] are white, 3,837 [41.6%] are African American and 461 [5.0%] are Hispanic or Latino.

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

Table 2- Racial Distribution					
ID	131131404033	131131404062	131131404061	131131401022	TOTAL
Block Group Population	3,453	1,461	2,242	2,046	9,202
White	1,266	1,049	992	995	4,302
% White	36.6%	71.8%	44.2%	48.6%	46.7%
African American	2,049	319	809	660	3,837
% African American	59.3%	21.8%	36.0%	32.2%	41.6%
Hispanic/ Latino	126	71	219	45	461
% Hispanic/ Latino	3.6%	4.8%	9.7%	2.1%	5.0%
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 - Banks 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 - Banks Road - Educational Attainment

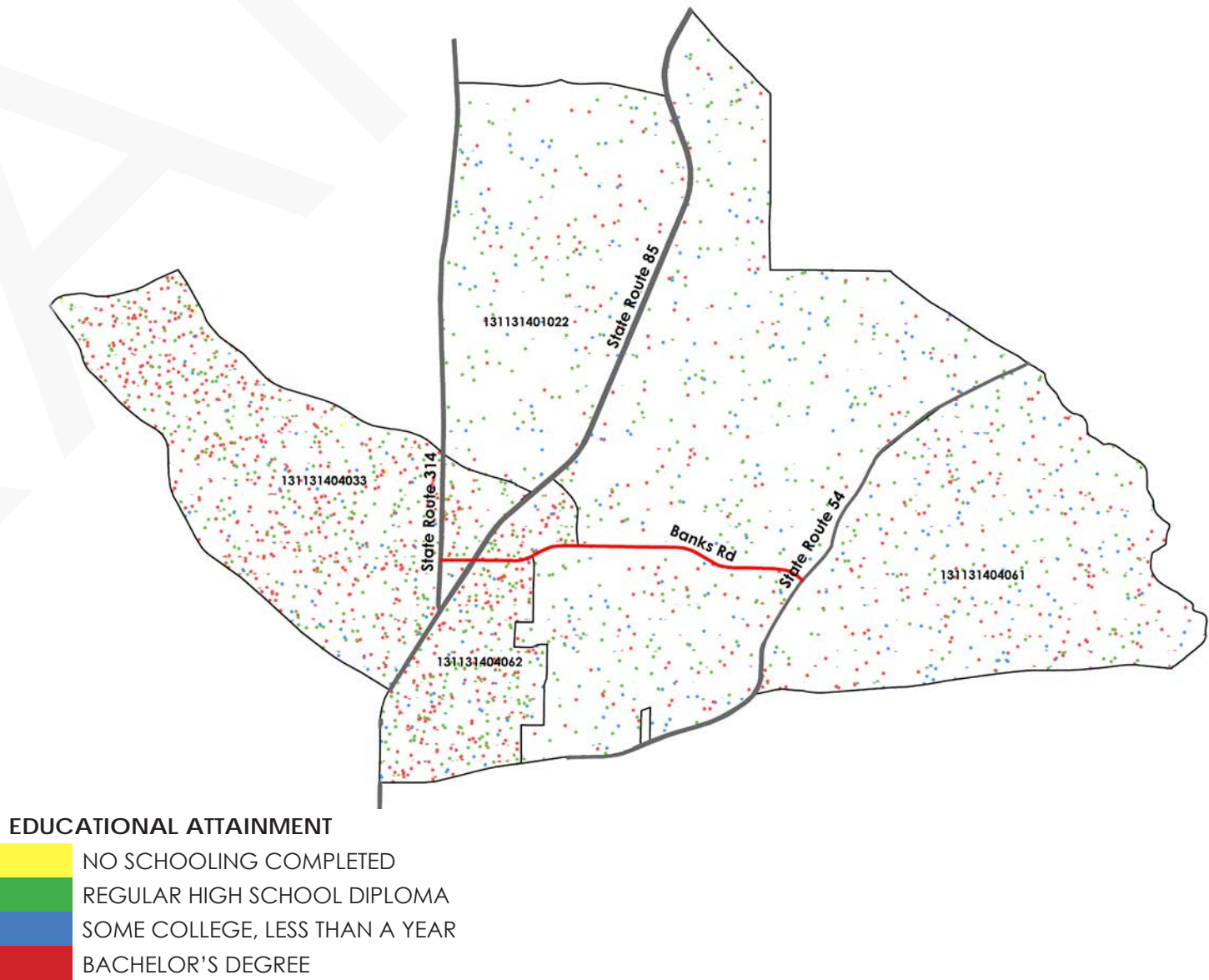


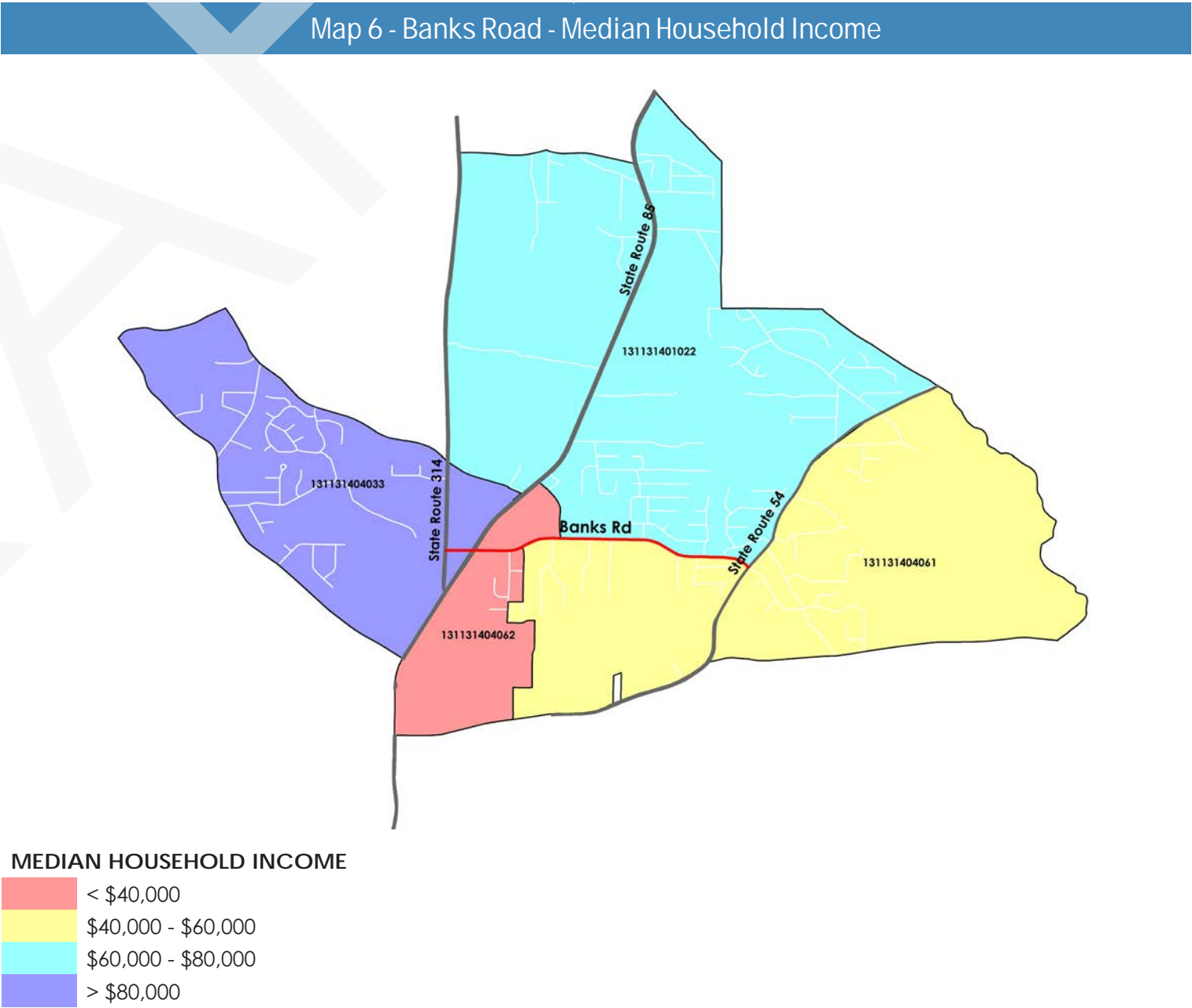
Table 3- Educational Attainment Distribution					
ID	131131404033	131131404062	131131404061	131131401022	TOTAL
Block Group Population (25 Years & Older)	2,324	1,084	1,370	1,636	6,414
No School Completed	8	0	0	0	8
% Not Completed School	0.3%	0%	0%	0%	0.1%
Regular High School Diploma	456	239	338	371	1,404
% With Regular High School Diploma	19.6%	22.0%	24.6%	22.6%	21.8%
Some College, Less Than A Year	66	45	166	184	461
% With Some College, Less Than A Year	2.8%	4.1%	12.1%	11.2%	7.1%
Bachelor's Degree	611	285	322	179	1,397
% With Bachelor's Degree	26.2%	0.5%	23.5%	10.9%	21.7%
NOTE - All values are estimates and do have associated margins of error.					

The table above represents the counts and percentages of the population in the block group with a certain level of education. The analyses depicts that 99.9% of the population of the block groups has completed high school. While 21.8% has a regular high school diploma, 7.1% has attended some college for less than a year and 21.7% 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 Banks Road was analyzed.

The minimum median household income in the area is approximately \$36,630, while the maximum median income is approximately \$85,036, the mean median household income in the area is \$59,903.

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

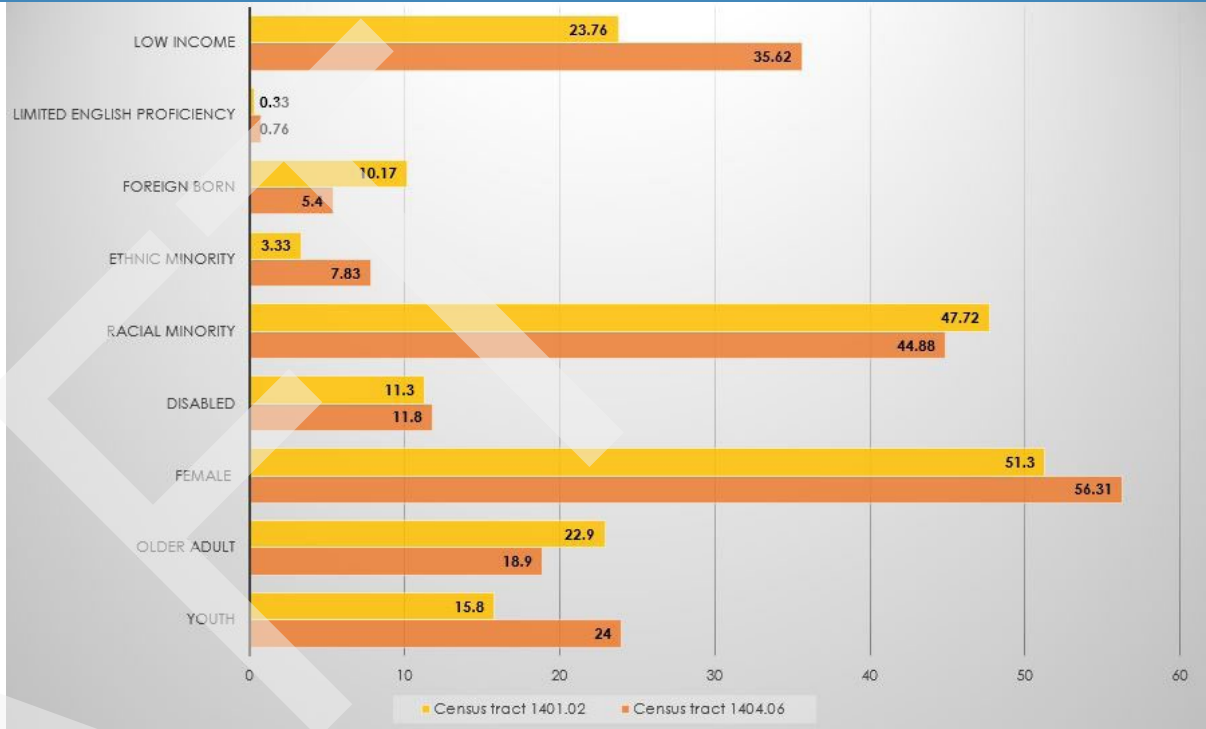
The Racial Minority, Ethnic Minority, and Low-Income Model is an adaptation of the Equitable Target Areas (ETA) model, with an index methodology similar to the Protected Classes Model. ARC considers these 3 inputs to be indicators of the greatest potential inequality in the Atlanta region.

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. A low score is 0 and 12 is a high score.

Corridor Analysis

The Banks Road corridor lies on the border of two census tracts. Fayette County’s census tract 1404.06 lies on the east and census tract 1401.02 lies on the west. Census tract 1404.06 has an average cumulative score of 18 for the Protected Classes Model and an equity score of 6 for the Racial Minority, Ethnic Minority, and Low-Income Model. Census tract 1401.02 has an average cumulative score of 16 for the Protected Classes Model and an equity score of 4 for the Racial Minority, Ethnic Minority, and Low-Income Model.

Figure 2 - Banks Road - Equity Analysis



Census tract 1404.06 – Residents in the tract under 18 years of age account for 24 % , while residents 65 years or older account for 18.9 %. Female residents account for 56.31 %, residents with disabilities account for 11.8 % of the population in the tract. While 44.88 % of residents identify as one or more racial minority, only 7.83 % of residents identified themselves as being of Hispanic or Spanish origin. The tract has a small population of foreign born nationals, with only 5.4 % of residents being born outside of the United States and 0.76 % of residents report having English proficiency below “very well.” Households with an income below \$32,920 (200% of the national poverty level) is 35.62 %. The Census defines a household to be composed of one or more people who occupy a housing unit. The 2019 Federal Poverty Level for a household of 2 individuals is \$16,460.

Census tract 1401.02 – Residents in the tract under 18 years of age is 15.8%, while 22.9% of residents are 65 years or older. 51.3% of residents are female. Residents with disabilities account for 11.3% of the population in the tract. While 47.72% of residents identify as one or more racial minority, only 3.33 % of residents identified themselves as being of Hispanic or Spanish origin. The tract has a small population of foreign born nationals, with 10.17% of residents being born outside of the United States and only 0.33% of residents report having English proficiency below “very well.” Households with an income below \$32,920 (200% of the national poverty level) is 23.67%. The Census defines a household to be composed of one or more people who occupy a housing unit. The 2019 Federal Poverty Level for a household of 2 individuals is \$16,460.

1.3 Land Use & Zoning -

Approximately 2,885 parcels, both residential and nonresidential, comprise the study area. Banks Road within the City of Fayetteville limits is a commercial node and transitions to residential from the city limits to SR 54. Map 7 depicts the land use pattern along the corridor.

Residential Usage

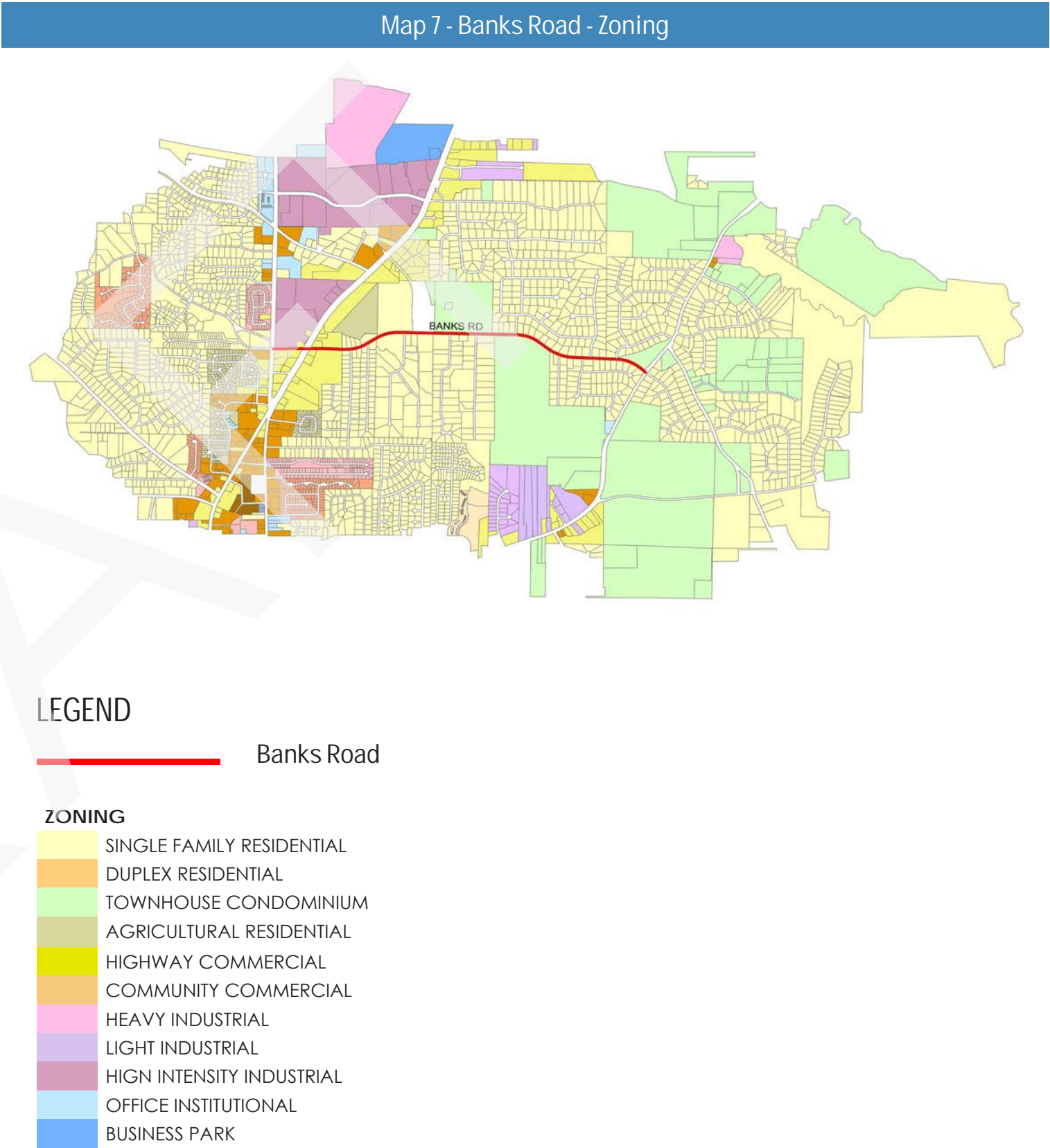
Approximately 2,549 parcels or 88.3% of the study area are residential. The four major types of residential uses seen along the corridor are:

Table 4 - Residential Zoning		
CATEGORY	ZONING ENTITY	NO OF PARCELS
• SINGLE FAMILY RESIDENTIAL	FAYETTE COUNTY / CITY OF FAYETTEVILLE	2023
• MULTI FAMILY RESIDENTIAL	FAYETTE COUNTY / CITY OF FAYETTEVILLE	224
• TOWNHOUSE CONDOMINIUM	FAYETTE COUNTY / CITY OF FAYETTEVILLE	239
• AGRICULTURAL RESIDENTIAL	FAYETTE COUNTY / CITY OF FAYETTEVILLE	63

Commercial Usage

Commercial zoning is clustered along the SR 85 and SR 314 intersections. 336 parcels are zoned commercial. The zoning designations for the area are:

Table 5 - Commercial Zoning		
CATEGORY	ZONING ENTITY	NO OF PARCELS
• BUSINESS PARK	CITY OF FAYETTEVILLE	2
• HIGHWAY COMMERCIAL	FAYETTE COUNTY / CITY OF FAYETTEVILLE	107
• COMMUNITY COMMERCIAL	FAYETTE COUNTY / CITY OF FAYETTEVILLE	111
• HEAVY INDUSTRIAL	FAYETTE COUNTY	3
• HIGH INTENSITY COMMERCIAL	CITY OF FAYETTEVILLE	21
• LIGHT INDUSTRIAL	FAYETTE COUNTY / CITY OF FAYETTEVILLE	42
• OFFICE INSTITUTIONAL	FAYETTE COUNTY / CITY OF FAYETTEVILLE	50



1.4 Roadway Infrastructure and Facilities

Per the Georgia Department of Transportation (GDOT) road classifications, Banks Road is classified as a minor arterial. The Banks Road corridor from its SR 314/W Fayetteville Road to SR 54, is approximately 1.7 miles.

There is one travel lane in each direction, which is generally 11 feet wide, but varies depending on the precise location. There are no turn lanes on Banks Road between SR 314 and SR 85.

The average right-of-way along Banks Road varies. According to Fayette County’s Thoroughfare Plan, minor arterials such as Banks 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

There are a total of 16 intersections along Banks Road within the limits of this corridor study. There are three signalized intersections along the corridor, at SR 314/W Fayetteville Road, SR 85/S Glynn Street, and SR 54. All other unsignalized intersections are two-way stop controlled (TWSC) with Banks 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.

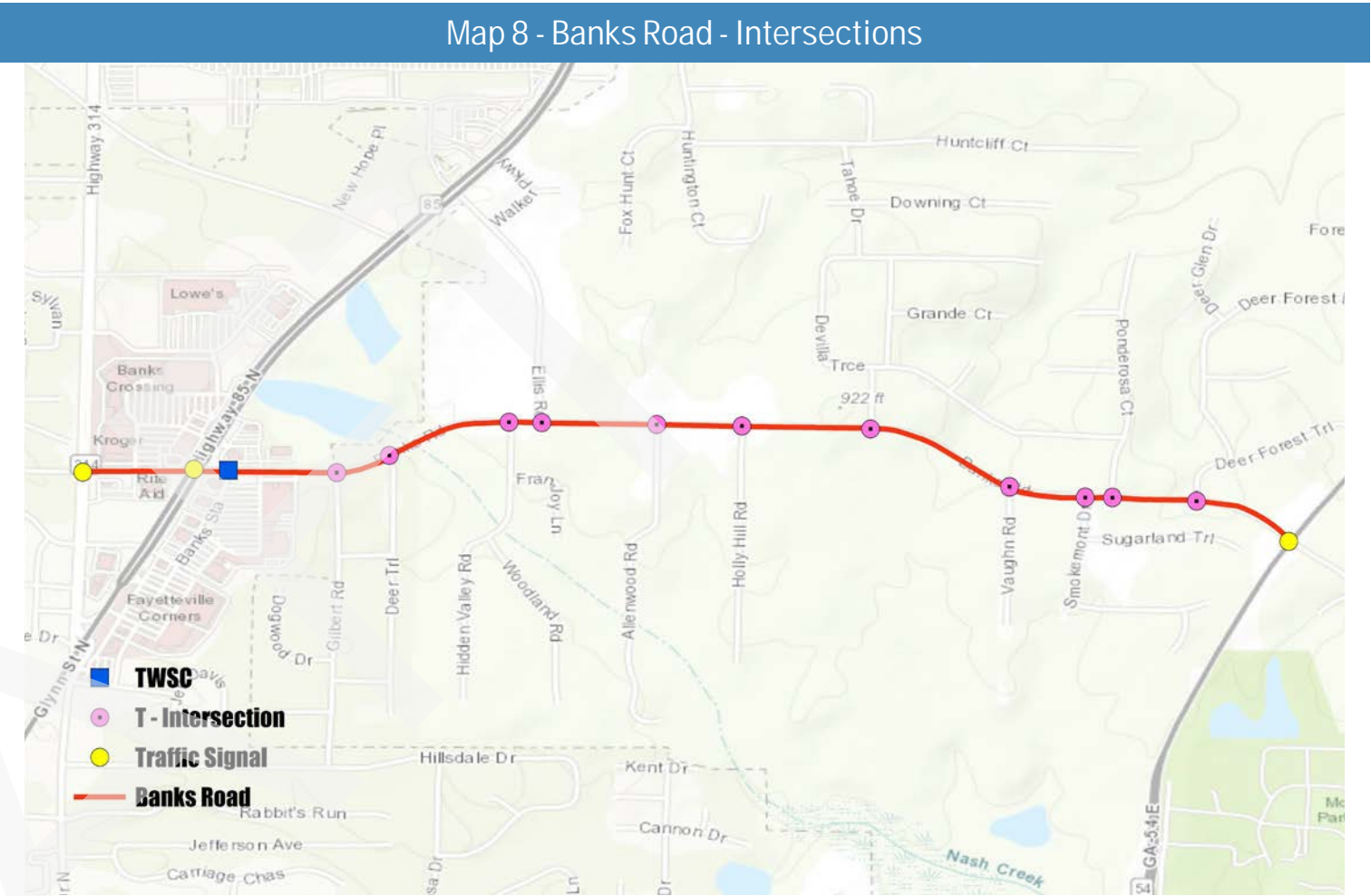


Table 6 - Banks Road Intersections		
INT. NO	BANKS ROAD	TRAFFIC CONTROL
1	AT SR 314/W FAYETTEVILLE ROAD	TRAFFIC SIGNAL
2	AT BANKS CROSSING	TWSC (NB/SB) ¹
3	AT SR 85/S GLYNN STREET	TRAFFIC SIGNAL
4	AT BANKS STATION DRIVEWAY	TWSC (NB/SB) ¹
5	AT GILBERT ROAD	T-INTERSECTION (NB) ¹
6	AT DEER TRAIL	T-INTERSECTION (NB) ¹
7	AT HIDDEN VALLEY ROAD	T-INTERSECTION (NB) ¹
8	AT ELLIS ROAD	T-INTERSECTION (SB) ¹
9	AT ALLENWOOD ROAD	T-INTERSECTION (NB) ¹
10	AT HOLLY HILL ROAD	T-INTERSECTION (NB) ¹
11	AT PONDEROSA TRACE	T-INTERSECTION (SB) ¹
12	AT VAUGHN DRIVE	T-INTERSECTION (NB) ¹
13	AT SMOKEMONT DRIVE	T-INTERSECTION (NB) ¹
14	AT PONDEROSA COURT	T-INTERSECTION (SB) ¹
15	AT DEER FOREST TRAIL	T-INTERSECTION (SB) ¹
16	AT SR 54	TRAFFIC SIGNAL
1. DENOTES WHICH MANEUVERS ARE STOP CONTROLLED.		

Bike/Pedestrian Facilities

There are sidewalks along both sides of Banks Road between SR 314 and SR 85, and along the north side from SR 85 to the City of Fayetteville limits. From the City of Fayetteville limits to SR 54, there are no sidewalks along Banks Road. There are no bicycle facilities along the corridor. 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 19.9 miles*
- Union City Park & Ride – approximately 12.6 miles*
- Jonesboro Park & Ride – approximately 6.6 miles*

[* - Measured from the midpoint of the corridor (Banks Road at Allenwood Road)]

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

- From the western termini, Banks Road begins a commercial/retail environment and transitions to a residential area west of the City of Fayetteville limits. As this area continues to grow there may arise the need for concrete channelizing islands to encourage right turns ingress and egress into and out of the commercial areas.
- Intersection at Gilbert Road has limited sight distance looking east.
- Intersection of Deer Trail is in a downhill grade looking east on Banks Road.
- Pedestrians observed walking east on the shoulder of Banks Road.
- Congestion at Hidden Valley Road and Ellis Road.
- Ample sight distance (both east and west) at Allenwood Road.
- Limited sight distance (east and west) at Ponderosa Trace and Banks Road intersection. There are curves in both directions approaching Vaugh Drive.

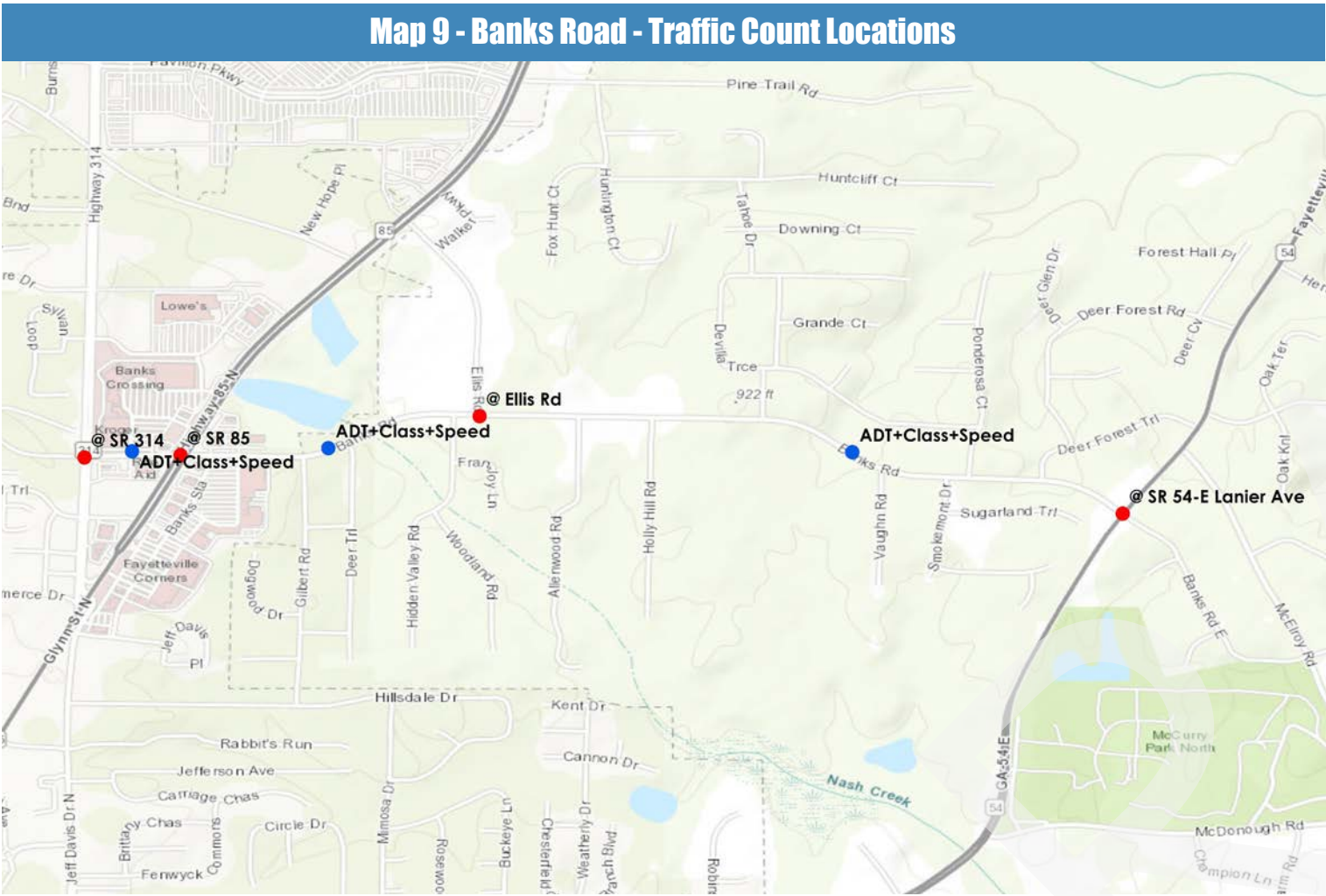
- Smokemont Drive at Banks Road has some water standing in the turning lane gutter.
- Some subdivisions have small turn radii, which may impact turn movements for residential trash pickup at least during weekday commutes.
- Approaching SR 54, there is a gore area evolving into a turning lane and this intersection is under construction.
- Fair pavement condition with 25' wide surface with some longitudinal and transverse cracking.
- Some raveling and slight reflection of wheel path is visible in some areas.
- Observed that some shoulders broke in various radius.
- The majority of the road had 3' grass shoulders some with steep slopes.

Images 1 to 3 - Banks 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 were collected at:
- Banks Road between SR 314/W Fayetteville Road and SR 85
 - Banks Road east of Gilbert Road
 - Banks Road west of Vaughn Drive

- Weekday 4-hour AM and PM Peak Period (7-9 AM and 4-6 PM) Turning Movement Counts (TMC) were collected at:
- Banks Road at SR 314/W Fayetteville Road
 - Banks Road at SR 85/S Glynn Street
 - Banks Road at Ellis Road
 - Banks Road at SR 54

Saturday peak period Turning Movement Counts were also collect at SR 314/W Fayetteville Road and SR 85/S Glynn Street.

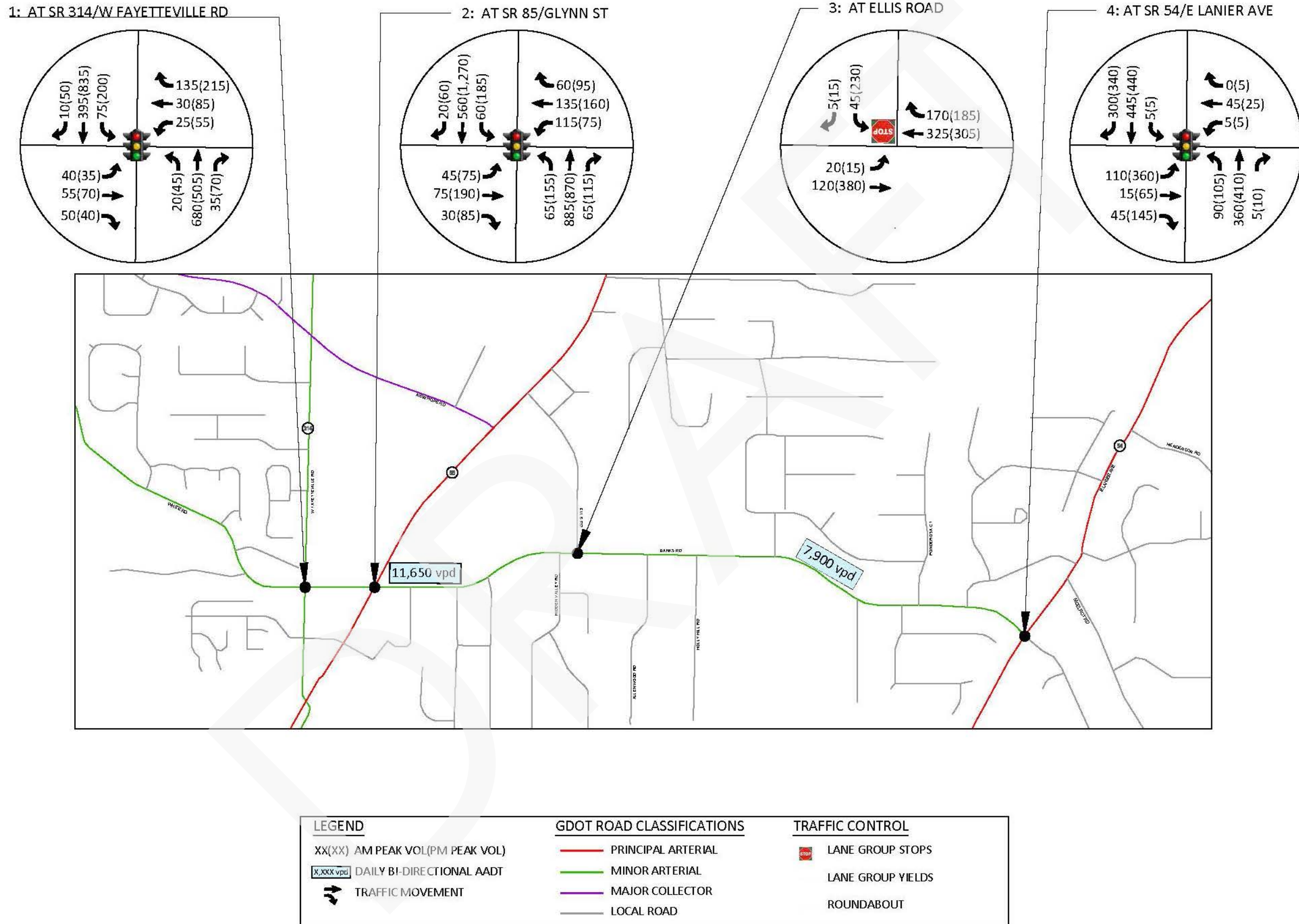
Between SR 314 and Ellis Road, the average ADT is 8,652 vehicles. Between Ellis Road and SR 54, the average ADT is 12,751 vehicles. Adjusting the April counts for daily and seasonal factors per GDOT standards, the Average Annual Daily Traffic (AADT) for the two aforementioned segments, are 7,900 vehicles and 11,650 vehicles, respectively. The count data shows that there is significant increase in traffic along Banks Road west of Ellis Road. Table 7 describes daily truck percentages along the corridor.

Table 7 - Banks Road Daily Truck Percentages			
BANKS ROAD	SINGLE UNIT	COMBO	TOTAL
BETWEEN SR 314 AND ELLIS ROAD	1.7 %	0.1 %	1.8 %
BETWEEN ELLIS ROAD AND SR 54	2.9 %	0.1 %	3.0 %

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 Banks Road are shown in Figure 2.

Figure 2 - Banks Road - 2018 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. The following count stations on minor arterials within the vicinity of Banks Road were collected:

- White Road west of SR 314
- SR 314 north of Banks Road
- N Jeff Davis Drive south of Banks Road
- Highway 92 west of SR 314

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

- SR 85 north of Banks Road
- SR 85 south of Banks Road
- SR 54 north of Banks Road
- McDonough Road east of McElroy Road

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

Regional Travel Demand Model

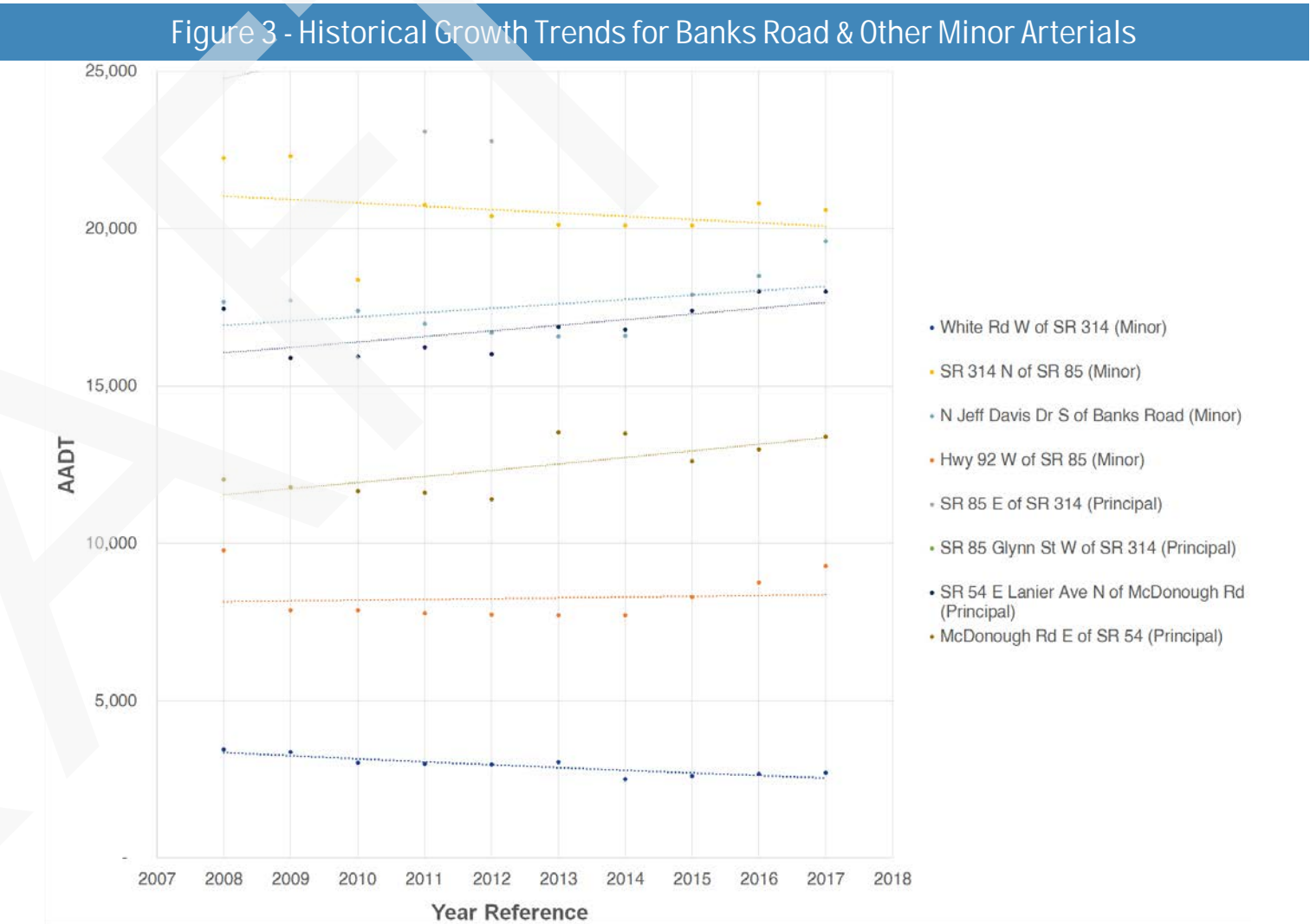
The Atlanta Regional Commission travel demand model (ARC TDM) was reviewed and traffic projections at pertinent locations were selected and analyzed to determine future growth rates of traffic along the corridor and the surrounding roadway network.

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 0.95%. Figure 3 shows the historical growth trends for Historical Growth Trends for Minor & Principal Arterials in Area.



ARC Travel Demand Model

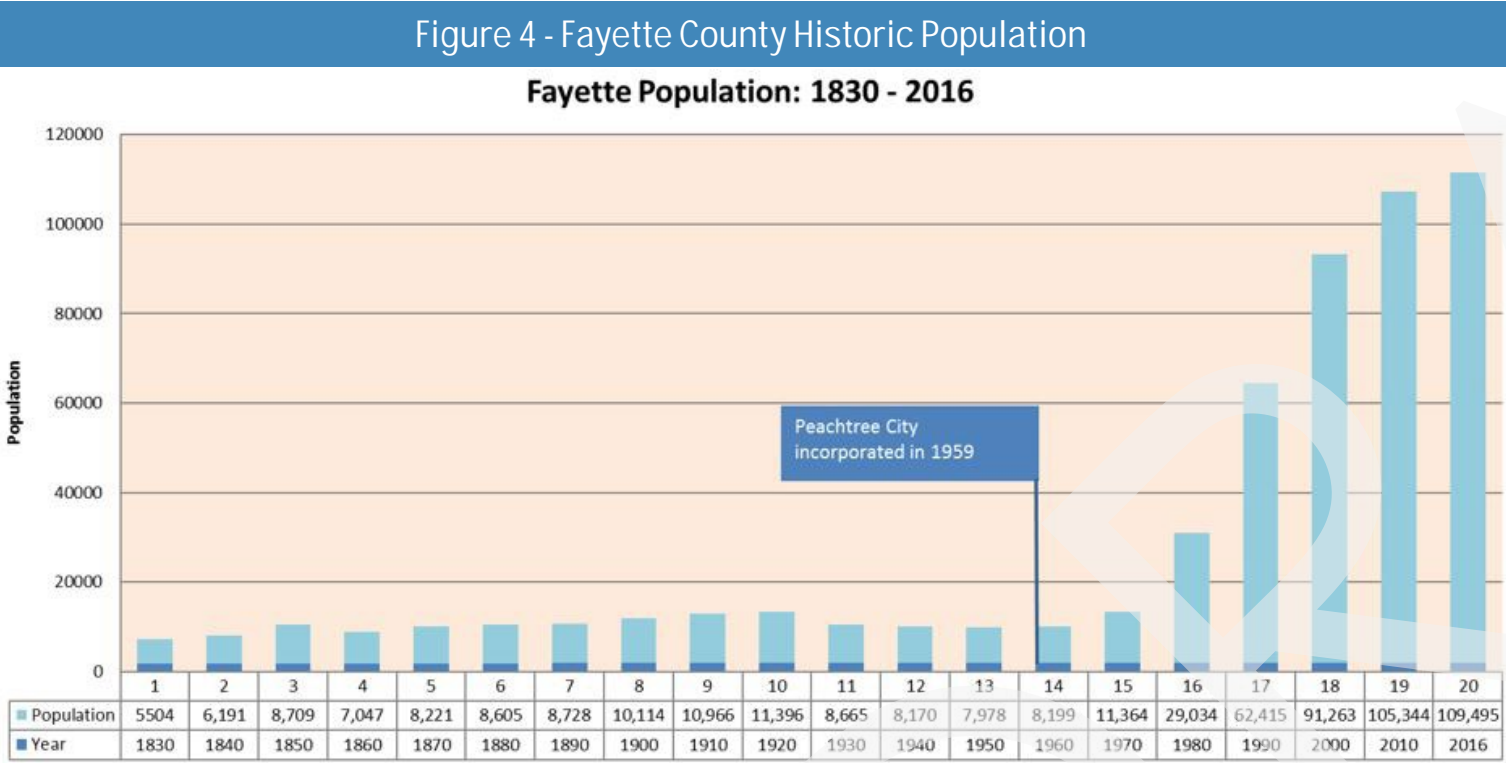
Since roadway improvements and socio-economic factors, such as population and employment change are incorporated into regional TDM, they provide realistic projections of future traffic volumes for a region. The ARC TDM forecasted data for 2015, 2020, 2030, and 2040 was used in the growth rate analysis.

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 Banks 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 Banks 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 drive has the freedom to drive with free flow speed and level F represents the worst quality of traffic when the traffic flow breaks down. 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 metropolitan areas, an acceptable Level of Service during peak hours is LOS D, which indicates a tolerable delay for the average road user.

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.

Table 9 - 2018 Existing Intersection Level of Service (LOS)					
	BANKS ROAD	TRAFFIC CONTROL	AM PEAK	PM PEAK	SAT PEAK
1	AT SR 314/W FAYETTEVILLE ROAD	TRAFFIC SIGNAL	B (11.1 s)	B (18.1 s)	B (17.8 s)
2	AT SR 85/S GLYNN STREET	TRAFFIC SIGNAL	C (22.9 s)	C (32.5 s)	C (33.5 s)
3	AT ELLIS ROAD	TWSC (SB) ¹	C (15.0 s)	F (63.0 s)	
4	AT SR 54	TRAFFIC SIGNAL	B (14.0 s)	D (26.4 s)	
1. FOR TWO-WAY STOP CONTROLLED (TWSC) INTERSECTIONS, LOS ARE REPORTED FOR THE SIDE STREET APPROACHES ONLY.					

As shown above, under the 2018 existing traffic conditions, all of the study intersections are operating at an acceptable LOS during the morning peak hour. In the afternoon peak hour, Ellis Road at Banks Road is operating at LOS F with the average control delay being 63 seconds for the southbound vehicles. Banks Road at SR 54 is operating at LOS D and is currently under construction as part of the SR 54 Widening.

In terms of roadway capacity, Banks Road is operating at an acceptable LOS between SR 85 and Ellis Road during morning and afternoon peak hours. Between Ellis Road and SR 54, Banks Road is performing at LOS D during both the morning and afternoon peak hour.

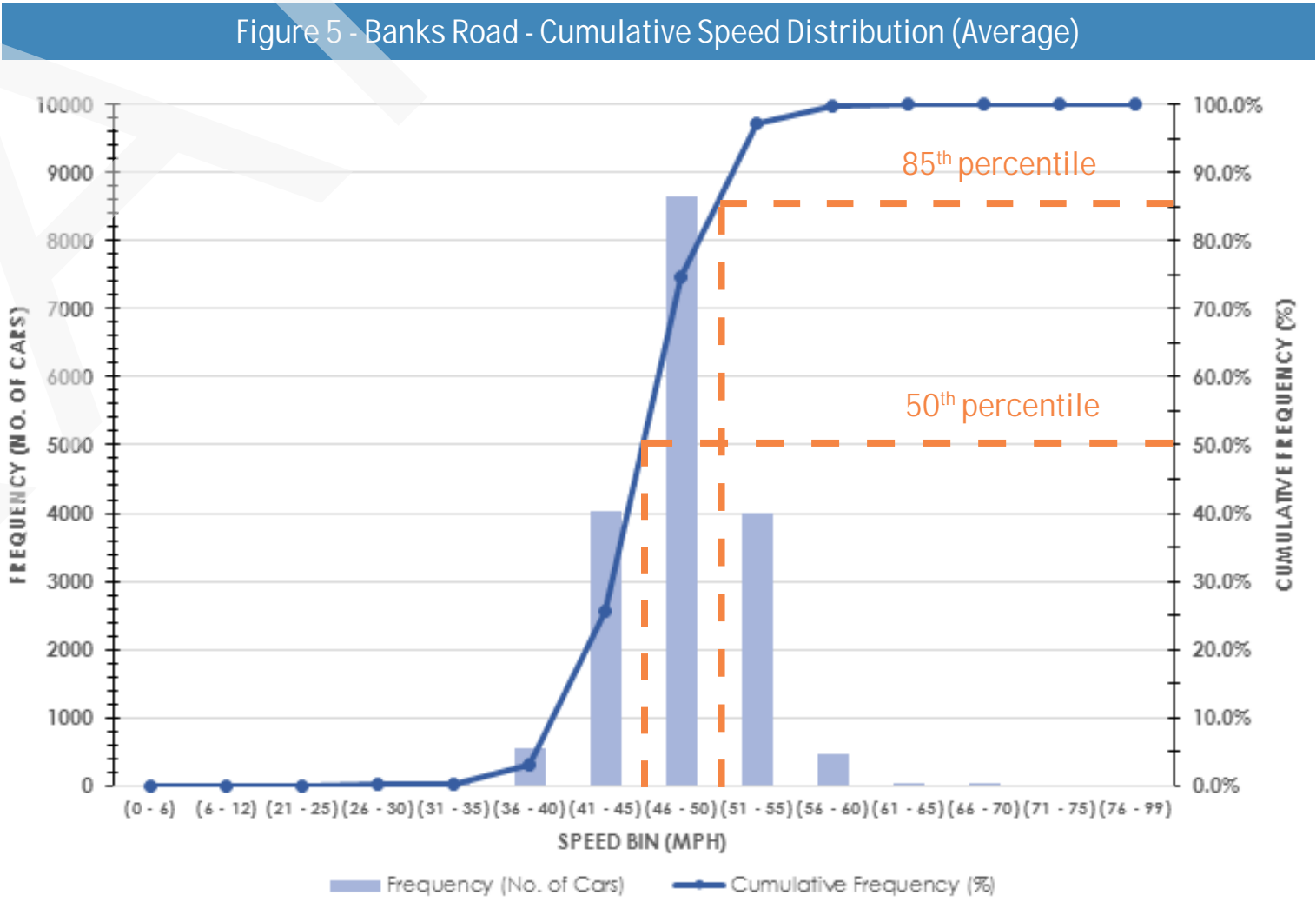
Table 10 - 2018 Existing Peak Hour Roadway Capacity Level of Service (LOS)				
BANKS ROAD	AM PEAK		PM PEAK	
	LOS	V/C	LOS	V/C
FROM SR 85 TO ELLIS ROAD	C	0.14	C	0.30
FROM ELLIS ROAD TO SR 54	D	0.13	D	0.40
V/C - VOLUME TO CAPACITY RATIO				

Safety Analysis

Speed Study -

Vehicle speeds were obtained for Banks Road eastbound and westbound travel directions in April 2018 at two points along the corridor. Figure 5 shows the average cumulative speed distribution along Banks Road. Given the posted speed limit of 35 miles per hour, approximately 99% of vehicles were exceeding the speed limit with the 85th percentile speed being an average of 51 mph.

As shown, the 85th percentile speed along Banks Road is approximately 51 mph. The 10 mph pace along the corridor was 41 mph to 51 mph. Given the posted speed limit along Banks Road is 35 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 Banks Road between November 2013 and October 2018. Crash Data by Type, 5-Year Crash History, and Time-of-Day are shown in Figure 6, Figure 7 and Figure 8, respectively. Property Damage Only (PDO), injuries, and fatalities resulting from car crashes along Banks Road for this 5-year period are shown in Table 11.

This data demonstrates that there has been a substantial number of crashes along this corridor. Banks Road's crash rate is higher in every category when compared to the statewide average for minor arterials. Particularly concerning is the severity of the crashes along Banks Road. Approximately 23% of the crashes during this time period resulted in one or more injuries.

There were two fatalities resulting from a vehicle going off roadway east of Ponderosa Trace January 2018. There was one crash involving a pedestrian on Banks Road at its intersection with Ellis Road. The average number of crashes occurring on Banks Road is 74 crashes per year. The majority of the crashes being contributed to rear end and angle crashes. These findings indicate that there is a recognizable need to implement techniques to reduce the frequency and severity of crashes along the corridor.

As expected, the signalized intersections along the corridor have the higher number of crashes for the five-year period. Controlling for signalized intersection, the five unsignalized intersections with the highest number of crashes in order from highest to lowest are Deer Forest Trail, Ellis Road, Vaughn Drive, Ponderosa Trace, and Allenwood Road.

Rural-two lane typical sections, such as Banks Road, typically results have higher frequency of rear end and angle 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.

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

Figure 6 - Banks Road - Five Year Crash Data by Type

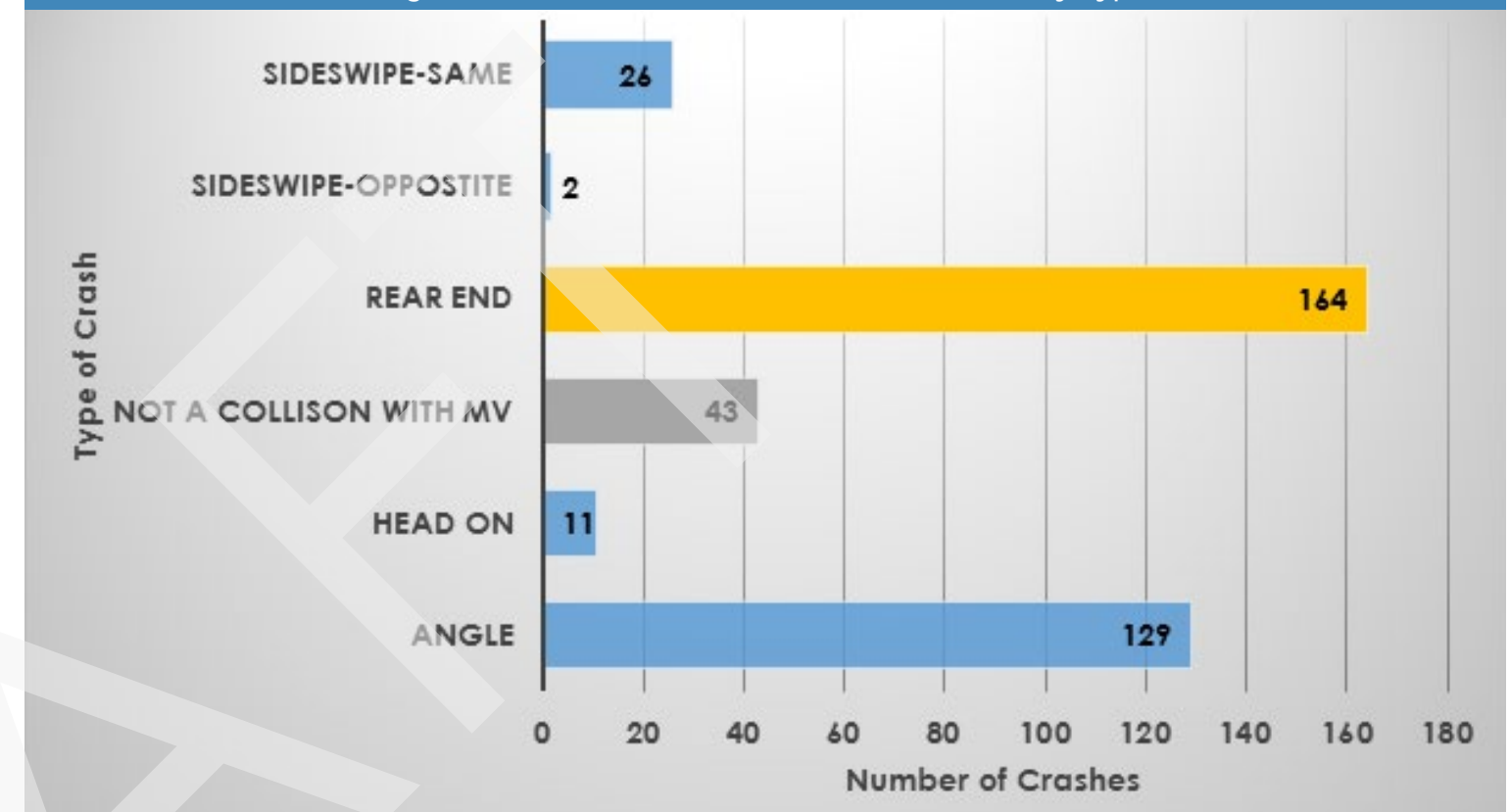


Figure 7 - Banks Road - Five Year Crash History by Type

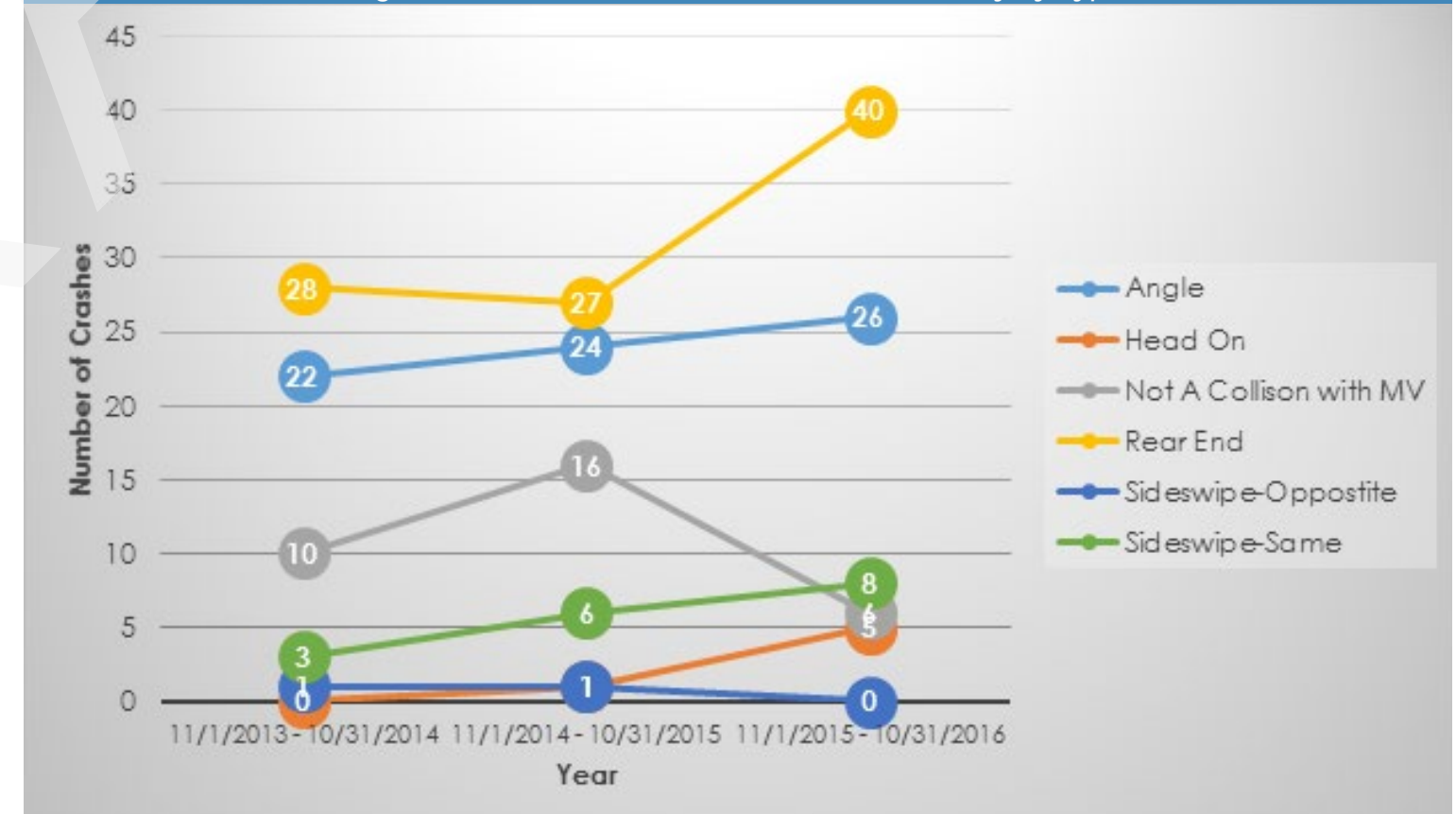


Figure 8 - Banks Road - Total Crashes by Time-of-Day

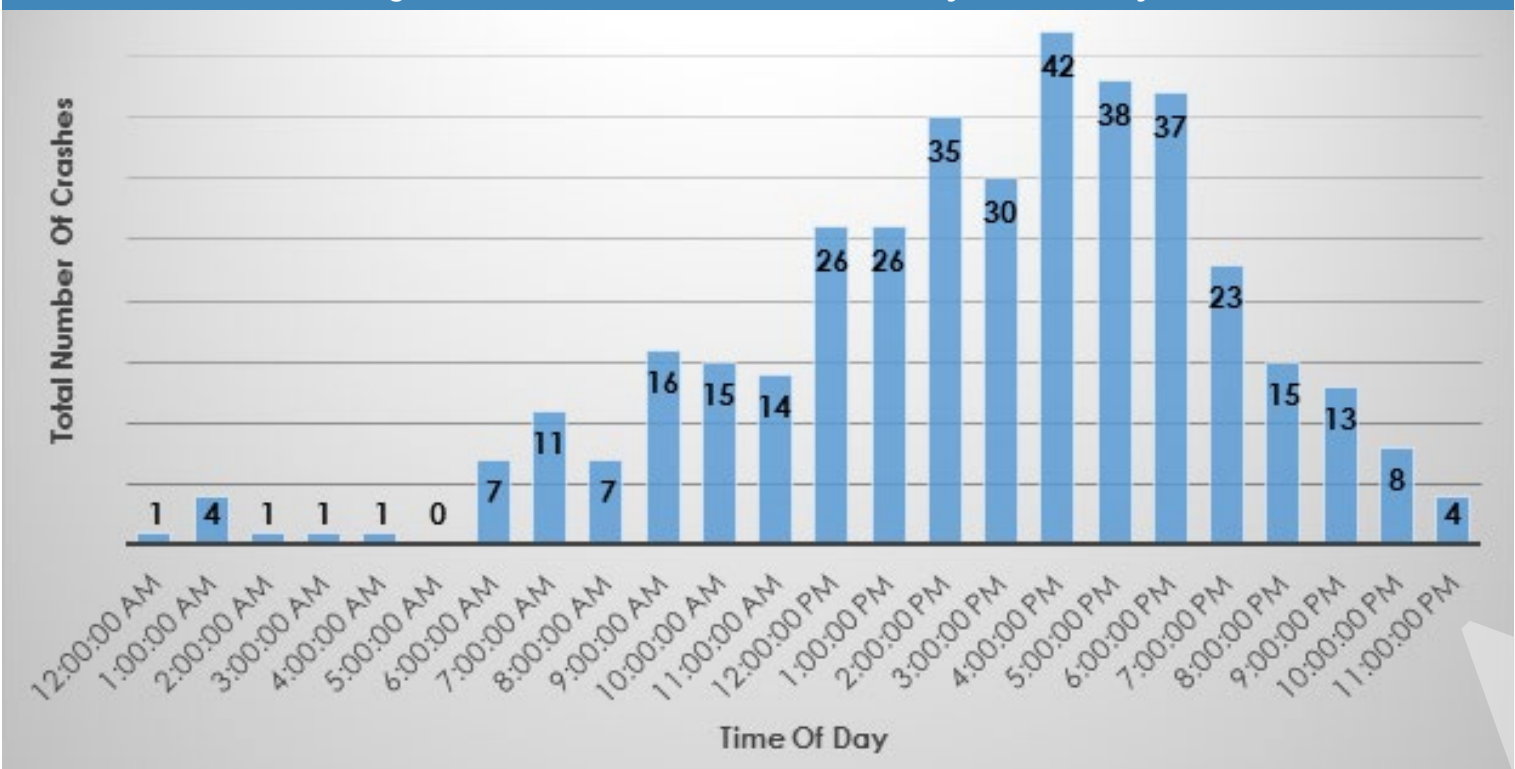


Figure 9 - Banks Road - Total Crashes per Intersection

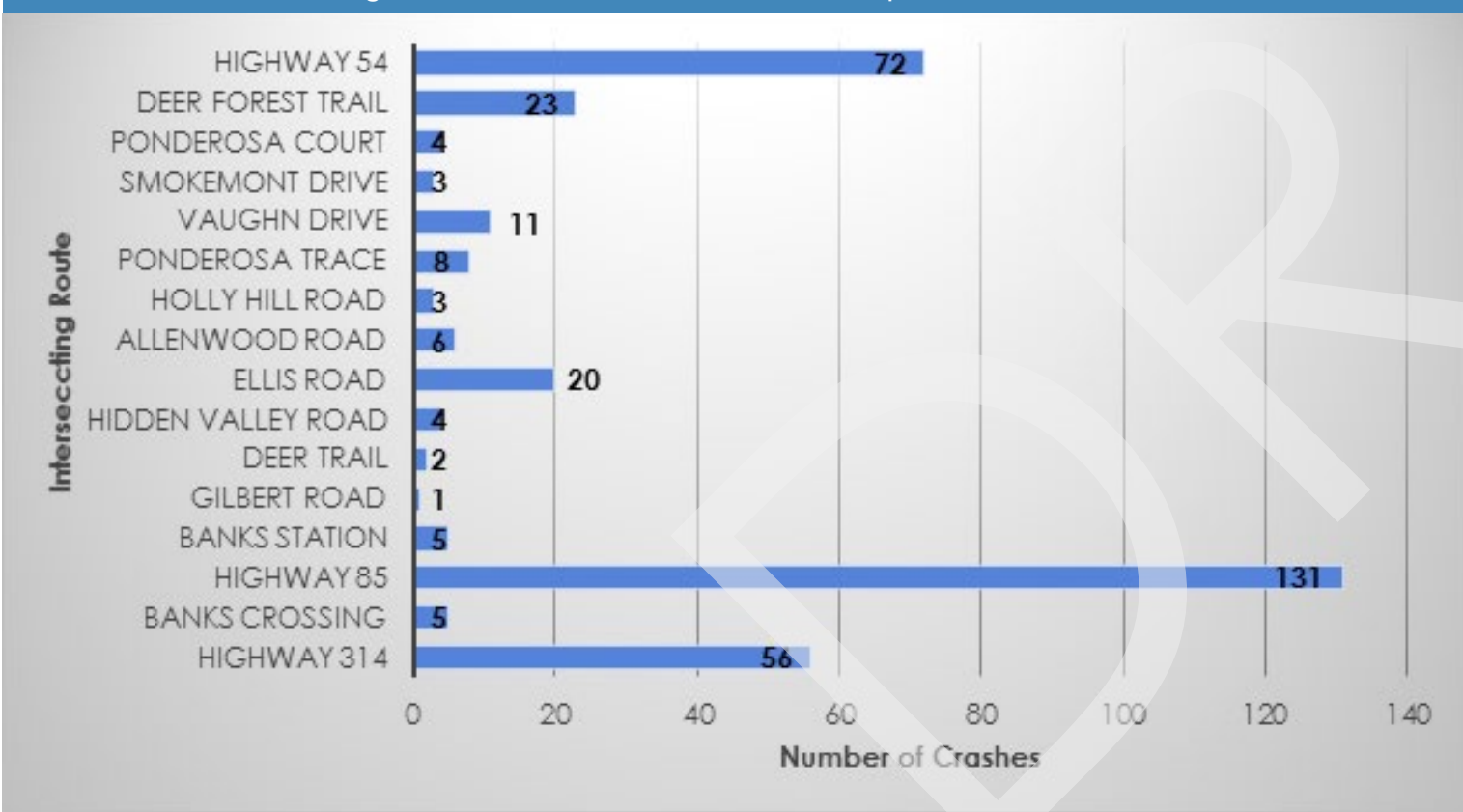
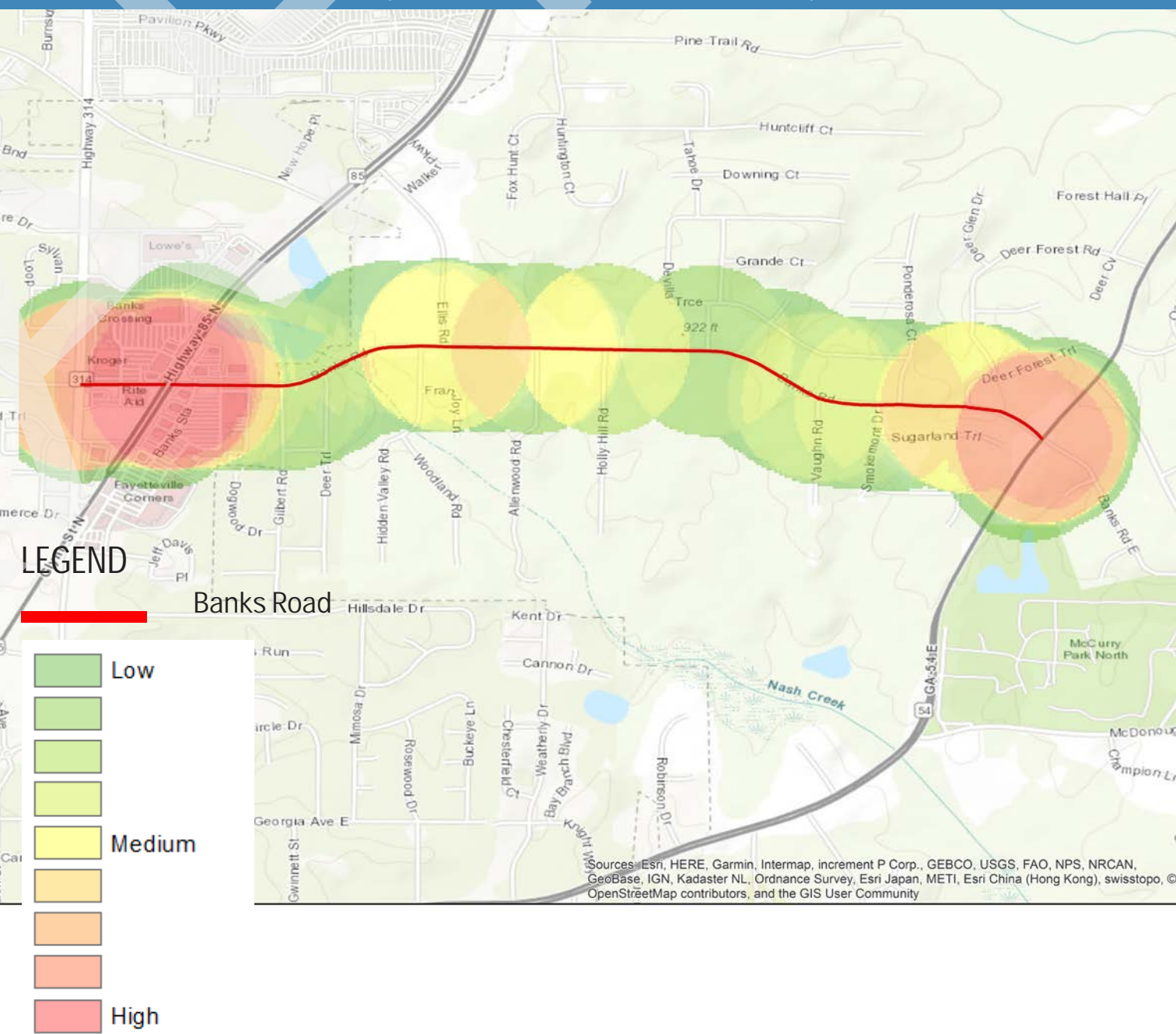


Table 11 - Banks Road Crash Rates Relative To State Averages

	TOTAL CRASHES (5 YEARS)	CRASH RATE ¹	STATEWIDE AVG. (2016) ¹
TOTAL CRASHES	375	1078	506
TOTAL INJURY ACCIDENTS	86	247	124
TOTAL INJURIES	164	471	186
TOTAL FATAL ACCIDENTS	1	2.87	1.72
TOTAL FATALITIES	2	5.75	1.86

1. Crashes per 100 million vehicle-miles of travel.

Map 10 - Banks Road - Crashes Heat Map



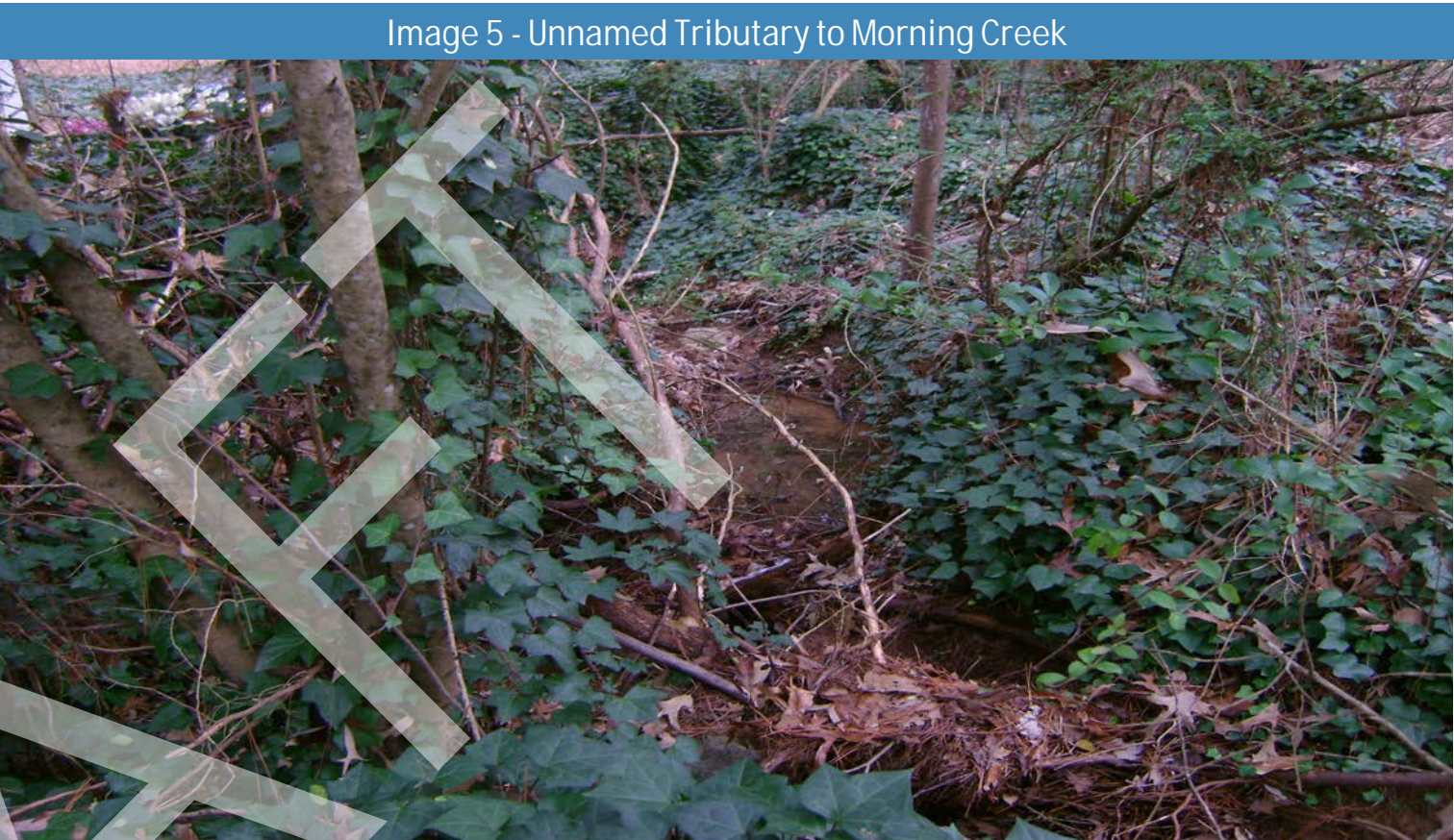
1.6 Environmental Due Diligence

The purpose of the survey was to identify sensitive environmental conditions 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 that were surveyed included natural, cultural, community, and physical resources in the general vicinity of the Banks Road corridor.

The existing Banks Road study consists of two travel lanes and is an undivided roadway throughout the corridor. Right and left turn lanes are provided at SR 314, SR 85, and SR 74. Land use along the Banks Road corridor is urban and primarily commercial near the western terminus of the study corridor in the area of SR 314 and SR 85, and is rural and primarily residential with some agricultural use along the remainder of the corridor. A sample of sensitive environmental land uses that were identified along the 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 required to determine type of environmental and historic resources that need to be protected in the jurisdiction.

The Banks Road Due Diligence report along with the Environmental Resources Location map are attached in the appendix.



1.7 Utilities

This section of the report presents an inventory of existing utilities along the corridor. Map 13 represents the location of these utilities. Description and photos of these utilities are presented below. Fayette County must conduct a detailed analysis prior to any construction.

A
Fiber Box (2 AYO)



E
Fire Hydrant



I
AT&T Cabinets



M
GA 54 looking Southwest



B
Banks Road looking west



F
FDC Vault



J
Looking west toward GA 85 reflecting turn lane for Dollar General



N
GA 54 looking Southwest



C
Fiber Optic Pedestal AT&T



G
AT&T UG. Cable Pedestal



K
Power Line



O
GA 54 looking Southwest



D
AT&T UG. Pedestal



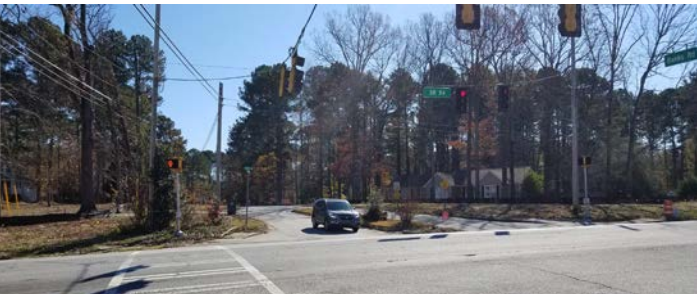
H
Detention Pond

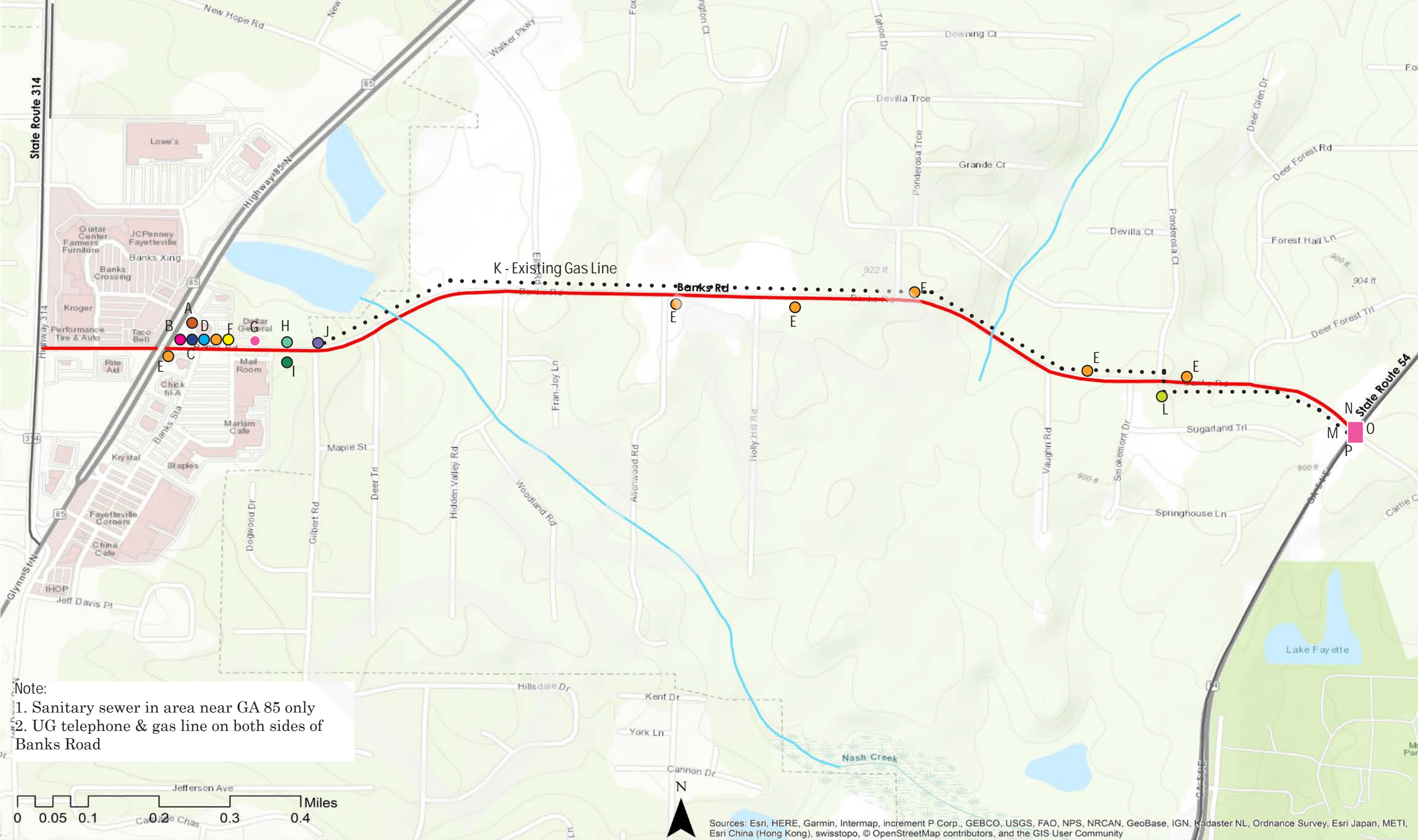


L
Marked Gas-line (AGL) & AT&T Telephone Pedestal



P
Banks Road looking Southeast





1.8 Summary

Banks Road is an important roadway in the northeastern quadrant of Fayette County providing mobility between State Route 54 to State Route 85 and Route 314. The 1.7-mile major road also provides connectivity for the abutting property owners and intersecting local streets.

Banks Road has one through lane, typically 11 feet wide for each direction of travel (turn lanes are provided at a few side streets) and is posted with a 35 mph speed limit. It is controlled by three signalized intersections (at SR 314/W Fayetteville Road, SR 85/S Glynn Street, and SR 54); all other unsignalized intersections are two-way stop controlled (TWSC). There are sidewalks along both sides of Banks Road between SR 314 and SR 85, and along the north side from SR 85 to the City of Fayetteville limits. There are no bicycle facilities along the corridor. The only transit service is demand responsive provided by Senior Services and different private carriers.

The abutting land use is primarily residential with commercial activity being clustered around the SR 85 and SR 314 corridors. An investigation of the demographic make-up of the citizens within 1-mile of Banks Road (data source was the 2016 American Community Survey at the block group level) that the male to female ratio is close to 56 to 44 percent; approximately 46% of the citizens are white, 42% are African American; less than 1% have not completed high school; and the mean median household income is \$59,903.

The average annual daily traffic along Banks Road ranges from approximately 7,900 vehicles to 11,650 vehicles, and the daily truck percentage along the corridor ranges from 2% to 3%. The morning and afternoon peak hours begin at 7:00 AM and 5:00 PM, respectively. Under the existing traffic conditions, all study intersections are operating at an acceptable LOS during the morning and afternoon peak hours except at Banks Road and Ellis Road, which is currently failing in the afternoon peak hour. In terms of roadway capacity, the corridor itself is operating at an acceptable LOS. From collected speed data, the 85th percentile speed is 51 mph, approximately 16 mph over the posted speed limit.

For the recent 5-year period ending October 2018, an analysis of crash records from GEARS revealed 375 crashes with two resulting in a fatality. The most crash occurrences were rear-ends and the second most being a angle collisions. The majority of the crashes are clustered at the intersections with Highway 85 and 54, followed by Highway 314. Approximately 23% of the crashes resulted in an injury. Banks Road's crash rate is higher in every category when compared to the statewide average for minor arterials.

An environmental survey revealed that Banks Road is within the Line Creek Watershed and and the Flint River Upper 6 Watershed. Both these watersheds are listed as a High Priority Watershed by the Georgia Department of Natural Resources' (GDNRs'). The Banks Road corridor crosses two streams: Nash Creek and an Unnamed Tributary to Morning Creek. Nash Creek is a perennial stream that flows southeasterly from the project corridor. The Unnamed Tributary to Morning Creek is a perennial stream that flows northeasterly from the project corridor toward Morning Creek.

The National Wetland Inventory (NWI) identified no wetlands in the area of the Banks Road study corridor. Field reconnaissance of the corridor identified two potential wetland areas associated with the two stream crossings. 2013 Fayette County Flood Study identified the Nash Creek floodplain as a special flood hazard area (existing 100-year floodplain) that crosses Banks Road. The GDNR lists eight federal and state protected species known to occur in Fayette County. Eight historic resources were identified along the corridor that are potentially eligible for the National Register of Historic Places. No community resources such as churches, cemeteries, schools, fire stations, or community centers were identified along the Banks Road study corridor.

Environmental Due Diligence Report

To: Dan Dobry
From: Michelle McIntosh
CC: Chris Rideout, Zahra Jeena
Date: April 12, 2019
Re: Banks Road Corridor (Fayette County Project #17TAP)

An environmental survey has been performed for the Banks Road transportation corridor from State Route 314 (SR 314), just west of State Route 85 (SR 85), to State Route 54/East Lanier Avenue (SR 54). The total length of the study corridor is approximately 1.7 miles.

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 conducted on December 11, 2018. Sensitive environmental land uses that were surveyed for include natural, cultural, community, and physical resources in the general vicinity of the Banks Road corridor. The area surveyed for environmental resources includes the view shed from the existing travel corridor.

The existing Banks Road study consists of two travel lanes and is an undivided roadway throughout the corridor. Right and left turn lanes are provided as needed at SR 314, SR 85, and SR 54. Land use along the Banks Road corridor is urban and primarily commercial near the western terminus of the study corridor in the area of SR 314 and SR 85, and is rural and primarily residential with some agricultural use along the remainder of the corridor.

Sensitive environmental land uses that were identified along the Banks Road study corridor are itemized below.

Natural Resources:

Watershed – The Banks Road study corridor is located within the Line Creek Watershed (Hydrologic Unit Code [HUC] #0313000502) and the Flint River Upper 6 Watershed (HUC #0313000501). Both these watersheds are listed as a High Priority Watershed in the Georgia Department of Natural Resources' (GDNRs') State Wildlife Action Plan (SWAP). The SWAP is a statewide strategy to conserve populations of native wildlife species and their natural habitats before these animals, plants, and places become rarer and more costly to conserve or restore. High priority species or habitats are species or habitats that rank highest for recommended research or other conservation related measures. The Line Creek Watershed and the Flint River Upper 6 Watershed are two of 165 watersheds identified as High Priority

Watersheds to protect the best known populations of 168 high priority aquatic species. For more information, see the threatened and endangered species discussion below.

Streams – The Banks Road corridor crosses two streams: Nash Creek and an Unnamed Tributary to Morning Creek (see Figure 1 – Environmental Resources Location Map).

Nash Creek is a perennial stream that flows southeasterly from the project corridor (see Photo 1 – Nash Creek). Nash Creek is not listed on the Georgia Environmental Protection Division's (GEPD's) 2016 Integrated 305(b)/303(d) list of waters that does not support its designated use of fishing. A tributary to Nash Creek is listed on the GEPD's 2016 Integrated 305(b)/303(d) list of waters that does not support its designated use of fishing due to unacceptable amounts of fecal coliform caused by urban runoff; however, the tributary is located outside of the Banks Road study corridor.



Photo 1 – Nash Creek

The Unnamed Tributary to Morning Creek is a perennial stream that flows northeasterly from the project corridor toward Morning Creek (see Photo 2 – Unnamed Tributary to Morning Creek). The unnamed tributary in the project corridor is not listed on the GEPD's 2016 Integrated 305(b)/303(d) list of waters that does not support its designated use of fishing; however, just northeast of the project corridor at the tributary's convergence with Morning Creek, Morning Creek is listed as not supporting its designated use of fishing due to unacceptable amounts of fecal coliform caused by urban runoff and nonpoint sources.



Photo 2 – Unnamed Tributary to Morning Creek

Wetlands – The National Wetland Inventory (NWI) identified no wetlands in the area of the Banks Road study corridor. Field reconnaissance of the corridor identified two potential wetland areas associated with the two stream crossings that may be determined to meet U.S. Army Corps of Engineers (USACE) wetland criteria. Prior to construction activities in the area of the streams, field studies would need to be conducted and coordinated with the USACE to determine if the potential wetland areas meet the USACE criteria for a wetland determination and to determine USACE jurisdiction.

Floodplains – Review of the Federal Emergency Management Agency's (FEMA's) Flood Insurance Rate Map (FIRM) map identified no regulatory floodways or special flood hazard area along the study corridor. However, the 2013 Fayette County Flood Study identified the Nash Creek floodplain as a special flood hazard area (existing 100-year floodplain) that crosses Banks Road.

Threatened and Endangered Species – The GDNR lists eight federal and state protected species known to occur in Fayette County. Coordination with the U.S. Fish and Wildlife Service (USFWS) through the ECOS-IPaC website also identified one additional protected species that may occur in the project area for a total of nine protected species.

Field reconnaissance was performed along the study corridor to determine as to whether or not there appears to be suitable habitat along the project corridor for the identified species. The federal and state listed species known to occur in Fayette County are identified in Table 1 along with federal and state designations, descriptions of preferred habitat, and information concerning potential habitat along the corridor. Protected species surveys would need to be conducted prior to construction activities.

Scientific Name	Common Name (Species Type)	Federal & State Protection Status	Preferred Habitat	Potential Habitat Identified
Animal Species:				
<i>Elliptio arcata</i>	delicate spike (mussel)	US: None GA: Endangered	Gravel or sand shoals in medium to large rivers; occasionally found in sand-bottomed runs with slow, steady current; usually found adjacent to or underneath large boulders or limestone bedrock in center channel; rarely found in slack water or silt.	No
<i>Elliptoideus sloatianus</i>	purple bankclimber (mussel)	US: Threatened GA: None	Sand, fine gravel or muddy sand substrates in moderate current in large rivers or streams.	No
<i>Hamiota subangulata</i>	shinyrayed pocketbook (mussel)	US: Endangered GA: Endangered	Medium sized streams to large rivers in sandy to muddy substrates with variable current.	No
<i>Macrochelys temminckii</i>	alligator snapping turtle (mussel)	US: None GA: Threatened	Large streams and rivers and associated impoundments draining to them; microhabitat preferences include portions of streams with undercut banks, log jams, & deep holes.	No
<i>Medionidus penicillatus</i>	gulf moccasin-shell (mussel)	US: Endangered GA: Endangered	Small streams to large rivers with moderate flow & sandy substrates; also found in gravel & cobble substrates.	Yes
<i>Notropis hypsilepsis</i>	highscale shiner (mussel)	US: None GA: Rare	Tributary streams, often near stream confluences with large rivers; runs & pools over sand & bedrock substrates.	No
<i>Pleurobema pyriforme</i>	oval pigtoe (mussel)	US: Endangered GA: Endangered	Typically occupies small streams to large rivers with moderate flow and sand or gravel substrates.	Yes
<i>Strophitus radiates</i>	rayed creekshell (mussel)	US: None GA: Threatened	Mud, sand, or gravel substrates in small creeks to large rivers.	Yes
Plant Species:				
<i>Cypripedium acuale</i>	pink ladyslipper (perennial)	US: None GA: Unusual	Upland pine and mixed pine-hardwood forests with acidic soils; in the mountains, near edges of rhododendron thickets & mountain bogs.	Yes

Because these species are listed in Fayette County, coordination was completed with the Georgia Natural Heritage Program to identify any known occurrence of all listed species along the Banks Road study corridor or within 3 miles of the Banks Road study corridor. As a result, a known presence of the alligator snapping turtle was identified approximately 2.0 miles east of the study corridor in the Flint River.

Cultural Resources:

Historic Resources – The Georgia's Natural, Archaeological, Historic Resource Geographic Information System (GNARHGIS) database was reviewed to identify potential resources along the Sandy Creek Road project corridor. As a result, eight historic resources were identified along the corridor that are potentially eligible for the National Register of Historic Places (refer back to Figure 1 – Environmental Resources Location Map). The identified potential resources are listed in the table below and shown in Photos 3 and 4.

Res. #	Structure Type	Year Built	Location; Address	Identification Method	Photo #
1	Gabled Wing Cottage	1910	South of Banks Road, just east of Hidden Valley Road; 215 Banks Road	GNAHRGIS	3
2	Central Hallway Cottage	1900	North of Banks Road, across from Holly Hill Road; 316 Banks Road	GNAHRGIS	4

Field reconnaissance revealed that some of resources identified in the GNAHRGIS database may have lost their historic integrity since the GNAHRGIS survey was conducted. No additional potential historic resources were identified during the field reconnaissance.



Photo 3 – Potential Historic Resource #1



Photo 4 – Potential Historic Resource #2

Community Resources:

Section 4(f) Resources – Section 4(f) of the USDOT Act refers to the temporary and/or permanent use and constructive use of land from a significant publicly owned park, recreation area, or wildlife and waterfowl refuge, or any historic site. Investigation of the project corridor has identified no significant publicly owned parks, recreation areas, or wildlife and waterfowl refuges. However, if historic resources eligible for the NRHP are determined to be present along the corridor, these resources would be considered Section 4(f) resources.

Other – No community resources such as churches, cemeteries, schools, fire stations, or community centers were identified along the Banks Road study corridor.

Physical Resources:

Two potential contamination sites have been identified along the Banks Road study corridor: a dry cleaners and a Good Year automobile shop. These facilities are located on the north side of Banks Road, just east of SR 314 (refer back to Figure 1 – Environmental Resources Location Map). Because these facilities are likely to use and store large quantities of the petroleum based products, a Phase I Environmental Site Assessment would need to be performed prior to any acquisition of easements or right-of-way from the properties, if needed for project implementation.

No underground storage tanks (USTs) or other potential contamination sites such as landfills have been identified along the Banks Road study corridor.

Banks Road - Environmental Resources Location Map

