PROJECT TRAFFIC ANALYSIS REPORT

Northeast Gateway: Welaunee Boulevard

Project Development and Environment Study

From Fleischmann Road to Centerville Road at Shamrock Street and Roberts Road

Tallahassee, Florida

December 2021

Prepared For:

BLUEPRINT INTERGOVERNMENTAL AGENCY

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EXECUTIVE SUMMARY

Blueprint Intergovernmental Agency is conducting a Project Development and Environment (PD&E) Study for the proposed Northeast Gateway: Welaunee Boulevard (hereinafter, referred to as "Northeast Gateway") in Tallahassee, Florida. The proposed corridor would extend approximately six (6) miles from its existing termini, east of Fleischmann Road, over Interstate 10 (I-10) to connect at the existing intersection of Centerville Road, Bradfordville Road, and Roberts Road, with an extension of Shamrock Street South eastward from Centerville Road to connect at an intersection with Welaunee Boulevard. There will also be a connection to the area schools, Roberts Elementary School and Montford Middle School, and a future connection to the new Northeast Park, slated to be built in the vicinity. Though the PD&E is not evaluating the greenway and associated trailheads, the overall project includes a new Welaunee Greenway that would connect with the Miccosukee Canopy Road Greenway.

The alignment for Northeast Gateway will converge with the previously constructed Welaunee Boulevard at the eastern boundary of the Canopy Development. The proposed alignment will be located generally within the City of Tallahassee with the northern termini being located in unincorporated Leon County.

The preferred alternative for Northeast Gateway is anticipated to provide near-term and long-term relief to surrounding scenic roadways that are locally protected and designated as Canopy Roads. No direct and limited secondary cultural resource impacts, social and economic impacts, or physical impacts within the study area are anticipated.

Project Traffic Analysis Report

This Project Traffic Analysis Report (PTAR) describes the traffic characteristics in and around the PD&E study area both in relation to the operational performance and the safety of the existing roadway network. In addition, the PTAR provides an evaluation of the expected future traffic operations on the roadway network with forecasted traffic volumes, including the methodologies employed to estimate future traffic demand, the results of traffic projections, and the anticipated performance of the roadway network with and without the Northeast Gateway: Welaunee Boulevard through design year 2045.

The findings of the analyses indicate that the proposed Northeast Gateway: Welaunee Boulevard could successfully reduce the traffic congestion on Centerville Road and Miccosukee Road while also providing relief to U.S. 319 (Thomasville Road) and U.S. 90 (Mahan Drive).

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INTRODUCTION

Blueprint Intergovernmental Agency is conducting a Project Development and Environment (PD&E) Study for the proposed Northeast Gateway: Welaunee Boulevard (hereinafter, referred to as "Northeast Gateway") in Tallahassee, Florida The proposed corridor would extend approximately six (6) miles from its existing termini, east of Fleischmann Road, over Interstate 10 (I-10) to connect at the existing intersection of Centerville Road, Bradfordville Road, and Roberts Road, with an extension of Shamrock Street South eastward from Centerville Road to connect at an intersection with Welaunee Boulevard. There will also be a connection to the area schools, Roberts Elementary School and Montford Middle School, and a future connection to the new Northeast Park, slated to be built in the vicinity. A potential interchange at the crossing of Interstate 10 (I-10) may be evaluated in a future Interchange Justification Report and separate PD&E study; therefore, interchange development and evaluation are not within the scope of services for this study. Though the PD&E is not evaluating the greenway and associated trailheads, the overall project includes a new Welaunee Greenway that would connect with the Miccosukee Canopy Road Greenway. The location and limits of the project area are shown in **Figure 1**.

The alignment for Northeast Gateway will converge with the previously constructed Welaunee Boulevard at the eastern boundary of the Canopy Development. The proposed alignment will be located generally within the City of Tallahassee with the northern termini being located in unincorporated Leon County.

The proposed Northeast Gateway will consist of two eleven-foot wide travel lanes (one in each direction) with curb and gutter from its existing termini east of Fleischmann Road to the intersection of Centerville Road and Shamrock Street South, inclusive of an eight-foot wide sidewalk and twelve-foot multi-use path. The proposed section from the intersection of Welaunee Boulevard and Shamrock Street Extension to the intersection of Roberts Road, Bradfordville Road, and Centerville Road will consist of two eleven-foot wide travel lanes with five-foot wide paved shoulders, inclusive of a twelve-foot multi-use path to the Pimlico Drive Extension. There will also be a connection to the area schools, Roberts Elementary School and Montford Middle School, and a future connection to the new Northeast Park.

As part of the PD&E Study, this Project Traffic Analysis Report (PTAR) is provided to detail the existing traffic characteristics within the study area and the traffic characteristics expected in the future. Existing traffic analysis includes an evaluation of the traffic operations under existing conditions as well as an evaluation of the crash data recorded in the study area for the most recent five years of available data. For the future traffic analysis, the PTAR describes the methodologies employed to estimate future traffic demand, the results of traffic projections, and the anticipated performance of the proposed Northeast Gateway and surrounding roadways. Estimated future traffic projections are used to analyze the performance of the Northeast Gateway in the expected opening year (2025) and the design year (2045).

The future traffic analyses were performed initially with the existing roadway facilities (No Build scenario) in the study area as a baseline for comparison against improvement alternatives. Various alternatives were developed and evaluated in the selection of the preferred alignment as a part of this PD&E Study. Traffic analyses for the Northeast Gateway study area were conducted for the following scenarios:

- Existing (2018) Conditions: 2018 traffic volumes on the existing roadway network.
- Future No Build (2025, 2045): Projected future traffic volumes on the existing roadway network.
- Future Build (2025, 2045): Projected future traffic volumes on the existing roadway network plus the proposed Northeast Gateway.

Roadway Nomenclature

Several of the roadways in the broader Northeast Gateway PD&E study area have multiple names and designations. For brevity, when included henceforth, the roads will be referred to as follows:

- **U.S. 319**, also known within the study area as S.R. 261 and Capital Circle NE
- **U.S. 319**, also known within the study area as S.R. 61 and Thomasville Road
- **C.R. 0347**, also known within the study area as Miccosukee Road
- **C.R. 0345**, also known within the study area as Proctor Road
- **C.R. 151**, also known within the study area as Centerville Road
- **I-10**, also known near the study area as S.R. 8

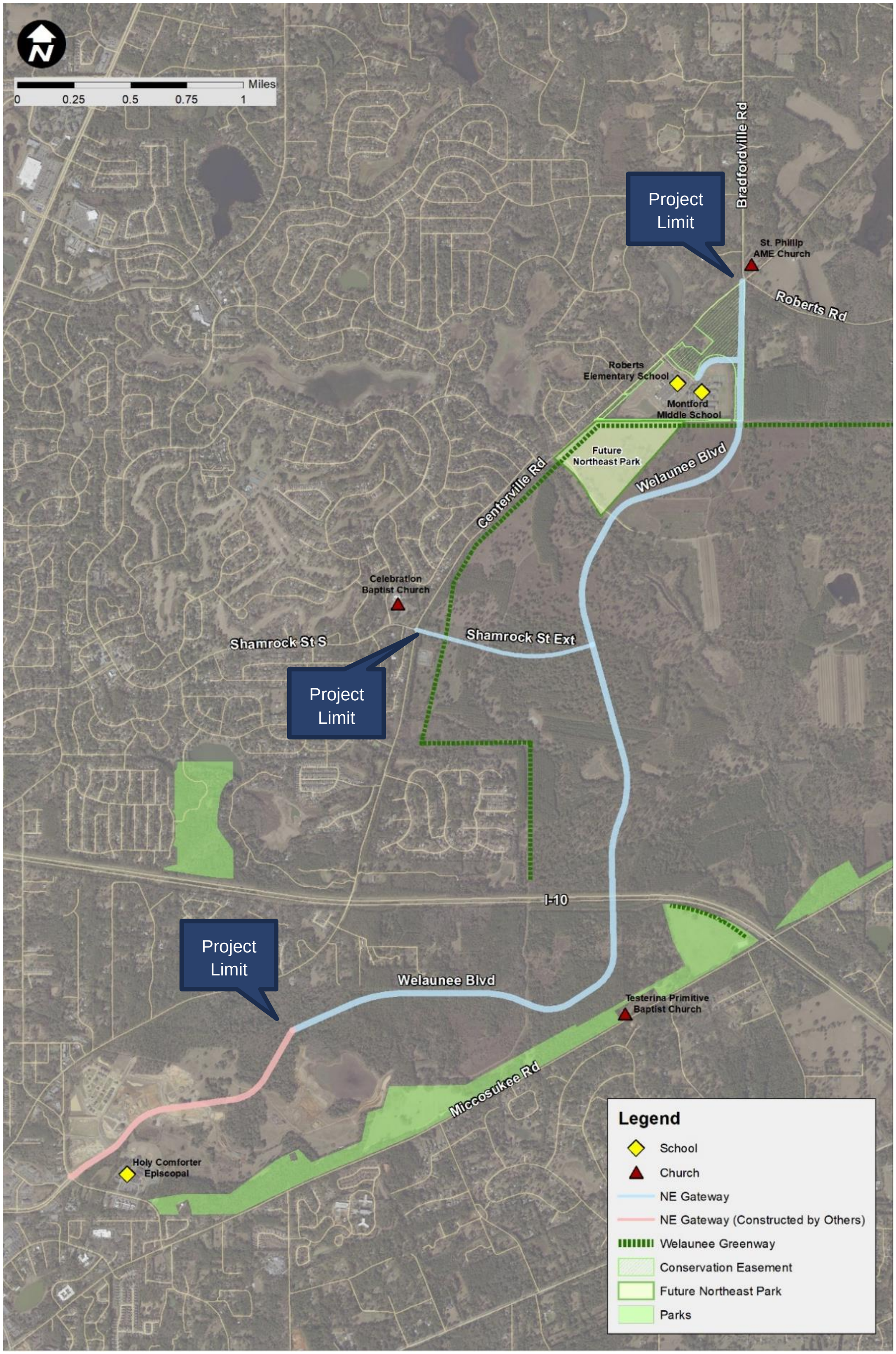

Figure 1. Project Location Map

PROJECT PURPOSE AND NEED

As part of the PD&E process, build alternatives have been developed and evaluated for their impact to the built and natural environments and their satisfaction of the project's purpose and need. The public has been involved throughout the entirety of the PD&E process. The impacts, feasibility, utility, and costs of the proposed Northeast Gateway alternatives have been evaluated against the no-build alternative throughout the process as well.

Purpose

The purpose of the project is to improve regional mobility and enhance connectivity for motorized and non-motorized users. In addition, the Northeast Gateway will reduce transportation pressures on surrounding roadways resulting from existing, ongoing, and proposed development on adjacent properties.

Need

The project is needed to provide an alternative route for existing users of Centerville and Miccosukee Roads—two scenic roadways that are locally protected and designated as Canopy Roads. Ongoing and proposed development of the 7,000-acre Welaunee Critical Area Plan, which is nearly entirely located between Centerville and Miccosukee Roads, will result in increased congestion on these two Canopy Roadways, should a new transportation facility not be developed. In addition, the project is anticipated to provide relief to U.S. 319 (Thomasville Road) and U.S. 90 (Mahan Drive)—the first phase of a new regional gateway into Tallahassee.

EXISTING CONDITIONS ANAYLSIS

The existing roadway facilities in the study area vary in functional classification, road type, and speed limit. The features of each facility are summarized in **Table 1**.

Table 1. Existing Facilities Characteristics

Segment	Limits	Functional Classification	Road Type	Speed Limit
Centerville Road	From Capital Circle NE to Roberts Road	Urban Minor Arterial	Two-Lane, Undivided	35-45 mph
	From Roberts Road to Proctor Road	Rural Major Collector	Two-Lane, Undivided	45 mph
Welaunee Boulevard	From Centerville Road to Fleischmann Road	Unassigned	Four-Lane, Divided	45 mph
Fleischmann Road	From Miccosukee Road to Centerville Road	Urban Minor Collector	Two-Lane, Undivided	35 mph
Miccosukee Road	From Capital Circle NE to Thornton Road	Urban Minor Arterial	Two-Lane, Undivided	35 mph
Bradfordville Road	From Thomasville Road to Roberts Road	Urban Major Collector	Two-Lane, Undivided	45 mph
Roberts Road	From Bradfordville Road to Proctor Road	Rural Minor Collector	Two-Lane, Undivided	45 mph

Existing Traffic

In an effort to establish baseline existing traffic conditions, traffic data was gathered along roadway segments and at intersections within the study area. Sources for existing conditions included FDOT's *Florida Transportation Information (FTI) 2018* software and field data collection by HSA Consulting, Inc. (HSA).

Data Collection

Florida Traffic Online (2018) web application was consulted to obtain traffic data utilized in various applications throughout the traffic analysis, which included the historical annual average daily traffic (AADT), seasonal factor (SF), K factor, D factor, and T factor along the corridor.

Field data was collected in December 2018 at five (5) segment locations and five (5) intersections within or immediately outside the study area. For segment analyses, 72-hour bi-directional traffic counts were collected on Tuesday, Wednesday, and Thursday, December 11th through 13th, 2018. For intersection analyses, twelve hours of turning movement counts (TMC) were collected at five (5) intersections in the study area:

- Welaunee Boulevard and Fleischmann Road (Signalized)
- Welaunee Boulevard and Centerville Road (Signalized)
- Centerville Road and Capital Circle NE (Signalized)
- Centerville Road and Shamrock Street (Unsignalized)
- Miccosukee Road and Thornton Road (Unsignalized)

The TMCs were collected from 6:00 AM to 10:00 AM to capture the morning peak, from 11:00 AM to 2:00 PM to capture the midday peak, and from 2:00 PM to 6:00 PM to capture the evening peak. For the intersection TMCs, heavy vehicles (trucks, buses, recreational vehicles [RVs]) were quantified separately from passenger vehicle traffic. The raw segment counts and TMCs collected are included in **Appendix A**.

The amended project expanded the study area and brought the addition of studied intersections. Due to the COVID-19 pandemic in Spring 2020, ability to collect accurate typical weekday data for the additional intersections was limited. Traffic volumes were obtained from the City of Tallahassee for morning, midday, and evening peak periods with the most recent data available. These obtained volumes were then grown to the studied date using growth rates of the original studied intersections by comparing the collected volumes to the City of Tallahassee traffic volumes of the respective intersection and calculating the growth rate accordingly. The weighted average growth rate calculated from the original studied intersections was then applied to the traffic volumes obtained from the City of Tallahassee for the intersections listed below.

- Centerville Road and Pimlico Drive (Signalized)
- Centerville Road and Roberts Road and Bradfordville Road (Signalized)

Traffic Factors

Traffic factors included in the existing conditions analyses include the seasonal factor (SF), peak hour factor (PHF), and heavy vehicle (HV) percentage. The SF was applied to both the segment counts and TMCs; the SF is a ratio that normalizes average daily traffic (ADT) volumes to *annual* average daily traffic (AADT) volumes, accounting for seasonal variation in traffic volumes throughout the year. PHF and HV percentage were applied only for intersection analyses; the PHF accounts for variations in TMC volume intensity throughout the peak hour and HV percentage ensures that the effect of large trucks and other heavy vehicles is accounted for in intersection analyses.

Other traffic factors are calculated based on the existing traffic data for application in traffic volume forecasting. These factors are detailed in the Traffic Forecasting Methodology section of the PTAR and include directional distribution factors (D factors), truck percentage (T factors), and proportion of annual average daily traffic on a roadway segment during the study hour (K factors).

Segment Volumes

Existing segment volumes were calculated as AADTs and as peak hour directional volumes. Both data sets were evaluated with an applied 1.04 SF for the date of data collection and the 2018 Peak Season Factor Category Report obtained from *FDOT's Florida Traffic Online (2018)* web application. Existing traffic volumes are summarized in **Table 2**.

Table 2. Existing Traffic Volumes

FDOT Roadway ID Road Name	Limits	2018 AADT (veh/day)	2018 Truck AADT* (HV/day)[1]	2018 Peak Hour Directional (veh/hour)[2]
55130003 Centerville Road	Capital Circle NE to Glenncrest Lane[3]	21,500	537	1,400
55130000 Centerville Road	Glenncrest Lane to Proctor Road[3]	12,100	387	800
55000119 Fleischmann Road	Miccosukee Road to Centerville Road[3]	4,900	122	300
55540000 Miccosukee Road	Capital Circle NE to Thornton Road[4]	10,500	504	650
N/A Welaunee Boulevard	Centerville Road to Fleischmann Road	N/A	N/A	N/A
55522500 Bradfordville Road	Thomasville Road to Centerville Road[5]	6,500	162	350
55522501 Roberts Road	Centerville Road to I-10 Bridge[5]	5,400	513	300

[1] T Factor applied to 2018 AADT volumes
[2] D and K Factors applied to 2018 AADT volumes
[3] Values based on *FDOT's Florida Traffic Online (2018)* web application.
[4] Values based on average 72-hour bi-directional traffic counts.
[5] Values based on Capital Region Transportation Planning Agency Model (CRTPA Model 2007), grown to Existing Year 2018.

Intersection Volumes

Existing intersection volumes were calculated for the AM and PM peak hour conditions. All collected quantities were factored using the 1.04 SF for the week during which TMCs were conducted. Approximate HV percentages and PHFs were calculated based on TMCs.

The substantial amendment to the project expanded the study area. Additional studied intersections were Centerville Road with Pimlico Drive, and Centerville Road with Bradfordville Road and Roberts Road. Due to the COVID-19 pandemic, accurate typical weekday traffic collection was not viable. Peak hour volumes for these and the original studied intersections were received from the City of Tallahassee. Volumes from the original intersections were then compared to the collected data and a weighted average growth rate for was calculated and averaged amongst all excluding the intersection of Centerville Road and Capital Circle NE due it currently being at capacity. The calculated weighted average growth rate was then applied to the obtained volumes from the City of Tallahassee to grow the volumes to the date of the collected volumes.

Existing intersection turning movement volumes are summarized in **Figure 2** and **Figure 3**.

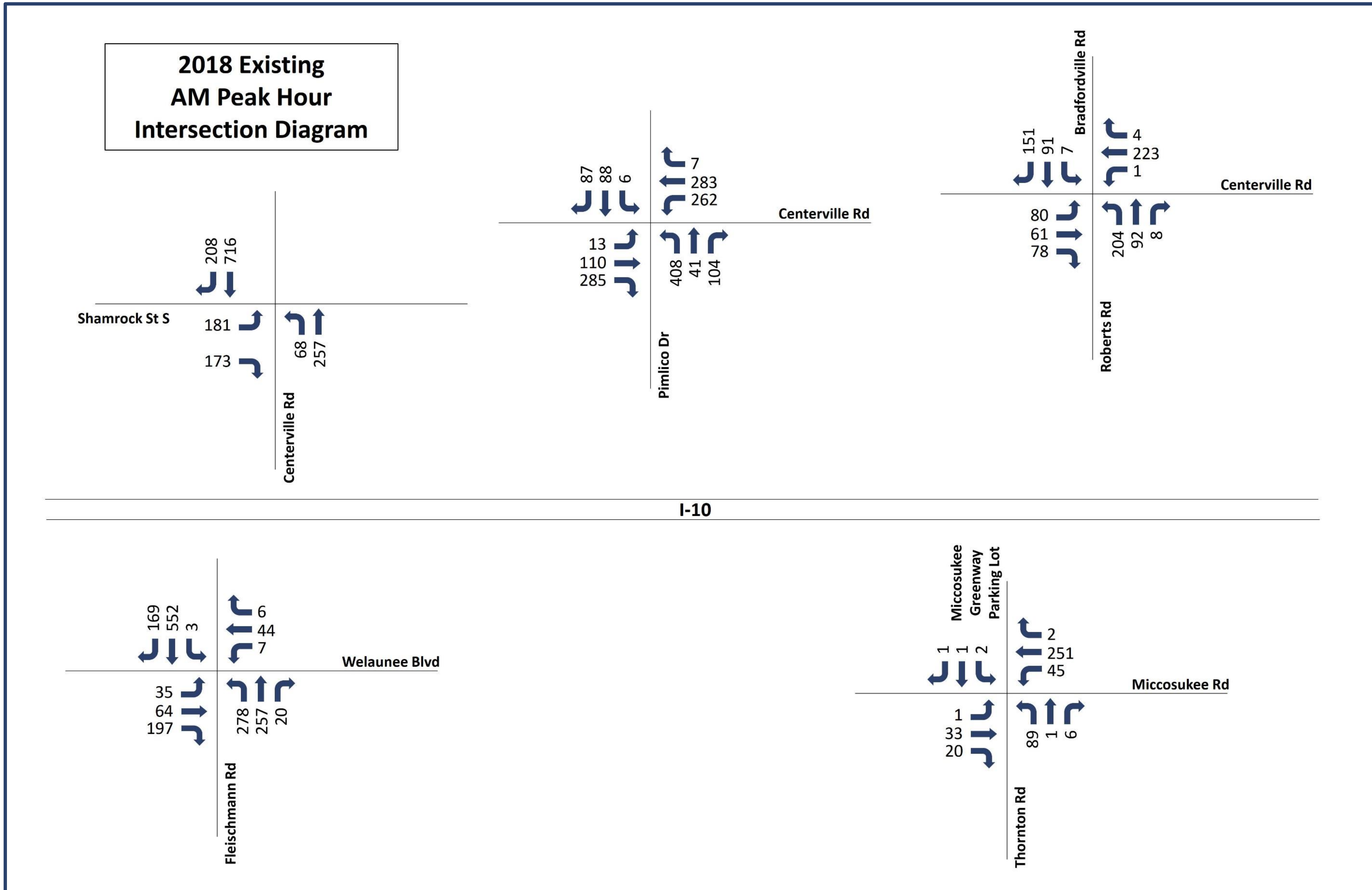

Figure 2. Existing AM Turning Movement Volumes

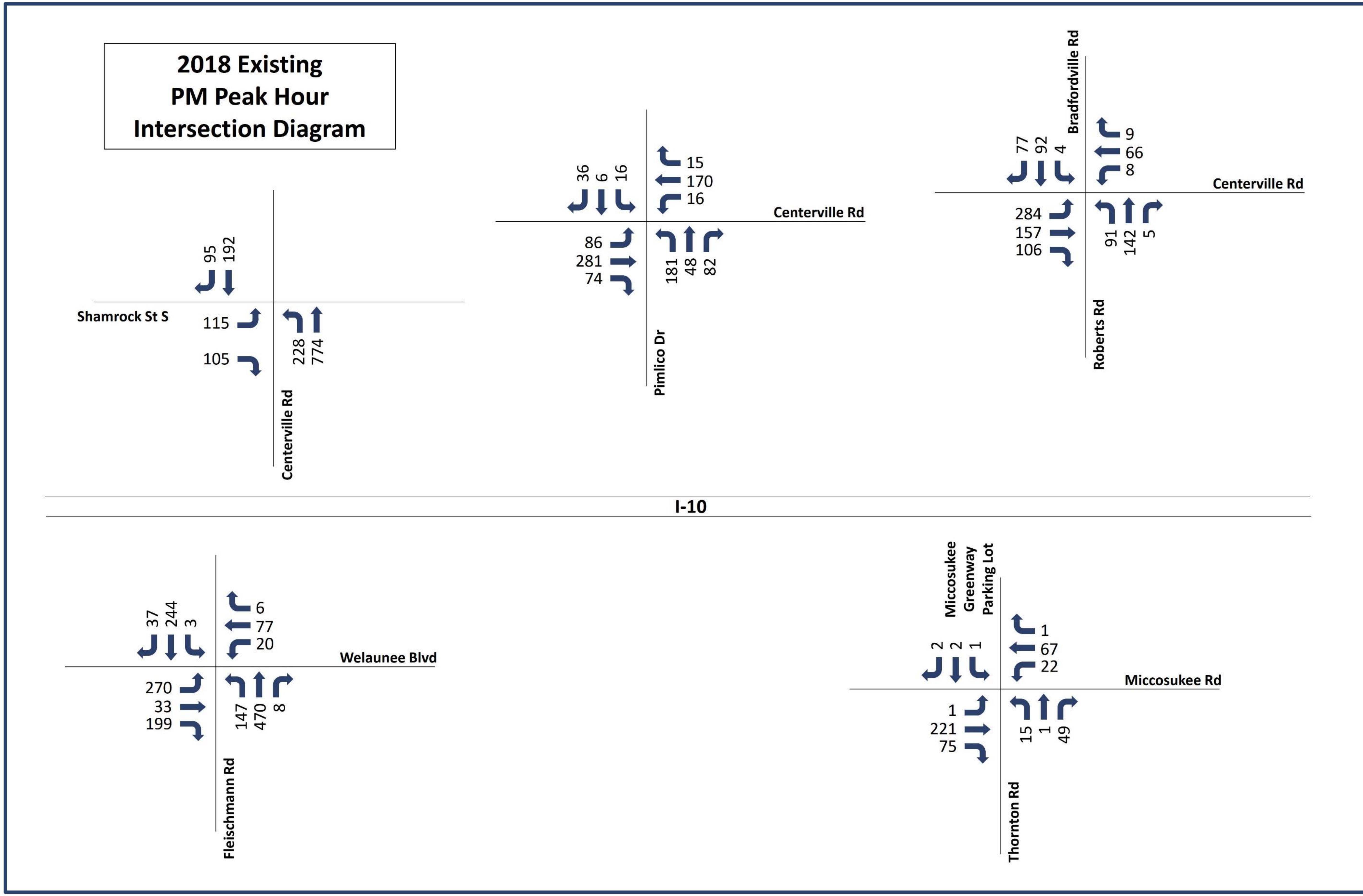

Figure 3. Existing PM Turning Movement Volumes

Measures of Effectiveness

The Measure of Effectiveness (MOE) will be determined by the alleviation of vehicle traffic on the scenic and locally protected Centerville and Miccosukee Roads, relief to Thomasville Road and Mahan Drive, and enhanced mobility for economic growth. These improvements will alleviate traffic along the existing roadway network while protecting the community's Canopy Roads.

Existing Traffic Analysis

Analyses of the existing traffic conditions were conducted for study area segments based on maximum service volumes and for intersections based on control delay. The existing traffic volumes used in the analyses were calculated by applying FDOT seasonal factors to the collected segment volumes and turning movement volumes, as described in the previous section.

Existing Segment Analysis

Segments within Northeast Gateway study area were analyzed using the information provided in the *2020 FDOT Quality/Level of Service (Q/LOS) Handbook*. The analysis compares existing traffic volumes to maximum service volumes established for each roadway according to various characteristics of the roadways. The segment analysis for the study area roadways was performed for the two-way AADT and peak hour peak directional conditions. For the peak hour analysis, the highest hourly directional volume for each segment was compared to the corresponding maximum service volume, regardless of the hour during which the peak occurred (i.e. some peak hours occurred during the morning peak and others during the evening peak).

The results of the segment analysis are included in **Table 3** and **Table 4** for the AADT and peak hour peak directional volumes, respectively. In the tables, each roadway segment volume is presented with classification information and the maximum service volume (MSV) for that segment to perform at level of service (LOS) D. LOS D is the FDOT standard for roadways in an urban area. MSV adjustments for non-state facilities and for the presence or lack of exclusive right and left-turn lanes are also indicated. Overall, the segment analysis indicates that the study area roadways operate within acceptable thresholds for LOS D for the daily conditions, with the exception of Centerville Road from Welaunee Boulevard to Stonegate Drive. For peak hour directional conditions, the operations of study area roadways exceed the acceptable threshold for the segments of Centerville Road from Welaunee Boulevard to Pimlico Drive, Fleischmann Road from Miccosukee Road to Centerville Road, and Miccosukee Road from Capital Circle NE to Thornton Road.

Table 3. Existing Segment AADT Analysis

Segment	Limits	2018 AADT (veh/day)	# Lanes[1]	Speed Limit	Facility Type[2]	LOS D MSV[3]	Adjustment Factor[4]	Adjusted MSV	V/C
Centerville Road	Capital Circle NE to Welaunee Boulevard	21,500	4	45	Class I	39,800	-10%	35,820	0.60
	Welaunee Boulevard to Stonegate Drive	14,500	2	35	Class II	14,800	-10%	13,320	1.09
	Stonegate Drive to Pimlico Drive	12,000	2	45	Class I	17,700	-10%	15,930	0.75
	Pimlico Drive to Proctor Road	6,500	2	45	Class I	16,200	-10%	14,580	0.45
Welaunee Boulevard	Centerville Road to Fleischmann Road	8,900	4	45	Class I	39,800	-10%	35,820	0.25
Fleischmann Road	Miccosukee Road to Centerville Road	4,900	2	35	Class II	14,800	-10%	13,320	0.37
Miccosukee Road	Capital Circle NE to Thornton Road	10,500	2	35	Class II	14,800	-10%	13,320	0.79
Bradfordville Road	From Thomasville Road to Centerville Road	6,500	2	45	Class I	16,200	-10%	14,580	0.45
Roberts Road	Centerville Road to Proctor Road	5,400	2	45	Class I	16,200	-10%	14,580	0.37

[1] "2U" Two lanes, undivided. "4D" Four lanes, divided by median.

[2] Signalized Arterials are classified by speed limit. "Class I" represents facilities with speed limit 40 mph or higher and "Class II" represents facilities with speed limit 35 mph or lower.

[3] LOS D is FDOT standard for urban roadways.

[4] Reduction in signalized arterial capacity for non-state roadways.

Table 4. Existing Segment Peak Hour Peak Direction Analysis

Segment	Limits	2018 AADT (veh/day)	# Lanes[1]	Speed Limit	Facility Type[2]	LOS D MSV[3]	Adjustment Factor[4]	Adjusted MSV	V/C
Centerville Road	Capital Circle NE to Welaunee Boulevard	1,600	4	45	Class I	2,000	-10%	1,800	0.89
	Welaunee Boulevard to Stonegate Drive	1,300	2	35	Class II	750	-10%	675	1.93
	Stonegate Drive to Pimlico Drive	1,000	2	45	Class I	880	-10%	792	1.26
	Pimlico Drive to Proctor Road	600	2	45	Class I	800	-10%	720	0.83
Welaunee Boulevard	Centerville Road to Fleischmann Road	500	4	45	Class I	2,000	-10%	1,800	0.28
Fleischmann Road	Miccosukee Road to Centerville Road	750	2	35	Class II	750	-10%	675	1.11
Miccosukee Road	Capital Circle NE to Thornton Road	800	2	35	Class II	750	-10%	675	1.19
Bradfordville Road	From Thomasville Road to Centerville Road	450	2	45	Class I	800	-10%	720	0.63
Roberts Road	Centerville Road to Proctor Road	300	2	45	Class I	800	-10%	720	0.42

[1] "2U" Two lanes, undivided. "4D" Four lanes, divided by median.

[2] Signalized Arterials are classified by speed limit. "Class I" represents facilities with speed limit 40 mph or higher and "Class II" represents facilities with speed limit 35 mph or lower.

[3] LOS D is FDOT standard for urban roadways.

[4] Reduction in signalized arterial capacity for non-state roadways.

Existing Intersection Analysis

Intersection operations were analyzed using *Synchro 10* and SIDRA Intersection 9 software, which utilize methodologies established in the HCM 2010 to evaluate intersection delay and LOS based on geometric configuration, lane discipline, traffic volumes, traffic factors, and other relevant characteristics of the intersections and vehicle types navigating them. Synchro was used for all signalized and stop-controlled intersections while SIDRA was used for all roundabout scenarios.

Existing traffic operations were analyzed for the weekday AM and PM peak hour conditions. TMCs, peak hour factors, and heavy vehicle percentages obtained during data collection were utilized in analyzing each intersection. Peak hour factors and heavy vehicle percentages were applied when evaluating the intersections in *Synchro 10* to account for their impact on LOS and delay. For intersections, LOS is determined based on the seconds of control delay per vehicle. LOS D is the FDOT target for intersections in an urban area. The LOS criteria for signalized and unsignalized intersections are shown in **Table 5** and **Table 6** respectively.

Table 5. Signalized Intersection LOS Thresholds (HCM 2010)

Intersection Average Control Delay per Vehicle (sec)	LOS
≤ 10	A
> 10 and ≤ 20	B
> 20 and ≤ 35	C
> 35 and ≤ 55	D
> 55 and ≤ 80	E
> 80 or if V/C ≥ 1.0	F
Note: For approach-based and intersection-wide assessments, LOS is defined solely by control delay.	

Table 6. Unsignalized Intersection LOS Thresholds (HCM 2010)

Intersection Average Control Delay per Vehicle (sec)	LOS
≤ 10	A
> 10 and ≤ 15	B
> 15 and ≤ 25	C
> 25 and ≤ 35	D
> 35 and ≤ 50	E
> 50 or if V/C ≥ 1.0	F
Note: For approach-based and intersection-wide assessments, LOS is defined solely by control delay.	

Table 7 summarizes the overall intersection delay and LOS for each of the intersections evaluated for the AM and PM peak hours for the existing 2018 condition. The Synchro and SIDRA reports for these analyses are included in **Appendix B**.

Table 7. Existing Year 2018 Peak Hour Intersection Analysis

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		LOS	Delay (s)	LOS	Delay (s)
Centerville Road at Shamrock Street South	Unsignalized	F	273.5	F	137.5
Welaunee Boulevard at Fleischmann Road	Signalized	F	84.0	C	34.6
Miccosukee Road at Thornton Road	Unsignalized	B	14.5	B	11.2
Centerville Road at Bradfordville Road	Signalized	B	18.4	B	14.0
Centerville Road at Pimlico Drive	Signalized	D	39.5	C	20.3

The intersections along Centerville Road with Bradfordville Road and Pimlico Drive, as well as the intersection of Miccosukee Road at Thornton Road operate at an acceptable LOS under the existing conditions for the peak hours analyzed. The intersection along Centerville Road with Shamrock Street South, as well as the intersection of Welaunee Boulevard at Fleischmann Road operate below the LOS D target established by FDOT during at least one of the peak hours for the corridor.

CRASH AND SAFETY ANALYSIS

Crash and Safety Introduction

Crash Data from January 1, 2015 to December 31, 2019 was obtained from FDOT's Crash Analysis Reporting System (CARS) based on the most recent five years of available data. Crash report data from incidents within 250-feet of an intersection within the study area was included as well to recognize incidents within the surrounding area of influence.

Centerville Road Crash and Safety Analysis

Crash and Safety Analysis (2015-2019)

Crash details including crash location, crash type, time of crash, lighting conditions, surface conditions, and other contributing factors were assessed to identify potential high-crash locations and trends within the study area.

A total of 409 crashes–including 161 injury crashes–were reported over the five-year period within the study area. The annual crash frequency varied during the analysis years over the five-year period, with a maximum of 95 crashes in 2015 and a minimum of 62 crashes in 2019.

Crash Severity and Contributing Factors

Crash data was analyzed to estimate the severity of crashes and contributing factors. Injury crashes accounted for 39% of all crashes. Crashes that occurred under dark conditions, including dusk and dawn, accounted for 23% of all crashes that occurred and wet surface conditions accounted for 18%. **Table 8** summarizes the crashes that occurred in the study area during the five-year period.

Table 8. Five-Year Crash Summary, 2015-2019

Year	Total Crashes	Fatal Crashes	Injury Crashes	Dark Crashes	Wet Crashes	Alcohol Crashes
2015	95	0	37	26	20	4
2016	84	0	41	14	15	1
2017	86	0	27	17	14	3
2018	82	0	30	23	19	2
2019	62	0	26	14	6	4
Total	**409**	**0**	**161**	**94**	**74**	**14**
	100%	**0%**	**39%**	**23%**	**18%**	**3%**

The locations of the 409 crashes recorded within the study area are shown in **Figure 4**.

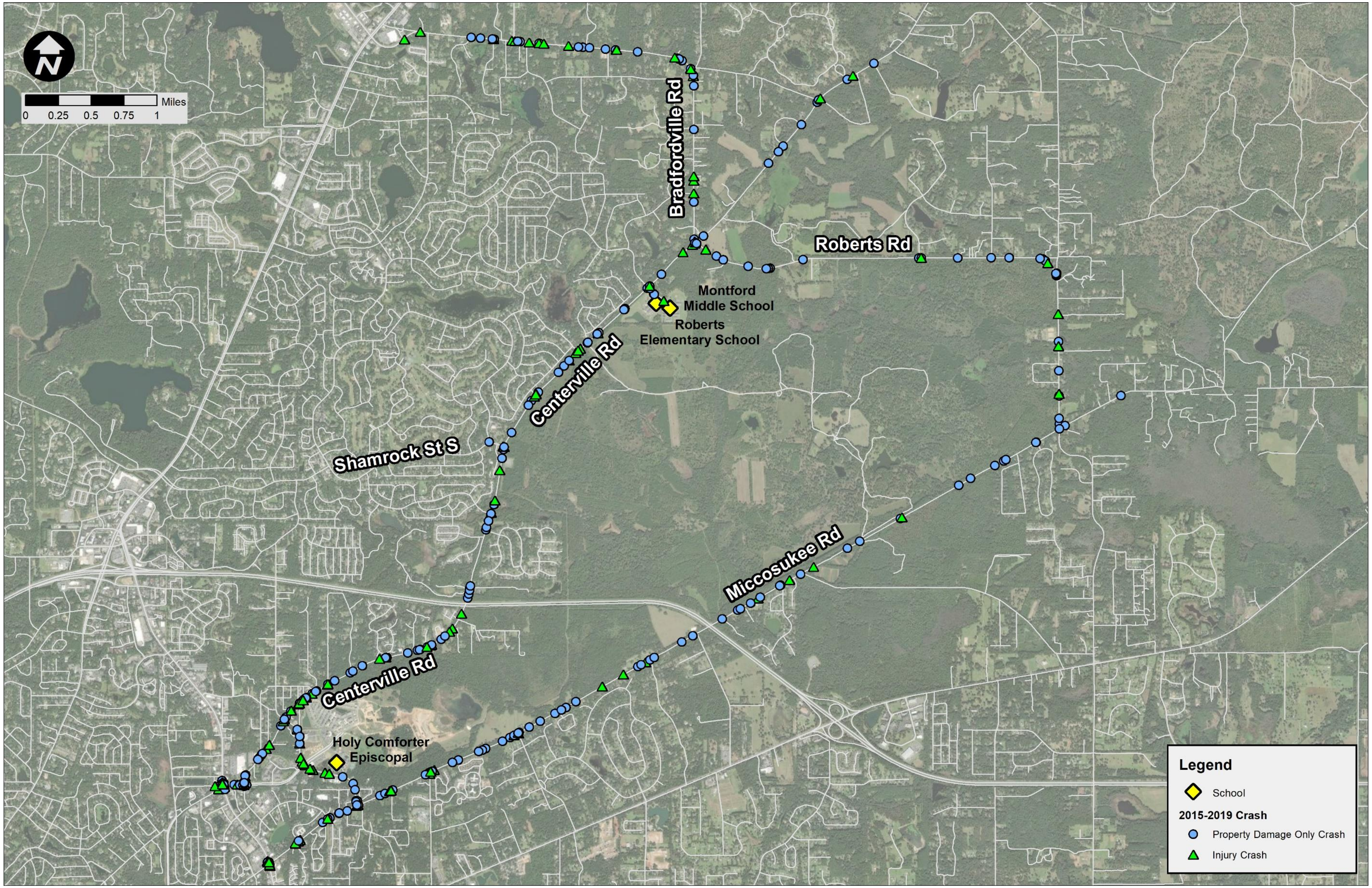

Figure 4. Crash Location, 2015-2019

Temporal Crash Trends

Crash characteristics were assessed to determine temporal trends in the 409 crashes during the five-year period, such as monthly, weekly, and hourly variations in crash frequency. June and December were the most common months for crashes, with 49 (12%) crashes occurring in each month, compared to the monthly average of 34 crashes. The day of the week during which the most crashes occurred was Wednesday with 78 crashes (19%) compared to the average of 58 crashes. The three-hour period during which the most crashes occurred was between 2:00 P.M. and 5:00 P.M., with 97 crashes (24%). Overall, the hourly crash trends tend to correlate with the fluctuations in traffic volumes observed in the data collected. The following figures depict the monthly, weekly, and hourly patterns observed in the five years of crash data from 2015 to 2019 on corridors within the study area. These trends are depicted in **Figure 5**, through **Figure 7**.

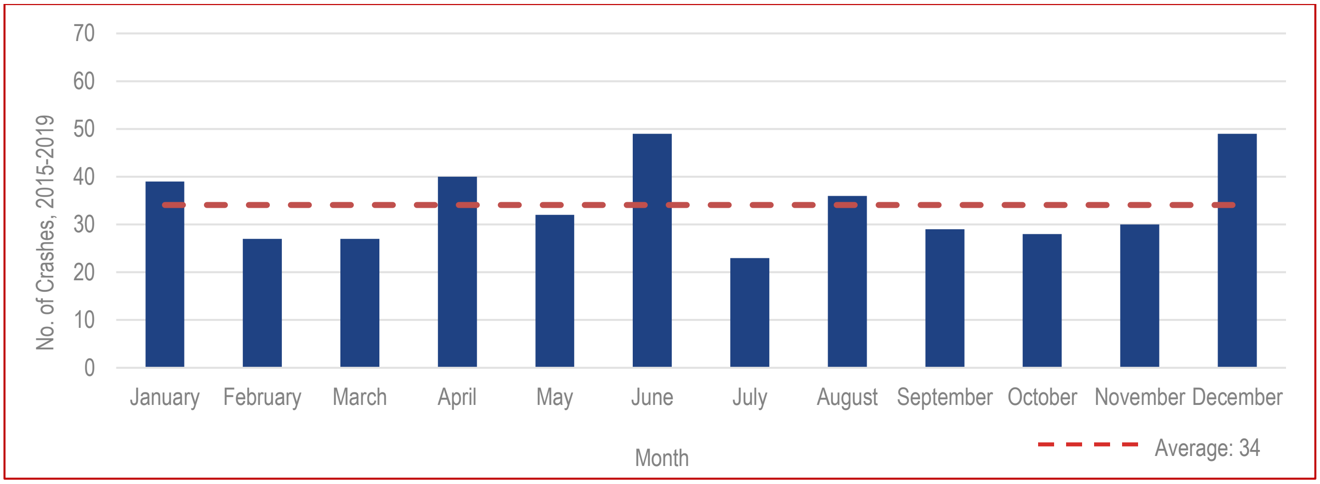

Figure 5. Crashes by Month, 2015-2019

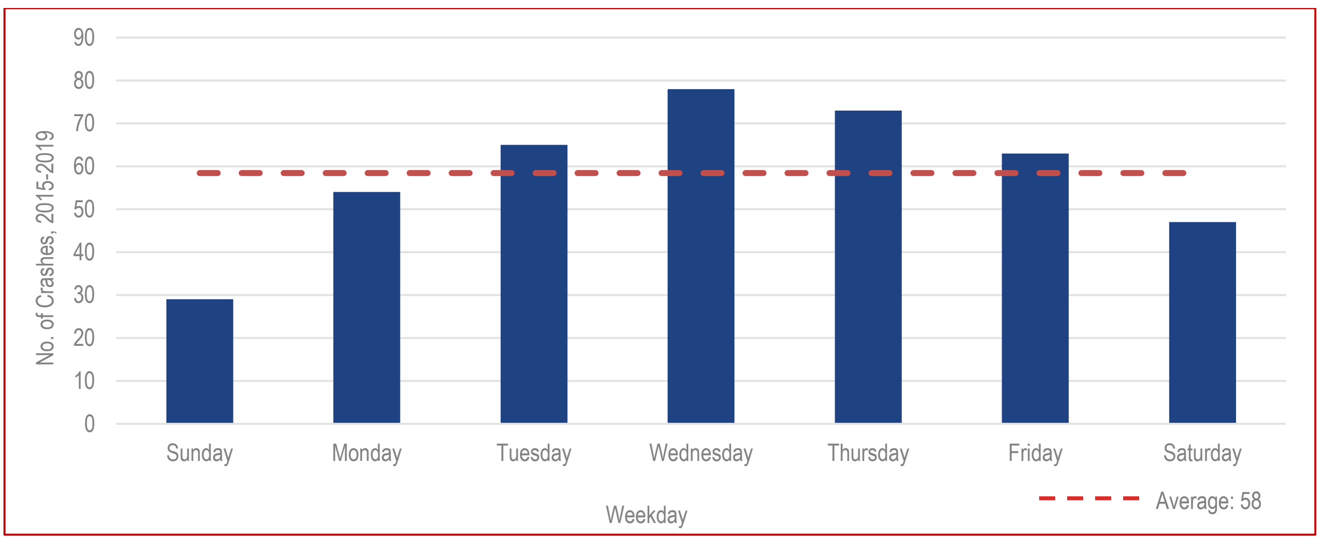

Figure 6. Crashes by Day of the Week, 2015-2019

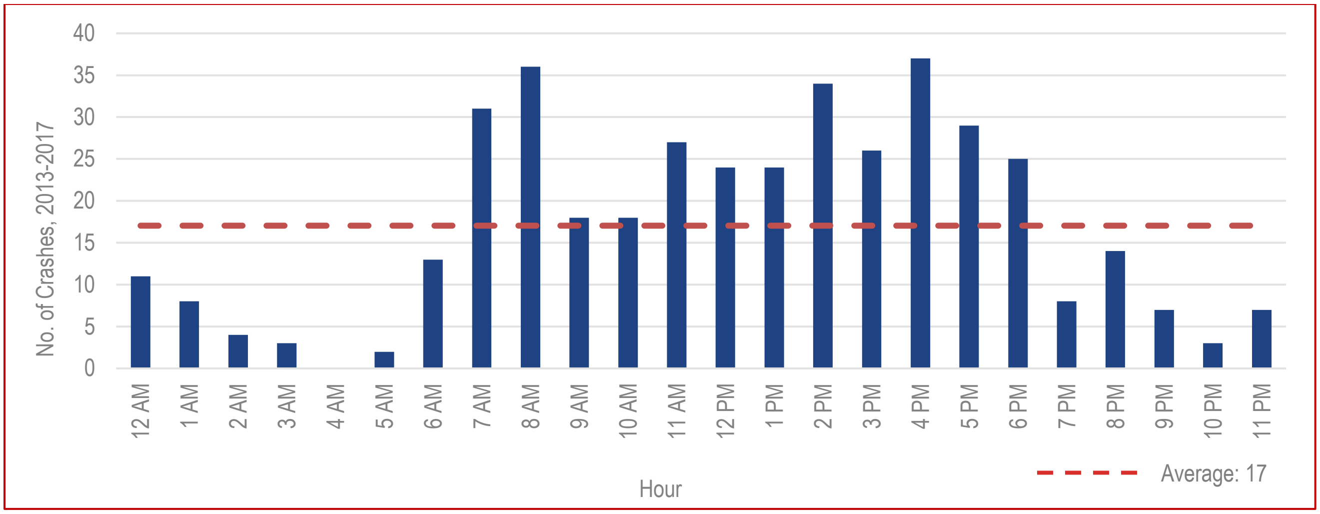

Figure 7. Crashes by Hour, 2015-2019

Several parameters were used to determine trends in the crash types that occurred in the study area from 2015 to 2019. The highest percentage of any crash type within the study area was attributed to rear end crashes, which accounted for 148 of the 409 crashes (36%). Angle crashes were the second most common crash type with 82 crashes (20%). **Table 9** summarizes the five years of crash data by crash type.

Table 9. Crash Summary by Crash Type, 2015-2019

Crash Type	Year					5-year Total	Percentage
	2015	2016	2017	2018	2019		
Rear End	42	35	28	27	16	148	36%
Others	24	18	22	20	31	115	28%
Angle	18	19	16	21	8	82	20%
Sideswipe, Same Direction	4	5	7	5	2	23	6%
Sideswipe, Opposite Direction	3	3	9	5	2	22	5%
Head On	3	4	4	2	3	16	4%
Unknown	1	0	0	2	0	3	1%
TOTAL	**95**	**84**	**86**	**82**	**62**	**409**	**100%**

Fatal Crashes

No Fatal Crashes occurred within the study area over the five-year period analyzed.

Crash Rate Analysis

Crash rates for the study corridor were calculated based on whether a crash at an intersection or along a segment between intersections. Crashes that were reported as having occurred at an intersection, were analyzed as intersection crashes. Crashes that occurred outside of the intersections were considered crashes occurring along a segment.

Of the 409 crashes within the study area, 157 were a signalized intersection within the study area. Of those, the most crashes recorded at any individual intersection from 2015 to 2019 was at the intersection of Centerville Road and Capital Circle NE, which accounted for 108 (69%) of all signalized intersection crashes within the study area.

Segment Crash Rates

Crash rates per million vehicle miles travelled (MVMT) were calculated for each year from 2015 to 2019 for segments within the study area. The classification of Centerville Road (from Welaunee Blvd to Shamrock St S), Bradfordville Road, Miccosukee Road (from Capital Circle NE to Fleischmann Ln), and Fleischmann Road as urban, two-lane, undivided roadways, and Centerville Road (from Shamrock St S to Proctor Rd) and Miccosukee Road (from Fleischmann Ln to Crump Rd) as suburban, two-lane, undivided roadways, was utilized to compare the study segments to the statewide average crash rate for similar facilities in each year.

Crashes along the segment, the associated crash rate based on crashes per million vehicle miles travelled and the statewide average for similar facilities are summarized in **Table 10**. Of the five years of crash data analyzed, the crash rate for the segment of Centerville Road from Shamrock St S to Proctor Rd was higher than the statewide average crash rate for the year 2017, and the crash rate for the segment of Fleischmann Road from Welaunee Blvd to Centerville Rd was higher than the statewide average crash rate for the year 2016. All other segment crash rates were lower than the statewide average crash rate.

Table 10. Segment Crash Rates, 2015-2019

Roadway	Limits	Length (Miles)		Year				
				2015	2016	2017	2018	2019
Centerville Road	Welaunee Blvd to Shamrock St S	4.00	AADT	12,500	13,000	13,000	13,500	13,000
			Crashes	17	26	18	15	13
			Crash Rate	**0.932**	**1.370**	**0.948**	**0.761**	**0.685**
			Statewide Average	3.452	3.892	4.246	4.062	
Centerville Road	Shamrock St S to Proctor Rd	3.58	AADT	6,200	6,300	6,400	6,500	6,600
			Crashes	8	3	15	4	14
			Crash Rate	**0.987**	**0.364**	**1.794**	**0.471**	**1.623**
			Statewide Average	1.236	1.309	1.328	1.336	
Bradfordville Road	Velda Dairy Rd to Centerville Rd	3.37	AADT	5,800	6,100	6,300	6,500	6,700
			Crashes	8	9	8	10	9
			Crash Rate	**1.121**	**1.199**	**1.032**	**1.251**	**1.092**
			Statewide Average	3.452	3.892	4.246	4.062	
Miccosukee Road	Capital Circle NE to Fleischmann Rd	0.80	AADT	10,000	10,500	10,500	10,500	10,500
			Crashes	5	2	2	3	2
			Crash Rate	**1.712**	**0.652**	**0.652**	**0.978**	**0.652**
			Statewide Average	3.452	3.892	4.246	4.062	
Miccosukee Road	Fleischmann to Crump Rd	6.07	AADT	9,600	9,900	10,000	10,500	11,000
			Crashes	19	12	7	17	11
			Crash Rate	**0.893**	**0.547**	**0.316**	**0.731**	**0.451**
			Statewide Average	1.236	1.309	1.328	1.336	
Fleischmann Road	Miccosukee Rd to Welaunee Blvd	0.99	AADT	9,600	9,900	10,000	10,500	11,000
			Crashes	0	1	0	1	0
			Crash Rate	**0.000**	**0.280**	**0.000**	**0.264**	**0.000**
			Statewide Average	1.236	1.309	1.328	1.336	
Fleischmann Road	Welaunee Blvd to Centerville Rd	0.51	AADT	9,600	9,900	10,000	10,500	11,000
			Crashes	1	3	0	1	3
			Crash Rate	**0.560**	**1.628**	**0.000**	**0.512**	**1.465**
			Statewide Average	1.236	1.309	1.328	1.336	

Intersection Crash Rates

Crash rates per million vehicles entering intersections were calculated for each year from 2015 to 2019 for intersections within the study area. The classification of Capital Circle NE as an urban, six-lane, divided raised roadway, Welaunee Boulevard as an urban, four-lane, divided raised roadway, Centerville Road (from Welaunee Blvd to Shamrock Street South) as an urban, two-lane, undivided roadway, Centerville Road (from Shamrock Street South to Proctor Road) as a suburban, two-lane, undivided roadway, and Miccosukee Road as a suburban, two-lane, undivided roadway, was utilized to compare the study segment to the statewide average crash rate for similar facilities in each year.

Crashes at each of the intersections, the associated crash rate based on million vehicles entering intersections, and the statewide average for similar facilities are summarized in **Table 11**. The crash rate at the intersection of Centerville Road and Shamrock Street S was higher than the statewide average crash rate for the year 2015. The crash rate at the intersection of Miccosukee Road and Thornton Road was higher than the statewide average crash rate for the years 2015 and 2016. The crash rate for the intersection of Centerville Road and Bradfordville Road/Roberts Road was higher than the statewide average crash rate for the years 2015 to 2018. The crash rate for the intersection of Centerville Road and Pimlico Road was higher than the statewide average crash rate for the years 2015 and 2017. All other intersection crash rates were lower than the statewide average crash rates.

Table 11. Intersection Crash Rates, 2015-2019

Intersection		Year				
		2015	2016	2017	2018	2019
Capital Circle NE and Centerville Rd	AADT Entering Intersection	83500	84500	85500	86500	82500
	Crashes	27	23	29	22	7
	Crash Rate	**0.886**	**0.746**	**0.929**	**0.697**	**0.232**
	Statewide Average	0.913	0.939	0.938	0.948	
Welaunee Blvd and Centerville Rd	AADT Entering Intersection	35770	35840	35920	36000	36080
	Crashes	2	5	0	7	2
	Crash Rate	**0.153**	**0.382**	**0.000**	**0.533**	**0.152**
	Statewide Average	0.643	0.653	0.669	0.666	
Centerville Rd and Shamrock St S	AADT Entering Intersection	17300	18200	16900	17900	17100
	Crashes	2	1	2	0	2
	Crash Rate	**0.317**	**0.151**	**0.324**	**0.000**	**0.320**
	Statewide Average	0.302	0.337	0.348	0.323	
Welaunee Blvd and Fleischmann Rd	AADT Entering Intersection	10870	11680	12190	13800	14910
	Crashes	2	1	2	2	2
	Crash Rate	**0.504**	**0.235**	**0.450**	**0.397**	**0.368**
	Statewide Average	0.643	0.653	0.669	0.666	
Miccosukee Rd and Thornton Rd	AADT Entering Intersection	11340	11460	11980	12100	12220
	Crashes	1	1	0	0	0
	Crash Rate	**0.242**	**0.239**	**0.000**	**0.000**	**0.000**
	Statewide Average	0.204	0.215	0.210	0.198	
Centerville Rd and Bradfordville Rd/Roberts Rd	AADT Entering Intersection	12190	12460	12730	13000	13270
	Crashes	6	3	4	2	1
	Crash Rate	**1.349**	**0.660**	**0.861**	**0.421**	**0.206**
	Statewide Average	0.306	0.309	0.309	0.286	
Centerville Rd and Pimlico Rd	AADT Entering Intersection	12060	12190	12320	12440	12570
	Crashes	2	0	3	0	3
	Crash Rate	**0.454**	**0.000**	**0.667**	**0.000**	**0.654**
	Statewide Average	0.306	0.309	0.309	0.286	

Crash Analysis Findings

In summary, over the five-year analysis period from 2015 to 2019, rear-end crashes accounted for 36% of all crashes, while angle crashes accounted for 20% of crashes over the five-year period. No significant monthly, weekly, or hourly crash trends were observed based on the recorded crash data. There were several incidences where the segment or intersection crash rate was higher than the statewide average. The Northeast Gateway project is anticipated to potentially improve safety by relieving congestion along these segments by redistributing traffic.

TRAFFIC FORECASTING METHODOLOGY

This section describes the methodologies employed to estimate future traffic demand, the results of traffic projections, and the anticipated performance of the Northeast Gateway and surrounding roadways in the projected future conditions. Estimated future traffic projections are used to analyze the performance of the study area roadways in the expected opening year (2025) and design year (2045) for this PD&E Study.

The future traffic analysis is performed initially with the existing roadway facility (Future No Build Condition) as a baseline for comparison of corridor improvement alternatives. This comparison will help illustrate the impact that additional future traffic and shifts in traffic due to the addition of the Northeast Gateway: Welaunee Boulevard will have on traffic operations throughout the study area.

Traffic Growth Rate

Consistent with the FDOT *2019 Project Forecasting Handbook*, several tools were utilized to develop future traffic projections. Historical AADT volumes along the corridor, future population projections, and the regional travel demand model output were reviewed to determine the most appropriate growth rates for future traffic projections.

Historical Growth

FDOT collects annual traffic data at several locations within the study area. Ten portable traffic monitoring sites have been used to calculate the AADT for most sites within the study area each year. A compound growth rate that reflects the trend in traffic growth for the most recent five years (2014 to 2018) of available traffic data from each count location was calculated via linear regression. Applying linear regression reduces the impact of any outliers among the data.

The historical traffic trend analysis in the study area found minimal to significant growth along the roadways. The maximum historical growth rate found in the study area was 15.02% along Fleischmann Road south of Centerville Road. The results of the growth analysis for the study area are summarized in **Table 12**.

Table 12. Historical Traffic Trend Analysis

Location	Count Site	FDOT Two-Way AADT (veh/day)					Compound Growth Rate 2014-2018
		2014	2015	2016	2017	2018	
Fleischmann Road south of Centerville Road	555172	2,800	3,200	3,600	3,700	4,900	15.02%
Centerville Road north of S.R. 8 (I-10)	555158	11,200	11,700	12,000	11,600	12,100	1.95%
Centerville Road east of Capital Circle NE	555155	19,800	20,900	21,500	22,000	21,500	2.08%
Capital Circle NE north of Centerville Road	555139	57,000	55,500	54,500	56,500	57,000	0.00%
Centerville Road west of Capital Circle NE	555156	15,000	14,500	15,500	15,000	15,500	0.82%
Miccosukee Road west of S.R. 261	553025	20,500	21,500	20,500	20,500	21,000	0.60%
Miccosukee Road west of Crump Road	550282	1,900	2,100	2,100	2,000	2,100	2.53%
Shamrock Street South north of Longford Drive	555105	5,200	5,600	6,200	5,300	5,800	2.77%
Bradfordville Road east of S.R. 61 (Thomasville Road)	553070	9,200	9,400	9,300	10,600	10,300	2.86%
Roberts Road north of S.R. 10 (U.S. 90)	550363	4,800	4,900	4,700	4,600	5,000	1.03%
Note: Traffic data included in this table was obtained from FDOT Florida Traffic Online.							

BEBR Population Projections

The University of Florida's Bureau of Economic and Business Research (BEBR) analyzes population growth trends in counties throughout Florida along with other statistical metrics. Annually, BEBR publishes an estimate of current county populations and a range of projected county populations for each fifth year from 2020 to 2045. Projections are calculated using a combination of techniques applied to historical population data from each county.

Table 13 depicts the BEBR low, medium, and high population projections for Leon County, as well as the associated compound annual growth percentage estimates using the 2018 population as a base. According to BEBR projections, minimal population growth is anticipated for Leon County over this analysis period.

Table 13. BEBR Population Projections, Leon County

	Projection	2018	Projection Year						Compound Growth Rate 2018-2045
			2020	2025	2030	2035	2040	2045	
Leon County	Low	292,332	286,100	290,400	292,200	291,900	290,700	288,500	-0.05%
	Medium		298,300	311,900	322,800	331,500	339,200	346,000	0.63%
	High		309,900	331,500	351,700	369,800	386,900	402,800	1.19%

Model Data

The Capital Region Transportation Planning Agency Model (CRTPA Model 2007) was used as the basis and framework to model and evaluate various land use and roadway network scenarios within the surrounding area of influence as part of the traffic modeling efforts.

The CRTPA 2007 Model is the adopted base year travel demand model for Florida's Capital Region and contains the roadway network and socioeconomic dataset associated with the 2035 Existing + Committed (E+C) scenario. The E+C scenario represents the existing roadway network with the addition of future roadways and developments that have been committed to. For the traffic modeling performed for this PD&E Study, the E+C scenario was used as the basis for developing a robust, study-specific model.

Within the framework of this base model, additional modeling inputs such as roadway facility type, area type, and laneage have been established. Further modeling effort details can be found in the Traffic Modeling Summary Report, which was published in November 2019 and can be found in **Appendix C**.

For Future Build Scenario, a 2045 year scenario was extrapolated based on 2035 data model and was modified to include links for the Northeast Gateway. In the 2025 modeling scenario, an extension of Dempsey Mayo Road was included that extends from Miccosukee Road to Centerville Road. In the 2035 and 2045 modeling scenarios, extensions of Dempsey Mayo Road, Edenfield Road, and Thornton Road were included. The Edenfield Road and Thornton Road extensions extend from Miccosukee Road to the proposed Welaunee Boulevard. In addition, both 2035 and 2045 modeling scenarios were evaluated with and without a potential future interchange at I-10 and Welaunee Boulevard. For reporting purposes, 2045 modeling scenario results will be presented to include a future interchange at I-10.

In addition to the Future Build scenario, further modifications to the raw socioeconomic datasets were made within the immediate project area and surrounding area of influence, such as the Welaunee area. **Figure 8** depicts the Welaunee area, which is commonly referred to as the Toe, Heel, and Arch. The Toe refers to the area south of I-10 bounded by Miccosukee Road, Fleischmann Road, and Centerville Road. The Heel refers to the area north of I-10, near the I-10 and U.S. 90 (Mahan Drive) interchange, bounded by Mahan Road and Miccosukee Road. The Arch refers to the area north of I-10 bounded by Centerville Road, Roberts Road, and Crump Road.

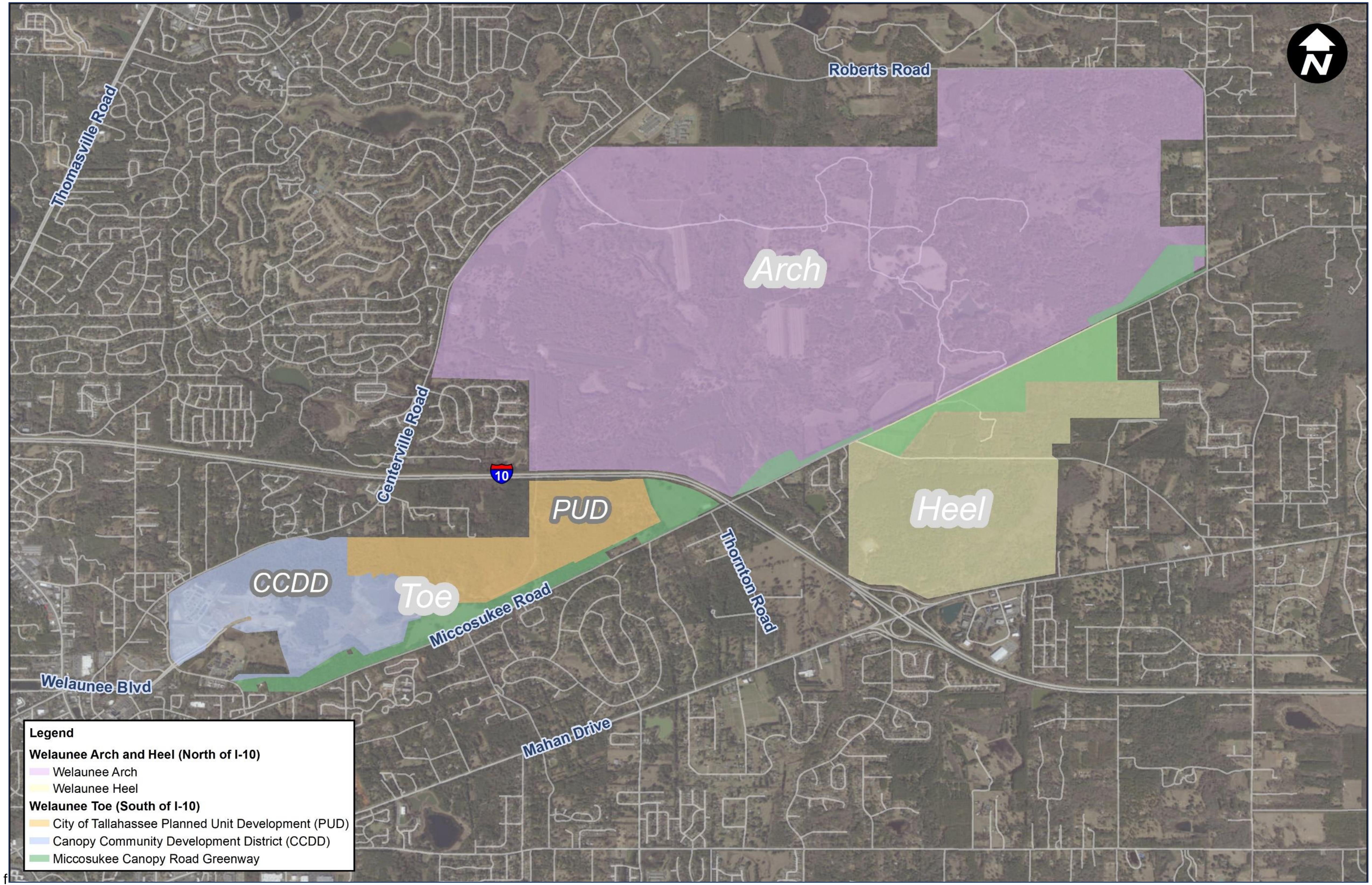

Figure 8. Welaunee Area

The land use assumptions and level of development for each Welaunee area segment by Future Year is shown in **Table 14**. This correlates with the modifications made to the socioeconomic data associated with each zone in the modeling efforts. Further details of these changes can be found in the Traffic Modeling Summary Report that was published in November 2019 and is located in **Appendix C**.

Table 14. Welaunee Area Land Use Assumptions

Welaunee Area	Future Analysis Year	
	2025	2045
Canopy Community Development District (CCDD)	Partial Development	Full Development
City of Tallahassee Planned Unit Development (PUD)	No Development	Full Development
Arch	No Development	Partial Development
Heel	No Development	Partial Development

For Future No Build scenario, the 2025 model volumes were compared to the 2007 Base model volumes to establish the growth rates of each studied segment within that timeframe. Growth rates were further developed for the 2025 to 2045 timeframe through model volume comparison of the 2045 No Build scenario to the 2025 No Build scenario. A minimum growth rate of 0.5% was used for all Future No Build scenarios to ensure area growth was accounted for. Detailed growth rates are discussed later in this report.

Future Build scenario growth rates were developed through model volume comparison of the Build scenario to the corresponding year No Build scenario of each studied segment. The studied year No Build turning movement volumes were then grown using the respective segment Build scenario growth rate associated with directional volumes. Detailed growth rates are discussed later in this report. **Table 15** and **Table 16** show a summary of the base and future model volumes 2025 and 2045, as well as their respective annual growth rate estimates.

Table 15. CRTPA 2025 Model Growth Determination

Intersection	Segment	Model Volume			No Build Growth Rate	Build Growth Rate
		2007	2025 No Build	2025 Build		
Centerville Road at Shamrock Street South	Northern	10,395	13,500	11,000	1.5%	-18.5%
	Southern	12,777	15,500	13,500	1.1%	-12.9%
	Eastern	--	--	100	N/A	N/A
	Western	7,535	9,600	9,200	1.4%	-4.2%
Welaunee Boulevard at Fleischmann Road	Northern	5,957	4,300	2,900	0.5%	-32.6%
	Southern	7,088	3,000	4,200	0.5%	40.0%
	Eastern	--	--	11,500	N/A	N/A
	Western	4,382	13,500	16,500	6.5%	22.2%
Miccosukee Road at Thornton Road	Northern	--	--	--	N/A	N/A
	Southern	741	3,000	2,400	8.1%	-20.0%
	Eastern	4,466	4,700	2,800	0.5%	-40.4%
	Western	5,023	3,700	3,400	0.5%	-8.1%
Centerville Road and Bradfordville Road and Roberts Road	Northern	3,694	9,000	9,000	5.1%	0.0%
	Southern	3,931	7,100	6,900	3.3%	-2.8%
	Eastern	2,685	3,300	3,800	1.2%	15.2%
	Western	8,094	12,000	7,000	2.2%	-41.7%
	Southwestern	--	--	9,300	N/A	N/A
Centerville Road at Pimlico Drive	Northern	357	500	450	1.9%	-10.0%
	Southern	1,226	2,100	1,300	3.0%	-38.1%
	Eastern	8,094	12,000	7,000	2.2%	-41.7%
	Western	8,830	13,500	8,500	2.4%	-37.0%
Welaunee Boulevard at Shamrock Street Extension	Northern	--	--	6,400	N/A	N/A
	Southern	--	--	6,600	N/A	N/A
	Western	--	--	100	N/A	N/A

Table 16. CRTPA 2045 Model Growth Determination

Intersection	Segment	Model Volume			No Build Growth Rate	Build Growth Rate
		2025 No Build	2045 No Build	2045 Build		
Centerville Road at Shamrock Street South	Northern	13,500	15,500	14,500	0.7%	-6.5%
	Southern	15,500	20,000	17,000	1.3%	-15.0%
	Eastern	--	--	11,500	N/A	N/A
	Western	9,600	12,500	12,500	1.3%	0.0%
Welaunee Boulevard at Fleischmann Road	Northern	4,300	9,100	5,000	3.8%	-45.1%
	Southern	3,000	4,200	6,600	1.7%	57.1%
	Eastern	--	--	27,500	N/A	N/A
	Western	13,500	27,500	31,000	3.6%	12.7%
Miccosukee Road at Thornton Road	Northern	--	--	10,500	N/A	N/A
	Southern	3,000	19,000	7,600	9.7%	-60.0%
	Eastern	4,700	11,500	5,700	4.6%	-50.4%
	Western	3,700	10,500	5,100	5.4%	-51.4%
Centerville Road and Bradfordville Road and Roberts Road	Northern	9,000	13,000	16,500	1.9%	26.9%
	Southern	7,100	15,500	6,600	4.0%	-57.4%
	Eastern	3,300	3,600	9,400	0.5%	161.1%
	Western	12,000	17,000	9,400	1.8%	-44.7%
	Southwestern	--	--	17,000	N/A	N/A
Centerville Road at Pimlico Drive	Northern	500	950	400	3.3%	-57.9%
	Southern	2,100	2,900	1,300	1.6%	-55.2%
	Eastern	12,000	17,000	9,400	1.8%	-44.7%
	Western	13,500	17,000	10,500	1.2%	-38.2%
Welaunee Boulevard at Shamrock Street Extension	Northern	--	--	15,000	N/A	N/A
	Southern	--	--	27,000	N/A	N/A
	Western	--	--	11,500	N/A	N/A

FUTURE CONDITIONS ANALYSIS

For this PD&E Study, traffic operations are evaluated for the peak conditions in Opening Year 2025 and Design Year 2045. Existing traffic counts and turning movement volumes were collected in December 2018 and factored to represent peak season conditions, as detailed previously in the Existing Conditions section of this report. Projected traffic growth rates were applied to the factored existing traffic volumes to estimate future traffic volumes. The growth rates and the method of applying those growth rates are detailed in the No Build Growth Rates and Build Growth Rates sections of this report.

Future Traffic Factors

Standard K

Consistent with the *2019 Project Forecasting Handbook*, design hourly volumes (DHV) are calculated by multiplying the projected AADT by the Standard K factor. Standard K factors have been established by FDOT for various facility and area types statewide as a means to design future roadway geometry more cost effectively than using the more traditional K_{30} factor, which is calculated based on the 30^{th} highest hour volumes and is believed to often lead to overdesign. The Standard K factor for all roadways within the study area is 9.0.

Directional Distribution (D)

The D-Factor applied to future volumes is representative of the peak directional distribution of traffic during the peak hour on a given roadway segment. Recommended D-Factors for traffic forecasting in Florida are included in **Table 17**. Actual peak hour D-Factors recorded on area roadways range from 50.3% to 78.5%. Where the recorded peak hour D-Factor was lower than the recommended minimum, the minimum D-factor is applied for future directional design hourly volume (DDHV) calculations. Where there wasn't a portable traffic monitoring site or collected volume along the segment, the recommended D-Factor provided in the *2019 Project Traffic Forecasting Handbook* was applied for future DDHV calculations.

Table 17. Recommended D-Factors (D) for Traffic Forecasting

Road Type	Low	D	High	Standard Deviation
Rural Arterial	51.1	58.1	79.6	6.29
Urban Arterial	50.8	57.9	67.1	4.60

Source: Figure 2.9: 2019 Project Traffic Forecasting Handbook

No Build Scenario

A No Build Scenario was evaluated, which represents the existing roadway network without the proposed improvements associated with the Northeast Gateway. The No Build Scenario remains a viable alternative throughout the PD&E process. Forecasted traffic volumes associated with the No Build Scenario for 2025 and 2045 are shown in later sections of this report. The No Build Scenario was utilized as the basis for comparison of all corridors.

No Build Growth Rates

For Future No Build Scenario, the 2025 model volumes were compared to the 2007 Base model volumes to establish the growth rates of each studied segment within that time span. Growth rates were further developed for the 2025 to 2045 time span through model volume comparison of the 2045 No Build Scenario to the 2025 No Build Scenario. A minimum growth rate of 0.5% was used for all Future No Build scenarios to ensure area growth was accounted for.

No Build Projected Segment Volumes

The No Build segment AADT volumes for future years 2025 and 2045 for the Northeast Gateway: Welaunee Boulevard study area are summarized in **Table 18.** These volumes reflect the Future No Build Scenario and are rounded per FDOT *2019 Project Forecasting Handbook* guidance.

Table 18. Future No Build Daily and Directional Design Hour Volumes

Roadway	Limits	2018 AADT (veh/day)	Growth Rate		Standard K	D Factor	2025		2045	
			2025	2045			AADT	DDHV	AADT	DDHV
Centerville Road	From Capital Circle NE to Welaunee Boulevard	21,500	2.5%	0.9%	9.0%	71.5%	25,500	1,600	30,500	1,900
	From Welaunee Boulevard to Stonegate Drive	14,500	1.7%	0.5%	9.0%	78.5%	16,500	1,200	18,000	1,300
	From Stonegate Drive to Pimlico Drive	12,100	1.3%	1.1%	9.0%	71.5%	13,000	850	16,000	1,000
	From Pimlico Drive to Proctor Road	6,500	1.7%	1.1%	9.0%	58.1%	7,300	400	9,100	450
Welaunee Boulevard	From Centerville Road to Fleischmann Road	8,900	6.5%	3.6%	9.0%	51.1%	14,000	650	28,500	1,300
Fleischmann Road	From Miccosukee Road to Centerville Road	4,900	0.5%	3.2%	9.0%	66.2%	5,100	300	9,600	550
Miccosukee Road	From Capital Circle NE to Thornton Road	10,500	0.5%	3.3%	9.0%	69.6%	11,000	700	21,000	1,300
Bradfordville Road	From Thomasville Road to Centerville Road	6,500	4.3%	2.1%	9.0%	58.1%	8,700	450	13,000	700
Roberts Road	From Centerville Road to Proctor Road	5,400	3.6%	4.0%	9.0%	58.1%	6,900	350	15,000	800

No Build Projected Intersection Turning Movement Volumes

To determine the turning movement volumes for future year scenarios, the determined growth rates per studied approach segment were applied to the existing peak season corrected turning movement volumes for future years 2025 and 2045. The future intersection turning movement volumes are included in **Figure 9** through **Figure 12**.

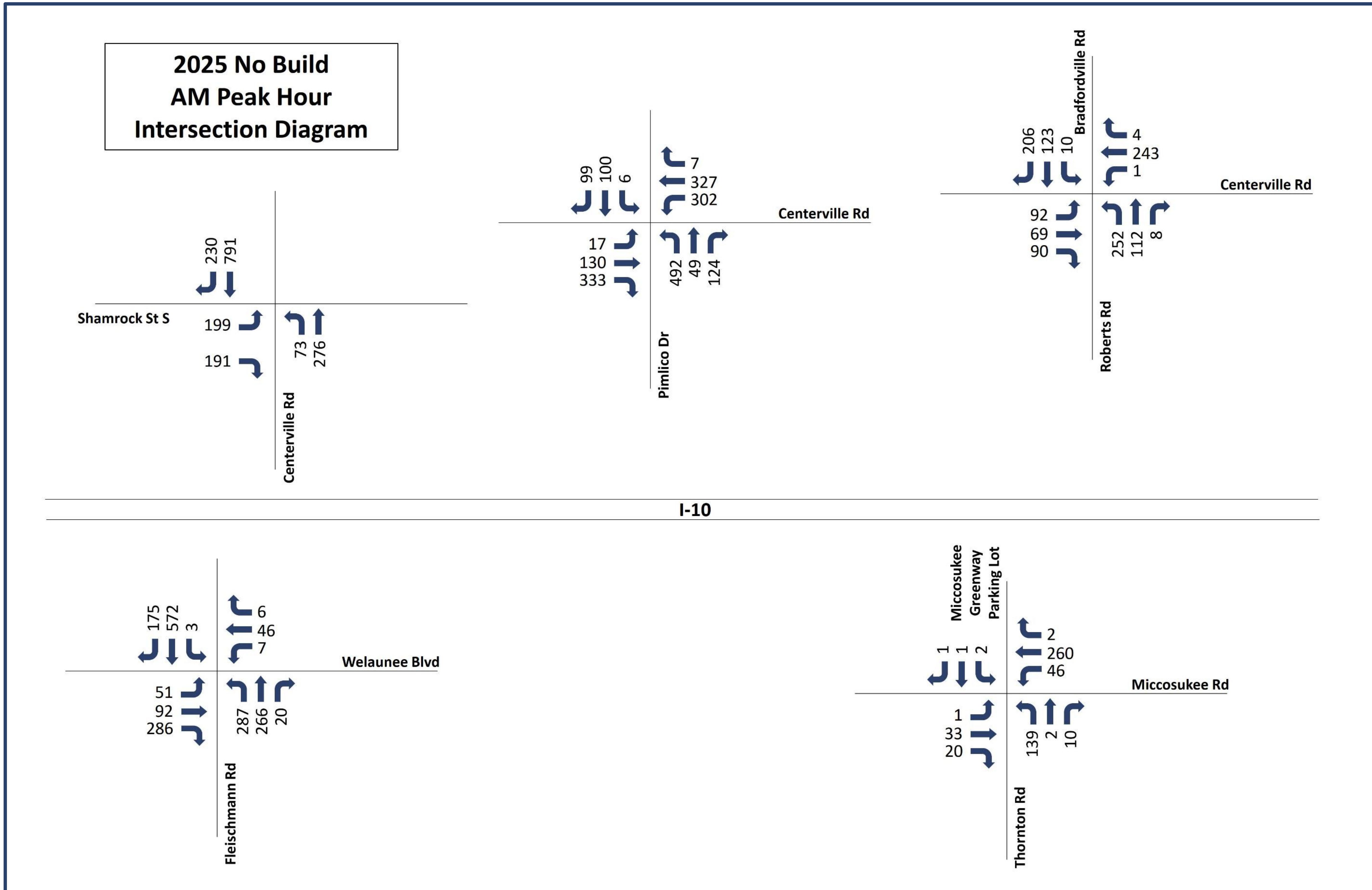

Figure 9. No Build 2025 Opening Year AM Turning Movement Volumes

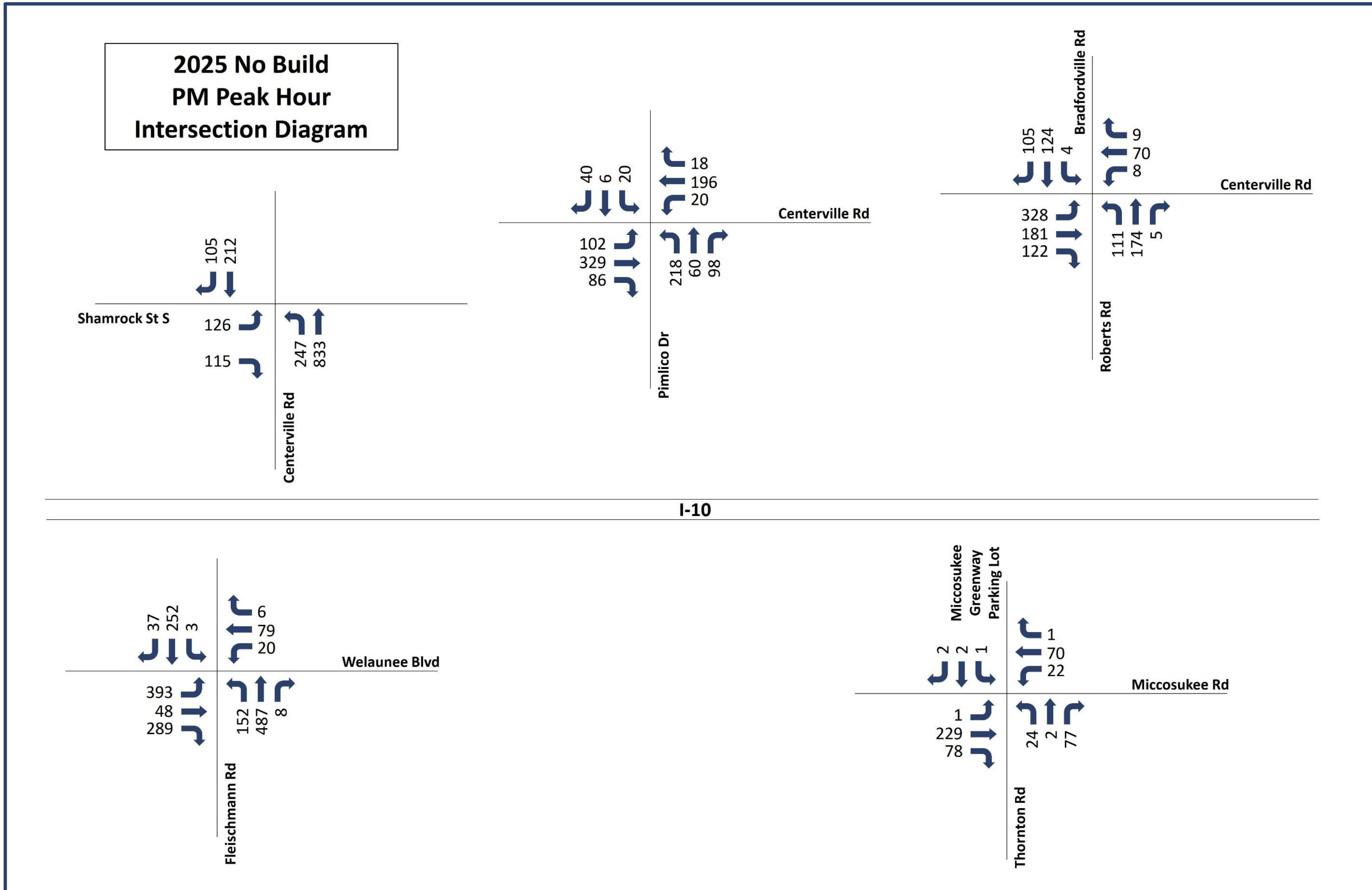

Figure 10. No Build 2025 Opening Year PM Turning Movement Volumes

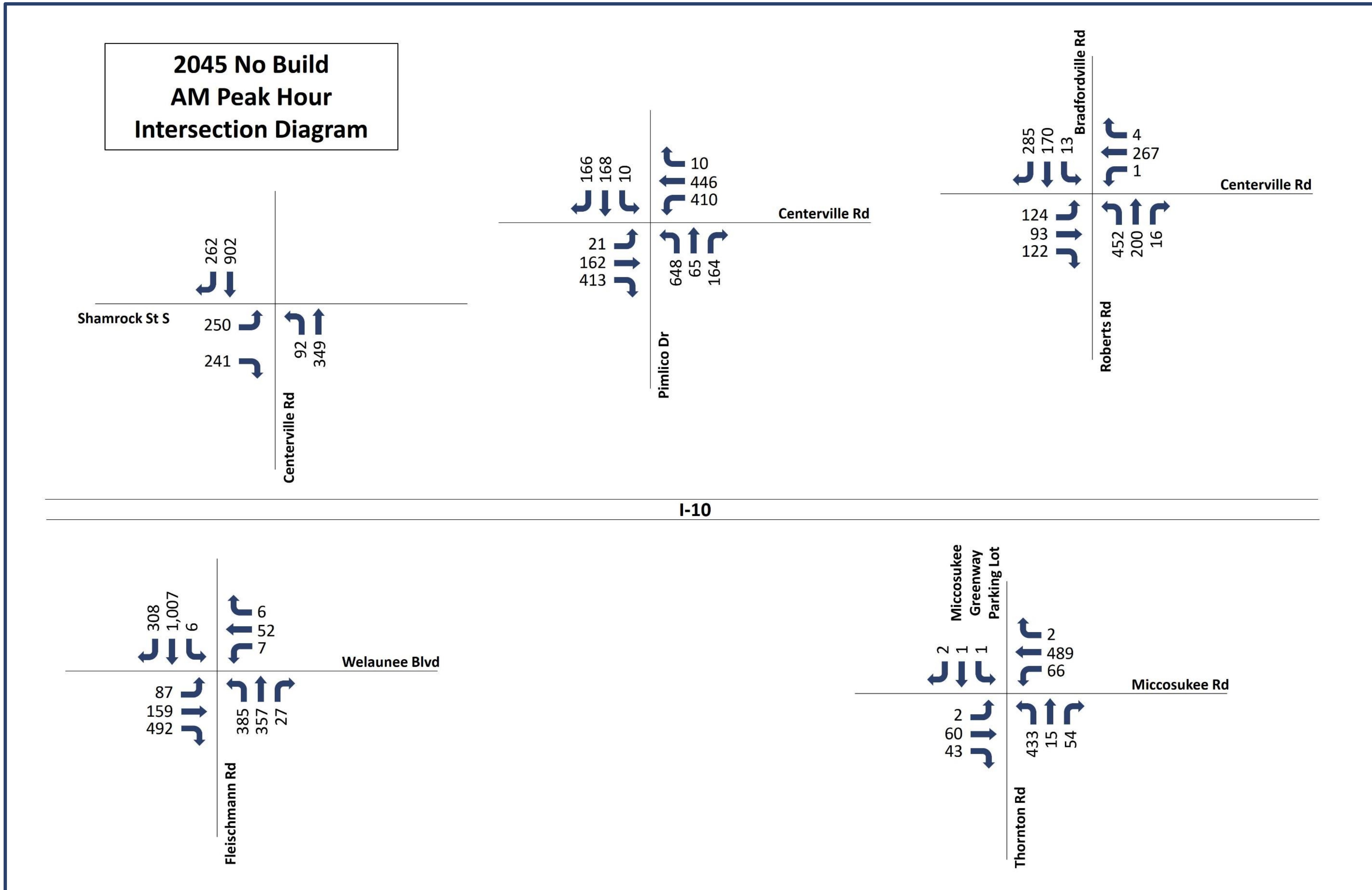

Figure 11. No Build 2045 Design Year AM Turning Movement Volumes

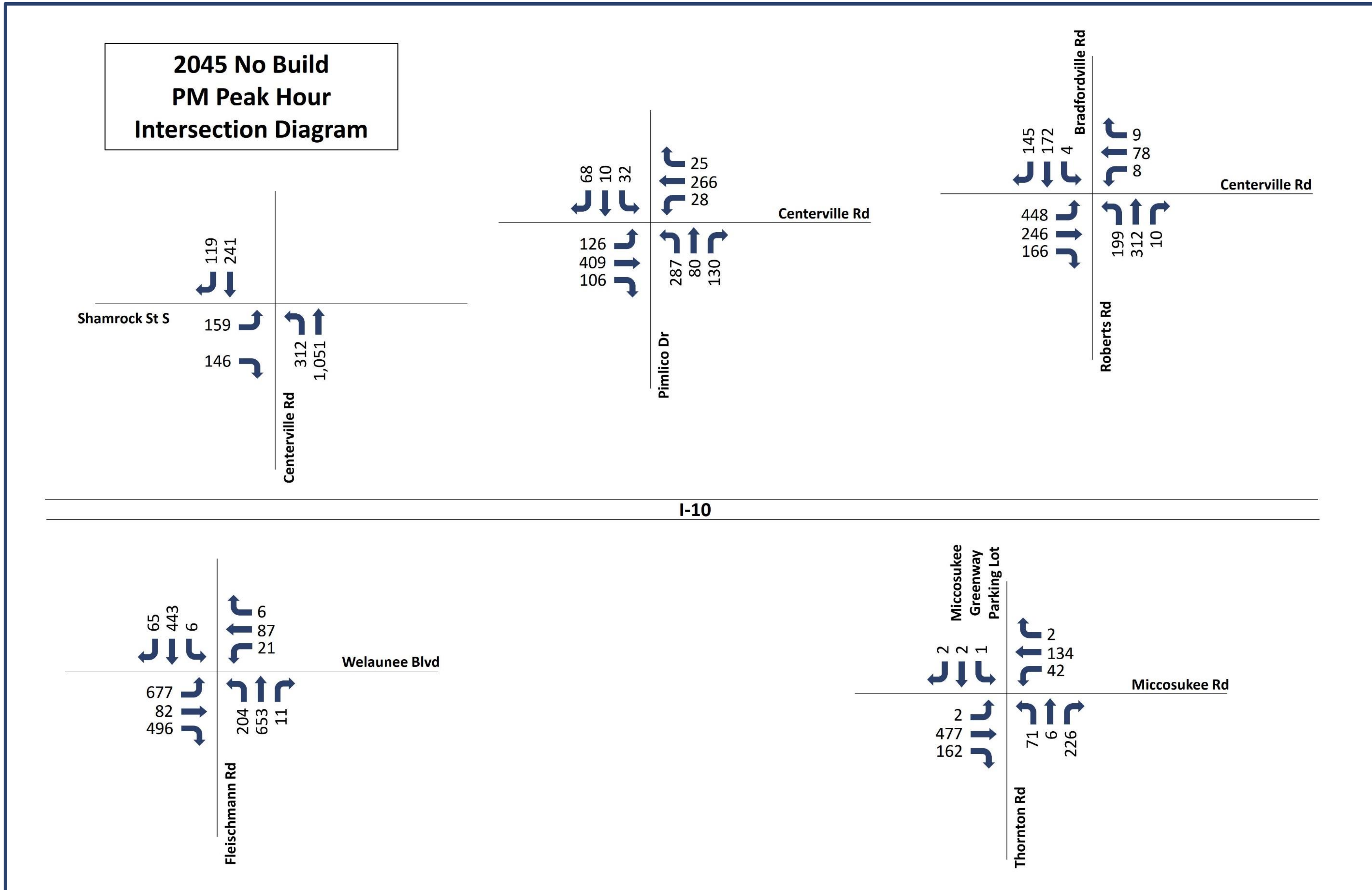

Figure 12. No Build 2045 Design Year PM Turning Movement Volumes

No Build Daily and Design Hour Segment Analysis

Segments within the Northeast Gateway: Welaunee Boulevard study area were analyzed for the Future No Build scenario using the LOS service volumes provided in the *2020 FDOT Q/LOS Handbook*. The segment analysis for the study area roadways was performed for both the two-way AADT and for the directional design hour volume (DDHV) conditions.

The results of the segment analysis are included in **Table 19** and **Table 20** for the AADT and DDHV, respectively. In the tables, each roadway segment volume is presented with classification information and the maximum service volume (MSV) for that segment to perform at LOS D. LOS D is the FDOT standard for roadways in an urban area. MSV adjustments for non-state facilities are also indicated. Overall, the segment analysis found that the study area roadways are expected to be over capacity under the No Build conditions by Design Year 2045 including Centerville Road, Miccosukee Road, and Roberts Road.

Table 19. Future No Build AADT Roadway Capacity Analysis

Roadway	Limits	# Lanes	Speed Limit	Facility Type	Adjusted MSV*	2025 AADT (veh/day)	2025 v/c	2045 AADT (veh/day)	2045 v/c
Centerville Road	From Capital Circle NE to Welaunee Boulevard	4D	45	Class I	35,820	25,500	0.71	30,500	0.85
	From Welaunee Boulevard to Stonegate Drive	2U	35	Class II	13,320	16,500	1.24	18,000	1.35
	From Stonegate Drive to Pimlico Drive	2U	45	Class I	15,930	13,000	0.82	16,000	1.00
	From Pimlico Drive to Proctor Road	2U	45	Class I	14,580	7,300	0.50	9,100	0.62
Welaunee Boulevard	From Centerville Road to Fleischmann Road	4D	45	Class I	35,820	14,000	0.39	28,500	0.80
Fleischmann Road	From Miccosukee Road to Centerville Road	2U	35	Class II	13,320	5,100	0.38	9,600	0.72
Miccosukee Road	From Capital Circle NE to Thornton Road	2U	35	Class II	13,320	11,000	0.83	21,000	1.58
Bradfordville Road	From Velda Dairy Road to Centerville Road	2U	45	Class I	14,580	8,700	0.60	13,000	0.89
Roberts Road	From Centerville Road to Proctor Road	2U	45	Class I	14,580	6,900	0.47	15,000	1.03

*Calculations for Adjusted MSV shown in Table 3

Table 20. Future No Build DDHV Roadway Capacity Analysis

Roadway	Limits	# Lanes	Speed Limit	Facility Type	Adjusted MSV*	2025 DDHV (veh/day)	2025 v/c	2045 DDHV (veh/day)	2045 v/c
Centerville Road	From Capital Circle NE to Welaunee Boulevard	4D	45	Class I	1,800	1,600	0.89	1,900	1.06
	From Welaunee Boulevard to Stonegate Drive	2U	35	Class II	675	1,200	1.78	1,300	1.93
	From Stonegate Drive to Pimlico Drive	2U	45	Class I	792	850	1.07	1,000	1.26
	From Pimlico Drive to Proctor Road	2U	45	Class I	720	400	0.56	450	0.63
Welaunee Boulevard	From Centerville Road to Fleischmann Road	4D	45	Class I	1,800	650	0.36	1,300	0.72
Fleischmann Road	From Miccosukee Road to Centerville Road	2U	35	Class II	675	300	0.44	550	0.81
Miccosukee Road	From Capital Circle NE to Thornton Road	2U	35	Class II	675	700	1.04	1,300	1.93
Bradfordville Road	From Velda Dairy Road to Centerville Road	2U	45	Class I	720	450	0.63	700	0.97
Roberts Road	From Centerville Road to Proctor Road	2U	45	Class I	720	350	0.49	800	1.11

*Calculations for Adjusted MSV shown in Table 4

No Build Peak Hour Intersection Analysis

As with the existing condition traffic analysis, the study area intersections within the Northeast Gateway: Welaunee Boulevard PD&E study area were analyzed using Synchro software. Projected build year and design year volumes were input to evaluate the Future No Build intersection operations. Future No Build traffic operations were analyzed for the weekday AM and PM peak hour conditions. TMCs, peak hour factors, and percent heavy vehicles obtained during data collection were used as a basis for the analysis and were grown to the future intersection turning movements shown in previous figures. The results of the Future No Build intersection operational analysis are included in **Table 21** and **Table 22**. For TWSC intersections, the delay presented is for the stop-controlled approach on which the delay was highest.

Table 21. Future No Build Intersection Analysis – 2025 Opening Year

Intersection	Traffic Control	Weekday			
		AM Peak Hour		PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)
Centerville Road at Shamrock Street South	Traffic Signal	C	31.4	B	10.1
Welaunee Boulevard at Fleischmann Road	Traffic Signal	F	87.8	D	36.1
Miccosukee Road at Thornton Road	TWSC	B	14.8	B	11.4
Centerville Road and Bradfordville Road and Roberts Road	Traffic Signal	B	17.5	B	14.0
Centerville Road at Pimlico Drive	Traffic Signal	D	39.9	C	22.4

Table 22. Future No Build Intersection Analysis – 2045 Design Year

Intersection	Traffic Control	Weekday			
		AM Peak Hour		PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)
Centerville Road at Shamrock Street South	Traffic Signal	F	81.3	B	19.3
Welaunee Boulevard at Fleischmann Road	Traffic Signal	F	263.4	F	86.6
Miccosukee Road at Thornton Road	TWSC	F	354.0	E	42.1
Centerville Road and Bradfordville Road and Roberts Road	Traffic Signal	E	77.8	C	29.7
Centerville Road at Pimlico Drive	Traffic Signal	F	113.6	C	28.6

Build Future Traffic Analysis

For the Build scenario, the effects of the proposed Northeast Gateway: Welaunee Boulevard from Fleischmann Road to Roberts Road and Shamrock Street South on the surrounding roadway network were considered. It was assumed that the Northeast Gateway would be classified as a two-lane, undivided arterial with turn bays, with a posted speed of 45 mph. Where the Northeast Gateway ties-in to the existing intersection of Centerville Road and Shamrock Street South, the roadway will widen to four-lanes to accommodate a two-lane roundabout that would control traffic. Where the Northeast Gateway ties-in to the existing intersection of Bradfordville Road, Centerville Road, and Roberts Road, a single-lane roundabout would control traffic. Where Shamrock Street Extension intersects with Welaunee Boulevard, a single-lane roundabout would control traffic.

The addition of the Northeast Gateway is intended to reduce the amount vehicle traffic on Centerville Road and Miccosukee Road—two scenic and protected canopy roads—and Thomasville Road by redistributing daily traffic onto Welaunee Boulevard.

Build Growth Rates

For the Build Scenario, growth rates were developed for each studied segment through model volume comparison for Build Scenario to the No Build Scenario of the corresponding year. The Future Build Scenario growth rate associated with the studied segment was then applied to the respective No Build Scenario turning movement directional volumes.

Vehicle Traffic Shift

The primary intended purpose of the Northeast Gateway is to provide an alternate route for vehicle traffic traveling along the City of Tallahassee's protected canopy roads. It is expected that a portion of vehicle traffic that currently travels along Centerville Road, Miccosukee Road, and Thomasville Road will utilize the Northeast Gateway to travel between areas north and south of I-10. In the determination of Future Build Scenario traffic volumes, it is assumed that a portion of the AADT on each Centerville Road, Miccosukee Road, and Thomasville Road would use the Northeast Gateway in lieu of the existing roadways. While the exact number of vehicles making the north to south connection is not known, peak hour turning movement percentages and modeling segment weighted percentages were used to approximate the number of vehicles that might use the Northeast Gateway instead of the local roads. The approximate percentage shifts in traffic are shown in **Figure 13** and **Figure 14** depict the traffic volume shift on the Build roadway network when compared to the No Build roadway network.

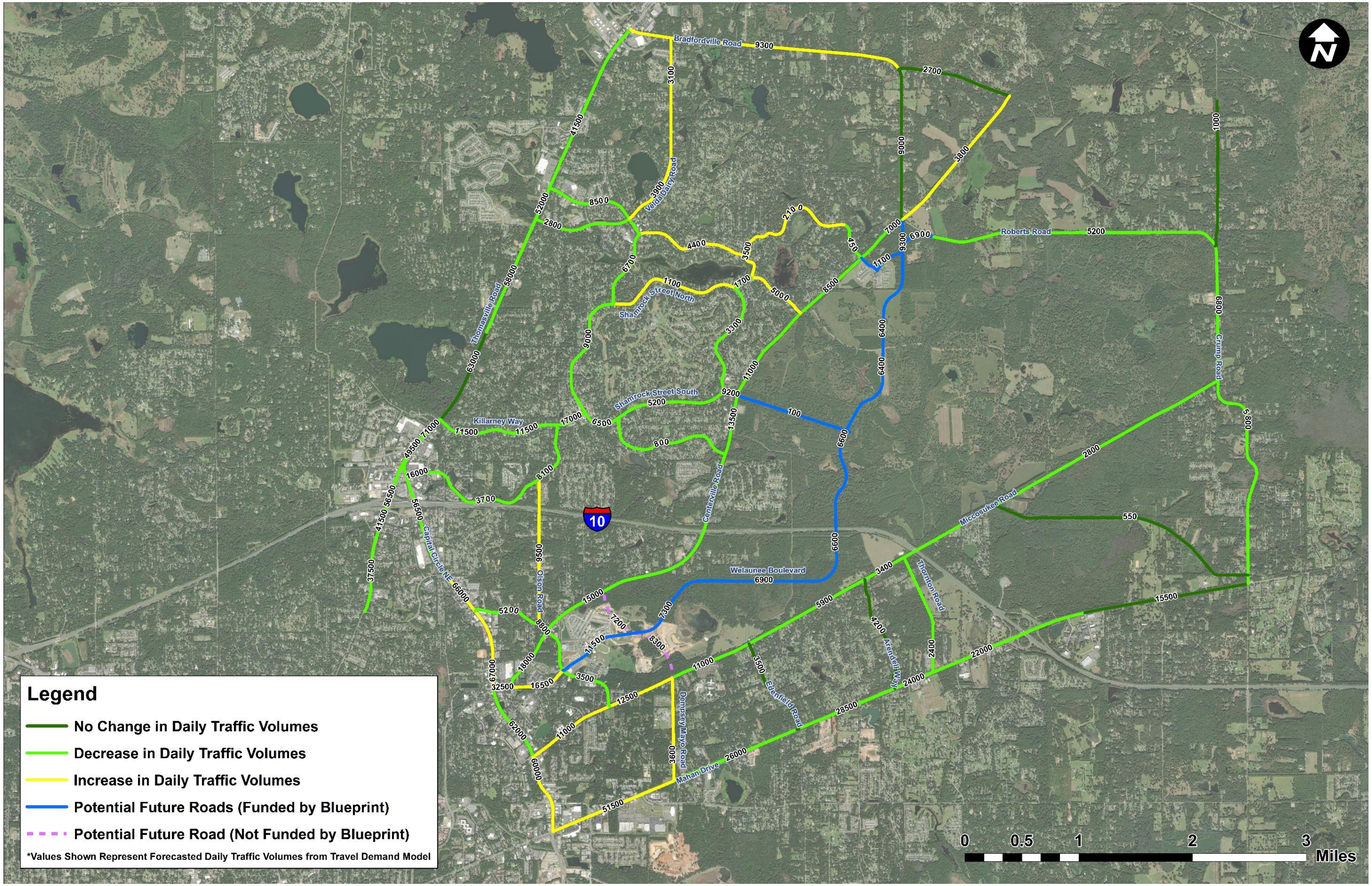

Figure 13. Build 2025 Opening Year Study Area Vehicle Traffic Shift

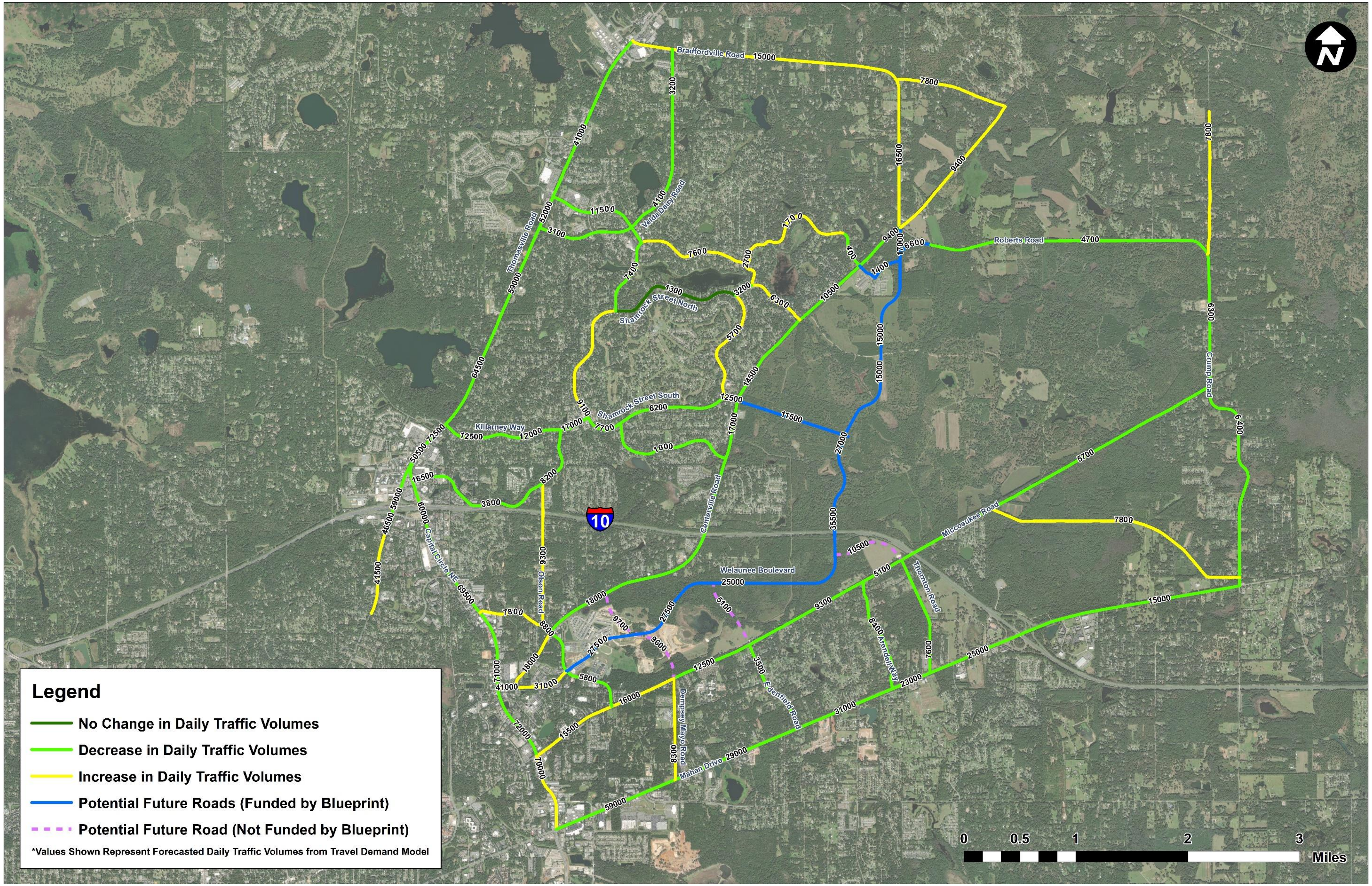

Figure 14. Build 2045 Design Year Study Area Vehicle Traffic Shift

Build Projected Intersection Turning Movement Volumes

To determine the turning movement volumes for future year scenarios 2025 and 2045, the determined Build scenario growth rates per studied approach segment were applied to the No Build scenario of the respective year. For the project segments at the studied intersections with limited data, including Welaunee Boulevard at Fleischmann Road, Shamrock Street Extension at Centerville Road, and Welaunee Boulevard at Roberts Road, the projected Build volumes at each intersection for the future year were weighed against and distributed accordingly to the model. The Future Build intersection turning movement volumes are included in **Figure 15** through **Figure 18**.

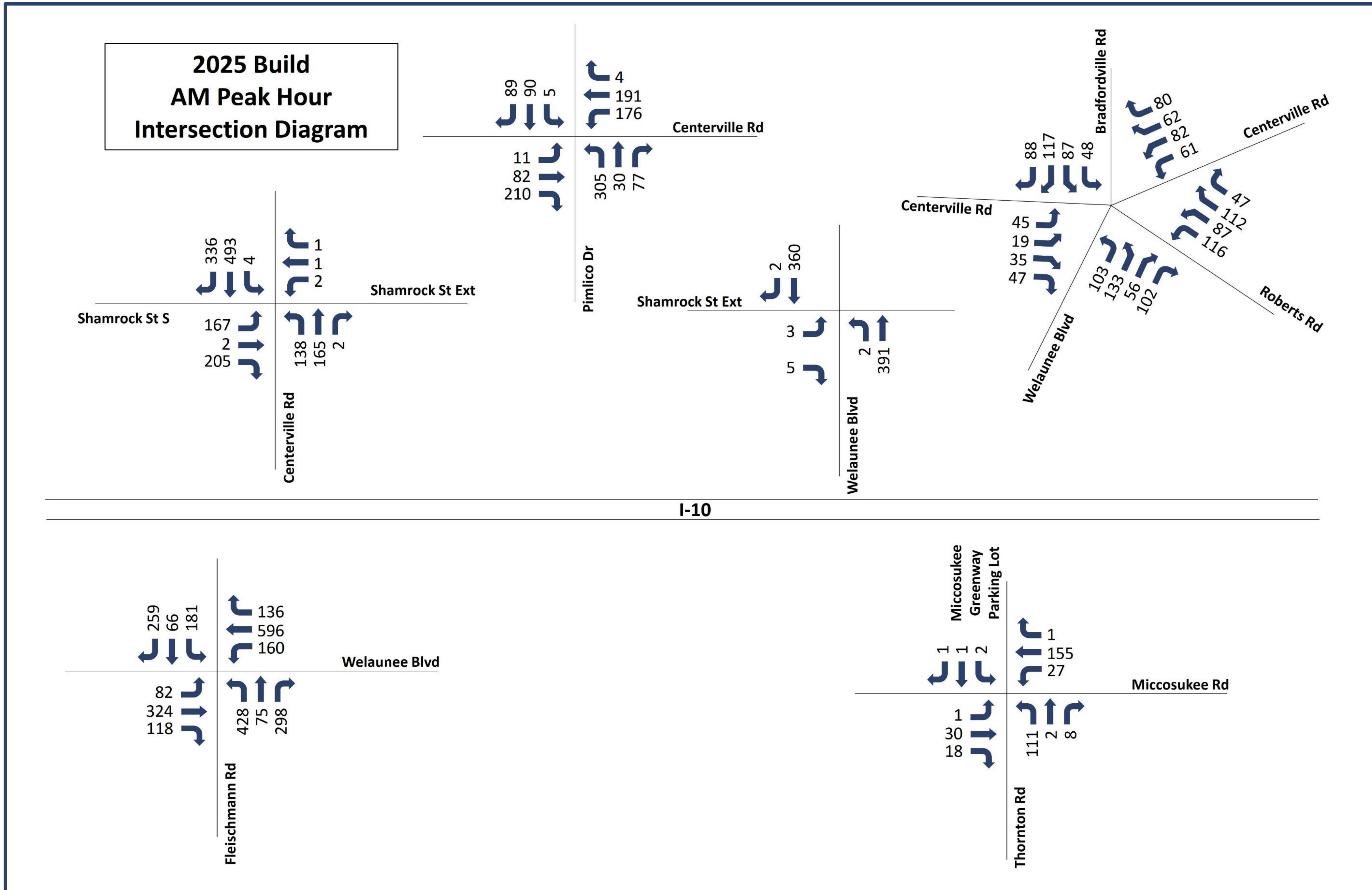

Figure 15. Build 2025 Opening Year AM Turning Movement Volumes

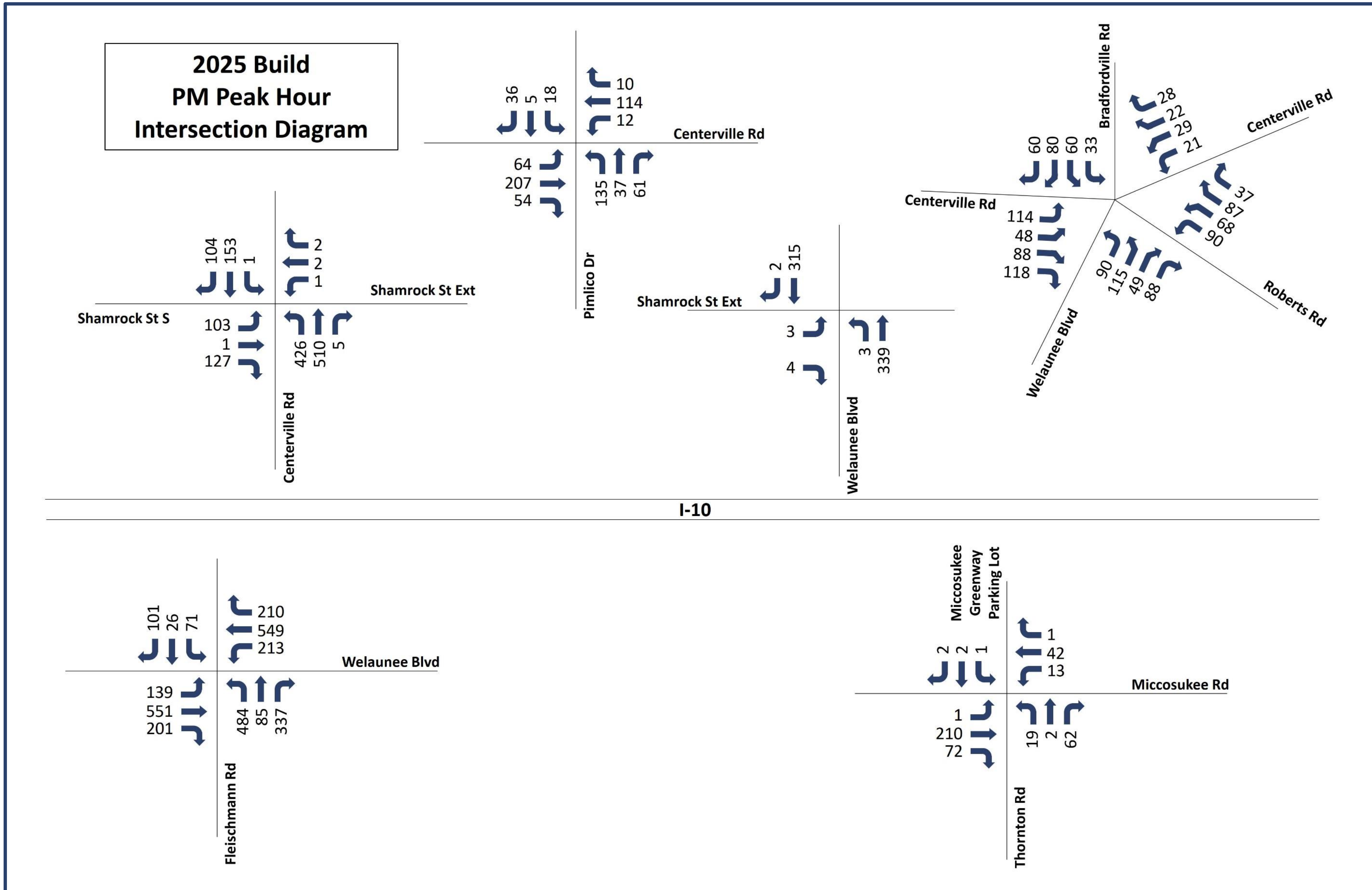

Figure 16. Build 2025 Opening Year PM Turning Movement Volumes

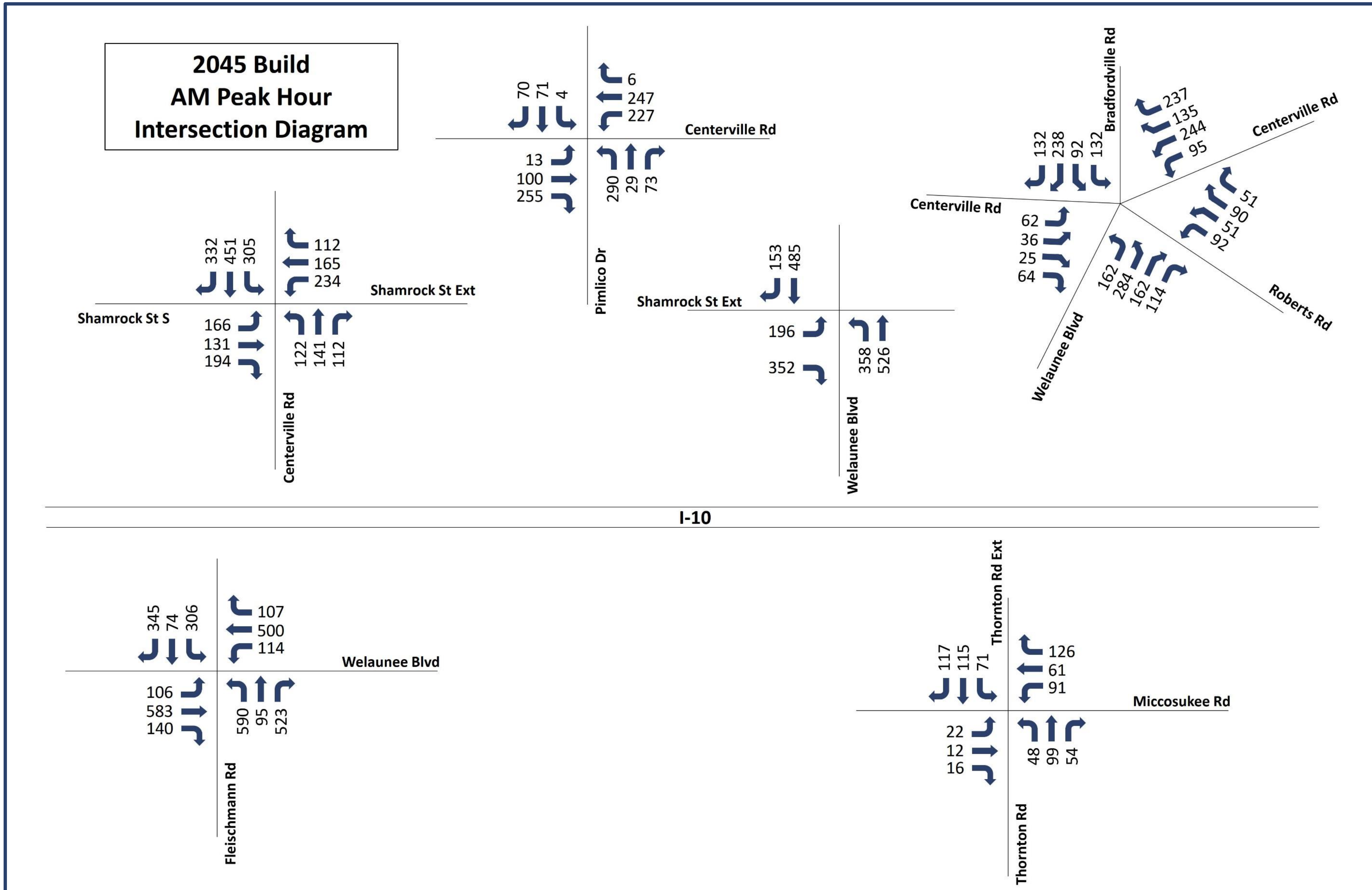

Figure 17. Build 2045 Design Year AM Turning Movement Volumes

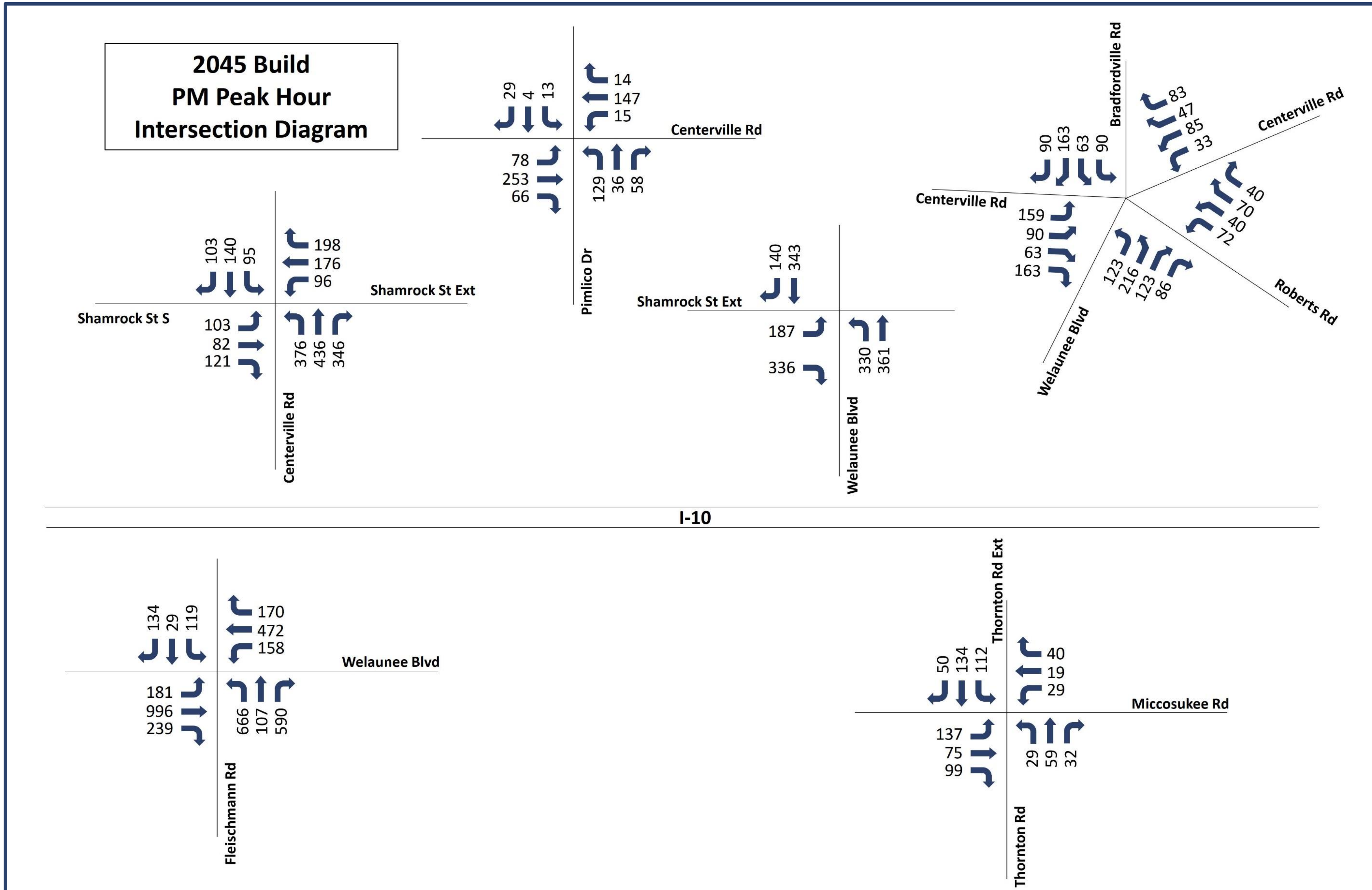

Figure 18. Build 2045 Design Year PM Turning Movement Volumes

Build Daily and Design Hour Segment Analysis

Segments within the Northeast Gateway study area were analyzed for the Future Build scenario using the LOS service volumes provided in the *2020 FDOT Q/LOS Handbook*. The segment analyses for the study area roadways were performed both for the two-way AADT and for the DDHV conditions.

The results of the segment analysis are included in **Table 23** and **Table 24** for the AADT and DDHV, respectively. In the tables, each roadway segment volume is presented with classification information and the MSV for that segment to perform at LOS D. LOS D is the FDOT standard for roadways in an urban area. MSV adjustments for non-state facilities are also indicated. Overall, the segment analysis found that the study area roadways are expected to be over capacity under the Build conditions by Design Year 2045 including Centerville Road, Miccosukee Road, and Bradfordville Road. Although similar segments are over capacity in the No Build and Build conditions, relief is shown along the key roadways.

Table 23. Future Build AADT Roadway Capacity Analysis

Roadway	Limits	# Lanes	Speed Limit	Facility Type	Adjusted MSV*	2025 AADT (veh/day)	2025 v/c	2045 AADT (veh/day)	2045 v/c
Centerville Road	From Capital Circle NE to Welaunee Boulevard	4D	45	Class I	35,820	26,000	0.73	33,000	0.92
	From Welaunee Boulevard to Stonegate Drive	2U	35	Class II	13,320	15,000	1.13	19,000	1.43
	From Stonegate Drive to Pimlico Drive	2U	45	Class I	15,930	10,500	0.66	13,000	0.82
	From Pimlico Drive to Proctor Road	2U	45	Class I	14,580	6,300	0.43	14,500	0.99
Welaunee Boulevard	From Centerville Road to Fleischmann Road	4D	45	Class I	35,820	17,000	0.47	32,000	0.89
	From Fleischmann Road to Edenfield Road	4D	35	Class II	29,160	9,400	0.32	27,500	0.94
	Edenfield Road to Shamrock Street	2U	45	Class I	15,930	6,700	0.42	29,000	1.82
	From Shamrock Street to Pimlico Drive	2U	45	Class I	15,930	6,400	0.40	15,000	0.94
	From Pimlico Drive to Bradfordville Road	2U	45	Class I	14,580	9,300	0.64	17,000	1.17
Shamrock Street Extension	From Centerville Road to Welaunee Boulevard	2U	45	Class I	15,930	100	0.01	11,500	0.72
Fleischmann Road	From Miccosukee Road to Centerville Road	2U	35	Class II	13,320	5,000	0.38	8,300	0.62
Miccosukee Road	From Capital Circle NE to Thornton Road	2U	35	Class II	13,320	11,000	0.83	16,000	1.20
Bradfordville Road	From Velda Dairy Road to Centerville Road	2U	45	Class I	14,580	8,700	0.60	15,500	1.06
Roberts Road	From Centerville Road to Proctor Road	2U	45	Class I	14,580	6,100	0.42	5,600	0.38

*Calculations for Adjusted MSV shown in Table 3

Table 24. Future Build DDHV Roadway Capacity Analysis

Roadway	Limits	# Lanes	Speed Limit	Facility Type	Adjusted MSV*	2025 DDHV (veh/day)	2025 v/c	2045 DDHV (veh/day)	2045 v/c
Centerville Road	From Capital Circle NE to Welaunee Boulevard	4D	45	Class I	1,800	1,600	0.89	2,100	1.17
	From Welaunee Boulevard to Stonegate Drive	2U	35	Class II	675	1,100	1.63	1,300	1.93
	From Stonegate Drive to Pimlico Drive	2U	45	Class I	792	700	0.88	850	1.07
	From Pimlico Drive to Proctor Road	2U	45	Class I	720	300	0.42	750	1.04
Welaunee Boulevard	From Centerville Road to Fleischmann Road	4D	45	Class I	1,800	750	0.42	1,500	0.83
	From Fleischmann Road to Edenfield Road	4D	35	Class II	1,467	500	0.34	1,400	0.95
	Edenfield Road to Shamrock Street	2U	45	Class I	792	350	0.44	1,500	1.89
	From Shamrock Street to Pimlico Drive	2U	45	Class I	792	350	0.44	800	1.01
	From Pimlico Drive to Bradfordville Road	2U	45	Class I	720	500	0.69	850	1.18
Shamrock Street Extension	From Centerville Road to Welaunee Boulevard	2U	45	Class I	792	10	0.01	600	0.76
Fleischmann Road	From Miccosukee Road to Centerville Road	2U	35	Class II	675	300	0.44	500	0.74
Miccosukee Road	From Capital Circle NE to Thornton Road	2U	35	Class II	675	700	1.04	1,000	1.48
Bradfordville Road	From Velda Dairy Road to Centerville Road	2U	45	Class I	720	450	0.63	800	1.11
Roberts Road	From Centerville Road to Proctor Road	2U	45	Class I	720	300	0.42	300	0.42

*Calculations for Adjusted MSV shown in Table 4

Build Peak Hour Intersection Analysis

As with the existing condition traffic analyses, the study area intersections within the Northeast Gateway PD&E Study area were analyzed using Synchro and SIDRA software. Projected Opening Year (2025) and Design Year (2045) volumes were input to evaluate the Future Build intersection operations. Future Build traffic operations were analyzed for the weekday AM and PM peak hour conditions. TMCs, peak hour factors, and percent heavy vehicles obtained during data collection were used as a basis for the analyses and were grown to the future intersection turning movements shown in previous figures. The results of the Future Build intersection operations analyses are included in **Table 25** and **Table 26**. For TWSC intersections, the delay presented is for the stop-controlled approach on which the delay was highest.

Table 25. Future Build Intersection Analysis – 2025 Opening Year

Intersection	Traffic Control	Weekday			
		AM Peak Hour		PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)
Centerville Road at Shamrock Street South	Roundabout	B	11.0	B	13.7
Welaunee Boulevard at Fleischmann Road	Traffic Signal	D	38.8	D	42.0
Miccosukee Road at Thornton Road	TWSC	B	11.5	B	10.7
Welaunee Boulevard at Centerville Road and Bradfordville Road and Roberts Road	Roundabout	B	10.2	A	8.3
Centerville Road at Pimlico Drive	Traffic Signal	C	24.5	B	18.0
Welaunee Boulevard at Shamrock Street Extension	Roundabout	A	5.3	A	5.0

Table 26. Future Build Intersection Analysis – 2045 Design Year

Intersection	Traffic Control	Weekday			
		AM Peak Hour		PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)
Centerville Road at Shamrock Street South	Roundabout	D	26.4	C	24.2
Welaunee Boulevard at Fleischmann Road	Traffic Signal	E	79.2	F	99.5
Miccosukee Road at Thornton Road	TWSC	C	19.5	C	21.2
Welaunee Boulevard at Centerville Road and Bradfordville Road and Roberts Road	Roundabout	F	81.0	C	16.5
Centerville Road at Pimlico Drive	Traffic Signal	C	24.3	B	17.5
Welaunee Boulevard at Shamrock Street Extension	Roundabout	C	23.2	B	12.8

Signalized and roundabout analyses were performed at the tie-in existing intersections of Centerville Road and Shamrock Street South and Bradfordville Road, Centerville Road, and Roberts Road. The results were presented to the Blueprint Intergovernmental Agency Board at their April 8, 2021 meeting. It was at this meeting that the board directed staff to proceed with the roundabout control type at these intersections.

Intersections for the study area roadways were analyzed using Synchro and SIDRA software to evaluate future traffic operations for the Opening Year (2025) and Design Year (2045). Traffic operations were analyzed for the weekday AM and PM peak hour conditions. Turning movement counts, peak hour factors, and percent heavy vehicles obtained during data collection were used as a basis for the analysis and were grown to the future intersection turning movements shown in the *Project Traffic Analysis Report*. For two-way stop-controlled (TWSC) intersections, the delay presented is for the stop-controlled approach on which the delay was highest.

Overall, all intersections are anticipated to operate acceptably under the Opening Build conditions. In Design Year 2045, the signalized intersection Welaunee Boulevard at Fleischmann Road is expected to operate at LOS E and F with a 79.2 second and 99.5 second delay for a vehicle during the AM and PM Peak Hour respectively. The single-lane 5-leg roundabout intersection of Welaunee Boulevard at Centerville Road and Bradfordville Road and Roberts Road is expected to operate at a LOS F with an 81.0 second delay and a v/c ratio of 1.3 for a vehicle during the AM Peak Hour.

SUMMARY OF ANALYSIS RESULTS

The findings of the analyses for the Northeast Gateway PTAR indicate that the addition of the Northeast Gateway will not adversely impact traffic operations or roadway capacities within the area. **Table 27** and **Table 28** show the roadway benefit and the relief it provides to the studied intersections during the AM and PM peak hours by comparing the seconds of delay during the Build scenario to the No Build scenario. Majority of the intersections are anticipated to experience less delay in the Build scenario. The few cases in which delay was increased, it was by a range of 3.2 to 12.9 seconds while the delay decrease ranged from 0.3 to 334.5 seconds.

Table 29 and **Table 30** show the roadway benefit and the relief it provides to the studied roadway segments by comparing the v/c ratio of the segment’s AADT and DDHV during the Build scenario to the No Build Scenario.

In summary, it is anticipated that the Northeast Gateway will reduce traffic on the canopy roads and improve traffic operations at study area intersections.

Table 27. Intersection Analysis Summary – AM Peak Hour

Intersection	AM Peak Hour						
	Existing	Opening			Design		
	Delay (s)	No Build Delay (s)	Build Delay (s)	No Build vs Build Deviation (s)	No Build Delay (s)	Build Delay (s)	No Build vs Build Deviation (s)
Centerville Road at Shamrock Street South	273.5	31.4	11.0	-20.4	81.3	26.4	-54.9
Welaunee Boulevard at Fleischmann Road	84.0	87.8	38.8	-49.0	263.4	79.2	-184.2
Miccosukee Road at Thornton Road	14.5	14.8	11.5	-3.3	354.0	19.5	-334.5
Centerville Road at Bradfordville Road	18.4	17.5	10.2	-7.3	77.8	81.0	+3.2
Centerville Road at Pimlico Drive	39.5	39.9	24.5	-15.4	113.6	24.3	-89.3
Welaunee Boulevard at Shamrock Street Extension	--	--	5.3	--	--	23.2	--

Table 28. Intersection Analysis Summary – PM Peak Hour

Intersection	PM Peak Hour						
	Existing	Opening			Design		
	Delay (s)	No Build Delay (s)	Build Delay (s)	No Build vs Build Deviation (s)	No Build Delay (s)	Build Delay (s)	No Build vs Build Deviation (s)
Centerville Road at Shamrock Street South	137.5	10.1	13.7	+3.6	19.3	24.2	+4.9
Welaunee Boulevard at Fleischmann Road	34.6	36.1	42.0	+5.9	86.6	99.5	+12.9
Miccosukee Road at Thornton Road	11.2	11.4	10.7	-0.7	42.1	21.2	-20.9
Centerville Road at Bradfordville Road	14.0	14.0	8.3	-5.7	29.7	16.5	-13.2
Centerville Road at Pimlico Drive	20.3	22.4	18.0	-4.4	28.6	17.5	-11.1
Welaunee Boulevard at Shamrock Street Extension	--	--	5.0	--	--	12.8	--

Table 29. Segment Analysis Summary – AADT Roadway Capacity

Roadway	Limits	Existing	Opening			Design		
			No Build (v/c)	Build (v/c)	No Build vs Build Deviation (v/c)	No Build (v/c)	Build (v/c)	No Build vs Build Deviation (v/c)
Centerville Road	From Capital Circle NE to Welaunee Boulevard	0.60	0.71	0.73	+0.02	0.85	0.92	+0.07
	From Welaunee Boulevard to Stonegate Drive	1.09	1.24	1.13	-0.11	1.35	1.43	+0.08
	From Stonegate Drive to Pimlico Drive	0.75	0.82	0.66	-0.16	1.00	0.82	-0.18
	From Pimlico Drive to Proctor Road	0.45	0.50	0.43	-0.07	0.62	0.99	+0.37
Welaunee Boulevard	From Centerville Road to Fleischmann Road	0.25	0.39	0.47	+0.08	0.80	0.89	+0.09
	From Fleischmann Road to Edenfield Road	--	--	0.32	--	--	0.94	--
	Edenfield Road to Shamrock Street	--	--	0.42	--	--	1.82	--
	From Shamrock Street to Pimlico Drive	--	--	0.40	--	--	0.94	--
	From Pimlico Drive to Bradfordville Road	--	--	0.64	--	--	1.17	--
Shamrock Street Extension	From Centerville Road to Welaunee Boulevard	--	--	0.01	--	--	0.72	--
Fleischmann Road	From Miccosukee Road to Centerville Road	0.37	0.38	0.38	0.00	0.72	0.62	-0.10
Miccosukee Road	From Capital Circle NE to Thornton Road	0.79	0.83	0.83	0.00	1.58	1.20	-0.38
Bradfordville Road	From Velda Dairy Road to Centerville Road	0.45	0.60	0.60	0.00	0.89	1.06	+0.17
Roberts Road	From Centerville Road to Proctor Road	0.37	0.47	0.42	-0.05	1.03	0.38	-0.65

Table 30. Segment Analysis Summary – DDHV Roadway Capacity

Roadway	Limits	Existing	Opening			Design		
			No Build (v/c)	Build (v/c)	No Build vs Build Deviation (v/c)	No Build (v/c)	Build (v/c)	No Build vs Build Deviation (v/c)
Centerville Road	From Capital Circle NE to Welaunee Boulevard	0.89	0.89	0.89	0.00	1.06	1.17	+0.11
	From Welaunee Boulevard to Stonegate Drive	1.93	1.78	1.63	-0.15	1.93	1.93	0.00
	From Stonegate Drive to Pimlico Drive	1.26	1.07	0.88	-0.19	1.26	1.07	-0.19
	From Pimlico Drive to Proctor Road	0.83	0.56	0.42	-0.14	0.63	1.04	+0.41
Welaunee Boulevard	From Centerville Road to Fleischmann Road	0.28	0.36	0.42	+0.06	0.72	0.83	+0.11
	From Fleischmann Road to Edenfield Road	--	--	0.34	--	--	0.95	--
	Edenfield Road to Shamrock Street	--	--	0.44	--	--	1.89	--
	From Shamrock Street to Pimlico Drive	--	--	0.44	--	--	1.01	--
	From Pimlico Drive to Bradfordville Road	--	--	0.69	--	--	1.18	--
Shamrock Street Extension	From Centerville Road to Welaunee Boulevard	--	--	0.01	--	--	0.76	--
Fleischmann Road	From Miccosukee Road to Centerville Road	1.11	0.44	0.44	0.00	0.81	0.74	-0.07
Miccosukee Road	From Capital Circle NE to Thornton Road	1.19	1.04	1.04	0.00	1.93	1.48	-0.45
Bradfordville Road	From Velda Dairy Road to Centerville Road	0.63	0.63	0.63	0.00	0.97	1.11	+0.14
Roberts Road	From Centerville Road to Proctor Road	0.42	0.49	0.42	-0.07	1.11	0.42	-0.69

APPENDIX A: RAW TRAFFIC DATA

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

INTERSECTION OF SR 261 Capital Circle NE & Centerville Road

COUNT DATE: 11-Dec-18 FILE NAME: CapCircle&Centerville.xls

	Capital Circle NE Southbound				Centerville Rd Westbound				Capital Circle NE Northbound				Centerville Rd Eastbound				
Time	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		TOTAL
7:00	40	409	114		127	146	13		13	193	29		52	35	20		1191
7:15	40	409	101		145	140	14		14	266	44		81	50	12		1316
7:30	60	516	118		144	190	11		31	323	44		90	67	27		1621
7:45	56	458	169		155	187	35		25	341	65		103	108	26		1728
TOTAL	196	1792	502		571	663	73		83	1123	182		326	260	85		5856
8:00	45	444	132		132	192	34		23	323	46		94	93	23		1581
8:15	54	477	165		124	186	19		23	319	38		109	76	30		1620
8:30	38	434	191		102	163	34		18	301	43		90	48	37		1499
8:45	43	370	140		97	129	36		27	323	41		103	70	39		1418
TOTAL	180	1725	628		455	670	123		91	1266	168		396	287	129		6118
9:00	41	316	109		95	121	29		25	265	44		111	65	35		1256
9:15	25	307	117		64	84	27		20	293	36		104	58	50		1185
9:30	36	274	100		90	80	31		22	292	34		115	60	41		1175
9:45	51	317	92		100	68	34		24	281	29		103	50	40		1189
TOTAL	153	1214	418		349	353	121		91	1131	143		433	233	166		4805
10:00	33	244	134		37	67	36		20	267	39		136	57	45		1115
10:15	46	289	91		58	63	38		18	218	37		105	74	51		1088
10:30	48	307	106		60	68	33		27	277	37		127	61	42		1193
10:45	37	314	118		71	71	36		35	270	40		143	46	67		1248
TOTAL	164	1154	449		226	269	143		100	1032	153		511	238	205		4644
11:00	34	312	137		67	67	34		19	245	32		113	50	45		1155
11:15	25	314	97		62	71	49		20	337	34		188	61	54		1312
11:30	30	290	101		82	81	43		19	276	35		182	79	56		1274
11:45	49	348	152		74	69	55		33	320	36		171	72	43		1422
TOTAL	138	1264	487		285	288	181		91	1178	137		654	262	198		5163
12:00	29	296	126		105	62	76		30	317	34		181	76	62		1394
12:15	52	360	148		111	66	45		29	319	48		166	72	50		1466
12:30	45	347	119		75	74	33		28	315	45		160	88	47		1376
12:45	63	315	159		83	81	35		30	300	47		184	96	48		1441
TOTAL	189	1318	552		374	283	189		117	1251	174		691	332	207		5677

13:00	53	373	145		77	73	43		22	325	45		177	71	42		1446
13:15	42	394	161		56	71	31		27	341	40		160	76	50		1449
13:30	52	336	125		84	74	34		22	286	42		195	91	56		1397
13:45	61	374	114		76	68	34		24	362	51		131	71	41		1407
TOTAL	208	1477	545		293	286	142		95	1314	178		663	309	189		5699
14:00	38	316	151		68	73	51		32	338	68		213	104	39		1491
14:15	44	310	104		78	84	44		21	319	50		147	84	81		1366
14:30	39	310	133		68	64	35		30	374	59		187	85	51		1435
14:45	36	314	109		73	93	55		31	359	49		163	95	58		1435
TOTAL	157	1250	497		287	314	185		114	1390	226		710	368	229		5727
15:00	43	331	122		97	94	48		27	340	51		178	108	43		1482
15:15	36	313	136		70	107	48		32	357	42		195	106	39		1481
15:30	35	319	117		86	93	56		33	370	50		182	90	51		1482
15:45	25	286	102		66	75	42		29	390	62		205	91	46		1419
TOTAL	139	1249	477		319	369	194		121	1457	205		760	395	179		5864
16:00	46	326	134		82	102	42		25	382	49		216	118	44		1566
16:15	28	275	136		76	83	52		23	446	57		250	119	53		1598
16:30	30	314	107		77	85	57		25	444	82		222	127	46		1616
16:45	31	328	149		74	75	49		28	417	62		241	130	33		1617
TOTAL	135	1243	526		309	345	200		101	1689	250		929	494	176		6397
17:00	36	387	157		81	99	59		22	448	73		248	144	41		1795
17:15	36	399	134		80	111	58		28	425	97		258	134	33		1793
17:30	31	330	132		100	97	54		23	434	90		240	161	42		1734
17:45	32	323	103		70	89	34		22	390	98		250	160	39		1610
TOTAL	135	1439	526		331	396	205		95	1697	358		996	599	155		6932
18:00	23	280	110		73	80	32		24	388	62		179	100	31		1382
18:15	20	261	109		52	90	40		24	330	52		159	86	30		1253
18:30	17	290	84		50	63	29		14	322	44		108	74	22		1117
18:45	11	239	67		46	48	10		16	272	44		125	68	16		962
TOTAL	71	1070	370		221	281	111		78	1312	202		571	328	99		4714

PEAK HOUR DATA 7:00 TO 11:00

PEAK HR START TIME 7:30

	Capital Circle NE Southbound			Centerville Rd Westbound			Capital Circle NE Northbound			Centerville Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	215	1895	584	555	755	99	102	1306	193	396	344	106	6550
% OF APPROACH	8.0%	70.3%	21.7%	39.4%	53.6%	7.0%	6.4%	81.6%	12.1%	46.8%	40.7%	12.5%	
PEAK HR FACTOR		0.968			0.934			0.929			0.892		

PEAK HOUR DATA 11:00 TO 15:00

PEAK HR START TIME 13:15

	Capital Circle NE Southbound			Centerville Rd Westbound			Capital Circle NE Northbound			Centerville Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	193	1420	551	284	286	150	105	1327	201	699	342	186	5744
% OF APPROACH	8.9%	65.6%	25.5%	39.4%	39.7%	20.8%	6.4%	81.3%	12.3%	57.0%	27.9%	15.2%	
PEAK HR FACTOR		0.906			0.938			0.932			0.862		

PEAK HOUR DATA 15:00 TO 19:00

PEAK HR START TIME 16:45

	Capital Circle NE Southbound			Centerville Rd Westbound			Capital Circle NE Northbound			Centerville Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	134	1444	572	335	382	220	101	1724	322	987	569	149	6939
% OF APPROACH	6.2%	67.2%	26.6%	35.8%	40.8%	23.5%	4.7%	80.3%	15.0%	57.9%	33.4%	8.7%	
PEAK HR FACTOR		0.927			0.933			0.976			0.962		

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

INTERSECTION OF Welaunee Blvd & Centerville Road - Buford Blvd

COUNT DATE: 11-Dec-18 FILE NAME: Welaunee&Centerville.xls

	Centerville Rd Southbound				Welaunee Blvd Westbound				Buford Blvd Northbound				Centerville Rd Eastbound				
Time	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		TOTAL
7:00	4	12	264		2	25	4		3	9	3		28	55	16		425
7:15	7	23	272		4	35	0		6	7	7		48	64	20		493
7:30	5	32	295		12	47	1		6	10	9		61	88	12		578
7:45	13	19	252		13	110	1		10	4	11		76	130	20		659
TOTAL	29	86	1083		31	217	6		25	30	30		213	337	68		2155
8:00	14	55	226		24	123	6		8	17	15		68	95	21		672
8:15	9	22	245		13	56	6		5	9	9		57	77	17		525
8:30	6	27	274		9	51	5		11	12	7		54	53	18		527
8:45	5	20	150		15	63	9		15	1	8		61	49	22		418
TOTAL	34	124	895		61	293	26		39	39	39		240	274	78		2142
9:00	10	13	191		9	42	6		8	4	6		63	58	16		426
9:15	7	14	124		11	51	11		10	10	4		63	58	8		371
9:30	10	15	137		1	50	5		17	10	3		56	43	23		370
9:45	6	14	131		10	53	5		9	6	2		45	65	15		361
TOTAL	33	56	583		31	196	27		44	30	15		227	224	62		1528
10:00	8	16	89		3	53	7		13	18	4		62	47	14		334
10:15	8	19	101		8	46	6		10	13	8		52	62	22		355
10:30	9	7	107		12	50	8		11	15	4		66	60	21		370
10:45	12	10	99		5	49	10		12	11	2		45	62	15		332
TOTAL	37	52	396		28	198	31		46	57	18		225	231	72		1391
11:00	4	16	82		4	66	9		17	22	1		60	43	9		333
11:15	13	15	104		1	66	10		26	20	4		66	41	14		380
11:30	12	16	112		5	72	12		15	11	5		54	55	13		382
11:45	16	11	111		7	94	17		16	15	8		82	57	17		451
TOTAL	45	58	409		17	298	48		74	68	18		262	196	53		1546
12:00	18	19	103		9	134	23		28	36	7		86	48	13		524
12:15	12	24	106		7	66	17		20	19	4		102	60	13		450
12:30	18	19	114		5	63	15		18	20	7		86	75	15		455
12:45	18	24	107		7	55	8		16	16	12		89	97	15		464
TOTAL	66	86	430		28	318	63		82	91	30		363	280	56		1893

13:00	12	18	98		1	64	6		17	17	4		69	78	21		405
13:15	10	17	136		5	43	5		18	19	9		77	59	18		416
13:30	12	16	120		7	46	2		16	17	9		80	76	20		421
13:45	15	19	112		6	67	8		18	17	5		81	73	34		455
TOTAL	49	70	466		19	220	21		69	70	27		307	286	93		1697
14:00	17	14	105		5	58	5		23	23	9		123	69	19		470
14:15	11	16	109		3	50	1		19	16	7		106	68	17		423
14:30	7	14	103		2	48	10		15	25	11		121	78	17		451
14:45	12	10	115		3	72	8		26	16	7		106	85	13		473
TOTAL	47	54	432		13	228	24		83	80	34		456	300	66		1817
15:00	15	16	127		3	73	13		30	29	5		115	77	19		522
15:15	11	19	98		8	91	5		27	23	5		102	70	15		474
15:30	9	12	121		4	71	10		25	21	4		119	43	16		455
15:45	9	13	76		5	79	8		15	23	6		115	64	16		429
TOTAL	44	60	422		20	314	36		97	96	20		451	254	66		1880
16:00	10	16	111		3	59	13		18	33	7		154	69	13		506
16:15	11	19	95		2	78	20		25	20	4		146	61	14		495
16:30	13	12	109		9	73	13		25	41	13		163	94	9		574
16:45	11	12	110		1	62	13		31	33	8		196	71	13		561
TOTAL	45	59	425		15	272	59		99	127	32		659	295	49		2136
17:00	13	23	106		10	95	20		47	63	11		229	95	12		724
17:15	10	26	124		6	93	22		34	77	10		217	84	6		709
17:30	5	20	109		5	95	22		31	58	18		246	79	5		693
17:45	19	12	106		1	65	22		17	27	6		227	83	9		594
TOTAL	47	81	445		22	348	86		129	225	45		919	341	32		2720
18:00	17	10	111		0	43	9		16	22	3		147	44	5		427
18:15	12	12	97		1	50	5		13	18	5		133	29	4		379
18:30	7	13	72		0	32	5		12	14	0		104	20	9		288
18:45	7	8	68		0	8	4		9	10	2		98	22	3		239
TOTAL	43	43	348		1	133	23		50	64	10		482	115	21		1333

PEAK HOUR DATA 7:00 TO 11:00

PEAK HR START TIME: 7:30

	Centerville Rd Southbound			Welaunee Blvd Westbound			Buford Blvd Northbound			Centerville Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	41	128	1018	62	336	14	29	40	44	262	390	70	2434
% OF APPROACH	3.5%	10.8%	85.8%	15.0%	81.6%	3.4%	25.7%	35.4%	38.9%	36.3%	54.0%	9.7%	
PEAK HR FACTOR	0.894			0.673			0.706			0.799			

PEAK HOUR DATA 11:00 TO 15:00

PEAK HR START TIME: 12:00

	Centerville Rd Southbound			Welaunee Blvd Westbound			Buford Blvd Northbound			Centerville Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	66	86	430	28	318	63	82	91	30	363	280	56	1893
% OF APPROACH	11.3%	14.8%	73.9%	6.8%	77.8%	15.4%	40.4%	44.8%	14.8%	51.9%	40.1%	8.0%	
PEAK HR FACTOR	0.964			0.616			0.715			0.869			

PEAK HOUR DATA 15:00 TO 19:00

PEAK HR START TIME: 17:00

	Centerville Rd Southbound			Welaunee Blvd Westbound			Buford Blvd Northbound			Centerville Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	47	81	445	22	348	86	129	225	45	919	341	32	2720
% OF APPROACH	8.2%	14.1%	77.7%	4.8%	76.3%	18.9%	32.3%	56.4%	11.3%	71.1%	26.4%	2.5%	
PEAK HR FACTOR	0.895			0.912			0.824			0.961			

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

INTERSECTION OF Centerville Road & Shamrock Street

COUNT DATE: 11-Dec-18 FILE NAME: Centerville&Shamrock.xls

	Centerville Rd Southbound								Centerville Rd Northbound				Shamrock St Eastbound				
Time		Thru	Right						Left	Thru			Left		Right		TOTAL
7:00		127	8						7	25			9		49		225
7:15		160	26						11	30			16		30		273
7:30		185	36						20	34			11		44		330
7:45		194	45						16	68			21		56		400
TOTAL		666	115						54	157			57		179		1228
8:00		165	55						13	70			106		36		445
8:15		162	48						15	67			26		40		358
8:30		167	52						20	41			21		35		336
8:45		142	40						24	53			23		20		302
TOTAL		636	195						72	231			176		131		1441
9:00		121	45						17	44			34		30		291
9:15		90	38						17	51			32		23		251
9:30		80	13						10	33			10		19		165
9:45		63	14						20	29			10		28		164
TOTAL		354	110						64	157			86		100		871
10:00		50	12						15	31			8		20		136
10:15		42	11						16	34			8		24		135
10:30		47	13						17	31			9		23		140
10:45		49	13						16	35			14		19		146
TOTAL		188	49						64	131			39		86		557
11:00		40	14						11	49			11		11		136
11:15		65	12						17	33			11		24		162
11:30		54	13						16	30			16		22		151
11:45		51	7						20	45			13		14		150
TOTAL		210	46						64	157			51		71		599
12:00		35	13						27	42			8		21		146
12:15		46	14						21	46			14		20		161
12:30		42	17						16	60			14		28		177
12:45		51	24						25	39			3		20		162
TOTAL		174	68						89	187			39		89		646

13:00		42	18						29	44			14		34		181
13:15		58	12						11	41			18		23		163
13:30		46	16						15	44			19		30		170
13:45		50	9						20	51			11		27		168
TOTAL		196	55						75	180			62		114		682
14:00		53	16						17	57			14		15		172
14:15		40	16						28	84			23		22		213
14:30		43	18						30	77			24		29		221
14:45		67	25						26	75			24		18		235
TOTAL		203	75						101	293			85		84		841
15:00		92	39						22	86			21		24		284
15:15		62	18						36	67			30		27		240
15:30		46	9						24	85			30		26		220
15:45		57	18						20	83			36		14		228
TOTAL		257	84						102	321			117		91		972
16:00		65	52						25	94			23		18		277
16:15		57	30						38	119			23		21		288
16:30		48	19						42	119			27		27		282
16:45		43	22						48	143			30		23		309
TOTAL		213	123						153	475			103		89		1156
17:00		40	20						47	163			29		26		325
17:15		44	27						58	205			27		23		384
17:30		52	20						57	195			24		29		377
17:45		48	24						58	181			31		23		365
TOTAL		184	91						220	744			111		101		1451
18:00		44	9						42	168			24		22		309
18:15		40	15						35	94			16		13		213
18:30		21	9						22	72			32		21		177
18:45		16	11						19	74			19		14		153
TOTAL		121	44						118	408			91		70		852

PEAK HOUR DATA 7:00 TO 11:00

PEAK HR START TIME 7:45

	Centerville Rd Southbound			Centerville Rd Northbound		Shamrock St Eastbound		
	Thru	Right		Left	Thru	Left	Right	TOTAL
PEAK HR TOTALS	688	200		64	246	174	167	1539
% OF APPROACH	77.5%	22.5%		20.6%	79.4%	51.0%	49.0%	
PEAK HR FACTOR	0.929			0.923		0.600		

PEAK HOUR DATA 11:00 TO 15:00

PEAK HR START TIME 14:00

	Centerville Rd Southbound			Centerville Rd Northbound		Shamrock St Eastbound		
	Thru	Right		Left	Thru	Left	Right	TOTAL
PEAK HR TOTALS	203	75		101	293	85	84	841
% OF APPROACH	73.0%	27.0%		25.6%	74.4%	50.3%	49.7%	
PEAK HR FACTOR	0.755			0.877		0.797		

PEAK HOUR DATA 15:00 TO 19:00

PEAK HR START TIME 17:00

	Centerville Rd Southbound			Centerville Rd Northbound		Shamrock St Eastbound		
	Thru	Right		Left	Thru	Left	Right	TOTAL
PEAK HR TOTALS	184	91		220	744	111	101	1451
% OF APPROACH	66.9%	33.1%		22.8%	77.2%	52.4%	47.6%	
PEAK HR FACTOR	0.955			0.916		0.964		

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

INTERSECTION OF Welaunee Blvd & Fleischmann Road

COUNT DATE: 11-Dec-18 FILE NAME: Welaunee&Fleischmann.xls

	Welaunee Blvd Southbound				Fleischmann Rd Westbound				Welaunee Blvd Northbound				Fleischmann Rd Eastbound			
Time	Left	Thru	Right		Left	Thru	Right		Uturn	Left	Thru	Right	Left	Thru	Right	TOTAL
7:00	2	7	0		18	27	7		1	1	18	12	0	72	15	180
7:15	2	8	0		18	23	6		0	2	23	20	1	92	17	212
7:30	1	15	1		35	35	6		2	6	15	43	0	139	26	324
7:45	3	16	2		83	75	3		1	5	13	71	1	139	39	451
TOTAL	8	46	3		154	160	22		4	14	69	146	2	442	97	1167
8:00	1	5	3		110	82	5		4	5	15	51	1	155	55	492
8:15	2	6	0		40	56	6		4	8	17	24	1	97	42	303
8:30	0	12	0		33	48	2		4	6	7	18	1	67	33	231
8:45	1	10	0		51	39	1		5	5	7	22	1	64	29	235
TOTAL	4	33	3		234	225	14		17	24	46	115	4	383	159	1261
9:00	0	10	1		27	34	1		5	5	9	25	1	51	18	187
9:15	0	9	0		22	41	4		1	5	18	22	1	42	16	181
9:30	1	10	1		25	26	0		2	7	10	19	0	42	10	153
9:45	4	7	0		27	37	2		5	5	8	31	0	42	10	178
TOTAL	5	36	2		101	138	7		13	22	45	97	2	177	54	699
10:00	5	12	0		25	33	2		2	6	18	12	1	35	6	157
10:15	5	11	0		23	25	0		2	6	10	30	0	44	7	163
10:30	1	10	1		24	37	0		2	3	8	20	0	25	10	141
10:45	2	8	0		25	44	4		2	4	10	22	0	40	8	169
TOTAL	13	41	1		97	139	6		8	19	46	84	1	144	31	630
11:00	2	10	1		28	36	4		3	4	11	34	0	37	8	178
11:15	4	8	2		19	28	14		6	7	10	26	1	34	8	167
11:30	1	16	2		28	36	0		2	9	14	24	0	25	4	161
11:45	4	23	4		29	43	5		2	14	12	37	0	42	4	219
TOTAL	11	57	9		104	143	23		13	34	47	121	1	138	24	725
12:00	8	58	0		33	49	3		5	14	11	38	0	39	8	266
12:15	2	11	2		29	43	4		4	12	27	25	0	38	7	204
12:30	3	10	1		28	31	3		2	14	23	41	1	51	10	218
12:45	1	10	1		17	48	6		3	11	18	51	0	53	15	234
TOTAL	14	89	4		107	171	16		14	51	79	155	1	181	40	922

13:00	3	12	1		20	38	4		2	6	15	37	1	57	8	204
13:15	2	5	1		23	32	2		1	5	16	25	0	50	16	178
13:30	0	11	0		27	38	2		4	6	19	30	0	49	4	190
13:45	2	17	1		37	29	2		2	8	12	32	1	42	8	193
TOTAL	7	45	3		107	137	10		9	25	62	124	2	198	36	765
14:00	0	5	1		31	37	2		0	10	9	50	0	63	10	218
14:15	3	9	3		27	54	2		1	18	10	40	1	43	3	214
14:30	2	10	3		26	46	3		2	13	13	47	1	57	5	228
14:45	1	9	2		42	75	2		4	15	8	49	1	77	6	291
TOTAL	6	33	9		126	212	9		7	56	40	186	3	240	24	951
15:00	2	6	3		58	75	1		1	21	18	50	0	46	7	288
15:15	3	11	0		58	84	3		3	17	14	30	2	72	7	304
15:30	6	13	3		31	48	1		2	8	6	35	1	57	3	214
15:45	4	11	0		28	56	2		5	15	8	40	0	49	8	226
TOTAL	15	41	6		175	263	7		11	61	46	155	3	224	25	1032
16:00	3	6	3		31	75	3		0	16	4	43	1	55	1	241
16:15	2	9	2		41	81	1		3	24	7	52	1	51	5	279
16:30	4	10	1		31	79	6		6	35	8	63	0	55	5	303
16:45	2	6	3		23	89	6		1	38	9	50	0	51	6	284
TOTAL	11	31	9		126	324	16		10	113	28	208	2	212	17	1107
17:00	3	12	2		40	130	5		4	67	13	57	0	65	9	407
17:15	4	20	1		48	142	1		3	50	6	54	0	56	8	393
17:30	11	33	3		28	97	0		4	73	2	35	1	64	8	359
17:45	2	10	0		25	83	2		1	58	11	46	2	49	12	301
TOTAL	20	75	6		141	452	8		12	248	32	192	3	234	37	1460
18:00	8	13	2		12	65	1		0	22	13	28	0	49	3	216
18:15	6	10	1		17	49	1		0	13	6	20	0	51	2	176
18:30	3	9	0		8	50	1		0	7	7	18	0	36	2	141
18:45	0	3	1		5	35	0		0	7	5	16	1	28	3	104
TOTAL	17	35	4		42	199	3		0	49	31	82	1	164	10	637

PEAK HOUR DATA 7:00 TO 11:00

PEAK HR START TIME: 7:30

	Welaunee Blvd Southbound			Fleischmann Rd Westbound			Welaunee Blvd Northbound				Fleischmann Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Uturn	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	7	42	6	268	248	20	11	24	60	189	3	530	162	1570
% OF APPROACH	12.7%	76.4%	10.9%	50.0%	46.3%	3.7%	3.9%	8.5%	21.1%	66.5%	0.4%	76.3%	23.3%	
PEAK HR FACTOR	0.655			0.680			0.789				0.823			

PEAK HOUR DATA 11:00 TO 15:00

PEAK HR START TIME: 14:00

	Welaunee Blvd Southbound			Fleischmann Rd Westbound			Welaunee Blvd Northbound				Fleischmann Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Uturn	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	6	33	9	126	212	9	7	56	40	186	3	240	24	951
% OF APPROACH	12.5%	68.8%	18.8%	36.3%	61.1%	2.6%	2.4%	19.4%	13.8%	64.4%	1.1%	89.9%	9.0%	
PEAK HR FACTOR	0.800			0.729			0.951				0.795			

PEAK HOUR DATA 15:00 TO 19:00

PEAK HR START TIME: 17:00

	Welaunee Blvd Southbound			Fleischmann Rd Westbound			Welaunee Blvd Northbound				Fleischmann Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Uturn	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	20	75	6	141	452	8	12	248	32	192	3	234	37	1460
% OF APPROACH	19.8%	74.3%	5.9%	23.5%	75.2%	1.3%	2.5%	51.2%	6.6%	39.7%	1.1%	85.4%	13.5%	
PEAK HR FACTOR	0.537			0.787			0.858				0.926			

HSA CONSULTING GROUP, INC.
1315 COUNTRY CLUB RD.
GULF BREEZE, FLA. 32563

ALL VEHICLES

INTERSECTION OF Miccosukee Road & Thornton Road

COUNT DATE: 11-Dec-18 FILE NAME: Miccosukee&Thornton.xls

	Miccosukee Greenway Trail Southbound				Miccosukee Rd Westbound				Thornton Rd Rd Northbound				Miccosukee Rd Eastbound			
Time	Left	Thru	Right		Left	Thru	Right		Left	Thru	Right		Left	Thru	Right	TOTAL
7:00	0	0	1		6	45	0		9	0	1		0	6	2	70
7:15	1	0	0		16	49	1		11	0	0		0	9	4	91
7:30	1	0	1		13	69	0		31	1	1		0	6	2	125
7:45	0	0	0		9	56	1		24	0	4		1	7	8	110
TOTAL	2	0	2		44	219	2		75	1	6		1	28	16	396
8:00	0	1	0		5	67	0		20	0	1		0	11	6	111
8:15	0	0	1		6	44	0		15	2	5		0	5	5	83
8:30	0	2	0		6	38	0		10	1	4		0	7	9	77
8:45	0	0	0		3	33	0		12	0	2		0	8	9	67
TOTAL	0	3	1		20	182	0		57	3	12		0	31	29	338
9:00	0	0	1		3	20	1		10	0	1		2	10	9	57
9:15	0	0	0		6	23	1		5	0	0		0	6	8	49
9:30	0	1	0		4	21	1		6	0	8		0	12	5	58
9:45	1	0	0		6	21	0		2	1	3		0	12	8	54
TOTAL	1	1	1		19	85	3		23	1	12		2	40	30	218
10:00	0	1	1		3	18	0		2	0	4		0	8	3	40
10:15	1	0	1		3	20	0		2	1	1		1	9	5	44
10:30	0	0	1		1	11	0		1	0	2		1	9	8	34
10:45	0	0	0		2	31	0		5	0	6		0	13	5	62
TOTAL	1	1	3		9	80	0		10	1	13		2	39	21	180
11:00	0	1	0		1	19	0		8	0	1		1	9	6	46
11:15	0	0	0		2	23	0		5	0	3		1	11	6	51
11:30	0	1	0		4	18	1		9	0	4		1	13	8	59
11:45	0	1	1		2	27	0		5	0	7		2	14	3	62
TOTAL	0	3	1		9	87	1		27	0	15		5	47	23	218
12:00	0	1	1		5	23	0		4	0	3		0	12	10	59
12:15	0	0	1		3	19	0		2	0	5		3	9	3	45
12:30	0	0	3		6	12	1		3	0	5		1	12	4	47
12:45	0	0	2		1	17	1		4	0	5		2	14	6	52
TOTAL	0	1	7		15	71	2		13	0	18		6	47	23	203

13:00	1	0	0		4	18	0		3	0	4		0	20	3	53
13:15	0	0	0		3	15	0		4	0	4		0	28	9	63
13:30	0	1	2		5	15	1		4	0	5		1	11	6	51
13:45	1	1	0		3	10	0		6	0	5		0	17	4	47
TOTAL	2	2	2		15	58	1		17	0	18		1	76	22	214
14:00	0	0	0		1	14	0		2	0	10		1	13	12	53
14:15	0	1	0		5	14	1		4	0	4		0	16	5	50
14:30	0	0	0		5	13	0		11	0	6		0	17	5	57
14:45	0	0	0		2	11	0		3	0	7		1	20	5	49
TOTAL	0	1	0		13	52	1		20	0	27		2	66	27	209
15:00	1	0	0		2	18	0		2	0	1		0	20	7	51
15:15	0	0	0		6	9	0		3	0	10		0	24	11	63
15:30	1	0	1		7	11	0		3	3	10		0	24	9	69
15:45	0	0	1		3	15	0		2	0	5		1	22	8	57
TOTAL	2	0	2		18	53	0		10	3	26		1	90	35	240
16:00	0	0	0		3	12	0		1	0	6		1	28	9	60
16:15	1	0	0		3	12	0		3	1	10		0	27	12	69
16:30	0	0	0		3	13	1		3	0	16		0	49	9	94
16:45	0	1	0		7	9	0		3	0	11		0	45	14	90
TOTAL	1	1	0		16	46	1		10	1	43		1	149	44	313
17:00	0	1	0		7	17	1		7	0	10		0	43	26	112
17:15	0	0	0		2	11	0		3	1	11		1	59	14	102
17:30	0	0	1		6	22	0		3	0	17		0	53	11	113
17:45	0	1	1		7	14	0		2	0	10		0	58	21	114
TOTAL	0	2	2		22	64	1		15	1	48		1	213	72	441
18:00	1	0	1		6	11	0		2	1	12		0	47	6	87
18:15	1	0	0		5	9	0		3	0	14		0	28	8	68
18:30	0	0	0		3	5	0		3	0	8		0	30	5	54
18:45	0	0	0		2	8	0		4	0	5		0	22	6	47
TOTAL	2	0	1		16	33	0		12	1	39		0	127	25	256

PEAK HOUR DATA 7:00 TO 11:00

PEAK HR START TIME 7:15

	Miccosukee Greenway Trail Southbound			Miccosukee Rd Westbound			Thornton Rd Northbound			Miccosukee Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	2	1	1	43	241	2	86	1	6	1	33	20	437
% OF APPROACH	50.0%	25.0%	25.0%	15.0%	84.3%	0.7%	92.5%	1.1%	6.5%	1.9%	61.1%	37.0%	
PEAK HR FACTOR		0.500			0.872			0.705			0.794		

PEAK HOUR DATA 11:00 TO 15:00

PEAK HR START TIME 11:15

	Miccosukee Greenway Trail Southbound			Miccosukee Rd Westbound			Thornton Rd Northbound			Miccosukee Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	0	3	2	13	91	1	23	0	17	4	50	27	231
% OF APPROACH	0.0%	60.0%	40.0%	12.4%	86.7%	1.0%	57.5%	0.0%	42.5%	4.9%	61.7%	33.3%	
PEAK HR FACTOR		0.625			0.905			0.769			0.920		

PEAK HOUR DATA 15:00 TO 19:00

PEAK HR START TIME 17:00

	Miccosukee Greenway Trail Southbound			Miccosukee Rd Westbound			Thornton Rd Northbound			Miccosukee Rd Eastbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	TOTAL
PEAK HR TOTALS	0	2	2	22	64	1	15	1	48	1	213	72	441
% OF APPROACH	0.0%	50.0%	50.0%	25.3%	73.6%	1.1%	23.4%	1.6%	75.0%	0.3%	74.5%	25.2%	
PEAK HR FACTOR		0.500			0.777			0.800			0.905		

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Capital Circle north of Centerville Road
County: Leon
Start Date: 11-Dec-18
Start Time: 0:00

	Northbound					Southbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	32	18	24	24	98	19	29	20	17	85	183
1:00	17	10	10	20	57	20	21	11	9	61	118
2:00	19	5	12	11	47	5	16	11	9	41	88
3:00	7	9	10	17	43	23	15	12	23	73	116
4:00	10	16	24	54	104	17	16	30	38	101	205
5:00	40	65	65	85	255	31	49	73	122	275	530
6:00	112	107	172	221	612	151	231	370	476	1228	1840
7:00	272	378	428	460	1538	570	575	709	765	2619	4157
8:00	425	456	418	488	1787	691	721	700	598	2710	4497
9:00	392	409	404	452	1657	492	503	451	437	1883	3540
10:00	442	438	498	470	1848	468	458	448	518	1892	3740
11:00	488	569	583	634	2274	492	452	469	526	1939	4213
12:00	624	619	562	561	2366	492	532	500	575	2099	4465
13:00	630	533	555	598	2316	548	572	521	497	2138	4454
14:00	594	585	644	623	2446	566	453	516	526	2061	4507
15:00	616	641	639	678	2574	514	528	519	492	2053	4627
16:00	674	783	756	775	2988	493	469	478	503	1943	4931
17:00	776	795	745	731	3047	618	575	513	466	2172	5219
18:00	648	566	463	433	2110	436	423	390	340	1589	3699
19:00	368	385	289	260	1302	331	280	257	228	1096	2398
20:00	236	200	223	177	836	221	209	234	209	873	1709
21:00	156	146	139	128	569	177	149	118	115	559	1128
22:00	84	73	82	57	296	118	88	79	68	353	649
23:00	85	57	41	39	222	61	46	43	43	193	415
Total					31392					30036	61428

Peak Hour Summary

	Direction:	Northbound
	Hour	Volume
A.M	800	1787
P.M	1630	3102
Daily	1630	3102

	Direction:	Southbound
	Hour	Volume
A.M	730	2886
P.M	1245	2216
Daily	730	2886

	Direction:	Combined
	Hour	Volume
A.M	730	4655
P.M	1645	5300
Daily	1645	5300

CLASSIFICATION SUMMARY

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Tot Vol	Trk %
NB	53	25377	4897	93	716	52	23	90	78	6	0	0	7	0	0	1065	31392	3.39%
SB	86	24318	4573	87	686	124	6	80	55	10	0	0	11	0	0	1059	30036	3.53%
Total	139	49695	9470	180	1402	176	29	170	133	16	0	0	18	0	0	2124	61428	3.46%

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Capital Circle north of Centerville Road
County: Leon
Start Date: 12-Dec-18 Start Time: 0:00

	Northbound					Southbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	22	32	25	24	103	35	16	17	20	88	191
1:00	12	15	17	18	62	12	9	19	12	52	114
2:00	12	10	14	13	49	8	12	12	13	45	94
3:00	9	10	14	15	48	7	16	16	25	64	112
4:00	19	13	21	52	105	19	27	20	40	106	211
5:00	46	41	69	70	226	41	49	67	133	290	516
6:00	94	117	153	221	585	145	218	352	491	1206	1791
7:00	251	311	408	458	1428	572	525	737	663	2497	3925
8:00	458	477	446	425	1806	742	712	659	698	2811	4617
9:00	423	457	427	481	1788	529	471	471	488	1959	3747
10:00	383	452	496	441	1772	459	430	442	502	1833	3605
11:00	534	521	588	642	2285	441	483	489	459	1872	4157
12:00	642	616	569	576	2403	505	540	539	562	2146	4549
13:00	585	540	587	604	2316	555	545	583	524	2207	4523
14:00	562	585	617	588	2352	545	538	536	519	2138	4490
15:00	656	676	722	709	2763	485	511	495	497	1988	4751
16:00	727	779	716	769	2991	471	480	497	547	1995	4986
17:00	822	830	763	775	3190	602	566	478	464	2110	5300
18:00	649	600	484	468	2201	455	421	353	416	1645	3846
19:00	412	355	346	271	1384	309	310	263	296	1178	2562
20:00	256	197	194	202	849	265	301	232	212	1010	1859
21:00	169	165	158	98	590	172	142	141	88	543	1133
22:00	101	84	65	66	316	110	90	74	59	333	649
23:00	76	57	45	36	214	85	52	50	42	229	443
Total					31826					30345	62171

Peak Hour Summary

	Direction:	Northbound
	Hour	Volume
A.M	745	1839
P.M	1700	3190
Daily	1700	3190

	Direction:	Southbound
	Hour	Volume
A.M	730	2854
P.M	1245	2245
Daily	730	2854

	Direction:	Combined
	Hour	Volume
A.M	730	4655
P.M	1645	5377
Daily	1645	5377

CLASSIFICATION SUMMARY

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Tot Vol	Trk %
NB	NOT AVAILABLE																	
SB	81	24715	4507	90	662	124	14	93	47	7	0	1	4	0	0	1042	30345	3.43%
Total																		

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Capital Circle north of Centerville Road
County: Leon
Start Date: 13-Dec-18
Start Time: 0:00

	Northbound					Southbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	37	36	23	12	108	33	30	34	22	119	227
1:00	23	21	14	18	76	16	16	22	11	65	141
2:00	7	15	12	10	44	17	9	13	16	55	99
3:00	14	15	12	10	51	11	17	17	22	67	118
4:00	14	23	27	38	102	7	21	23	19	70	172
5:00	45	54	57	86	242	29	55	71	139	294	536
6:00	88	139	156	191	574	147	211	384	473	1215	1789
7:00	267	328	423	479	1497	535	588	717	722	2562	4059
8:00	444	495	436	414	1789	722	698	620	662	2702	4491
9:00	436	359	470	493	1758	512	531	477	517	2037	3795
10:00	449	458	446	545	1898	494	483	469	479	1925	3823
11:00	559	543	534	709	2345	496	466	471	528	1961	4306
12:00	658	636	637	583	2514	508	531	519	604	2162	4676
13:00	647	600	565	589	2401	537	565	568	559	2229	4630
14:00	608	633	702	627	2570	549	534	519	499	2101	4671
15:00	685	681	701	687	2754	516	542	480	470	2008	4762
16:00	679	818	769	725	2991	476	446	572	500	1994	4985
17:00	794	729	737	705	2965	533	573	533	501	2140	5105
18:00	649	595	496	387	2127	418	421	375	349	1563	3690
19:00	368	357	365	290	1380	340	285	268	245	1138	2518
20:00	257	223	224	205	909	268	225	239	206	938	1847
21:00	197	186	133	102	618	192	199	157	139	687	1305
22:00	115	90	69	64	338	158	104	76	98	436	774
23:00	79	69	46	33	227	65	59	66	56	246	473
Total					32278					30714	62992

Peak Hour Summary

	Direction:	Northbound
	Hour	Volume
A.M	745	1854
P.M	1615	3106
Daily	1615	3106

	Direction:	Southbound
	Hour	Volume
A.M	730	2859
P.M	1245	2274
Daily	730	2859

	Direction:	Combined
	Hour	Volume
A.M	730	4700
P.M	1630	5195
Daily	1630	5195

CLASSIFICATION SUMMARY

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Tot Vol	Trk %
NB	NOT AVAILABLE																	
SB	110	25299	4386	59	573	134	9	66	57	14	1	0	6	0	0	919	30714	2.99%
Total																		

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Centerville Road east of Capital Circle
County: Leon
Start Date: 11-Dec-18 Start Time: 0:00

	Eastbound					Westbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	12	5	5	7	29	11	10	3	11	35	64
1:00	5	4	9	6	24	5	4	4	2	15	39
2:00	5	4	4	3	16	0	2	0	3	5	21
3:00	4	3	1	2	10	0	0	2	1	3	13
4:00	1	4	9	3	17	4	6	12	12	34	51
5:00	4	9	18	25	56	16	27	31	59	133	189
6:00	25	42	48	62	177	69	85	131	204	489	666
7:00	96	131	178	215	620	312	326	363	392	1393	2013
8:00	182	164	116	153	615	380	359	316	287	1342	1957
9:00	133	128	127	145	533	272	194	210	205	881	1414
10:00	126	143	146	133	548	167	174	180	164	685	1233
11:00	114	115	118	147	494	177	215	206	228	826	1320
12:00	165	178	187	225	755	276	207	210	198	891	1646
13:00	173	167	173	212	725	200	200	193	196	789	1514
14:00	228	214	208	219	869	206	188	176	223	793	1662
15:00	221	202	184	219	826	238	229	241	183	891	1717
16:00	242	223	266	273	1004	208	210	217	220	855	1859
17:00	310	272	318	335	1235	257	261	245	208	971	2206
18:00	178	140	132	129	579	176	175	122	94	567	1146
19:00	135	108	103	81	427	91	87	71	61	310	737
20:00	77	78	67	76	298	75	45	44	42	206	504
21:00	75	58	48	39	220	32	35	44	27	138	358
22:00	38	26	27	21	112	27	17	15	14	73	185
23:00	18	16	9	9	52	18	11	7	9	45	97
Total					10241					12370	22611

Peak Hour Summary

	Direction:	Eastbound
	Hour	Volume
A.M	730	739
P.M	1700	1235
Daily	1700	1235

	Direction:	Westbound
	Hour	Volume
A.M	730	1494
P.M	1645	983
Daily	730	1494

	Direction:	Combined
	Hour	Volume
A.M	730	2233
P.M	1700	2206
Daily	730	2233

CLASSIFICATION SUMMARY

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Tot Vol	Trk %
EB	51	8589	1145	33	145	217	18	17	14	11	0	1	0	0	0	456	10241	4.45%
WB	22	10149	1761	55	235	87	5	28	23	3	0	0	2	0	0	438	12370	3.54%
Total	73	18738	2906	88	380	304	23	45	37	14	0	1	2	0	0	894	22611	3.95%

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Centerville Road east of Capital Circle
County: Leon
Start Date: 12-Dec-18
Start Time: 0:00

		Eastbound						Westbound						Combined
Time		1st	2nd	3rd	4th	Hour Tot.		1st	2nd	3rd	4th	Hour Tot.		Total
0:00		20	8	10	8	46		4	7	2	7	20		66
1:00		2	5	4	1	12		9	3	1	2	15		27
2:00		4	5	4	5	18		0	3	4	4	11		29
3:00		3	2	4	4	13		1	2	2	8	13		26
4:00		4	7	6	9	26		3	4	8	12	27		53
5:00		3	12	14	36	65		16	14	44	45	119		184
6:00		17	31	52	76	176		55	103	116	207	481		657
7:00		102	115	163	198	578		292	322	340	383	1337		1915
8:00		167	163	127	152	609		378	379	294	294	1345		1954
9:00		167	147	150	155	619		219	230	226	200	875		1494
10:00		136	143	120	151	550		178	184	164	181	707		1257
11:00		144	158	137	154	593		188	232	223	228	871		1464
12:00		163	152	217	213	745		261	226	209	217	913		1658
13:00		174	187	206	223	790		236	202	209	201	848		1638
14:00		205	212	205	214	836		197	185	207	222	811		1647
15:00		220	203	208	219	850		237	231	211	202	881		1731
16:00		189	208	239	249	885		252	252	229	230	963		1848
17:00		301	325	310	264	1200		254	218	204	203	879		2079
18:00		237	172	148	137	694		151	137	129	120	537		1231
19:00		128	114	99	97	438		91	73	76	59	299		737
20:00		95	103	76	65	339		73	52	46	47	218		557
21:00		84	61	44	35	224		40	44	27	32	143		367
22:00		34	31	26	32	123		29	14	23	11	77		200
23:00		25	15	8	8	56		24	15	5	5	49		105
Total						10485						12439		22924

Peak Hour Summary

	Direction: Eastbound	
	Hour	Volume
A.M	730	691
P.M	1700	1200
Daily	1700	1200

	Direction: Westbound	
	Hour	Volume
A.M	730	1480
P.M	1615	965
Daily	730	1480

	Direction: Combined	
	Hour	Volume
A.M	730	2171
P.M	1645	2091
Daily	730	2171

CLASSIFICATION SUMMARY

Dir		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Tot Vol	Trk %
EB		52	8651	1296	36	183	188	18	24	24	12	1	0	0	0	0	486	10485	4.64%
WB		26	10063	1894	52	264	71	6	34	26	1	0	0	2	0	0	456	12439	3.67%
Total		78	18714	3190	88	447	259	24	58	50	13	1	0	2	0	0	942	22924	4.11%

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Centerville Road east of Capital Circle
County: Leon
Start Date: 13-Dec-18 Start Time: 0:00

		Eastbound						Westbound						Combined
Time		1st	2nd	3rd	4th	Hour Tot.		1st	2nd	3rd	4th	Hour Tot.		Total
0:00		16	12	7	0	35		11	11	12	1	35		70
1:00		7	8	8	3	26		7	5	6	1	19		45
2:00		2	1	3	4	10		0	5	5	2	12		22
3:00		6	3	4	6	19		0	1	0	5	6		25
4:00		1	3	5	5	14		5	8	4	14	31		45
5:00		6	7	21	24	58		20	26	21	55	122		180
6:00		31	34	55	73	193		66	101	140	192	499		692
7:00		93	123	170	216	602		303	324	350	371	1348		1950
8:00		210	156	149	172	687		365	354	350	250	1319		2006
9:00		138	156	140	167	601		270	222	229	214	935		1536
10:00		144	129	146	139	558		171	200	202	202	775		1333
11:00		144	140	113	136	533		188	215	217	203	823		1356
12:00		169	155	198	186	708		277	239	166	245	927		1635
13:00		210	175	186	177	748		191	190	172	165	718		1466
14:00		204	215	177	189	785		191	199	221	241	852		1637
15:00		214	223	205	217	859		238	190	223	190	841		1700
16:00		226	241	233	298	998		196	190	234	208	828		1826
17:00		327	335	309	316	1287		260	237	250	198	945		2232
18:00		234	191	153	127	705		177	159	129	116	581		1286
19:00		134	121	125	84	464		107	80	86	69	342		806
20:00		117	83	80	85	365		52	55	54	49	210		575
21:00		96	78	71	53	298		59	41	35	26	161		459
22:00		44	33	22	25	124		19	16	24	11	70		194
23:00		15	15	20	11	61		21	13	11	7	52		113
Total						10738						12451		23189

Peak Hour Summary

	Direction:	Eastbound
	Hour	Volume
A.M	730	752
P.M	1700	1287
Daily	1700	1287

	Direction:	Westbound
	Hour	Volume
A.M	730	1440
P.M	1645	955
Daily	730	1440

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	Direction:	Combined
	Hour	Volume
A.M	730	2192
P.M	1700	2232
Daily	1700	2232

CLASSIFICATION SUMMARY

Dir		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Tot Vol	Trk %
EB		42	8761	1459	34	205	165	24	19	22	7	0	0	0	0	0	476	10738	4.43%
WB		24	9978	1918	50	290	114	3	43	29	1	0	0	1	0	0	531	12451	4.26%
Total		66	18739	3377	84	495	279	27	62	51	8	0	0	1	0	0	1007	23189	4.34%

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Centerville Road south of Shamrock Street
County: Leon
Start Date: 11-Dec-18 Start Time: 0:00

	Northbound					Southbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	5	1	5	0	11	1	2	1	0	4	15
1:00	3	2	2	1	8	2	1	0	0	3	11
2:00	1	1	2	1	5	1	1	0	0	2	7
3:00	0	1	0	1	2	0	0	2	0	2	4
4:00	2	0	1	4	7	2	0	8	9	19	26
5:00	6	1	2	11	20	9	11	22	28	70	90
6:00	5	10	16	21	52	35	65	71	114	285	337
7:00	35	36	56	83	210	173	191	229	257	850	1060
8:00	87	77	57	80	301	199	199	200	156	754	1055
9:00	62	71	40	54	227	151	120	97	91	459	686
10:00	42	52	49	50	193	72	67	70	64	273	466
11:00	57	52	43	68	220	51	85	73	62	271	491
12:00	66	71	76	71	284	64	86	73	75	298	582
13:00	62	53	60	68	243	75	79	81	78	313	556
14:00	78	106	110	103	397	69	61	71	86	287	684
15:00	106	109	113	99	427	121	89	73	71	354	781
16:00	123	165	162	192	642	87	84	75	68	314	956
17:00	224	267	252	252	995	66	69	82	73	290	1285
18:00	195	128	99	92	514	67	53	42	30	192	706
19:00	65	83	47	43	238	33	36	27	36	132	370
20:00	44	54	39	34	171	28	29	15	21	93	264
21:00	34	30	30	19	113	15	13	13	11	52	165
22:00	15	9	14	10	48	4	8	9	5	26	74
23:00	4	5	4	1	14	4	1	0	2	7	21
Total					5342					5350	10692

Peak Hour Summary

	Direction:	Northbound
	Hour	Volume
A.M	745	304
P.M	1700	995
Daily	1700	995

	Direction:	Southbound
	Hour	Volume
A.M	730	884
P.M	1445	369
Daily	730	884

	Direction:	Combined
	Hour	Volume
A.M	730	1187
P.M	1700	1285
Daily	1700	1285

CLASSIFICATION SUMMARY

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Tot Vol	Trk %
NB	4	4156	1011	18	124	9	0	18	2	0	0	0	0	0	0	171	5342	3.20%
SB	4	4127	1026	31	124	14	3	20	0	0	0	0	1	0	0	193	5350	3.61%
Total	8	8283	2037	49	248	23	3	38	2	0	0	0	1	0	0	364	10692	3.40%

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Centerville Road south of Shamrock Street
County: Leon
Start Date: 12-Dec-18 Start Time: 0:00

	Northbound					Southbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	4	3	3	3	13	2	2	1	1	6	19
1:00	2	0	0	2	4	2	4	0	0	6	10
2:00	0	2	0	0	2	0	0	0	0	0	2
3:00	0	0	0	2	2	0	0	1	0	1	3
4:00	0	4	4	2	10	3	1	4	8	16	26
5:00	2	3	4	13	22	8	7	25	32	72	94
6:00	6	10	10	20	46	41	57	80	126	304	350
7:00	32	27	43	94	196	187	180	232	221	820	1016
8:00	72	77	62	76	287	210	211	204	151	776	1063
9:00	61	49	52	57	219	127	130	103	84	444	663
10:00	48	51	52	62	213	72	76	73	69	290	503
11:00	57	57	55	62	231	68	90	70	67	295	526
12:00	68	66	78	78	290	66	68	73	90	297	587
13:00	71	74	65	56	266	94	103	89	70	356	622
14:00	111	109	123	100	443	73	56	77	83	289	732
15:00	106	115	145	152	518	110	61	62	71	304	822
16:00	131	153	147	212	643	118	109	80	84	391	1034
17:00	212	236	258	220	926	69	64	71	60	264	1190
18:00	184	116	112	68	480	62	57	61	46	226	706
19:00	73	67	57	53	250	42	24	33	18	117	367
20:00	53	57	44	35	189	25	22	28	30	105	294
21:00	36	46	19	15	116	26	16	14	9	65	181
22:00	16	11	8	9	44	6	3	3	1	13	57
23:00	5	11	6	2	24	5	1	2	2	10	34
Total					5434					5467	10901

Peak Hour Summary

	Direction:	Northbound
	Hour	Volume
A.M	745	305
P.M	1700	926
Daily	1700	926

	Direction:	Southbound
	Hour	Volume
A.M	730	874
P.M	1600	391
Daily	730	874

	Direction:	Combined
	Hour	Volume
A.M	730	1160
P.M	1645	1206
Daily	1645	1206

CLASSIFICATION SUMMARY

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Tot Vol	Trk %
NB	8	4185	1057	22	130	11	1	19	1	0	0	0	0	0	0	184	5434	3.39%
SB	8	4196	1059	31	137	9	2	22	3	0	0	0	0	0	0	204	5467	3.73%
Total	16	8381	2116	53	267	20	3	41	4	0	0	0	0	0	0	388	10901	3.56%

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Centerville Road south of Shamrock Street
County: Leon
Start Date: 13-Dec-18 Start Time: 0:00

	Northbound					Southbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	4	3	1	1	9	0	3	0	0	3	12
1:00	1	1	2	0	4	1	1	1	1	4	8
2:00	0	1	0	2	3	0	2	1	1	4	7
3:00	1	1	1	0	3	0	1	3	2	6	9
4:00	1	1	0	3	5	1	4	6	5	16	21
5:00	1	0	1	10	12	7	10	21	26	64	76
6:00	9	7	18	22	56	42	64	82	108	296	352
7:00	26	29	68	85	208	192	192	228	243	855	1063
8:00	69	68	51	79	267	209	226	184	150	769	1036
9:00	70	51	53	52	226	120	137	84	82	423	649
10:00	47	51	42	50	190	77	76	85	77	315	505
11:00	55	60	50	55	220	70	61	69	68	268	488
12:00	73	61	35	81	250	50	83	84	69	286	536
13:00	65	72	73	63	273	66	68	75	72	281	554
14:00	82	111	100	95	388	72	84	78	84	318	706
15:00	92	120	103	126	441	98	77	70	78	323	764
16:00	138	155	153	182	628	102	68	87	65	322	950
17:00	219	263	257	265	1004	80	79	69	82	310	1314
18:00	207	138	103	73	521	72	67	48	72	259	780
19:00	90	67	64	69	290	55	32	39	19	145	435
20:00	66	52	45	39	202	22	25	29	30	106	308
21:00	41	41	20	23	125	29	28	21	14	92	217
22:00	17	20	15	8	60	11	12	8	3	34	94
23:00	3	7	8	7	25	4	3	5	2	14	39
Total					5410					5513	10923

Peak Hour Summary

	Direction:	Northbound
	Hour	Volume
A.M	730	290
P.M	1700	1004
Daily	1700	1004

	Direction:	Southbound
	Hour	Volume
A.M	730	906
P.M	1415	344
Daily	730	906

	Direction:	Combined
	Hour	Volume
A.M	730	1196
P.M	1700	1314
Daily	1700	1314

CLASSIFICATION SUMMARY

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Tot Trk	Tot Vol	Trk %
NB	7	4204	1037	20	107	17	0	18	0	0	0	0	0	0	0	162	5410	2.99%
SB	12	4197	1083	29	139	15	0	37	1	0	0	0	0	0	0	221	5513	4.01%
Total	19	8401	2120	49	246	32	0	55	1	0	0	0	0	0	0	383	10923	3.51%

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Miccosukee Road east of Fleischmann Road
County: Leon
Start Date: 11-Dec-18 Start Time: 0:00

Time		Eastbound						Westbound					Combined
		1st	2nd	3rd	4th	Hour Tot.		1st	2nd	3rd	4th	Hour Tot.	Total
0:00		6	5	3	2	16		3	1	2	2	8	24
1:00		1	3	2	3	9		0	0	0	3	3	12
2:00		2	0	2	1	5		0	2	1	0	3	8
3:00		1	1	2	0	4		0	3	0	1	4	8
4:00		0	2	0	2	4		1	2	3	2	8	12
5:00		0	3	5	6	14		3	8	7	16	34	48
6:00		7	11	31	41	90		23	25	46	59	153	243
7:00		49	88	86	98	321		106	113	162	232	613	934
8:00		94	91	63	68	316		201	158	145	126	630	946
9:00		65	68	47	67	247		91	81	65	80	317	564
10:00		52	69	69	63	253		62	66	55	83	266	519
11:00		73	72	69	66	280		78	66	86	65	295	575
12:00		86	64	78	70	298		76	67	53	80	276	574
13:00		89	86	62	73	310		72	64	73	78	287	597
14:00		100	98	107	117	422		71	70	87	111	339	761
15:00		100	117	104	113	434		94	98	65	74	331	765
16:00		120	129	161	166	576		82	89	94	83	348	924
17:00		214	187	157	200	758		93	78	55	90	316	1074
18:00		131	90	80	57	358		57	49	40	35	181	539
19:00		47	60	56	63	226		38	42	26	19	125	351
20:00		31	37	41	27	136		26	18	27	13	84	220
21:00		31	25	16	27	99		10	13	12	14	49	148
22:00		6	14	9	5	34		10	8	9	7	34	68
23:00		5	7	3	5	20		11	8	1	4	24	44
Total						5230						4728	9958

Peak Hour Summary

	Direction: Eastbound	
	Hour	Volume
A.M	730	369
P.M	1700	758
Daily	1700	758

	Direction: Westbound	
	Hour	Volume
A.M	730	753
P.M	1430	390
Daily	730	753

`

	Direction: Combined	
	Hour	Volume
A.M	730	1122
P.M	1630	1076
Daily	730	1122

CLASSIFICATION SUMMARY

Dir		1	2	3	4	5	6	7	8	9	10	11	13	14	15	Tot Trk	Tot Vol	Trk %
EB		11	4019	984	32	154	7	4	18	0	1	0	0	0	0	216	5230	4.13%
WB		6	3786	823	11	85	6	0	11	0	0	0	0	0	0	113	4728	2.39%
Total		17	7805	1807	43	239	13	4	29	0	1	0	0	0	0	329	9958	3.30%

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Miccosukee Road east of Fleischmann Road
County: Leon
Start Date: 12-Dec-18 Start Time: 0:00

		Eastbound						Westbound					Combined
Time		1st	2nd	3rd	4th	Hour Tot.		1st	2nd	3rd	4th	Hour Tot.	Total
0:00		5	2	2	2	11		0	3	2	2	7	18
1:00		1	1	1	1	4		1	0	1	0	2	6
2:00		2	1	0	1	4		0	1	0	1	2	6
3:00		0	0	0	1	1		1	2	1	2	6	7
4:00		0	0	6	2	8		0	1	3	3	7	15
5:00		3	1	1	3	8		4	6	8	20	38	46
6:00		3	11	25	44	83		19	26	42	72	159	242
7:00		42	73	82	89	286		106	109	150	234	599	885
8:00		96	106	67	65	334		159	189	151	120	619	953
9:00		59	52	54	63	228		99	71	73	83	326	554
10:00		62	59	49	71	241		65	72	68	81	286	527
11:00		77	73	67	64	281		71	67	69	71	278	559
12:00		88	81	77	82	328		70	75	64	67	276	604
13:00		88	95	83	84	350		84	60	76	83	303	653
14:00		86	94	140	130	450		77	78	69	97	321	771
15:00		128	108	115	121	472		116	83	107	75	381	853
16:00		135	133	150	189	607		91	78	88	83	340	947
17:00		206	207	208	174	795		96	71	91	92	350	1145
18:00		117	97	83	71	368		65	52	50	47	214	582
19:00		44	70	50	46	210		59	34	31	19	143	353
20:00		35	54	41	25	155		27	18	30	13	88	243
21:00		39	19	20	15	93		17	19	7	7	50	143
22:00		16	11	8	9	44		8	2	2	12	24	68
23:00		13	6	5	7	31		5	8	4	2	19	50
Total						5392						4838	10230

Peak Hour Summary

	Direction:	Eastbound
	Hour	Volume
A.M	730	373
P.M	1645	810
Daily	1645	810

	Direction:	Westbound
	Hour	Volume
A.M	745	733
P.M	1445	403
Daily	745	733

	Direction:	Combined
	Hour	Volume
A.M	730	1105
P.M	1645	1151
Daily	1645	1151

CLASSIFICATION SUMMARY

Dir		1	2	3	4	5	6	7	8	9	10	11	13	14	15	Tot Trk	Tot Vol	Trk %
EB		7	4159	1021	26	164	1	2	12	0	0	0	0	0	0	205	5392	3.80%
WB		4	3894	823	15	83	6	0	13	0	0	0	0	0	0	117	4838	2.42%
Total		11	8053	1844	41	247	7	2	25	0	0	0	0	0	0	322	10230	3.15%

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Miccosukee Road east of Fleischmann Road
County: Leon
Start Date: 13-Dec-18 Start Time: 0:00

	Eastbound					Westbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	4	4	4	1	13	2	6	0	3	11	24
1:00	0	1	1	2	4	2	1	0	2	5	9
2:00	2	1	1	2	6	0	1	1	2	4	10
3:00	2	0	3	1	6	1	2	1	1	5	11
4:00	0	2	3	2	7	0	2	5	1	8	15
5:00	2	1	7	7	17	3	9	10	20	42	59
6:00	5	13	37	38	93	32	30	50	72	184	277
7:00	46	76	88	98	308	100	100	159	217	576	884
8:00	103	86	57	60	306	193	168	140	113	614	920
9:00	55	51	56	68	230	104	92	73	72	341	571
10:00	46	58	50	58	212	59	73	74	78	284	496
11:00	60	81	70	75	286	53	74	70	56	253	539
12:00	99	87	80	103	369	72	53	73	79	277	646
13:00	90	83	72	91	336	78	65	69	74	286	622
14:00	90	84	120	139	433	81	87	78	117	363	796
15:00	104	137	120	127	488	106	84	110	80	380	868
16:00	137	133	156	194	620	82	80	74	74	310	930
17:00	184	195	203	186	768	84	94	87	70	335	1103
18:00	131	100	83	66	380	72	71	49	37	229	609
19:00	43	53	49	50	195	48	34	50	36	168	363
20:00	46	42	36	36	160	33	25	18	25	101	261
21:00	37	25	21	24	107	22	18	13	15	68	175
22:00	19	13	13	15	60	11	11	9	7	38	98
23:00	14	6	7	7	34	11	7	5	1	24	58
Total					5438					4906	10344

Peak Hour Summary

	Direction:	Eastbound
	Hour	Volume
A.M	730	375
P.M	1645	776
Daily	1645	776

	Direction:	Westbound
	Hour	Volume
A.M	730	737
P.M	1445	417
Daily	730	737

	Direction:	Combined
	Hour	Volume
A.M	730	1112
P.M	1645	1115
Daily	1645	1115

CLASSIFICATION SUMMARY

Dir	1	2	3	4	5	6	7	8	9	10	11	13	14	15	Tot Trk	Tot Vol	Trk %
EB	5	4195	1038	26	150	1	1	20	0	0	0	2	0	0	200	5438	3.68%
WB	9	3963	822	11	84	7	0	10	0	0	0	0	0	0	112	4906	2.28%
Total	14	8158	1860	37	234	8	1	30	0	0	0	2	0	0	312	10344	3.02%

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Welaunee Blvd east of Centennial Blvd
County: Leon
Start Date: 11-Dec-18
Start Time: 0:00

		Eastbound						Westbound					Combined
Time		1st	2nd	3rd	4th	Hour Tot.		1st	2nd	3rd	4th	Hour Tot.	Total
0:00		2	2	1	0	5		1	1	2	3	7	12
1:00		0	1	0	1	2		0	0	0	0	0	2
2:00		0	0	0	0	0		0	0	0	0	0	0
3:00		0	0	0	0	0		0	0	0	0	0	0
4:00		0	2	0	1	3		0	0	2	1	3	6
5:00		0	3	4	12	19		3	1	2	5	11	30
6:00		5	6	20	25	56		9	9	9	13	40	96
7:00		39	49	64	93	245		32	38	70	131	271	516
8:00		73	51	30	42	196		146	84	72	89	391	587
9:00		40	40	41	48	169		49	47	50	45	191	360
10:00		38	45	37	38	158		43	48	41	40	172	330
11:00		41	46	42	64	193		58	42	61	62	223	416
12:00		65	71	76	84	296		105	53	57	38	253	549
13:00		61	50	55	58	224		40	43	50	66	199	423
14:00		65	66	78	73	282		46	37	44	63	190	472
15:00		91	61	52	56	260		71	82	51	59	263	523
16:00		61	84	113	96	354		42	52	52	40	186	540
17:00		136	104	116	113	469		66	86	73	56	281	750
18:00		61	38	30	26	155		33	38	25	11	107	262
19:00		25	27	32	19	103		15	14	12	13	54	157
20:00		12	17	14	13	56		13	8	5	10	36	92
21:00		21	10	8	8	47		7	1	3	1	12	59
22:00		3	4	3	2	12		8	2	1	2	13	25
23:00		4	0	1	2	7		4	2	0	1	7	14
Total						3311						2910	6221

Peak Hour Summary

	Direction:	Eastbound
	Hour	Volume
A.M	730	281
P.M	1700	469
Daily	1700	469

	Direction:	Westbound
	Hour	Volume
A.M	745	433
P.M	1700	281
Daily	745	433

	Direction:	Combined
	Hour	Volume
A.M	730	712
P.M	1700	750
Daily	1700	750

CLASSIFICATION SUMMARY

Dir		1	2	3	4	5	6	7	8	9	10	11	13	14	15	Tot Trk	Tot Vol	Trk %
EB		4	2365	748	14	108	33	25	12	2	0	0	0	0	0	194	3311	5.86%
WB		NOT AVAILABLE																
Total																		

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Welaunee Blvd east of Centennial Blvd
County: Leon
Start Date: 12-Dec-18 Start Time: 0:00

	Eastbound					Westbound					Combined
Time	1st	2nd	3rd	4th	Hour Tot.	1st	2nd	3rd	4th	Hour Tot.	Total
0:00	3	0	1	1	5	2	1	0	1	4	9
1:00	0	1	0	1	2	1	0	1	1	3	5
2:00	1	1	0	0	2	0	0	0	0	0	2
3:00	0	0	0	0	0	0	0	0	2	2	2
4:00	0	1	1	1	3	0	0	0	0	0	3
5:00	1	0	2	15	18	3	1	3	3	10	28
6:00	5	5	20	34	64	7	10	16	19	52	116
7:00	29	41	52	101	223	40	49	57	120	266	489
8:00	76	46	27	38	187	143	81	60	77	361	548
9:00	43	37	48	45	173	61	49	52	43	205	378
10:00	42	44	34	53	173	39	37	43	46	165	338
11:00	45	54	44	51	194	52	49	46	69	216	410
12:00	58	66	74	72	270	112	57	42	52	263	533
13:00	65	60	52	76	253	42	44	55	58	199	452
14:00	61	64	77	86	288	46	55	44	69	214	502
15:00	76	64	60	65	265	78	76	64	51	269	534
16:00	63	64	78	89	294	62	69	47	52	230	524
17:00	116	98	118	78	410	56	48	61	57	222	632
18:00	47	42	39	31	159	29	14	16	19	78	237
19:00	22	27	17	23	89	13	10	14	10	47	136
20:00	16	19	11	14	60	11	7	5	4	27	87
21:00	15	12	13	4	44	5	3	1	5	14	58
22:00	9	5	1	7	22	7	2	3	0	12	34
23:00	1	1	0	1	3	0	3	0	0	3	6
Total					3201					2862	6063

Peak Hour Summary

	Direction:	Eastbound
	Hour	Volume
A.M	730	275
P.M	1645	421
Daily	1645	421

	Direction:	Westbound
	Hour	Volume
A.M	745	404
P.M	1445	287
Daily	745	404

`

	Direction:	Combined
	Hour	Volume
A.M	730	676
P.M	1645	638
Daily	730	676

CLASSIFICATION SUMMARY

Dir	1	2	3	4	5	6	7	8	9	10	11	13	14	15	Tot Trk	Tot Vol	Trk %
EB	4	2289	715	15	131	21	10	7	9	0	0	0	0	0	193	3201	6.03%
WB	NOT AVAILABLE																
Total																	

HSA Consulting Group, Inc.
1315 Country Club Road
Gulf Breeze, Florida 32563

Location: Welaunee Blvd east of Centennial Blvd
County: Leon
Start Date: 13-Dec-18 Start Time: 0:00

		Eastbound						Westbound					Combined
Time		1st	2nd	3rd	4th	Hour Tot.		1st	2nd	3rd	4th	Hour Tot.	Total
0:00		2	1	4	0	7		0	3	1	1	5	12
1:00		2	2	2	0	6		3	0	2	0	5	11
2:00		3	0	0	0	3		0	1	0	0	1	4
3:00		1	0	0	1	2		0	0	0	0	0	2
4:00		0	0	1	0	1		1	1	1	1	4	5
5:00		1	0	1	13	15		4	6	0	5	15	30
6:00		8	3	22	25	58		8	5	17	26	56	114
7:00		37	49	52	102	240		36	34	61	116	247	487
8:00		64	44	37	39	184		135	92	76	60	363	547
9:00		34	45	40	53	172		47	45	47	44	183	355
10:00		48	33	35	45	161		38	38	52	51	179	340
11:00		48	49	46	56	199		33	59	57	47	196	395
12:00		66	60	70	57	253		112	51	43	81	287	540
13:00		62	53	59	54	228		51	49	48	36	184	412
14:00		68	65	80	75	288		56	41	44	75	216	504
15:00		86	65	75	71	297		91	55	78	56	280	577
16:00		69	78	96	107	350		48	46	56	52	202	552
17:00		111	116	127	97	451		85	88	90	52	315	766
18:00		59	36	32	26	153		44	21	17	20	102	255
19:00		17	28	20	16	81		18	11	15	14	58	139
20:00		24	19	20	23	86		22	10	14	10	56	142
21:00		15	18	12	13	58		10	4	4	3	21	79
22:00		4	7	4	7	22		6	3	1	0	10	32
23:00		2	4	1	0	7		3	4	0	1	8	15
Total						3322						2993	6315

Peak Hour Summary

	Direction:	Eastbound
	Hour	Volume
A.M	715	267
P.M	1645	461
Daily	1645	461

	Direction:	Westbound
	Hour	Volume
A.M	745	419
P.M	1645	315
Daily	745	419

	Direction:	Combined
	Hour	Volume
A.M	730	666
P.M	1645	776
Daily	1645	776

CLASSIFICATION SUMMARY

Dir		1	2	3	4	5	6	7	8	9	10	11	13	14	15	Tot Trk	Tot Vol	Trk %
EB		4	2350	754	9	131	38	14	11	8	3	0	0	0	0	214	3322	6.44%
WB		NOT AVAILABLE																
Total																		

PEAK HOUR QUEUES (Vehicles)
Capital Circle NE & Centerville Road

	Capital Circle NB			Centerville EB			Capital Circle SB			Centerville WB		
	L	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**
AM Peak (745-800 interval)												
Avg	2	40	0	22	19	1	10	126	0	24	38	2
Min	0	31	0	20	16	0	7	100	0	18	30	0
Max	4	50	2	24	23	2	12	140	0	28	45	5
Midday Peak (1315-1330 interval)												
Avg	4	64	0	25	12	1	6	89	0	10	16	0
Min	3	60	0	18	6	0	2	70	0	9	11	0
Max	8	68	0	30	16	3	10	100	0	13	22	0
PM Peak (1700-1715 interval)												
Avg	2	139	0	44	82	0	8	67	0	17	18	9
Min	1	130	0	42	70	0	3	55	0	12	12	4
Max	5	145	0	48	92	0	12	78	0	24	26	13

NOTE: Capital Circle through queues are long and frequently cut off access to turn lanes. This was particularly noted for NB in the PM peak hour, and for SB in the AM and Midday peak hours.

PEAK HOUR QUEUES (Vehicles)
Centerville Road & Shamrock Street

	Centerville NB	Shamrock EB	
	L	**L**	**R**
AM Peak (800-815 interval)			
Avg	1	4	1
Min	0	0	0
Max	2	8	4
Midday Peak (1445-1500 interval)			
Avg	1	1	1
Min	0	0	0
Max	2	3	1
PM Peak (1715-1730 interval)			
Avg	1	2	1
Min	0	0	0
Max	4	5	3

PEAK HOUR QUEUES (Vehicles)
Miccosukee Road & Thornton Road

	Thornton NB L/T/R	Miccosukee EB L/T/R	Greenway Access SB L/T/R	Miccosuke WB L/T/R
AM Peak (730-745 interval)				
Avg	2	NONE	1	NONE
Min	1		1	
Max	3		1	
Midday Peak (1145-1200 interval)				
Avg	1	NONE	1	NONE
Min	1		1	
Max	1		1	
PM Peak (1745-1800 interval)				
Avg	1	NONE	1	0
Min	1		1	0
Max	1		1	1

PEAK HOUR QUEUES (Vehicles)
Welaunee Blvd & Centerville Road - Buford Blvd

	Buford NB			Centerville EB			Centerville SB			Welaunee WB		
	L	T	R	L	T	R	L	T	R	L	T	R
AM Peak (800-815 interval)												
Avg	1	1	0	7	10	0	1	7	*see below	4	23	1
Min	0	1	0	4	8	0	0	2		2	19	0
Max	3	2	1	10	15	0	3	13		8	26	1
Midday Peak (1200-1215 interval)												
Avg	2	2	0	7	1	0	2	1	3	1	9	1
Min	0	0	0	2	0	0	0	0	1	0	6	0
Max	4	5	1	16	3	0	3	4	9	2	14	2
PM Peak (1700-1715 interval)												
Avg	8	10	0	26	2	0	5	3	5	3	17	2
Min	2	5	0	9	0	0	3	1	2	1	8	0
Max	13	14	0	45	2	0	6	4	9	6	22	4

* SB right turns are very heavy in AM peak hour but are free-flow for the majority of the signal cycle. Queues are therefore difficult to determine. When the SB rights were held by the signal, the queue would extend well beyond the designated right turn lane (40+ vehicles) but would typically resume moving after a few seconds.

PEAK HOUR QUEUES (Vehicles)
Welaunee Blvd & Fleischmann Road

	Welaunee NB			Fleischmann EB			Welaunee SB			Fleischmann WB	
	L	**T**	**R**	**L**	**T**	**R**	**L**	**T**	**R**	**L**	**T/R**
AM Peak (800-815 interval)											
Avg	1	2	4	0	17	0	0	1	0	12	3
Min	0	0	0	0	15	0	0	0	0	10	1
Max	3	3	8	0	18	0	1	1	0	14	5
Midday Peak (1445-1500 interval)											
Avg	2	1	2	0	4	0	0	1	0	2	3
Min	1	0	0	0	3	0	0	0	0	1	0
Max	3	3	8	0	6	0	1	3	0	3	5
PM Peak (1700-1715 interval)											
Avg	4	1	1	0	5	0	0	1	0	2	8
Min	2	0	0	0	2	0	0	0	0	0	6
Max	10	1	2	0	7	0	1	2	0	3	10

APPENDIX B: SYNCHRO/SIDRA INTERSECTION ANALYSIS RESULTS

Intersection						
Int Delay, s/veh	83.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	181	173	68	257	716	208
Future Vol, veh/h	181	173	68	257	716	208
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	355	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	92	92	93	93
Heavy Vehicles, %	2	2	2	4	2	2
Mvmt Flow	302	288	74	279	770	224

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1309	882	994	0	-	0
Stage 1	882	-	-	-	-	-
Stage 2	427	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 176	345	696	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	658	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 157	345	696	-	-	-
Mov Cap-2 Maneuver	~ 157	-	-	-	-	-
Stage 1	362	-	-	-	-	-
Stage 2	658	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	273.5	2.3	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	696	-	157	345	-	-
HCM Lane V/C Ratio	0.106	-	1.921	0.836	-	-
HCM Control Delay (s)	10.8	-	$ 485.9	51.2	-	-
HCM Lane LOS	B	-	F	F	-	-
HCM 95th %tile Q(veh)	0.4	-	23	7.4	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	64	197	7	44	6	278	257	20	3	552	169
Future Volume (veh/h)	35	64	197	7	44	6	278	257	20	3	552	169
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1600	1723	1545	1654	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	44	81	249	11	68	9	409	378	29	4	665	0
Peak Hour Factor	0.79	0.79	0.79	0.65	0.65	0.65	0.68	0.68	0.68	0.83	0.83	0.83
Percent Heavy Veh, %	3	11	2	15	7	2	2	2	2	2	2	2
Cap, veh/h	247	388	185	201	317	147	346	839	64	468	653	
Arrive On Green	0.03	0.13	0.13	0.01	0.10	0.10	0.16	0.53	0.53	0.00	0.38	0.00
Sat Flow, veh/h	1628	3040	1454	1472	3143	1453	1641	1580	121	1641	1723	1460
Grp Volume(v), veh/h	44	81	249	11	68	9	409	0	407	4	665	0
Grp Sat Flow(s),veh/h/ln	1628	1520	1454	1472	1572	1453	1641	0	1701	1641	1723	1460
Q Serve(g_s), s	1.9	1.9	10.2	0.5	1.6	0.4	12.5	0.0	11.8	0.1	30.3	0.0
Cycle Q Clear(g_c), s	1.9	1.9	10.2	0.5	1.6	0.4	12.5	0.0	11.8	0.1	30.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	247	388	185	201	317	147	346	0	903	468	653	
V/C Ratio(X)	0.18	0.21	1.34	0.05	0.21	0.06	1.18	0.00	0.45	0.01	1.02	
Avail Cap(c_a), veh/h	281	388	185	271	420	194	346	0	903	553	653	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.0	31.3	34.9	31.8	33.1	32.5	23.0	0.0	11.6	15.2	24.8	0.0
Incr Delay (d2), s/veh	0.3	0.3	185.9	0.0	0.1	0.1	107.2	0.0	1.6	0.0	39.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.7	12.9	0.2	0.6	0.2	16.6	0.0	4.3	0.0	18.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	31.5	220.8	31.8	33.2	32.6	130.2	0.0	13.2	15.2	64.7	0.0
LnGrp LOS	C	C	F	C	C	C	F	A	B	B	F	
Approach Vol, veh/h		374			88			816			669	A
Approach Delay, s/veh		157.5			32.9			71.8			64.4	
Approach LOS		F			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	49.0	7.2	17.0	19.0	36.8	9.3	14.9
Change Period (Y+Rc), s	6.5	6.5	6.3	6.8	6.5	6.5	6.8	* 6.8
Max Green Setting (Gmax), s	4.5	34.5	4.7	10.2	12.5	26.5	4.2	* 11
Max Q Clear Time (g_c+I1), s	2.1	13.8	2.5	12.2	14.5	32.3	3.9	3.6
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	84.0
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection												
Int Delay, s/veh	4.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	1	33	20	45	251	2	89	1	6	2	1	1
Future Vol, veh/h	1	33	20	45	251	2	89	1	6	2	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	87	87	87	71	71	71	50	50	50
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	42	25	52	289	2	125	1	8	4	2	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	291	0	0	67	0	0	453	452	55	455	463	290
Stage 1	-	-	-	-	-	-	57	57	-	394	394	-
Stage 2	-	-	-	-	-	-	396	395	-	61	69	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1271	-	-	1535	-	-	517	503	1012	515	496	749
Stage 1	-	-	-	-	-	-	955	847	-	631	605	-
Stage 2	-	-	-	-	-	-	629	605	-	950	837	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1271	-	-	1535	-	-	498	482	1012	494	476	749
Mov Cap-2 Maneuver	-	-	-	-	-	-	498	482	-	494	476	-
Stage 1	-	-	-	-	-	-	954	846	-	630	581	-
Stage 2	-	-	-	-	-	-	600	581	-	940	836	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.1	14.5	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	514	1271	-	-	1535	-	-	534
HCM Lane V/C Ratio	0.263	0.001	-	-	0.034	-	-	0.015
HCM Control Delay (s)	14.5	7.8	0	-	7.4	0	-	11.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1	0	-	-	0.1	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	61	78	1	223	4	204	92	8	7	91	151
Future Volume (veh/h)	80	61	78	1	223	4	204	92	8	7	91	151
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1695	1695	1723	1723	1723	1709	1709	1709	1668	1668	1668
Adj Flow Rate, veh/h	104	80	104	4	251	11	268	99	18	9	132	194
Peak Hour Factor	0.77	0.76	0.75	0.25	0.89	0.38	0.76	0.93	0.44	0.75	0.69	0.78
Percent Heavy Veh, %	3	4	4	2	2	2	3	3	3	6	6	6
Cap, veh/h	419	256	333	65	343	15	392	126	20	69	257	361
Arrive On Green	0.07	0.38	0.38	0.21	0.21	0.21	0.41	0.41	0.41	0.41	0.41	0.41
Sat Flow, veh/h	1628	669	870	8	1628	71	706	310	50	13	632	888
Grp Volume(v), veh/h	104	0	184	266	0	0	385	0	0	335	0	0
Grp Sat Flow(s),veh/h/ln	1628	0	1539	1707	0	0	1066	0	0	1534	0	0
Q Serve(g_s), s	2.7	0.0	4.9	0.0	0.0	0.0	10.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.7	0.0	4.9	8.4	0.0	0.0	20.0	0.0	0.0	9.8	0.0	0.0
Prop In Lane	1.00		0.57	0.02		0.04	0.70		0.05	0.03		0.58
Lane Grp Cap(c), veh/h	419	0	589	423	0	0	539	0	0	687	0	0
V/C Ratio(X)	0.25	0.00	0.31	0.63	0.00	0.00	0.71	0.00	0.00	0.49	0.00	0.00
Avail Cap(c_a), veh/h	560	0	1065	795	0	0	629	0	0	799	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	14.5	0.0	12.5	21.4	0.0	0.0	16.6	0.0	0.0	13.1	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.6	3.3	0.0	0.0	4.7	0.0	0.0	1.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.5	3.4	0.0	0.0	4.7	0.0	0.0	3.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	0.0	13.2	24.6	0.0	0.0	21.3	0.0	0.0	14.3	0.0	0.0
LnGrp LOS	B	A	B	C	A	A	C	A	A	B	A	A
Approach Vol, veh/h		288			266			385			335	
Approach Delay, s/veh		13.8			24.6			21.3			14.3	
Approach LOS		B			C			C			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		28.3		29.7	10.0	18.3		29.7				
Change Period (Y+Rc), s		* 6.1		6.1	5.9	6.1		* 6.1				
Max Green Setting (Gmax), s		* 40		27.9	9.1	24.9		* 28				
Max Q Clear Time (g_c+I1), s		6.9		11.8	4.7	10.4		22.0				
Green Ext Time (p_c), s		1.7		2.2	0.1	1.8		1.5				

Intersection Summary			
HCM 6th Ctrl Delay			18.4
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	110	285	262	283	7	408	41	104	6	88	87
Future Volume (vph)	13	110	285	262	283	7	408	41	104	6	88	87
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.99	1.00
Satd. Flow (prot)	1630	1683	1458	1630	1705		1630	1549	1458		1705	1458
Flt Permitted	0.55	1.00	1.00	0.45	1.00		0.47	1.00	1.00		0.96	1.00
Satd. Flow (perm)	945	1683	1458	779	1705		802	1549	1458		1640	1458
Peak-hour factor, PHF	0.55	0.78	0.88	0.74	0.84	0.50	0.87	0.65	0.80	0.42	0.91	0.85
Adj. Flow (vph)	24	141	324	354	337	14	469	63	130	14	97	102
RTOR Reduction (vph)	0	0	165	0	1	0	0	0	73	0	0	89
Lane Group Flow (vph)	24	141	159	354	350	0	469	63	57	0	111	13
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	13%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	22.7	22.1	22.1	51.3	44.7		54.7	54.7	54.7		16.3	16.3
Effective Green, g (s)	22.7	22.1	22.1	51.3	44.7		54.7	54.7	54.7		16.3	16.3
Actuated g/C Ratio	0.18	0.18	0.18	0.41	0.36		0.44	0.44	0.44		0.13	0.13
Clearance Time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	174	296	256	476	607		564	675	635		213	189
v/s Ratio Prot	0.00	0.08		c0.14	0.21		c0.22	0.04				
v/s Ratio Perm	0.02		0.11	c0.17			c0.15		0.04		0.07	0.01
v/c Ratio	0.14	0.48	0.62	0.74	0.58		0.83	0.09	0.09		0.52	0.07
Uniform Delay, d1	42.9	46.4	47.8	28.4	32.7		28.3	20.8	20.7		50.9	47.9
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	1.2	4.6	6.2	1.3		10.1	0.1	0.1		2.3	0.2
Delay (s)	43.2	47.7	52.4	34.6	34.0		38.4	20.8	20.8		53.2	48.1
Level of Service	D	D	D	C	C		D	C	C		D	D
Approach Delay (s)		50.6			34.3			33.3			50.7	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	125.4	Sum of lost time (s)	26.7
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	20.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	115	105	228	774	192	95
Future Vol, veh/h	115	105	228	774	192	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	500	0	355	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	92	92	96	96
Heavy Vehicles, %	2	2	2	2	2	4
Mvmt Flow	120	109	248	841	200	99

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1587	250	299	0	-	0
Stage 1	250	-	-	-	-	-
Stage 2	1337	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	~ 119	789	1262	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 96	789	1262	-	-	-
Mov Cap-2 Maneuver	~ 96	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	245	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	137.5	1.9	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1262	-	96	789	-	-
HCM Lane V/C Ratio	0.196	-	1.248	0.139	-	-
HCM Control Delay (s)	8.5	-	253.7	10.3	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.7	-	8.4	0.5	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	270	33	199	20	77	6	147	470	8	3	244	37
Future Volume (veh/h)	270	33	199	20	77	6	147	470	8	3	244	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1723	1627	1723	1723	1723	1723	1723	1709	1723
Adj Flow Rate, veh/h	318	39	234	37	143	11	186	595	10	3	265	0
Peak Hour Factor	0.85	0.85	0.85	0.54	0.54	0.54	0.79	0.79	0.79	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	9	2	2	2	2	2	3	2
Cap, veh/h	336	628	279	214	266	124	564	848	14	270	724	
Arrive On Green	0.13	0.19	0.19	0.03	0.09	0.09	0.08	0.50	0.50	0.00	0.42	0.00
Sat Flow, veh/h	1641	3273	1452	1641	3092	1443	1641	1689	28	1641	1709	1460
Grp Volume(v), veh/h	318	39	234	37	143	11	186	0	605	3	265	0
Grp Sat Flow(s),veh/h/ln	1641	1637	1452	1641	1546	1443	1641	0	1718	1641	1709	1460
Q Serve(g_s), s	12.0	0.9	14.7	1.9	4.2	0.7	5.7	0.0	25.6	0.1	10.0	0.0
Cycle Q Clear(g_c), s	12.0	0.9	14.7	1.9	4.2	0.7	5.7	0.0	25.6	0.1	10.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	336	628	279	214	266	124	564	0	863	270	724	
V/C Ratio(X)	0.95	0.06	0.84	0.17	0.54	0.09	0.33	0.00	0.70	0.01	0.37	
Avail Cap(c_a), veh/h	336	1039	461	379	982	458	638	0	863	473	724	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.4	31.2	36.8	38.1	41.4	39.8	12.9	0.0	18.1	17.3	18.6	0.0
Incr Delay (d2), s/veh	35.4	0.0	7.0	0.1	0.6	0.1	0.1	0.0	4.7	0.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	0.4	5.6	0.8	1.6	0.2	2.0	0.0	10.4	0.0	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.8	31.3	43.8	38.2	42.0	39.9	13.0	0.0	22.8	17.3	20.0	0.0
LnGrp LOS	E	C	D	D	D	D	B	A	C	B	C	
Approach Vol, veh/h		591			191			791			268	A
Approach Delay, s/veh		58.0			41.2			20.5			20.0	
Approach LOS		E			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	54.0	8.8	24.9	14.3	46.5	18.8	14.9
Change Period (Y+Rc), s	6.5	6.5	6.3	6.8	6.5	6.5	6.8	* 6.8
Max Green Setting (Gmax), s	12.0	40.0	12.0	30.0	12.0	40.0	12.0	* 30
Max Q Clear Time (g_c+I1), s	2.1	27.6	3.9	16.7	7.7	12.0	14.0	6.2
Green Ext Time (p_c), s	0.0	3.4	0.0	0.8	0.1	1.7	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

User approved changes to right turn type.

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	221	75	22	67	1	15	1	49	1	2	2
Future Vol, veh/h	1	221	75	22	67	1	15	1	49	1	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	78	78	78	77	77	77	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	243	82	28	86	1	19	1	64	2	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	87	0	0	325	0	0	433	429	284	462	470	87
Stage 1	-	-	-	-	-	-	286	286	-	143	143	-
Stage 2	-	-	-	-	-	-	147	143	-	319	327	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1509	-	-	1235	-	-	533	518	755	510	492	971
Stage 1	-	-	-	-	-	-	721	675	-	860	779	-
Stage 2	-	-	-	-	-	-	856	779	-	693	648	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1509	-	-	1235	-	-	518	505	755	457	480	971
Mov Cap-2 Maneuver	-	-	-	-	-	-	518	505	-	457	480	-
Stage 1	-	-	-	-	-	-	720	674	-	859	760	-
Stage 2	-	-	-	-	-	-	828	760	-	633	647	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2	11.1	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	678	1509	-	-	1235	-	-	594
HCM Lane V/C Ratio	0.125	0.001	-	-	0.023	-	-	0.017
HCM Control Delay (s)	11.1	7.4	0	-	8	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	284	157	106	8	66	9	91	142	5	4	92	77
Future Volume (veh/h)	284	157	106	8	66	9	91	142	5	4	92	77
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1695	1695	1695	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	379	185	141	18	85	27	123	165	10	5	103	100
Peak Hour Factor	0.75	0.85	0.75	0.44	0.78	0.33	0.74	0.86	0.50	0.75	0.89	0.77
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	759	470	358	105	275	78	230	225	12	76	194	182
Arrive On Green	0.16	0.52	0.52	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1641	907	691	98	1150	327	541	944	52	12	814	765
Grp Volume(v), veh/h	379	0	326	130	0	0	298	0	0	208	0	0
Grp Sat Flow(s),veh/h/ln	1641	0	1598	1574	0	0	1537	0	0	1590	0	0
Q Serve(g_s), s	8.1	0.0	6.2	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.1	0.0	6.2	3.3	0.0	0.0	8.9	0.0	0.0	5.8	0.0	0.0
Prop In Lane	1.00		0.43	0.14		0.21	0.41		0.03	0.02		0.48
Lane Grp Cap(c), veh/h	759	0	828	458	0	0	468	0	0	453	0	0
V/C Ratio(X)	0.50	0.00	0.39	0.28	0.00	0.00	0.64	0.00	0.00	0.46	0.00	0.00
Avail Cap(c_a), veh/h	759	0	991	606	0	0	613	0	0	607	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.2	0.0	7.3	15.8	0.0	0.0	17.8	0.0	0.0	16.7	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.7	0.7	0.0	0.0	3.1	0.0	0.0	1.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.0	1.6	1.1	0.0	0.0	3.1	0.0	0.0	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.7	0.0	8.0	16.5	0.0	0.0	20.9	0.0	0.0	18.3	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	C	A	A	B	A	A
Approach Vol, veh/h		705			130			298			208	
Approach Delay, s/veh		9.4			16.5			20.9			18.3	
Approach LOS		A			B			C			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		32.1		18.1	14.0	18.1		18.1				
Change Period (Y+Rc), s		* 6.1		6.1	5.9	6.1		* 6.1				
Max Green Setting (Gmax), s		* 31		16.9	8.1	16.9		* 17				
Max Q Clear Time (g_c+I1), s		8.2		7.8	10.1	5.3		10.9				
Green Ext Time (p_c), s		3.0		0.9	0.0	0.7		1.0				
Intersection Summary												
HCM 6th Ctrl Delay			14.0									
HCM 6th LOS			B									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	281	74	16	170	15	181	48	82	16	6	36
Future Volume (vph)	86	281	74	16	170	15	181	48	82	16	6	36
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1630	1716	1458	1630	1662		1630	1716	1458		1577	1458
Flt Permitted	0.54	1.00	1.00	0.50	1.00		0.38	1.00	1.00		0.76	1.00
Satd. Flow (perm)	919	1716	1458	852	1662		647	1716	1458		1248	1458
Peak-hour factor, PHF	0.80	0.91	0.76	0.75	0.87	0.43	0.91	0.77	0.89	0.54	0.75	0.73
Adj. Flow (vph)	108	309	97	21	195	35	199	62	92	30	8	49
RTOR Reduction (vph)	0	0	67	0	6	0	0	0	61	0	0	46
Lane Group Flow (vph)	108	309	30	21	224	0	199	62	31	0	38	3
Heavy Vehicles (%)	2%	2%	2%	2%	2%	8%	2%	2%	2%	8%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	23.0	21.4	21.4	20.2	20.0		23.4	23.4	23.4		4.7	4.7
Effective Green, g (s)	23.0	21.4	21.4	20.2	20.0		23.4	23.4	23.4		4.7	4.7
Actuated g/C Ratio	0.33	0.31	0.31	0.29	0.29		0.34	0.34	0.34		0.07	0.07
Clearance Time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	4.0	4.0	3.0	4.0		4.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	323	532	452	252	482		402	582	495		85	99
v/s Ratio Prot	c0.01	c0.18		0.00	0.13		c0.09	0.04				
v/s Ratio Perm	0.10		0.02	0.02			c0.08		0.02		0.03	0.00
v/c Ratio	0.33	0.58	0.07	0.08	0.47		0.50	0.11	0.06		0.45	0.03
Uniform Delay, d1	17.6	20.0	16.7	18.9	20.1		17.4	15.6	15.4		30.9	30.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	1.9	0.1	0.1	1.0		1.3	0.1	0.1		3.7	0.1
Delay (s)	17.9	21.9	16.8	19.0	21.0		18.7	15.7	15.4		34.6	30.1
Level of Service	B	C	B	B	C		B	B	B		C	C
Approach Delay (s)		20.1			20.9			17.3			32.1	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	68.9	Sum of lost time (s)	26.7
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	426	370	114	678	923	120	125	1597	237	231	2040	629
Future Volume (vph)	426	370	114	678	923	120	125	1597	237	231	2040	629
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4508	3260	1444	3162	3260	1430	1630	4638	1430	1614	4684	1444
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4508	3260	1444	3162	3260	1430	1630	4638	1430	1614	4684	1444
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	463	402	124	737	1003	130	136	1736	258	251	2217	684
RTOR Reduction (vph)	0	0	109	0	0	98	0	0	91	0	0	182
Lane Group Flow (vph)	463	402	15	737	1003	32	136	1736	167	251	2217	502
Heavy Vehicles (%)	4%	2%	3%	2%	2%	4%	2%	3%	4%	3%	2%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.4	18.3	18.3	32.5	37.4	37.4	11.2	51.2	51.2	19.2	59.2	59.2
Effective Green, g (s)	13.4	18.3	18.3	32.5	37.4	37.4	11.2	51.2	51.2	19.2	59.2	59.2
Actuated g/C Ratio	0.09	0.12	0.12	0.22	0.25	0.25	0.07	0.34	0.34	0.13	0.39	0.39
Clearance Time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	4.0	4.0	2.5	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	402	397	176	685	812	356	121	1583	488	206	1848	569
v/s Ratio Prot	0.10	c0.12		0.23	c0.31		0.08	c0.37		0.16	c0.47	
v/s Ratio Perm			0.01			0.02			0.12			0.35
v/c Ratio	1.15	1.01	0.09	1.08	1.24	0.09	1.12	1.10	0.34	1.22	1.20	0.88
Uniform Delay, d1	68.3	65.8	58.4	58.8	56.3	43.2	69.4	49.4	36.8	65.4	45.4	42.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	93.2	48.4	1.0	56.6	116.4	0.5	119.0	53.9	1.9	134.0	95.4	17.7
Delay (s)	161.5	114.2	59.4	115.4	172.7	43.8	188.4	103.3	38.8	199.4	140.8	59.9
Level of Service	F	F	E	F	F	D	F	F	D	F	F	E
Approach Delay (s)		129.5			141.2			100.9			127.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	124.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.8
Intersection Capacity Utilization	110.8%	ICU Level of Service	H
Analysis Period (min)	15		
Description: TMC Date: 3/30/2017			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	319	477	86	93	507	20	29	42	46	49	149	1185
Future Volume (veh/h)	319	477	86	93	507	20	29	42	46	49	149	1185
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1709	1723	1723	1723	1695	1723	1695	1723	1723	1723	1723
Adj Flow Rate, veh/h	347	518	93	101	551	22	32	46	50	53	162	1288
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	3	2	2	2	4	2	4	2	2	2	2
Cap, veh/h	339	824	370	247	453	198	248	919	791	657	797	931
Arrive On Green	0.18	0.25	0.25	0.06	0.14	0.14	0.03	0.54	0.54	0.46	0.46	0.46
Sat Flow, veh/h	1615	3247	1457	1641	3273	1432	1641	1695	1459	1299	1723	1459
Grp Volume(v), veh/h	347	518	93	101	551	22	32	46	50	53	162	1288
Grp Sat Flow(s),veh/h/ln	1615	1624	1457	1641	1637	1432	1641	1695	1459	1299	1723	1459
Q Serve(g_s), s	22.8	18.4	6.6	6.8	18.0	1.7	1.3	1.7	2.1	3.0	7.2	60.2
Cycle Q Clear(g_c), s	22.8	18.4	6.6	6.8	18.0	1.7	1.3	1.7	2.1	3.0	7.2	60.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	339	824	370	247	453	198	248	919	791	657	797	931
V/C Ratio(X)	1.02	0.63	0.25	0.41	1.22	0.11	0.13	0.05	0.06	0.08	0.20	1.38
Avail Cap(c_a), veh/h	339	824	370	247	453	198	282	919	791	657	797	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.30	0.30	0.30	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.7	43.1	38.7	44.4	56.0	49.0	16.6	14.0	14.1	19.6	20.7	23.5
Incr Delay (d2), s/veh	33.3	1.1	0.5	0.4	115.9	0.3	0.3	0.1	0.2	0.2	0.6	179.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.2	7.5	2.4	2.7	14.5	0.6	0.5	0.7	0.7	0.9	3.0	71.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.0	44.2	39.1	44.8	171.9	49.3	17.0	14.1	14.3	19.8	21.3	202.5
LnGrp LOS	F	D	D	D	F	D	B	B	B	B	C	F
Approach Vol, veh/h		958			674			128			1503	
Approach Delay, s/veh		53.8			148.8			14.9			176.6	
Approach LOS		D			F			B			F	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	29.0	24.0		77.0	14.0	39.0	10.3	66.7				
Change Period (Y+Rc), s	* 6.2	6.0		6.5	6.0	6.0	6.9	6.5				
Max Green Setting (Gmax), s	* 23	18.0		70.5	8.0	33.0	6.1	57.5				
Max Q Clear Time (g_c+I1), s	24.8	20.0		4.1	8.8	20.4	3.3	62.2				
Green Ext Time (p_c), s	0.0	0.0		0.5	0.0	3.7	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			128.4									
HCM 6th LOS			F									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	199	191	73	276	791	230
Future Volume (veh/h)	199	191	73	276	791	230
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1695	1723	1723
Adj Flow Rate, veh/h	216	208	79	300	860	250
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	4	2	2
Cap, veh/h	246	219	168	1234	934	271
Arrive On Green	0.15	0.15	0.73	0.73	0.73	0.73
Sat Flow, veh/h	1641	1460	508	1695	1283	373
Grp Volume(v), veh/h	216	208	79	300	0	1110
Grp Sat Flow(s),veh/h/ln	1641	1460	508	1695	0	1656
Q Serve(g_s), s	11.6	12.7	13.7	5.3	0.0	49.8
Cycle Q Clear(g_c), s	11.6	12.7	63.5	5.3	0.0	49.8
Prop In Lane	1.00	1.00	1.00			0.23
Lane Grp Cap(c), veh/h	246	219	168	1234	0	1205
V/C Ratio(X)	0.88	0.95	0.47	0.24	0.00	0.92
Avail Cap(c_a), veh/h	246	219	168	1234	0	1205
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	37.9	36.4	4.1	0.0	10.1
Incr Delay (d2), s/veh	28.1	46.7	2.0	0.1	0.0	11.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	7.3	1.7	1.2	0.0	14.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	65.5	84.6	38.4	4.2	0.0	21.7
LnGrp LOS	E	F	D	A	A	C
Approach Vol, veh/h	424			379	1110	
Approach Delay, s/veh	74.9			11.3	21.7	
Approach LOS	E			B	C	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		71.0		19.0		71.0
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		65.5		13.5		65.5
Max Q Clear Time (g_c+I1), s		65.5		14.7		51.8
Green Ext Time (p_c), s		0.0		0.0		5.6

Intersection Summary		
HCM 6th Ctrl Delay		31.4
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	92	286	7	46	6	287	266	20	3	572	175
Future Volume (veh/h)	51	92	286	7	46	6	287	266	20	3	572	175
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1695	1723	1695	1695	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	55	100	311	8	50	7	312	289	22	3	622	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	4	2	4	4	2	2	2	2	2	2	2
Cap, veh/h	245	401	181	180	282	127	390	903	69	589	810	
Arrive On Green	0.04	0.12	0.12	0.01	0.09	0.09	0.11	0.57	0.57	0.00	0.47	0.00
Sat Flow, veh/h	1628	3221	1454	1615	3221	1452	1641	1581	120	1641	1723	1460
Grp Volume(v), veh/h	55	100	311	8	50	7	312	0	311	3	622	0
Grp Sat Flow(s),veh/h/ln	1628	1611	1454	1615	1611	1452	1641	0	1701	1641	1723	1460
Q Serve(g_s), s	2.7	2.5	11.2	0.4	1.3	0.4	8.5	0.0	8.6	0.1	27.0	0.0
Cycle Q Clear(g_c), s	2.7	2.5	11.2	0.4	1.3	0.4	8.5	0.0	8.6	0.1	27.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	245	401	181	180	282	127	390	0	972	589	810	
V/C Ratio(X)	0.22	0.25	1.72	0.04	0.18	0.06	0.80	0.00	0.32	0.01	0.77	
Avail Cap(c_a), veh/h	289	401	181	284	419	189	390	0	972	701	810	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.3	35.6	39.4	36.8	38.1	37.7	16.5	0.0	10.1	12.5	19.8	0.0
Incr Delay (d2), s/veh	0.5	0.3	345.7	0.0	0.1	0.1	10.5	0.0	0.9	0.0	6.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	1.0	21.3	0.2	0.5	0.1	3.8	0.0	3.1	0.0	11.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	35.9	385.1	36.9	38.2	37.7	27.0	0.0	11.0	12.5	26.7	0.0
LnGrp LOS	D	D	F	D	D	D	C	A	B	B	C	
Approach Vol, veh/h		466			65			623			625	A
Approach Delay, s/veh		268.9			38.0			19.0			26.6	
Approach LOS		F			D			B			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.9	57.9	7.2	18.0	16.0	48.8	10.5	14.7
Change Period (Y+Rc), s	6.5	6.5	6.3	6.8	6.5	6.5	6.8	* 6.8
Max Green Setting (Gmax), s	6.5	39.5	6.7	11.2	9.5	36.5	6.2	* 12
Max Q Clear Time (g_c+I1), s	2.1	10.6	2.4	13.2	10.5	29.0	4.7	3.3
Green Ext Time (p_c), s	0.0	2.0	0.0	0.0	0.0	2.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	87.8
HCM 6th LOS	F

Notes
User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	33	20	46	260	2	139	2	10	2	1	1
Future Vol, veh/h	1	33	20	46	260	2	139	2	10	2	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	36	22	50	283	2	151	2	11	2	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	285	0	0	58	0	0	434	434	47	440	444	284
Stage 1	-	-	-	-	-	-	49	49	-	384	384	-
Stage 2	-	-	-	-	-	-	385	385	-	56	60	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1277	-	-	1546	-	-	532	515	1022	527	508	755
Stage 1	-	-	-	-	-	-	964	854	-	639	611	-
Stage 2	-	-	-	-	-	-	638	611	-	956	845	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1277	-	-	1546	-	-	514	495	1022	504	488	755
Mov Cap-2 Maneuver	-	-	-	-	-	-	514	495	-	504	488	-
Stage 1	-	-	-	-	-	-	963	853	-	638	588	-
Stage 2	-	-	-	-	-	-	612	588	-	942	844	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.1	14.8	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	531	1277	-	-	1546	-	-	545
HCM Lane V/C Ratio	0.309	0.001	-	-	0.032	-	-	0.008
HCM Control Delay (s)	14.8	7.8	0	-	7.4	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	1.3	0	-	-	0.1	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	69	90	1	243	4	252	112	8	10	123	206
Future Volume (veh/h)	92	69	90	1	243	4	252	112	8	10	123	206
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1695	1695	1723	1723	1723	1709	1709	1709	1695	1695	1695
Adj Flow Rate, veh/h	100	75	98	1	264	4	274	122	9	11	134	224
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	4	4	2	2	2	3	3	3	4	4	4
Cap, veh/h	386	241	315	62	327	5	391	151	10	70	257	408
Arrive On Green	0.07	0.36	0.36	0.19	0.19	0.19	0.43	0.43	0.43	0.43	0.43	0.43
Sat Flow, veh/h	1628	667	872	2	1690	26	668	349	23	16	596	946
Grp Volume(v), veh/h	100	0	173	269	0	0	405	0	0	369	0	0
Grp Sat Flow(s),veh/h/ln	1628	0	1539	1717	0	0	1040	0	0	1558	0	0
Q Serve(g_s), s	2.7	0.0	4.8	0.1	0.0	0.0	11.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.7	0.0	4.8	8.8	0.0	0.0	22.1	0.0	0.0	10.7	0.0	0.0
Prop In Lane	1.00		0.57	0.00		0.01	0.68		0.02	0.03		0.61
Lane Grp Cap(c), veh/h	386	0	557	394	0	0	551	0	0	735	0	0
V/C Ratio(X)	0.26	0.00	0.31	0.68	0.00	0.00	0.73	0.00	0.00	0.50	0.00	0.00
Avail Cap(c_a), veh/h	471	0	811	582	0	0	779	0	0	1028	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.6	0.0	13.5	22.8	0.0	0.0	16.4	0.0	0.0	12.6	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.3	2.1	0.0	0.0	2.2	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	1.5	3.5	0.0	0.0	4.7	0.0	0.0	3.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.9	0.0	13.9	24.9	0.0	0.0	18.6	0.0	0.0	13.1	0.0	0.0
LnGrp LOS	B	A	B	C	A	A	B	A	A	B	A	A
Approach Vol, veh/h		273			269			405			369	
Approach Delay, s/veh		14.6			24.9			18.6			13.1	
Approach LOS		B			C			B			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		27.4		31.6	9.9	17.5		31.6				
Change Period (Y+Rc), s		* 6.1		6.1	5.9	6.1		* 6.1				
Max Green Setting (Gmax), s		* 31		36.9	7.1	17.9		* 37				
Max Q Clear Time (g_c+I1), s		6.8		12.7	4.7	10.8		24.1				
Green Ext Time (p_c), s		0.7		1.2	0.0	0.6		1.4				

Intersection Summary		
HCM 6th Ctrl Delay		17.5
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	130	333	302	327	7	492	49	124	6	100	99
Future Volume (vph)	17	130	333	302	327	7	492	49	124	6	100	99
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1630	1683	1458	1630	1710		1630	1591	1458		1711	1458
Flt Permitted	0.46	1.00	1.00	0.48	1.00		0.46	1.00	1.00		0.98	1.00
Satd. Flow (perm)	782	1683	1458	829	1710		795	1591	1458		1682	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	141	362	328	355	8	535	53	135	7	109	108
RTOR Reduction (vph)	0	0	236	0	1	0	0	0	75	0	0	93
Lane Group Flow (vph)	18	141	126	328	362	0	535	53	60	0	116	15
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	10%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	18.9	17.9	17.9	33.1	26.1		41.1	41.1	41.1		12.5	12.5
Effective Green, g (s)	18.9	17.9	17.9	33.1	26.1		41.1	41.1	41.1		12.5	12.5
Actuated g/C Ratio	0.20	0.19	0.19	0.36	0.28		0.44	0.44	0.44		0.13	0.13
Clearance Time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	167	323	280	373	479		554	702	643		225	195
v/s Ratio Prot	0.00	0.08		c0.09	0.21		c0.24	0.03				
v/s Ratio Perm	0.02		0.09	c0.23			c0.19		0.04		0.07	0.01
v/c Ratio	0.11	0.44	0.45	0.88	0.76		0.97	0.08	0.09		0.52	0.07
Uniform Delay, d1	29.9	33.2	33.3	27.3	30.6		22.7	15.0	15.1		37.5	35.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.9	1.2	20.3	6.7		29.4	0.0	0.1		2.0	0.2
Delay (s)	30.2	34.1	34.4	47.6	37.3		52.1	15.1	15.2		39.5	35.4
Level of Service	C	C	C	D	D		D	B	B		D	D
Approach Delay (s)		34.2			42.2			42.5			37.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	39.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	93.1	Sum of lost time (s)	26.7
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	1063	612	161	409	467	269	123	2107	393	142	1554	615
Future Volume (vph)	1063	612	161	409	467	269	123	2107	393	142	1554	615
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4596	3260	1444	3131	3260	1435	1630	4684	1432	1630	4638	1458
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4596	3260	1444	3131	3260	1435	1630	4684	1432	1630	4638	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1155	665	175	445	508	292	134	2290	427	154	1689	668
RTOR Reduction (vph)	0	0	142	0	0	158	0	0	83	0	0	233
Lane Group Flow (vph)	1155	665	33	445	508	134	134	2290	344	154	1689	435
Confl. Peds. (#/hr)	3					3	2		5	5		
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	2%	2%	2%	3%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	29.4	28.6	28.6	20.2	19.4	19.4	13.3	60.2	60.2	12.2	59.1	59.1
Effective Green, g (s)	29.4	28.6	28.6	20.2	19.4	19.4	13.3	60.2	60.2	12.2	59.1	59.1
Actuated g/C Ratio	0.20	0.19	0.19	0.13	0.13	0.13	0.09	0.40	0.40	0.08	0.39	0.39
Clearance Time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	4.0	4.0	2.5	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	900	621	275	421	421	185	144	1879	574	132	1827	574
v/s Ratio Prot	c0.25	0.20		0.14	c0.16		0.08	c0.49		0.09	c0.36	
v/s Ratio Perm			0.02			0.09			0.24			0.30
v/c Ratio	1.28	1.07	0.12	1.06	1.21	0.72	0.93	1.22	0.60	1.17	0.92	0.76
Uniform Delay, d1	60.3	60.7	50.3	64.9	65.3	62.7	67.9	44.9	35.4	68.9	43.3	39.3
Progression Factor	1.00	1.00	1.00	0.74	0.75	0.74	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	136.0	56.6	0.9	45.4	103.0	6.5	58.4	103.5	4.6	130.0	9.4	9.0
Delay (s)	196.3	117.3	51.2	93.8	151.6	52.6	126.3	148.4	40.0	198.9	52.8	48.3
Level of Service	F	F	D	F	F	D	F	F	D	F	D	D
Approach Delay (s)		157.2			107.7			131.1			60.5	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	113.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.8
Intersection Capacity Utilization	114.1%	ICU Level of Service	H
Analysis Period (min)	15		
Description: TMC Date: 3/30/2017			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1124	415	38	32	528	130	139	242	47	55	93	516
Future Volume (veh/h)	1124	415	38	32	528	130	139	242	47	55	93	516
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1695	1709	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	1222	451	41	35	574	141	151	263	51	60	101	561
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	4	3	2	2	2	2	2	2	2
Cap, veh/h	965	2251	1003	226	498	223	130	281	238	61	132	928
Arrive On Green	0.74	0.91	0.91	0.03	0.15	0.15	0.04	0.16	0.16	0.08	0.08	0.08
Sat Flow, veh/h	1641	3273	1459	1615	3247	1455	1641	1723	1460	1066	1723	1460
Grp Volume(v), veh/h	1222	451	41	35	574	141	151	263	51	60	101	561
Grp Sat Flow(s),veh/h/ln	1641	1637	1459	1615	1624	1455	1641	1723	1460	1066	1723	1460
Q Serve(g_s), s	83.8	2.2	0.4	2.7	23.0	13.6	6.1	22.6	4.5	1.9	8.6	11.5
Cycle Q Clear(g_c), s	83.8	2.2	0.4	2.7	23.0	13.6	6.1	22.6	4.5	11.5	8.6	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	965	2251	1003	226	498	223	130	281	238	61	132	928
V/C Ratio(X)	1.27	0.20	0.04	0.16	1.15	0.63	1.17	0.93	0.21	0.98	0.76	0.60
Avail Cap(c_a), veh/h	965	2251	1003	260	498	223	130	281	238	61	132	928
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.23	0.23	0.23	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.1	2.1	2.0	51.7	63.5	59.5	66.3	62.0	54.4	74.8	67.9	16.2
Incr Delay (d2), s/veh	122.1	0.0	0.0	0.1	89.7	6.5	130.5	36.9	0.6	106.6	24.3	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	54.6	0.6	0.1	1.1	15.5	5.4	6.9	12.7	1.7	4.1	4.7	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	137.2	2.1	2.0	51.8	153.2	66.1	196.8	98.9	55.0	181.4	92.2	17.5
LnGrp LOS	F	A	A	D	F	E	F	F	E	F	F	B
Approach Vol, veh/h		1714			750			465			722	
Approach Delay, s/veh		98.4			132.1			125.9			41.6	
Approach LOS		F			F			F			D	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	90.0	29.0		31.0	9.8	109.2	13.0	18.0				
Change Period (Y+Rc), s	* 6.2	6.0		6.5	6.0	6.0	6.9	6.5				
Max Green Setting (Gmax), s	* 84	23.0		24.5	7.0	100.0	6.1	11.5				
Max Q Clear Time (g_c+I1), s	85.8	25.0		24.6	4.7	4.2	8.1	13.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	4.5	0.0	0.0				

Intersection Summary			
HCM 6th Ctrl Delay			97.6
HCM 6th LOS			F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	126	115	247	833	212	105
Future Volume (veh/h)	126	115	247	833	212	105
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	137	125	268	905	230	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	212	189	696	1056	666	330
Arrive On Green	0.13	0.13	0.61	0.61	0.61	0.61
Sat Flow, veh/h	1641	1460	1037	1723	1087	539
Grp Volume(v), veh/h	137	125	268	905	0	344
Grp Sat Flow(s),veh/h/ln	1641	1460	1037	1723	0	1626
Q Serve(g_s), s	3.4	3.5	7.3	18.3	0.0	4.4
Cycle Q Clear(g_c), s	3.4	3.5	11.7	18.3	0.0	4.4
Prop In Lane	1.00	1.00	1.00			0.33
Lane Grp Cap(c), veh/h	212	189	696	1056	0	996
V/C Ratio(X)	0.65	0.66	0.38	0.86	0.00	0.35
Avail Cap(c_a), veh/h	365	325	1020	1594	0	1505
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.6	17.7	6.9	6.7	0.0	4.1
Incr Delay (d2), s/veh	3.3	3.9	0.3	3.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.2	0.9	2.9	0.0	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.9	21.6	7.3	9.9	0.0	4.3
LnGrp LOS	C	C	A	A	A	A
Approach Vol, veh/h	262			1173	344	
Approach Delay, s/veh	21.2			9.3	4.3	
Approach LOS	C			A	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		31.7		11.0		31.7
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		39.5		9.5		39.5
Max Q Clear Time (g_c+I1), s		20.3		5.5		6.4
Green Ext Time (p_c), s		5.9		0.3		1.4
Intersection Summary						
HCM 6th Ctrl Delay			10.1			
HCM 6th LOS			B			

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	393	48	289	20	79	6	152	487	8	3	252	37
Future Volume (veh/h)	393	48	289	20	79	6	152	487	8	3	252	37
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	0.99		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1695	1723	1723	1695	1723	1723	1723	1723	1723	1709	1723
Adj Flow Rate, veh/h	427	52	314	22	86	7	165	529	9	3	274	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	4	2	2	4	2	2	2	2	2	3	2
Cap, veh/h	466	794	358	194	214	95	445	686	12	212	554	
Arrive On Green	0.20	0.25	0.25	0.02	0.07	0.07	0.09	0.41	0.41	0.00	0.32	0.00
Sat Flow, veh/h	1641	3221	1454	1641	3221	1440	1641	1689	29	1641	1709	1460
Grp Volume(v), veh/h	427	52	314	22	86	7	165	0	538	3	274	0
Grp Sat Flow(s),veh/h/ln	1641	1611	1454	1641	1611	1440	1641	0	1717	1641	1709	1460
Q Serve(g_s), s	16.2	1.0	17.0	1.0	2.1	0.4	5.2	0.0	22.1	0.1	10.6	0.0
Cycle Q Clear(g_c), s	16.2	1.0	17.0	1.0	2.1	0.4	5.2	0.0	22.1	0.1	10.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	466	794	358	194	214	95	445	0	698	212	554	
V/C Ratio(X)	0.92	0.07	0.88	0.11	0.40	0.07	0.37	0.00	0.77	0.01	0.49	
Avail Cap(c_a), veh/h	466	835	377	289	461	206	494	0	698	336	554	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.9	23.6	29.6	34.3	36.6	35.8	15.7	0.0	21.0	20.0	22.2	0.0
Incr Delay (d2), s/veh	23.0	0.0	19.4	0.1	0.5	0.1	0.2	0.0	8.1	0.0	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.4	7.5	0.4	0.8	0.1	1.8	0.0	9.7	0.0	4.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.8	23.6	49.0	34.4	37.1	35.9	15.8	0.0	29.0	20.0	25.4	0.0
LnGrp LOS	D	C	D	C	D	D	B	A	C	B	C	
Approach Vol, veh/h		793			115			703			277	A
Approach Delay, s/veh		48.9			36.5			25.9			25.3	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.8	39.7	8.3	27.0	13.5	33.0	23.0	12.2
Change Period (Y+Rc), s	6.5	6.5	6.3	6.8	6.5	6.5	6.8	* 6.8
Max Green Setting (Gmax), s	6.5	29.5	6.7	21.2	9.5	26.5	16.2	* 12
Max Q Clear Time (g_c+I1), s	2.1	24.1	3.0	19.0	7.2	12.6	18.2	4.1
Green Ext Time (p_c), s	0.0	1.7	0.0	0.3	0.0	1.3	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	36.1
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	229	78	22	70	1	24	2	77	1	2	2
Future Vol, veh/h	1	229	78	22	70	1	24	2	77	1	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	249	85	24	76	1	26	2	84	1	2	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	77	0	0	334	0	0	421	419	292	462	461	77
Stage 1	-	-	-	-	-	-	294	294	-	125	125	-
Stage 2	-	-	-	-	-	-	127	125	-	337	336	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1522	-	-	1225	-	-	543	525	747	510	497	984
Stage 1	-	-	-	-	-	-	714	670	-	879	792	-
Stage 2	-	-	-	-	-	-	877	792	-	677	642	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1522	-	-	1225	-	-	531	514	747	444	487	984
Mov Cap-2 Maneuver	-	-	-	-	-	-	531	514	-	444	487	-
Stage 1	-	-	-	-	-	-	713	669	-	878	776	-
Stage 2	-	-	-	-	-	-	855	776	-	599	641	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.9	11.4	11.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	677	1522	-	-	1225	-	-	596
HCM Lane V/C Ratio	0.165	0.001	-	-	0.02	-	-	0.009
HCM Control Delay (s)	11.4	7.4	0	-	8	0	-	11.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	181	122	8	70	9	111	174	5	4	124	105
Future Volume (veh/h)	328	181	122	8	70	9	111	174	5	4	124	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1695	1695	1695	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	357	197	133	9	76	10	121	189	5	4	135	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	745	466	315	96	295	36	229	258	6	79	223	184
Arrive On Green	0.15	0.49	0.49	0.21	0.21	0.21	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1641	959	647	60	1395	171	481	1007	24	7	869	719
Grp Volume(v), veh/h	357	0	330	95	0	0	315	0	0	253	0	0
Grp Sat Flow(s),veh/h/ln	1641	0	1606	1626	0	0	1513	0	0	1596	0	0
Q Serve(g_s), s	7.1	0.0	6.3	0.0	0.0	0.0	2.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.1	0.0	6.3	2.3	0.0	0.0	9.0	0.0	0.0	6.6	0.0	0.0
Prop In Lane	1.00		0.40	0.09		0.11	0.38		0.02	0.02		0.45
Lane Grp Cap(c), veh/h	745	0	780	427	0	0	493	0	0	486	0	0
V/C Ratio(X)	0.48	0.00	0.42	0.22	0.00	0.00	0.64	0.00	0.00	0.52	0.00	0.00
Avail Cap(c_a), veh/h	745	0	1055	689	0	0	640	0	0	646	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.8	0.0	7.9	15.6	0.0	0.0	16.3	0.0	0.0	15.6	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.8	0.6	0.0	0.0	2.9	0.0	0.0	1.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	1.7	0.8	0.0	0.0	3.0	0.0	0.0	2.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.2	0.0	8.7	16.2	0.0	0.0	19.3	0.0	0.0	17.4	0.0	0.0
LnGrp LOS	B	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		687			95			315			253	
Approach Delay, s/veh		10.0			16.2			19.3			17.4	
Approach LOS		A			B			B			B	

Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		29.1		18.2	13.0	16.1		18.2				
Change Period (Y+Rc), s		* 6.1		6.1	5.9	6.1		* 6.1				
Max Green Setting (Gmax), s		* 31		16.9	7.1	17.9		* 17				
Max Q Clear Time (g_c+I1), s		8.3		8.6	9.1	4.3		11.0				
Green Ext Time (p_c), s		3.0		1.0	0.0	0.5		1.1				

Intersection Summary			
HCM 6th Ctrl Delay			14.0
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	329	86	20	196	18	218	60	98	20	6	40
Future Volume (vph)	102	329	86	20	196	18	218	60	98	20	6	40
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1630	1716	1458	1630	1691		1630	1716	1458		1629	1458
Flt Permitted	0.44	1.00	1.00	0.48	1.00		0.39	1.00	1.00		0.74	1.00
Satd. Flow (perm)	758	1716	1458	824	1691		669	1716	1458		1243	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	358	93	22	213	20	237	65	107	22	7	43
RTOR Reduction (vph)	0	0	63	0	3	0	0	0	70	0	0	39
Lane Group Flow (vph)	111	358	30	22	230	0	237	65	37	0	29	4
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%	2%	2%	2%	4%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	30.6	25.2	25.2	21.6	20.7		26.3	26.3	26.3		6.6	6.6
Effective Green, g (s)	30.6	25.2	25.2	21.6	20.7		26.3	26.3	26.3		6.6	6.6
Actuated g/C Ratio	0.40	0.33	0.33	0.28	0.27		0.34	0.34	0.34		0.09	0.09
Clearance Time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	4.0	4.0	3.0	4.0		4.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	362	562	477	240	455		401	586	498		106	125
v/s Ratio Prot	c0.02	c0.21		0.00	0.14		c0.11	0.04				
v/s Ratio Perm	0.10		0.02	0.02			c0.10		0.03		0.02	0.00
v/c Ratio	0.31	0.64	0.06	0.09	0.51		0.59	0.11	0.07		0.27	0.03
Uniform Delay, d1	15.3	22.0	17.8	20.2	23.8		19.8	17.3	17.1		32.9	32.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	2.7	0.1	0.2	1.2		2.7	0.1	0.1		1.4	0.1
Delay (s)	15.5	24.6	17.8	20.4	25.0		22.5	17.4	17.1		34.3	32.3
Level of Service	B	C	B	C	C		C	B	B		C	C
Approach Delay (s)		21.7			24.6			20.3			33.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	76.9	Sum of lost time (s)	26.7
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	469	407	126	800	1089	141	142	1820	271	263	2326	717
Future Volume (vph)	469	407	126	800	1089	141	142	1820	271	263	2326	717
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4508	3260	1444	3162	3260	1430	1630	4638	1430	1614	4684	1444
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4508	3260	1444	3162	3260	1430	1630	4638	1430	1614	4684	1444
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	510	442	137	870	1184	153	154	1978	295	286	2528	779
RTOR Reduction (vph)	0	0	117	0	0	114	0	0	127	0	0	182
Lane Group Flow (vph)	510	442	20	870	1184	39	154	1978	168	286	2528	597
Heavy Vehicles (%)	4%	2%	3%	2%	2%	4%	2%	3%	4%	3%	2%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	12.4	22.4	22.4	28.4	38.4	38.4	11.2	51.2	51.2	19.2	59.2	59.2
Effective Green, g (s)	12.4	22.4	22.4	28.4	38.4	38.4	11.2	51.2	51.2	19.2	59.2	59.2
Actuated g/C Ratio	0.08	0.15	0.15	0.19	0.26	0.26	0.07	0.34	0.34	0.13	0.39	0.39
Clearance Time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	4.0	4.0	2.5	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	372	486	215	598	834	366	121	1583	488	206	1848	569
v/s Ratio Prot	c0.11	0.14		0.28	c0.36		0.09	c0.43		0.18	c0.54	
v/s Ratio Perm			0.01			0.03			0.12			0.41
v/c Ratio	1.37	0.91	0.10	1.45	1.42	0.11	1.27	1.25	0.34	1.39	1.37	1.05
Uniform Delay, d1	68.8	62.8	55.1	60.8	55.8	42.7	69.4	49.4	36.9	65.4	45.4	45.4
Progression Factor	1.00	1.00	1.00	0.84	0.95	0.69	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	183.2	23.6	0.9	205.5	189.5	0.1	172.2	117.7	1.9	201.8	169.1	51.5
Delay (s)	252.0	86.4	55.9	256.8	242.5	29.6	241.6	167.1	38.8	267.2	214.5	96.9
Level of Service	F	F	E	F	F	C	F	F	D	F	F	F
Approach Delay (s)		160.1			233.4			156.2			193.2	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	189.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.8
Intersection Capacity Utilization	123.7%	ICU Level of Service	H
Analysis Period (min)	15		
Description: TMC Date: 3/30/2017			

c Critical Lane Group

HCM 6th Signalized Intersection Summary
2: Centerville Rd & Welaunee Blvd 04/29/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	376	563	103	159	872	34	64	94	103	55	164	1303
Future Volume (veh/h)	376	563	103	159	872	34	64	94	103	55	164	1303
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1709	1723	1723	1723	1695	1723	1695	1723	1723	1723	1723
Adj Flow Rate, veh/h	409	612	112	173	948	37	70	102	112	60	178	1416
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	3	2	2	2	4	2	4	2	2	2	2
Cap, veh/h	315	931	418	278	698	306	217	842	725	533	716	847
Arrive On Green	0.05	0.09	0.09	0.09	0.21	0.21	0.04	0.50	0.50	0.42	0.42	0.42
Sat Flow, veh/h	1615	3247	1457	1641	3273	1433	1641	1695	1459	1167	1723	1459
Grp Volume(v), veh/h	409	612	112	173	948	37	70	102	112	60	178	1416
Grp Sat Flow(s),veh/h/ln	1615	1624	1457	1641	1637	1433	1641	1695	1459	1167	1723	1459
Q Serve(g_s), s	24.8	27.3	10.7	12.3	32.0	3.1	3.6	4.8	6.3	4.8	10.1	62.3
Cycle Q Clear(g_c), s	24.8	27.3	10.7	12.3	32.0	3.1	3.6	4.8	6.3	4.8	10.1	62.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	315	931	418	278	698	306	217	842	725	533	716	847
V/C Ratio(X)	1.30	0.66	0.27	0.62	1.36	0.12	0.32	0.12	0.15	0.11	0.25	1.67
Avail Cap(c_a), veh/h	315	931	418	278	698	306	226	842	725	533	716	847
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.27	0.27	0.27	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.1	60.8	53.3	41.5	59.0	47.6	23.1	20.2	20.6	27.0	28.6	31.5
Incr Delay (d2), s/veh	140.8	1.0	0.4	3.2	170.2	0.2	1.2	0.3	0.5	0.4	0.8	307.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.6	12.1	4.2	5.1	29.5	1.1	1.5	2.0	2.3	1.4	4.4	101.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	195.9	61.8	53.7	44.7	229.2	47.9	24.3	20.5	21.0	27.4	29.4	338.6
LnGrp LOS	F	E	D	D	F	D	C	C	C	C	C	F
Approach Vol, veh/h		1133			1158			284			1654	
Approach Delay, s/veh		109.4			195.8			21.7			294.0	
Approach LOS		F			F			C			F	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	31.0	38.0		81.0	20.0	49.0	12.2	68.8				
Change Period (Y+Rc), s	* 6.2	6.0		6.5	6.0	6.0	6.9	6.5				
Max Green Setting (Gmax), s	* 25	32.0		74.5	14.0	43.0	6.1	61.5				
Max Q Clear Time (g_c+I1), s	26.8	34.0		8.3	14.3	29.3	5.6	64.3				
Green Ext Time (p_c), s	0.0	0.0		1.1	0.0	4.6	0.0	0.0				

Intersection Summary			
HCM 6th Ctrl Delay			199.4
HCM 6th LOS			F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	250	241	92	349	902	262
Future Volume (veh/h)	250	241	92	349	902	262
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1695	1723	1723
Adj Flow Rate, veh/h	272	262	100	379	980	285
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	4	2	2
Cap, veh/h	239	213	60	1293	978	284
Arrive On Green	0.15	0.15	0.76	0.76	0.76	0.76
Sat Flow, veh/h	1641	1460	438	1695	1283	373
Grp Volume(v), veh/h	272	262	100	379	0	1265
Grp Sat Flow(s),veh/h/ln	1641	1460	438	1695	0	1656
Q Serve(g_s), s	17.5	17.5	0.0	8.2	0.0	91.5
Cycle Q Clear(g_c), s	17.5	17.5	91.5	8.2	0.0	91.5
Prop In Lane	1.00	1.00	1.00			0.23
Lane Grp Cap(c), veh/h	239	213	60	1293	0	1262
V/C Ratio(X)	1.14	1.23	1.67	0.29	0.00	1.00
Avail Cap(c_a), veh/h	239	213	60	1293	0	1262
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	51.3	51.3	60.0	4.4	0.0	14.3
Incr Delay (d2), s/veh	100.0	137.8	362.1	0.1	0.0	25.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	14.5	7.8	2.2	0.0	32.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	151.3	189.0	422.1	4.5	0.0	40.1
LnGrp LOS	F	F	F	A	A	F
Approach Vol, veh/h	534			479	1265	
Approach Delay, s/veh	169.8			91.7	40.1	
Approach LOS	F			F	D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		97.0		23.0		97.0
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		91.5		17.5		91.5
Max Q Clear Time (g_c+I1), s		93.5		19.5		93.5
Green Ext Time (p_c), s		0.0		0.0		0.0

Intersection Summary			
HCM 6th Ctrl Delay			81.3
HCM 6th LOS			F

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	159	492	7	52	6	385	357	27	6	1007	308
Future Volume (veh/h)	87	159	492	7	52	6	385	357	27	6	1007	308
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1695	1723	1695	1695	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	95	173	535	8	57	7	418	388	29	7	1095	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	4	2	4	4	2	2	2	2	2	2	2
Cap, veh/h	227	434	196	125	299	135	294	1066	80	577	916	
Arrive On Green	0.05	0.13	0.13	0.01	0.09	0.09	0.15	0.67	0.67	0.01	0.53	0.00
Sat Flow, veh/h	1628	3221	1454	1615	3221	1452	1641	1583	118	1641	1723	1460
Grp Volume(v), veh/h	95	173	535	8	57	7	418	0	417	7	1095	0
Grp Sat Flow(s),veh/h/ln	1628	1611	1454	1615	1611	1452	1641	0	1701	1641	1723	1460
Q Serve(g_s), s	7.2	7.4	20.2	0.7	2.5	0.7	22.5	0.0	15.9	0.3	79.8	0.0
Cycle Q Clear(g_c), s	7.2	7.4	20.2	0.7	2.5	0.7	22.5	0.0	15.9	0.3	79.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	227	434	196	125	299	135	294	0	1146	577	916	
V/C Ratio(X)	0.42	0.40	2.73	0.06	0.19	0.05	1.42	0.00	0.36	0.01	1.20	
Avail Cap(c_a), veh/h	227	434	196	182	423	191	294	0	1146	635	916	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.8	59.3	64.9	60.8	62.8	62.0	54.5	0.0	10.6	15.9	35.1	0.0
Incr Delay (d2), s/veh	1.2	0.6	793.4	0.1	0.1	0.1	208.4	0.0	0.9	0.0	98.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	3.0	50.6	0.3	1.0	0.2	28.2	0.0	6.1	0.1	57.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.1	59.9	858.3	60.8	63.0	62.1	262.8	0.0	11.5	15.9	133.6	0.0
LnGrp LOS	E	E	F	E	E	E	F	A	B	B	F	
Approach Vol, veh/h		803			72			835			1102	A
Approach Delay, s/veh		591.7			62.6			137.3			132.9	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	107.5	7.7	27.0	29.0	86.3	14.0	20.7
Change Period (Y+Rc), s	6.5	6.5	6.3	6.8	6.5	6.5	6.8	* 6.8
Max Green Setting (Gmax), s	6.5	90.5	6.7	20.2	22.5	74.5	7.2	* 20
Max Q Clear Time (g_c+I1), s	2.3	17.9	2.7	22.2	24.5	81.8	9.2	4.5
Green Ext Time (p_c), s	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	263.4
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	152.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	60	43	66	489	2	433	15	54	1	1	2
Future Vol, veh/h	2	60	43	66	489	2	433	15	54	1	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	65	47	72	532	2	471	16	59	1	1	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	534	0	0	112	0	0	772	771	89	807	793	533
Stage 1	-	-	-	-	-	-	93	93	-	677	677	-
Stage 2	-	-	-	-	-	-	679	678	-	130	116	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1034	-	-	1478	-	-	~ 317	331	969	300	321	547
Stage 1	-	-	-	-	-	-	914	818	-	443	452	-
Stage 2	-	-	-	-	-	-	~ 441	452	-	874	800	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1034	-	-	1478	-	-	~ 298	307	969	256	298	547
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 298	307	-	256	298	-
Stage 1	-	-	-	-	-	-	912	816	-	442	421	-
Stage 2	-	-	-	-	-	-	~ 408	421	-	803	798	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.9	$ 354	15
HCM LOS			F	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	322	1034	-	-	1478	-	-	366
HCM Lane V/C Ratio	1.695	0.002	-	-	0.049	-	-	0.012
HCM Control Delay (s)	$ 354	8.5	0	-	7.6	0	-	15
HCM Lane LOS	F	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	34	0	-	-	0.2	-	-	0

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	93	122	1	267	4	452	200	16	13	170	285
Future Volume (veh/h)	124	93	122	1	267	4	452	200	16	13	170	285
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1695	1695	1723	1723	1723	1709	1709	1709	1695	1695	1695
Adj Flow Rate, veh/h	135	101	133	1	290	4	491	217	17	14	185	310
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	4	4	2	2	2	3	3	3	4	4	4
Cap, veh/h	166	168	221	24	281	4	438	176	14	39	401	648
Arrive On Green	0.05	0.25	0.25	0.17	0.17	0.17	0.67	0.67	0.67	0.67	0.67	0.67
Sat Flow, veh/h	1628	664	874	1	1694	23	598	264	21	22	603	973
Grp Volume(v), veh/h	135	0	234	295	0	0	725	0	0	509	0	0
Grp Sat Flow(s),veh/h/ln	1628	0	1538	1718	0	0	883	0	0	1598	0	0
Q Serve(g_s), s	7.1	0.0	20.1	4.7	0.0	0.0	75.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	7.1	0.0	20.1	24.9	0.0	0.0	100.0	0.0	0.0	25.0	0.0	0.0
Prop In Lane	1.00		0.57	0.00		0.01	0.68		0.02	0.03		0.61
Lane Grp Cap(c), veh/h	166	0	388	309	0	0	628	0	0	1089	0	0
V/C Ratio(X)	0.81	0.00	0.60	0.95	0.00	0.00	1.15	0.00	0.00	0.47	0.00	0.00
Avail Cap(c_a), veh/h	166	0	390	309	0	0	628	0	0	1089	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	53.6	0.0	49.5	63.0	0.0	0.0	35.1	0.0	0.0	12.5	0.0	0.0
Incr Delay (d2), s/veh	25.2	0.0	2.6	39.0	0.0	0.0	86.5	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	8.0	14.6	0.0	0.0	38.9	0.0	0.0	8.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.8	0.0	52.0	102.1	0.0	0.0	121.6	0.0	0.0	12.9	0.0	0.0
LnGrp LOS	E	A	D	F	A	A	F	A	A	B	A	A
Approach Vol, veh/h		369			295			725			509	
Approach Delay, s/veh		61.8			102.1			121.6			12.9	
Approach LOS		E			F			F			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		44.0		106.1	13.0	31.0		106.1				
Change Period (Y+Rc), s		* 6.1		6.1	5.9	6.1		* 6.1				
Max Green Setting (Gmax), s		* 38		99.9	7.1	24.9		* 1E2				
Max Q Clear Time (g_c+I1), s		22.1		27.0	9.1	26.9		102.0				
Green Ext Time (p_c), s		0.8		1.9	0.0	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			77.8									
HCM 6th LOS			E									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	162	413	410	446	10	648	65	164	10	168	166
Future Volume (vph)	21	162	413	410	446	10	648	65	164	10	168	166
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1630	1683	1458	1630	1710		1630	1620	1458		1711	1458
Flt Permitted	0.22	1.00	1.00	0.40	1.00		0.19	1.00	1.00		0.98	1.00
Satd. Flow (perm)	372	1683	1458	679	1710		325	1620	1458		1679	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	176	449	446	485	11	704	71	178	11	183	180
RTOR Reduction (vph)	0	0	162	0	1	0	0	0	96	0	0	142
Lane Group Flow (vph)	23	176	287	446	495	0	704	71	82	0	194	38
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	8%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	33.0	29.1	29.1	57.3	47.4		70.7	70.7	70.7		15.2	15.2
Effective Green, g (s)	33.0	29.1	29.1	57.3	47.4		70.7	70.7	70.7		15.2	15.2
Actuated g/C Ratio	0.22	0.19	0.19	0.37	0.31		0.46	0.46	0.46		0.10	0.10
Clearance Time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	112	320	277	392	530		573	749	674		167	145
v/s Ratio Prot	0.01	0.10		c0.16	0.29		c0.40	0.04				
v/s Ratio Perm	0.04		0.20	c0.26			c0.17		0.06		0.12	0.03
v/c Ratio	0.21	0.55	1.04	1.14	0.93		1.23	0.09	0.12		1.16	0.26
Uniform Delay, d1	48.5	55.9	61.9	44.2	51.2		43.0	23.1	23.4		68.8	63.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.9	2.0	63.9	88.5	23.8		117.6	0.1	0.1		119.8	1.0
Delay (s)	49.4	58.0	125.7	132.8	75.0		160.6	23.1	23.5		188.6	64.6
Level of Service	D	E	F	F	E		F	C	C		F	E
Approach Delay (s)		104.6			102.3			124.8			128.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	113.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	152.8	Sum of lost time (s)	26.7
Intersection Capacity Utilization	102.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	1170	673	179	483	551	318	141	2402	448	162	1771	701
Future Volume (vph)	1170	673	179	483	551	318	141	2402	448	162	1771	701
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4596	3260	1444	3131	3260	1435	1630	4684	1432	1630	4638	1458
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4596	3260	1444	3131	3260	1435	1630	4684	1432	1630	4638	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1272	732	195	525	599	346	153	2611	487	176	1925	762
RTOR Reduction (vph)	0	0	144	0	0	157	0	0	83	0	0	234
Lane Group Flow (vph)	1272	732	51	525	599	189	153	2611	404	176	1925	528
Confl. Peds. (#/hr)	3					3	2		5	5		
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	2%	2%	2%	3%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	28.4	31.4	31.4	17.4	20.4	20.4	10.2	60.2	60.2	12.2	62.2	62.2
Effective Green, g (s)	28.4	31.4	31.4	17.4	20.4	20.4	10.2	60.2	60.2	12.2	62.2	62.2
Actuated g/C Ratio	0.19	0.21	0.21	0.12	0.14	0.14	0.07	0.40	0.40	0.08	0.41	0.41
Clearance Time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	4.0	4.0	2.5	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	870	682	302	363	443	195	110	1879	574	132	1923	604
v/s Ratio Prot	c0.28	0.22		0.17	c0.18		0.09	c0.56		0.11	c0.42	
v/s Ratio Perm			0.04			0.13			0.28			0.36
v/c Ratio	1.46	1.07	0.17	1.45	1.35	0.97	1.39	1.39	0.70	1.33	1.00	0.87
Uniform Delay, d1	60.8	59.3	48.6	66.3	64.8	64.5	69.9	44.9	37.5	68.9	43.9	40.3
Progression Factor	1.00	1.00	1.00	0.78	0.78	0.63	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	214.3	55.8	1.2	202.3	159.9	12.6	222.0	178.7	7.1	192.5	20.8	16.2
Delay (s)	275.1	115.1	49.8	254.1	210.2	53.4	291.9	223.6	44.6	261.4	64.7	56.5
Level of Service	F	F	D	F	F	D	F	F	D	F	E	E
Approach Delay (s)		201.9			189.0			200.0			74.6	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	162.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.8
Intersection Capacity Utilization	126.0%	ICU Level of Service	H
Analysis Period (min)	15		
Description: TMC Date: 3/30/2017			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1326	489	45	55	909	224	312	542	105	61	102	567
Future Volume (veh/h)	1326	489	45	55	909	224	312	542	105	61	102	567
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1695	1709	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	1441	532	49	60	988	243	339	589	114	66	111	616
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	4	3	2	2	2	2	2	2	2
Cap, veh/h	790	2010	896	275	649	291	182	385	326	48	212	840
Arrive On Green	0.60	0.82	0.82	0.04	0.20	0.20	0.05	0.22	0.22	0.12	0.12	0.12
Sat Flow, veh/h	1641	3273	1459	1615	3247	1456	1641	1723	1460	744	1723	1460
Grp Volume(v), veh/h	1441	532	49	60	988	243	339	589	114	66	111	616
Grp Sat Flow(s),veh/h/ln	1641	1637	1459	1615	1624	1456	1641	1723	1460	744	1723	1460
Q Serve(g_s), s	67.8	5.7	1.0	4.4	30.0	24.0	8.1	33.5	9.9	0.0	9.1	18.5
Cycle Q Clear(g_c), s	67.8	5.7	1.0	4.4	30.0	24.0	8.1	33.5	9.9	18.5	9.1	18.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	790	2010	896	275	649	291	182	385	326	48	212	840
V/C Ratio(X)	1.83	0.26	0.05	0.22	1.52	0.83	1.86	1.53	0.35	1.37	0.52	0.73
Avail Cap(c_a), veh/h	790	2010	896	287	649	291	182	385	326	48	212	840
HCM Platoon Ratio	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.11	0.11	0.11	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	5.8	5.4	45.1	60.0	57.6	61.9	58.3	49.1	75.0	61.6	23.4
Incr Delay (d2), s/veh	371.8	0.0	0.0	0.1	242.4	19.1	406.6	251.7	0.9	258.5	3.1	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	97.8	1.8	0.3	1.8	33.9	10.2	23.9	41.4	3.7	5.3	4.1	16.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	396.6	5.9	5.4	45.2	302.4	76.7	468.5	310.0	50.0	333.5	64.7	27.0
LnGrp LOS	F	A	A	D	F	E	F	F	D	F	E	C
Approach Vol, veh/h		2022			1291			1042			793	
Approach Delay, s/veh		284.3			248.0			333.1			57.8	
Approach LOS		F			F			F			E	
Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	74.0	36.0		40.0	11.9	98.1	15.0	25.0				
Change Period (Y+Rc), s	* 6.2	6.0		6.5	6.0	6.0	6.9	6.5				
Max Green Setting (Gmax), s	* 68	30.0		33.5	7.0	91.0	8.1	18.5				
Max Q Clear Time (g_c+I1), s	69.8	32.0		35.5	6.4	7.7	10.1	20.5				
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	5.4	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			250.2									
HCM 6th LOS			F									

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	159	146	312	1051	241	119
Future Volume (veh/h)	159	146	312	1051	241	119
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	173	159	339	1142	262	129
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	220	195	717	1225	775	381
Arrive On Green	0.13	0.13	0.71	0.71	0.71	0.71
Sat Flow, veh/h	1641	1460	993	1723	1090	536
Grp Volume(v), veh/h	173	159	339	1142	0	391
Grp Sat Flow(s),veh/h/ln	1641	1460	993	1723	0	1626
Q Serve(g_s), s	7.2	7.5	14.0	40.3	0.0	6.5
Cycle Q Clear(g_c), s	7.2	7.5	20.5	40.3	0.0	6.5
Prop In Lane	1.00	1.00	1.00			0.33
Lane Grp Cap(c), veh/h	220	195	717	1225	0	1156
V/C Ratio(X)	0.79	0.81	0.47	0.93	0.00	0.34
Avail Cap(c_a), veh/h	220	196	843	1445	0	1364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.7	29.9	7.8	8.8	0.0	3.9
Incr Delay (d2), s/veh	17.2	22.4	0.5	10.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	3.7	2.1	10.7	0.0	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.9	52.3	8.3	19.0	0.0	4.1
LnGrp LOS	D	D	A	B	A	A
Approach Vol, veh/h	332			1481	391	
Approach Delay, s/veh	49.5			16.5	4.1	
Approach LOS	D			B	A	
Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		55.9		15.0		55.9
Change Period (Y+Rc), s		5.5		5.5		5.5
Max Green Setting (Gmax), s		59.5		9.5		59.5
Max Q Clear Time (g_c+I1), s		42.3		9.5		8.5
Green Ext Time (p_c), s		8.1		0.0		1.7
Intersection Summary						
HCM 6th Ctrl Delay			19.3			
HCM 6th LOS			B			

Notes

User approved pedestrian interval to be less than phase max green.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	677	82	496	21	87	6	204	653	11	6	443	65
Future Volume (veh/h)	677	82	496	21	87	6	204	653	11	6	443	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		1.00	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1695	1723	1723	1695	1723	1723	1723	1723	1723	1709	1723
Adj Flow Rate, veh/h	736	89	539	23	95	7	222	710	12	7	482	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	4	2	2	4	2	2	2	2	2	3	2
Cap, veh/h	619	1171	529	124	166	74	278	724	12	74	601	
Arrive On Green	0.33	0.36	0.36	0.02	0.05	0.05	0.09	0.43	0.43	0.01	0.35	0.00
Sat Flow, veh/h	1641	3221	1456	1641	3221	1432	1641	1689	29	1641	1709	1460
Grp Volume(v), veh/h	736	89	539	23	95	7	222	0	722	7	482	0
Grp Sat Flow(s),veh/h/ln	1641	1611	1456	1641	1611	1432	1641	0	1718	1641	1709	1460
Q Serve(g_s), s	48.2	2.6	53.2	1.9	4.2	0.7	12.5	0.0	60.6	0.4	37.3	0.0
Cycle Q Clear(g_c), s	48.2	2.6	53.2	1.9	4.2	0.7	12.5	0.0	60.6	0.4	37.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	619	1171	529	124	166	74	278	0	737	74	601	
V/C Ratio(X)	1.19	0.08	1.02	0.19	0.57	0.09	0.80	0.00	0.98	0.09	0.80	
Avail Cap(c_a), veh/h	619	1171	529	165	258	114	278	0	737	133	601	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.7	30.5	46.6	63.9	67.8	66.1	32.6	0.0	41.2	38.5	42.8	0.0
Incr Delay (d2), s/veh	100.8	0.0	43.8	0.3	1.2	0.2	13.9	0.0	28.7	0.2	10.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	38.7	1.0	25.4	0.8	1.8	0.3	6.0	0.0	30.9	0.2	17.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	144.5	30.5	90.4	64.1	69.0	66.4	46.5	0.0	69.8	38.7	53.6	0.0
LnGrp LOS	F	C	F	E	E	E	D	A	E	D	D	
Approach Vol, veh/h		1364			125			944			489	A
Approach Delay, s/veh		115.7			67.9			64.4			53.4	
Approach LOS		F			E			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.7	69.3	9.3	60.0	19.0	58.0	55.0	14.3
Change Period (Y+Rc), s	6.5	6.5	6.3	6.8	6.5	6.5	6.8	* 6.8
Max Green Setting (Gmax), s	6.5	57.5	6.7	53.2	12.5	51.5	48.2	* 12
Max Q Clear Time (g_c+I1), s	2.4	62.6	3.9	55.2	14.5	39.3	50.2	6.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	86.6
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

User approved changes to right turn type.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	11.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	477	162	42	134	2	71	6	226	1	2	2
Future Vol, veh/h	2	477	162	42	134	2	71	6	226	1	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	518	176	46	146	2	77	7	246	1	2	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	148	0	0	694	0	0	851	850	606	976	937	147
Stage 1	-	-	-	-	-	-	610	610	-	239	239	-
Stage 2	-	-	-	-	-	-	241	240	-	737	698	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1434	-	-	901	-	-	280	298	497	230	265	900
Stage 1	-	-	-	-	-	-	482	485	-	764	708	-
Stage 2	-	-	-	-	-	-	762	707	-	410	442	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1434	-	-	901	-	-	265	281	497	109	250	900
Mov Cap-2 Maneuver	-	-	-	-	-	-	265	281	-	109	250	-
Stage 1	-	-	-	-	-	-	481	484	-	762	668	-
Stage 2	-	-	-	-	-	-	715	667	-	204	441	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.2	42.1	19.3
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	407	1434	-	-	901	-	-	258
HCM Lane V/C Ratio	0.809	0.002	-	-	0.051	-	-	0.021
HCM Control Delay (s)	42.1	7.5	0	-	9.2	0	-	19.3
HCM Lane LOS	E	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	7.3	0	-	-	0.2	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	448	246	166	8	78	9	199	312	10	4	172	145
Future Volume (veh/h)	448	246	166	8	78	9	199	312	10	4	172	145
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1695	1695	1695	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	487	267	180	9	85	10	216	339	11	4	187	158
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	543	357	241	58	180	20	283	382	12	49	411	342
Arrive On Green	0.17	0.37	0.37	0.13	0.13	0.13	0.47	0.47	0.47	0.47	0.47	0.47
Sat Flow, veh/h	1641	959	647	63	1398	155	465	812	25	4	874	726
Grp Volume(v), veh/h	487	0	447	104	0	0	566	0	0	349	0	0
Grp Sat Flow(s),veh/h/ln	1641	0	1606	1616	0	0	1302	0	0	1604	0	0
Q Serve(g_s), s	13.1	0.0	18.8	0.0	0.0	0.0	20.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	13.1	0.0	18.8	4.5	0.0	0.0	32.1	0.0	0.0	11.6	0.0	0.0
Prop In Lane	1.00		0.40	0.09		0.10	0.38		0.02	0.01		0.45
Lane Grp Cap(c), veh/h	543	0	598	258	0	0	677	0	0	802	0	0
V/C Ratio(X)	0.90	0.00	0.75	0.40	0.00	0.00	0.84	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	543	0	765	416	0	0	753	0	0	888	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	26.4	0.0	21.2	31.5	0.0	0.0	19.9	0.0	0.0	14.0	0.0	0.0
Incr Delay (d2), s/veh	17.6	0.0	4.7	2.2	0.0	0.0	8.9	0.0	0.0	0.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	7.3	1.9	0.0	0.0	10.2	0.0	0.0	3.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.0	0.0	26.0	33.7	0.0	0.0	28.7	0.0	0.0	14.8	0.0	0.0
LnGrp LOS	D	A	C	C	A	A	C	A	A	B	A	A
Approach Vol, veh/h		934			104			566			349	
Approach Delay, s/veh		35.4			33.7			28.7			14.8	
Approach LOS		D			C			C			B	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		35.1		42.8	19.0	16.1		42.8				
Change Period (Y+Rc), s		* 6.1		6.1	5.9	6.1		* 6.1				
Max Green Setting (Gmax), s		* 37		40.9	13.1	17.9		* 41				
Max Q Clear Time (g_c+I1), s		20.8		13.6	15.1	6.5		34.1				
Green Ext Time (p_c), s		3.7		2.8	0.0	0.5		2.5				
Intersection Summary												
HCM 6th Ctrl Delay			29.7									
HCM 6th LOS			C									
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	126	409	106	28	266	25	287	80	130	32	10	68
Future Volume (vph)	126	409	106	28	266	25	287	80	130	32	10	68
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1630	1716	1458	1630	1691		1630	1716	1458		1629	1458
Flt Permitted	0.33	1.00	1.00	0.34	1.00		0.45	1.00	1.00		0.72	1.00
Satd. Flow (perm)	573	1716	1458	585	1691		769	1716	1458		1219	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	137	445	115	30	289	27	312	87	141	35	11	74
RTOR Reduction (vph)	0	0	76	0	3	0	0	0	94	0	0	65
Lane Group Flow (vph)	137	445	39	30	313	0	312	87	47	0	46	9
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%	2%	2%	2%	4%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	34.5	27.5	27.5	25.3	22.9		27.0	27.0	27.0		9.5	9.5
Effective Green, g (s)	34.5	27.5	27.5	25.3	22.9		27.0	27.0	27.0		9.5	9.5
Actuated g/C Ratio	0.42	0.34	0.34	0.31	0.28		0.33	0.33	0.33		0.12	0.12
Clearance Time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Vehicle Extension (s)	2.0	4.0	4.0	3.0	4.0		4.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	332	576	490	211	473		375	566	481		141	169
v/s Ratio Prot	c0.04	c0.26		0.00	0.19		c0.12	0.05				
v/s Ratio Perm	0.14		0.03	0.04			c0.16		0.03		0.04	0.01
v/c Ratio	0.41	0.77	0.08	0.14	0.66		0.83	0.15	0.10		0.33	0.05
Uniform Delay, d1	15.8	24.3	18.5	20.2	26.0		23.6	19.3	19.0		33.2	32.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.3	6.8	0.1	0.3	3.8		15.1	0.1	0.1		1.4	0.1
Delay (s)	16.1	31.1	18.6	20.5	29.8		38.7	19.5	19.0		34.6	32.3
Level of Service	B	C	B	C	C		D	B	B		C	C
Approach Delay (s)		26.1			29.0			30.4			33.1	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	81.8	Sum of lost time (s)	26.7
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	446	387	119	689	938	122	124	1584	235	233	2056	634
Future Volume (vph)	446	387	119	689	938	122	124	1584	235	233	2056	634
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4508	3260	1444	3162	3260	1430	1630	4638	1430	1614	4684	1444
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4508	3260	1444	3162	3260	1430	1630	4638	1430	1614	4684	1444
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	485	421	129	749	1020	133	135	1722	255	253	2235	689
RTOR Reduction (vph)	0	0	110	0	0	100	0	0	127	0	0	182
Lane Group Flow (vph)	485	421	19	749	1020	33	135	1722	128	253	2235	507
Heavy Vehicles (%)	4%	2%	3%	2%	2%	4%	2%	3%	4%	3%	2%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.4	22.4	22.4	28.4	37.4	37.4	10.2	51.2	51.2	19.2	60.2	60.2
Effective Green, g (s)	13.4	22.4	22.4	28.4	37.4	37.4	10.2	51.2	51.2	19.2	60.2	60.2
Actuated g/C Ratio	0.09	0.15	0.15	0.19	0.25	0.25	0.07	0.34	0.34	0.13	0.40	0.40
Clearance Time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	4.0	4.0	2.5	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	402	486	215	598	812	356	110	1583	488	206	1879	579
v/s Ratio Prot	c0.11	c0.13		0.24	c0.31		0.08	c0.37		0.16	c0.48	
v/s Ratio Perm			0.01			0.02			0.09			0.35
v/c Ratio	1.21	0.87	0.09	1.25	1.26	0.09	1.23	1.09	0.26	1.23	1.19	0.88
Uniform Delay, d1	68.3	62.3	55.0	60.8	56.3	43.3	69.9	49.4	35.7	65.4	44.9	41.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	114.2	18.4	0.8	127.0	125.3	0.5	159.1	50.5	1.3	137.7	90.9	16.8
Delay (s)	182.5	80.7	55.8	187.8	181.6	43.8	229.0	99.9	37.0	203.1	135.8	58.3
Level of Service	F	F	E	F	F	D	F	F	D	F	F	E
Approach Delay (s)		125.3			174.4			100.6			124.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	129.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.8
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		
Description: TMC Date: 3/30/2017			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	386	354	156	96	426	236	230	127	117	374	166	737
Future Volume (veh/h)	386	354	156	96	426	236	230	127	117	374	166	737
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1709	1723	1723	1723	1695	1723	1695	1723	1723	1723	1723
Adj Flow Rate, veh/h	420	385	170	104	463	257	250	138	127	407	180	801
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	3	2	2	2	4	2	4	2	2	2	2
Cap, veh/h	408	991	445	356	636	279	284	273	235	474	469	653
Arrive On Green	0.18	0.31	0.31	0.07	0.19	0.19	0.07	0.16	0.16	0.18	0.27	0.27
Sat Flow, veh/h	1615	3247	1458	1641	3273	1433	1641	1695	1457	1641	1723	1458
Grp Volume(v), veh/h	420	385	170	104	463	257	250	138	127	407	180	801
Grp Sat Flow(s),veh/h/ln	1615	1624	1458	1641	1637	1433	1641	1695	1457	1641	1723	1458
Q Serve(g_s), s	15.8	8.4	8.3	4.5	11.9	15.8	6.1	6.7	7.2	16.3	7.6	24.5
Cycle Q Clear(g_c), s	15.8	8.4	8.3	4.5	11.9	15.8	6.1	6.7	7.2	16.3	7.6	24.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	408	991	445	356	636	279	284	273	235	474	469	653
V/C Ratio(X)	1.03	0.39	0.38	0.29	0.73	0.92	0.88	0.51	0.54	0.86	0.38	1.23
Avail Cap(c_a), veh/h	408	991	445	373	636	279	284	273	235	474	469	653
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.43	0.43	0.43	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.7	24.6	24.6	26.2	34.0	35.6	34.5	34.5	34.7	26.1	26.6	24.9
Incr Delay (d2), s/veh	37.0	0.5	1.1	0.2	4.5	34.5	26.4	6.5	8.7	14.7	2.4	115.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.8	3.2	2.9	1.7	4.9	8.0	4.8	3.2	3.0	8.8	3.3	33.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.7	25.1	25.7	26.4	38.5	70.0	60.9	41.0	43.4	40.7	29.0	139.8
LnGrp LOS	F	C	C	C	D	E	E	D	D	D	C	F
Approach Vol, veh/h		975			824			515			1388	
Approach Delay, s/veh		41.4			46.8			51.3			96.4	
Approach LOS		D			D			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	24.0	23.0	21.0	12.0	34.0	13.0	31.0
Change Period (Y+Rc), s	* 6.2	6.5	* 6.7	6.5	6.0	* 6.5	6.9	6.5
Max Green Setting (Gmax), s	* 16	17.5	* 16	14.5	7.0	* 27	6.1	24.5
Max Q Clear Time (g_c+I1), s	17.8	17.8	18.3	9.2	6.5	10.4	8.1	26.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.6	0.0	3.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	64.6
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

MOVEMENT SUMMARY

Site: 3 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Shamrock St and Centerville Rd - Opening
Site Category: Future Conditions AM
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Centerville Rd														
3	L2	138	2.0	150	2.0	0.146	4.5	LOS A	0.6	15.0	0.32	0.20	0.32	30.4
8	T1	165	4.0	179	4.0	0.146	4.4	LOS A	0.6	15.0	0.31	0.19	0.31	32.3
18	R2	2	2.0	2	2.0	0.146	4.3	LOS A	0.6	14.6	0.30	0.19	0.30	31.5
Approach		305	3.1	332	3.1	0.146	4.4	LOS A	0.6	15.0	0.31	0.20	0.31	31.4
East: Shamrock St Ext														
1	L2	2	2.0	2	2.0	0.003	4.4	LOS A	0.0	0.2	0.47	0.28	0.47	30.3
6	T1	1	2.0	1	2.0	0.002	4.1	LOS A	0.0	0.2	0.45	0.26	0.45	32.5
16	R2	1	2.0	1	2.0	0.002	4.1	LOS A	0.0	0.2	0.45	0.26	0.45	31.5
Approach		4	2.0	4	2.0	0.003	4.2	LOS A	0.0	0.2	0.46	0.27	0.46	31.1
North: Centerville Rd														
7	L2	4	2.0	4	2.0	0.383	7.0	LOS A	2.0	51.5	0.38	0.24	0.38	31.5
4	T1	493	2.0	536	2.0	0.383	6.9	LOS A	2.0	51.5	0.37	0.24	0.37	31.3
14	R2	336	2.0	365	2.0	0.383	6.7	LOS A	2.0	50.5	0.36	0.23	0.36	30.3
Approach		833	2.0	905	2.0	0.383	6.8	LOS A	2.0	51.5	0.37	0.23	0.37	30.9
West: Shamrock St S														
5	L2	167	2.0	182	2.0	0.231	7.0	LOS A	0.9	23.3	0.55	0.53	0.55	29.3
2	T1	2	2.0	2	2.0	0.231	7.0	LOS A	0.9	23.3	0.55	0.53	0.55	29.1
12	R2	205	2.0	223	2.0	0.256	6.8	LOS A	1.0	26.0	0.54	0.52	0.54	30.1
Approach		374	2.0	407	2.0	0.256	6.9	LOS A	1.0	26.0	0.55	0.53	0.55	29.8
All Vehicles		1516	2.2	1648	2.2	0.383	6.4	LOS A	2.0	51.5	0.40	0.30	0.40	30.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	324	118	160	596	136	428	75	298	181	66	259
Future Volume (veh/h)	82	324	118	160	596	136	428	75	298	181	66	259
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1695	1723	1695	1695	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	89	352	128	174	648	148	465	82	324	197	72	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	4	2	4	4	2	2	2	2	2	2	2
Cap, veh/h	204	573	259	335	712	322	608	83	329	281	397	
Arrive On Green	0.06	0.18	0.18	0.11	0.22	0.22	0.16	0.27	0.27	0.11	0.23	0.00
Sat Flow, veh/h	1628	3221	1456	1615	3221	1457	1641	304	1202	1641	1723	1460
Grp Volume(v), veh/h	89	352	128	174	648	148	465	0	406	197	72	0
Grp Sat Flow(s),veh/h/ln	1628	1611	1456	1615	1611	1457	1641	0	1506	1641	1723	1460
Q Serve(g_s), s	3.5	8.1	6.3	6.9	15.7	7.0	12.5	0.0	21.4	7.2	2.7	0.0
Cycle Q Clear(g_c), s	3.5	8.1	6.3	6.9	15.7	7.0	12.5	0.0	21.4	7.2	2.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	204	573	259	335	712	322	608	0	412	281	397	
V/C Ratio(X)	0.44	0.61	0.49	0.52	0.91	0.46	0.77	0.00	0.99	0.70	0.18	
Avail Cap(c_a), veh/h	233	573	259	355	713	322	608	0	412	290	397	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.7	30.3	29.6	23.3	30.4	27.0	22.2	0.0	28.9	21.7	24.7	0.0
Incr Delay (d2), s/veh	1.5	1.9	1.5	0.5	15.4	0.4	5.2	0.0	40.9	5.9	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	3.1	2.2	2.5	7.3	2.4	2.7	0.0	11.9	3.0	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.1	32.3	31.1	23.8	45.7	27.4	27.5	0.0	69.8	27.6	25.7	0.0
LnGrp LOS	C	C	C	C	D	C	C	A	E	C	C	
Approach Vol, veh/h		569			970			871			269	A
Approach Delay, s/veh		31.2			39.0			47.2			27.1	
Approach LOS		C			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	28.4	15.0	21.0	19.0	24.9	11.6	24.5
Change Period (Y+Rc), s	6.5	6.5	6.3	6.8	6.5	6.5	6.8	* 6.8
Max Green Setting (Gmax), s	9.5	20.5	9.7	14.2	12.5	17.5	6.2	* 18
Max Q Clear Time (g_c+I1), s	9.2	23.4	8.9	10.1	14.5	4.7	5.5	17.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	0.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	38.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	30	18	27	155	1	111	2	8	2	1	1
Future Vol, veh/h	1	30	18	27	155	1	111	2	8	2	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	33	20	29	168	1	121	2	9	2	1	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	169	0	0	53	0	0	273	272	43	278	282	169
Stage 1	-	-	-	-	-	-	45	45	-	227	227	-
Stage 2	-	-	-	-	-	-	228	227	-	51	55	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1409	-	-	1553	-	-	679	635	1027	674	627	875
Stage 1	-	-	-	-	-	-	969	857	-	776	716	-
Stage 2	-	-	-	-	-	-	775	716	-	962	849	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1409	-	-	1553	-	-	666	621	1027	655	613	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	666	621	-	655	613	-
Stage 1	-	-	-	-	-	-	968	856	-	775	701	-
Stage 2	-	-	-	-	-	-	757	701	-	950	848	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	1.1	11.5	10.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	681	1409	-	-	1553	-	-	686
HCM Lane V/C Ratio	0.193	0.001	-	-	0.019	-	-	0.006
HCM Control Delay (s)	11.5	7.6	0	-	7.4	0	-	10.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0

MOVEMENT SUMMARY

Site: 6 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Bradfordville Rd, Roberts Rd, Welaunee Boulevard, and Centerville Rd
Site Category: Opening Conditions AM
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Roberts Rd														
3b	L3	116	2.0	126	2.0	0.462	10.1	LOS B	3.0	75.6	0.67	0.70	0.82	31.8
3	L2	87	2.0	95	2.0	0.462	10.1	LOS B	3.0	75.6	0.67	0.70	0.82	30.4
8	T1	112	3.0	122	3.0	0.462	10.1	LOS B	3.0	75.6	0.67	0.70	0.82	29.8
18	R2	47	2.0	51	2.0	0.462	10.1	LOS B	3.0	75.6	0.67	0.70	0.82	28.9
Approach		362	2.3	393	2.3	0.462	10.1	LOS B	3.0	75.6	0.67	0.70	0.82	30.4
East: Centerville Rd														
1	L2	61	2.0	66	2.0	0.450	11.7	LOS B	2.6	67.2	0.72	0.81	0.97	30.0
1a	L1	82	2.0	89	2.0	0.450	11.7	LOS B	2.6	67.2	0.72	0.81	0.97	30.6
6	T1	62	2.0	67	2.0	0.450	11.7	LOS B	2.6	67.2	0.72	0.81	0.97	29.5
16	R2	80	2.0	87	2.0	0.450	11.7	LOS B	2.6	67.2	0.72	0.81	0.97	28.5
Approach		285	2.0	310	2.0	0.450	11.7	LOS B	2.6	67.2	0.72	0.81	0.97	29.6
North: Bradfordville Rd														
7	L2	48	4.0	52	4.0	0.491	11.8	LOS B	3.3	83.5	0.72	0.83	1.00	30.9
4	T1	87	4.0	95	4.0	0.491	11.8	LOS B	3.3	83.5	0.72	0.83	1.00	30.4
14a	R1	117	2.0	127	2.0	0.491	11.7	LOS B	3.3	83.5	0.72	0.83	1.00	31.3
14	R2	88	2.0	96	2.0	0.491	11.7	LOS B	3.3	83.5	0.72	0.83	1.00	29.3
Approach		340	2.8	370	2.8	0.491	11.7	LOS B	3.3	83.5	0.72	0.83	1.00	30.5
West: Centerville Rd														
5	L2	45	3.0	49	3.0	0.211	7.1	LOS A	0.9	22.8	0.60	0.57	0.60	32.2
2	T1	19	4.0	21	4.0	0.211	7.2	LOS A	0.9	22.8	0.60	0.57	0.60	31.6
12	R2	35	2.0	38	2.0	0.211	7.1	LOS A	0.9	22.8	0.60	0.57	0.60	30.5
12b	R3	47	2.0	51	2.0	0.211	7.1	LOS A	0.9	22.8	0.60	0.57	0.60	31.4
Approach		146	2.6	159	2.6	0.211	7.1	LOS A	0.9	22.8	0.60	0.57	0.60	31.5
SouthWest: Welaunee Blvd														
5bx	L3	103	2.0	112	2.0	0.444	8.9	LOS A	2.5	63.9	0.60	0.51	0.60	33.3
5ax	L1	133	2.0	145	2.0	0.444	8.9	LOS A	2.5	63.9	0.60	0.51	0.60	32.3
12ax	R1	56	2.0	61	2.0	0.444	8.9	LOS A	2.5	63.9	0.60	0.51	0.60	32.1
12bx	R3	102	2.0	111	2.0	0.444	8.9	LOS A	2.5	63.9	0.60	0.51	0.60	30.9
Approach		394	2.0	428	2.0	0.444	8.9	LOS A	2.5	63.9	0.60	0.51	0.60	32.2
All Vehicles		1527	2.3	1660	2.3	0.491	10.2	LOS B	3.3	83.5	0.67	0.69	0.81	30.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	82	210	176	191	4	305	30	77	5	90	89
Future Volume (vph)	11	82	210	176	191	4	305	30	77	5	90	89
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1630	1683	1458	1630	1711		1630	1549	1458		1712	1458
Flt Permitted	0.63	1.00	1.00	0.52	1.00		0.43	1.00	1.00		0.98	1.00
Satd. Flow (perm)	1073	1683	1458	885	1711		739	1549	1458		1688	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	89	228	191	208	4	332	33	84	5	98	97
RTOR Reduction (vph)	0	0	179	0	1	0	0	0	52	0	0	85
Lane Group Flow (vph)	12	89	49	191	211	0	332	33	32	0	103	12
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	13%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	17.9	16.9	16.9	30.2	23.2		30.2	30.2	30.2		9.8	9.8
Effective Green, g (s)	17.9	16.9	16.9	30.2	23.2		30.2	30.2	30.2		9.8	9.8
Actuated g/C Ratio	0.23	0.21	0.21	0.38	0.29		0.38	0.38	0.38		0.12	0.12
Clearance Time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	249	359	311	406	501		445	591	556		209	180
v/s Ratio Prot	0.00	0.05		c0.04	0.12		c0.14	0.02				
v/s Ratio Perm	0.01		0.03	c0.14			c0.15		0.02		0.06	0.01
v/c Ratio	0.05	0.25	0.16	0.47	0.42		0.75	0.06	0.06		0.49	0.07
Uniform Delay, d1	23.9	25.8	25.3	17.4	22.5		19.3	15.4	15.5		32.3	30.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.4	0.2	0.9	0.6		6.7	0.0	0.0		1.8	0.2
Delay (s)	23.9	26.2	25.5	18.3	23.1		26.0	15.5	15.5		34.2	30.8
Level of Service	C	C	C	B	C		C	B	B		C	C
Approach Delay (s)		25.7			20.8			23.2			32.5	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	79.1	Sum of lost time (s)	26.7
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

MOVEMENT SUMMARY

Site: 8 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Shamrock St and Welaunee Blvd - Opening
Site Category: Future Conditions AM
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Welaunee Blvd														
3	L2	2	2.0	2	2.0	0.317	5.5	LOS A	1.9	47.9	0.04	0.01	0.04	32.2
8	T1	391	2.0	425	2.0	0.317	5.5	LOS A	1.9	47.9	0.04	0.01	0.04	31.9
Approach		393	2.0	427	2.0	0.317	5.5	LOS A	1.9	47.9	0.04	0.01	0.04	31.9
North: Welaunee Blvd														
4	T1	360	2.0	391	2.0	0.291	5.2	LOS A	1.7	42.6	0.03	0.00	0.03	32.1
14	R2	2	2.0	2	2.0	0.291	5.2	LOS A	1.7	42.6	0.03	0.00	0.03	31.2
Approach		362	2.0	393	2.0	0.291	5.2	LOS A	1.7	42.6	0.03	0.00	0.03	32.1
West: Shamrock St Ext														
5	L2	3	2.0	3	2.0	0.010	4.1	LOS A	0.0	1.0	0.46	0.28	0.46	31.8
12	R2	5	2.0	5	2.0	0.010	4.1	LOS A	0.0	1.0	0.46	0.28	0.46	30.6
Approach		8	2.0	9	2.0	0.010	4.1	LOS A	0.0	1.0	0.46	0.28	0.46	31.1
All Vehicles		763	2.0	829	2.0	0.317	5.3	LOS A	1.9	47.9	0.04	0.01	0.04	32.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	1113	641	169	416	474	273	122	2090	390	143	1566	620
Future Volume (vph)	1113	641	169	416	474	273	122	2090	390	143	1566	620
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4596	3260	1444	3131	3260	1435	1630	4684	1432	1630	4638	1437
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4596	3260	1444	3131	3260	1435	1630	4684	1432	1630	4638	1437
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1210	697	184	452	515	297	133	2272	424	155	1702	674
RTOR Reduction (vph)	0	0	143	0	0	158	0	0	84	0	0	234
Lane Group Flow (vph)	1210	697	41	452	515	139	133	2272	340	155	1702	440
Confl. Peds. (#/hr)	3					3	2		5	5		2
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	2%	2%	2%	3%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	30.4	32.4	32.4	17.4	19.4	19.4	13.2	59.2	59.2	12.2	58.2	58.2
Effective Green, g (s)	30.4	32.4	32.4	17.4	19.4	19.4	13.2	59.2	59.2	12.2	58.2	58.2
Actuated g/C Ratio	0.20	0.22	0.22	0.12	0.13	0.13	0.09	0.39	0.39	0.08	0.39	0.39
Clearance Time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	4.0	4.0	2.5	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	931	704	311	363	421	185	143	1848	565	132	1799	557
v/s Ratio Prot	c0.26	0.21		0.14	c0.16		0.08	c0.49		c0.10	0.37	
v/s Ratio Perm			0.03			0.10			0.24			0.31
v/c Ratio	1.30	0.99	0.13	1.25	1.22	0.75	0.93	1.23	0.60	1.17	0.95	0.79
Uniform Delay, d1	59.8	58.6	47.5	66.3	65.3	63.0	67.9	45.4	36.1	68.9	44.4	40.5
Progression Factor	1.00	1.00	1.00	1.07	1.10	1.30	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	142.8	31.6	0.9	112.6	102.5	2.6	53.9	108.2	4.7	132.7	11.8	10.9
Delay (s)	202.6	90.2	48.3	183.3	174.2	84.6	121.9	153.6	40.8	201.6	56.2	51.4
Level of Service	F	F	D	F	F	F	F	F	D	F	E	D
Approach Delay (s)		151.6			156.4			135.2			63.8	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	121.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.8
Intersection Capacity Utilization	128.6%	ICU Level of Service	H
Analysis Period (min)	15		
Description: TMC Date: 3/30/2017			
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	690	632	280	106	474	263	842	466	428	180	79	354
Future Volume (veh/h)	690	632	280	106	474	263	842	466	428	180	79	354
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1695	1709	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	750	687	304	115	515	286	915	507	465	196	86	385
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	4	3	2	2	2	2	2	2	2
Cap, veh/h	538	1189	527	243	444	197	589	546	462	190	132	548
Arrive On Green	0.10	0.12	0.12	0.07	0.14	0.14	0.31	0.32	0.32	0.08	0.08	0.08
Sat Flow, veh/h	1641	3273	1452	1615	3247	1439	1641	1723	1460	1641	1723	1460
Grp Volume(v), veh/h	750	687	304	115	515	286	915	507	465	196	86	385
Grp Sat Flow(s),veh/h/ln	1641	1637	1452	1615	1624	1439	1641	1723	1460	1641	1723	1460
Q Serve(g_s), s	44.8	29.8	29.7	9.1	20.5	20.5	47.1	42.7	47.5	11.3	7.3	11.5
Cycle Q Clear(g_c), s	44.8	29.8	29.7	9.1	20.5	20.5	47.1	42.7	47.5	11.3	7.3	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	538	1189	527	243	444	197	589	546	462	190	132	548
V/C Ratio(X)	1.39	0.58	0.58	0.47	1.16	1.45	1.55	0.93	1.01	1.03	0.65	0.70
Avail Cap(c_a), veh/h	538	1189	527	253	444	197	589	546	462	190	132	548
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.31	0.31	0.31	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.2	55.1	55.1	50.4	64.8	64.8	42.5	49.6	51.2	63.6	67.3	39.7
Incr Delay (d2), s/veh	180.9	0.6	1.4	0.5	94.6	230.6	257.2	24.5	43.3	73.9	22.3	7.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	48.8	13.3	11.8	3.7	14.2	20.1	62.1	21.9	22.7	6.1	4.0	13.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	239.1	55.8	56.5	50.9	159.4	295.4	299.7	74.1	94.6	137.5	89.6	47.1
LnGrp LOS	F	E	E	D	F	F	F	E	F	F	F	D
Approach Vol, veh/h		1741			916			1887			667	
Approach Delay, s/veh		134.9			188.2			188.6			79.2	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	51.0	27.0	18.0	54.0	17.0	61.0	54.0	18.0
Change Period (Y+Rc), s	* 6.2	6.5	* 6.7	6.5	6.0	* 6.5	6.9	6.5
Max Green Setting (Gmax), s	* 45	20.5	* 11	47.5	12.0	* 54	47.1	11.5
Max Q Clear Time (g_c+I1), s	46.8	22.5	13.3	49.5	11.1	31.8	49.1	13.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	8.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	156.6
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

MOVEMENT SUMMARY

Site: 3 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Shamrock St and Centerville Rd - Opening
Site Category: Future Conditions PM
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Centerville Rd														
3	L2	426	2.0	463	2.0	0.417	7.3	LOS A	2.4	60.2	0.34	0.20	0.34	29.3
8	T1	510	2.0	554	2.0	0.417	7.0	LOS A	2.4	60.2	0.32	0.18	0.32	31.2
18	R2	5	2.0	5	2.0	0.417	7.0	LOS A	2.3	58.9	0.32	0.18	0.32	30.4
Approach		941	2.0	1023	2.0	0.417	7.1	LOS A	2.4	60.2	0.33	0.19	0.33	30.3
East: Shamrock St Ext														
1	L2	1	2.0	1	2.0	0.006	7.9	LOS A	0.0	0.5	0.65	0.55	0.65	30.2
6	T1	2	2.0	2	2.0	0.006	7.6	LOS A	0.0	0.5	0.65	0.53	0.65	30.3
16	R2	2	2.0	2	2.0	0.006	7.0	LOS A	0.0	0.4	0.63	0.51	0.63	30.2
Approach		5	2.0	5	2.0	0.006	7.4	LOS A	0.0	0.5	0.64	0.53	0.64	30.2
North: Centerville Rd														
7	L2	1	2.0	1	2.0	0.158	5.8	LOS A	0.6	15.5	0.50	0.44	0.50	32.0
4	T1	153	2.0	166	2.0	0.158	5.7	LOS A	0.6	15.5	0.49	0.43	0.49	31.8
14	R2	104	4.0	113	4.0	0.158	5.5	LOS A	0.6	15.1	0.48	0.41	0.48	30.8
Approach		258	2.8	280	2.8	0.158	5.6	LOS A	0.6	15.5	0.49	0.43	0.49	31.4
West: Shamrock St S														
5	L2	103	2.0	112	2.0	0.100	4.0	LOS A	0.4	9.9	0.29	0.17	0.29	30.5
2	T1	1	2.0	1	2.0	0.100	4.0	LOS A	0.4	9.9	0.29	0.17	0.29	30.2
12	R2	127	2.0	138	2.0	0.115	4.0	LOS A	0.4	11.2	0.28	0.16	0.28	31.4
Approach		231	2.0	251	2.0	0.115	4.0	LOS A	0.4	11.2	0.28	0.17	0.28	30.9
All Vehicles		1435	2.1	1560	2.1	0.417	6.3	LOS A	2.4	60.2	0.35	0.23	0.35	30.6

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	551	201	213	549	210	484	85	337	71	26	101
Future Volume (veh/h)	139	551	201	213	549	210	484	85	337	71	26	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1695	1723	1723	1695	1723	1723	1723	1723	1723	1709	1723
Adj Flow Rate, veh/h	151	599	218	232	597	228	526	92	366	77	28	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	4	2	2	4	2	2	2	2	2	3	2
Cap, veh/h	225	651	293	252	723	325	680	109	434	238	370	
Arrive On Green	0.07	0.20	0.20	0.10	0.22	0.22	0.19	0.36	0.36	0.05	0.22	0.00
Sat Flow, veh/h	1641	3221	1449	1641	3221	1450	1641	302	1202	1641	1709	1460
Grp Volume(v), veh/h	151	599	218	232	597	228	526	0	458	77	28	0
Grp Sat Flow(s),veh/h/ln	1641	1611	1449	1641	1611	1450	1641	0	1504	1641	1709	1460
Q Serve(g_s), s	6.2	16.4	12.7	8.7	15.9	13.0	17.5	0.0	25.2	3.3	1.2	0.0
Cycle Q Clear(g_c), s	6.2	16.4	12.7	8.7	15.9	13.0	17.5	0.0	25.2	3.3	1.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.80	1.00		1.00
Lane Grp Cap(c), veh/h	225	651	293	252	723	325	680	0	543	238	370	
V/C Ratio(X)	0.67	0.92	0.74	0.92	0.83	0.70	0.77	0.00	0.84	0.32	0.08	
Avail Cap(c_a), veh/h	225	651	293	252	741	334	680	0	543	275	370	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.6	35.2	33.7	29.5	33.2	32.1	22.3	0.0	26.4	26.3	28.1	0.0
Incr Delay (d2), s/veh	7.6	18.3	9.8	35.5	7.0	5.2	5.0	0.0	14.7	0.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	7.8	5.1	6.4	6.7	4.9	2.3	0.0	10.7	1.2	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.2	53.5	43.6	65.1	40.2	37.3	27.3	0.0	41.1	26.6	28.5	0.0
LnGrp LOS	D	D	D	E	D	D	C	A	D	C	C	
Approach Vol, veh/h		968			1057			984			105	A
Approach Delay, s/veh		48.6			45.0			33.8			27.1	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	39.0	15.0	25.0	24.0	26.0	13.0	27.0
Change Period (Y+Rc), s	6.5	6.5	6.3	6.8	6.5	6.5	6.8	* 6.8
Max Green Setting (Gmax), s	6.5	30.5	8.7	18.2	17.5	19.5	6.2	* 21
Max Q Clear Time (g_c+I1), s	5.3	27.2	10.7	18.4	19.5	3.2	8.2	17.9
Green Ext Time (p_c), s	0.0	1.0	0.0	0.0	0.0	0.1	0.0	0.6

Intersection Summary			
HCM 6th Ctrl Delay			42.0
HCM 6th LOS			D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

User approved changes to right turn type.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	210	72	13	42	1	19	2	62	1	2	2
Future Vol, veh/h	1	210	72	13	42	1	19	2	62	1	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	228	78	14	46	1	21	2	67	1	2	2

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	47	0	0	306	0	0	346	344	267	379	383	47
Stage 1	-	-	-	-	-	-	269	269	-	75	75	-
Stage 2	-	-	-	-	-	-	77	75	-	304	308	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1560	-	-	1255	-	-	608	579	772	579	550	1022
Stage 1	-	-	-	-	-	-	737	687	-	934	833	-
Stage 2	-	-	-	-	-	-	932	833	-	705	660	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1560	-	-	1255	-	-	599	572	772	522	543	1022
Mov Cap-2 Maneuver	-	-	-	-	-	-	599	572	-	522	543	-
Stage 1	-	-	-	-	-	-	736	686	-	933	824	-
Stage 2	-	-	-	-	-	-	917	824	-	641	659	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.8	10.7	10.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	718	1560	-	-	1255	-	-	662
HCM Lane V/C Ratio	0.126	0.001	-	-	0.011	-	-	0.008
HCM Control Delay (s)	10.7	7.3	0	-	7.9	0	-	10.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0

MOVEMENT SUMMARY

Site: 6 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Bradfordville Rd, Roberts Rd, Welaunee Boulevard, and Centerville Rd
Site Category: Future Conditions PM
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Roberts Rd														
3b	L3	90	2.0	98	2.0	0.376	8.9	LOS A	1.9	48.0	0.64	0.63	0.66	32.3
3	L2	68	2.0	74	2.0	0.376	8.9	LOS A	1.9	48.0	0.64	0.63	0.66	30.8
8	T1	87	2.0	95	2.0	0.376	8.9	LOS A	1.9	48.0	0.64	0.63	0.66	30.3
18	R2	37	2.0	40	2.0	0.376	8.9	LOS A	1.9	48.0	0.64	0.63	0.66	29.3
Approach		282	2.0	307	2.0	0.376	8.9	LOS A	1.9	48.0	0.64	0.63	0.66	30.9
East: Centerville Rd														
1	L2	21	4.0	23	4.0	0.154	6.8	LOS A	0.6	15.8	0.59	0.57	0.59	32.0
1a	L1	29	2.0	32	2.0	0.154	6.7	LOS A	0.6	15.8	0.59	0.57	0.59	32.7
6	T1	22	4.0	24	4.0	0.154	6.8	LOS A	0.6	15.8	0.59	0.57	0.59	31.4
16	R2	28	4.0	30	4.0	0.154	6.8	LOS A	0.6	15.8	0.59	0.57	0.59	30.3
Approach		100	3.4	109	3.4	0.154	6.8	LOS A	0.6	15.8	0.59	0.57	0.59	31.6
North: Bradfordville Rd														
7	L2	33	2.0	36	2.0	0.269	6.6	LOS A	1.3	32.6	0.52	0.44	0.52	33.3
4	T1	60	2.0	65	2.0	0.269	6.6	LOS A	1.3	32.6	0.52	0.44	0.52	32.6
14a	R1	80	2.0	87	2.0	0.269	6.6	LOS A	1.3	32.6	0.52	0.44	0.52	33.7
14	R2	60	2.0	65	2.0	0.269	6.6	LOS A	1.3	32.6	0.52	0.44	0.52	31.4
Approach		233	2.0	253	2.0	0.269	6.6	LOS A	1.3	32.6	0.52	0.44	0.52	32.8
West: Centerville Rd														
5	L2	114	2.0	124	2.0	0.423	8.7	LOS A	2.3	59.0	0.60	0.52	0.60	31.5
2	T1	48	2.0	52	2.0	0.423	8.7	LOS A	2.3	59.0	0.60	0.52	0.60	30.9
12	R2	88	4.0	96	4.0	0.423	8.8	LOS A	2.3	59.0	0.60	0.52	0.60	29.8
12b	R3	118	2.0	128	2.0	0.423	8.7	LOS A	2.3	59.0	0.60	0.52	0.60	30.7
Approach		368	2.5	400	2.5	0.423	8.7	LOS A	2.3	59.0	0.60	0.52	0.60	30.8
SouthWest: Welaunee Blvd														
5bx	L3	90	2.0	98	2.0	0.416	8.9	LOS A	2.3	57.3	0.62	0.58	0.64	33.3
5ax	L1	115	2.0	125	2.0	0.416	8.9	LOS A	2.3	57.3	0.62	0.58	0.64	32.3
12ax	R1	49	2.0	53	2.0	0.416	8.9	LOS A	2.3	57.3	0.62	0.58	0.64	32.1
12bx	R3	88	2.0	96	2.0	0.416	8.9	LOS A	2.3	57.3	0.62	0.58	0.64	30.9
Approach		342	2.0	372	2.0	0.416	8.9	LOS A	2.3	57.3	0.62	0.58	0.64	32.1
All Vehicles		1325	2.2	1440	2.2	0.423	8.3	LOS A	2.3	59.0	0.60	0.55	0.61	31.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	207	54	12	114	10	135	37	61	18	5	36
Future Volume (vph)	64	207	54	12	114	10	135	37	61	18	5	36
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1630	1716	1458	1630	1687		1630	1716	1458		1624	1458
Flt Permitted	0.59	1.00	1.00	0.62	1.00		0.40	1.00	1.00		0.90	1.00
Satd. Flow (perm)	1020	1716	1458	1060	1687		693	1716	1458		1520	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	225	59	13	124	11	147	40	66	20	5	39
RTOR Reduction (vph)	0	0	38	0	3	0	0	0	48	0	0	37
Lane Group Flow (vph)	70	225	21	13	132	0	147	40	18	0	25	2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	8%	2%	2%	2%	4%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	27.2	23.7	23.7	21.8	21.0		18.2	18.2	18.2		4.0	4.0
Effective Green, g (s)	27.2	23.7	23.7	21.8	21.0		18.2	18.2	18.2		4.0	4.0
Actuated g/C Ratio	0.41	0.36	0.36	0.33	0.32		0.27	0.27	0.27		0.06	0.06
Clearance Time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	448	610	518	353	531		306	468	398		91	87
v/s Ratio Prot	c0.01	c0.13		0.00	0.08		c0.06	0.02				
v/s Ratio Perm	0.06		0.01	0.01			c0.07		0.01		0.02	0.00
v/c Ratio	0.16	0.37	0.04	0.04	0.25		0.48	0.09	0.05		0.27	0.03
Uniform Delay, d1	12.2	15.9	14.0	15.2	16.9		19.6	18.0	17.8		29.9	29.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.4	0.0	0.0	0.2		1.2	0.1	0.0		1.6	0.1
Delay (s)	12.4	16.3	14.1	15.2	17.2		20.8	18.1	17.9		31.6	29.6
Level of Service	B	B	B	B	B		C	B	B		C	C
Approach Delay (s)		15.1			17.0			19.6			30.4	
Approach LOS		B			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	26.7
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

MOVEMENT SUMMARY

Site: 8 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Shamrock St and Welaunee Blvd - Opening
Site Category: Future Conditions PM
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Welaunee Blvd														
3	L2	3	2.0	3	2.0	0.276	5.1	LOS A	1.6	39.4	0.04	0.01	0.04	32.4
8	T1	339	2.0	368	2.0	0.276	5.1	LOS A	1.6	39.4	0.04	0.01	0.04	32.1
Approach		342	2.0	372	2.0	0.276	5.1	LOS A	1.6	39.4	0.04	0.01	0.04	32.1
North: Welaunee Blvd														
4	T1	315	2.0	342	2.0	0.256	4.9	LOS A	1.4	35.6	0.04	0.01	0.04	32.2
14	R2	2	2.0	2	2.0	0.256	4.9	LOS A	1.4	35.6	0.04	0.01	0.04	31.3
Approach		317	2.0	345	2.0	0.256	4.9	LOS A	1.4	35.6	0.04	0.01	0.04	32.2
West: Shamrock St Ext														
5	L2	3	2.0	3	2.0	0.008	3.9	LOS A	0.0	0.8	0.43	0.25	0.43	31.7
12	R2	4	2.0	4	2.0	0.008	3.9	LOS A	0.0	0.8	0.43	0.25	0.43	30.6
Approach		7	2.0	8	2.0	0.008	3.9	LOS A	0.0	0.8	0.43	0.25	0.43	31.1
All Vehicles		666	2.0	724	2.0	0.276	5.0	LOS A	1.6	39.4	0.04	0.01	0.04	32.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	499	433	134	863	1175	152	141	1807	269	242	2145	661
Future Volume (vph)	499	433	134	863	1175	152	141	1807	269	242	2145	661
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4508	3260	1444	3162	3260	1430	1630	4638	1430	1614	4684	1444
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4508	3260	1444	3162	3260	1430	1630	4638	1430	1614	4684	1444
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	542	471	146	938	1277	165	153	1964	292	263	2332	718
RTOR Reduction (vph)	0	0	123	0	0	119	0	0	131	0	0	181
Lane Group Flow (vph)	542	471	23	938	1277	46	153	1964	161	263	2332	537
Heavy Vehicles (%)	4%	2%	3%	2%	2%	4%	2%	3%	4%	3%	2%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	13.4	23.4	23.4	31.4	41.4	41.4	10.2	48.2	48.2	18.2	56.2	56.2
Effective Green, g (s)	13.4	23.4	23.4	31.4	41.4	41.4	10.2	48.2	48.2	18.2	56.2	56.2
Actuated g/C Ratio	0.09	0.16	0.16	0.21	0.28	0.28	0.07	0.32	0.32	0.12	0.37	0.37
Clearance Time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	4.0	4.0	2.5	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	402	508	225	661	899	394	110	1490	459	195	1754	541
v/s Ratio Prot	c0.12	0.14		0.30	c0.39		0.09	c0.42		0.16	c0.50	
v/s Ratio Perm			0.02			0.03			0.11			0.37
v/c Ratio	1.35	0.93	0.10	1.42	1.42	0.12	1.39	1.32	0.35	1.35	1.33	0.99
Uniform Delay, d1	68.3	62.5	54.3	59.3	54.3	40.6	69.9	50.9	38.9	65.9	46.9	46.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	172.5	25.4	0.9	197.4	195.7	0.6	222.0	148.0	2.1	186.9	152.3	36.8
Delay (s)	240.8	87.9	55.2	256.7	250.0	41.2	291.9	198.9	41.0	252.8	199.2	83.4
Level of Service	F	F	E	F	F	D	F	F	D	F	F	F
Approach Delay (s)		155.3			238.2			185.7			178.4	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	192.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.8
Intersection Capacity Utilization	123.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	357	615	153	139	738	324	153	67	115	627	156	829
Future Volume (veh/h)	357	615	153	139	738	324	153	67	115	627	156	829
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1709	1723	1723	1723	1695	1723	1695	1723	1723	1723	1723
Adj Flow Rate, veh/h	388	668	166	151	802	352	166	73	125	682	170	901
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	3	2	2	2	4	2	4	2	2	2	2
Cap, veh/h	372	1107	497	302	736	323	178	139	119	607	584	785
Arrive On Green	0.20	0.34	0.34	0.08	0.22	0.22	0.05	0.08	0.08	0.31	0.34	0.34
Sat Flow, veh/h	1615	3247	1458	1641	3273	1434	1641	1695	1455	1641	1723	1459
Grp Volume(v), veh/h	388	668	166	151	802	352	166	73	125	682	170	901
Grp Sat Flow(s),veh/h/ln	1615	1624	1458	1641	1637	1434	1641	1695	1455	1641	1723	1459
Q Serve(g_s), s	27.8	23.9	11.9	9.8	31.5	31.5	7.1	5.8	11.5	43.3	10.1	47.5
Cycle Q Clear(g_c), s	27.8	23.9	11.9	9.8	31.5	31.5	7.1	5.8	11.5	43.3	10.1	47.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	372	1107	497	302	736	323	178	139	119	607	584	785
V/C Ratio(X)	1.04	0.60	0.33	0.50	1.09	1.09	0.93	0.52	1.05	1.12	0.29	1.15
Avail Cap(c_a), veh/h	372	1107	497	316	736	323	178	139	119	607	584	785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.29	0.29	0.29	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	38.3	34.3	37.1	54.3	54.3	61.0	61.6	64.3	40.4	33.9	32.4
Incr Delay (d2), s/veh	37.1	0.7	0.5	0.5	60.0	76.8	48.9	13.4	95.2	75.3	1.3	81.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.9	9.6	4.3	3.9	18.7	18.1	5.1	3.0	7.4	32.0	4.5	42.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.4	39.0	34.9	37.5	114.3	131.0	109.8	75.0	159.5	115.7	35.2	113.6
LnGrp LOS	F	D	C	D	F	F	F	E	F	F	D	F
Approach Vol, veh/h		1222			1305			364			1753	
Approach Delay, s/veh		51.6			109.9			119.9			106.8	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.0	38.0	50.0	18.0	17.8	54.2	14.0	54.0
Change Period (Y+Rc), s	* 6.2	6.5	* 6.7	6.5	6.0	* 6.5	6.9	6.5
Max Green Setting (Gmax), s	* 28	31.5	* 43	11.5	13.0	* 47	7.1	47.5
Max Q Clear Time (g_c+I1), s	29.8	33.5	45.3	13.5	11.8	25.9	9.1	49.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	94.2
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

MOVEMENT SUMMARY

Site: 3 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Shamrock St and Centerville Rd - Design - Interchange
Site Category: Future Conditions AM
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Centerville Rd														
3	L2	122	2.0	133	2.0	0.273	8.3	LOS A	1.1	27.3	0.61	0.61	0.61	29.5
8	T1	141	4.0	153	4.0	0.273	8.0	LOS A	1.1	27.3	0.59	0.59	0.59	30.2
18	R2	112	2.0	122	2.0	0.273	7.6	LOS A	1.1	27.1	0.58	0.58	0.58	30.0
Approach		375	2.8	408	2.8	0.273	8.0	LOS A	1.1	27.3	0.59	0.59	0.59	29.9
East: Shamrock St Ext														
1	L2	234	2.0	254	2.0	0.312	7.7	LOS A	1.3	34.2	0.56	0.53	0.56	29.2
6	T1	165	2.0	179	2.0	0.312	7.2	LOS A	1.3	34.2	0.54	0.50	0.54	31.1
16	R2	112	2.0	122	2.0	0.312	7.2	LOS A	1.3	33.7	0.54	0.50	0.54	30.3
Approach		511	2.0	555	2.0	0.312	7.4	LOS A	1.3	34.2	0.55	0.51	0.55	30.0
North: Centerville Rd														
7	L2	305	2.0	332	2.0	0.726	19.5	LOS C	8.3	210.8	0.84	1.18	1.71	25.9
4	T1	451	2.0	490	2.0	0.726	18.8	LOS C	8.6	217.8	0.83	1.18	1.70	26.3
14	R2	332	2.0	361	2.0	0.726	18.2	LOS C	8.6	217.8	0.83	1.17	1.69	26.2
Approach		1088	2.0	1183	2.0	0.726	18.8	LOS C	8.6	217.8	0.83	1.18	1.70	26.2
West: Shamrock St S														
5	L2	166	2.0	180	2.0	0.518	17.8	LOS C	2.6	67.2	0.78	0.93	1.25	26.2
2	T1	131	2.0	142	2.0	0.518	16.9	LOS C	2.7	68.6	0.77	0.92	1.23	26.8
12	R2	194	2.0	211	2.0	0.518	16.0	LOS C	2.7	68.6	0.76	0.91	1.22	26.8
Approach		491	2.0	534	2.0	0.518	16.9	LOS C	2.7	68.6	0.77	0.92	1.23	26.6
All Vehicles		2465	2.1	2679	2.1	0.726	14.4	LOS B	8.6	217.8	0.72	0.90	1.20	27.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	583	140	114	500	107	590	95	523	306	74	345
Future Volume (veh/h)	106	583	140	114	500	107	590	95	523	306	74	345
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1695	1723	1695	1695	1723	1723	1723	1695	1723	1723	1723
Adj Flow Rate, veh/h	115	634	152	124	543	116	641	103	568	333	80	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	3	4	2	4	4	2	2	2	4	2	2	2
Cap, veh/h	180	621	281	164	621	281	781	82	454	312	368	
Arrive On Green	0.06	0.19	0.19	0.06	0.19	0.19	0.30	0.36	0.36	0.15	0.21	0.00
Sat Flow, veh/h	1628	3221	1456	1615	3221	1456	1641	229	1265	1641	1723	1460
Grp Volume(v), veh/h	115	634	152	124	543	116	641	0	671	333	80	0
Grp Sat Flow(s),veh/h/ln	1628	1611	1456	1615	1611	1456	1641	0	1495	1641	1723	1460
Q Serve(g_s), s	6.2	21.2	10.3	6.7	18.0	7.7	32.5	0.0	39.5	16.5	4.2	0.0
Cycle Q Clear(g_c), s	6.2	21.2	10.3	6.7	18.0	7.7	32.5	0.0	39.5	16.5	4.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.85	1.00		1.00
Lane Grp Cap(c), veh/h	180	621	281	164	621	281	781	0	537	312	368	
V/C Ratio(X)	0.64	1.02	0.54	0.76	0.87	0.41	0.82	0.00	1.25	1.07	0.22	
Avail Cap(c_a), veh/h	180	621	281	164	635	287	781	0	537	312	368	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.3	44.4	40.0	35.5	43.1	38.9	20.7	0.0	35.3	30.3	35.7	0.0
Incr Delay (d2), s/veh	7.5	41.6	2.1	16.5	12.2	0.4	6.5	0.0	127.3	70.4	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	11.9	3.8	3.4	8.1	2.7	13.3	0.0	32.8	12.4	1.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.8	86.0	42.1	52.0	55.3	39.3	27.2	0.0	162.6	100.7	37.0	0.0
LnGrp LOS	D	F	D	D	E	D	C	A	F	F	D	
Approach Vol, veh/h		901			783			1312			413	A
Approach Delay, s/veh		73.1			52.4			96.4			88.4	
Approach LOS		E			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	46.0	13.0	28.0	39.0	30.0	13.0	28.0
Change Period (Y+Rc), s	6.5	6.5	6.3	6.8	6.5	6.5	6.8	* 6.8
Max Green Setting (Gmax), s	16.5	39.5	6.7	21.2	32.5	23.5	6.2	* 22
Max Q Clear Time (g_c+I1), s	18.5	41.5	8.7	23.2	34.5	6.2	8.2	20.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3

Intersection Summary	
HCM 6th Ctrl Delay	79.2
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	11.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	12	16	91	61	126	48	99	54	71	115	117
Future Vol, veh/h	22	12	16	91	61	126	48	99	54	71	115	117
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	13	17	99	66	137	52	108	59	77	125	127

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	30	0	0	529	471	22	486	411	135
Stage 1	-	-	-	-	-	-	70	70	-	333	333	-
Stage 2	-	-	-	-	-	-	459	401	-	153	78	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1369	-	-	1583	-	-	460	491	1055	492	531	914
Stage 1	-	-	-	-	-	-	940	837	-	681	644	-
Stage 2	-	-	-	-	-	-	582	601	-	849	830	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1369	-	-	1583	-	-	297	447	1055	354	484	914
Mov Cap-2 Maneuver	-	-	-	-	-	-	297	447	-	354	484	-
Stage 1	-	-	-	-	-	-	923	822	-	669	598	-
Stage 2	-	-	-	-	-	-	368	558	-	684	815	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.4	2.4	19.5	15.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	463	1369	-	-	1583	-	-	354	635
HCM Lane V/C Ratio	0.472	0.017	-	-	0.062	-	-	0.218	0.397
HCM Control Delay (s)	19.5	7.7	0	-	7.4	0	-	18	14.4
HCM Lane LOS	C	A	A	-	A	A	-	C	B
HCM 95th %tile Q(veh)	2.5	0.1	-	-	0.2	-	-	0.8	1.9

MOVEMENT SUMMARY

Site: 6 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Bradfordville Rd, Roberts Rd, Welaunee Boulevard, and Centerville Rd
Site Category: Future Conditions AM
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Roberts Rd														
3b	L3	92	2.0	100	2.0	0.589	19.1	LOS C	3.8	96.2	0.81	1.00	1.39	30.2
3	L2	51	2.0	55	2.0	0.589	19.1	LOS C	3.8	96.2	0.81	1.00	1.39	29.0
8	T1	90	3.0	98	3.0	0.589	19.2	LOS C	3.8	96.2	0.81	1.00	1.39	27.8
18	R2	51	2.0	55	2.0	0.589	19.1	LOS C	3.8	96.2	0.81	1.00	1.39	26.7
Approach		284	2.3	309	2.3	0.589	19.2	LOS C	3.8	96.2	0.81	1.00	1.39	28.6
East: Centerville Rd														
1	L2	95	2.0	103	2.0	1.323	178.3	LOS F	73.7	1872.8	1.00	4.16	10.35	9.8
1a	L1	244	2.0	265	2.0	1.323	178.3	LOS F	73.7	1872.8	1.00	4.16	10.35	9.9
6	T1	135	2.0	147	2.0	1.323	178.3	LOS F	73.7	1872.8	1.00	4.16	10.35	9.8
16	R2	237	2.0	258	2.0	1.323	178.3	LOS F	73.7	1872.8	1.00	4.16	10.35	9.6
Approach		711	2.0	773	2.0	1.323	178.3	LOS F	73.7	1872.8	1.00	4.16	10.35	9.8
North: Bradfordville Rd														
7	L2	132	4.0	143	4.0	1.026	68.3	LOS F	28.3	723.3	1.00	2.32	4.78	18.1
4	T1	92	4.0	100	4.0	1.026	68.3	LOS F	28.3	723.3	1.00	2.32	4.78	17.8
14a	R1	238	2.0	259	2.0	1.026	68.1	LOS F	28.3	723.3	1.00	2.32	4.78	18.1
14	R2	132	2.0	143	2.0	1.026	68.1	LOS F	28.3	723.3	1.00	2.32	4.78	17.4
Approach		594	2.8	646	2.8	1.026	68.2	LOS F	28.3	723.3	1.00	2.32	4.78	17.9
West: Centerville Rd														
5	L2	62	3.0	67	3.0	0.373	12.3	LOS B	1.7	44.7	0.73	0.79	0.91	31.3
2	T1	36	4.0	39	4.0	0.373	12.4	LOS B	1.7	44.7	0.73	0.79	0.91	30.2
12	R2	25	2.0	27	2.0	0.373	12.3	LOS B	1.7	44.7	0.73	0.79	0.91	28.8
12b	R3	64	2.0	70	2.0	0.373	12.3	LOS B	1.7	44.7	0.73	0.79	0.91	29.9
Approach		187	2.7	203	2.7	0.373	12.3	LOS B	1.7	44.7	0.73	0.79	0.91	30.3
SouthWest: Welaunee Blvd														
5bx	L3	162	2.0	176	2.0	0.928	37.8	LOS E	26.0	661.2	1.00	1.82	3.12	24.4
5ax	L1	284	2.0	309	2.0	0.928	37.8	LOS E	26.0	661.2	1.00	1.82	3.12	23.6
12ax	R1	162	2.0	176	2.0	0.928	37.8	LOS E	26.0	661.2	1.00	1.82	3.12	23.2
12bx	R3	114	2.0	124	2.0	0.928	37.8	LOS E	26.0	661.2	1.00	1.82	3.12	22.4
Approach		722	2.0	785	2.0	0.928	37.8	LOS E	26.0	661.2	1.00	1.82	3.12	23.5
All Vehicles		2498	2.3	2715	2.3	1.323	81.0	LOS F	73.7	1872.8	0.96	2.43	5.21	16.4

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	100	255	227	247	6	290	29	73	4	71	70
Future Volume (vph)	13	100	255	227	247	6	290	29	73	4	71	70
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		1.00	1.00
Satd. Flow (prot)	1630	1683	1458	1630	1709		1630	1549	1458		1711	1458
Flt Permitted	0.59	1.00	1.00	0.51	1.00		0.44	1.00	1.00		0.98	1.00
Satd. Flow (perm)	1013	1683	1458	872	1709		754	1549	1458		1688	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	109	277	247	268	7	315	32	79	4	77	76
RTOR Reduction (vph)	0	0	216	0	1	0	0	0	50	0	0	66
Lane Group Flow (vph)	14	109	61	247	274	0	315	32	29	0	81	10
Heavy Vehicles (%)	2%	4%	2%	2%	2%	2%	2%	13%	2%	2%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	18.1	17.1	17.1	30.4	23.4		29.2	29.2	29.2		9.8	9.8
Effective Green, g (s)	18.1	17.1	17.1	30.4	23.4		29.2	29.2	29.2		9.8	9.8
Actuated g/C Ratio	0.23	0.22	0.22	0.39	0.30		0.37	0.37	0.37		0.13	0.13
Clearance Time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	242	368	318	409	511		432	578	544		211	182
v/s Ratio Prot	0.00	0.06		c0.06	0.16		c0.13	0.02				
v/s Ratio Perm	0.01		0.04	c0.18			c0.15		0.02		0.05	0.01
v/c Ratio	0.06	0.30	0.19	0.60	0.54		0.73	0.06	0.05		0.38	0.05
Uniform Delay, d1	23.3	25.5	24.9	18.2	22.9		19.3	15.7	15.7		31.4	30.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.5	0.3	2.5	1.1		6.1	0.0	0.0		1.2	0.1
Delay (s)	23.4	26.0	25.2	20.7	24.0		25.4	15.7	15.7		32.6	30.2
Level of Service	C	C	C	C	C		C	B	B		C	C
Approach Delay (s)		25.3			22.4			22.9			31.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	78.2	Sum of lost time (s)	26.7
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

MOVEMENT SUMMARY

Site: 8 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Shamrock St and Welaunee Blvd - Design - Interchange
Site Category: Future Conditions AM
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Welaunee Blvd														
3	L2	358	2.0	389	2.0	0.886	26.7	LOS D	33.9	861.9	1.00	1.46	2.17	24.2
8	T1	526	2.0	572	2.0	0.886	26.7	LOS D	33.9	861.9	1.00	1.46	2.17	24.1
Approach		884	2.0	961	2.0	0.886	26.7	LOS D	33.9	861.9	1.00	1.46	2.17	24.2
North: Welaunee Blvd														
4	T1	486	2.0	528	2.0	0.770	19.8	LOS C	13.3	337.2	0.91	1.29	1.82	26.6
14	R2	153	2.0	166	2.0	0.770	19.8	LOS C	13.3	337.2	0.91	1.29	1.82	25.9
Approach		639	2.0	695	2.0	0.770	19.8	LOS C	13.3	337.2	0.91	1.29	1.82	26.4
West: Shamrock St Ext														
5	L2	196	2.0	213	2.0	0.763	21.6	LOS C	10.5	265.8	0.91	1.31	1.90	25.5
12	R2	352	2.0	383	2.0	0.763	21.6	LOS C	10.5	265.8	0.91	1.31	1.90	24.8
Approach		548	2.0	596	2.0	0.763	21.6	LOS C	10.5	265.8	0.91	1.31	1.90	25.0
All Vehicles		2071	2.0	2251	2.0	0.886	23.2	LOS C	33.9	861.9	0.95	1.37	1.99	25.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Traffic Volume (vph)	1246	717	191	521	595	343	140	2385	445	149	1633	646
Future Volume (vph)	1246	717	191	521	595	343	140	2385	445	149	1633	646
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Lane Util. Factor	0.94	0.95	1.00	0.97	0.95	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	4596	3260	1444	3131	3260	1435	1630	4684	1432	1630	4638	1437
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	4596	3260	1444	3131	3260	1435	1630	4684	1432	1630	4638	1437
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1354	779	208	566	647	373	152	2592	484	162	1775	702
RTOR Reduction (vph)	0	0	143	0	0	156	0	0	84	0	0	233
Lane Group Flow (vph)	1354	779	65	566	647	217	152	2592	400	162	1775	469
Confl. Peds. (#/hr)	3					3	2		5	5		2
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%	2%	2%	2%	2%	3%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	29.4	32.4	32.4	18.4	21.4	21.4	13.6	59.2	59.2	11.2	56.8	56.8
Effective Green, g (s)	29.4	32.4	32.4	18.4	21.4	21.4	13.6	59.2	59.2	11.2	56.8	56.8
Actuated g/C Ratio	0.20	0.22	0.22	0.12	0.14	0.14	0.09	0.39	0.39	0.07	0.38	0.38
Clearance Time (s)	7.6	7.6	7.6	7.6	7.6	7.6	6.8	6.8	6.8	6.8	6.8	6.8
Vehicle Extension (s)	3.0	4.0	4.0	2.5	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0
Lane Grp Cap (vph)	900	704	311	384	465	204	147	1848	565	121	1756	544
v/s Ratio Prot	c0.29	c0.24		0.18	c0.20		0.09	c0.55		c0.10	0.38	
v/s Ratio Perm			0.05			0.15			0.28			0.33
v/c Ratio	1.50	1.11	0.21	1.47	1.39	1.06	1.03	1.40	0.71	1.34	1.01	0.86
Uniform Delay, d1	60.3	58.8	48.3	65.8	64.3	64.3	68.2	45.4	38.2	69.4	46.6	43.0
Progression Factor	1.00	1.00	1.00	1.01	0.96	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	232.8	67.0	1.5	214.6	177.4	38.5	83.5	184.5	7.3	197.8	24.2	16.4
Delay (s)	293.1	125.8	49.8	281.0	239.0	97.2	151.7	229.9	45.5	267.2	70.8	59.4
Level of Service	F	F	D	F	F	F	F	F	D	F	E	E
Approach Delay (s)		215.8			220.6			198.6			79.8	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	174.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.8
Intersection Capacity Utilization	137.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	637	1097	273	155	823	361	561	246	424	301	75	398
Future Volume (veh/h)	637	1097	273	155	823	361	561	246	424	301	75	398
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1723	1723	1695	1709	1723	1723	1723	1723	1723	1723	1723
Adj Flow Rate, veh/h	692	1192	297	168	895	392	610	267	461	327	82	433
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	4	3	2	2	2	2	2	2	2
Cap, veh/h	729	1866	829	257	758	338	426	316	268	251	132	718
Arrive On Green	0.14	0.19	0.19	0.08	0.23	0.23	0.21	0.18	0.18	0.11	0.08	0.08
Sat Flow, veh/h	1641	3273	1455	1615	3247	1447	1641	1723	1460	1641	1723	1460
Grp Volume(v), veh/h	692	1192	297	168	895	392	610	267	461	327	82	433
Grp Sat Flow(s),veh/h/ln	1641	1637	1455	1615	1624	1447	1641	1723	1460	1641	1723	1460
Q Serve(g_s), s	58.3	50.4	26.7	12.0	35.0	35.0	32.1	22.5	27.5	16.3	6.9	11.5
Cycle Q Clear(g_c), s	58.3	50.4	26.7	12.0	35.0	35.0	32.1	22.5	27.5	16.3	6.9	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	729	1866	829	257	758	338	426	316	268	251	132	718
V/C Ratio(X)	0.95	0.64	0.36	0.65	1.18	1.16	1.43	0.85	1.72	1.30	0.62	0.60
Avail Cap(c_a), veh/h	729	1866	829	257	758	338	426	316	268	251	132	718
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.09	0.09	0.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.5	46.6	37.0	39.5	57.5	57.5	50.5	59.2	61.2	60.8	67.1	27.5
Incr Delay (d2), s/veh	3.6	0.2	0.1	4.7	94.9	100.1	207.3	23.3	340.4	162.9	20.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	28.2	22.3	10.5	5.0	24.0	22.1	26.3	11.8	35.4	13.6	3.8	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.0	46.8	37.1	44.1	152.4	157.6	257.8	82.5	401.6	223.7	87.1	31.2
LnGrp LOS	E	D	D	D	F	F	F	F	F	F	F	C
Approach Vol, veh/h		2181			1455			1338			842	
Approach Delay, s/veh		50.0			141.3			272.4			111.4	
Approach LOS		D			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	69.0	41.5	23.0	34.0	18.0	92.5	39.0	18.0
Change Period (Y+Rc), s	* 6.2	6.5	* 6.7	6.5	6.0	* 6.5	6.9	6.5
Max Green Setting (Gmax), s	* 46	34.5	* 16	27.5	12.0	* 69	32.1	11.5
Max Q Clear Time (g_c+I1), s	60.3	37.0	18.3	29.5	14.0	52.4	34.1	13.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	10.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	132.9
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

MOVEMENT SUMMARY

Site: 3 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Shamrock St and Centerville Rd - Design - Interchange
Site Category: Future Conditions PM
Roundabout

Vehicle Movement Performance															
Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Centerville Rd														
3	L2	376	2.0	409	2.0	0.610	12.2	LOS B	6.3	160.3	0.66	0.73	0.97	28.1
8	T1	436	2.0	474	2.0	0.610	11.8	LOS B	6.3	160.3	0.65	0.71	0.95	28.7
18	R2	346	2.0	376	2.0	0.610	11.5	LOS B	6.2	158.7	0.64	0.69	0.93	28.5
Approach		1158	2.0	1259	2.0	0.610	11.8	LOS B	6.3	160.3	0.65	0.71	0.95	28.4
East: Shamrock St Ext														
1	L2	96	2.0	104	2.0	0.461	15.0	LOS B	2.3	57.3	0.74	0.86	1.10	27.6
6	T1	176	2.0	191	2.0	0.461	14.6	LOS B	2.3	58.0	0.73	0.85	1.09	27.7
16	R2	198	2.0	215	2.0	0.461	13.6	LOS B	2.3	58.0	0.72	0.84	1.07	27.7
Approach		470	2.0	511	2.0	0.461	14.2	LOS B	2.3	58.0	0.73	0.85	1.08	27.7
North: Centerville Rd														
7	L2	95	2.0	103	2.0	0.257	8.4	LOS A	1.0	25.2	0.61	0.61	0.61	29.6
4	T1	140	2.0	152	2.0	0.257	8.0	LOS A	1.0	25.2	0.60	0.60	0.60	30.1
14	R2	103	4.0	112	4.0	0.257	7.8	LOS A	1.0	24.9	0.59	0.59	0.59	29.9
Approach		338	2.6	367	2.6	0.257	8.0	LOS A	1.0	25.2	0.60	0.60	0.60	29.9
West: Shamrock St S														
5	L2	103	2.0	112	2.0	0.169	5.4	LOS A	0.7	17.1	0.45	0.37	0.45	30.5
2	T1	82	2.0	89	2.0	0.169	5.3	LOS A	0.7	17.1	0.44	0.35	0.44	31.0
12	R2	121	2.0	132	2.0	0.169	5.1	LOS A	0.7	16.8	0.43	0.34	0.43	30.9
Approach		306	2.0	333	2.0	0.169	5.3	LOS A	0.7	17.1	0.44	0.35	0.44	30.8
All Vehicles		2272	2.1	2470	2.1	0.610	10.9	LOS B	6.3	160.3	0.63	0.67	0.86	28.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	996	239	158	472	170	666	107	590	119	29	134
Future Volume (veh/h)	181	996	239	158	472	170	666	107	590	119	29	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1695	1723	1723	1695	1723	1723	1723	1723	1723	1709	1723
Adj Flow Rate, veh/h	197	1083	260	172	513	185	724	116	641	129	32	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	4	2	2	4	2	2	2	2	2	3	2
Cap, veh/h	320	1014	457	165	917	413	712	89	493	130	222	
Arrive On Green	0.10	0.31	0.31	0.07	0.28	0.28	0.31	0.39	0.39	0.05	0.13	0.00
Sat Flow, veh/h	1641	3221	1453	1641	3221	1452	1641	229	1264	1641	1709	1460
Grp Volume(v), veh/h	197	1083	260	172	513	185	724	0	757	129	32	0
Grp Sat Flow(s),veh/h/ln	1641	1611	1453	1641	1611	1452	1641	0	1493	1641	1709	1460
Q Serve(g_s), s	12.6	47.2	22.4	10.7	20.3	15.7	46.5	0.0	58.5	7.5	2.5	0.0
Cycle Q Clear(g_c), s	12.6	47.2	22.4	10.7	20.3	15.7	46.5	0.0	58.5	7.5	2.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.85	1.00		1.00
Lane Grp Cap(c), veh/h	320	1014	457	165	917	413	712	0	582	130	222	
V/C Ratio(X)	0.61	1.07	0.57	1.04	0.56	0.45	1.02	0.00	1.30	0.99	0.14	
Avail Cap(c_a), veh/h	337	1014	457	165	917	413	712	0	582	130	222	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.4	51.4	42.9	40.9	45.7	44.0	41.2	0.0	45.8	60.2	57.9	0.0
Incr Delay (d2), s/veh	3.1	48.4	1.7	81.6	0.5	0.3	37.9	0.0	147.4	76.3	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	25.6	8.3	8.1	8.2	5.7	13.5	0.0	45.1	4.3	1.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.4	99.8	44.6	122.6	46.1	44.3	79.1	0.0	193.1	136.5	59.2	0.0
LnGrp LOS	D	F	D	F	D	D	F	A	F	F	E	
Approach Vol, veh/h		1540			870			1481			161	A
Approach Delay, s/veh		82.5			60.9			137.4			121.1	
Approach LOS		F			E			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	65.0	17.0	54.0	53.0	26.0	21.5	49.5
Change Period (Y+Rc), s	6.5	6.5	6.3	6.8	6.5	6.5	6.8	* 6.8
Max Green Setting (Gmax), s	7.5	58.5	10.7	47.2	46.5	19.5	16.2	* 42
Max Q Clear Time (g_c+I1), s	9.5	60.5	12.7	49.2	48.5	4.5	14.6	22.3
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.1	0.1	1.2

Intersection Summary	
HCM 6th Ctrl Delay	99.5
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

User approved changes to right turn type.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	12.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	137	75	99	29	19	40	29	59	32	112	134	50
Future Vol, veh/h	137	75	99	29	19	40	29	59	32	112	134	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	149	82	108	32	21	43	32	64	35	122	146	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	64	0	0	190	0	0	641	562	136	591	595	43
Stage 1	-	-	-	-	-	-	434	434	-	107	107	-
Stage 2	-	-	-	-	-	-	207	128	-	484	488	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1538	-	-	1384	-	-	388	436	913	419	417	1027
Stage 1	-	-	-	-	-	-	600	581	-	898	807	-
Stage 2	-	-	-	-	-	-	795	790	-	564	550	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1538	-	-	1384	-	-	229	379	913	316	362	1027
Mov Cap-2 Maneuver	-	-	-	-	-	-	229	379	-	316	362	-
Stage 1	-	-	-	-	-	-	534	517	-	799	788	-
Stage 2	-	-	-	-	-	-	599	771	-	423	490	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.3	2.5	19.5	21.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	378	1538	-	-	1384	-	-	316	439
HCM Lane V/C Ratio	0.345	0.097	-	-	0.023	-	-	0.385	0.456
HCM Control Delay (s)	19.5	7.6	0	-	7.7	0	-	23.4	19.9
HCM Lane LOS	C	A	A	-	A	A	-	C	C
HCM 95th %tile Q(veh)	1.5	0.3	-	-	0.1	-	-	1.8	2.3

MOVEMENT SUMMARY

Site: 6 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Bradfordville Rd, Roberts Rd, Welaunee Boulevard, and Centerville Rd
Site Category: Future Conditions PM
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Roberts Rd														
3b	L3	72	2.0	78	2.0	0.441	13.9	LOS B	2.3	58.7	0.75	0.85	1.05	30.4
3	L2	40	2.0	43	2.0	0.441	13.9	LOS B	2.3	58.7	0.75	0.85	1.05	29.1
8	T1	70	2.0	76	2.0	0.441	13.9	LOS B	2.3	58.7	0.75	0.85	1.05	28.6
18	R2	40	2.0	43	2.0	0.441	13.9	LOS B	2.3	58.7	0.75	0.85	1.05	27.7
Approach		222	2.0	241	2.0	0.441	13.9	LOS B	2.3	58.7	0.75	0.85	1.05	29.1
East: Centerville Rd														
1	L2	33	4.0	36	4.0	0.435	12.4	LOS B	2.4	60.6	0.73	0.82	0.99	29.9
1a	L1	85	2.0	92	2.0	0.435	12.3	LOS B	2.4	60.6	0.73	0.82	0.99	30.4
6	T1	47	4.0	51	4.0	0.435	12.4	LOS B	2.4	60.6	0.73	0.82	0.99	29.3
16	R2	83	4.0	90	4.0	0.435	12.4	LOS B	2.4	60.6	0.73	0.82	0.99	28.4
Approach		248	3.3	270	3.3	0.435	12.4	LOS B	2.4	60.6	0.73	0.82	0.99	29.4
North: Bradfordville Rd														
7	L2	90	2.0	98	2.0	0.514	11.1	LOS B	3.9	98.3	0.70	0.78	0.94	31.1
4	T1	63	2.0	68	2.0	0.514	11.1	LOS B	3.9	98.3	0.70	0.78	0.94	30.5
14a	R1	163	2.0	177	2.0	0.514	11.1	LOS B	3.9	98.3	0.70	0.78	0.94	31.5
14	R2	90	2.0	98	2.0	0.514	11.1	LOS B	3.9	98.3	0.70	0.78	0.94	29.5
Approach		406	2.0	441	2.0	0.514	11.1	LOS B	3.9	98.3	0.70	0.78	0.94	30.8
West: Centerville Rd														
5	L2	159	2.0	173	2.0	0.679	17.5	LOS C	7.1	181.5	0.84	1.11	1.54	28.1
2	T1	90	2.0	98	2.0	0.679	17.5	LOS C	7.1	181.5	0.84	1.11	1.54	27.6
12	R2	63	4.0	68	4.0	0.679	17.6	LOS C	7.1	181.5	0.84	1.11	1.54	26.8
12b	R3	163	2.0	177	2.0	0.679	17.5	LOS C	7.1	181.5	0.84	1.11	1.54	27.5
Approach		475	2.3	516	2.3	0.679	17.5	LOS C	7.1	181.5	0.84	1.11	1.54	27.6
SouthWest: Welaunee Blvd														
5bx	L3	123	2.0	134	2.0	0.775	22.7	LOS C	10.8	274.4	0.92	1.30	1.98	27.9
5ax	L1	216	2.0	235	2.0	0.775	22.7	LOS C	10.8	274.4	0.92	1.30	1.98	27.2
12ax	R1	123	2.0	134	2.0	0.775	22.7	LOS C	10.8	274.4	0.92	1.30	1.98	27.0
12bx	R3	86	2.0	93	2.0	0.775	22.7	LOS C	10.8	274.4	0.92	1.30	1.98	26.2
Approach		548	2.0	596	2.0	0.775	22.7	LOS C	10.8	274.4	0.92	1.30	1.98	27.1
All Vehicles		1899	2.2	2064	2.2	0.775	16.5	LOS C	10.8	274.4	0.81	1.03	1.41	28.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).

Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	253	66	15	147	14	129	36	58	13	4	29
Future Volume (vph)	78	253	66	15	147	14	129	36	58	13	4	29
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85		1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00		0.96	1.00
Satd. Flow (prot)	1630	1716	1458	1630	1685		1630	1716	1458		1627	1458
Flt Permitted	0.57	1.00	1.00	0.59	1.00		0.41	1.00	1.00		0.91	1.00
Satd. Flow (perm)	981	1716	1458	1013	1685		700	1716	1458		1541	1458
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	275	72	16	160	15	140	39	63	14	4	32
RTOR Reduction (vph)	0	0	46	0	3	0	0	0	47	0	0	30
Lane Group Flow (vph)	85	275	26	16	172	0	140	39	16	0	18	2
Heavy Vehicles (%)	2%	2%	2%	2%	2%	8%	2%	2%	2%	4%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2		2	6			8		8	4		4
Actuated Green, G (s)	27.8	24.2	24.2	22.2	21.4		17.1	17.1	17.1		3.9	3.9
Effective Green, g (s)	27.8	24.2	24.2	22.2	21.4		17.1	17.1	17.1		3.9	3.9
Actuated g/C Ratio	0.42	0.37	0.37	0.34	0.32		0.26	0.26	0.26		0.06	0.06
Clearance Time (s)	6.0	5.8	5.8	6.0	5.8		5.9	6.0	6.0		6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	449	630	535	348	547		284	445	378		91	86
v/s Ratio Prot	c0.01	c0.16		0.00	0.10		c0.05	0.02				
v/s Ratio Perm	0.07		0.02	0.01			c0.07		0.01		0.01	0.00
v/c Ratio	0.19	0.44	0.05	0.05	0.31		0.49	0.09	0.04		0.20	0.02
Uniform Delay, d1	11.7	15.7	13.4	14.6	16.7		20.0	18.5	18.3		29.5	29.2
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.5	0.0	0.1	0.3		1.3	0.1	0.0		1.1	0.1
Delay (s)	11.9	16.2	13.5	14.7	17.1		21.4	18.6	18.3		30.6	29.3
Level of Service	B	B	B	B	B		C	B	B		C	C
Approach Delay (s)		14.9			16.9			20.1			29.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	65.9	Sum of lost time (s)	26.7
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

MOVEMENT SUMMARY

Site: 8 [NE Gateway: Welaunee Blvd (Site Folder: General)]

Shamrock St and Welaunee Blvd - Design - Interchange
Site Category: Future Conditions PM
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: Welaunee Blvd														
3	L2	330	2.0	359	2.0	0.686	13.6	LOS B	9.8	247.9	0.72	0.68	0.96	28.0
8	T1	361	2.0	392	2.0	0.686	13.6	LOS B	9.8	247.9	0.72	0.68	0.96	27.8
Approach		691	2.0	751	2.0	0.686	13.6	LOS B	9.8	247.9	0.72	0.68	0.96	27.9
North: Welaunee Blvd														
4	T1	343	2.0	373	2.0	0.564	11.6	LOS B	5.1	129.4	0.70	0.76	0.97	29.4
14	R2	140	2.0	152	2.0	0.564	11.6	LOS B	5.1	129.4	0.70	0.76	0.97	28.6
Approach		483	2.0	525	2.0	0.564	11.6	LOS B	5.1	129.4	0.70	0.76	0.97	29.2
West: Shamrock St Ext														
5	L2	187	2.0	203	2.0	0.619	13.2	LOS B	6.7	169.3	0.75	0.89	1.17	28.2
12	R2	336	2.0	365	2.0	0.619	13.2	LOS B	6.7	169.3	0.75	0.89	1.17	27.3
Approach		523	2.0	568	2.0	0.619	13.2	LOS B	6.7	169.3	0.75	0.89	1.17	27.6
All Vehicles		1697	2.0	1845	2.0	0.686	12.9	LOS B	9.8	247.9	0.72	0.77	1.03	28.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: US HCM 6.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX C: TRAFFIC MODELING SUMMARY REPORT

TRAFFIC MODELING SUMMARY REPORT

Northeast Gateway: Welaunee Boulevard

Project Development and Environment Study

Leon County, Florida

November 2019

Prepared For:

BLUEPRINT INTERGOVERNMENTAL AGENCY

Prepared By:

Kimley»Horn

EXECUTIVE SUMMARY

The purpose of this Traffic Modeling Summary Report is to outline the assumptions, methodologies, analyses, and findings from the traffic modeling component of the Project Traffic Analysis Report (PTAR) for the Northeast Gateway: Welaunee Boulevard Project Development and Environment (PD&E) Study.

Phase I of the Northeast Gateway project, as originally defined, is to evaluate extending Welaunee Boulevard from its existing termini, east of Fleischmann Road, to the northeast over I-10. In addition, Phase I of the project includes an extension of Shamrock Street South eastward from Centerville Road to connect at an intersection with the Welaunee Boulevard extension. Following direction from the Blueprint Intergovernmental Agency Board at their September 5th, 2019 meeting, the parameters of the traffic modeling efforts were expanded, and additional corridors beyond the project as it was originally defined were evaluated.

To perform the traffic modeling, the Capital Region Transportation Planning Agency Model (CRTPA Model 2007) was used as the framework for developing a study-specific model that best represents the existing and future conditions within the northeast area.

Initially, 17 logical and feasible modeling corridors were screened to determine whether each was feasible for Phase I of the Northeast Gateway project. Following this initial screening, four modeling corridors were determined to remain feasible and were carried further for evaluation, which included Corridor 1, 2, 3, and 4 as shown in **Figure 3** on page 10 of this report. In addition to these four, the No Build Scenario was also carried forward for evaluation as it remains a required alternative throughout the PD&E process.

The remaining five corridors were analyzed for Opening Year 2025, Interim Year 2035, and Design Year 2045 utilizing various industry proven methods. The performance of each corridor was evaluated based on the ability to meet the purpose and need of the project as well as the ability to best preserve neighborhoods and residential areas. Based on these evaluations, the description and performance of each corridor is detailed in **Table I** on the following page.

The traffic modeling performed for this PD&E study is one of several tools that will be used as part of the comprehensive traffic analysis being conducted for this study. The next step in the traffic component of this study is to perform a detailed analysis of traffic conditions by forecasting future traffic volumes and evaluating segment and intersection operations on a daily and peak hour basis. These analyses will aid in the development of recommendations on roadway and intersection elements, such as lane geometry, turn lane locations, and lengths as well as intersection control and configurations.

Table I. Descriptions and Performance of Modeling Corridor

Modeling Corridor	Description	Performance
No Build Scenario	The No Build Scenario represents the existing roadway network without the proposed improvements associated with the Northeast Gateway project.	The No Build Scenario does not meet the purpose and need of the project and provides no benefit to the existing roadway network in Opening Year 2025 and through Design Year 2045.
1	Corridor 1 is a combination of Corridors 2 and 3. This corridor is an extension of Welaunee Boulevard from its existing termini, east of Fleischmann Road, to the northeast over I-10 to connect at the existing intersection of Centerville Road and Roberts Road. In addition, this corridor includes extending Shamrock Street South eastward from Centerville Road to connect at an intersection with the Welaunee Boulevard extension. This corridor may include a realignment of the western end of Roberts Road and a connection to Pimlico Drive, north of Montford Middle School.	Corridor 1 meets the purpose and need of the project and provides the most significant benefit to the existing roadway network in Opening Year 2025 and through Design Year 2045.
2	Corridor 2 is the original Phase I of the Northeast Gateway project. This corridor extends Welaunee Boulevard from its existing termini, east of Fleischmann Road, to the northeast over I-10. In addition, this includes an extension of Shamrock Street South eastward from Centerville Road to connect at an intersection with the Welaunee Boulevard extension.	Corridor 2 meets the purpose and need of the project and provides benefit to the existing roadway network in Opening Year 2025 and through Design Year 2045.
3	Corridor 3 is an extension of Welaunee Boulevard from its existing termini, east of Fleischmann Road, to the northeast over I-10 to connect at the existing intersection of Centerville Road and Roberts Road. This corridor may include a realignment of the western end of Roberts Road and a connection to Pimlico Drive, north of Montford Middle School.	Corridor 3 meets the purpose and need of the project and provides significant benefit to the existing roadway network in Opening Year 2025 and through Design Year 2045.
4	Corridor 4 is an extension of Welaunee Boulevard eastward from its existing termini, east of Fleischmann Road, to connect with an extension of Thornton Road. This corridor does not cross over I-10.	Corridor 4 meets the purpose and need of the project and provides limited benefit to the roadway network in Opening Year 2025 and an even more limited benefit in Interim Year 2035. This corridor does not meet the purpose and need of the project in Design Year 2045.

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INTRODUCTION

The purpose of this Traffic Modeling Summary Report is to outline the assumptions, methodologies, analyses, and findings from the traffic modeling component of the Project Traffic Analysis Report (PTAR) for the Northeast Gateway: Welaunee Boulevard Project Development and Environment (PD&E) Study.

The traffic modeling component of this PD&E study is the first step in the comprehensive traffic analysis that is being conducted as part of this study. While traffic modeling is a natural component in the progression of a PD&E study, through project coordination and public feedback, the Blueprint Intergovernmental Agency Board provided direction at their September 5th, 2019 meeting to expand the parameters of the traffic modeling efforts, which allowed the project team to evaluate additional corridors beyond the project as it was originally defined. This led to the development and evaluation of various logical and feasible roadway network scenarios, which were developed and evaluated utilizing the tools and methodologies outlined in this report.

Project Description

Phase I of the Northeast Gateway project, as originally defined, is to evaluate extending Welaunee Boulevard from its existing termini, east of Fleischmann Road, to the northeast over I-10. In addition, Phase I of the project includes an extension of Shamrock Street South eastward from Centerville Road to connect at an intersection with the Welaunee Boulevard extension.

Purpose and Need

The purpose of the project is to improve regional mobility and enhance connectivity for motorized and non-motorized users. In addition, the Northeast Gateway will reduce transportation pressures on surrounding roadways resulting from existing, ongoing, and proposed development on adjacent properties.

The project is needed to provide an alternative route for existing users of Centerville and Miccosukee Roads—two scenic roadways that are locally protected and designated as Canopy Roads. Ongoing and proposed development of the 7,000-acre Welaunee Critical Area Plan, which is nearly entirely located between Centerville and Miccosukee Roads, will result in increased congestion on these two Canopy Roadways, should a new transportation facility not be developed. In addition, the project is anticipated to provide relief to U.S. 319 (Thomasville Road) and U.S. 90 (Mahan Drive)—the first phase of a new regional gateway into Tallahassee.

TRAVEL DEMAND MODELING

What is a Travel Demand Model?

A travel demand model is a planning tool that utilizes computer programs to replicate real-world travel patterns and forecasts future travel needs. Travel demand modeling includes elements such as roadway networks and land use data within a Transportation Analysis Zone (TAZ). Land use data associated with each TAZ includes socioeconomic data, such as population and employment data, to calculate the expected demand on surrounding transportation facilities.

In general, a travel demand model operates based on the assumption that a trip will default to the quickest and most direct route to its destination based on travel time and roadway characteristics. It should be noted that traffic modeling provides a macroscopic view of forecasted daily traffic volumes and patterns, which may vary from actual daily traffic volumes and patterns. Forecasted daily traffic volumes represent total trips and do not distinguish between passenger cars and heavy vehicles nor do they distinguish mode choice, such as vehicle driver versus a transit rider.

Base Travel Demand Model

The Capital Region Transportation Planning Agency Model (CRTPA Model 2007) was used as the basis and framework to model and evaluate various land use and roadway network scenarios within the surrounding area of influence as part of the traffic modeling efforts.

The CRTPA 2007 Model is the adopted base year travel demand model for Florida's Capital Region and contains the roadway network and socioeconomic dataset associated with the 2035 Existing + Committed (E+C) scenario. The E+C scenario represents the existing roadway network with the addition of future roadways and developments that have been committed to. For the traffic modeling performed for this PD&E study, the E+C scenario was used as the basis for developing a robust, study-specific model.

Within the framework of this base model, additional modeling inputs such as roadway facility type, area type, and laneage have been established. Maps depicting these attributes are shown in **Appendix A.** Daily model traffic volumes for the 2007 Base Year model, without any modifications, are shown in **Appendix B**.

Development of a Study-Specific Model

As previously mentioned, the 2035 E+C scenario was used as the basis for developing a study-specific model to perform the traffic modeling for this study and has been modified as detailed below.

Analysis Years

Traffic modeling analyses were conducted for Opening Year 2025, Interim Year 2035, and Design Year 2045. Since 2035 was the latest year within the model, the socioeconomic data associated with the 2035 E+C scenario was extrapolated to develop the dataset for 2045. To obtain datasets for 2025 and 2035, the data associated with the 2007 Base Year model and 2045 Design Year model was interpolated.

The 2025, 2035, and 2045 datasets obtained through interpolation and extrapolation were considered raw datasets, as they were further modified based on the assumptions outlined in the sections below.

Roadway Network Assumptions

The roadway network from the 2035 E+C scenario was retained for the 2025, 2035, and 2045 modeling scenarios and included additional potential future roadways that may be privately or publicly funded by an organization other than Blueprint Intergovernmental Agency.

In the 2025 modeling scenario, an extension of Dempsey Mayo Road was included that extends from Miccosukee Road to Centerville Road.

In the 2035 and 2045 modeling scenarios, extensions of Dempsey Mayo Road, Edenfield Road, and Thornton Road were included. The Edenfield Road and Thornton Road extensions extends from Miccosukee Road to the proposed Welaunee Boulevard. In addition, both 2035 and 2045 modeling scenarios were evaluated with and without a potential future interchange at I-10 and Welaunee Boulevard.

Land Use Assumptions

The socioeconomic data associated with the 2035 E+C scenario was used as the basis for developing socioeconomic datasets for the 2025, 2035, and 2045 modeling scenarios. As previously mentioned, the raw dataset for 2045 was extrapolated while the others were obtained through interpolation. Additional modifications made to these raw datasets were developed in coordination with the Tallahassee-Leon County Planning Department (TLCPD) and landowners in the area.

Further modifications to the raw datasets were made within the immediate project area and surrounding area of influence, such as the Welaunee area. **Figure 1** depicts the Welaunee area, which is commonly referred to as the Toe, Heel, and Arch. The Toe refers to the area south of I-10 bounded by Miccosukee Road, Fleischmann Road, and Centerville Road. The Heel refers to the area north of I-10, near the I-10 and U.S. 90 (Mahan Drive) interchange, bounded by Mahan Road and Miccosukee Road. The Arch refers to the area north of I-10 bounded by Centerville Road, Roberts Road, and Crump Road.

Table 1 through **Table 3** shows the socioeconomic data associated with each zone that has been modified. Modified socioeconomic data is listed by TAZ. **Figure 2** depicts the TAZ boundaries and respective TAZ number. The values within these tables represent the number of single-family dwelling units, multi-family dwelling units, and total employees within each zone. A single-family dwelling unit is considered a detached, single-family home. A multi-family dwelling unit is considered a building that is designed to house several families, such as an apartment building. Total employees represent the non-residential land uses within a zone.

Additional noteworthy areas that were reviewed and incorporated into these modeling efforts included major ongoing and approved planned developments in the vicinity of Bannerman Road as well as anticipated growth at Roberts Elementary School and Montford Middle School.

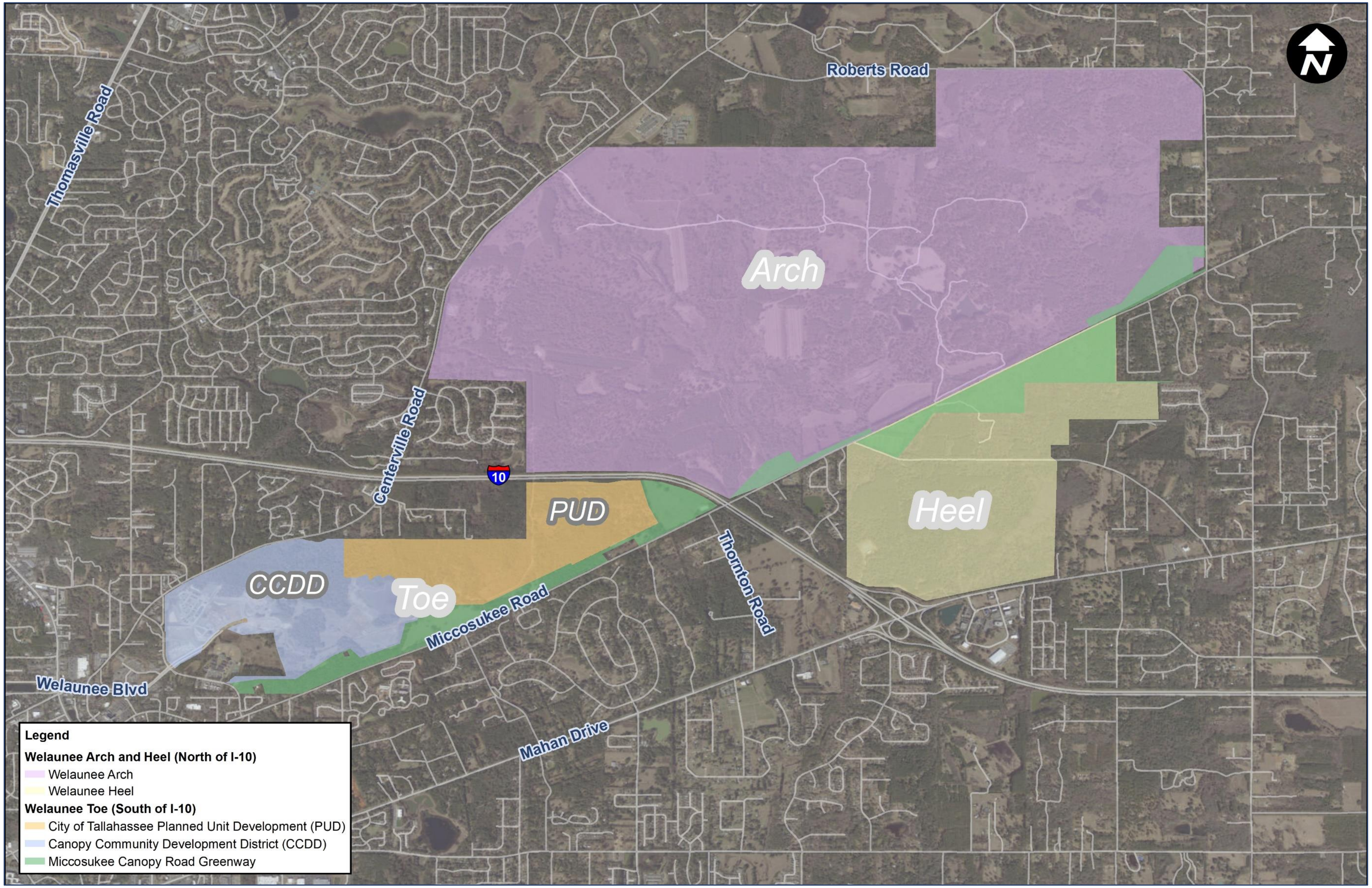


Figure 1. Welaunee Area

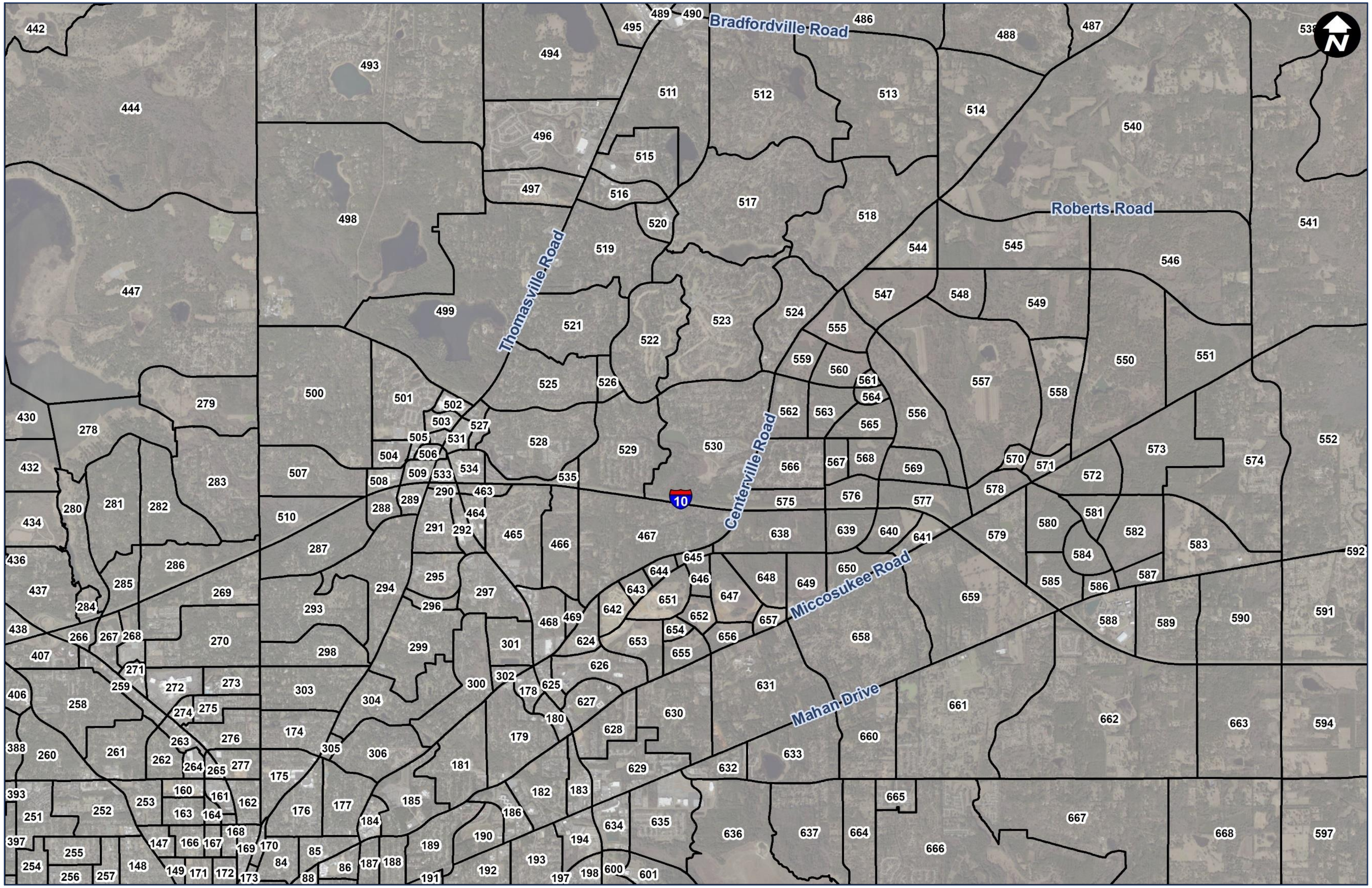


Figure 2. Transportation Analysis Zone (TAZ) Map

Table 1. Welaunee Toe 2025, 2035, and 2045 Modified Land Use Data

Transportation Analysis Zone (TAZ)	2025			2035			2045		
	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Employees	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Employees	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Employees
Canopy Community Development District (CCDD)									
642	69	68	126	81	119	172	92	169	216
643	160	0	10	193	0	6	225	0	0
644	24	0	9	35	0	5	45	0	0
645	0	0	7	0	0	4	0	0	0
646	16	0	13	23	0	7	30	0	0
647	2	0	63	3	0	31	3	0	0
651	71	0	103	77	141	181	83	282	258
652	425	0	93	511	0	97	596	0	100
653	1	98	103	2	93	224	2	87	345
654	17	0	6	24	0	3	30	0	0
655	29	2	17	39	2	9	48	2	0
Subtotal	*814*	*168*	*550*	*984*	*354*	*736*	*1,154*	*540*	*919*
City of Tallahassee Planned Unit Development (PUD)									
639	0	0	0	63	63	133	194	194	408
640	0	0	0	91	91	100	280	279	307
641	0	0	0	0	0	0	1	0	0
648	0	0	0	0	0	0	252	0	43
649	0	0	0	0	0	0	189	0	28
650	0	0	0	35	35	15	210	207	87
Subtotal	*0*	*0*	*0*	*189*	*188*	*247*	*1,126*	*680*	*873*
TOTAL	**814**	**168**	**550**	**1,173**	**542**	**983**	**2,280**	**1,220**	**1,792**

Table 2. Welaunee Heel 2025, 2035, and 2045 Modified Land Use Data

Transportation Analysis Zone (TAZ)	2025			2035			2045		
	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Employees	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Employees	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Employees
572	0	0	0	0	0	63	0	0	125
573	0	0	0	1	0	85	1	0	169
580	0	0	0	0	0	56	0	0	113
581	0	0	0	0	0	28	0	0	54
582	0	0	0	1	0	75	1	0	150
584	0	0	0	0	0	34	0	0	67
585	0	0	5	131	113	201	261	156	396
586	0	0	0	0	0	14	0	0	28
587	0	0	0	1	0	21	2	0	41
TOTAL	**0**	**0**	**5**	**133**	**113**	**575**	**265**	**156**	**1143**

Table 3. Welaunee Arch 2025, 2035, and 2045 Modified Land Use Data

Transportation Analysis Zone (TAZ)	2025			2035			2045		
	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Employees	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Employees	Single-Family Dwelling Units	Multifamily Dwelling Units	Total Employees
545	7	0	0	7	0	-1	7	0	2
546	24	0	0	24	0	-3	24	0	5
547	0	0	0	0	0	0	0	0	0
548	0	0	0	0	0	0	0	0	0
549	0	0	0	0	0	0	0	0	0
550	0	0	0	0	0	0	0	0	1
551	0	0	0	0	0	0	0	0	0
555	0	0	0	0	0	0	125	0	0
556	0	0	0	0	0	0	635	0	0
557	0	0	0	0	0	0	400	0	0
558	0	0	0	0	0	0	183	0	30
559	0	0	0	0	0	0	101	0	131
560	0	0	0	0	0	0	100	0	217
561	0	0	0	0	0	0	50	0	13
562	0	0	5	0	0	0	376	0	0
563	0	0	0	0	0	0	330	0	0
564	0	0	0	0	0	0	50	0	0
565	0	0	0	0	0	0	325	0	0
567	0	0	0	0	0	0	175	0	0
568	0	0	0	63	0	50	250	0	199
569	0	0	0	88	0	56	350	0	224
570	0	0	0	0	0	0	50	0	21
571	0	0	0	0	0	0	50	0	37
576	0	0	0	25	125	91	101	500	363
577	0	0	0	38	125	128	152	500	513
578	0	0	0	0	0	0	0	0	0
TOTAL	**31**	**0**	**5**	**244**	**250**	**321**	**3,834**	**1,000**	**1,756**

MODELING CORRIDORS

No Build Scenario

A No Build Scenario was evaluated, which represents the existing roadway network without the proposed improvements associated with the Northeast Gateway. The No Build Scenario remains a viable alternative throughout the PD&E process. Forecasted traffic volumes associated with the No Build Scenario for 2025, 2035, and 2045 are shown in **Appendix C**. The No Build Scenario was utilized as the basis for comparison of all corridors.

Initial Screening of Corridors

For the traffic modeling efforts, 17 initial modeling corridors were developed and screened. These corridors were logical and feasible roadways that enhanced connectivity within the existing roadway network and included various routes and connections throughout the northeast. General alignments for each modeling corridor can be found in **Appendix D**. Each modeling corridor was screened to determine whether the corridor was feasible for Phase I of the Northeast Gateway project.

Feasible Corridors

Following the initial screening of modeling corridors, four corridors remain feasible for Phase I of the Northeast Gateway in addition to the No Build Scenario. **Table 4** lists the remaining corridors that underwent further study and evaluation, which are also depicted in **Figure 3**.

Table 4. Descriptions of Feasible Corridors

Modeling Corridor	Description
No Build Scenario	The No Build Scenario represents the existing roadway network without the proposed improvements associated with the Northeast Gateway project.
1	Corridor 1 is a combination of Corridors 2 and 3. This corridor is an extension of Welaunee Boulevard from its existing termini, east of Fleischmann Road, to the northeast over I-10 to connect at the existing intersection of Centerville Road and Roberts Road. In addition, this corridor includes extending Shamrock Street South eastward from Centerville Road to connect at an intersection with the Welaunee Boulevard extension. This corridor may include a realignment of the western end of Roberts Road and a connection to Pimlico Drive, north of Montford Middle School.
2	Corridor 2 is the original Phase I of the Northeast Gateway project. This corridor extends Welaunee Boulevard from its existing termini, east of Fleischmann Road, to the northeast over I-10. In addition, this includes an extension of Shamrock Street South eastward from Centerville Road to connect at an intersection with the Welaunee Boulevard extension.
3	Corridor 3 is an extension of Welaunee Boulevard from its existing termini, east of Fleischmann Road, to the northeast over I-10 to connect at the existing intersection of Centerville Road and Roberts Road. This corridor may include a realignment of the western end of Roberts Road and a connection to Pimlico Drive, north of Montford Middle School.
4	Corridor 4 is an extension of Welaunee Boulevard eastward from its existing termini, east of Fleischmann Road, to connect with an extension of Thornton Road. This corridor does not cross over I-10.

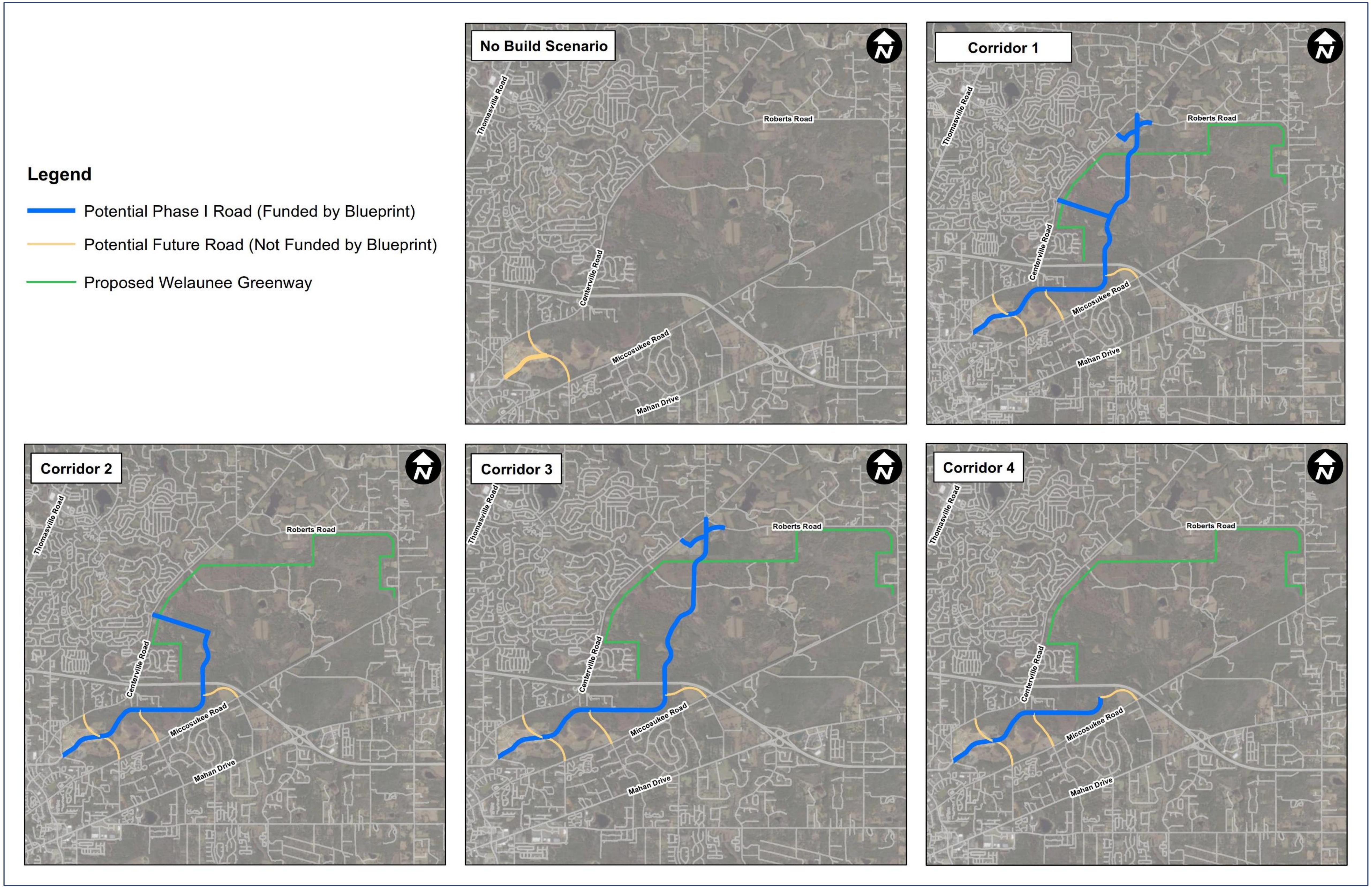


Figure 3. Study Corridors

EVALUATION OF FEASIBLE CORRIDORS

Study Area

The modeling study area extends beyond the immediate project area and includes an evaluation of 29 roadways that serve the northeast area. The study area is bounded to west by Thomasville Road and Capital Circle NE, to the north by Bradfordville Road and Pisgah Church Road, to the east by Proctor Road and Crump Road, and to the south by Mahan Drive. **Figure 4** depicts the roadways studied and evaluated as part of the traffic modeling analyses.

Since the travel demand model is a regional model, these segments include major roadways such as arterials and collectors, but do not include local roads such as residential streets, as these are not within the model. An arterial is a major thoroughfare with the primary purpose of moving traffic from one location to another. The characteristics of arterials may vary slightly depending on whether the roadway is classified as a principal or minor arterial as well as an urban or rural arterial. For example, Thomasville Road is classified as a principle arterial while Centerville Road is classified as a minor arterial. A collector is intended to serve as the primary connection between local roads and arterials. The characteristics of collectors may also vary depending on whether the roadway is classified as a major or minor collector. For example, Killarney Way and Thornton Road are classified as major collectors while McLaughlin Drive and Edenfield Road are classified as minor collectors.

To provide additional context, a typical trip that sets out to reach a freeway will begin on a local road, continue to a collector road then an arterial, which would provide access to a freeway. For more detail on the functional classification of roadways in the northeast area, including those studied, the City of Tallahassee's Roadway Functional Classification map can be found in **Appendix E**.

Evaluation Criteria

Criteria was developed to evaluate each feasible corridor from both a regional and local perspective. Primary evaluation criterion was based on a corridor's ability to satisfy the purpose and need of the project, which includes providing regional mobility, relieving surrounding roadway facilities, protecting the Canopy Roads, enhancing connectivity, and providing support for a potential future interchange at I-10 and Welaunee Boulevard. Secondary evaluation criterion was based on a corridor's ability to preserve neighborhoods and residential areas by improving the balance and distribution of traffic.

Evaluation Methods and Findings

To determine a corridor's ability to meet the criteria defined above, several evaluation methods were employed to ensure that the findings were based on a wholistic approach. The findings of each corridor are presented both numerically and graphically and are detailed in **Table 5**. As previously mentioned, the traffic modeling analyses are performed through a model to model comparison. Therefore, all corridors were evaluated in comparison to the No Build Scenario for the respective year being analyzed. For example, forecasted daily model volumes for 2025 Corridor 1 were evaluated in comparison to the forecasted daily model volumes for the 2025 No Build Scenario. Forecasted daily model volumes for the 2025, 2035, and 2045 No Build Scenarios can be found in **Appendix C**.

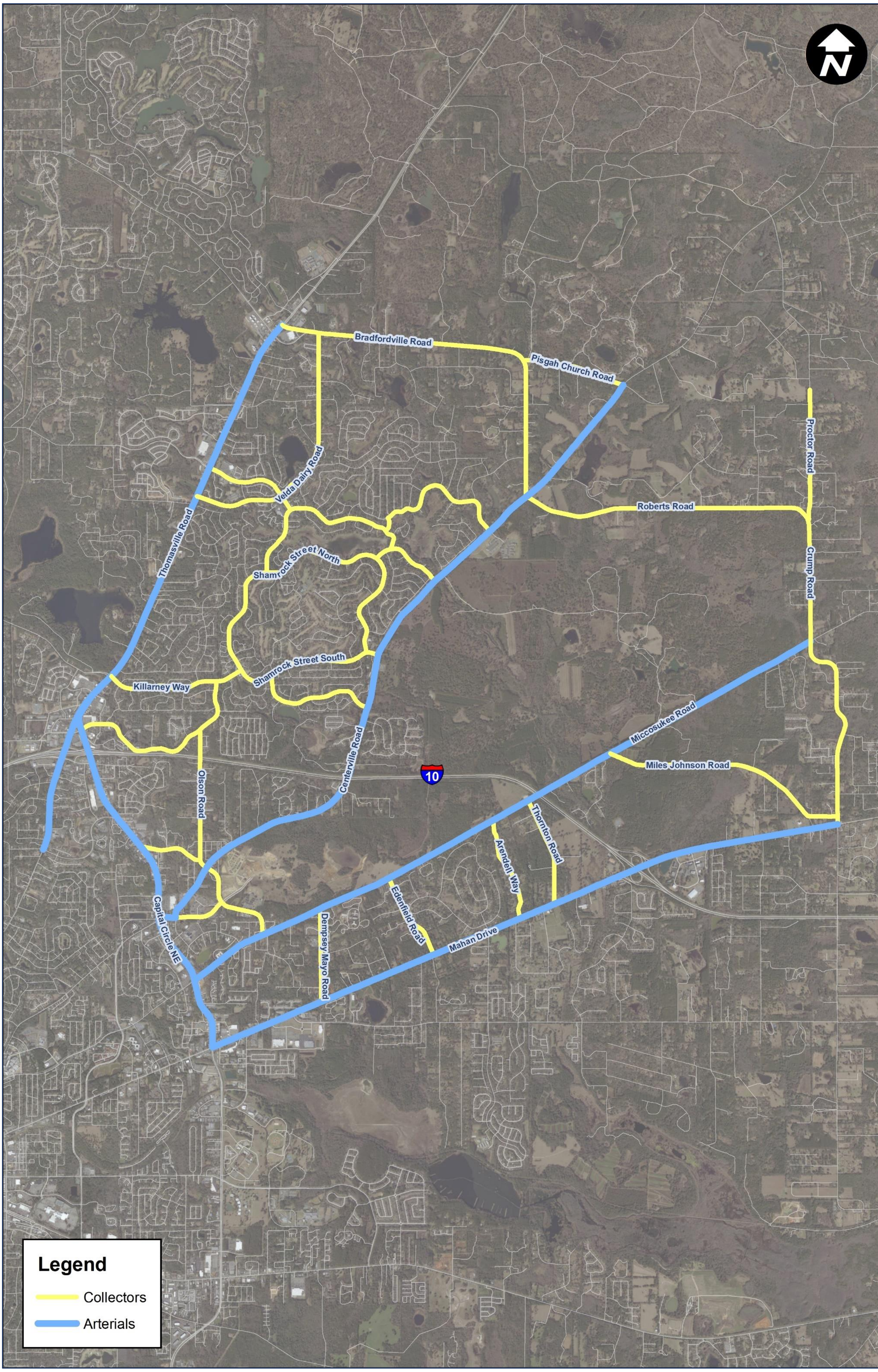


Figure 4. Modeling Roadways Studied

Table 5. Feasible Corridor Evaluation Methods

Evaluation Method	Evaluation Years	Description of Evaluation Method	Evaluation Method Metrics	Format	Location of Method Results
Quantitative Evaluation	2025 2035 2045	This evaluation method represents the net change between forecasted daily model volumes for an individual corridor and the No Build Scenario for that respective year. The purpose of this method is to estimate the potential future change in traffic patterns resulting from each corridor.	This evaluation method is presented in a color-coded table format, which shows forecasted daily model volumes by roadway segment, and is color-coded based on whether a roadway segment increases, decreases, or stays the same in comparison to the No Build Scenario. In this table, yellow signifies an increase and green signifies a decrease or no change in forecasted daily model volumes along the respective segment.	Table	**Appendix F**
Quantitative Evaluation	2025 2035 2045	This evaluation method is similar to the evaluation method presented above but is presented in a map format over an aerial background. This evaluation method represents the net change between forecasted daily model volumes for an individual corridor and the No Build Scenario for that respective year. The purpose of this method is to estimate the potential future change in traffic patterns resulting from each corridor.	This evaluation method is presented in a color-coded map format, which shows forecasted daily model volumes by roadway segment, and is color-coded based on whether a roadway segment increases, decreases, or stays the same in comparison to the No Build Scenario. In this map, yellow signifies an increase, bright green signifies a decrease, and dark green signifies a decrease or no change in forecasted daily model volumes along the respective segment.	Map	**Appendix G**
Qualitative Evaluation	2025 2035 2045	This evaluation method goes a step further than the quantitative evaluation method by evaluating the estimated impact associated with the net change between forecasted daily model volumes for an individual corridor and the No Build Scenario for that respective year. The purpose of this method is to estimate the potential significance behind future changes in traffic patterns resulting from each corridor.	This evaluation method is presented in a color-coded map format, which shows forecasted daily model volumes by roadway segment. In contrast, this method is color-coded based on whether a corridor has no to low impact or a moderate impact on a roadway segment in comparison to the No Build Scenario. In this map, yellow signifies a moderate impact and green signifies no to low impact. A moderate impact represents a forecasted daily model volume increase of 5% or more in comparison to the No Build Scenario. A no to low impact represents a forecasted daily model volume decrease or increase of less than 5%.	Map	**Appendix H**
Volume to Capacity Evaluation	2025 2035 2045	This evaluation method builds upon the Quantitative Evaluation by evaluating roadway segments that are overcapacity during the peak hour as they exist today to determine whether an individual corridor shows help to relief segments that have existing deficiencies. The purpose of this method is to estimate the magnitude of benefit to study area roadways with existing deficiencies.	This evaluation method analyzes volume to capacity (v/c), which is the ratio of traffic on a roadway segment to the capacity of that segment. A v/c ratio of 1.0 indicates that a roadway segment is operating at capacity, while a v/c ratio of less than 1.0 indicates that a roadway segment is operating below capacity. In summary, this evaluation method is presented in a color-coded table format, which shows forecasted daily model volumes by roadway segment, and is color-coded based on whether a roadway segment increases, decreases, stays the same in comparison to the No Build Scenario as well as whether the segment has a v/c of 1.0 or greater and decreases or has a v/c of 1.0 or greater and increases. In this table, yellow signifies an increase, green signifies a decrease or no change, bright green signifies a segment that has an existing deficiency and is relieved, and red signifies a segment that has an existing deficiency but is not relieved.	Table	**Appendix I**

Utilizing the criteria and methods outlined above, a traffic modeling summary matrix was developed to summarize the performance of the No Build Scenario and the four feasible corridors in 2025, 2035, and 2025, which is depicted in **Figure 5**.

Traffic Modeling Summary Matrix															
Criteria	Opening Year 2025 Modeling Corridor					Interim Year 2035 Modeling Corridor					Design Year 2045 Modeling Corridor				
	No Build Scenario	1	2	3	4	No Build Scenario	1	2	3	4	No Build Scenario	1	2	3	4
Evaluation of Primary Arterials															
Relieves Centerville Road	—	✓	✓	✓	✓	—	✓	—	✓	✓	—	✓	—	✓	✓
Relieves Miccosukee Road	—	✓	✓	✓	✓	—	✓	✓	✓	✓	—	✓✓	✓✓	✓✓	✓
Relieves Thomasville Road	—	✓✓	✓	✓✓	✓	—	✓✓	✓	✓✓	✓✓	—	✓	✓	✓	—
Relieves Mahan Drive	—	✓	✓	✓	✓	—	✓✓	✓	✓	✓	—	✓✓	✓✓	✓✓	✓✓
Potential for a Future I-10 Interchange	—	✓	✓	✓	—	—	✓	✓	✓	—	—	✓	✓	✓	—
Evaluation of Secondary Arterials and Noteworthy Connectors															
Relieves Killearn Estates Roadways	—	✓✓	✓	✓✓	✓	—	✓✓	—	✓✓	✓	—	✓✓	✓	✓✓	—
Relieves Killearn Center Boulevard	—	✓✓	✓✓	✓✓	✓✓	—	✓✓	✓✓	✓✓	—	—	✓✓	✓✓	✓✓	✓
Relieves Olson Road	—	✓	✓	✓	✓	—	✓	✓	—	—	—	✓✓	✓	✓	—

Figure 5. Traffic Modeling Summary Matrix

PEER REVIEW AND ADDITIONAL COORDINATION

Peer Review

As part of the traffic modeling efforts performed for this study, independent peer reviews of the modeling methodology, assumptions, input parameters, and results were conducted by Michael-Baker International and HNTB to ensure a reasonable, holistic approach was employed consistent with industry standards.

Additional Coordination

In addition to the independent peer review, ongoing coordination has occurred with Leon County Government, City of Tallahassee, Hopping Green & Sams (legal representatives for Powerhouse, Inc.), Dantin Consulting (engineering representative for Killearn Homes Association), and Keep It Rural.

It should be noted that the parties mentioned above include only those that have been coordinated with directly regarding the traffic modeling component of this PD&E study. Further coordination with stakeholders and City and County leadership as well as community engagement opportunities occurred and will continue to take place as the project progresses.

SUMMARY

Based on the extensive traffic modeling analyses performed for this PD&E study, **Table 6** details the performance of each corridor.

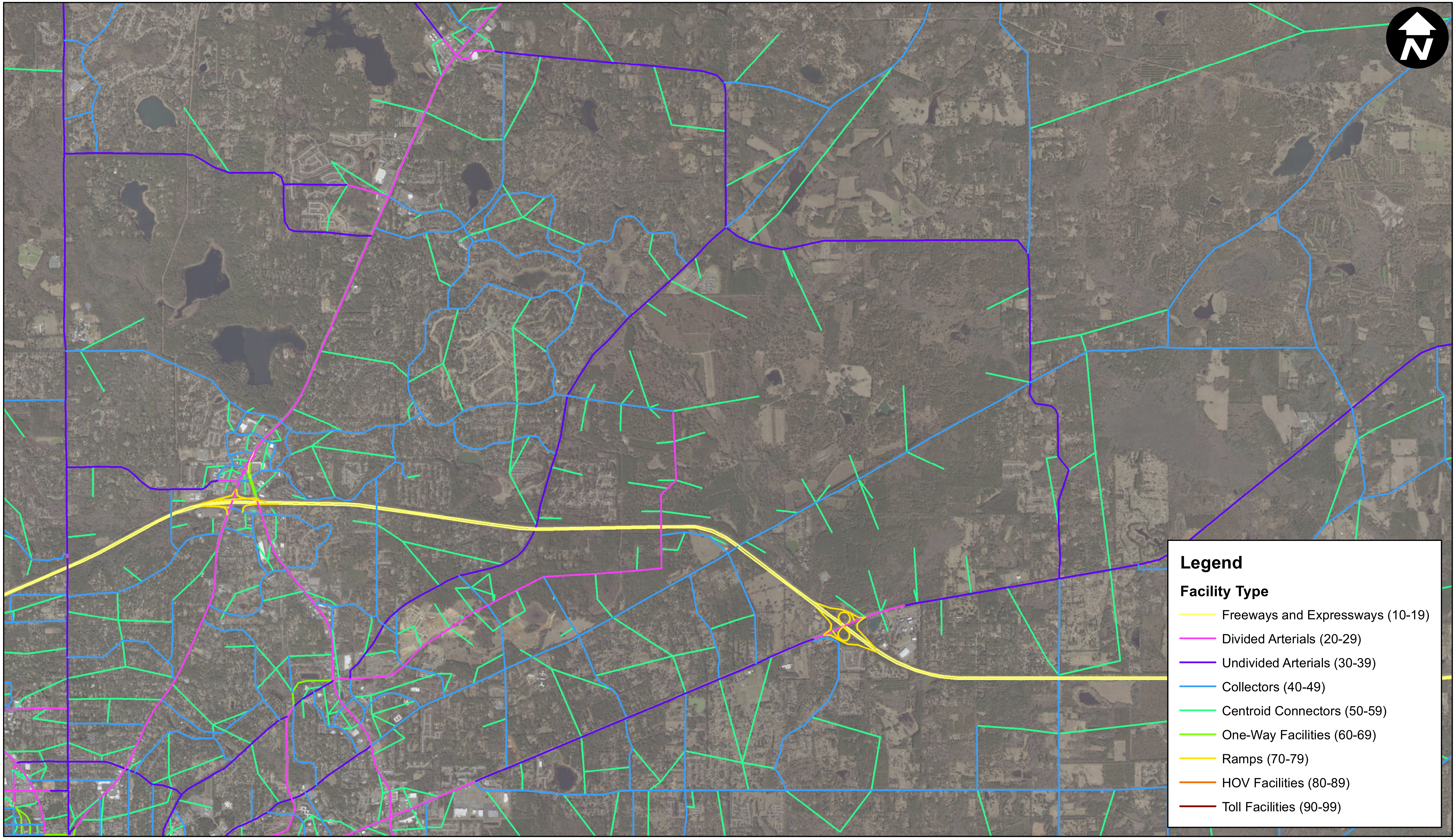
The traffic modeling performed for this PD&E study is one of several tools that will be utilized in the comprehensive traffic analysis being conducted for this study. The next step in the traffic component of this study is to perform a detailed analysis of traffic conditions by forecasting future traffic volumes and evaluating segment and intersection operations on a daily and peak hour basis. These analyses will aid in the development of recommendations on roadway and intersection elements, such as turn lane locations and lengths as well as intersection configurations.

Table 6. Summary of the Performance of Feasible Corridors

Modeling Corridor	Description	Performance
No Build Scenario	The No Build Scenario represents the existing roadway network without the proposed improvements associated with the Northeast Gateway project.	The No Build Scenario does not meet the purpose and need of the project and provides no benefit to the existing roadway network in Opening Year 2025 and through Design Year 2045.
1	Corridor 1 is a combination of Corridors 2 and 3. This corridor is an extension of Welaunee Boulevard from its existing termini, east of Fleischmann Road, to the northeast over I-10 to connect at the existing intersection of Centerville Road and Roberts Road. In addition, this corridor includes extending Shamrock Street South eastward from Centerville Road to connect at an intersection with the Welaunee Boulevard extension. This corridor may include a realignment of the western end of Roberts Road and a connection to Pimlico Drive, north of Montford Middle School.	Corridor 1 meets the purpose and need of the project and provides the most significant benefit to the existing roadway network in Opening Year 2025 and through Design Year 2045.
2	Corridor 2 is the original Phase I of the Northeast Gateway project. This corridor extends Welaunee Boulevard from its existing termini, east of Fleischmann Road, to the northeast over I-10. In addition, this includes an extension of Shamrock Street South eastward from Centerville Road to connect at an intersection with the Welaunee Boulevard extension.	Corridor 2 meets the purpose and need of the project and provides benefit to the existing roadway network in Opening Year 2025 and through Design Year 2045.
3	Corridor 3 is an extension of Welaunee Boulevard from its existing termini, east of Fleischmann Road, to the northeast over I-10 to connect at the existing intersection of Centerville Road and Roberts Road. This corridor may include a realignment of the western end of Roberts Road and a connection to Pimlico Drive, north of Montford Middle School.	Corridor 3 meets the purpose and need of the project and provides significant benefit to the existing roadway network in Opening Year 2025 and through Design Year 2045.
4	Corridor 4 is an extension of Welaunee Boulevard eastward from its existing termini, east of Fleischmann Road, to connect with an extension of Thornton Road. This corridor does not cross over I-10.	Corridor 4 meets the purpose and need of the project and provides limited benefit to the roadway network in Opening Year 2025 and an even more limited benefit in Interim Year 2035. This corridor does not meet the purpose and need of the project in Design Year 2045.

APPENDIX A:

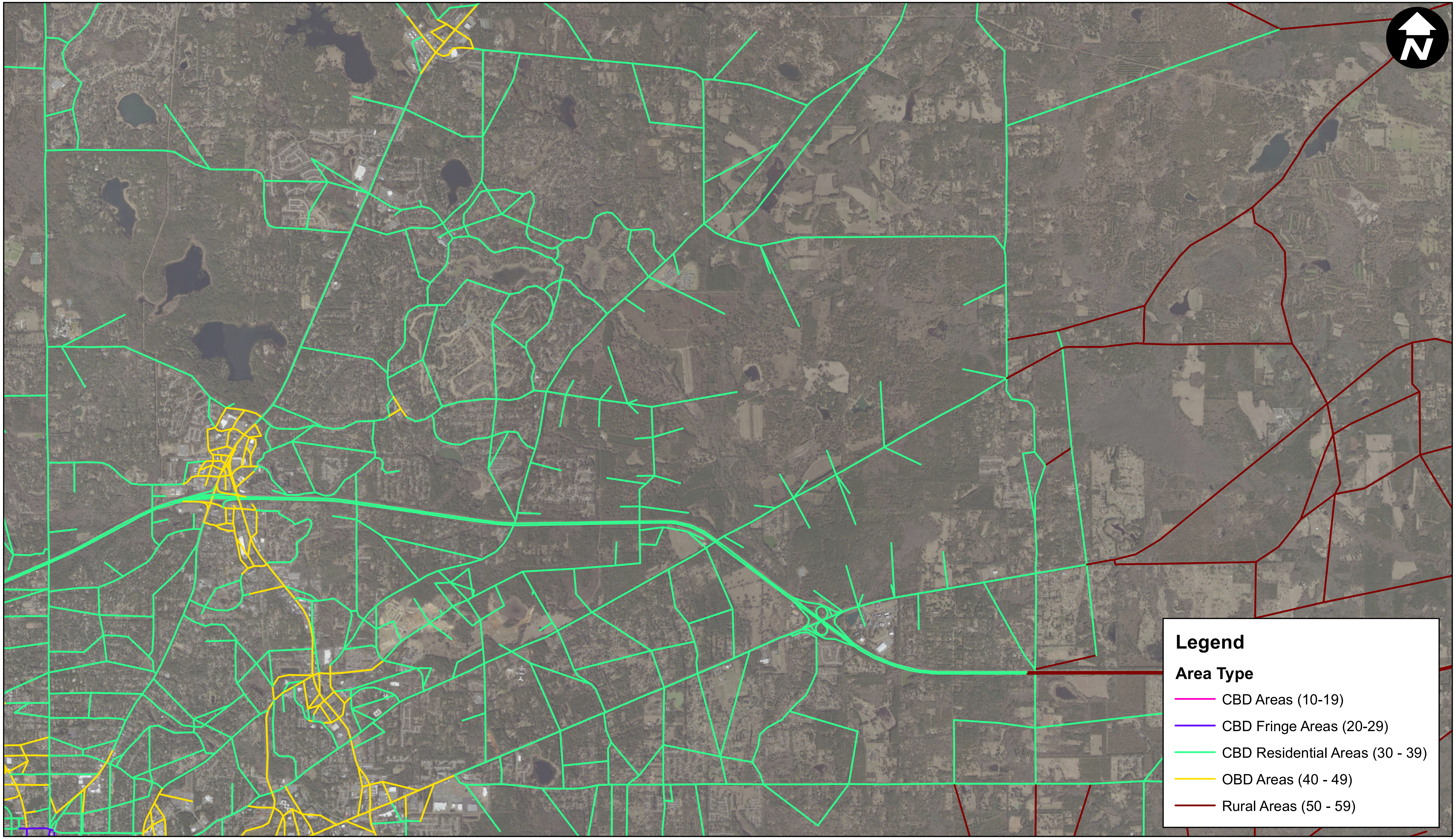
MODELED ROADWAY FACILITY TYPE, AREA TYPE, AND NUMBER OF LANES



Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

Modeling Inputs: Facility Type

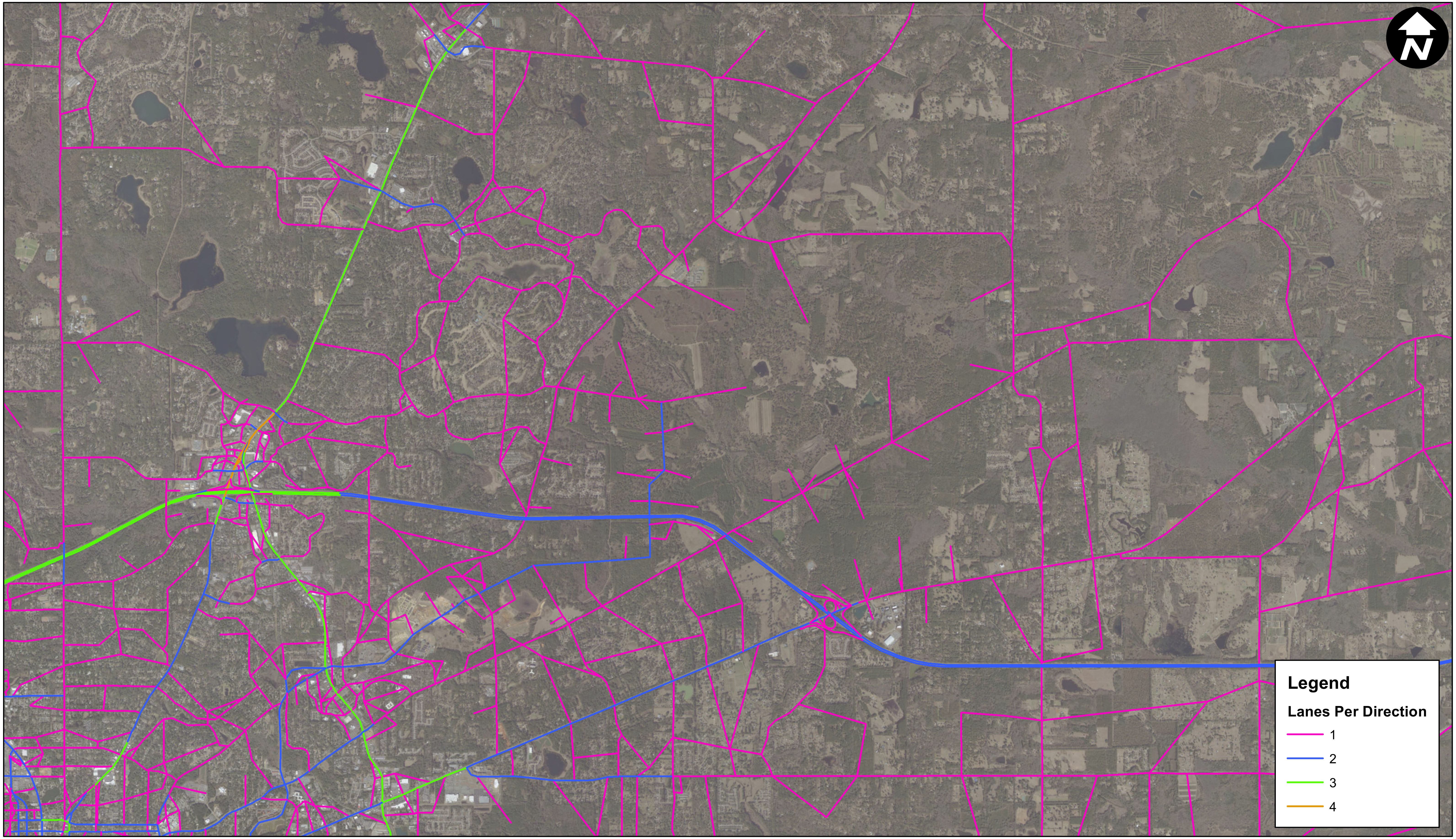
Note: 2025 Corridor 1 modeling network shown.



Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

Modeling Inputs: Area Type

Note: 2025 Corridor 1 modeling network shown.



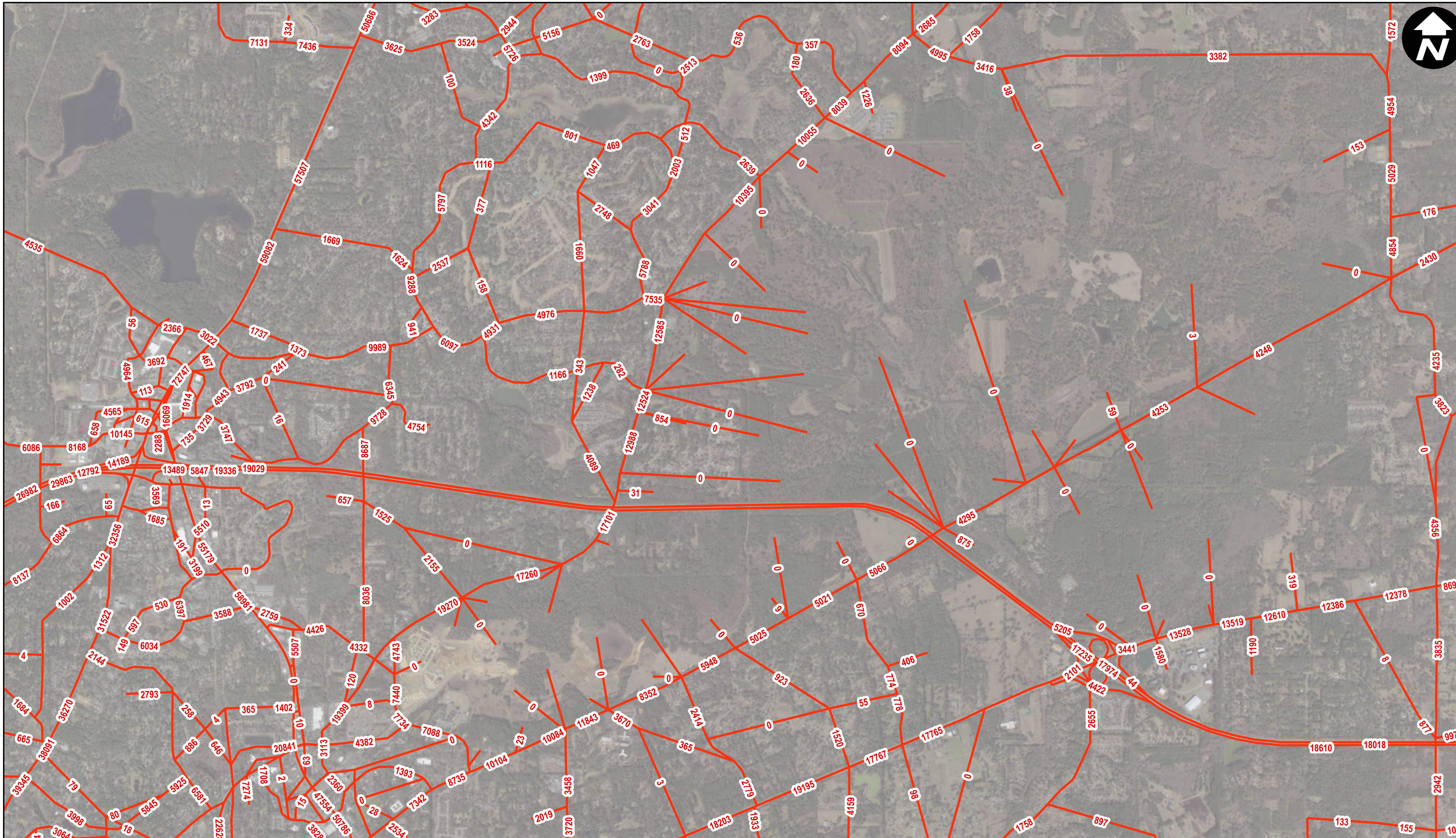
Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

Modeling Inputs: Number of Lanes

Note: 2025 Corridor 1 modeling network shown.

APPENDIX B:

2007 BASE YEAR MODEL VOLUMES



Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

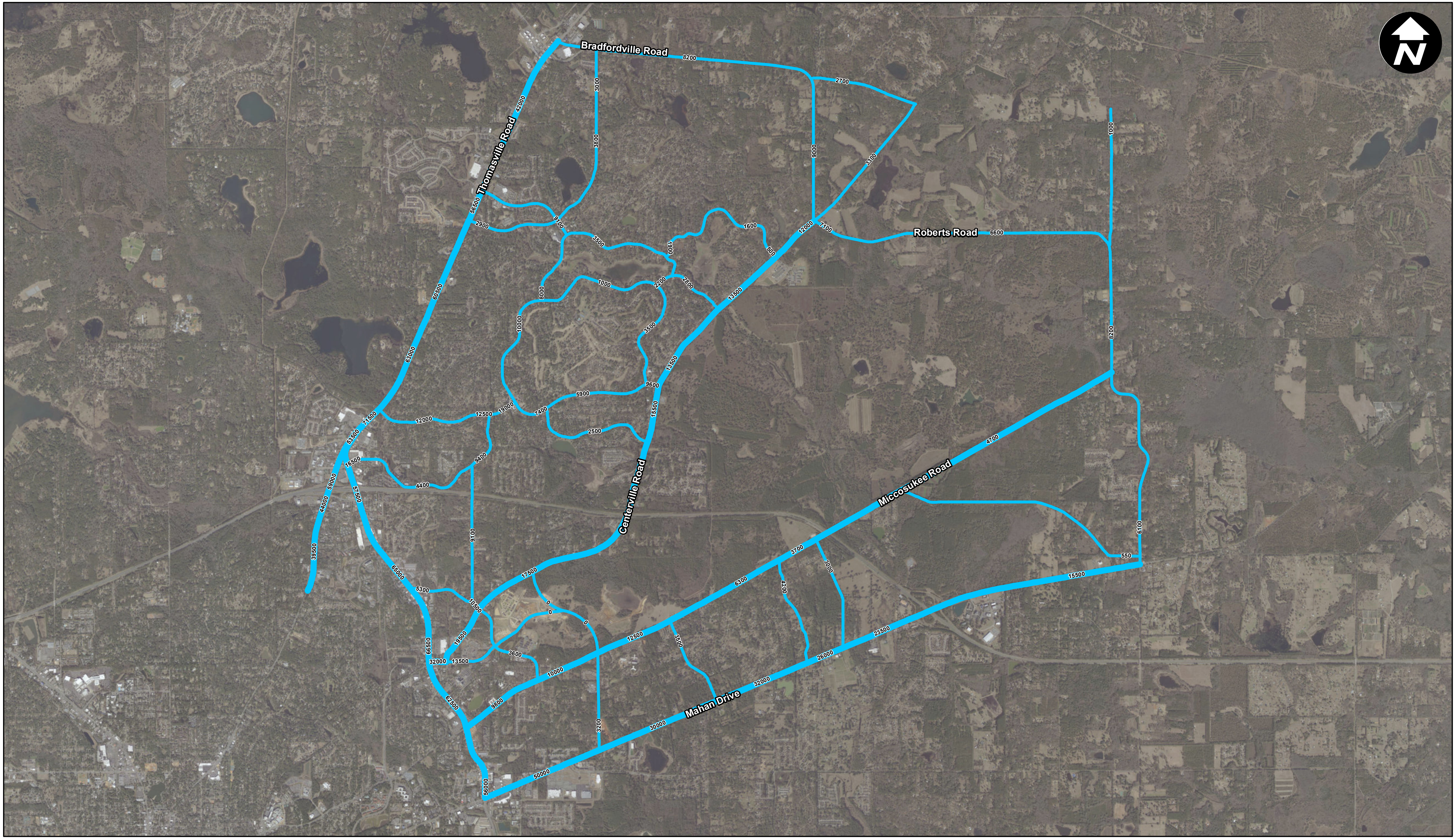
2007 Base Network

Model Scenario Information

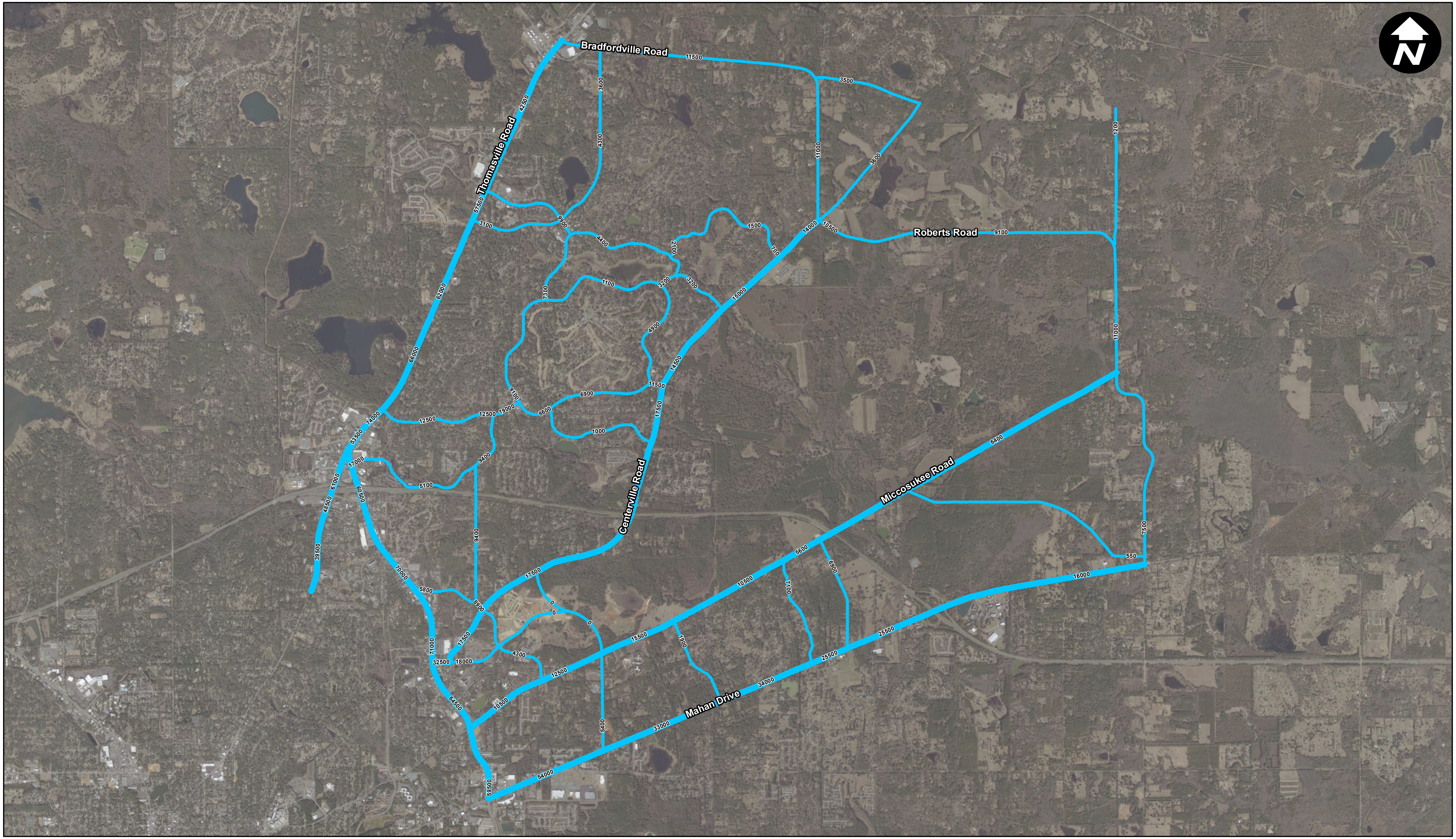
Year:	2007
Name:	Base Network
Capacity:	N/A

APPENDIX C:

2025, 2035, AND 2045 NO BUILD SCENARIO FUTURE DAILY MODEL VOLUMES



Northeast Gateway: Welaunee Boulevard PD&E Study **From Fleischmann Road to Centerville Road at Shamrock Street** **Leon County, Florida**	**Modeling Corridors** **Future Traffic Volumes**	**Modeling Information** **Year:** 2025 **Name:** No Build Scenario

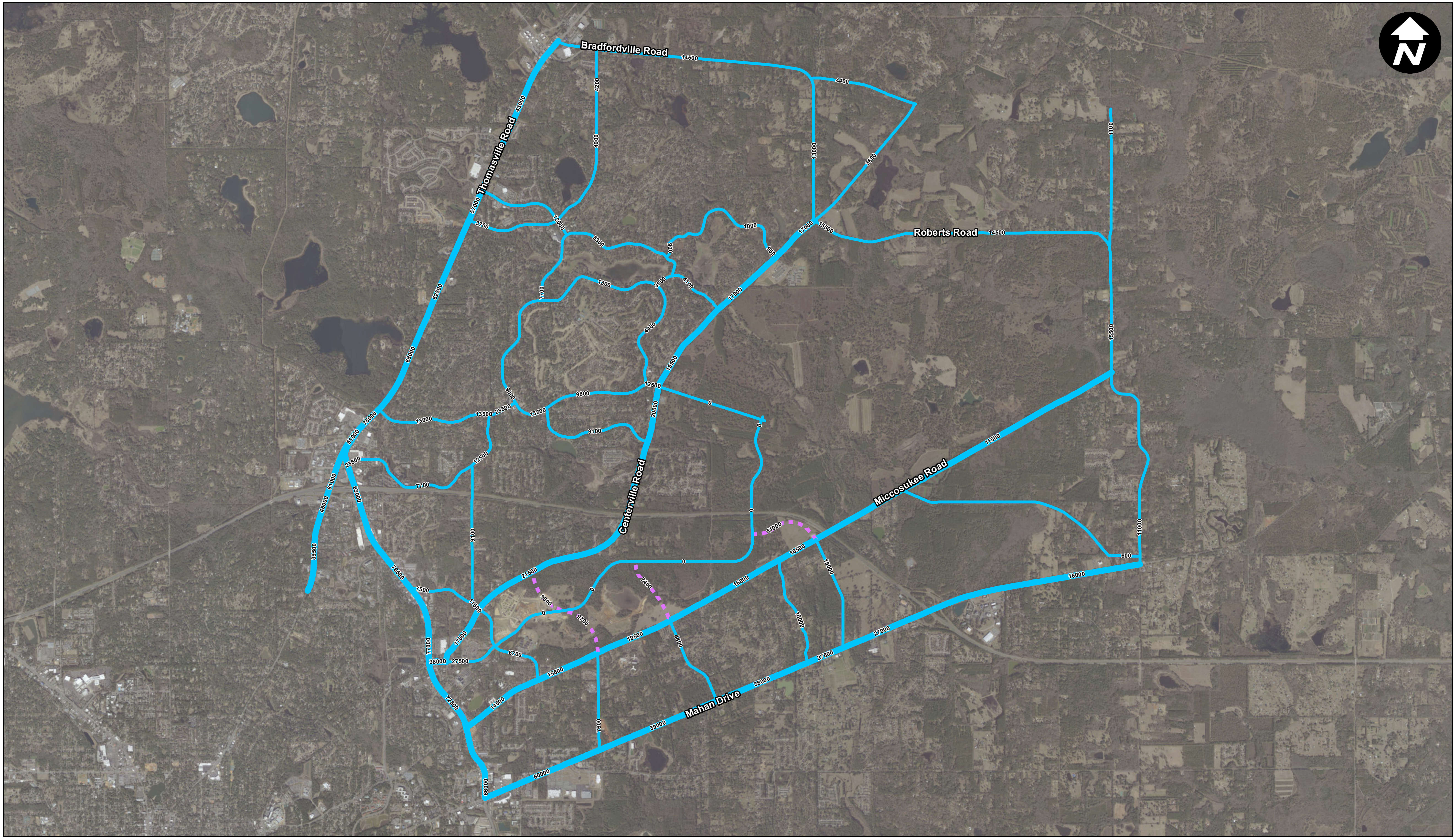


Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

Modeling Corridors
Future Traffic Volumes

Modeling Information

Year: 2035
Name: No Build Scenario



Northeast Gateway: Welaunee Boulevard PD&E Study **From Fleischmann Road to Centerville Road at Shamrock Street** **Leon County, Florida**	**Modeling Corridors** **Future Traffic Volumes**	**Modeling Information** **Year:** 2045 **Name:** No Build Scenario

APPENDIX D:

INITIAL 17 MODELING CORRIDORS

Corridor 1

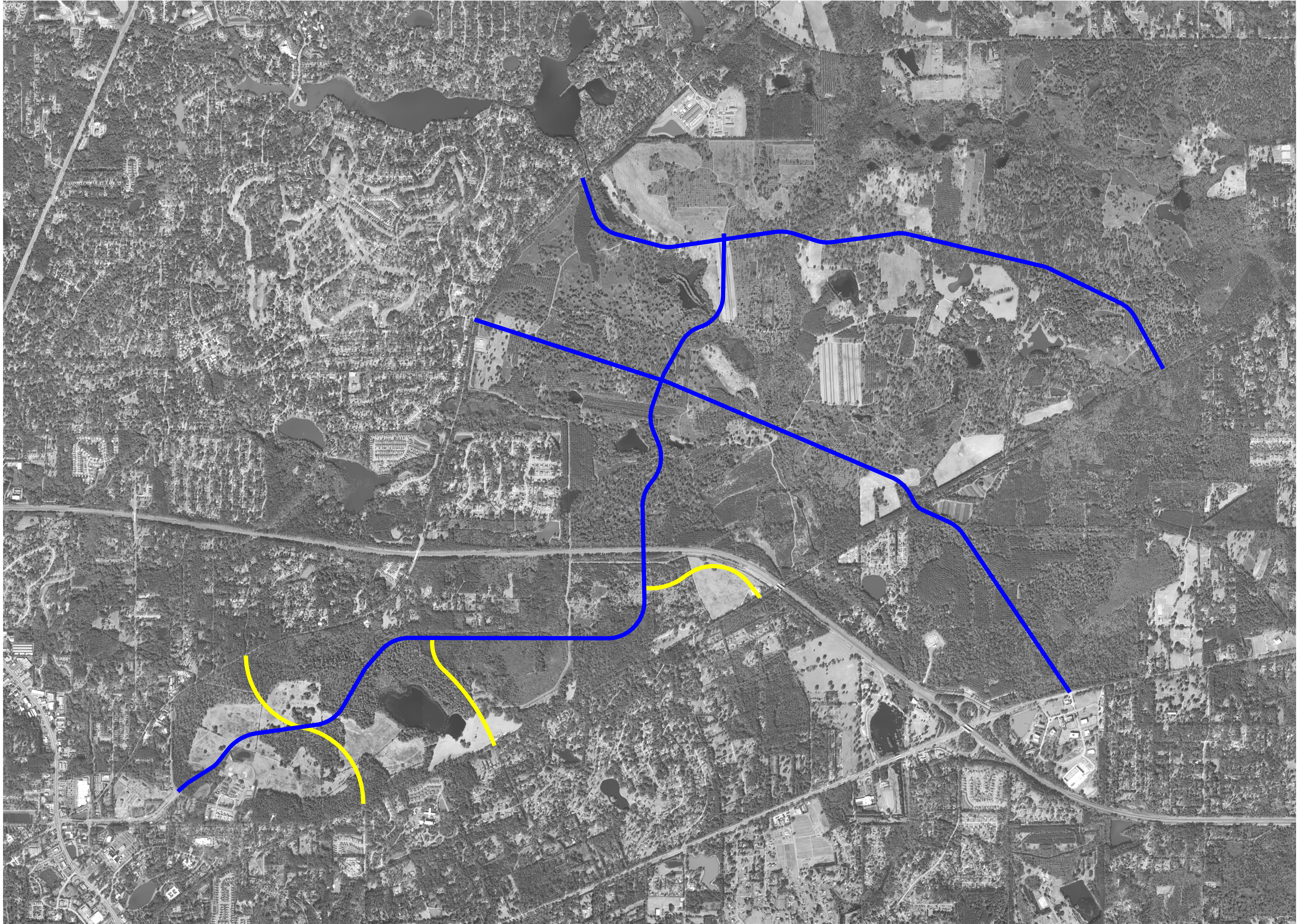
Corridor 2

Corridor 3

Corridor 4

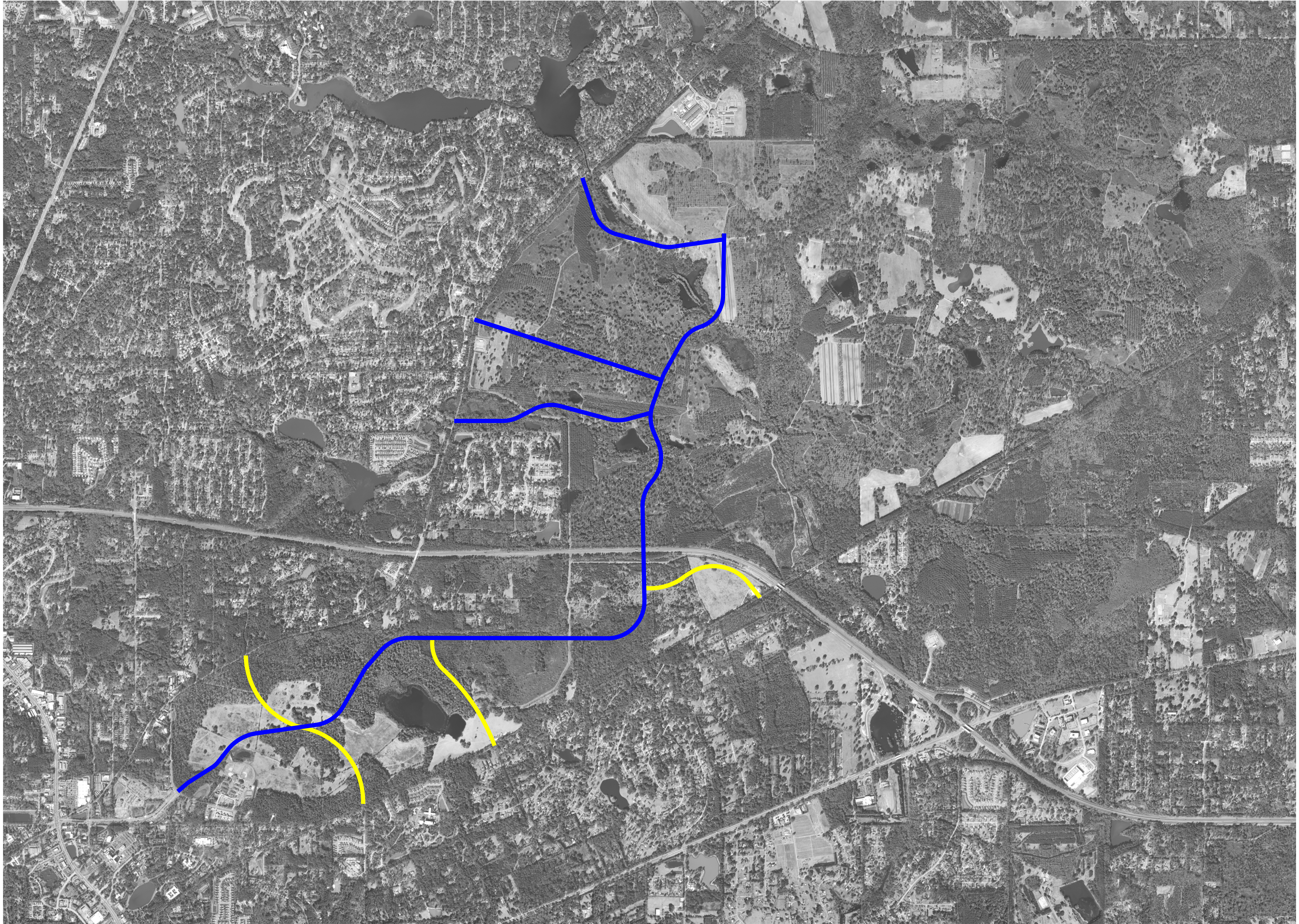
Corridor 5

Corridor 6



Corridor 7

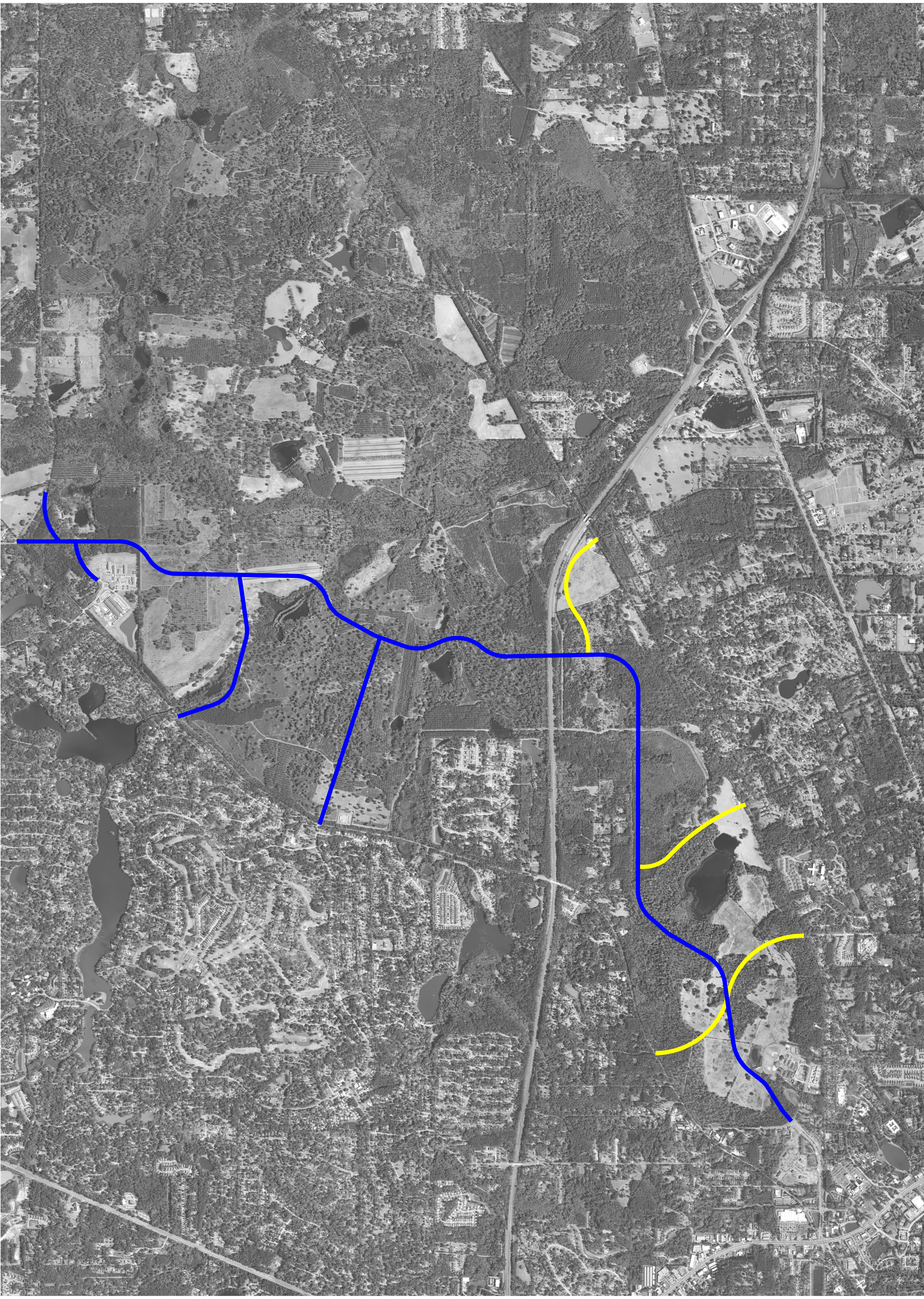
Corridor 8



Corridor 9

Corridor 10

Corridor 11



Corridor 12

Corridor 13

Corridor 14

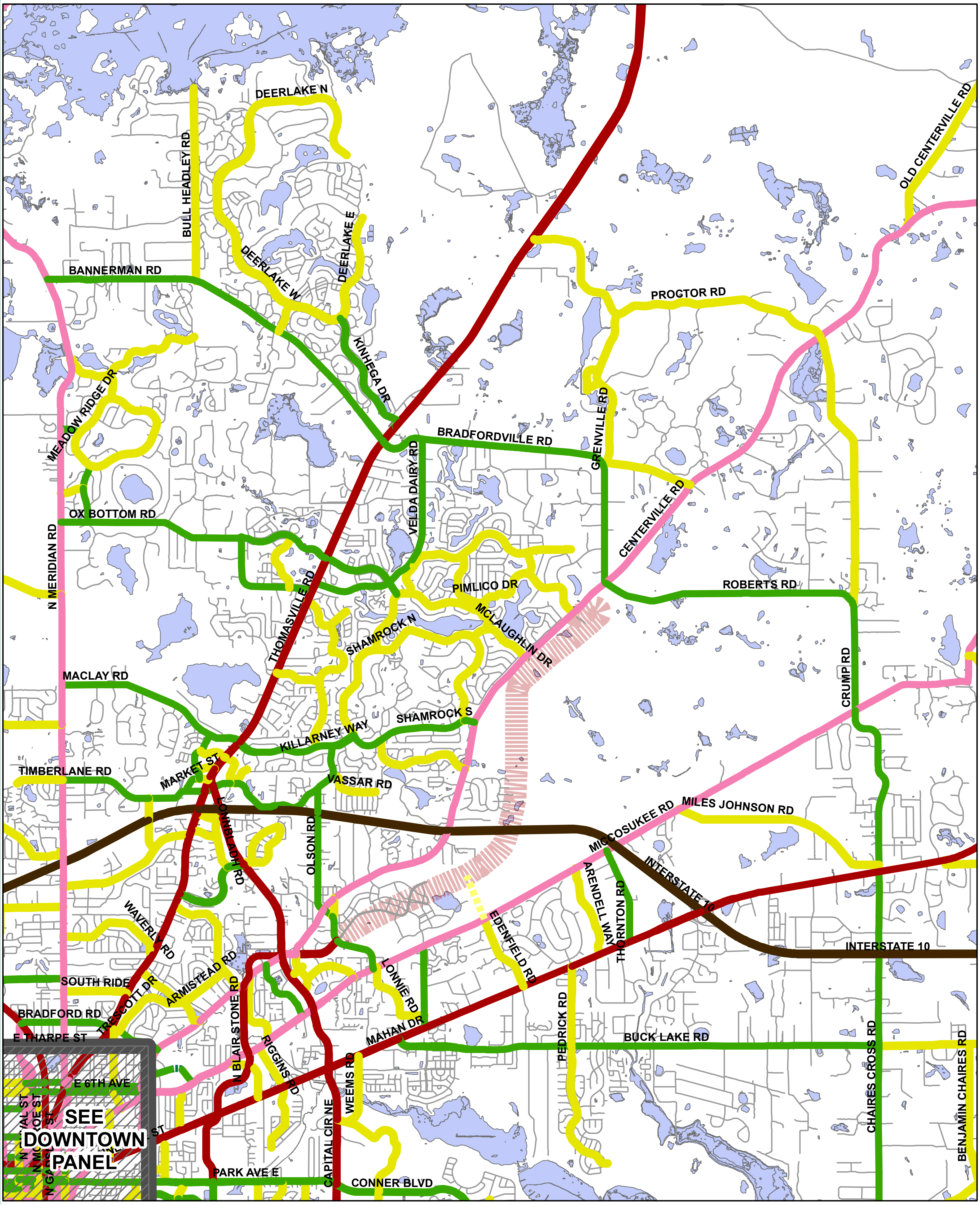
Corridor 15

Corridor 16

Corridor 17

APPENDIX E:

CITY OF TALLHASSEE’S ROADWAY FUNCTIONAL CLASSIFICATION MAP

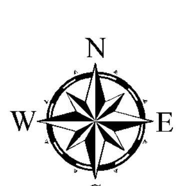


ROADWAY FUNCTIONAL CLASSIFICATION

TALLAHASSEE URBAN AREA

NORTHEAST

Effective date: 12/24/2010



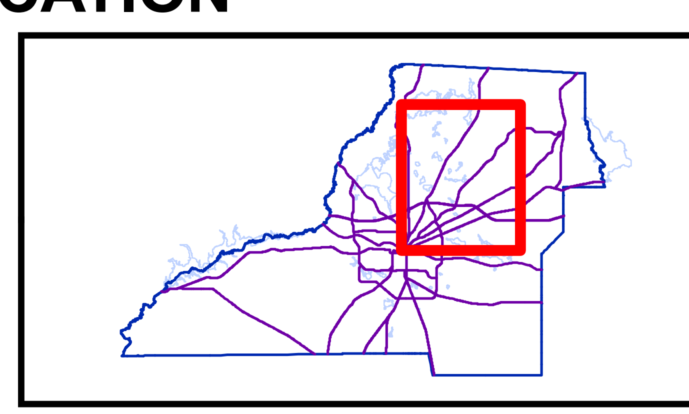
Legend

GIS Function Class Layer
Function Class

- Minor Collector
- Major Collector
- Minor Arterial
- Principle Arterial
- PA_Limited Access
- Proposed Local
- Proposed Minor Collector
- Proposed Major Collector
- Proposed Minor Arterial
- Proposed Principle Arterial

Reference Features

- Unclassified
- Water Features



General Location Map

Date Printed: Jan. 5, 2011

APPENDIX F:

QUANTITATIVE EVALUATION (TABLE FORM)

Green = Decreases or No Change
Yellow = Increases

Future Traffic Pattern Changes for Evaluation Matrix for Opening Year 2025

	Roadway and Limits	2025 No Build Scenario	AADT by Modeling Corridor			
			1	2	3	4
	Arendell Way					
	Miccosukee Road to Mahan Drive	4,200	4,200	4,300	4,200	4,300
	Bradfordville Road					
	Thomasville Road to Pigsah Church Road	8,200	9,300	9,200	9,300	9,200
	Pigsah Church Road to Centerville Road	9,000	9,000	8,600	9,000	8,600
	Capital Circle NE					
	Mahan Drive to Miccosukee Road	56,000	60,000	60,500	60,000	60,500
	Miccosukee Road to Centerville Road	62,500	62,000	65,500	62,500	64,000
	Centerville Road to Lonnbladh Road	66,500	67,000	69,500	68,000	69,000
	Lonnbladh Road to Hermitage Boulevard	65,000	66,000	67,500	66,000	66,500
	Hermitage Boulevard to Thomasville Road	57,500	56,500	58,000	58,000	57,500
PRIMARY	**Centerville Road**					
	Capital Circle NE to Welaunee Boulevard	32,000	32,500	31,500	33,000	32,000
	Welaunee Boulevard to Olson Road	19,500	18,000	20,500	19,500	18,000
	Olson Road to Charleston Road	17,500	15,000	17,500	16,000	17,500
	Charleston Road to Shamrock Street	15,500	13,500	16,500	14,000	16,500
	Shamrock Street to McLaughlin Drive	13,500	11,000	13,500	11,000	14,000
	McLaughlin Drive to Pimlico Drive	13,500	8,500	13,500	8,500	13,500
	Pimlico Drive to Bradfordville Road	12,000	7,000	12,500	7,100	12,500
	Bradfordville Road to Pisgah Church Road	3,300	3,800	3,200	3,800	3,100
	Clarecastle Way					
	Pimlico Drive to N. Shannon Lake Drive	1,900	3,500	2,400	3,500	1,900
	Crump Road					
	Mahan Drive to Miccosukee Road	6,100	5,800	5,900	5,800	5,900
	Miccosukee Road to Roberts Road	8,200	6,800	7,400	6,800	7,500
	Dempsey Mayo Road					
	Mahan Drive to Miccosukee Road	3,200	3,600	3,300	3,600	3,200
	Miccosukee Road to Welaunee Boulevard		7,200	6,600	7,200	4,000
	Welaunee Boulevard to Centerville Road		8,300	7,100	7,000	7,100
	Edenfield Road					
	Mahan Drive to Miccosukee Road	3,500	3,500	3,300	3,500	3,800
	Miccosukee Road to Welaunee Boulevard					3,100
	Fleischmann Road					
	Miccosukee Road to Centerville Road	3,600	3,500	4,500	3,400	4,800
	Gardenview Way					
	Shamrock Street South to Centerville Road	2,500	800	750	800	850
	Kerry Forest Parkway					
	Thomasville Road to Shannon Lakes North	9,100	8,500	8,600	8,300	9,000
	Killarney Way					
	Thomasville Road to Kilkenny Drive	12,000	11,500	12,500	12,000	12,500
	Kilkenny Drive to Raymond Diehl Road	12,500	11,500	12,500	12,000	12,500
	Raymond Diehl Road to Shamrock Street South	19,000	17,000	18,500	17,000	18,500
	Lonnbladh Road					
	Capital Circle NE to Olson Road	5,300	5,200	5,400	5,100	5,100
PRIMARY	**Mahan Drive**					
	Capital Circle NE to Dempsey Mayo Road	50,000	51,500	52,500	52,000	52,000
	Dempsey Mayo Road to Edenfield Road	30,000	26,000	26,500	26,000	26,000
	Edenfield Road to Arendell Way	32,000	28,500	29,000	28,000	28,500
	Arendell Way to Thornton Road	26,000	24,000	24,500	23,500	24,000
	Thornton Road to Summit Lake Drive	23,500	22,000	22,000	21,500	22,000
	Summit Lake Drive to Crump Road	15,500	15,500	16,000	15,500	15,500
	McLaughlin Drive					
	Shamrock Street North to E. Shannon Lakes Drive	2,200	1,700	2,700	2,000	2,000
	E. Shannon Lakes Drive to Centerville Road	2,800	5,000	2,700	4,700	3,000
PRIMARY	**Miccosukee Road**					
	Capital Circle NE to Fleischmann Road	9,800	11,000	11,000	11,000	11,500
	Fleischmann Road to Dempsey Mayo Road	10,000	12,500	13,000	12,500	12,500
	Dempsey Mayo Road to Edenfield Road	12,500	11,000	10,500	11,000	9,000
	Edenfield Road to Arendell Way	6,300	5,900	5,800	5,800	6,000
	Arendell Way to Thornton Road	3,700	3,400	3,600	3,500	3,500
	Thornton Road to Crump Road	4,700	2,800	3,900	3,700	4,400
	Miles Johnson Road					
	Miccosukee Road to Crump Road	550	550	550	550	550
	Olson Road					
	Centerville Road to Lonnbladh Road	10,500	8,800	9,700	8,900	10,500
	Lonnbladh Road to Raymond Diehl Road	9,100	9,500	10,000	9,300	9,200
	Pimlico Drive					
	Clarecastle Way to Santa Anita Drive	1,600	2,100	1,500	2,100	1,300
	Santa Anita Drive to Centerville Road	500	450	450	450	500
	Centerville Road to Welaunee Boulevard		1,100		1,100	
	Pisgah Church Road					
	Bradfordville Road to Centerville Road	2,700	2,700	2,700	2,700	2,700

Green = Decreases or No Change
Yellow = Increases

PRIMARY

Future Traffic Pattern Changes for Evaluation Matrix for Opening Year 2025					
Roadway and Limits	2025 No Build Scenario	AADT by Modeling Corridor			
		1	2	3	4
Proctor Road					
Crump Road to Centerville Road	1,000	1,000	1,100	1,000	1,100
Raymond Diehl Road					
Capital Circle NE to Village Square Boulevard	16,500	16,000	16,000	16,000	16,500
Village Square Boulevard to Delaney Drive	13,000	12,000	12,000	12,500	12,000
Delaney Drive to Olson Road	4,400	3,700	3,600	3,700	3,700
Olson Road to Killarney Way	9,400	8,100	9,000	8,200	8,900
Roberts Road					
Centerville Road to Realignment	7,100		7,400		7,400
Realignment of Roberts Road		6,900		6,900	
Realignment to Crump Road	6,600	5,200	5,700	5,200	5,700
Shamrock Street					
W. Shannon Lakes Drive to McLaughlin Drive (North)	1,000	1,100	1,100	1,100	1,000
McLaughlin Drive to Shamrock Street South (East)	3,500	3,300	4,000	3,500	3,200
Killarney Way to W. Shannon Lakes Drive (West)	10,000	9,000	9,800	9,300	10,000
Killarney Way to Gardenview Way (South)	7,400	6,500	7,100	6,500	7,000
Gardenview Way to Shamrock Street East (South)	5,900	5,200	5,700	5,100	5,600
Shamrock Street East to Centerville Road (South)	9,600	9,200	10,000	9,500	9,500
Centerville Road to Welaunee Boulevard (Extension)		100	450		
Shannon Lakes Drive					
Kerry Forest Parkway to McLaughlin Drive (North)	3,500	4,400	3,700	4,400	3,400
Shamrock Street North to Kerry Forest Parkway (West)	8,000	6,700	7,600	7,000	7,900
Thomasville Road					
Hermitage Boulevard to Metropolitan Boulevard	39,500	37,500	36,000	37,500	37,500
Metropolitan Boulevard to I-10 Westbound Ramp	44,000	41,500	40,000	41,500	42,000
I-10 Westbound Ramp to Killearn Center Boulevard	59,000	56,500	58,000	53,000	56,500
Killearn Center Boulevard to Village Square Boulevard	53,500	49,500	53,500	50,000	51,500
Village Square Boulevard to Killarney Way	71,500	71,000	72,000	71,000	72,500
Killarney Way to High Grove Road	63,000	63,000	63,000	62,500	63,500
High Grove Road to Velda Dairy Road	60,500	58,000	58,000	58,000	58,500
Velda Dairy Road to Kerry Forest Parkway	56,500	52,000	51,500	51,500	52,500
Kerry Forest Parkway to Bradfordville Road	42,000	41,500	41,000	41,500	41,500
Thornton Road					
Mahan Drive to Miccosukee Road	3,000	2,400	2,400	2,400	2,400
Miccosukee Road to Welaunee Boulevard					750
Velda Dairy Road					
Thomasville Road to Kerry Forest Parkway	2,900	2,800	3,000	2,800	2,500
Kerry Forest Parkway to Kimmer Rowe Drive	3,800	3,900	4,000	3,800	3,800
Kimmer Rowe Drive to Bradfordville Road	3,000	3,100	3,200	3,100	3,100
Welaunee Boulevard					
Centerville Road to Fleischmann Road	13,500	16,500	12,000	15,000	14,500
Fleischmann Road to Dempsey Mayo Road		11,500	5,600	10,000	5,700
Dempsey Mayo Road to Edenfield Road		7,300	1,300	7,400	4,100
Edenfield Road to Thornton Road		6,900	750	6,700	750
Thornton Road to Gardenview Way		6,600	450	6,500	
Gardenview Way to Shamrock Street		6,600	450	6,400	
Shamrock Street to McLaughlin Drive		6,400		6,400	
McLaughlin Drive to Pimlico Drive		6,400		6,400	
Pimlico Drive to Bradfordville Road		9,300		9,200	

	1	2	3	4
Sum of Green Segments (Decreases or No Change)	58	46	58	54
Sum of Yellow Segments (Increases)	19	31	19	23

Green = Decreases or No Change
Yellow = Increases

Future Traffic Pattern Changes Evaluation Matrix for Interim Year 2035

	Roadway and Limits	2035 No Build Scenario	AADT by Modeling Corridor			
			1	2	3	4
	Arendell Way					
	Miccosukee Road to Mahan Drive	7,100	7,900	7,500	7,600	7,000
	Bradfordville Road					
	Thomasville Road to Pigsah Church Road	11,500	12,500	11,000	12,500	11,500
	Pigsah Church Road to Centerville Road	11,000	12,500	11,000	13,000	11,000
	Capital Circle NE					
	Mahan Drive to Miccosukee Road	59,500	63,500	64,000	63,500	65,000
	Miccosukee Road to Centerville Road	64,500	66,000	65,500	65,500	69,000
	Centerville Road to Lonnbladh Road	71,000	68,500	70,000	70,000	72,000
	Lonnbladh Road to Hermitage Boulevard	70,000	68,500	69,000	69,000	70,000
	Hermitage Boulevard to Thomasville Road	60,500	57,500	58,000	56,500	59,500
PRIMARY	**Centerville Road**					
	Capital Circle NE to Welaunee Boulevard	32,500	33,000	33,000	35,500	33,500
	Welaunee Boulevard to Olson Road	17,500	19,000	16,500	17,000	17,500
	Olson Road to Charleston Road	17,500	15,000	16,000	15,000	17,500
	Charleston Road to Shamrock Street	17,500	13,500	17,000	13,500	17,000
	Shamrock Street to McLaughlin Drive	14,500	12,500	18,500	10,500	14,000
	McLaughlin Drive to Pimlico Drive	15,000	9,200	16,000	9,300	14,500
	Pimlico Drive to Bradfordville Road	14,000	7,600	15,000	8,400	13,500
	Bradfordville Road to Pisgah Church Road	3,600	4,600	3,500	4,600	3,000
	Clarecastle Way					
	Pimlico Drive to N. Shannon Lake Drive	2,100	3,800	3,000	3,400	1,600
	Crump Road					
	Mahan Drive to Miccosukee Road	7,500	6,200	6,900	6,200	7,500
	Miccosukee Road to Roberts Road	11,000	6,000	7,700	6,100	10,500
	Dempsey Mayo Road					
	Mahan Drive to Miccosukee Road	5,400	5,600	5,200	5,800	4,900
	Miccosukee Road to Welaunee Boulevard		6,300	5,900	5,800	4,300
	Welaunee Boulevard to Centerville Road		7,600	10,000	8,400	9,300
	Edenfield Road					
	Mahan Drive to Miccosukee Road	1,900	3,300	3,500	4,100	4,400
	Miccosukee Road to Welaunee Boulevard		3,500	3,700	4,100	5,000
	Fleischmann Road					
	Miccosukee Road to Centerville Road	4,300	3,400	4,400	4,400	5,200
	Gardenview Way					
	Shamrock Street South to Centerville Road	1,000	900	950	900	1,000
	Kerry Forest Parkway					
	Thomasville Road to Shannon Lakes North	9,900	9,700	9,900	9,500	9,200
	Killarney Way					
	Thomasville Road to Kilkenny Drive	12,500	11,500	13,000	12,000	13,000
	Kilkenny Drive to Raymond Diehl Road	12,500	11,500	11,500	12,000	13,000
	Raymond Diehl Road to Shamrock Street South	19,000	17,500	18,500	17,500	20,000
	Lonnbladh Road					
	Capital Circle NE to Olson Road	5,800	6,300	6,900	6,400	6,300
PRIMARY	**Mahan Drive**					
	Capital Circle NE to Dempsey Mayo Road	54,000	53,500	55,000	55,000	56,500
	Dempsey Mayo Road to Edenfield Road	33,000	26,500	27,000	27,000	27,500
	Edenfield Road to Arendell Way	34,000	29,500	30,500	30,500	31,000
	Arendell Way to Thornton Road	25,500	23,000	23,500	23,000	24,000
	Thornton Road to Summit Lake Drive	25,500	24,500	25,500	24,500	24,000
	Summit Lake Drive to Crump Road	16,000	15,000	15,500	15,000	16,000
	McLaughlin Drive					
	Shamrock Street North to E. Shannon Lakes Drive	3,200	2,400	3,400	2,300	2,700
	E. Shannon Lakes Drive to Centerville Road	3,200	5,800	4,600	5,800	2,800
PRIMARY	**Miccosukee Road**					
	Capital Circle NE to Fleischmann Road	10,500	13,000	12,500	10,000	13,000
	Fleischmann Road to Dempsey Mayo Road	12,500	13,000	12,500	13,000	13,500
	Dempsey Mayo Road to Edenfield Road	15,500	10,000	9,400	10,000	11,000
	Edenfield Road to Arendell Way	10,500	7,400	7,200	7,400	9,100
	Arendell Way to Thornton Road	5,600	5,400	5,000	4,700	5,200
	Thornton Road to Crump Road	6,400	4,500	4,100	4,400	6,900
	Miles Johnson Road					
	Miccosukee Road to Crump Road	550	550	550	550	550
	Olson Road					
	Centerville Road to Lonnbladh Road	8,900	8,600	10,500	9,000	9,700
	Lonnbladh Road to Raymond Diehl Road	9,400	9,900	8,100	9,700	9,800
	Pimlico Drive					
	Clarecastle Way to Santa Anita Drive	1,500	2,200	1,800	2,200	1,200
	Santa Anita Drive to Centerville Road	700	400	400	800	550
	Centerville Road to Welaunee Boulevard		1,100		1,100	
	Pisgah Church Road					
	Bradfordville Road to Centerville Road	3,500	3,500	3,500	3,500	3,500

Green = Decreases or No Change
Yellow = Increases

Future Traffic Pattern Changes Evaluation Matrix for Interim Year 2035

Roadway and Limits	2035 No Build Scenario	AADT by Modeling Corridor 1	2	3	4
Proctor Road					
Crump Road to Centerville Road	1,200	1,100	1,300	1,100	1,700
Raymond Diehl Road					
Capital Circle NE to Village Square Boulevard	17,000	16,500	17,000	17,000	18,000
Village Square Boulevard to Delaney Drive	14,000	12,500	13,000	13,000	14,500
Delaney Drive to Olson Road	5,100	4,100	5,000	3,900	4,600
Olson Road to Killarney Way	9,400	8,300	9,000	8,300	9,800
Roberts Road					
Centerville Road to Realignment	10,500		5,700		9,600
Realignment of Roberts Road		6,200		6,300	
Realignment to Crump Road	9,100	4,400	7,500	4,500	8,000
Shamrock Street					
W. Shannon Lakes Drive to McLaughlin Drive (North)	1,100	1,200	1,200	1,200	1,100
McLaughlin Drive to Shamrock Street South (East)	4,900	4,700	5,700	4,100	4,600
Killarney Way to W. Shannon Lakes Drive (West)	9,100	8,900	9,700	9,300	10,000
Killarney Way to Gardenview Way (South)	8,600	7,500	8,100	7,100	8,600
Gardenview Way to Shamrock Street East (South)	6,900	6,300	6,700	5,600	6,800
Shamrock Street East to Centerville Road (South)	11,500	11,500	12,500	10,000	11,000
Centerville Road to Welaunee Boulevard (Extension)		4,800	7,600		
Shannon Lakes Drive					
Kerry Forest Parkway to McLaughlin Drive (North)	4,400	5,700	6,000	5,300	3,900
Shamrock Street North to Kerry Forest Parkway (West)	7,300	6,800	7,700	7,200	7,600
Thomasville Road (PRIMARY)					
Hermitage Boulevard to Metropolitan Boulevard	39,500	39,500	40,000	39,000	39,000
Metropolitan Boulevard to I-10 Westbound Ramp	48,500	44,000	39,500	44,500	43,500
I-10 Westbound Ramp to Killearn Center Boulevard	61,000	59,000	57,000	59,000	59,000
Killearn Center Boulevard to Village Square Boulevard	53,500	51,500	53,000	51,500	51,000
Village Square Boulevard to Killarney Way	74,000	71,500	73,000	71,500	73,500
Killarney Way to High Grove Road	66,000	64,000	65,000	63,500	65,500
High Grove Road to Velda Dairy Road	62,000	59,000	59,000	58,500	60,000
Velda Dairy Road to Kerry Forest Parkway	57,500	52,500	52,500	52,000	52,500
Kerry Forest Parkway to Bradfordville Road	42,500	41,500	41,500	41,000	41,500
Thornton Road					
Mahan Drive to Miccosukee Road	6,900	8,000	8,300	8,500	5,400
Miccosukee Road to Welaunee Boulevard		8,700	7,700	7,200	2,400
Velda Dairy Road					
Thomasville Road to Kerry Forest Parkway	3,100	2,800	2,700	2,700	3,200
Kerry Forest Parkway to Kimmer Rowe Drive	4,300	4,300	4,700	4,100	4,200
Kimmer Rowe Drive to Bradfordville Road	3,600	3,200	3,900	3,300	3,500
Welaunee Boulevard					
Centerville Road to Fleischmann Road	18,000	21,500	21,500	23,500	19,500
Fleischmann Road to Dempsey Mayo Road		18,000	18,000	19,500	13,000
Dempsey Mayo Road to Edenfield Road		15,000	9,900	17,500	9,600
Edenfield Road to Thornton Road		12,000	6,100	13,500	4,000
Thornton Road to Gardenview Way		17,000	8,900	15,500	
Gardenview Way to Shamrock Street		15,500	7,500	14,000	
Shamrock Street to McLaughlin Drive		11,000		14,000	
McLaughlin Drive to Pimlico Drive		11,000		14,000	
Pimlico Drive to Bradfordville Road		14,500		16,000	

	1	2	3	4
Sum of Green Segments (Decreases or No Change)	56	47	53	53
Sum of Yellow Segments (Increases)	21	30	24	24

Green = Decreases or No Change
Yellow = Increases

	Future Traffic Pattern Changes Evaluation Matrix for Design Year 2045					
	Roadway and Limits	2045 No Build Scenario	AADT by Modeling Corridor			
			1	2	3	4
	Arendell Way					
	Miccosukee Road to Mahan Drive	10,000	10,000	9,700	9,900	9,500
	Bradfordville Road					
	Thomasville Road to Pigsah Church Road	14,500	15,500	14,500	15,500	14,500
	Pigsah Church Road to Centerville Road	13,000	16,000	14,000	16,000	9,400
	Capital Circle NE					
	Mahan Drive to Miccosukee Road	66,000	73,500	74,000	71,500	73,000
	Miccosukee Road to Centerville Road	72,500	78,500	78,500	78,000	73,500
	Centerville Road to Lonnbladh Road	77,000	71,000	72,500	73,000	77,000
	Lonnbladh Road to Hermitage Boulevard	76,500	71,000	73,000	73,500	77,500
	Hermitage Boulevard to Thomasville Road	63,000	60,000	61,000	61,000	64,500
PRIMARY	**Centerville Road**					
	Capital Circle NE to Welaunee Boulevard	38,000	40,500	42,000	46,500	39,000
	Welaunee Boulevard to Olson Road	17,000	18,000	19,500	20,500	19,000
	Olson Road to Charleston Road	21,500	17,000	18,500	20,000	21,500
	Charleston Road to Shamrock Street	20,000	15,500	17,000	16,500	21,000
	Shamrock Street to McLaughlin Drive	15,500	14,000	20,000	12,500	15,000
	McLaughlin Drive to Pimlico Drive	17,000	10,500	17,500	13,000	15,000
	Pimlico Drive to Bradfordville Road	17,000	9,500	17,000	13,000	15,000
	Bradfordville Road to Pisgah Church Road	3,600	4,500	3,400	4,500	2,700
	Clarecastle Way					
	Pimlico Drive to N. Shannon Lake Drive	900	3,000	1,900	2,000	1,000
	Crump Road					
	Mahan Drive to Miccosukee Road	11,000	6,700	9,200	9,200	11,000
	Miccosukee Road to Roberts Road	15,500	9,000	10,500	9,300	15,000
	Dempsey Mayo Road					
	Mahan Drive to Miccosukee Road	7,600	9,000	8,400	8,600	7,800
	Miccosukee Road to Welaunee Boulevard		9,600	9,000	9,100	5,900
	Welaunee Boulevard to Centerville Road		9,400	9,700	9,000	13,000
	Edenfield Road					
	Mahan Drive to Miccosukee Road	4,400	5,300	5,200	5,100	5,400
	Miccosukee Road to Welaunee Boulevard		6,800	7,400	6,700	7,000
	Fleischmann Road					
	Miccosukee Road to Centerville Road	6,700	5,300	5,200	5,500	6,000
	Gardenview Way					
	Shamrock Street South to Centerville Road	3,100	1,200	1,200	1,700	3,200
	Kerry Forest Parkway					
	Thomasville Road to Shannon Lakes North	12,000	11,500	12,000	11,500	11,500
	Killarney Way					
	Thomasville Road to Kilkenny Drive	13,000	13,500	13,000	12,500	14,500
	Kilkenny Drive to Raymond Diehl Road	13,500	13,500	13,000	12,000	15,000
	Raymond Diehl Road to Shamrock Street South	23,500	20,500	21,000	19,500	23,500
	Lonnbladh Road					
	Capital Circle NE to Olson Road	7,500	8,200	9,000	9,700	8,600
PRIMARY	**Mahan Drive**					
	Capital Circle NE to Dempsey Mayo Road	60,000	59,000	57,500	58,000	58,500
	Dempsey Mayo Road to Edenfield Road	39,000	28,500	28,500	29,000	29,000
	Edenfield Road to Arendell Way	38,000	31,500	31,500	32,000	32,500
	Arendell Way to Thornton Road	27,500	23,500	23,000	24,000	23,500
	Thornton Road to Summit Lake Drive	27,000	26,500	26,000	26,500	27,000
	Summit Lake Drive to Crump Road	16,000	15,000	15,000	15,000	16,000
	McLaughlin Drive					
	Shamrock Street North to E. Shannon Lakes Drive	3,500	2,400	4,500	2,800	3,700
	E. Shannon Lakes Drive to Centerville Road	4,100	6,600	5,100	6,400	3,700
PRIMARY	**Miccosukee Road**					
	Capital Circle NE to Fleischmann Road	14,500	13,500	14,500	14,500	16,500
	Fleischmann Road to Dempsey Mayo Road	15,500	14,000	15,000	15,000	16,000
	Dempsey Mayo Road to Edenfield Road	19,500	12,000	13,000	13,000	15,000
	Edenfield Road to Arendell Way	16,000	10,000	11,000	10,500	14,000
	Arendell Way to Thornton Road	10,500	7,000	7,200	6,600	9,900
	Thornton Road to Crump Road	11,500	6,200	7,300	5,400	11,500
	Miles Johnson Road					
	Miccosukee Road to Crump Road	600	600	600	600	600
	Olson Road					
	Centerville Road to Lonnbladh Road	11,500	11,500	12,500	12,500	12,000
	Lonnbladh Road to Raymond Diehl Road	9,100	8,200	8,700	8,700	9,200
	Pimlico Drive					
	Clarecastle Way to Santa Anita Drive	1,000	1,900	1,400	1,600	1,000
	Santa Anita Drive to Centerville Road	950	550	600	1,100	850
	Centerville Road to Welaunee Boulevard		1,400		1,400	
	Pisgah Church Road					
	Bradfordville Road to Centerville Road	4,400	4,200	4,300	4,200	4,300

Green = Decreases or No Change
Yellow = Increases

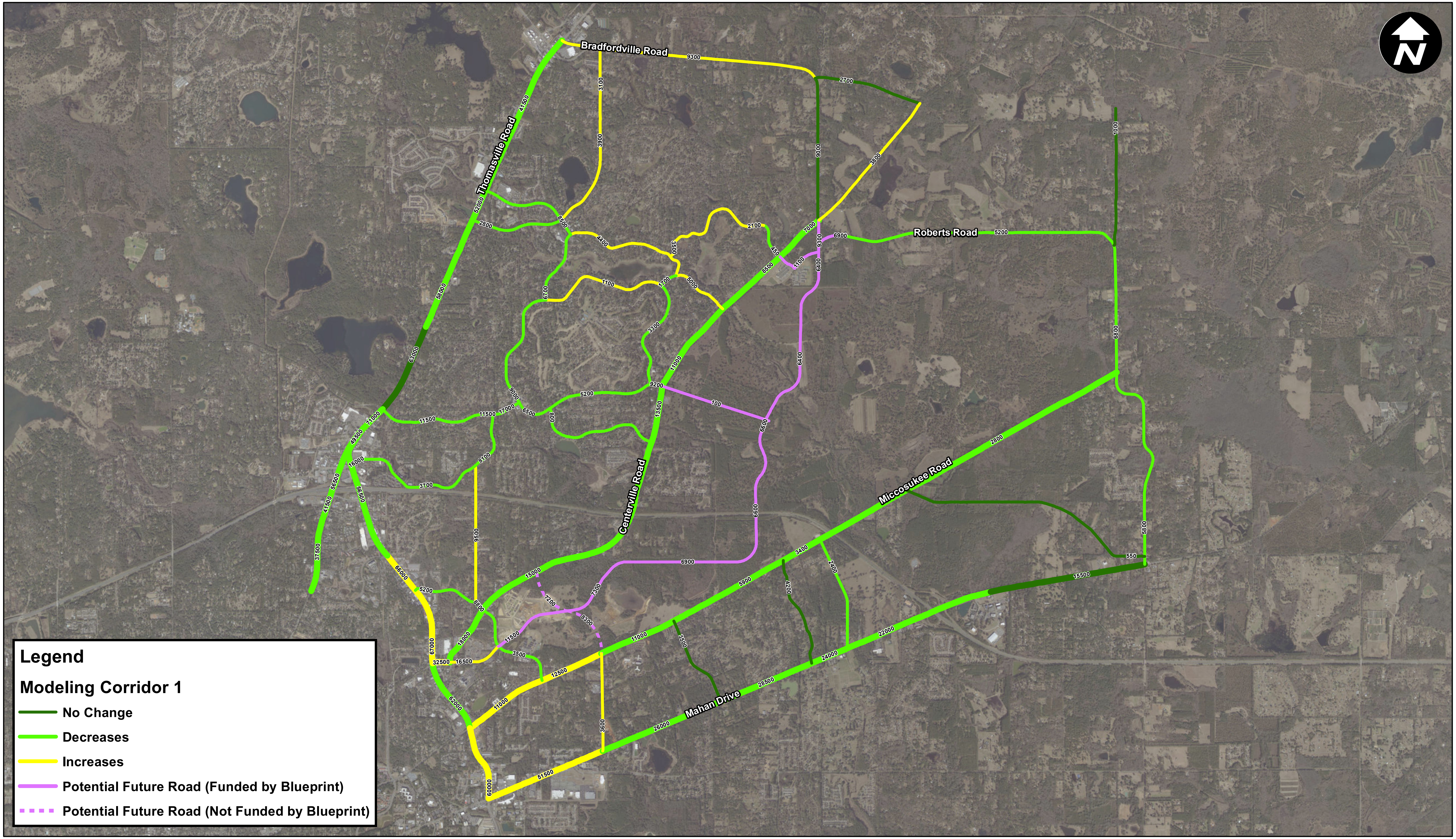
Future Traffic Pattern Changes Evaluation Matrix for Design Year 2045					
Roadway and Limits	2045 No Build Scenario	AADT by Modeling Corridor			
		1	2	3	4
Proctor Road					
Crump Road to Centerville Road	1,100	1,200	1,700	1,200	1,900
Raymond Diehl Road					
Capital Circle NE to Village Square Boulevard	23,500	17,500	18,500	18,500	24,000
Village Square Boulevard to Delaney Drive	16,500	14,000	14,500	14,500	16,000
Delaney Drive to Olson Road	7,700	5,300	6,000	6,100	6,400
Olson Road to Killarney Way	12,500	9,300	10,500	10,500	11,500
Roberts Road					
Centerville Road to Realignment	15,500		9,700		14,000
Realignment of Roberts Road		9,000		9,200	
Realignment to Crump Road	14,500	7,200	7,900	7,400	12,500
Shamrock Street					
W. Shannon Lakes Drive to McLaughlin Drive (North)	1,300	1,300	1,400	1,400	1,200
McLaughlin Drive to Shamrock Street South (East)	4,400	4,800	6,700	4,100	4,900
Killarney Way to W. Shannon Lakes Drive (West)	9,000	8,600	9,400	9,200	8,400
Killarney Way to Gardenview Way (South)	13,500	11,500	11,000	9,700	14,000
Gardenview Way to Shamrock Street East (South)	9,800	9,900	9,300	7,500	9,900
Shamrock Street East to Centerville Road (South)	12,500	15,500	16,500	11,500	13,000
Centerville Road to Welaunee Boulevard (Extension)		11,500	15,000		
Shannon Lakes Drive					
Kerry Forest Parkway to McLaughlin Drive (North)	5,300	6,900	7,700	6,300	5,300
Shamrock Street North to Kerry Forest Parkway (West)	7,700	7,000	7,700	7,400	6,900
Thomasville Road					
Hermitage Boulevard to Metropolitan Boulevard	39,500	41,000	40,500	40,500	40,500
Metropolitan Boulevard to I-10 Westbound Ramp	45,000	46,000	45,500	45,000	45,000
I-10 Westbound Ramp to Killearn Center Boulevard	61,000	58,000	59,500	59,000	63,500
Killearn Center Boulevard to Village Square Boulevard	51,000	51,500	52,000	52,000	52,000
Village Square Boulevard to Killarney Way	75,000	75,000	74,500	74,000	78,000
Killarney Way to High Grove Road	68,000	66,500	66,500	66,500	70,000
High Grove Road to Velda Dairy Road	62,500	60,000	60,000	60,000	62,500
Velda Dairy Road to Kerry Forest Parkway	57,000	52,500	52,000	53,000	54,000
Kerry Forest Parkway to Bradfordville Road	43,000	41,000	41,000	41,000	42,000
Thornton Road					
Mahan Drive to Miccosukee Road	19,000	11,000	11,000	10,500	10,000
Miccosukee Road to Welaunee Boulevard		11,500	11,000	10,500	9,200
Velda Dairy Road					
Thomasville Road to Kerry Forest Parkway	3,700	3,300	3,800	3,100	3,800
Kerry Forest Parkway to Kimmer Rowe Drive	4,900	4,300	5,600	4,500	5,100
Kimmer Rowe Drive to Bradfordville Road	4,200	3,400	4,700	3,800	4,600
Welaunee Boulevard					
Centerville Road to Fleischmann Road	27,500	38,000	36,500	34,500	31,000
Fleischmann Road to Dempsey Mayo Road		35,500	33,000	32,000	28,000
Dempsey Mayo Road to Edenfield Road		43,500	31,500	36,500	24,000
Edenfield Road to Thornton Road		30,500	27,000	30,500	13,500
Thornton Road to Gardenview Way		30,500	25,500	28,000	
Gardenview Way to Shamrock Street		22,500	16,500	18,000	
Shamrock Street to McLaughlin Drive		12,000		15,000	
McLaughlin Drive to Pimlico Drive		12,000		15,000	
Pimlico Drive to Bradfordville Road		15,500		18,500	

PRIMARY

Sum of Green Segments (Decreases or No Change)	54	49	55	43
Sum of Yellow Segments (Increases)	23	28	22	34

APPENDIX G:

QUANTITATIVE EVALUATION (MAP FORM)

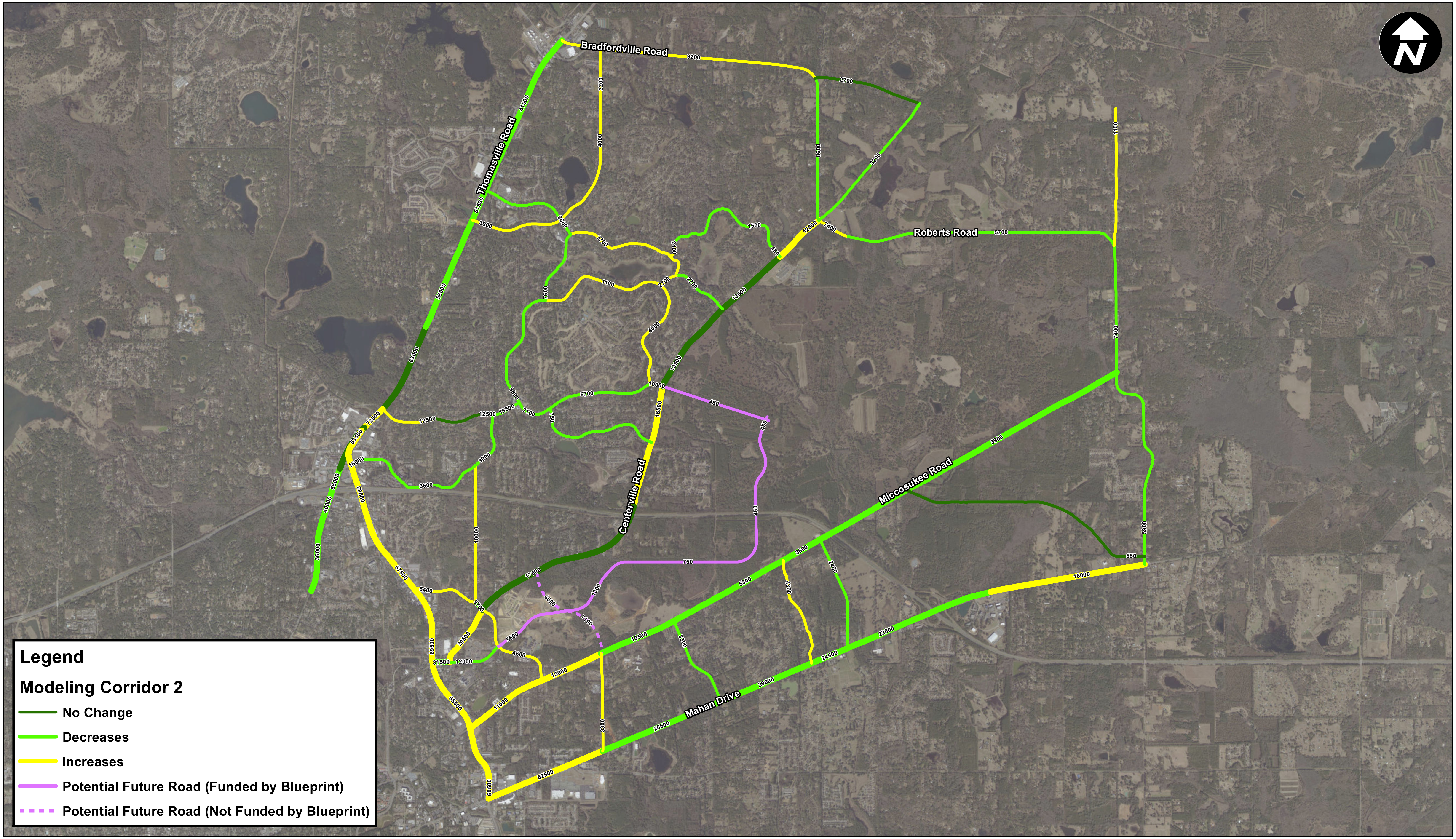


Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

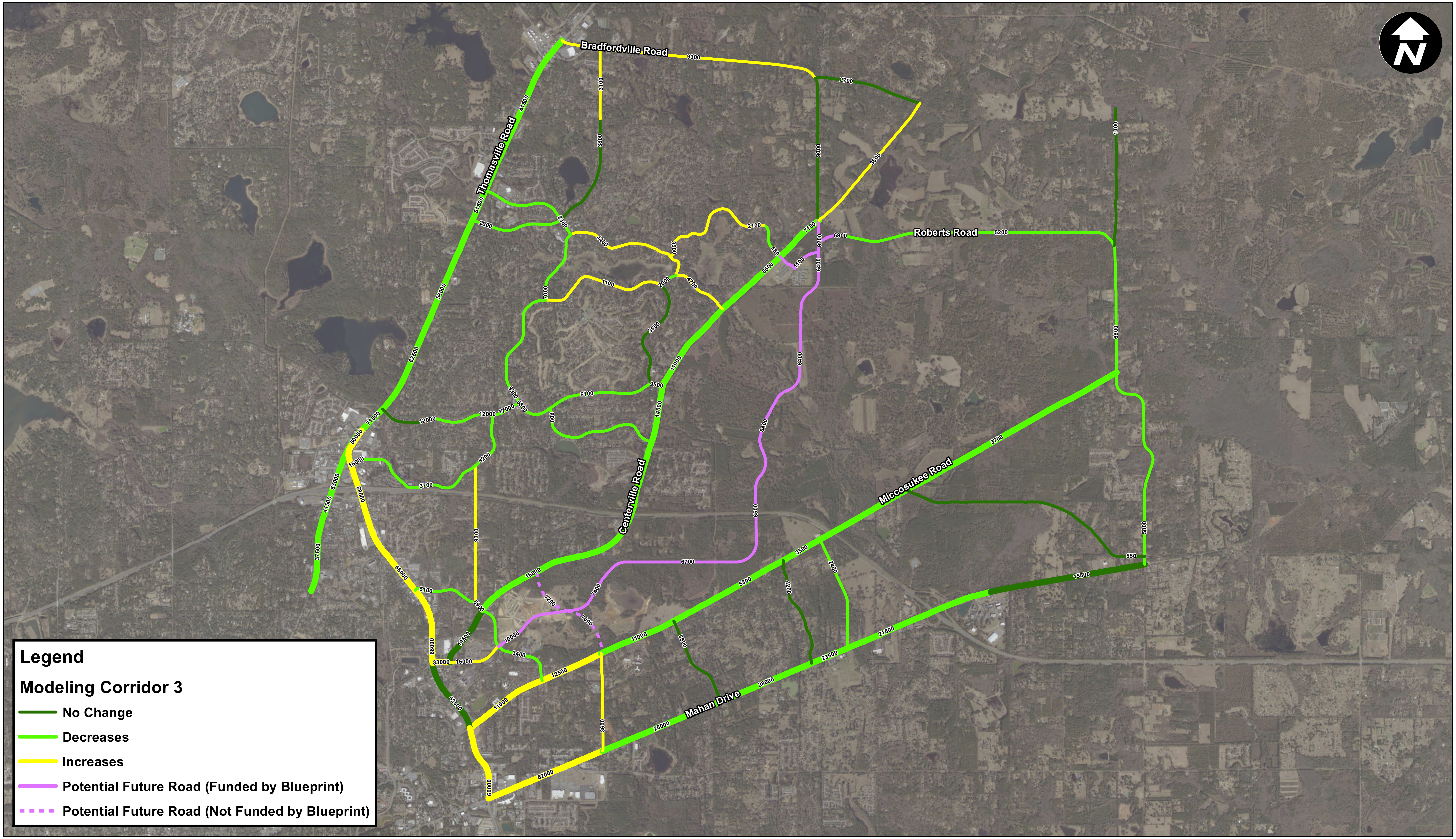
Modeling Corridors
Future Traffic Pattern Changes

Modeling Information

Year: 2025
Name: Corridor 1



Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors** **Future Traffic Pattern Changes**	**Modeling Information** **Year:** 2025 **Name:** Corridor 2

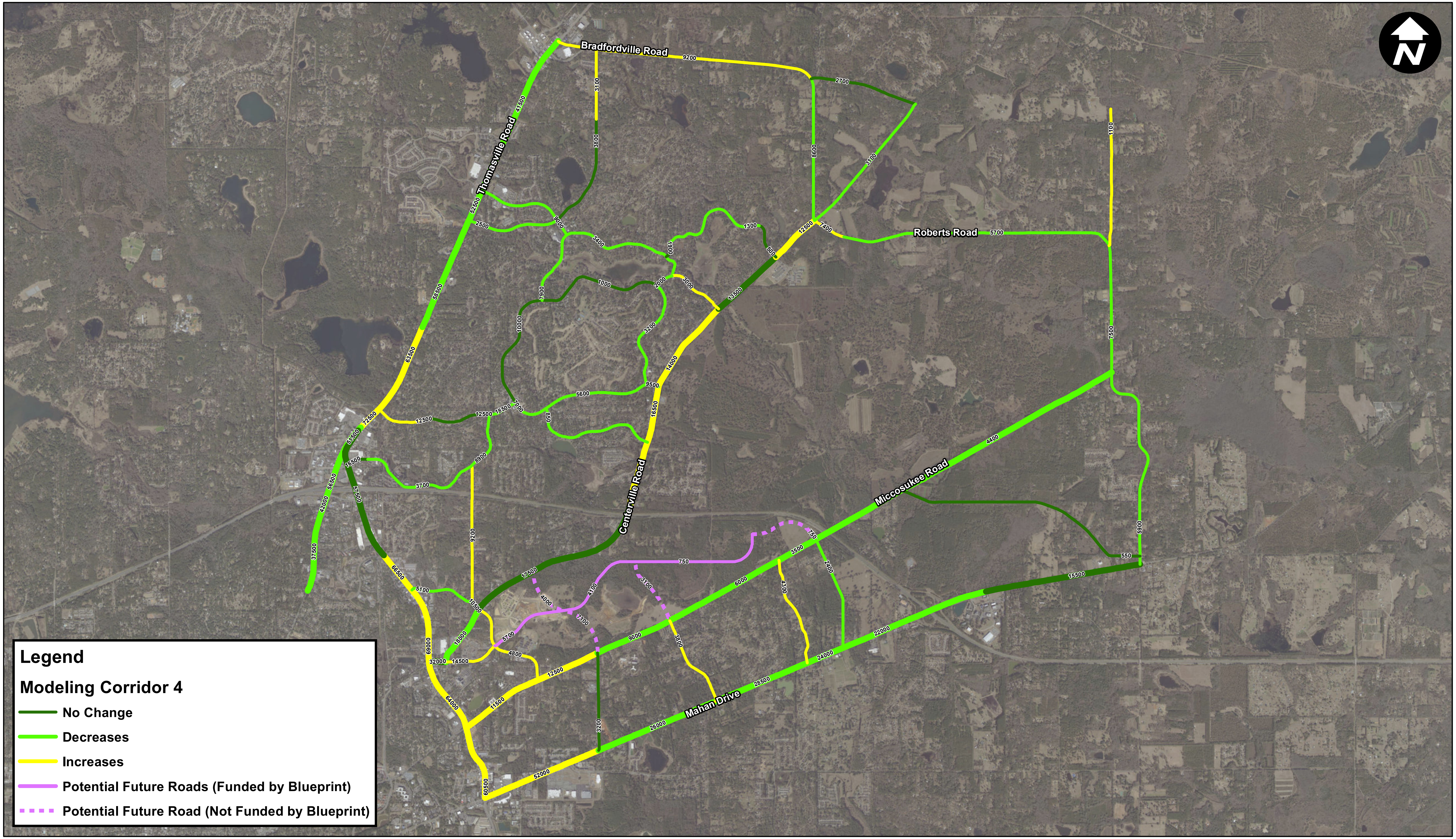


Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

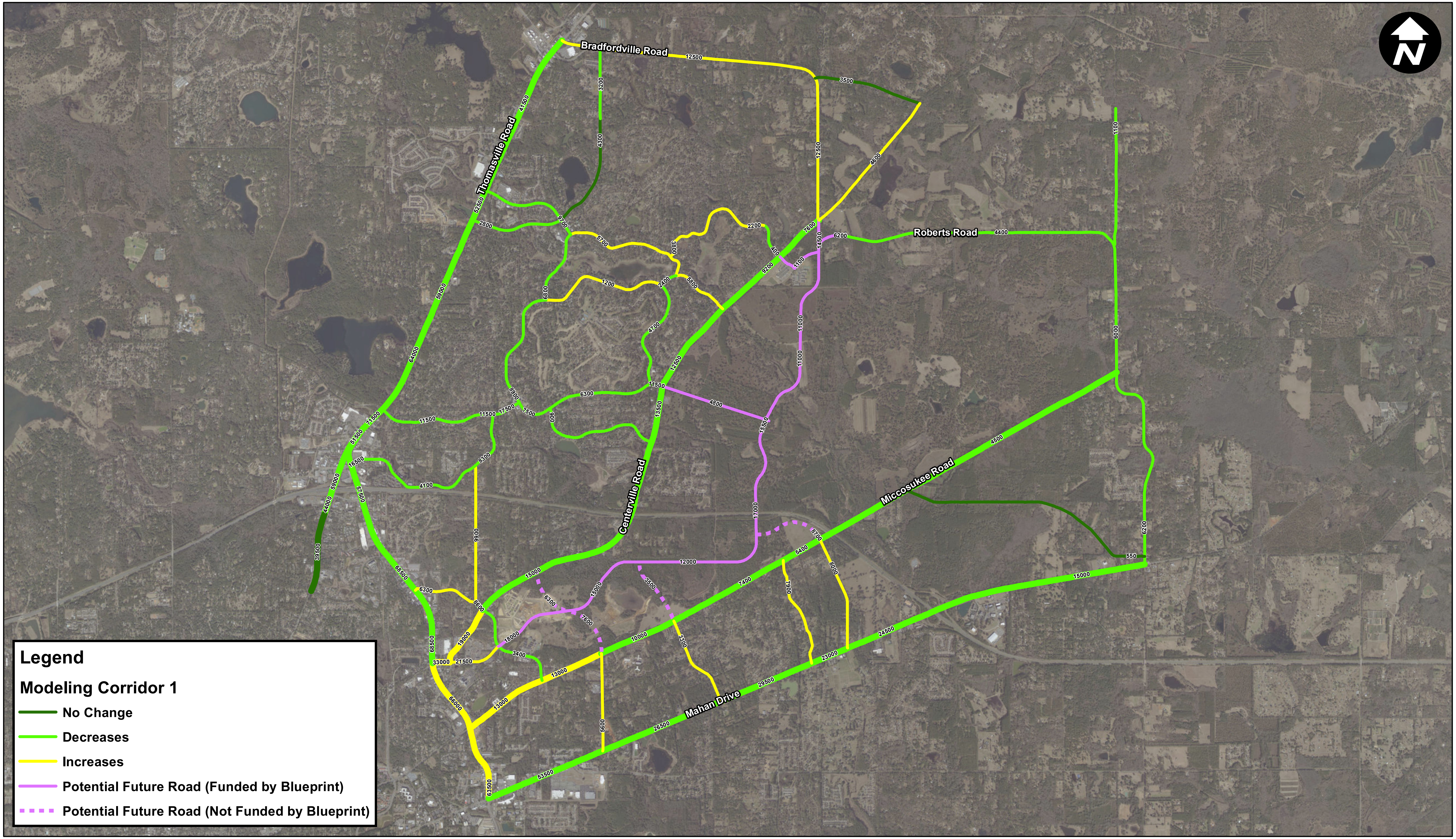
Modeling Corridors
Future Traffic Pattern Changes

Modeling Information

Year: 2025
Name: Corridor 3



Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors Future Traffic Pattern Changes**	**Modeling Information** Year: 2025 Name: Corridor 4

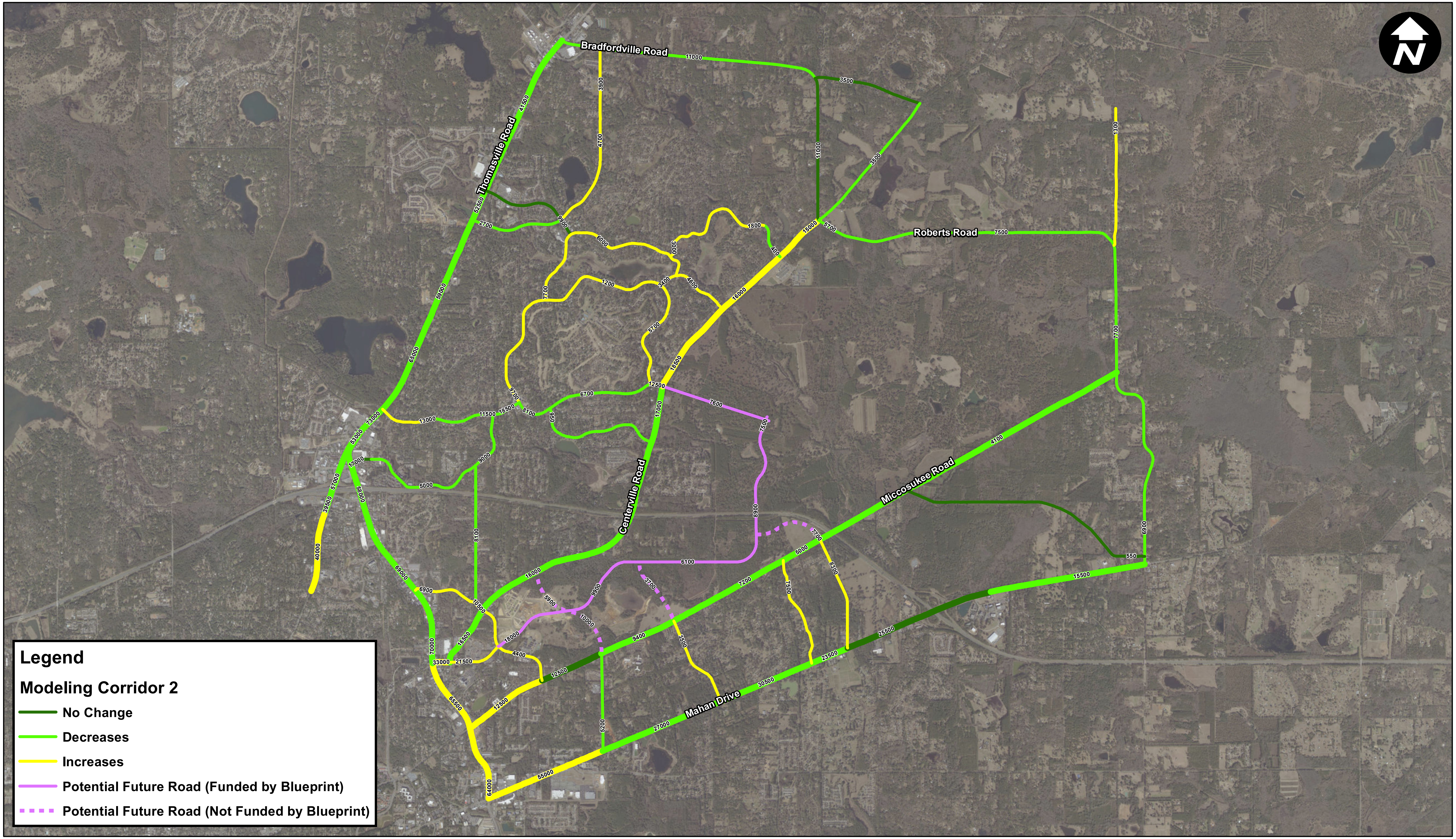


Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

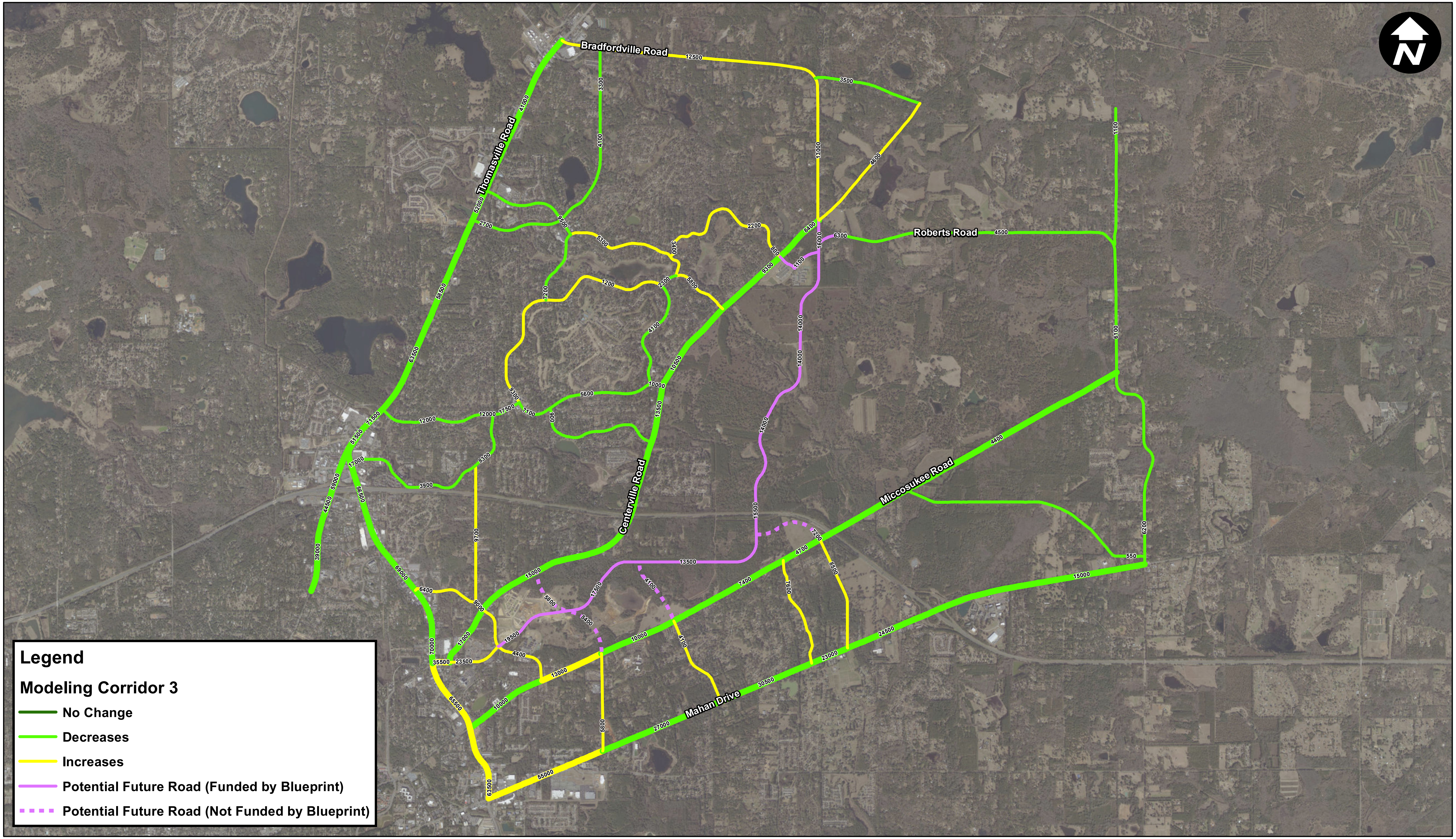
Modeling Corridors
Future Traffic Pattern Changes

Modeling Information

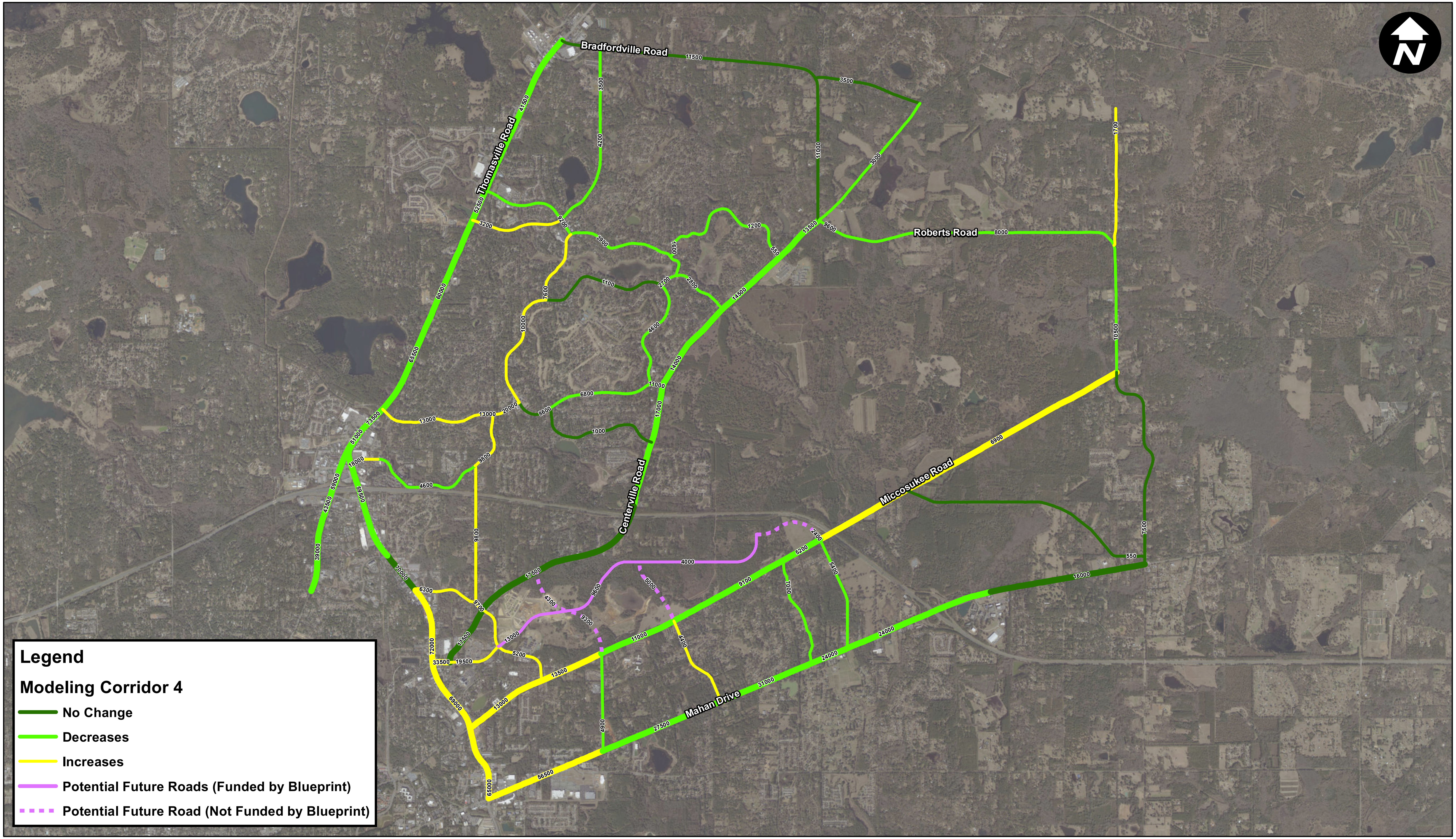
Year: 2035
Name: Corridor 1



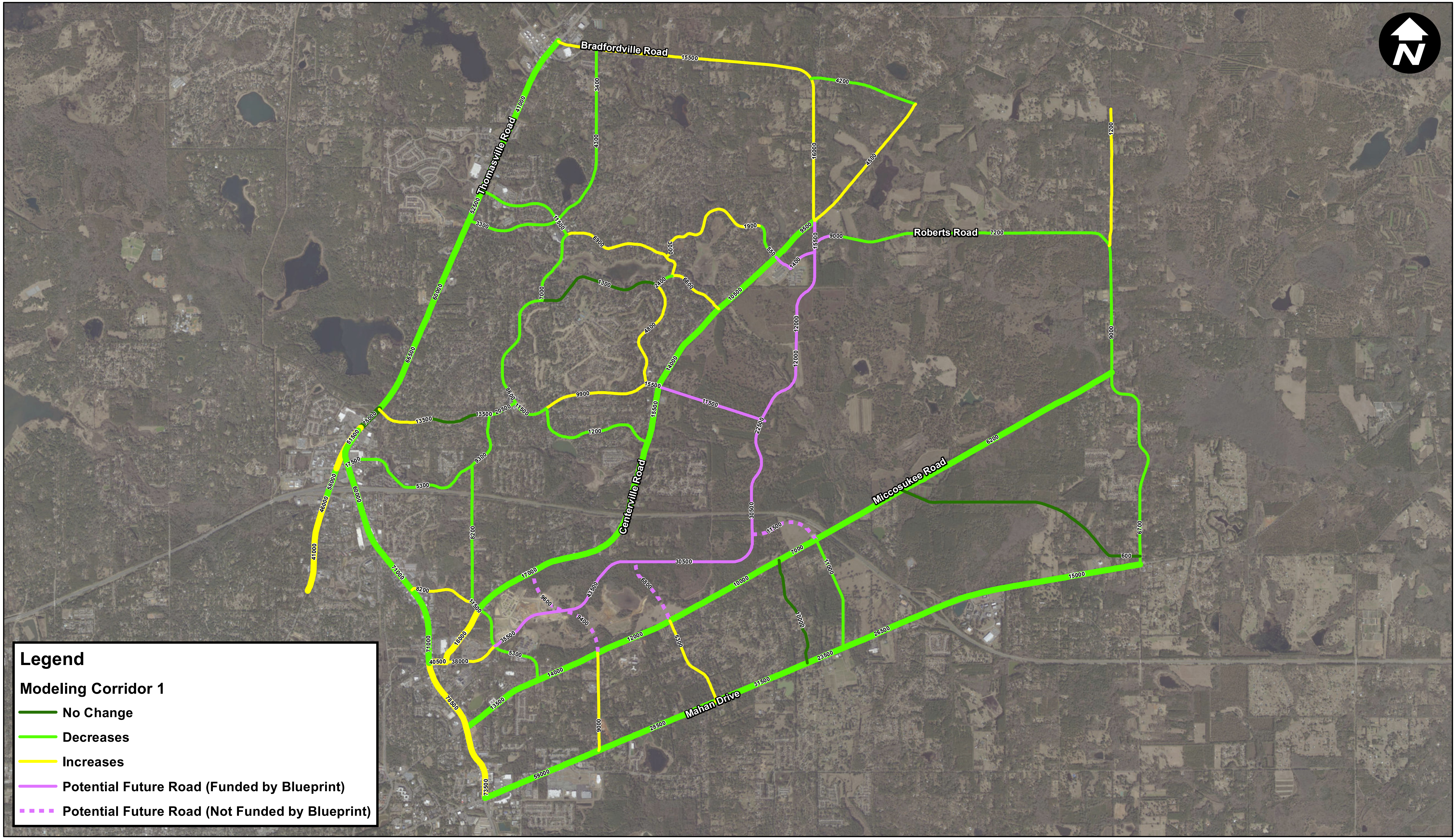
Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors** **Future Traffic Pattern Changes**	**Modeling Information** **Year:** 2035 **Name:** Corridor 2



Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors** **Future Traffic Pattern Changes**	**Modeling Information** **Year:** 2035 **Name:** Corridor 3



Northeast Gateway: Welaunee Boulevard PD&E Study **From Fleischmann Road to Centerville Road at Shamrock Street** **Leon County, Florida**	**Modeling Corridors** **Future Traffic Pattern Changes**	**Modeling Information** **Year:** 2035 **Name:** Corridor 4

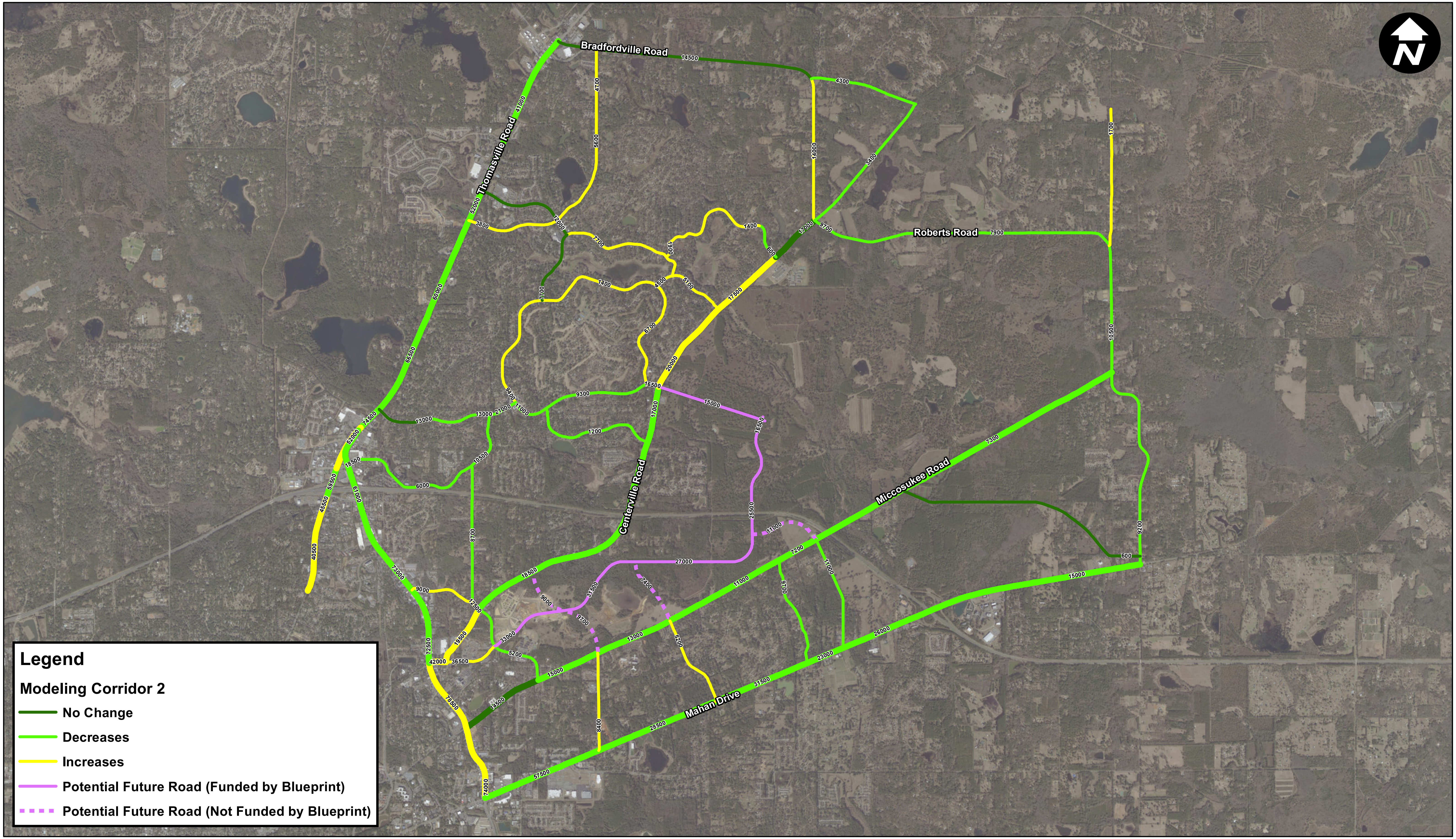


Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

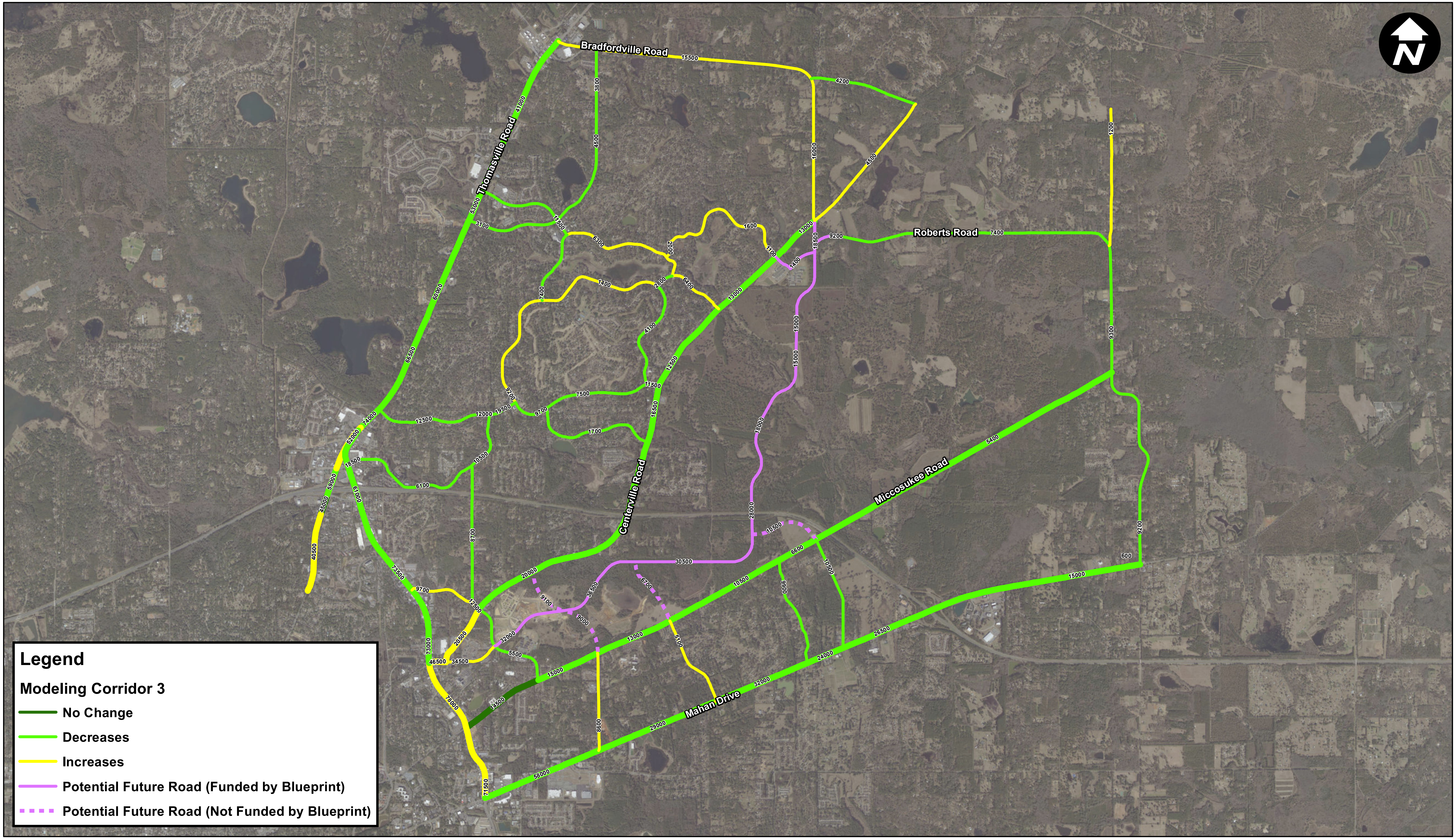
Modeling Corridors
Future Traffic Pattern Changes

Modeling Information

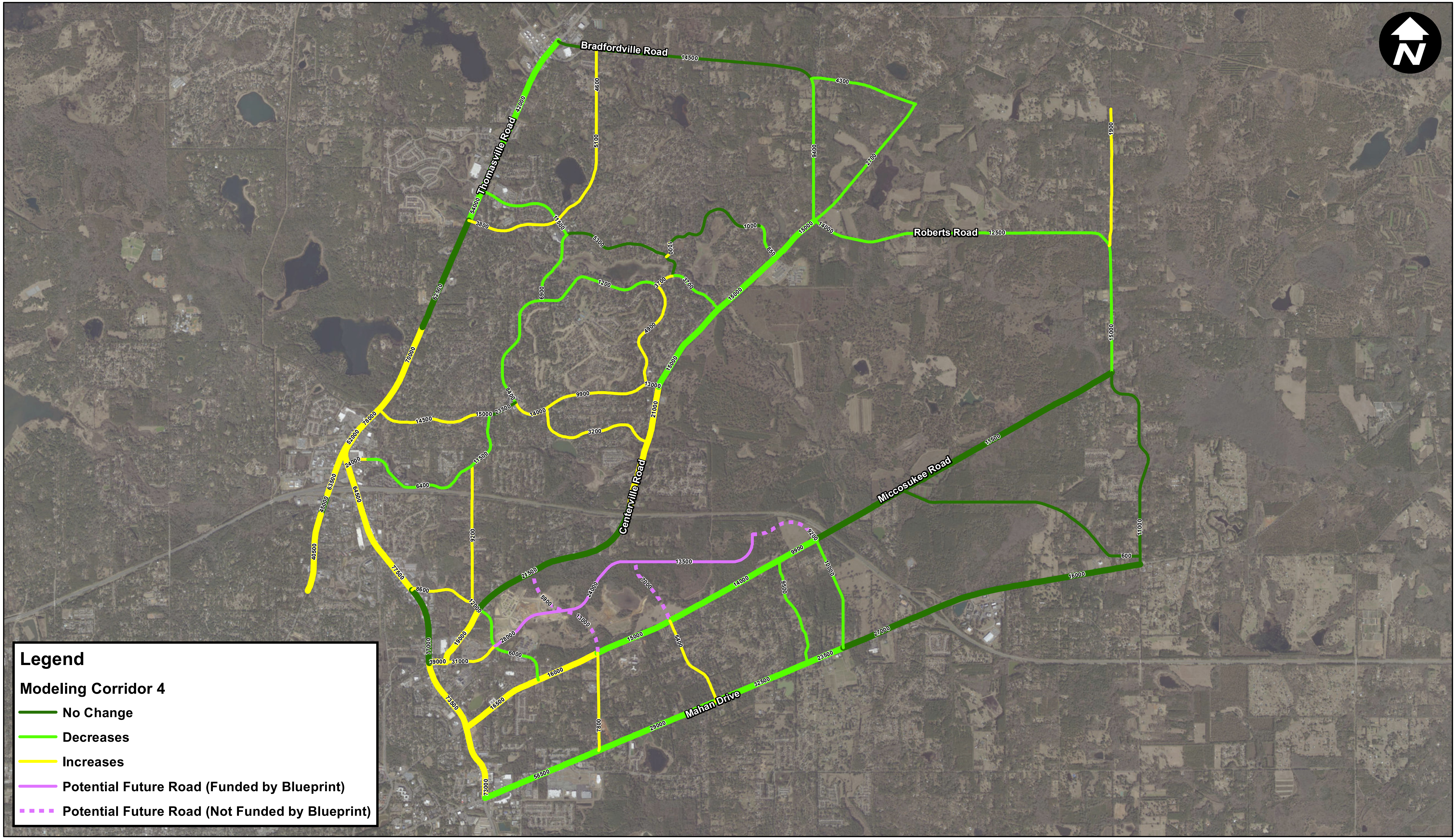
Year: 2045
Name: Corridor 1



Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors** **Future Traffic Pattern Changes**	**Modeling Information** **Year:** 2045 **Name:** Corridor 2



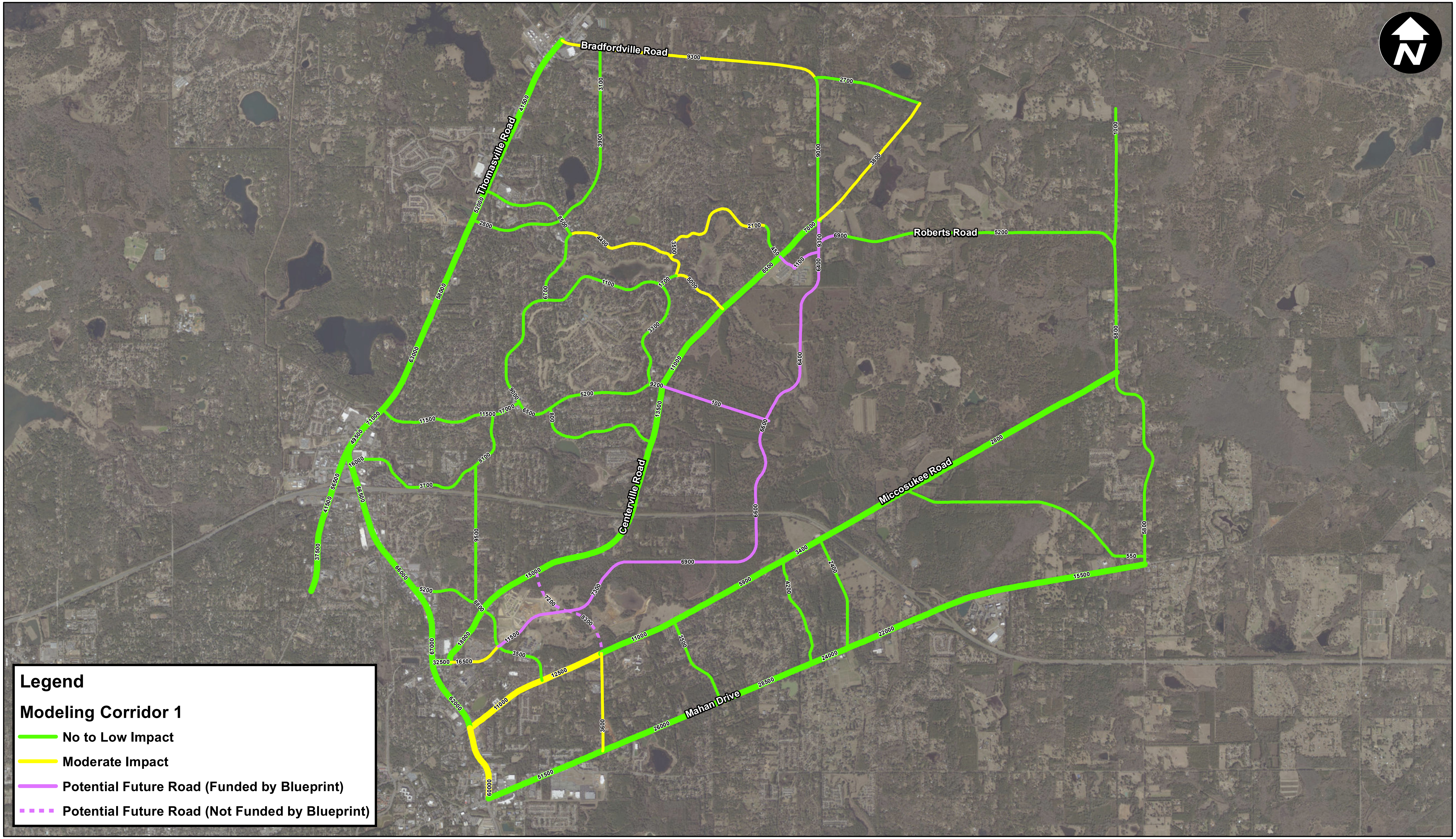
Northeast Gateway: Welaunee Boulevard PD&E Study **From Fleischmann Road to Centerville Road at Shamrock Street** **Leon County, Florida**	**Modeling Corridors** **Future Traffic Pattern Changes**	**Modeling Information** **Year:** 2045 **Name:** Corridor 3



Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors** **Future Traffic Pattern Changes**	**Modeling Information** **Year:** 2045 **Name:** Corridor 4

APPENDIX H:

QUALITATIVE EVALUATION (MAP FORM)

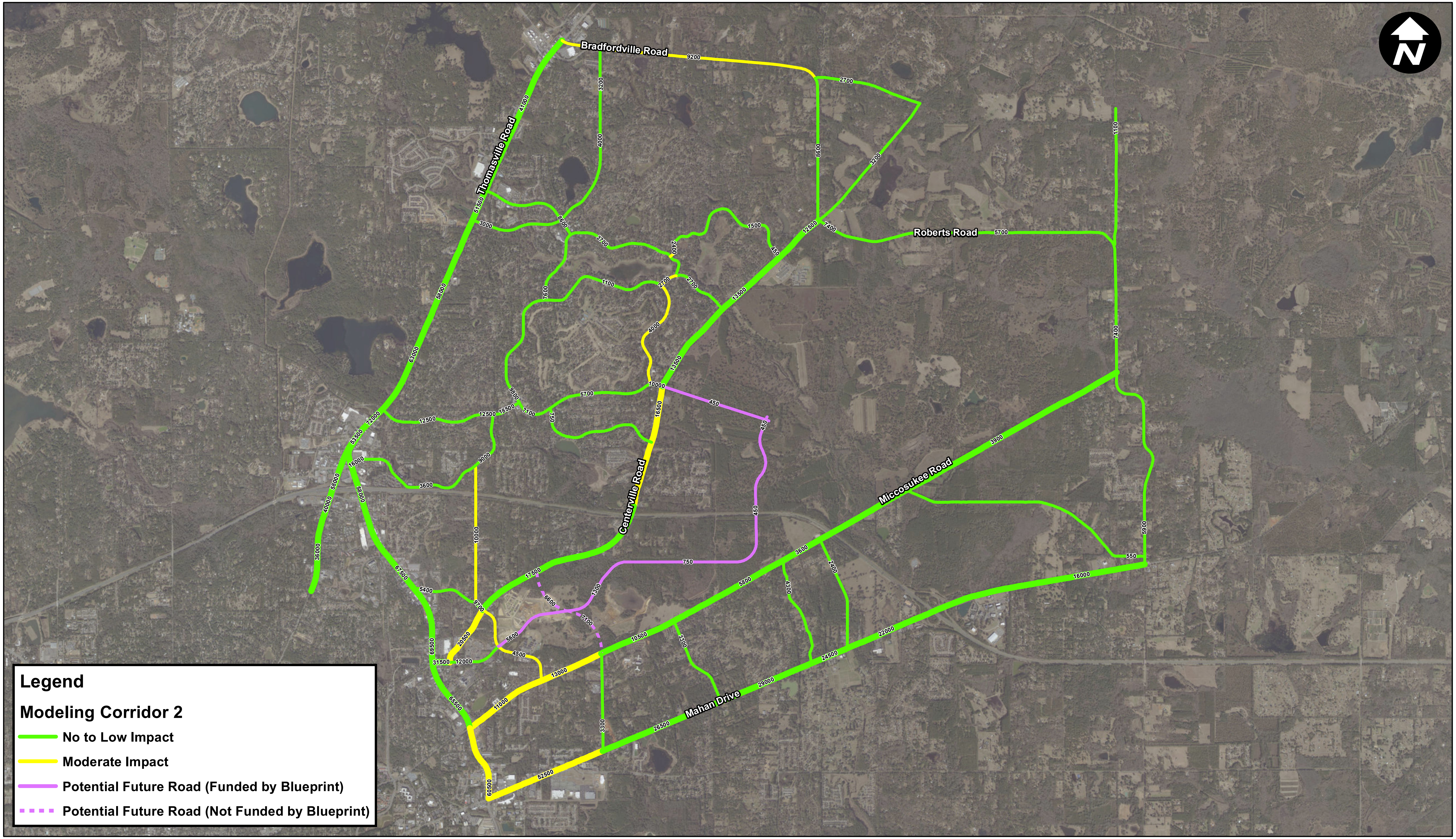


Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

Modeling Corridors
Future Traffic Impacts

Modeling Information

Year: 2025
Name: Corridor 1

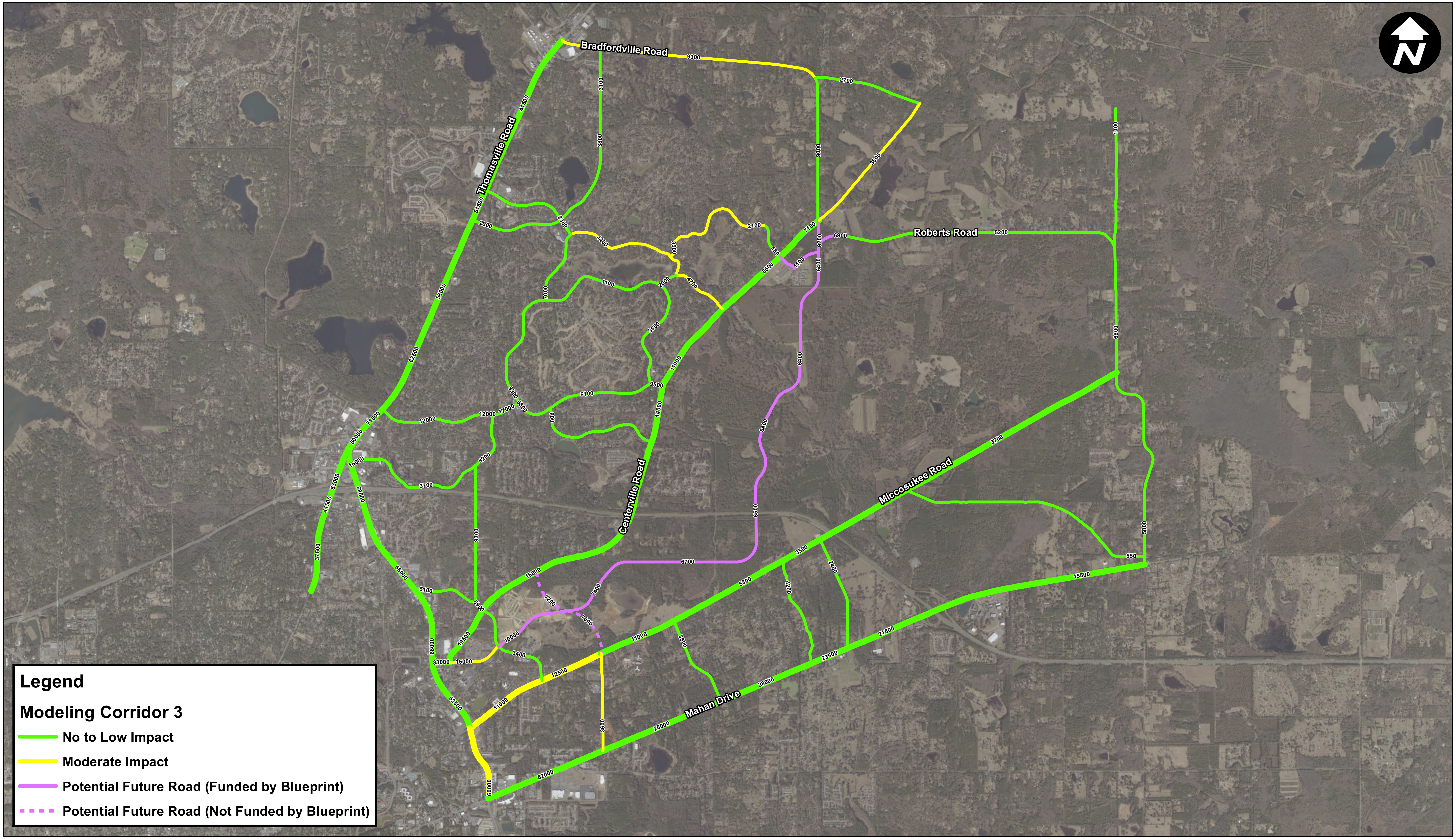


Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

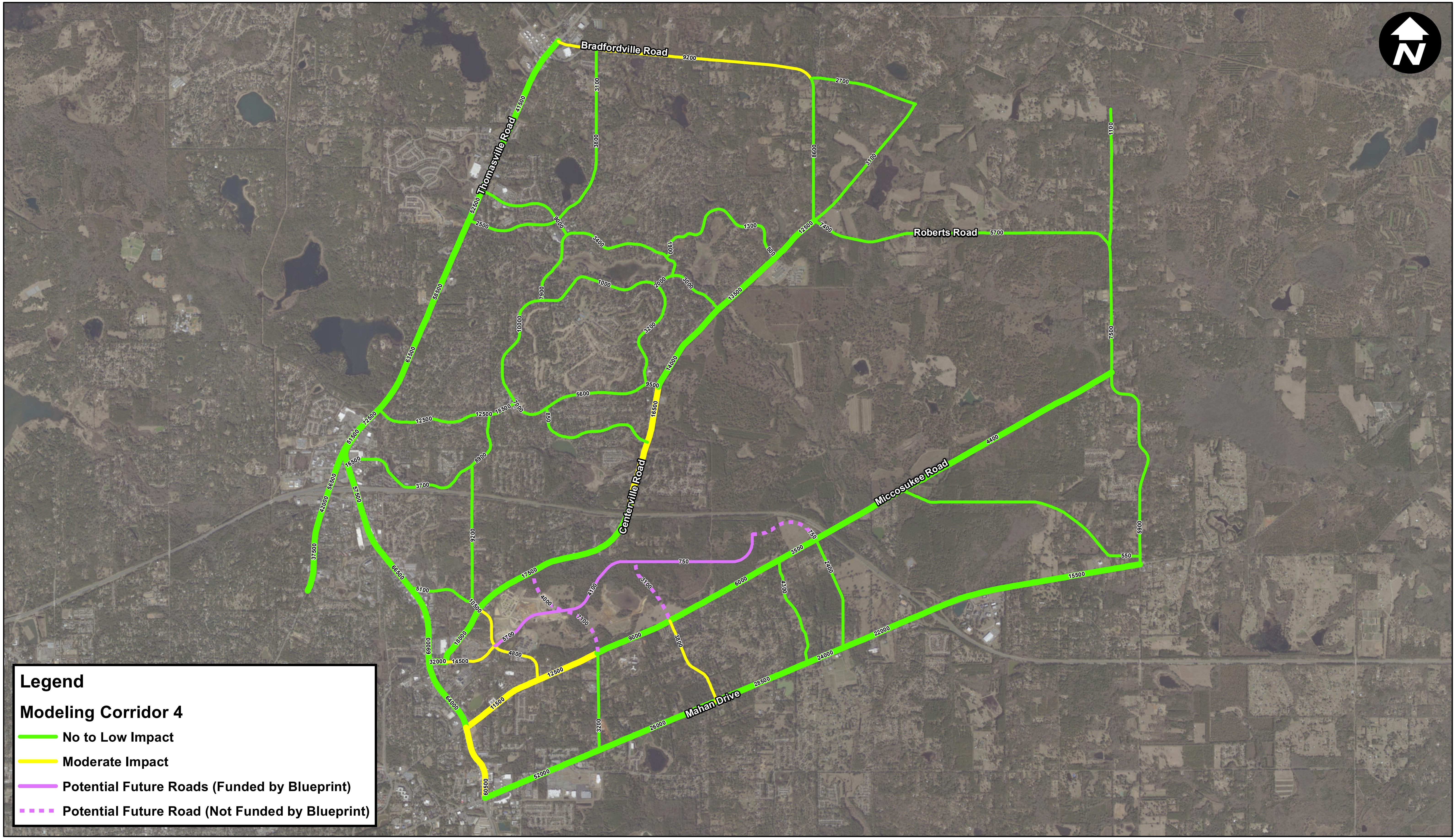
Modeling Corridors
Future Traffic Impacts

Modeling Information

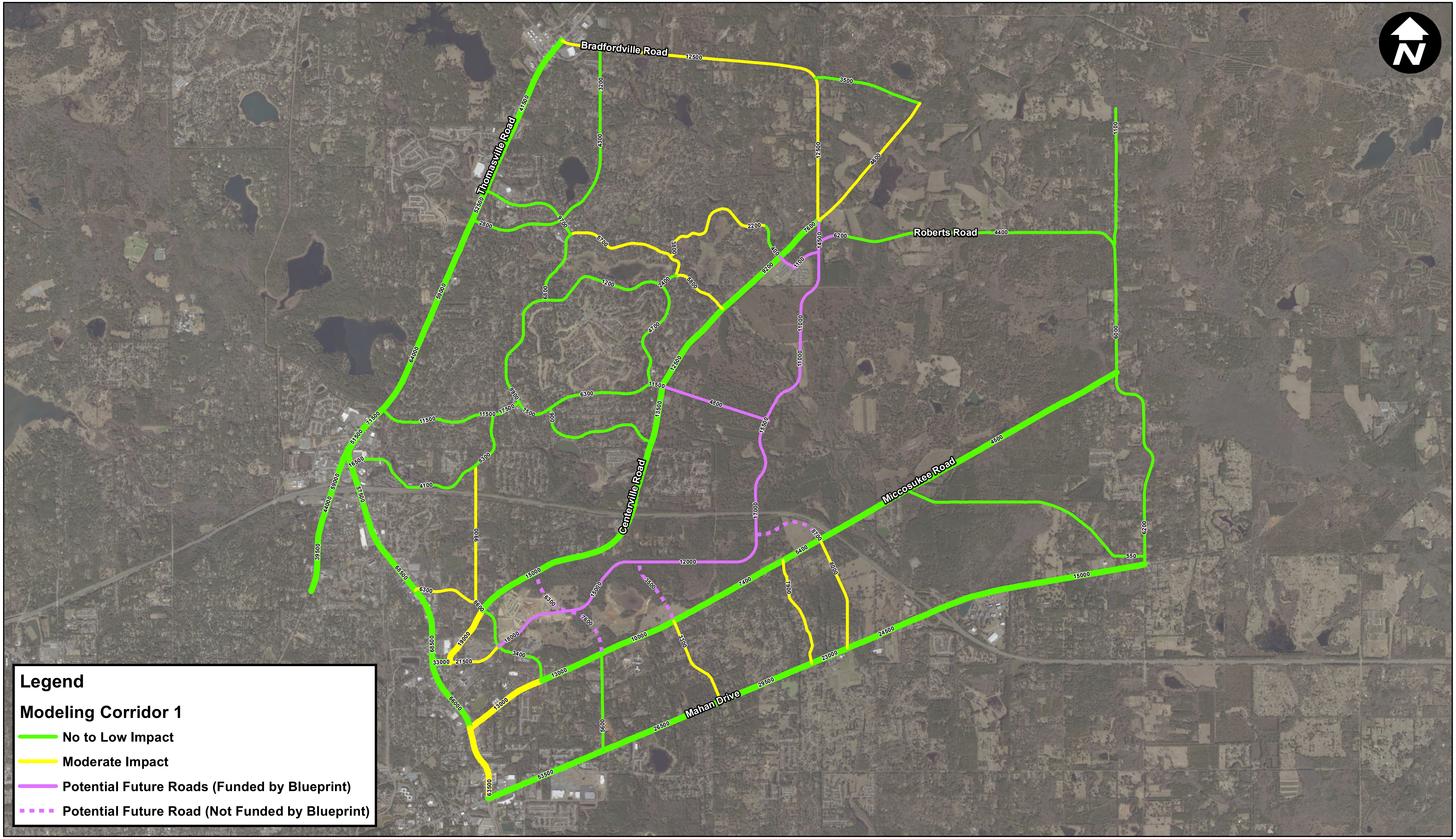
Year: 2025
Name: Corridor 2



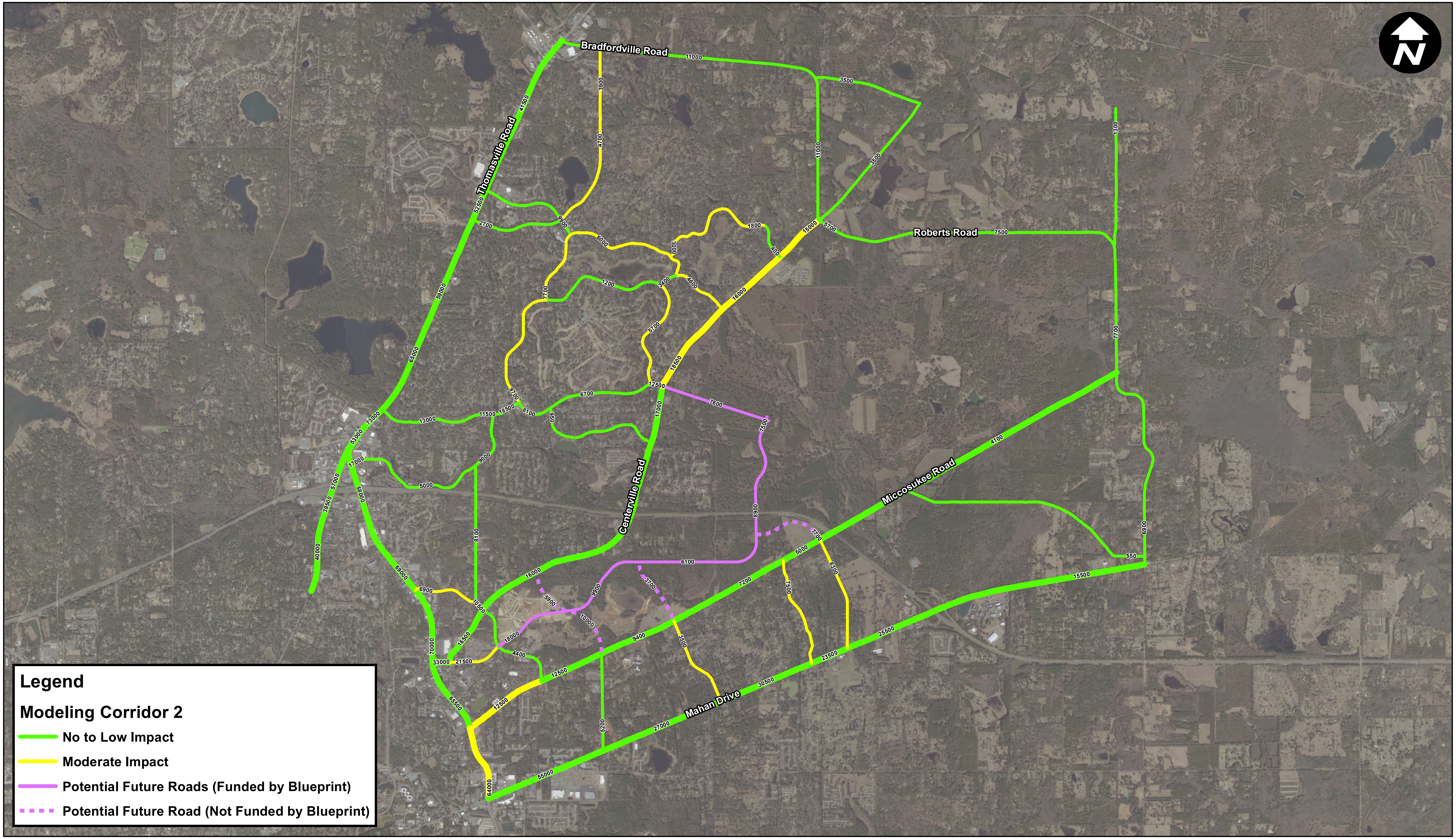
Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors** **Future Traffic Impacts**	**Modeling Information** **Year:** 2025 **Name:** Corridor 3



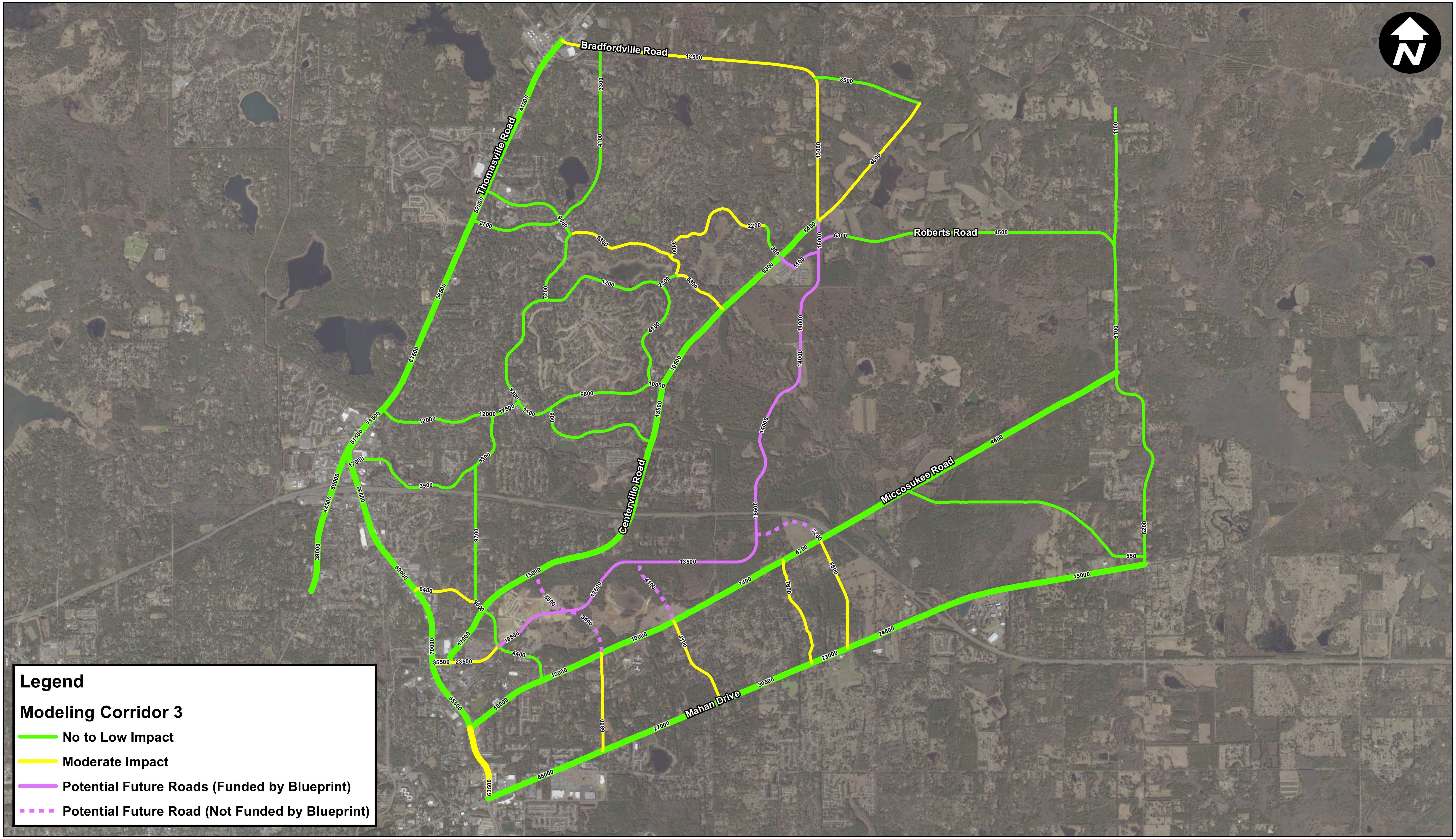
Northeast Gateway: Welaunee Boulevard PD&E Study **From Fleischmann Road to Centerville Road at Shamrock Street** **Leon County, Florida**	**Modeling Corridors** **Future Traffic Impacts**	**Modeling Information** **Year:** 2025 **Name:** Corridor 4



Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors Future Traffic Impacts**	**Modeling Information** **Year:** 2035 **Name:** Corridor 1



Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors Future Traffic Impacts**	**Modeling Information** **Year:** 2035 **Name:** Corridor 2

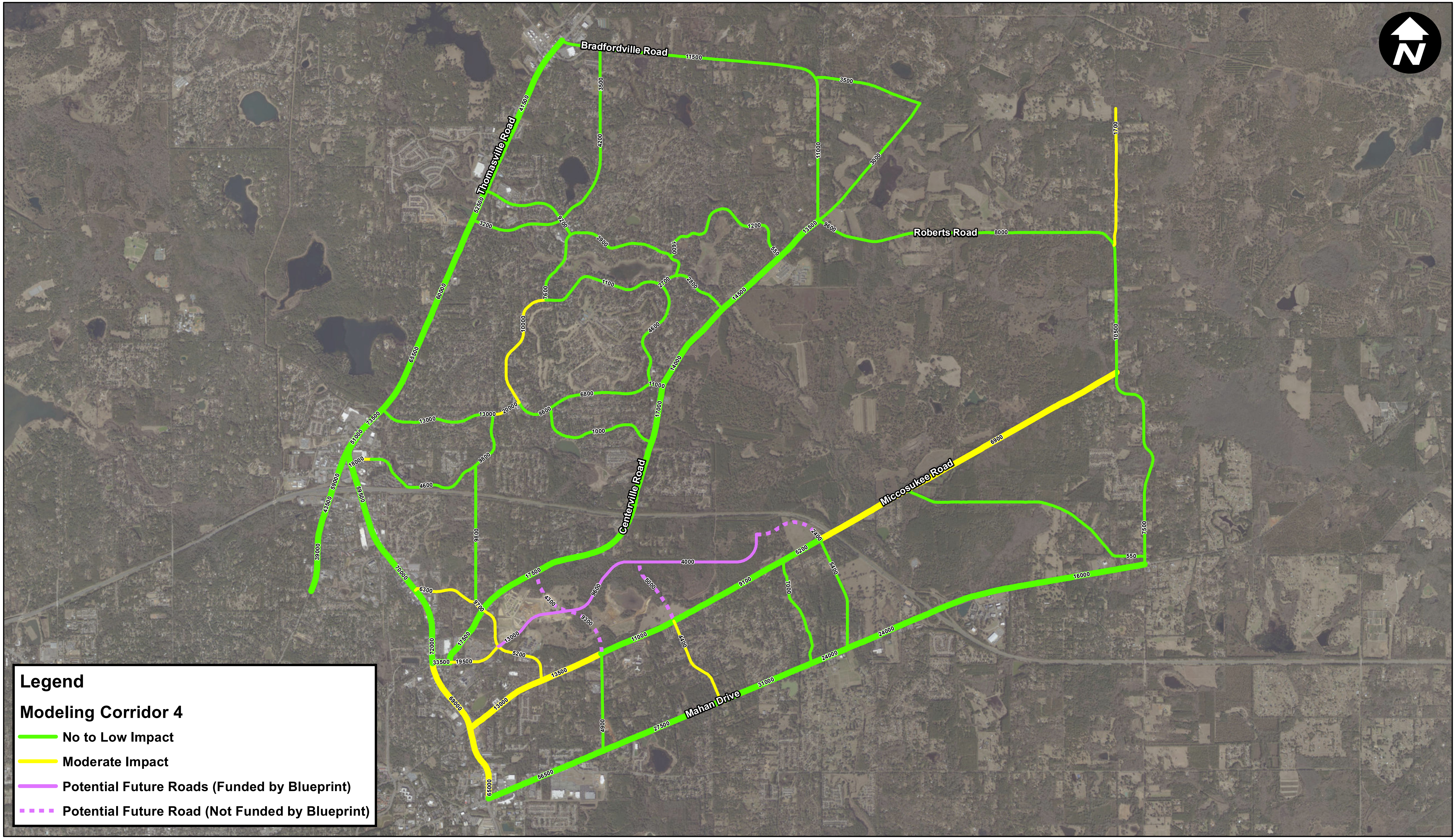


Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

Modeling Corridors
Future Traffic Impacts

Modeling Information

Year: 2035
Name: Corridor 3

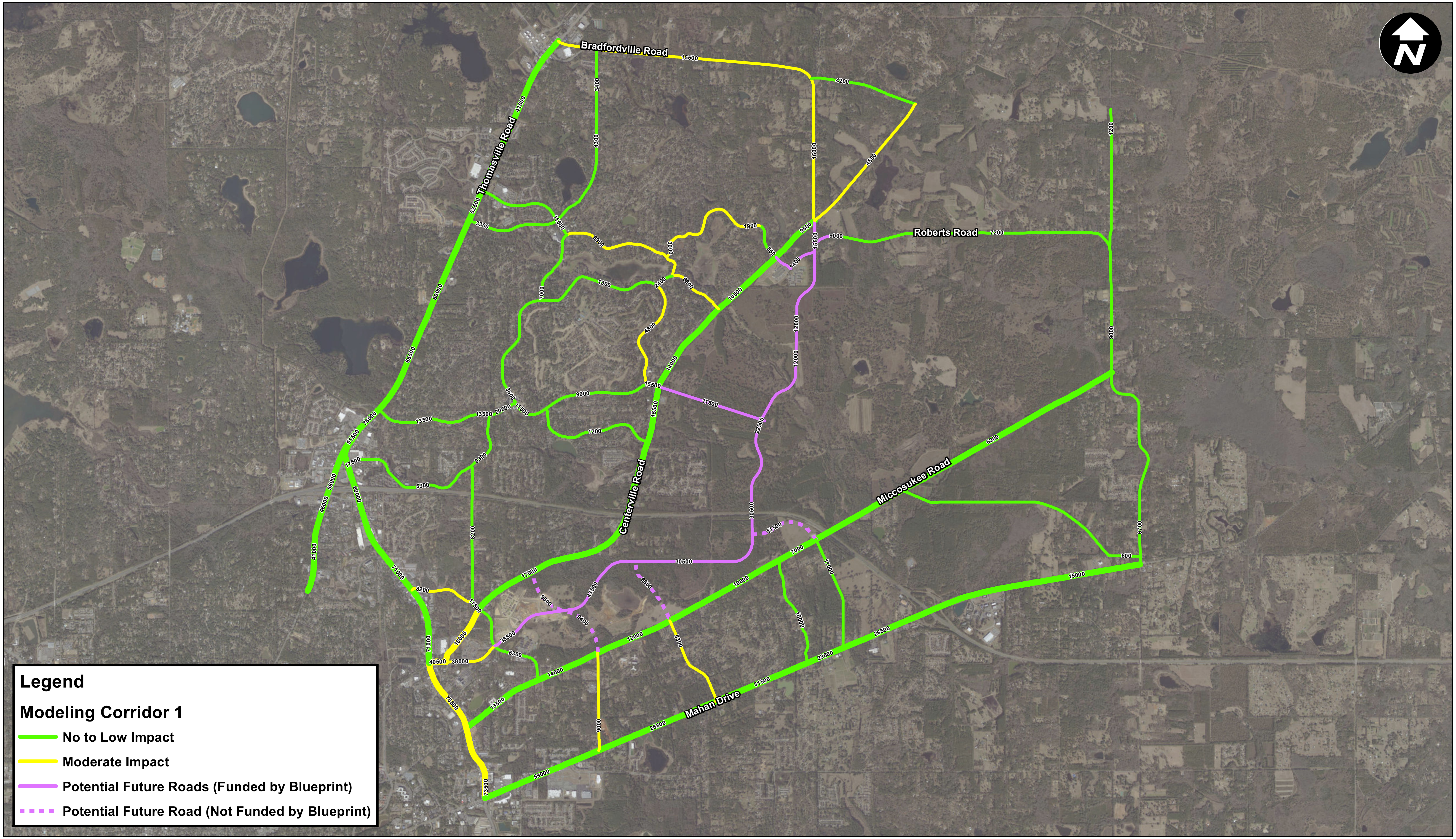


Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

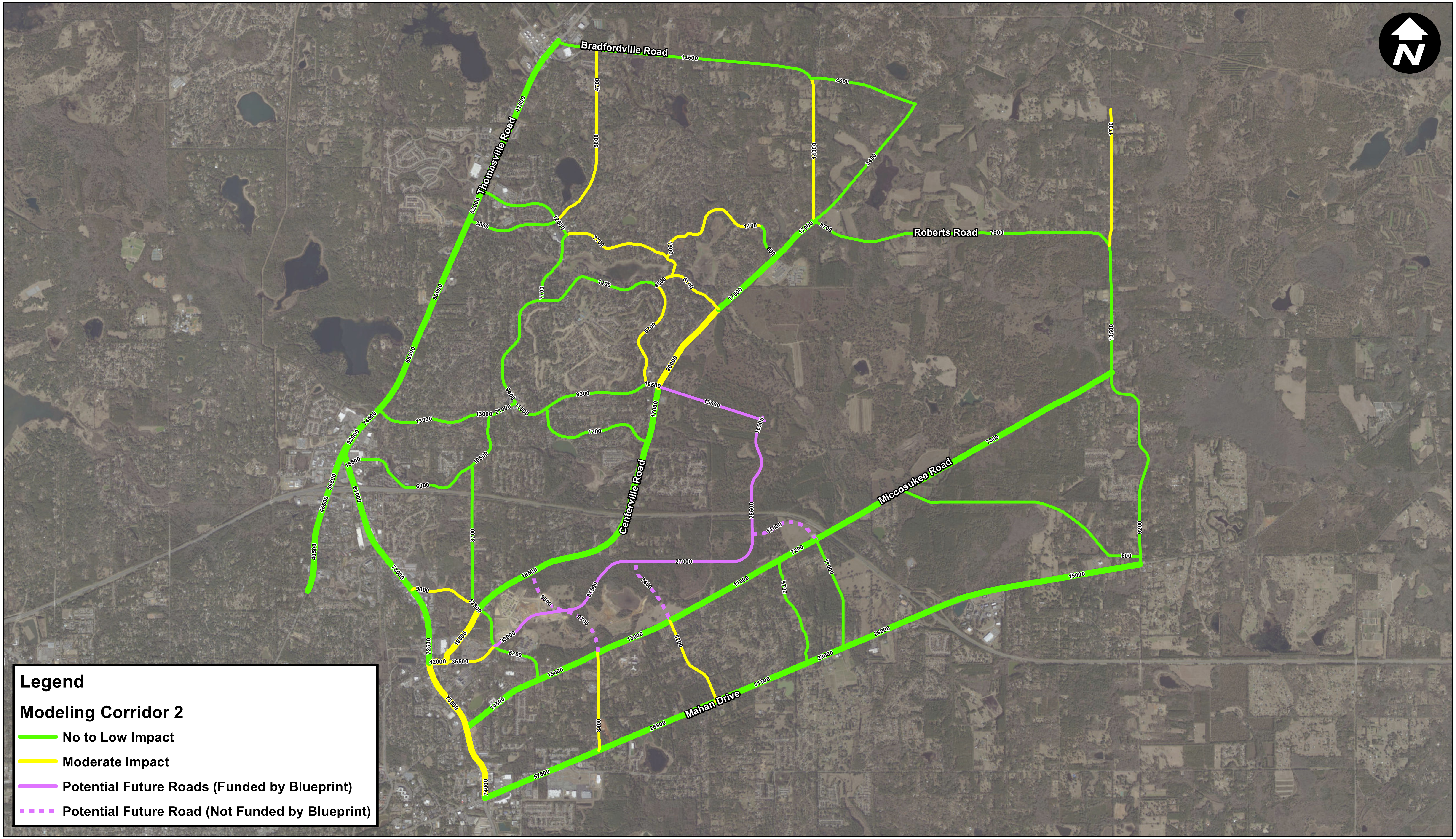
Modeling Corridors
Future Traffic Impacts

Modeling Information

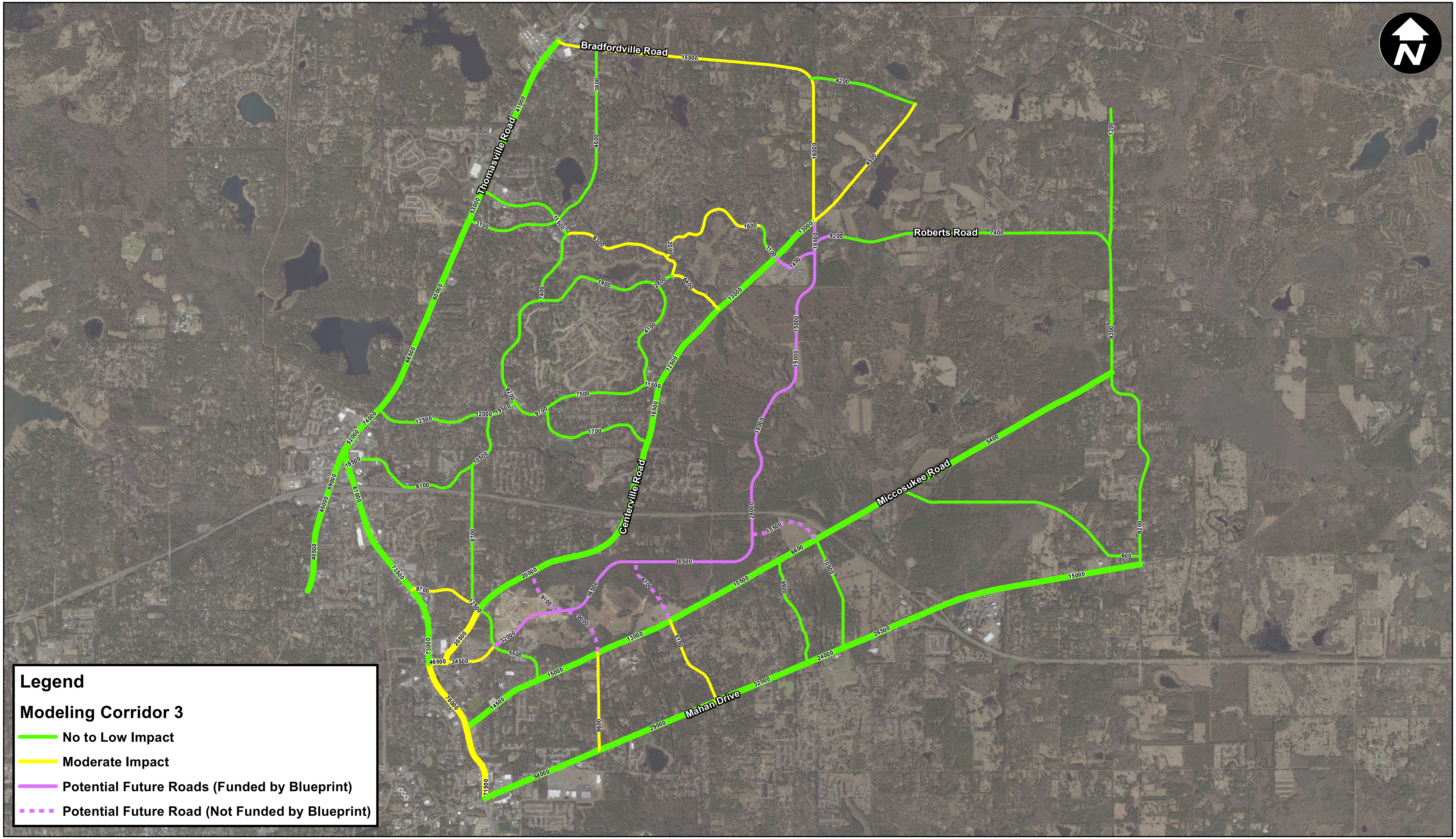
Year: 2035
Name: Corridor 4



Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors** **Future Traffic Impacts**	**Modeling Information** **Year:** 2045 **Name:** Corridor 1



Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors Future Traffic Impacts**	**Modeling Information** **Year:** 2045 **Name:** Corridor 2

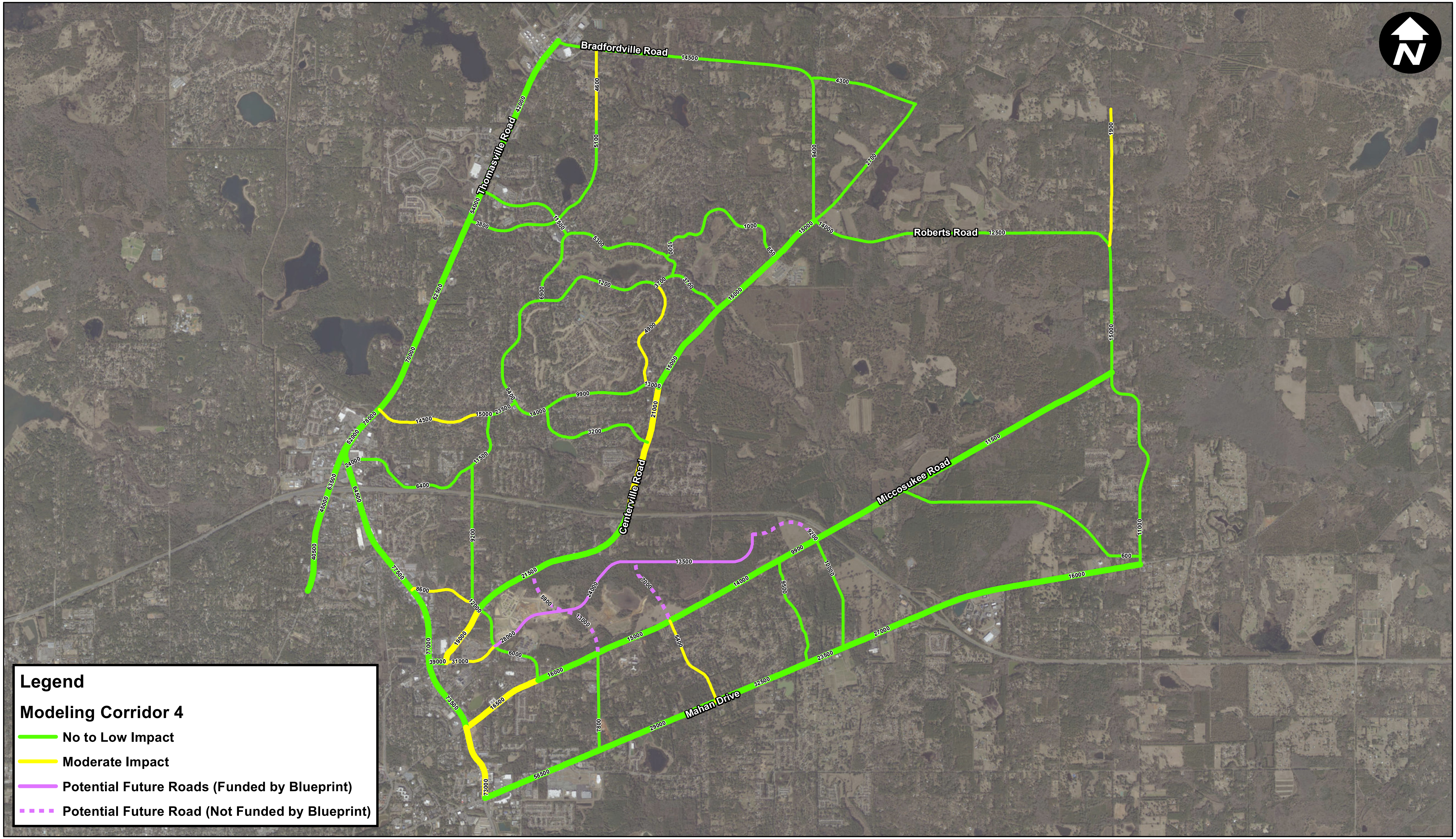


Northeast Gateway: Welaunee Boulevard PD&E Study
From Fleischmann Road to Centerville Road at Shamrock Street
Leon County, Florida

Modeling Corridors
Future Traffic Impacts

Modeling Information

Year: 2045
Name: Corridor 3



Northeast Gateway: Welaunee Boulevard PD&E Study From Fleischmann Road to Centerville Road at Shamrock Street Leon County, Florida	**Modeling Corridors** **Future Traffic Impacts**	**Modeling Information** **Year:** 2045 **Name:** Corridor 4

APPENDIX I:

VOLUME TO CAPACITY EVALUATION (TABLE FORM)

Green = Decreases or No Change

Bright Green = A segment with a V/C Ratio Greater Than 1 Decreases

Yellow = Increases

Red = A Segment with a V/C Ratio Greater Than 1 Increases

	Volume to Capacity Evaluation Matrix for Opening Year 2025					
	Roadway and Limits	2025 No Build Scenario	AADT by Modeling Corridor			
			1	2	3	4
	Arendell Way					
	Miccosukee Road to Mahan Drive	4,200	4,200	4,300	4,200	4,300
	Bradfordville Road					
	Thomasville Road to Pigsah Church Road	8,200	9,300	9,200	9,300	9,200
	Pigsah Church Road to Centerville Road	9,000	9,000	8,600	9,000	8,600
	Capital Circle NE					
	Mahan Drive to Miccosukee Road	56,000	60,000	60,500	60,000	60,500
	Miccosukee Road to Centerville Road	62,500	62,000	65,500	62,500	64,000
	Centerville Road to Lonnbladh Road	66,500	67,000	69,500	68,000	69,000
	Lonnbladh Road to Hermitage Boulevard	65,000	66,000	67,500	66,000	66,500
	Hermitage Boulevard to Thomasville Road	57,500	56,500	58,000	58,000	57,500
PRIMARY	**Centerville Road**					
	Capital Circle NE to Welaunee Boulevard	32,000	32,500	31,500	33,000	32,000
	Welaunee Boulevard to Olson Road	19,500	18,000	20,500	19,500	18,000
	Olson Road to Charleston Road	17,500	15,000	17,500	16,000	17,500
	Charleston Road to Shamrock Street	15,500	13,500	16,500	14,000	16,500
	Shamrock Street to McLaughlin Drive	13,500	11,000	13,500	11,000	14,000
	McLaughlin Drive to Pimlico Drive	13,500	8,500	13,500	8,500	13,500
	Pimlico Drive to Bradfordville Road	12,000	7,000	12,500	7,100	12,500
	Bradfordville Road to Pisgah Church Road	3,300	3,800	3,200	3,800	3,100
	Clarecastle Way					
	Pimlico Drive to N. Shannon Lake Drive	1,900	3,500	2,400	3,500	1,900
	Crump Road					
	Mahan Drive to Miccosukee Road	6,100	5,800	5,900	5,800	5,900
	Miccosukee Road to Roberts Road	8,200	6,800	7,400	6,800	7,500
	Dempsey Mayo Road					
	Mahan Drive to Miccosukee Road	3,200	3,600	3,300	3,600	3,200
	Miccosukee Road to Welaunee Boulevard		7,200	6,600	7,200	4,000
	Welaunee Boulevard to Centerville Road		8,300	7,100	7,000	7,100
	Edenfield Road					
	Mahan Drive to Miccosukee Road	3,500	3,500	3,300	3,500	3,800
	Miccosukee Road to Welaunee Boulevard					3,100
	Fleischmann Road					
	Miccosukee Road to Centerville Road	3,600	3,500	4,500	3,400	4,800
	Gardenview Way					
	Shamrock Street South to Centerville Road	2,500	800	750	800	850
	Kerry Forest Parkway					
	Thomasville Road to Shannon Lakes North	9,100	8,500	8,600	8,300	9,000
	Killarney Way					
	Thomasville Road to Kilkenny Drive	12,000	11,500	12,500	12,000	12,500
	Kilkenny Drive to Raymond Diehl Road	12,500	11,500	12,500	12,000	12,500
	Raymond Diehl Road to Shamrock Street South	19,000	17,000	18,500	17,000	18,500
	Lonnbladh Road					
	Capital Circle NE to Olson Road	5,300	5,200	5,400	5,100	5,100
PRIMARY	**Mahan Drive**					
	Capital Circle NE to Dempsey Mayo Road	50,000	51,500	52,500	52,000	52,000
	Dempsey Mayo Road to Edenfield Road	30,000	26,000	26,500	26,000	26,000
	Edenfield Road to Arendell Way	32,000	28,500	29,000	28,000	28,500
	Arendell Way to Thornton Road	26,000	24,000	24,500	23,500	24,000
	Thornton Road to Summit Lake Drive	23,500	22,000	22,000	21,500	22,000
	Summit Lake Drive to Crump Road	15,500	15,500	16,000	15,500	15,500
	McLaughlin Drive					
	Shamrock Street North to E. Shannon Lakes Drive	2,200	1,700	2,700	2,000	2,000
	E. Shannon Lakes Drive to Centerville Road	2,800	5,000	2,700	4,700	3,000
PRIMARY	**Miccosukee Road**					
	Capital Circle NE to Fleischmann Road	9,800	11,000	11,000	11,000	11,500
	Fleischmann Road to Dempsey Mayo Road	10,000	12,500	13,000	12,500	12,500
	Dempsey Mayo Road to Edenfield Road	12,500	11,000	10,500	11,000	9,000
	Edenfield Road to Arendell Way	6,300	5,900	5,800	5,800	6,000
	Arendell Way to Thornton Road	3,700	3,400	3,600	3,500	3,500
	Thornton Road to Crump Road	4,700	2,800	3,900	3,700	4,400
	Miles Johnson Road					
	Miccosukee Road to Crump Road	550	550	550	550	550
	Olson Road					
	Centerville Road to Lonnbladh Road	10,500	8,800	9,700	8,900	10,500
	Lonnbladh Road to Raymond Diehl Road	9,100	9,500	10,000	9,300	9,200
	Pimlico Drive					
	Clarecastle Way to Santa Anita Drive	1,600	2,100	1,500	2,100	1,300
	Santa Anita Drive to Centerville Road	500	450	450	450	500
	Centerville Road to Welaunee Boulevard		1,100		1,100	

Green = Decreases or No Change

Bright Green = A segment with a V/C Ratio Greater Than 1 Decreases

Yellow = Increases

Red = A Segment with a V/C Ratio Greater Than 1 Increases

PRIMARY

Volume to Capacity Evaluation Matrix for Opening Year 2025

Roadway and Limits	2025 No Build Scenario	AADT by Modeling Corridor			
		1	2	3	4
Pisgah Church Road					
Bradfordville Road to Centerville Road	2,700	2,700	2,700	2,700	2,700
Proctor Road					
Crump Road to Centerville Road	1,000	1,000	1,100	1,000	1,100
Raymond Diehl Road					
Capital Circle NE to Village Square Boulevard	16,500	16,000	16,000	16,000	16,500
Village Square Boulevard to Delaney Drive	13,000	12,000	12,000	12,500	12,000
Delaney Drive to Olson Road	4,400	3,700	3,600	3,700	3,700
Olson Road to Killarney Way	9,400	8,100	9,000	8,200	8,900
Roberts Road					
Centerville Road to Realignment	7,100		7,400		7,400
Realignment of Roberts Road		6,900		6,900	
Realignment to Crump Road	6,600	5,200	5,700	5,200	5,700
Shamrock Street					
W. Shannon Lakes Drive to McLaughlin Drive (North)	1,000	1,100	1,100	1,100	1,000
McLaughlin Drive to Shamrock Street South (East)	3,500	3,300	4,000	3,500	3,200
Killarney Way to W. Shannon Lakes Drive (West)	10,000	9,000	9,800	9,300	10,000
Killarney Way to Gardenview Way (South)	7,400	6,500	7,100	6,500	7,000
Gardenview Way to Shamrock Street East (South)	5,900	5,200	5,700	5,100	5,600
Shamrock Street East to Centerville Road (South)	9,600	9,200	10,000	9,500	9,500
Centerville Road to Welaunee Boulevard (Extension)		100	450		
Shannon Lakes Drive					
Kerry Forest Parkway to McLaughlin Drive (North)	3,500	4,400	3,700	4,400	3,400
Shamrock Street North to Kerry Forest Parkway (West)	8,000	6,700	7,600	7,000	7,900
Thomasville Road					
Hermitage Boulevard to Metropolitan Boulevard	39,500	37,500	36,000	37,500	37,500
Metropolitan Boulevard to I-10 Westbound Ramp	44,000	41,500	40,000	41,500	42,000
I-10 Westbound Ramp to Killearn Center Boulevard	59,000	56,500	58,000	53,000	56,500
Killearn Center Boulevard to Village Square Boulevard	53,500	49,500	53,500	50,000	51,500
Village Square Boulevard to Killarney Way	71,500	71,000	72,000	71,000	72,500
Killarney Way to High Grove Road	63,000	63,000	63,000	62,500	63,500
High Grove Road to Velda Dairy Road	60,500	58,000	58,000	58,000	58,500
Velda Dairy Road to Kerry Forest Parkway	56,500	52,000	51,500	51,500	52,500
Kerry Forest Parkway to Bradfordville Road	42,000	41,500	41,000	41,500	41,500
Thornton Road					
Mahan Drive to Miccosukee Road	3,000	2,400	2,400	2,400	2,400
Miccosukee Road to Welaunee Boulevard					750
Velda Dairy Road					
Thomasville Road to Kerry Forest Parkway	2,900	2,800	3,000	2,800	2,500
Kerry Forest Parkway to Kimmer Rowe Drive	3,800	3,900	4,000	3,800	3,800
Kimmer Rowe Drive to Bradfordville Road	3,000	3,100	3,200	3,100	3,100
Welaunee Boulevard					
Centerville Road to Fleischmann Road	13,500	16,500	12,000	15,000	14,500
Fleischmann Road to Dempsey Mayo Road		11,500	5,600	10,000	5,700
Dempsey Mayo Road to Edenfield Road		7,300	1,300	7,400	4,100
Edenfield Road to Thornton Road		6,900	750	6,700	750
Thornton Road to Gardenview Way		6,600	450	6,500	
Gardenview Way to Shamrock Street		6,600	450	6,400	
Shamrock Street to McLaughlin Drive		6,400		6,400	
McLaughlin Drive to Pimlico Drive		6,400		6,400	
Pimlico Drive to Bradfordville Road		9,300		9,200	

	1	2	3	4
Sum of Bright Green Segments (Decreases and Existing & Committed V/C Ratio is Greater Than 1)	7	4	6	4
Sum of Green Segments (Decreases or No Change)	51	42	52	50
Sum of Yellow Segments (Increases)	14	25	13	18
Sum of Yellow Segments (Increases and Existing & Committed V/C Ratio is Greater Than 1)	5	6	6	5

Green = Decreases or No Change
Bright Green = A segment with a V/C Ratio Greater Than 1 Decreases

Yellow = Increases
Red = A Segment with a V/C Ratio Greater Than 1 Increases

Volume to Capacity Evaluation Matrix for Interim Year 2035

	Roadway and Limits	2035 No Build Scenario	AADT by Modeling Corridor			
			1	2	3	4
	Arendell Way					
	Miccosukee Road to Mahan Drive	7,100	7,900	7,500	7,600	7,000
	Bradfordville Road					
	Thomasville Road to Pigsah Church Road	11,500	12,500	11,000	12,500	11,500
	Pigsah Church Road to Centerville Road	11,000	12,500	11,000	13,000	11,000
	Capital Circle NE					
	Mahan Drive to Miccosukee Road	59,500	63,500	64,000	63,500	65,000
	Miccosukee Road to Centerville Road	64,500	66,000	65,500	65,500	69,000
	Centerville Road to Lonnbladh Road	71,000	68,500	70,000	70,000	72,000
	Lonnbladh Road to Hermitage Boulevard	70,000	68,500	69,000	69,000	70,000
	Hermitage Boulevard to Thomasville Road	60,500	57,500	58,000	56,500	59,500
PRIMARY	**Centerville Road**					
	Capital Circle NE to Welaunee Boulevard	32,500	33,000	33,000	35,500	33,500
	Welaunee Boulevard to Olson Road	17,500	19,000	16,500	17,000	17,500
	Olson Road to Charleston Road	17,500	15,000	16,000	15,000	17,500
	Charleston Road to Shamrock Street	17,500	13,500	17,000	13,500	17,000
	Shamrock Street to McLaughlin Drive	14,500	12,500	18,500	10,500	14,000
	McLaughlin Drive to Pimlico Drive	15,000	9,200	16,000	9,300	14,500
	Pimlico Drive to Bradfordville Road	14,000	7,600	15,000	8,400	13,500
	Bradfordville Road to Pisgah Church Road	3,600	4,600	3,500	4,600	3,000
	Clarecastle Way					
	Pimlico Drive to N. Shannon Lake Drive	2,100	3,800	3,000	3,400	1,600
	Crump Road					
	Mahan Drive to Miccosukee Road	7,500	6,200	6,900	6,200	7,500
	Miccosukee Road to Roberts Road	11,000	6,000	7,700	6,100	10,500
	Dempsey Mayo Road					
	Mahan Drive to Miccosukee Road	5,400	5,600	5,200	5,800	4,900
	Miccosukee Road to Welaunee Boulevard		6,300	5,900	5,800	4,300
	Welaunee Boulevard to Centerville Road		7,600	10,000	8,400	9,300
	Edenfield Road					
	Mahan Drive to Miccosukee Road	1,900	3,300	3,500	4,100	4,400
	Miccosukee Road to Welaunee Boulevard		3,500	3,700	4,100	5,000
	Fleischmann Road					
	Miccosukee Road to Centerville Road	4,300	3,400	4,400	4,400	5,200
	Gardenview Way					
	Shamrock Street South to Centerville Road	1,000	900	950	900	1,000
	Kerry Forest Parkway					
	Thomasville Road to Shannon Lakes North	9,900	9,700	9,900	9,500	9,200
	Killarney Way					
	Thomasville Road to Kilkenny Drive	12,500	11,500	13,000	12,000	13,000
	Kilkenny Drive to Raymond Diehl Road	12,500	11,500	11,500	12,000	13,000
	Raymond Diehl Road to Shamrock Street South	19,000	17,500	18,500	17,500	20,000
	Lonnbladh Road					
	Capital Circle NE to Olson Road	5,800	6,300	6,900	6,400	6,300
PRIMARY	**Mahan Drive**					
	Capital Circle NE to Dempsey Mayo Road	54,000	53,500	55,000	55,000	56,500
	Dempsey Mayo Road to Edenfield Road	33,000	26,500	27,000	27,000	27,500
	Edenfield Road to Arendell Way	34,000	29,500	30,500	30,500	31,000
	Arendell Way to Thornton Road	25,500	23,000	23,500	23,000	24,000
	Thornton Road to Summit Lake Drive	25,500	24,500	25,500	24,500	24,000
	Summit Lake Drive to Crump Road	16,000	15,000	15,500	15,000	16,000
	McLaughlin Drive					
	Shamrock Street North to E. Shannon Lakes Drive	3,200	2,400	3,400	2,300	2,700
	E. Shannon Lakes Drive to Centerville Road	3,200	5,800	4,600	5,800	2,800
PRIMARY	**Miccosukee Road**					
	Capital Circle NE to Fleischmann Road	10,500	13,000	12,500	10,000	13,000
	Fleischmann Road to Dempsey Mayo Road	12,500	13,000	12,500	13,000	13,500
	Dempsey Mayo Road to Edenfield Road	15,500	10,000	9,400	10,000	11,000
	Edenfield Road to Arendell Way	10,500	7,400	7,200	7,400	9,100
	Arendell Way to Thornton Road	5,600	5,400	5,000	4,700	5,200
	Thornton Road to Crump Road	6,400	4,500	4,100	4,400	6,900
	Miles Johnson Road					
	Miccosukee Road to Crump Road	550	550	550	550	550
	Olson Road					
	Centerville Road to Lonnbladh Road	8,900	8,600	10,500	9,000	9,700
	Lonnbladh Road to Raymond Diehl Road	9,400	9,900	8,100	9,700	9,800
	Pimlico Drive					
	Clarecastle Way to Santa Anita Drive	1,500	2,200	1,800	2,200	1,200
	Santa Anita Drive to Centerville Road	700	400	400	800	550
	Centerville Road to Welaunee Boulevard		1,100		1,100	

Green = Decreases or No Change **Yellow = Increases**
Bright Green = A segment with a V/C Ratio Greater Than 1 Decreases **Red = A Segment with a V/C Ratio Greater Than 1 Increases**

PRIMARY

Volume to Capacity Evaluation Matrix for Interim Year 2035					
Roadway and Limits	2035 No Build Scenario	AADT by Modeling Corridor			
		1	2	3	4
Pisgah Church Road					
Bradfordville Road to Centerville Road	3,500	3,500	3,500	3,500	3,500
Proctor Road					
Crump Road to Centerville Road	1,200	1,100	1,300	1,100	1,700
Raymond Diehl Road					
Capital Circle NE to Village Square Boulevard	17,000	16,500	17,000	17,000	18,000
Village Square Boulevard to Delaney Drive	14,000	12,500	13,000	13,000	14,500
Delaney Drive to Olson Road	5,100	4,100	5,000	3,900	4,600
Olson Road to Killarney Way	9,400	8,300	9,000	8,300	9,800
Roberts Road					
Centerville Road to Realignment	10,500		5,700		9,600
Realignment of Roberts Road		6,200		6,300	
Realignment to Crump Road	9,100	4,400	7,500	4,500	8,000
Shamrock Street					
W. Shannon Lakes Drive to McLaughlin Drive (North)	1,100	1,200	1,200	1,200	1,100
McLaughlin Drive to Shamrock Street South (East)	4,900	4,700	5,700	4,100	4,600
Killarney Way to W. Shannon Lakes Drive (West)	9,100	8,900	9,700	9,300	10,000
Killarney Way to Gardenview Way (South)	8,600	7,500	8,100	7,100	8,600
Gardenview Way to Shamrock Street East (South)	6,900	6,300	6,700	5,600	6,800
Shamrock Street East to Centerville Road (South)	11,500	11,500	12,500	10,000	11,000
Centerville Road to Welaunee Boulevard (Extension)		4,800	7,600		
Shannon Lakes Drive					
Kerry Forest Parkway to McLaughlin Drive (North)	4,400	5,700	6,000	5,300	3,900
Shamrock Street North to Kerry Forest Parkway (West)	7,300	6,800	7,700	7,200	7,600
Thomasville Road					
Hermitage Boulevard to Metropolitan Boulevard	39,500	39,500	40,000	39,000	39,000
Metropolitan Boulevard to I-10 Westbound Ramp	48,500	44,000	39,500	44,500	43,500
I-10 Westbound Ramp to Killearn Center Boulevard	61,000	59,000	57,000	59,000	59,000
Killearn Center Boulevard to Village Square Boulevard	53,500	51,500	53,000	51,500	51,000
Village Square Boulevard to Killarney Way	74,000	71,500	73,000	71,500	73,500
Killarney Way to High Grove Road	66,000	64,000	65,000	63,500	65,500
High Grove Road to Velda Dairy Road	62,000	59,000	59,000	58,500	60,000
Velda Dairy Road to Kerry Forest Parkway	57,500	52,500	52,500	52,000	52,500
Kerry Forest Parkway to Bradfordville Road	42,500	41,500	41,500	41,000	41,500
Thornton Road					
Mahan Drive to Miccosukee Road	6,900	8,000	8,300	8,500	5,400
Miccosukee Road to Welaunee Boulevard		8,700	7,700	7,200	2,400
Velda Dairy Road					
Thomasville Road to Kerry Forest Parkway	3,100	2,800	2,700	2,700	3,200
Kerry Forest Parkway to Kimmer Rowe Drive	4,300	4,300	4,700	4,100	4,200
Kimmer Rowe Drive to Bradfordville Road	3,600	3,200	3,900	3,300	3,500
Welaunee Boulevard					
Centerville Road to Fleischmann Road	18,000	21,500	21,500	23,500	19,500
Fleischmann Road to Dempsey Mayo Road		18,000	18,000	19,500	13,000
Dempsey Mayo Road to Edenfield Road		15,000	9,900	17,500	9,600
Edenfield Road to Thornton Road		12,000	6,100	13,500	4,000
Thornton Road to Gardenview Way		17,000	8,900	15,500	
Gardenview Way to Shamrock Street		15,500	7,500	14,000	
Shamrock Street to McLaughlin Drive		11,000		14,000	
McLaughlin Drive to Pimlico Drive		11,000		14,000	
Pimlico Drive to Bradfordville Road		14,500		16,000	

Sum of Bright Green Segments (Decreases and Existing & Committed V/C Ratio is Greater Than 1)	9	8	9	4
Sum of Green Segments (Decreases or No Change)	47	39	44	49
Sum of Yellow Segments (Increases)	18	27	21	18
Sum of Yellow Segments (Increases and Existing & Committed V/C Ratio is Greater Than 1)	3	3	3	6

Green = Decreases or No Change
Bright Green = A segment with a V/C Ratio Greater Than 1 Decreases

Yellow = Increases
Red = A Segment with a V/C Ratio Greater Than 1 Increases

Volume to Capacity Evaluation Matrix for Design Year 2045

	Roadway and Limits	2045 No Build Scenario	AADT by Modeling Corridor			
			1	2	3	4
	Arendell Way					
	Miccosukee Road to Mahan Drive	10,000	10,000	9,700	9,900	9,500
	Bradfordville Road					
	Thomasville Road to Pigsah Church Road	14,500	15,500	14,500	15,500	14,500
	Pigsah Church Road to Centerville Road	13,000	16,000	14,000	16,000	9,400
	Capital Circle NE					
	Mahan Drive to Miccosukee Road	66,000	73,500	74,000	71,500	73,000
	Miccosukee Road to Centerville Road	72,500	78,500	78,500	78,000	73,500
	Centerville Road to Lonnbladh Road	77,000	71,000	72,500	73,000	77,000
	Lonnbladh Road to Hermitage Boulevard	76,500	71,000	73,000	73,500	77,500
	Hermitage Boulevard to Thomasville Road	63,000	60,000	61,000	61,000	64,500
PRIMARY	**Centerville Road**					
	Capital Circle NE to Welaunee Boulevard	38,000	40,500	42,000	46,500	39,000
	Welaunee Boulevard to Olson Road	17,000	18,000	19,500	20,500	19,000
	Olson Road to Charleston Road	21,500	17,000	18,500	20,000	21,500
	Charleston Road to Shamrock Street	20,000	15,500	17,000	16,500	21,000
	Shamrock Street to McLaughlin Drive	15,500	14,000	20,000	12,500	15,000
	McLaughlin Drive to Pimlico Drive	17,000	10,500	17,500	13,000	15,000
	Pimlico Drive to Bradfordville Road	17,000	9,500	17,000	13,000	15,000
	Bradfordville Road to Pisgah Church Road	3,600	4,500	3,400	4,500	2,700
	Clarecastle Way					
	Pimlico Drive to N. Shannon Lake Drive	900	3,000	1,900	2,000	1,000
	Crump Road					
	Mahan Drive to Miccosukee Road	11,000	6,700	9,200	9,200	11,000
	Miccosukee Road to Roberts Road	15,500	9,000	10,500	9,300	15,000
	Dempsey Mayo Road					
	Mahan Drive to Miccosukee Road	7,600	9,000	8,400	8,600	7,800
	Miccosukee Road to Welaunee Boulevard		9,600	9,000	9,100	5,900
	Welaunee Boulevard to Centerville Road		9,400	9,700	9,000	13,000
	Edenfield Road					
	Mahan Drive to Miccosukee Road	4,400	5,300	5,200	5,100	5,400
	Miccosukee Road to Welaunee Boulevard		6,800	7,400	6,700	7,000
	Fleischmann Road					
	Miccosukee Road to Centerville Road	6,700	5,300	5,200	5,500	6,000
	Gardenview Way					
	Shamrock Street South to Centerville Road	3,100	1,200	1,200	1,700	3,200
	Kerry Forest Parkway					
	Thomasville Road to Shannon Lakes North	12,000	11,500	12,000	11,500	11,500
	Killarney Way					
	Thomasville Road to Kilkenny Drive	13,000	13,500	13,000	12,500	14,500
	Kilkenny Drive to Raymond Diehl Road	13,500	13,500	13,000	12,000	15,000
	Raymond Diehl Road to Shamrock Street South	23,500	20,500	21,000	19,500	23,500
	Lonnbladh Road					
	Capital Circle NE to Olson Road	7,500	8,200	9,000	9,700	8,600
PRIMARY	**Mahan Drive**					
	Capital Circle NE to Dempsey Mayo Road	60,000	59,000	57,500	58,000	58,500
	Dempsey Mayo Road to Edenfield Road	39,000	28,500	28,500	29,000	29,000
	Edenfield Road to Arendell Way	38,000	31,500	31,500	32,000	32,500
	Arendell Way to Thornton Road	27,500	23,500	23,000	24,000	23,500
	Thornton Road to Summit Lake Drive	27,000	26,500	26,000	26,500	27,000
	Summit Lake Drive to Crump Road	16,000	15,000	15,000	15,000	16,000
	McLaughlin Drive					
	Shamrock Street North to E. Shannon Lakes Drive	3,500	2,400	4,500	2,800	3,700
	E. Shannon Lakes Drive to Centerville Road	4,100	6,600	5,100	6,400	3,700
PRIMARY	**Miccosukee Road**					
	Capital Circle NE to Fleischmann Road	14,500	13,500	14,500	14,500	16,500
	Fleischmann Road to Dempsey Mayo Road	15,500	14,000	15,000	15,000	16,000
	Dempsey Mayo Road to Edenfield Road	19,500	12,000	13,000	13,000	15,000
	Edenfield Road to Arendell Way	16,000	10,000	11,000	10,500	14,000
	Arendell Way to Thornton Road	10,500	7,000	7,200	6,600	9,900
	Thornton Road to Crump Road	11,500	6,200	7,300	5,400	11,500
	Miles Johnson Road					
	Miccosukee Road to Crump Road	600	600	600	600	600
	Olson Road					
	Centerville Road to Lonnbladh Road	11,500	11,500	12,500	12,500	12,000
	Lonnbladh Road to Raymond Diehl Road	9,100	8,200	8,700	8,700	9,200
	Pimlico Drive					
	Clarecastle Way to Santa Anita Drive	1,000	1,900	1,400	1,600	1,000
	Santa Anita Drive to Centerville Road	950	550	600	1,100	850
	Centerville Road to Welaunee Boulevard		1,400		1,400	

Green = Decreases or No Change **Yellow = Increases**

Bright Green = A segment with a V/C Ratio Greater Than 1 Decreases **Red = A Segment with a V/C Ratio Greater Than 1 Increases**

PRIMARY

Volume to Capacity Evaluation Matrix for Design Year 2045					
Roadway and Limits	2045 No Build Scenario	AADT by Modeling Corridor			
		1	2	3	4
Pisgah Church Road					
Bradfordville Road to Centerville Road	4,400	4,200	4,300	4,200	4,300
Proctor Road					
Crump Road to Centerville Road	1,100	1,200	1,700	1,200	1,900
Raymond Diehl Road					
Capital Circle NE to Village Square Boulevard	23,500	17,500	18,500	18,500	24,000
Village Square Boulevard to Delaney Drive	16,500	14,000	14,500	14,500	16,000
Delaney Drive to Olson Road	7,700	5,300	6,000	6,100	6,400
Olson Road to Killarney Way	12,500	9,300	10,500	10,500	11,500
Roberts Road					
Centerville Road to Realignment	15,500		9,700		14,000
Realignment of Roberts Road		9,000		9,200	
Realignment to Crump Road	14,500	7,200	7,900	7,400	12,500
Shamrock Street					
W. Shannon Lakes Drive to McLaughlin Drive (North)	1,300	1,300	1,400	1,400	1,200
McLaughlin Drive to Shamrock Street South (East)	4,400	4,800	6,700	4,100	4,900
Killarney Way to W. Shannon Lakes Drive (West)	9,000	8,600	9,400	9,200	8,400
Killarney Way to Gardenview Way (South)	13,500	11,500	11,000	9,700	14,000
Gardenview Way to Shamrock Street East (South)	9,800	9,900	9,300	7,500	9,900
Shamrock Street East to Centerville Road (South)	12,500	15,500	16,500	11,500	13,000
Centerville Road to Welaunee Boulevard (Extension)		11,500	15,000		
Shannon Lakes Drive					
Kerry Forest Parkway to McLaughlin Drive (North)	5,300	6,900	7,700	6,300	5,300
Shamrock Street North to Kerry Forest Parkway (West)	7,700	7,000	7,700	7,400	6,900
Thomasville Road					
Hermitage Boulevard to Metropolitan Boulevard	39,500	41,000	40,500	40,500	40,500
Metropolitan Boulevard to I-10 Westbound Ramp	45,000	46,000	45,500	45,000	45,000
I-10 Westbound Ramp to Killearn Center Boulevard	61,000	58,000	59,500	59,000	63,500
Killearn Center Boulevard to Village Square Boulevard	51,000	51,500	52,000	52,000	52,000
Village Square Boulevard to Killarney Way	75,000	75,000	74,500	74,000	78,000
Killarney Way to High Grove Road	68,000	66,500	66,500	66,500	70,000
High Grove Road to Velda Dairy Road	62,500	60,000	60,000	60,000	62,500
Velda Dairy Road to Kerry Forest Parkway	57,000	52,500	52,000	53,000	54,000
Kerry Forest Parkway to Bradfordville Road	43,000	41,000	41,000	41,000	42,000
Thornton Road					
Mahan Drive to Miccosukee Road	19,000	11,000	11,000	10,500	10,000
Miccosukee Road to Welaunee Boulevard		11,500	11,000	10,500	9,200
Velda Dairy Road					
Thomasville Road to Kerry Forest Parkway	3,700	3,300	3,800	3,100	3,800
Kerry Forest Parkway to Kimmer Rowe Drive	4,900	4,300	5,600	4,500	5,100
Kimmer Rowe Drive to Bradfordville Road	4,200	3,400	4,700	3,800	4,600
Welaunee Boulevard					
Centerville Road to Fleischmann Road	27,500	38,000	36,500	34,500	31,000
Fleischmann Road to Dempsey Mayo Road		35,500	33,000	32,000	28,000
Dempsey Mayo Road to Edenfield Road		43,500	31,500	36,500	24,000
Edenfield Road to Thornton Road		30,500	27,000	30,500	13,500
Thornton Road to Gardenview Way		30,500	25,500	28,000	
Gardenview Way to Shamrock Street		22,500	16,500	18,000	
Shamrock Street to McLaughlin Drive		12,000		15,000	
McLaughlin Drive to Pimlico Drive		12,000		15,000	
Pimlico Drive to Bradfordville Road		15,500		18,500	

Sum of Bright Green Segments (Decreases and Existing & Committed V/C Ratio is Greater Than 1)	8	8	9	2
Sum of Green Segments (Decreases or No Change)	46	41	46	41
Sum of Yellow Segments (Increases)	20	25	19	26
Sum of Yellow Segments (Increases and Existing & Committed V/C Ratio is Greater Than 1)	3	3	3	8