



Transportation Analysis

Horizon Pointe DRI #2563

Gwinnett County, Georgia

Report Prepared:

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Raw Traffic Counts (Peak Hour Turning Movements and 24-Hour Bi-directional Tubes)

Synchro Capacity Analysis

EXECUTIVE SUMMARY

This report presents the analysis of the anticipated traffic impacts of the *Horizon Pointe* development located in the Gwinnett County, Georgia. The approximately 57.50-acre site is located at the end of Horizon Drive, a local road approximately 1/2-mile north of Old Peachtree Road and east of I-85. Horizon Drive, a dead-end roadway that connects to Old Peachtree Road, will provide access to the proposed development. The proposed development will be an industrial warehouse facility with approximately 533,520 SF of warehousing space. It should be noted that an industrial warehouse facility with 168,564 SF of warehousing space is currently under construction and the project trips generated by the development will be included in the No-Build conditions analysis. The project is a Development of Regional Impact (DRI) and is subject to Georgia Regional Transportation Authority (GRTA) and Atlanta Regional Commission (ARC) review due to a rezoning. The DRI for this development was triggered by the filing of the rezoning application. DRI Form 1 was filed on March 7, 2016.

According to GRTA's Procedures and Principles for GRTA Development of Regional Impact Review, the proposed DRI complies with the Expedited Review Criteria in **Section 3-102, Part B – Limited Trip Generation**, which states:

...the land uses within the proposed DRI are such that the amount of trips generated by the development is likely to have minimal impact on the road network.

- 1. No more than one thousand (1,000) gross daily trips generated by the DRI based on a trip generation memorandum; or,*
- 2. **More than one thousand (1,000) but no more than three thousand (3,000) gross daily trips will be generated by the DRI, based on a trip generation memorandum and requires the submittal of an Access Analysis;** or,*
- 3. The proposed DRI is projected to generate no more than one hundred (100) gross PM peak hour weekday trips based on a trip generation memorandum.*

This development is proposed to generate a total of 1,490 gross daily trips based on 533,520 SF. Note: If the 533,520 SF is combined with the 168,564 SF under construction, the combined 702,084 SF is projected to generate 2,018 gross daily trips. Since this DRI development is expected to generate more than one thousand (1,000) but no more than three thousand (3,000) gross daily trips, it is being submitted for approval under GRTA's Expedited Review process.

The proposed development is expected to be completed by 2018 (approximately 2 years), and this analysis will consider the full build-out of the proposed site in 2018. The proposed site consists of the following land use and density:

- Warehouse Square Footage: 533,520 SF

Capacity analyses were performed throughout the study network for the Existing 2016 conditions, the Projected 2018 No-Build conditions, and the Projected 2018 Build conditions.

- Existing 2016 conditions represent traffic volumes collected in March 2016 at three (3) intersections during the AM and PM peak periods.
- Projected 2018 No-Build conditions represent the 2016 traffic volumes grown for two (2) years at 0.5 percent per year throughout the study network and the addition of the estimated project trips generated by the 168,564 SF industrial warehouse facility currently under construction.
- Projected 2018 Build conditions represent the Projected 2018 No-Build conditions plus the addition of the project trips that are anticipated to be generated by the *Horizon Pointe* development (DRI #2563)

Based on the **Existing 2016** conditions (*present conditions; i.e. excludes background traffic growth, the estimated project trips from the industrial warehouse facility currently under construction, and the estimated project trips from the Horizon Pointe DRI*), none of the three (3) study intersections operate below the acceptable level-of-service (LOS) standard of D.

Based on the **Projected 2018 No-Build** conditions (*includes background traffic growth and the estimated project trips from the industrial warehouse facility currently under construction, but excludes estimated project trips from the Horizon Pointe DRI*), none of the three (3) study intersections operate below the acceptable LOS standard of D.

Based on the **Projected 2018 Build** conditions (*includes background traffic growth, the estimated project trips from the industrial warehouse facility currently under construction, and the estimated project trips from the Horizon Pointe DRI*), none of the three (3) study intersections operate below the acceptable LOS standard of D.

Therefore, based on the above, no roadway improvements are recommended to support this proposed warehouse development.

1. PROJECT DESCRIPTION

1.1 INTRODUCTION

This report presents the analysis of the anticipated traffic impacts of the *Horizon Pointe* development located in the Gwinnett County, Georgia. The approximately 57.50-acre site is located at the end of Horizon Drive, a local road approximately 1/2-mile north of Old Peachtree Road and east of I-85. Horizon Drive, a dead-end roadway that connects to Old Peachtree Road, will provide access to the proposed development. The proposed development will be an industrial warehouse facility with approximately 533,520 SF of warehousing space. It should be noted that an industrial warehouse facility with 168,564 SF of warehousing space is currently under construction and the project trips generated by the development will be included in the No-Build conditions analysis. The project is a Development of Regional Impact (DRI) and is subject to Georgia Regional Transportation Authority (GRTA) and Atlanta Regional Commission (ARC) review due to a rezoning.

This property was include in a DRI in 2006, called New Trend Development (DRI #1010) which consisted of 165 acres and was proposed as a primarily residential development. It should be noted that the only construction that has occurred on this 165 acre DRI is a 168,564 SF warehouse building currently under construction.

According to GRTA's Procedures and Principles for GRTA Development of Regional Impact Review, the proposed DRI complies with the Expedited Review Criteria in **Section 3-102, Part B – Limited Trip Generation**, which states:

...the land uses within the proposed DRI are such that the amount of trips generated by the development is likely to have minimal impact on the road network.

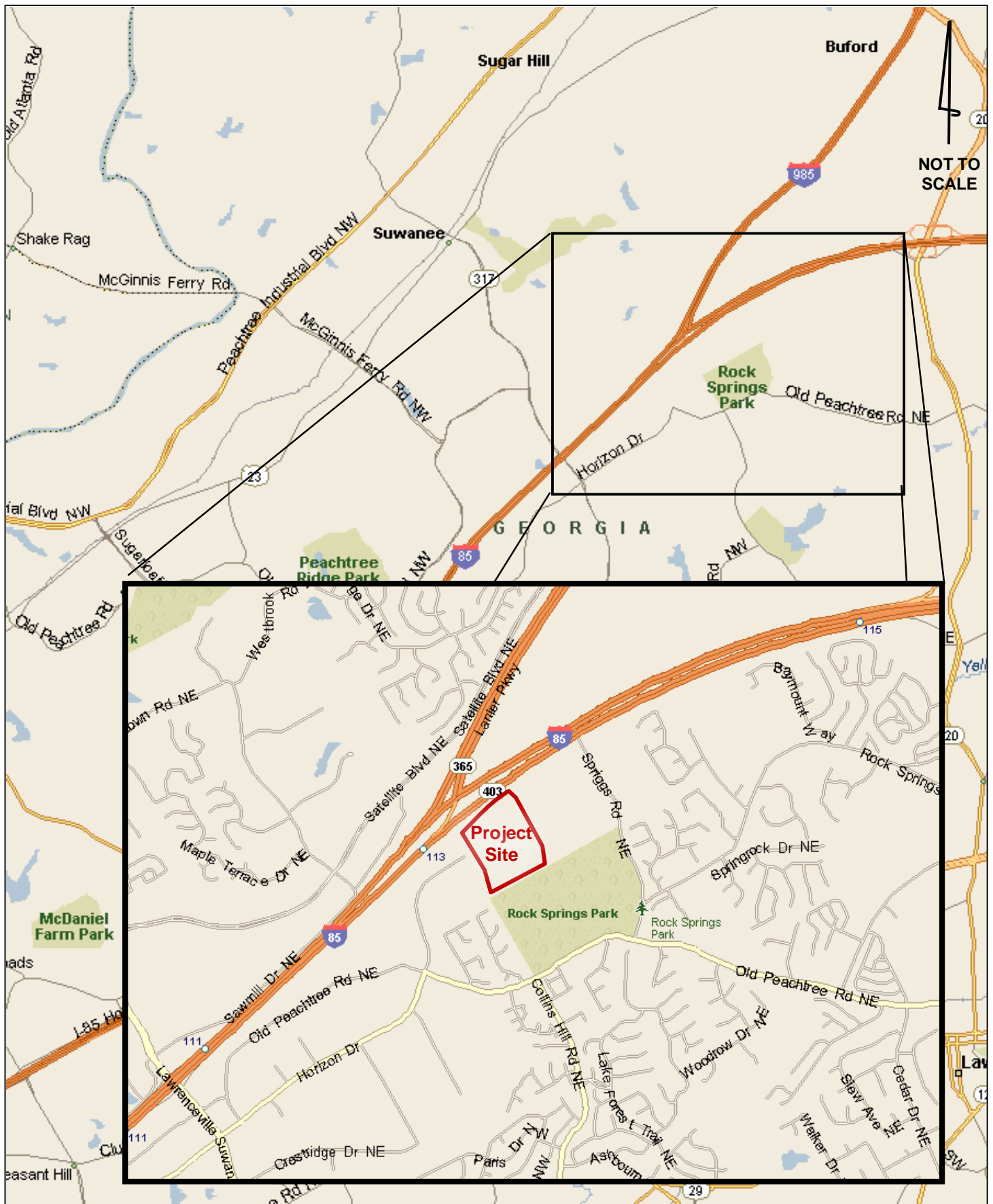
1. *No more than one thousand (1,000) gross daily trips generated by the DRI based on a trip generation memorandum; or,*
2. ***More than one thousand (1,000) but no more than three thousand (3,000) gross daily trips will be generated by the DRI, based on a trip generation memorandum and requires the submittal of an Access Analysis; or,***
3. *The proposed DRI is projected to generate no more than one hundred (100) gross PM peak hour weekday trips based on a trip generation memorandum.*

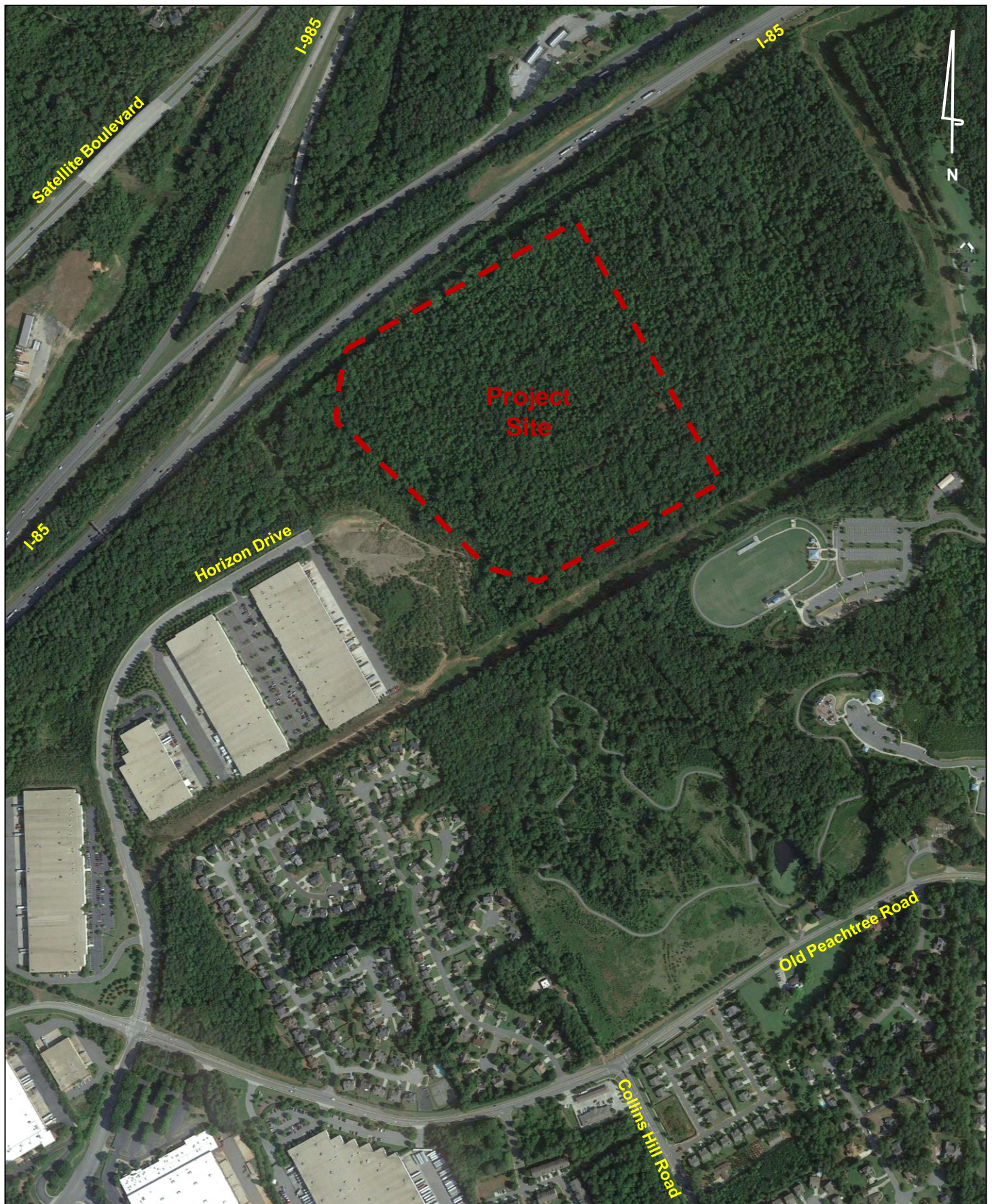
This development is proposed to generate a total of 1,490 gross daily trips based on 533,520 SF. Note: If the 533,520 SF is combined with the 168,564 SF under construction, the combined 702,084 SF is projected to generate 2,018 gross daily trips. Since this DRI development is expected to generate more than one thousand (1,000) but no more than three thousand (3,000) gross daily trips, it is being submitted for approval under GRTA's Expedited Review process.

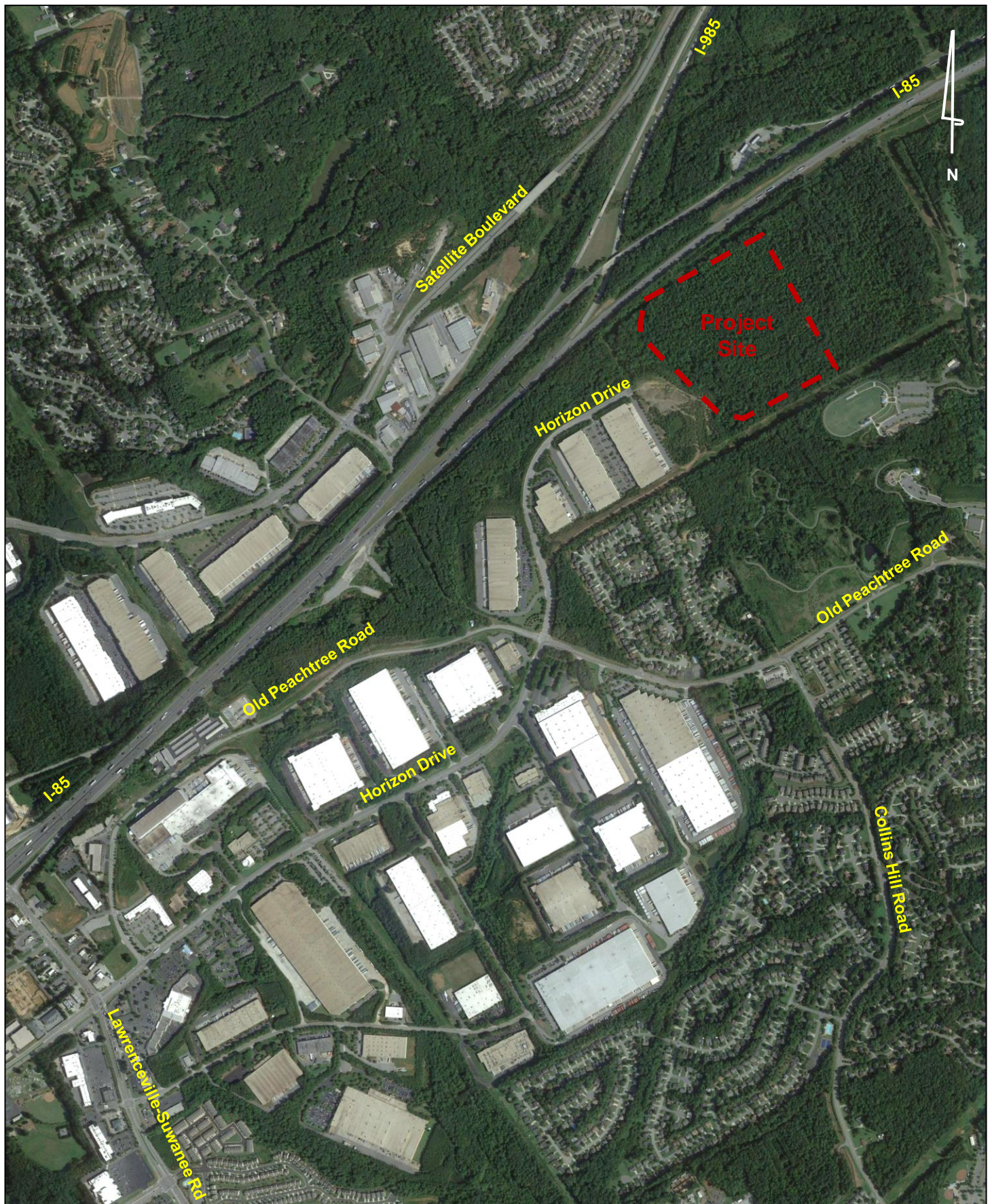
Figure 1 provides the site location of the *Horizon Pointe* DRI project. **Figure 2** and **Figure 3** provide aerial views of the project site and surrounding area.

The proposed project is expected to be completed by 2018, and this analysis will consider the full build-out of the proposed site in 2018. A summary of the proposed land-use and density can be found below in **Table 1**.

Table 1: Proposed Land Uses	
Warehouse	533,520 SF







1.2 SITE PLAN REVIEW

The proposed development is an approximately 57.50-acre site in Gwinnett County. The project site is located at the end of Horizon Drive, a local road approximately 1/2-mile north of Old Peachtree Road and east of I-85. Horizon Drive, a dead-end roadway that connects to Old Peachtree Road, will provide access to the proposed development. The proposed development will be an industrial warehouse facility with approximately 533,520 SF of warehousing space.

The property is currently an undeveloped land tract which is zoned to the Single Family Residence Zero Lot Line/Townhouse District (R-ZT) classification according to the Gwinnett County zoning map and is proposed to be zoned M-1. The Gwinnett County Future Development Map identifies the area as a Preferred Office Mixed-Use Area, and the ARC's *PLAN 2040 Unified Growth Policy Map* identifies the project site as being in an Established Suburbs place type area. Please refer to the Land Use and Zoning maps in Appendix A.

A reference of the proposed site plan can be found in Appendix B. A full-sized site plan consistent with GRTA's Site Plan Guidelines is also being submitted as part of the review package.

1.3 SITE ACCESS

As currently envisioned, the project site is located at the end of Horizon Drive, a local road approximately 1/2-mile north of Old Peachtree Road and east of I-85. Horizon Drive, a dead-end roadway that connects to Old Peachtree Road, will provide access to the proposed development. Old Peachtree Road connects to Buford Drive (SR 20), a principal arterial, on the east and Lawrenceville-Suwanee Road (SR 317), a minor arterial, on the west. Interstate 85 is accessible via Lawrenceville-Suwanee Road (SR 317) approximately 1/4-mile north of Old Peachtree Road on Lawrenceville-Suwanee Road (SR 317). Interstate 85 is also accessible via Buford Drive (SR 20) approximately 1.5 miles north of Old Peachtree Road on Buford Drive (SR 20).

The site driveway and internal roadways provide access to all parking on the site. Parking will be provided throughout the development as follows:

Parking Required by Code:	214 spaces
Parking Provided:	296 spaces

1.4 BICYCLE AND PEDESTRIAN FACILITIES

Pedestrian facilities (sidewalks) currently exist along the project site frontage. Sidewalks currently exist along both sides of Horizon Drive. Bicycle facilities do not currently exist along the project site frontage. According to the DRI site plan, no bicycle or pedestrian facilities are proposed.

1.5 TRANSIT FACILITIES

There are no direct transit routes located within the vicinity of the project site, and therefore, there were no alternative mode reductions taken.

2. TRAFFIC ANALYSES, METHODOLOGY AND ASSUMPTIONS

2.1 GROWTH RATE

Background traffic is defined as expected traffic on the roadway network in future year(s) absent the construction and opening of the proposed project. Background traffic can include a base growth rate based on historical count data as well as population growth data and estimates as well as trips anticipated from nearby or adjacent other projects. Based on methodology outlined in the GRTA Letter of Understanding (LOU), a 0.5 percent per year background traffic growth rate was used for all roadways.

2.2 TRAFFIC DATA COLLECTION

Weekday peak hour turning movement counts were collected on Tuesday, March 22, 2016 at three (3) intersections during the AM and PM peak periods. The morning and afternoon peak hours varied some between the intersections. Peak hours for all intersections are shown in **Table 2**.

Table 2: Peak Hour Summary		
Intersection	AM Peak Hour	PM Peak Hour
1. Old Peachtree Road at Horizon Drive	7:00-8:00	5:00-6:00
2. Lawrenceville-Suwanee Road at Old Peachtree Road	7:30-8:30	4:30-5:30
3. Old Peachtree Road at Collins Hill Road	7:00-8:00	5:00-6:00

All raw traffic count data is available upon request.

2.3 DETAILED INTERSECTION ANALYSIS

Level-of-service (LOS) is used to describe the operating characteristics of a road segment or intersection in relation to its capacity. LOS is defined as a qualitative measure that describes operational conditions and motorists' perceptions within a traffic stream. The *Highway Capacity Manual* defines six levels-of-service, LOS A through LOS F, with A being the best and F being the worst. Level-of-service analyses were conducted at all intersections within the study network using *Synchro Professional, Version 9.0*.

Levels-of-service for signalized intersections are reported for the intersection as a whole. One or more movements at an intersection may experience a low level-of-service, while the intersection as a whole may operate acceptably.

3. STUDY NETWORK

3.1 GROSS TRIP GENERATION

Traffic for the proposed land uses and densities were estimated using the *Institute of Transportation Engineers' (ITE) Trip Generation Manual, Ninth Edition, 2012*, using equations where available. Trip generation for this proposed development is calculated based upon the average of the following land uses: Warehouse (Land Use Code 150) and High-Cube Warehouse/Distribution Center (Land Use Code 152). An average was used based on actual traffic counts performed along Horizon Drive. Horizon Drive currently serves existing warehouse buildings of similar type. Please refer to Appendix C for details. Gross trips generated are displayed below in **Table 3**.

Table 3: Gross Trip Generation								
Land Use (Intensity)	ITE Code	Daily Traffic			AM Peak Hour		PM Peak Hour	
		Total	Enter	Exit	Enter	Exit	Enter	Exit
Warehouse (533,520 SF)	*	1,490	745	745	103	31	32	88
Total Gross Trips		1,490	745	745	103	31	32	88

*Average of Warehouse (Land Use Code 150) and High-Cube Warehouse (Land Use Code 152).

3.2 TRIP DISTRIBUTION

The directional distribution and assignment of new project trips and estimated project trips of the currently under construction industrial warehouse facility was based on the project land uses, a review of the land use densities and road facilities in the area, engineering judgment, existing traffic count data, and methodology discussions with the Georgia Regional Transportation Authority (GRTA), Atlanta Regional Commission (ARC), Georgia Department of Transportation (GDOT), and Gwinnett County. (See Section 5.0 – Trip Distribution and Assignment.)

3.3 LEVEL-OF-SERVICE STANDARDS

For the purposes of this traffic analysis, a level-of-service standard of D was assumed for all intersections and segments within the study network. If, however, an intersection or segment currently operates at LOS E or LOS F during an existing peak period, the LOS standard for that peak period becomes LOS E, consistent with the GRTA Letter of Understanding.

3.4 STUDY NETWORK DETERMINATION

A general study area was determined using engineering judgement and the GRTA 7% rule. This rule recommends that all intersections and segments be analyzed which are impacted to the extent that the traffic from the proposed site is 7% or more of the service volume of the facility (at a previously established LOS standard, typically LOS D) be considered for analysis. The study area was agreed upon during methodology discussions with GRTA, ARC, GDOT, and Gwinnett County staff, and includes the following three (3) intersections in **Table 4**.

The study network includes three (3) signalized intersections as noted in **Table 4**. The site location and study intersections can be found in **Figure 4**.

Table 4: Intersection Control Summary	
Intersection	Control
1. Old Peachtree Road at Horizon Drive	Signal
2. Lawrenceville-Suwanee Road at Old Peachtree Road	Signal
3. Old Peachtree Road at Collins Hill Road	Signal

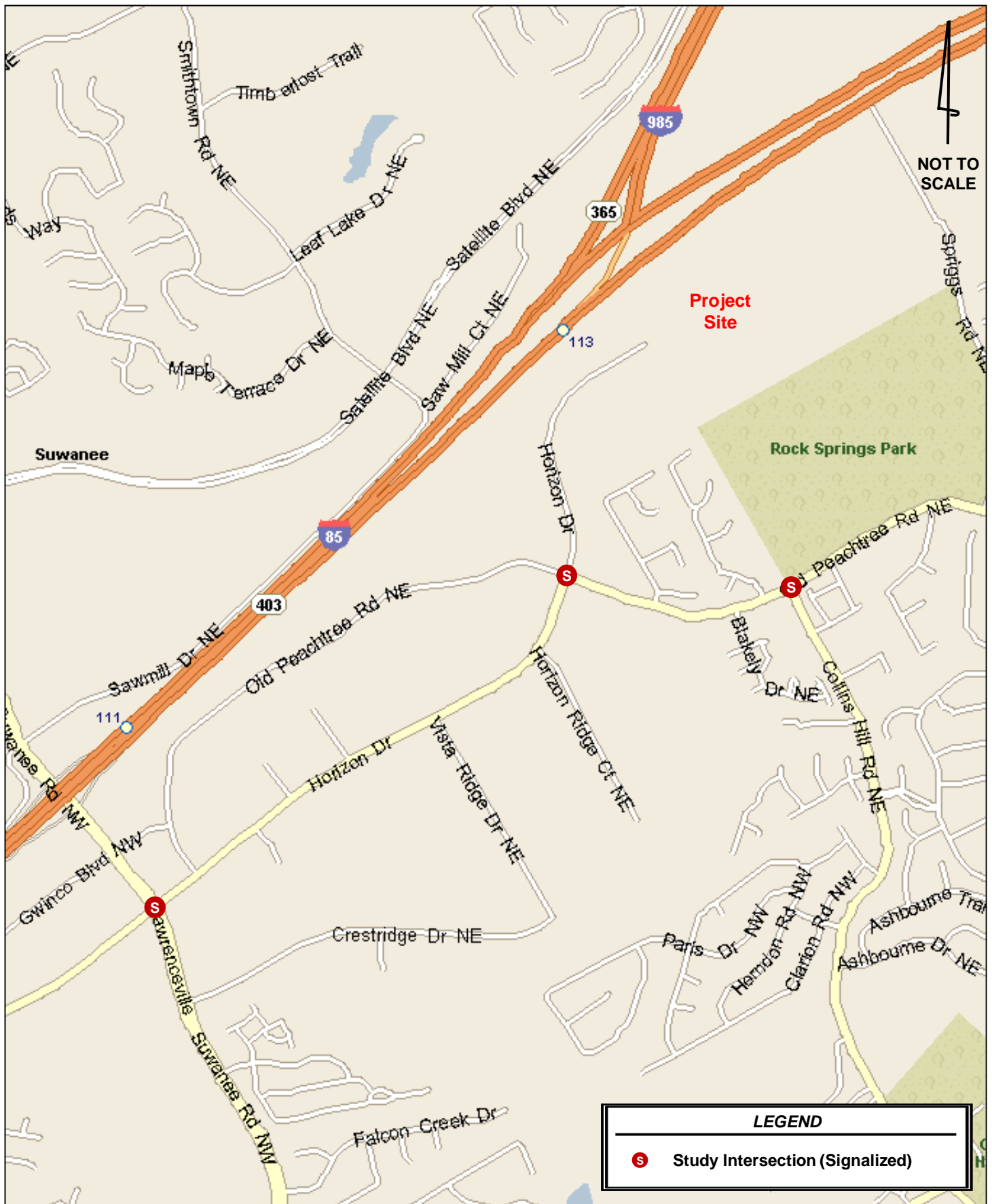
Each of the above listed intersections was analyzed for the Existing 2016 conditions, the Projected 2018 No-Build conditions, and the Projected 2018 Build conditions. The Projected 2018 No-Build conditions represent the Existing 2016 traffic volumes grown for two (2) years at 0.5 percent per year throughout the study network and the addition of the estimated project trips associated with the currently under construction 168,564 SF industrial warehouse facility. The Projected 2018 Build conditions add the project trips associated with the proposed 533,520 SF *Horizon Pointe* development to the Projected 2018 No-Build conditions.

3.5 EXISTING ROADWAY FACILITIES

Roadway classification descriptions for the entire study area are provided in **Table 5** (bolded roadways run adjacent to the site).

Table 5: Roadway Classifications				
Roadway	No. of Lanes	Posted Speed Limit (MPH)	Functional Classification	
			GDOT	Gwinnett County*
Horizon Drive (north of Old Peachtree Road)	3	35	Local Road	Local Road
Horizon Drive (south of Old Peachtree Road)	5	45	Major Collector	Local Road
Old Peachtree Road	2	45	Major Collector	Major Arterial
Lawrenceville-Suwanee Road	4	45	Minor Arterial	Major Arterial
Collins Hill Road	2	40	Major Collector	Minor Arterial

**Note: Gwinnett County Classifications are currently being updated as part of the Comprehensive Transportation Plan.*



4. TRIP GENERATION

As stated previously, gross trips associated with the proposed development were estimated using the *Institute of Transportation Engineers' (ITE) Trip Generation Manual, Ninth Edition, 2012*, using equations where available. Trip generation for this proposed development is calculated based upon the average of the following land uses: Warehouse (Land Use Code 150) and High-Cube Warehouse/Distribution Center (Land Use Code 152). An average was used based on actual traffic counts performed along Horizon Drive. Horizon Drive currently serves existing warehouse buildings of similar type. Please refer to Appendix C for details.

Internal capture reductions, alternative transportation mode (walking, bicycle, and transit), and pass-by trip reductions were not applied for this study.

The total trips generated and analyzed in this report associated with the *Horizon Pointe* development are listed in **Table 6**.

Table 6: Trip Generation							
	Daily Traffic			AM Peak Hour		PM Peak Hour	
	Total	Enter	Exit	Enter	Exit	Enter	Exit
Heavy Vehicle (Truck) Trips	374	187	187	26	8	8	22
Employee (Car) Trips	1,116	558	558	77	23	24	66
Total Trips	1,490	745	745	103	31	32	88

Note: Under No-Build conditions, the trips associated with the 168,564 SF warehouse was added to the roadway network. This currently under construction industrial warehouse facility is expected to generate: 528 daily trips, 65 trips during the AM peak, and 51 trips during the PM peak.

A more detailed trip generation analysis summary table is provided in Appendix C.

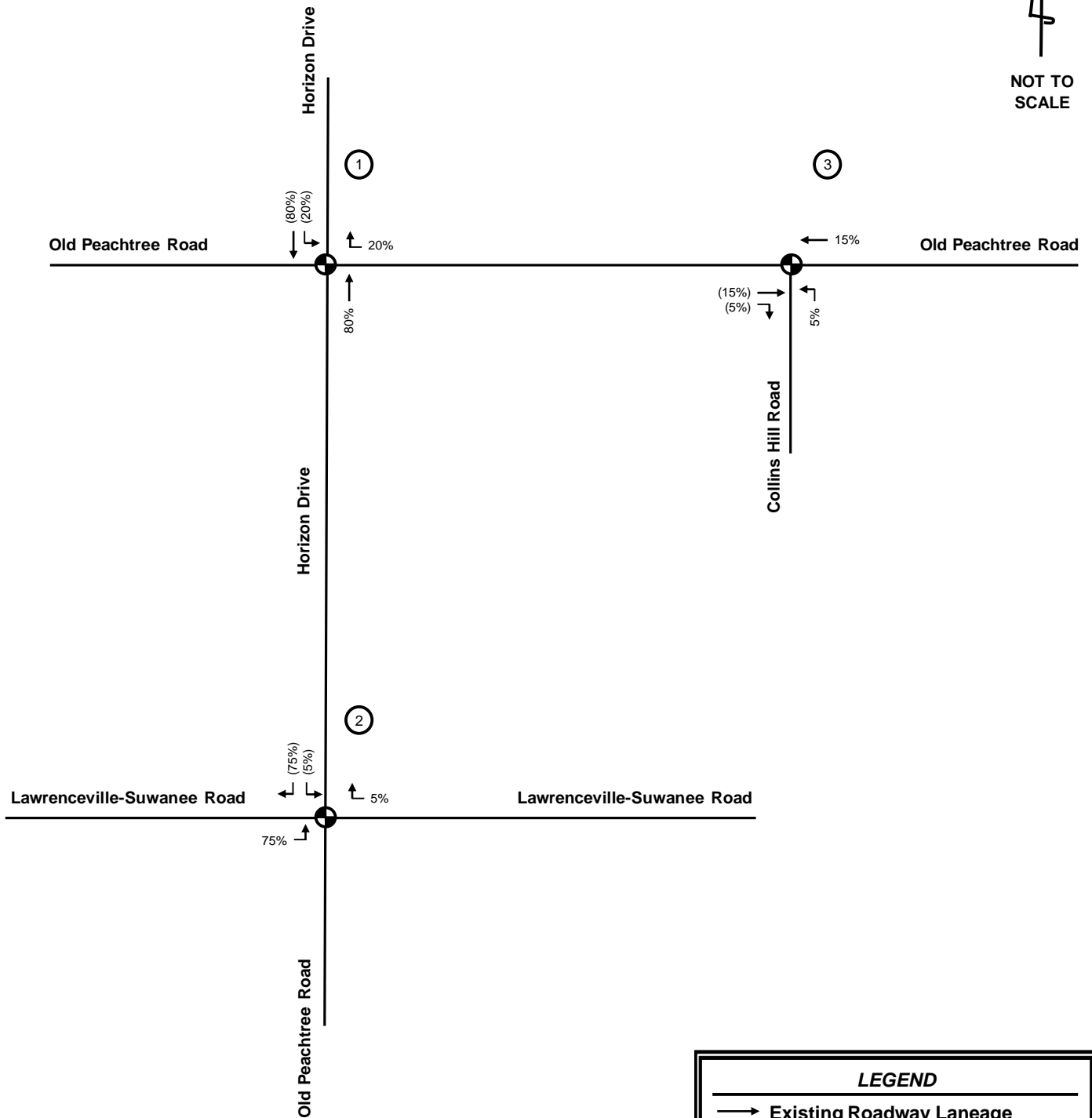
5. TRIP DISTRIBUTION AND ASSIGNMENT

New trips were distributed onto the roadway network using the percentages agreed to during methodology discussions with GRTA, ARC, GDOT, and Gwinnett County staff. **Figure 5** and **Figure 6** display the projected trip distribution and assignments for heavy vehicles (trucks) and employee trips (cars), respectively.

These percentages were applied to the net new trips expected to be generated by the development, and the volumes were assigned to the roadway network. The expected combined peak hour project trips by turning movement throughout the study network, generated by the proposed *Horizon Pointe* development, are shown in **Figure 7**.

Detailed intersection volume worksheets can also be found in Appendix D.

Proposed Site



LEGEND

→ Existing Roadway Laneage

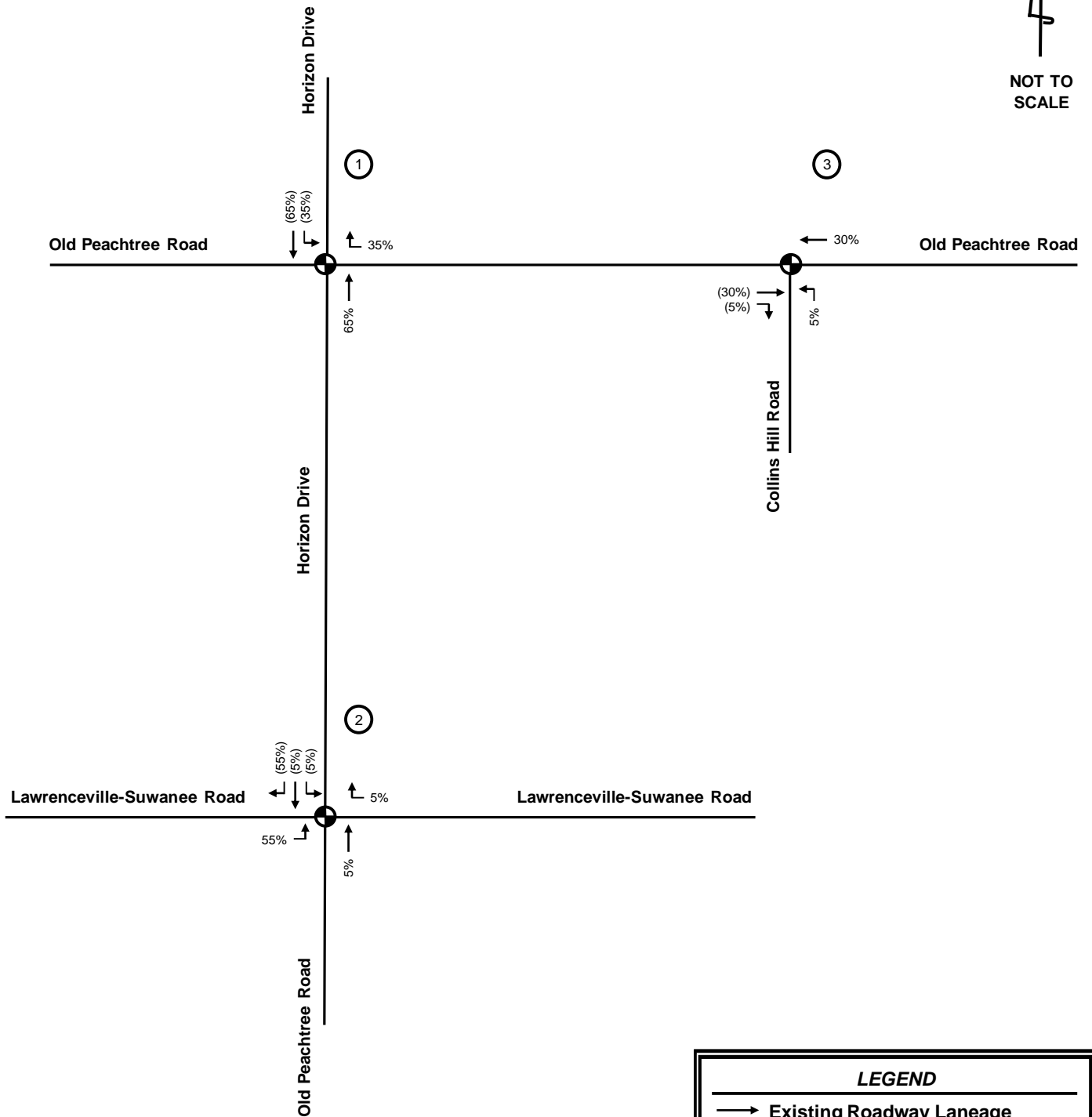
⬤ Existing Traffic Signal

XX% Heavy Vehicle IN Assignments

(XX%) Heavy Vehicle OUT Assignments

⊗ Intersection Reference Number

Proposed Site



LEGEND

→ Existing Roadway Laneage

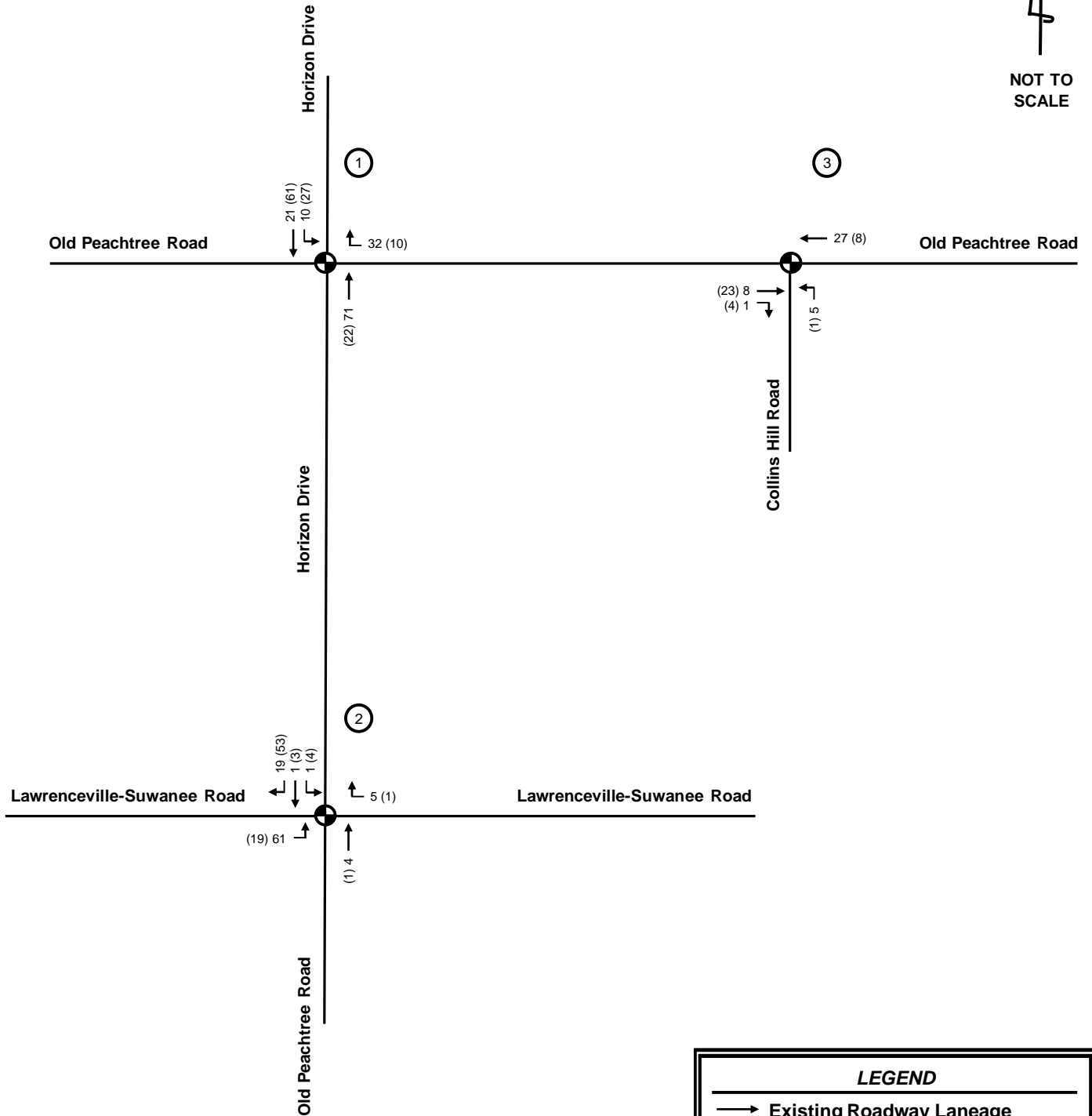
⬤ Existing Traffic Signal

XX% Employee / Car IN Assignments

(XX%) Employee / Car OUT Assignments

⊗ Intersection Reference Number

Proposed Site



LEGEND

→ Existing Roadway Laneage

●

Existing Traffic Signal

XX AM Peak Hour Project Trips

(XX) PM Peak Hour Project Trips

⊗ Intersection Reference Number

6. TRAFFIC ANALYSIS

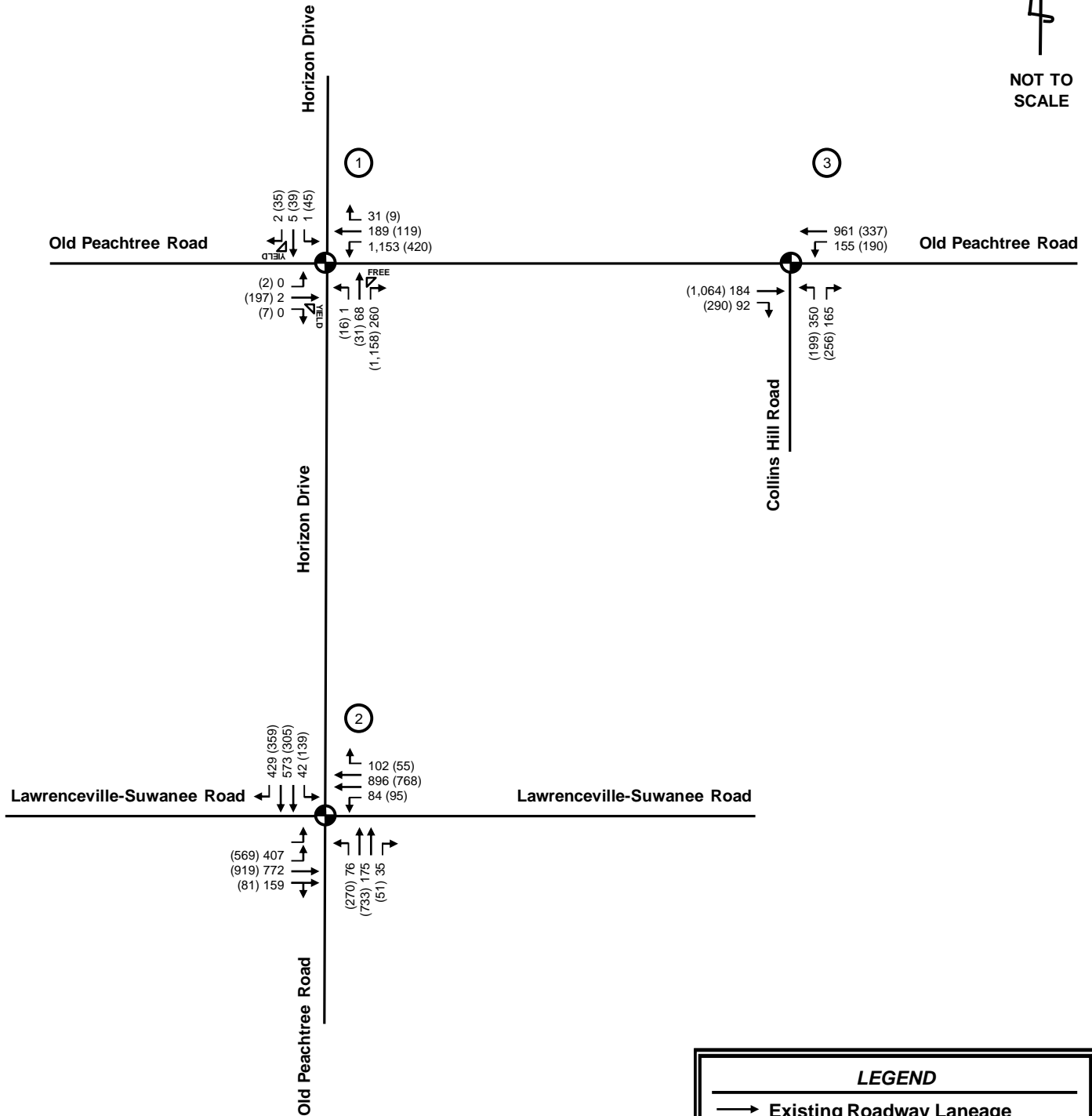
6.1 EXISTING 2016 CONDITIONS

The observed existing peak hour traffic volumes were entered into *Synchro 9.0*, and capacity analyses were performed for the AM and PM peak hours. The existing peak hour traffic volumes are displayed in **Figure 8**. The results of the capacity analyses for the Existing 2016 conditions are shown in **Table 7**.

Table 7: Existing 2016 Intersection Levels-of-Service <i>LOS (delay in seconds)</i>				
Intersection	Control	LOS Standard	AM Peak Hour	PM Peak Hour
1. Old Peachtree Road at Horizon Drive	Signal	D	B (13.0)	A (7.8)
2. Lawrenceville-Suwanee Road at Old Peachtree Road	Signal	D	D (40.4)	D (46.5)
3. Old Peachtree Road at Collins Hill Road	Signal	D	C (29.5)	D (39.4)

As shown in **Table 7**, all study intersections currently operate at or above their acceptable level-of-service standard during the AM and PM peak hours for the Existing 2016 conditions. Therefore, there are no recommended improvements for the Existing 2016 conditions scenario.

Proposed Site



LEGEND

Existing Roadway Laneage

Existing Traffic Signal

XX AM Peak Hour Traffic Volumes

(XX) PM Peak Hour Traffic Volumes

Intersection Reference Number

6.2 PROJECTED 2018 NO-BUILD CONDITIONS

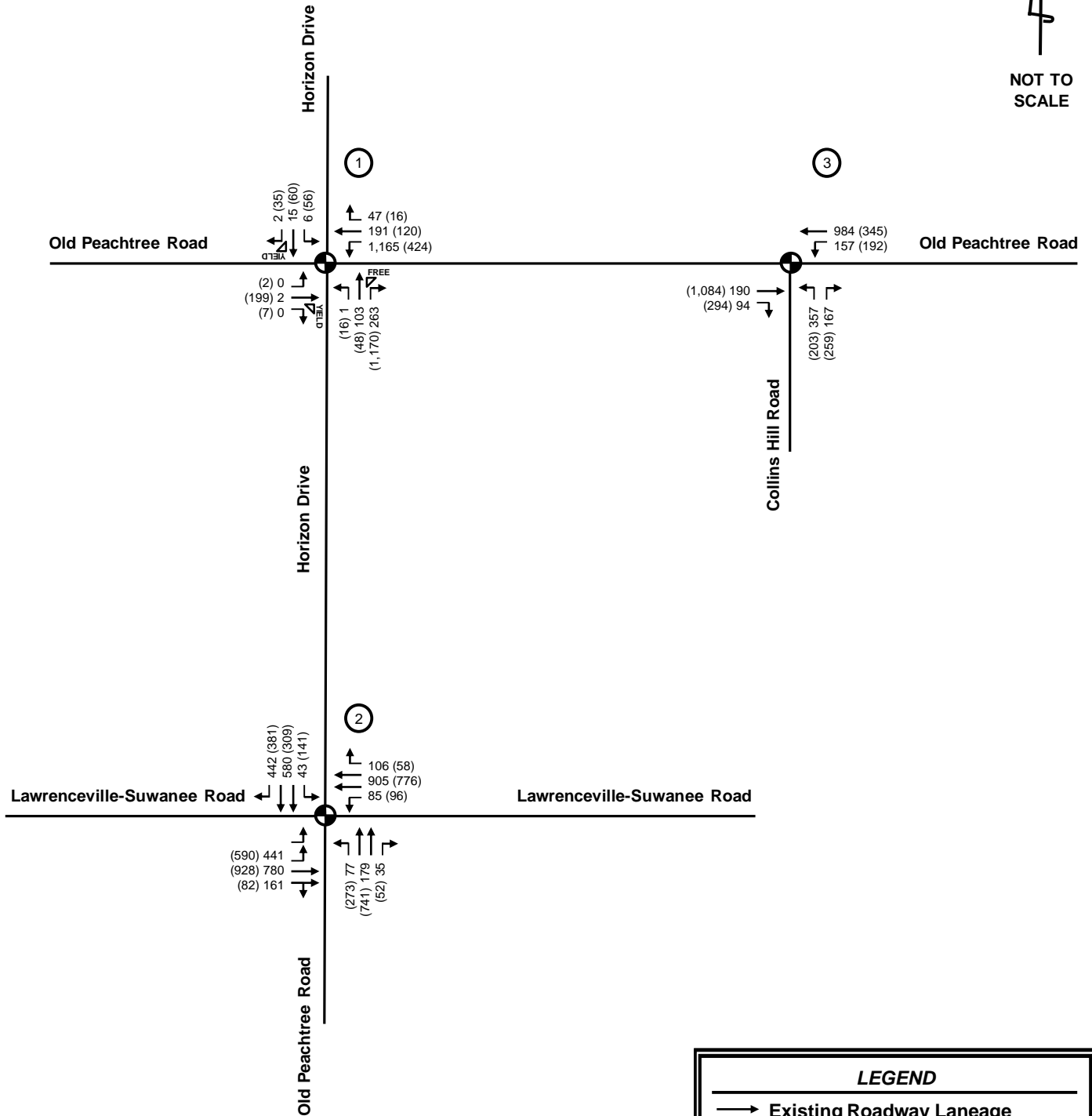
To account for growth in the vicinity of the proposed development, the existing traffic volumes were increased for two (2) years at 0.5 percent per year throughout the study network. Additionally, the estimated project trips from the currently under construction 168,564 SF industrial warehouse facility was included. These volumes were entered into *Synchro 9.0*, and capacity analyses were performed. The Projected 2018 No-Build conditions were analyzed using existing roadway geometry and existing intersection control types.

The intersection laneage and traffic volumes for the Projected 2018 No-Build conditions are shown in **Figure 9**. The results of the capacity analyses for the Projected 2018 No-Build conditions with existing geometry are shown in **Table 8**.

Table 8: Projected 2018 No-Build Intersection Levels-of-Service <i>LOS (delay in seconds)</i>				
Intersection	Control	LOS Standard	AM Peak Hour	PM Peak Hour
1. Old Peachtree Road at Horizon Drive	Signal	D	B (18.4)	A (9.1)
2. Lawrenceville-Suwanee Road at Old Peachtree Road	Signal	D	D (41.3)	D (47.9)
3. Old Peachtree Road at Collins Hill Road	Signal	D	C (30.6)	D (41.5)

As shown in **Table 8**, all study intersections currently operate at or above their acceptable level-of-service standard during the AM and PM peak hours for the Projected 2018 No-Build conditions. Therefore, there are no recommended improvements for the Projected 2018 No-Build conditions scenario.

Proposed Site



LEGEND

→ Existing Roadway Laneage

⬤ Existing Traffic Signal

XX AM Peak Hour Traffic Volumes

(XX) PM Peak Hour Traffic Volumes

⊗ Intersection Reference Number

6.3 PROJECTED 2018 BUILD CONDITIONS

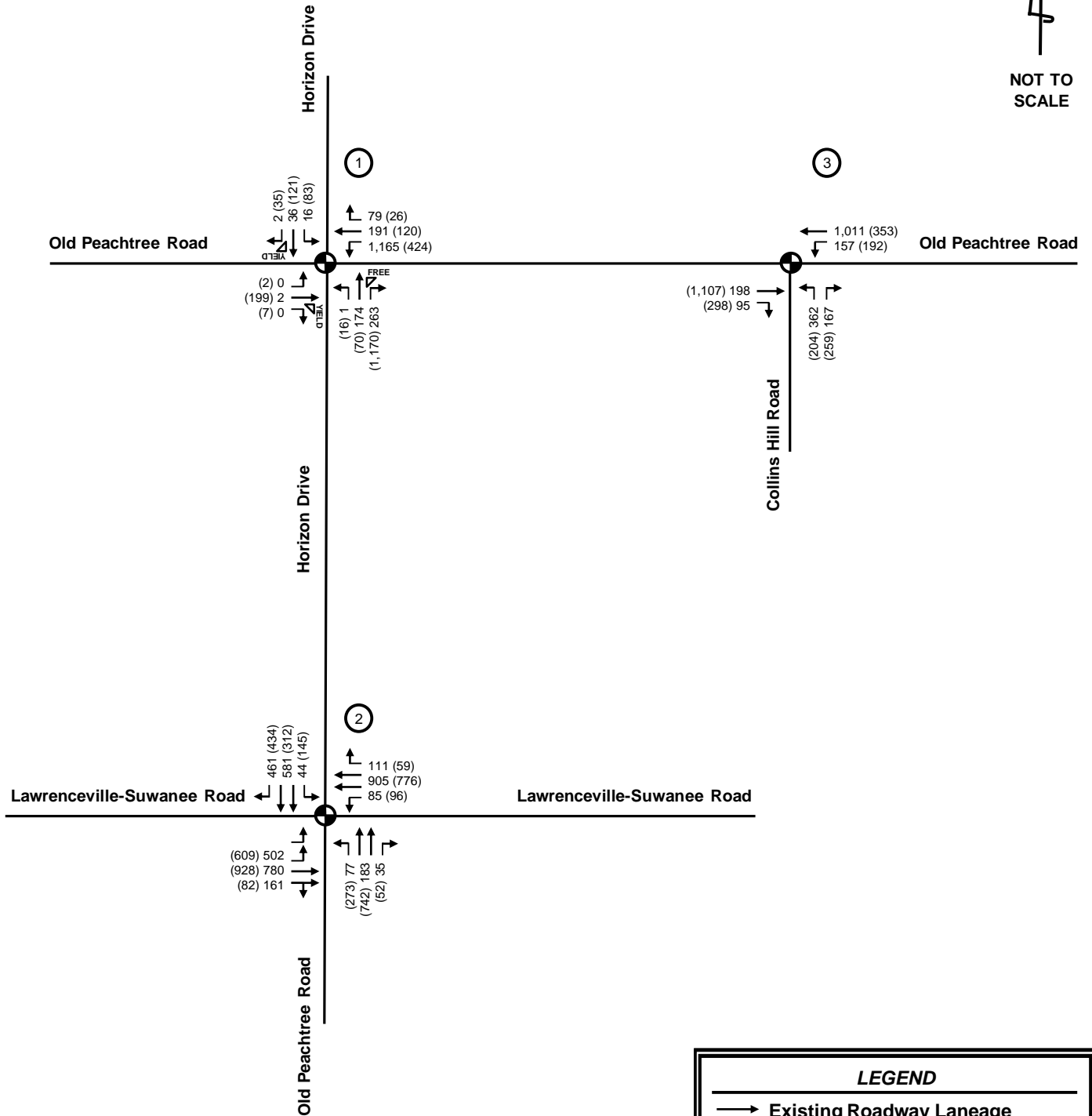
The traffic associated with the proposed *Horizon Pointe* development was added to the Projected 2018 No-Build volumes. These volumes were then entered into *Synchro 9.0*, and capacity analyses were performed. The Projected 2018 Build conditions were analyzed using existing roadway geometry and existing intersection control types.

The Projected 2018 Build conditions LOS with existing geometry are displayed in **Table 9**. The intersection laneage and traffic volumes for the Projected 2018 Build conditions are shown in **Figure 10**.

Table 9: Projected 2018 Build Intersection Levels-of-Service <i>LOS (delay in seconds)</i>				
Intersection	Control	LOS Standard	AM Peak Hour	PM Peak Hour
1. Old Peachtree Road at Horizon Drive	Signal	D	C (27.7)	B (12.2)
2. Lawrenceville-Suwanee Road at Old Peachtree Road	Signal	D	D (41.8)	D (51.7)
3. Old Peachtree Road at Collins Hill Road	Signal	D	C (32.1)	D (43.3)

As shown in **Table 9**, all study intersections currently operate at or above their acceptable level-of-service standard during the AM and PM peak hours for the Projected 2018 Build conditions. Therefore, there are no recommended improvements for the Projected 2018 Build conditions scenario.

Proposed Site



LEGEND

→ Existing Roadway Laneage

⬤

Existing Traffic Signal

XX AM Peak Hour Traffic Volumes

(XX) PM Peak Hour Traffic Volumes

⊗ Intersection Reference Number

7. IDENTIFICATION OF PROGRAMMED PROJECTS

According to ARC's Transportation Improvement Program (TIP), GDOT Statewide TIP (STIP), *Plan 2040* Regional Transportation Program (RTP), GDOT's Construction Work Program, and Gwinnett County's Comprehensive Transportation Plan (CTP) the following projects are programmed or planned to be completed by the respective years: within the vicinity of the proposed development. The identified projects are listed in **Table 10** below.

Table 10: Programmed Improvements			
#	Year	Project Number	Project Description
1	2020	AR-ML-410	I-85 managed lanes from Old Peachtree Road to Hamilton Mill Road.
2	2020	GW-407	SR 20 (Buford Drive) widening from Reynolds Road to SR 124. This project will add one additional northbound lane along SR 20.
3	2030	GW-020D	SR 20 (Buford Drive) widening from four lanes to eight lanes from I-85 North to Rock Springs Road.
4	2030	GW-364	SR 20 (Buford Drive) widening from four lanes to six lanes from SR 124 (Braselton Highway) to Hurricane Shoals Road.
5	2040	GW-308B	Sugarloaf Parkway extension from SR 316 east of Lawrenceville to I-85.
6	2040	GW-308C	Sugarloaf Parkway extension from I-85 to Peachtree Industrial Boulevard.
7	TBD	ASP-AR-952	I-85 North Collector Distributor Lanes from Old Peachtree Road to I-985 (4 lane system).
8	TBD	ASP-AR-ML-014	Managed Lane Modifications at I-85 North at I-985.
9	TBD	ASP-AR-ML-420	I-85 North Managed Lanes from I-285 to I-985. This project would include increasing the managed lanes from two lanes to four lanes.
10	TBD	ASP-GW-363	SR 20 (Buford Drive) widening from four lanes to six lanes from Rock Springs Road to Old Peachtree Road.
11	TBD	ASP-GW-373	I-85 North Collector Distributor Lanes from I-985 to SR 20 (4 lane system).
12	TBD	ASP-GW-377	Satellite Boulevard widening from Pleasant Hill Road to SR 20 (Nelson Brogdon Boulevard/Buford Drive).

The improvements associated with these projects in **Table 10** were not specifically considered for this DRI Transportation Analysis because they are not immediately within the study network or expected to be completed by 2018.

8. INGRESS/EGRESS ANALYSIS

Vehicular access to the *Horizon Pointe* development during the AM and PM peak periods includes the following signalized intersection:

- Old Peachtree Road at Horizon Drive

Capacity analyses were conducted for the site access intersection identified above for the Existing 2016 conditions, Projected 2018 No-Build conditions, and Projected 2018 Build conditions. The intersection laneage (geometry) and traffic volumes for the study intersection is shown in **Figure 8**, **Figure 9**, and **Figure 10**, respectively for each scenario. The levels-of-service determined using existing geometry for the site access intersection can be found in **Table 7**, **Table 8** and **Table 9** for the Existing 2016 conditions, Projected 2018 No-Build conditions, and Projected 2018 Build conditions, respectively.

Based on the Existing 2016 conditions, Projected 2018 No-Build conditions, and the Projected 2018 Build conditions, the studied site access intersection is expected to operate at an acceptable level-of-service for all conditions.

9. INTERNAL CIRCULATION ANALYSIS

Internal roadways throughout the site provide vehicular access to all warehousing buildings and parking on the site. A detailed copy of the proposed site plan can be found in Appendix B and a full-sized site plan is attached to the report.

The *Horizon Pointe* development is not mixed-use in nature and will have no mixed-use reductions taken.

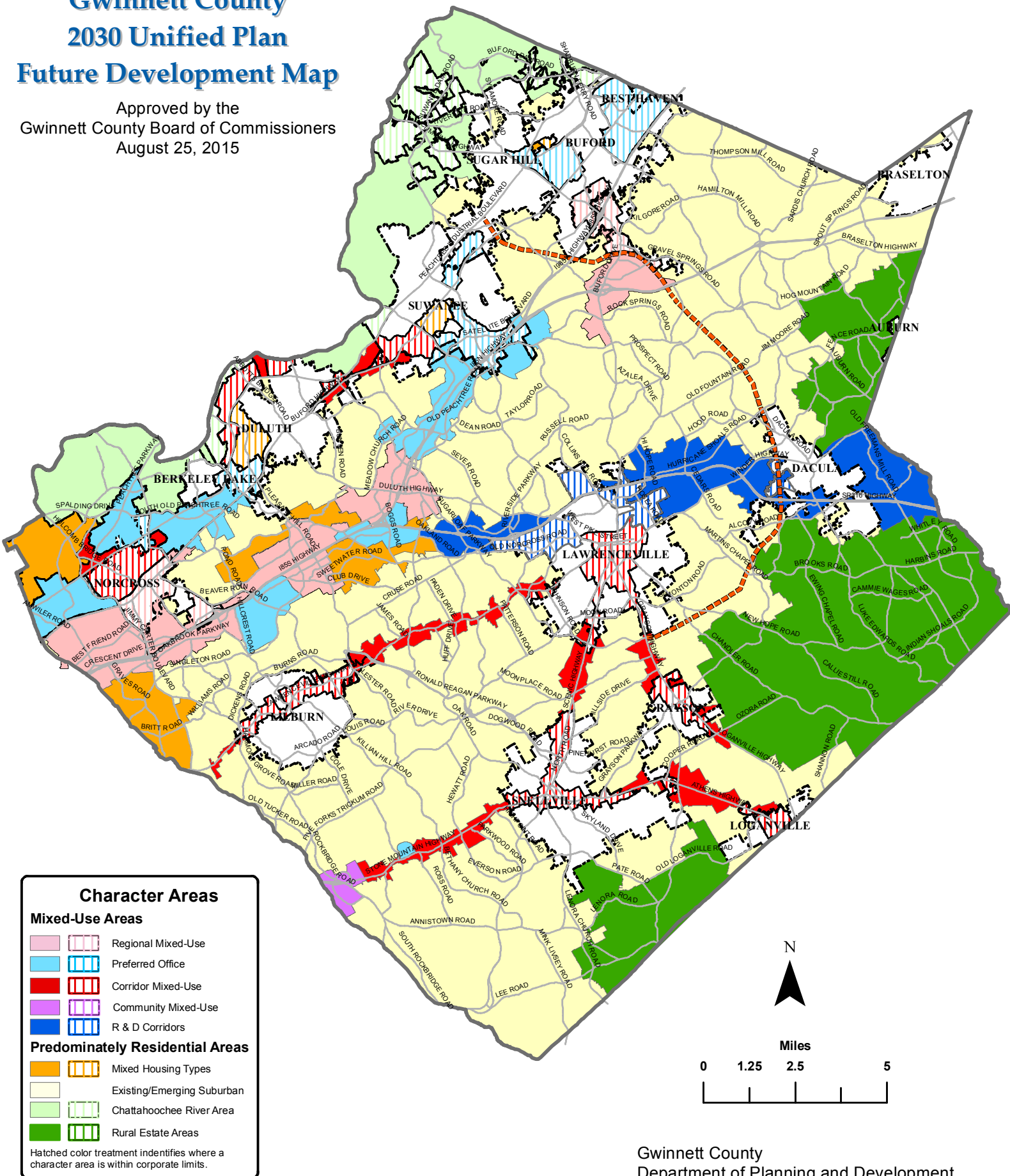
10. COMPLIANCE WITH COMPREHENSIVE PLAN ANALYSIS

The current Gwinnett County zoning is Single Family Residence Zero Lot Line/Townhouse District (R-ZT), which will require rezoning. The Gwinnett County Future Development Map identifies the area as a Preferred Office Mixed-Use Area, and the ARC's *PLAN 2040 Unified Growth Policy Map* identifies the project site as being in an Established Suburbs place type area. Please refer to the Land Use and Zoning maps in Appendix A.

Land Use and Zoning Maps

Gwinnett County 2030 Unified Plan Future Development Map

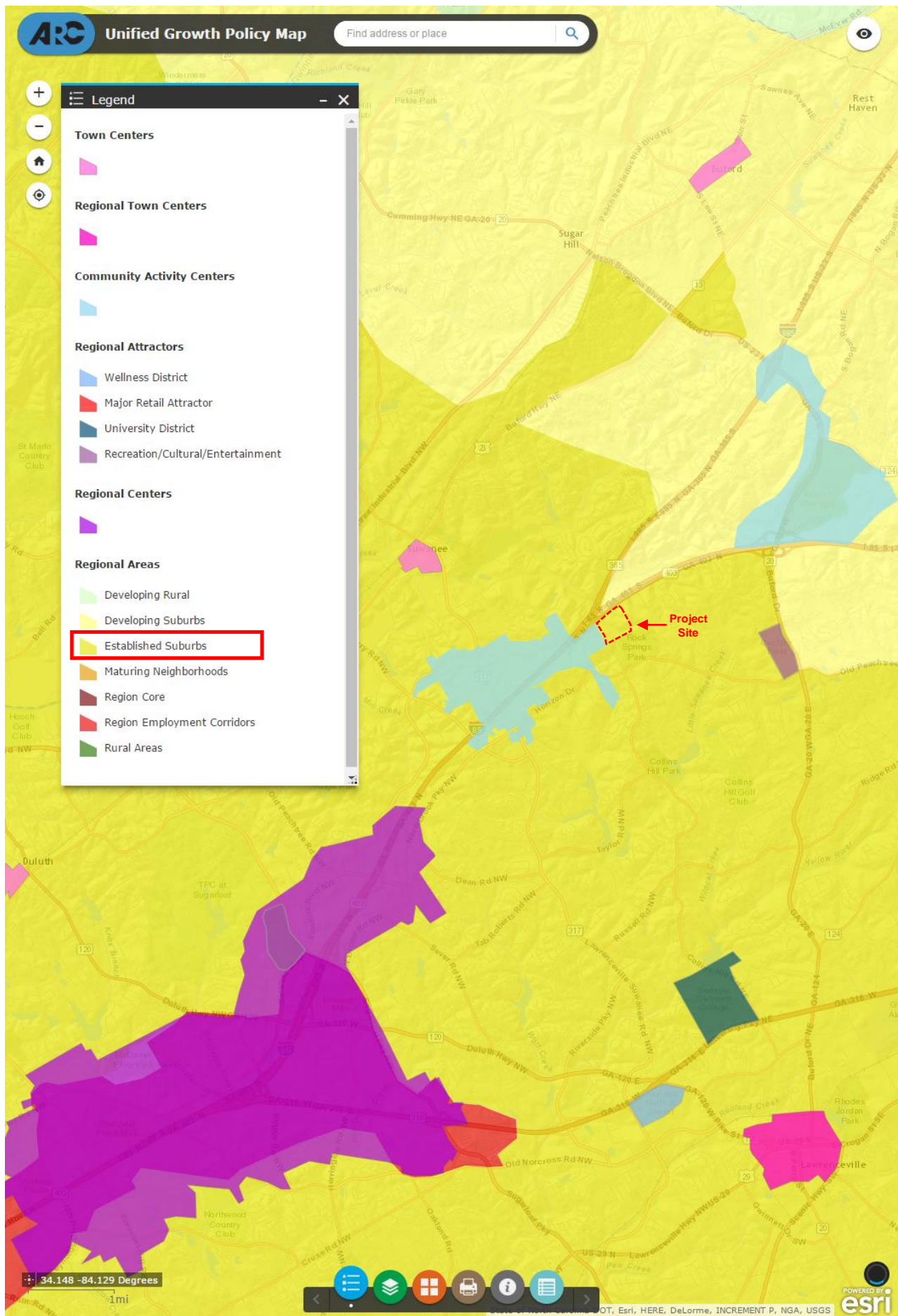
Approved by the
Gwinnett County Board of Commissioners
August 25, 2015



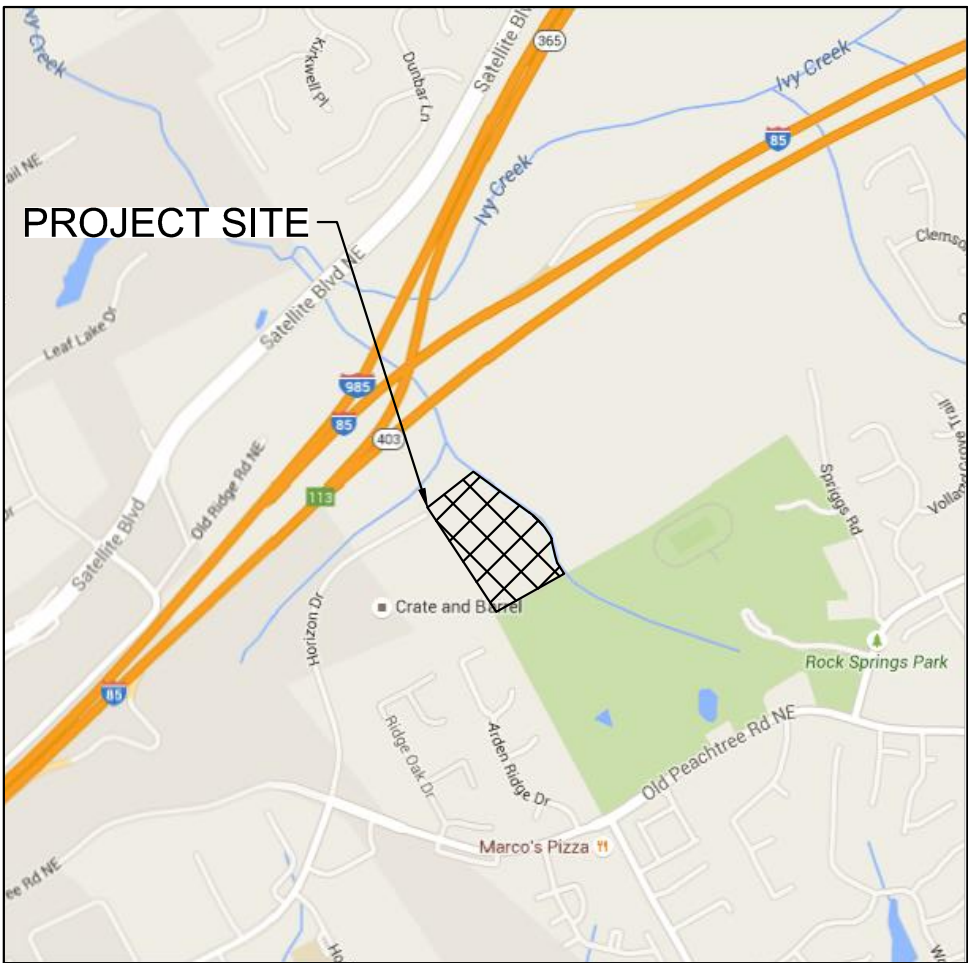
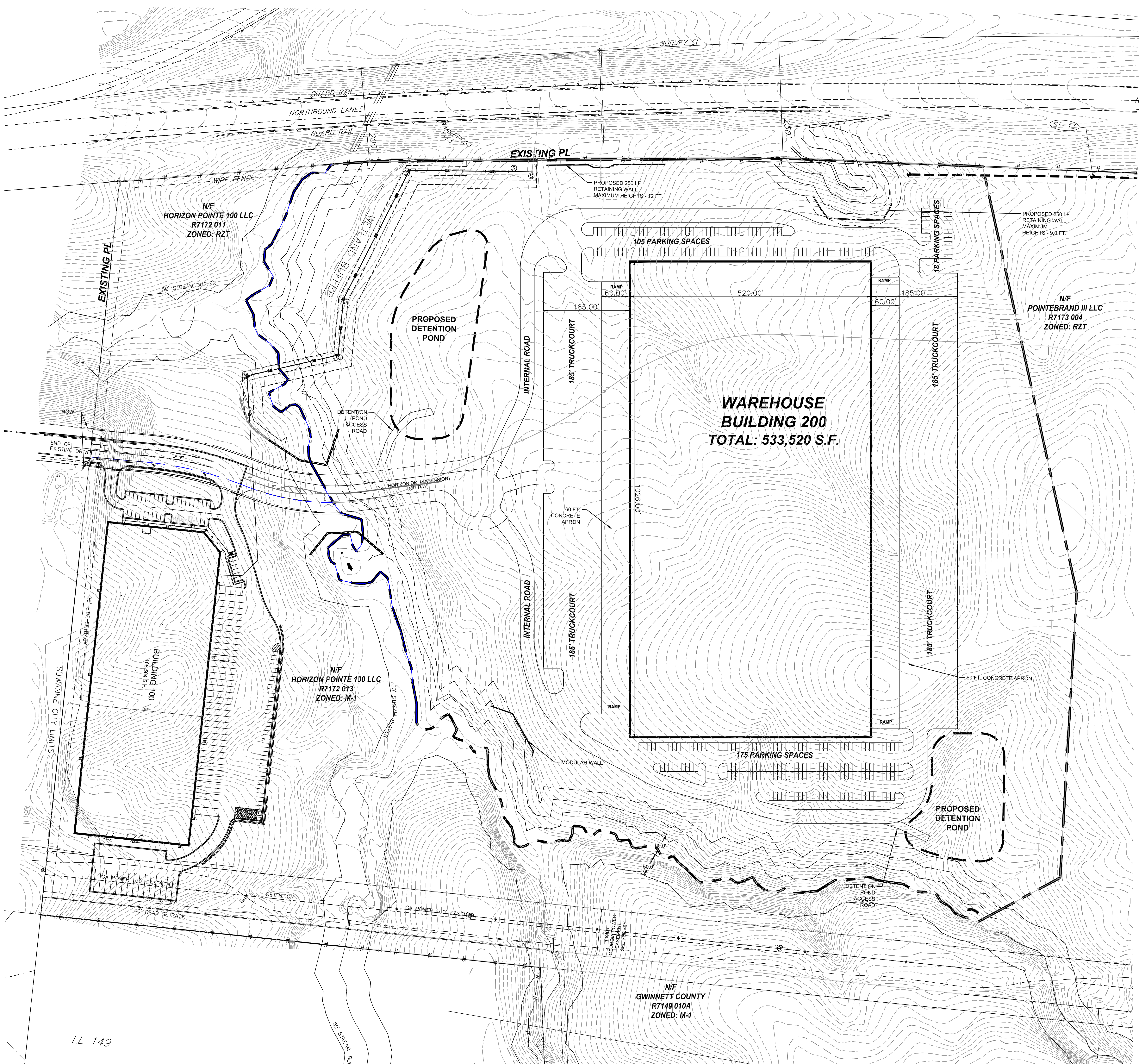
This map shows those areas that will be most subject to major policy interventions to achieve Unified Plan goals.

Gwinnett County
Department of Planning and Development
Long Range Planning Section
Planning Data Services Section
Date Printed: September 28, 2015

ARC Unified Growth Policy Map



Site Plan



VICINITY MAP
N.T.S.

DRI 2563

SITE DATA:

SITE ADDRESS:
HORIZON DR., UNINCORPORATED GWINNETT COUNTY,
GA 30024
(BUILDING ADDRESS TO BE DETERMINED)

ZONING:
CURRENT ZONING: RZT (SINGLE FAMILY ZERO LOT
LINE/TOWNHOME DISTRICT)
PROPOSED ZONING: M-1 (LIGHT INDUSTRIAL DISTRICT)

LAND AREA:
57.50 AC.

DEVELOPMENT STATISTICS
SUMMARY:

TOTAL AREA OF SITE: 57.50AC
BUILDING FOOTPRINTS: 533,520 SF
PARKING SPACES PROVIDED: 298 SPACES

PROPOSED DENSITY SUMMARY:

WAREHOUSE: 533,520 SF

PROPOSED PARKING SUMMARY:

REQUIRED PARKING: 214 SPACES TOTAL
PARKING PROPOSED: 298 SPACES

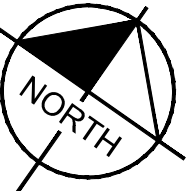
APPLICANT NAME:

OWNER/
DEVELOPER: TAYLOR & MATHIS PROPERTIES V, LLC
245 TOWNPARK DRIVE, SUITE 575
KENNESAW, GA 30144
CONTACT: MIKE IRBY
PHONE: (770) 795-1330

TRAFFIC ENGINEER: KIMLEY-HORN
CONTACT: JOHN WALKER
PHONE: 404-201-6157

CIVIL ENGINEER: KIMLEY-HORN
CONTACT: GREG MAXEY
PHONE: 470-299-7045

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GRAPHIC SCALE IN FEET
0 40 80 160

PROJECT: HORIZON POINTE HORIZON DRIVE		CLIENT: TAYLOR & MATHIS PROPERTIES V, LLC	
7th DISTRICT: LAND LOT 172, PARCEL NO. 7172 009		245 TownPark Drive, Suite 575 Kennesaw, GA 30144	
TITLE: DRI SITE PLAN		DATE: 04/15/16	
PROJECT NO. 0199000000		SHEET NUMBER	
DRI-1		BY: DATE:	
REVISIONS		No.	
Kimley»Horn		© 2016 KIMLEY-HORN AND ASSOCIATES, INC. 2 SUN COURT, SUITE 450 PEACHTREE CORNERS, GEORGIA 30092 PHONE (678) 533-3803 WWW.KIMLEY-HORN.COM	
GSWCC LEVEL # 0000000130		SCALE: AS NOTED DRAWN BY: JDT DESIGNED BY: JDT CHECKED BY: GMM	

Trip Generation Analysis

Trip Generation Analysis (9th Ed.)
Horizon Pointe DRI #2563
Gwinnett County, GA

Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out
Proposed Site Traffic								
* Warehouse (Proposed Build)	533,520 gross s.f.	1,490	134	103	31	120	32	88
* Warehouse (No-Build 2018: Currently Under Construction)	168,564 gross s.f.	528	65	50	15	51	14	37
*Average of Warehouse (Land Use Code 150) and High-Cube Warehouse (Land Use Code 152)								
Gross Trips Truck Trips (25% Warehousing Trips) Mixed-Use Reductions Alternative Mode Reductions Adjusted Truck Trips Car Trips (75% Warehousing Trips) Mixed-Use Reductions Alternative Mode Reductions Adjusted Car Trips Mixed-Use Reductions - TOTAL Alternative Mode Reductions - TOTAL Pass-By Reductions - TOTAL New Trips Driveway Volumes		1,490	134	103	31	120	32	88
		373	34	26	8	30	8	22
		0				0	0	0
		0	0	0	0	0	0	0
		373	34	26	8	30	8	22
		1,118	100	77	23	90	24	66
		0				0	0	0
		0	0	0	0	0	0	0
		1,118	100	77	23	90	24	66
		0	0	0	0	0	0	0
		0	0	0	0	0	0	0
		0	0	0	0	0	0	0
		1,490	134	103	31	120	32	88
		1,490	134	103	31	120	32	88

k:\atl_lpto\019949006 horizon pointe warehouse dri, gwinnett, jan 2016_dri phase ii\analysis\[20160401_horizon pointe warehouse dri analysis.xls]trip generation

Trip Generation Analysis (9th Ed.) Horizon Pointe DRI #2563 Gwinnett County, GA									
Land Use	Intensity	Daily Trips	AM Peak Hour			PM Peak Hour			
			Total	In	Out	Total	In	Out	
<u>Proposed Site Traffic</u>									
150 Warehousing	756,375 s.f.	2,809	251	198	53	218	55	163	
152 High-Cube Warehouse/Distribution Center	756,375 gross s.f.	1,271	80	55	25	95	29	66	
Current Warehouse Estimate (based on counts)	756,375 gross s.f.	1,513	156	146	10	171	34	137	
* Average of Warehouse and High-Cube	756,375 gross s.f.	2,040	166	127	39	157	42	115	

k:\atl_tpto\019949006 horizon pointe warehouse dri, gwinnett, jan 2016_dri phase ii\analysis\[sample.xls]trip generation

Intersection Volume Worksheets

INTERSECTION VOLUME DEVELOPMENT

Intersection 1: Old Peachtree Road at Horizon Drive AM PEAK HOUR

Description	Horizon Dr <u>Northbound</u>			Horizon Dr <u>Southbound</u>			Old Peachtree Rd <u>Eastbound</u>			Old Peachtree Rd <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed 2016 Traffic Volumes	1	68	260	1	5	2	0	2	0	1,153	189	31
Pedestrians												
Conflicting Pedestrians	0		0	0		0	0		0	0		0
Heavy Vehicles	0	0	3	0	0	0	0	0	0	2	0	0
Heavy Vehicle %	2%	2%	2%	2%	2%	2%	0%	2%	0%	2%	2%	2%
Peak Hour Factor	0.91			0.50			0.50			0.95		
Adjustment												
Adjusted 2016 Volumes	1	68	260	1	5	2	0	2	0	1153	189	31
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Currently Under Construction Warehouse (Truck Trips)	0	10	0	1	3	0	0	0	0	0	0	3
Currently Under Construction Warehouse (Car Trips)	0	24	0	4	7	0	0	0	0	0	0	13
2018 Background Traffic	1	103	263	6	15	2	0	2	0	1,165	191	47
Project Trips (Future Development Only)												
Trip Distribution IN		80%										20%
Trip Distribution OUT				20%	80%							
Truck Trips	0	21	0	2	6	0	0	0	0	0	0	5
Trip Distribution IN		65%										35%
Trip Distribution OUT				35%	65%							
Car Trips	0	50	0	8	15	0	0	0	0	0	0	27
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	71	0	10	21	0	0	0	0	0	0	32
2018 Buildout Total	1	174	263	16	36	2	0	2	0	1,165	191	79
2018 Heavy Vehicle %	2%	13%	2%	13%	18%	2%	0%	2%	0%	2%	2%	8%

PM PEAK HOUR

Description	Horizon Dr <u>Northbound</u>			Horizon Dr <u>Southbound</u>			Old Peachtree Rd <u>Eastbound</u>			Old Peachtree Rd <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed 2016 Traffic Volumes	16	31	1,158	45	39	35	2	197	7	420	119	9
Pedestrians												
Conflicting Pedestrians	0		0	0		0	0		0	0		0
Heavy Vehicles	0	1	0	0	1	0	0	0	0	1	0	0
Heavy Vehicle %	2%	3%	2%	2%	3%	2%	2%	2%	2%	2%	2%	2%
Peak Hour Factor	0.96			0.68			0.84			0.89		
Adjustment												
Adjusted 2016 Volumes	16	31	1158	45	39	35	2	197	7	420	119	9
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Currently Under Construction Warehouse (Truck Trips)	0	10	0	1	3	0	0	0	0	0	0	3
Currently Under Construction Warehouse (Car Trips)	0	7	0	10	18	0	0	0	0	0	0	4
2018 Background Traffic	16	48	1,170	56	60	35	2	199	7	424	120	16
Project Trips (Future Development Only)												
Trip Distribution IN		80%										20%
Trip Distribution OUT				20%	80%							
Truck Trips	0	6	0	4	18	0	0	0	0	0	0	2
Trip Distribution IN		65%										35%
Trip Distribution OUT				35%	65%							
Car Trips	0	16	0	23	43	0	0	0	0	0	0	8
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	22	0	27	61	0	0	0	0	0	0	10
2018 Buildout Total	16	70	1,170	83	121	35	2	199	7	424	120	26
2018 Heavy Vehicle %	2%	11%	2%	6%	16%	2%	2%	2%	2%	2%	2%	9%

INTERSECTION VOLUME DEVELOPMENT

Intersection 2: Lawrenceville-Suwanee Road at Old Peachtree Road AM PEAK HOUR

Description	Old Peachtree Rd <u>Northbound</u>			Old Peachtree Rd <u>Southbound</u>			Lawrenceville-Suwanee Rd <u>Eastbound</u>			Lawrenceville-Suwanee Rd <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed 2016 Traffic Volumes	76	175	35	42	573	429	407	772	159	84	896	102
Pedestrians												
Conflicting Pedestrians	0		0	0		0	0		0	0		0
Heavy Vehicles	3	3	1	0	5	15	14	6	3	0	14	2
Heavy Vehicle %	4%	2%	3%	2%	2%	3%	3%	2%	2%	2%	2%	2%
Peak Hour Factor	0.89			0.93			0.89			0.91		
Adjustment												
Adjusted 2016 Volumes	76	175	35	42	573	429	407	772	159	84	896	102
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Currently Under Construction Warehouse (Truck Trips)	0	0	0	0	0	3	9	0	0	0	0	1
Currently Under Construction Warehouse (Car Trips)	0	2	0	1	1	6	21	0	0	0	0	2
2018 Background Traffic	77	179	35	43	580	442	441	780	161	85	905	106
Project Trips (Future Development Only)												
Trip Distribution IN							75%					5%
Trip Distribution OUT				5%		75%						
Truck Trips	0	0	0	0	0	6	19	0	0	0	0	1
Trip Distribution IN		5%					55%					5%
Trip Distribution OUT				5%	5%	55%						
Car Trips	0	4	0	1	1	13	42	0	0	0	0	4
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	4	0	1	1	19	61	0	0	0	0	5
2018 Buildout Total	77	183	35	44	581	461	502	780	161	85	905	111
2018 Heavy Vehicle %	4%	2%	3%	2%	2%	5%	7%	2%	2%	2%	2%	3%

PM PEAK HOUR

Description	Old Peachtree Rd <u>Northbound</u>			Old Peachtree Rd <u>Southbound</u>			Lawrenceville-Suwanee Rd <u>Eastbound</u>			Lawrenceville-Suwanee Rd <u>Westbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed 2016 Traffic Volumes	270	733	51	139	305	359	569	919	81	95	768	55
Pedestrians												
Conflicting Pedestrians	0		0	0		0	0		0	0		0
Heavy Vehicles	4	6	3	0	9	9	16	8	0	1	8	3
Heavy Vehicle %	2%	2%	6%	2%	3%	3%	3%	2%	2%	2%	2%	5%
Peak Hour Factor	0.91			0.91			0.92			0.95		
Adjustment												
Adjusted 2016 Volumes	270	733	51	139	305	359	569	919	81	95	768	55
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Currently Under Construction Warehouse (Truck Trips)	0	0	0	0	0	3	9	0	0	0	0	1
Currently Under Construction Warehouse (Car Trips)	0	1	0	1	1	15	6	0	0	0	0	1
2018 Background Traffic	273	741	52	141	309	381	590	928	82	96	776	58
Project Trips (Future Development Only)												
Trip Distribution IN							75%					5%
Trip Distribution OUT				5%		75%						
Truck Trips	0	0	0	1	0	17	6	0	0	0	0	0
Trip Distribution IN		5%					55%					5%
Trip Distribution OUT				5%	5%	55%						
Car Trips	0	1	0	3	3	36	13	0	0	0	0	1
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	0	1	0	4	3	53	19	0	0	0	0	1
2018 Buildout Total	273	742	52	145	312	434	609	928	82	96	776	59
2018 Heavy Vehicle %	2%	2%	6%	3%	3%	6%	4%	2%	2%	2%	2%	5%

INTERSECTION VOLUME DEVELOPMENT

Intersection 3: Old Peachtree Road at Collins Hill Road AM PEAK HOUR

Description	Collins Hill Rd Northbound			Southbound			Old Peachtree Rd Eastbound			Old Peachtree Rd Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed 2016 Traffic Volumes	350	0	165	0	0	0	0	184	92	155	961	0
Pedestrians												
Conflicting Pedestrians	0		0	0		0	0		0	0		0
Heavy Vehicles												
Heavy Vehicle %	2%	0%	2%	0%	0%	0%	0%	2%	2%	2%	2%	0%
Peak Hour Factor	0.82						0.89			0.96		
Adjustment												
Adjusted 2016 Volumes	350	0	165	0	0	0	0	184	92	155	961	0
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Currently Under Construction Warehouse (Truck Trips)	1	0	0	0	0	0	0	1	0	0	2	0
Currently Under Construction Warehouse (Car Trips)	2	0	0	0	0	0	0	3	1	0	11	0
2018 Background Traffic	357	0	167	0	0	0	0	190	94	157	984	0
Project Trips (Future Development Only)												
Trip Distribution IN	5%										15%	
Trip Distribution OUT								15%	5%			
Truck Trips	1	0	0	0	0	0	0	1	0	0	4	0
Trip Distribution IN	5%										30%	
Trip Distribution OUT								30%	5%			
Car Trips	4	0	0	0	0	0	0	7	1	0	23	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	5	0	0	0	0	0	0	8	1	0	27	0
2018 Buildout Total	362	0	167	0	0	0	0	198	95	157	1,011	0
2018 Heavy Vehicle %	2%	0%	2%	0%	0%	0%	0%	2%	2%	2%	2%	0%

PM PEAK HOUR

Description	Collins Hill Rd Northbound			Southbound			Old Peachtree Rd Eastbound			Old Peachtree Rd Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Observed 2016 Traffic Volumes	199	0	256	0	0	0	0	1,064	290	190	337	0
Pedestrians												
Conflicting Pedestrians	0		0	0		0	0		0	0		0
Heavy Vehicles												
Heavy Vehicle %	2%	0%	2%	0%	0%	0%	0%	2%	2%	2%	2%	0%
Peak Hour Factor	0.84						0.96			0.87		
Adjustment												
Adjusted 2016 Volumes	199	0	256	0	0	0	0	1,064	290	190	337	0
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Growth Factor	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010	1.010
Currently Under Construction Warehouse (Truck Trips)	1	0	0	0	0	0	0	1	0	0	2	0
Currently Under Construction Warehouse (Car Trips)	1	0	0	0	0	0	0	8	1	0	3	0
2018 Background Traffic	203	0	259	0	0	0	0	1,084	294	192	345	0
Project Trips (Future Development Only)												
Trip Distribution IN	5%										15%	
Trip Distribution OUT								15%	5%			
Truck Trips	0	0	0	0	0	0	0	3	1	0	1	0
Trip Distribution IN	5%										30%	
Trip Distribution OUT								30%	5%			
Car Trips	1	0	0	0	0	0	0	20	3	0	7	0
Pass-By Trips	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Trips	1	0	0	0	0	0	0	23	4	0	8	0
2018 Buildout Total	204	0	259	0	0	0	0	1,107	298	192	353	0
2018 Heavy Vehicle %	2%	0%	2%	0%	0%	0%	0%	2%	2%	2%	2%	0%