

*Transportation Analysis*

**Riverview on the  
Chattahoochee  
DRI# 2152  
Cobb County, Georgia**

*Prepared for:*  
Green Street Properties

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## TABLE OF CONTENTS

1.0	Project Description.....	1
1.1	<i>Introduction.....</i>	1
1.2	<i>Site Plan Review.....</i>	2
1.3	<i>Site Access.....</i>	2
1.4	<i>Bicycle and Pedestrian Facilities.....</i>	6
1.5	<i>Transit Facilities.....</i>	6
2.0	Traffic Analyses Methodology and Assumptions.....	6
2.1	<i>Growth Rate.....</i>	6
2.2	<i>Traffic Data Collection.....</i>	7
2.3	<i>Detailed Intersection Analysis.....</i>	8
3.0	Study Network.....	9
3.1	<i>Gross Trip Generation.....</i>	9
3.2	<i>Trip Distribution.....</i>	9
3.3	<i>Level of Service Standards.....</i>	9
3.4	<i>Study Network Determination.....</i>	10
3.5	<i>Existing Facilities.....</i>	11
4.0	Trip Generation.....	12
5.0	Trip Distribution and Assignment.....	12
6.0	Traffic Analysis.....	13
6.1	<i>Existing 2010 Conditions.....</i>	13
6.2	<i>Projected No-Build 2018 Conditions.....</i>	15
6.3	<i>Projected Build 2018 Conditions.....</i>	17
7.0	Ingress/Egress Analysis.....	19
8.0	Identification of Programmed Projects.....	26
9.0	Internal Circulation Analysis.....	27
10.0	Compliance with Comprehensive Plan Analysis.....	27
11.0	Non-Expedited Criteria.....	28
11.1	<i>Vehicle Miles of Travel.....</i>	28
11.2	<i>Transportation and Traffic Analysis.....</i>	28
11.2.1	<i>Planned and Programmed Improvements.....</i>	28
11.2.2	<i>Preserving Regional Mobility.....</i>	28
11.2.3	<i>Safe and Efficient Operations.....</i>	28
11.2.4	<i>Minimize Congestion.....</i>	28
11.3	<i>Relationship of Existing Development and Infrastructure.....</i>	28
12.0	ARC's Air Quality Benchmark.....	29

## LIST OF TABLES

		<u>On Page</u>
Table 1:	Proposed Land Uses .....	1
Table 2:	Peak Hour Summary.....	7
Table 3:	Gross Trip Generation .....	9
Table 4:	Intersection Control Summary .....	10
Table 5:	Roadway Classification .....	11
Table 6:	Net Trip Generation.....	12
Table 7:	Existing 2010 Intersection Levels of Service.....	14
Table 8:	Existing 2010 Intersection Levels of Service IMPROVED.....	14
Table 9:	No-Build 2018 Intersection Levels of Service.....	16
Table 10:	No-Build 2018 Intersection Levels of Service IMPROVED .....	16
Table 11:	Build 2018 Intersection Levels of Service .....	18
Table 12:	Build 2018 Intersection Levels of Service IMPROVED .....	19
Table 13:	Build 2018 Intersection Levels of Service – Driveways.....	25
Table 14:	Programmed Improvements .....	26
Table 15:	Vehicle Mile Reductions.....	28
Table 16:	ARC VMT Reductions .....	29

## LIST OF FIGURES

	<u>Following Page</u>
Figure 1: Site Location .....	1
Figure 2: Aerial Photograph.....	1
Figure 3: Site Plan .....	2
Figure 4: Residential Trip Distribution.....	12
Figure 5: Non-Residential Trip Distribution.....	12
Figure 6A,6B: Project Trips.....	12
Figure 7: Existing 2010 Conditions.....	13
Figure 8: Projected No-Build 2018 Conditions.....	15
Figure 9A,9B: Projected Build 2018 Conditions.....	17
Figure 10: Future Road Projects.....	26

## APPENDIX

Site Photos

Future Roadway/Intersection Projects

Trip Generation and Volume Worksheets

Peak Hour Turning Movement Counts

Capacity Analyses – Existing 2010 Conditions

Capacity Analyses – Existing 2010 Conditions IMPROVED

Capacity Analyses – No-Build 2018 Conditions

Capacity Analyses – No-Build 2018 Conditions IMPROVED

Capacity Analyses – Build 2018 Conditions

Capacity Analyses – Build 2018 Conditions IMPROVED

## EXECUTIVE SUMMARY

This report presents the analysis of the anticipated traffic impacts associated with the proposed Riverview on the Chattahoochee development, a proposed approximate 81.95-acre mixed-use development. Because the project is a mixed-use development exceeding 400,000 gross square feet (SF), the proposed development is considered a Development of Regional Impact (DRI) and is subject to Georgia Regional Transportation Authority (GRTA) and Atlanta Regional Commission (ARC) review. This document is being submitted under non-expedited review.

The development is scheduled to be completed by 2018, and this analysis will consider the full build-out of the proposed site in 2018. The current zoning is R-20 (Residential) and HI (Heavy Industrial), and the local jurisdiction action is a requested re-zoning to Conditional Planned Village Community.

The proposed development is located along both sides of Riverview Road, between Veterans Memorial Highway (SR 8/US 78/US 278) and Freeman Parkway, and directly adjacent to Dickerson Drive and Nichols Drive.

The proposed site consists of the following land uses and densities:

<u>TOTAL SITE</u>
155 Units – Single Family
850 Units - Apartment
497 Units – Condo/Townhouse
200 Units – Senior Living
65,000 SF – Industrial
30,000 SF – Office
95,000 SF – Retail

Capacity analyses were performed for the Existing 2010 Conditions, Projected No-Build 2018 Conditions, and Projected Build 2018 Conditions at fourteen (14) intersections.

- Existing 2010 Conditions represent traffic volumes that were collected on August 24-26, 2010 by performing AM and PM peak hour turning movement counts. It should be noted that Cobb County School System began on August 5, 2010.
- Projected No-Build 2018 Conditions represent the existing traffic volumes grown for eight (8) years at 2% per year throughout the study network.
- Projected Build 2018 Conditions represent the No-Build 2018 Conditions with the addition of project trips that are anticipated to be generated by the Riverview on the Chattahoochee development.
- The Riverview on the Chattahoochee development is projected to generate 17,373 gross daily trips / 13,877 net daily trips (after mixed-use and pass-by reductions).

*Existing 2010 recommended improvements (present conditions; i.e. excludes background traffic growth and the Riverview on the Chattahoochee DRI project traffic):*

- Veterans Memorial Highway at Riverview Road (Intersection #2)
  - Construct a southbound right-turn lane along Riverview Road.
  - Construct a westbound right-turn lane along Veterans Memorial Highway.
- Highlands Parkway at Oakdale Road (Intersection #14)
  - Construct a 2<sup>nd</sup> westbound left-turn lane along Highlands Parkway.
  - Construct a 2<sup>nd</sup> southbound receiving lane along Oakdale Road to accommodate this improvement.

*No-Build 2018 recommended improvements (includes background traffic growth, but excludes the Riverview on the Chattahoochee DRI project traffic); these improvements are in addition to the Existing 2010 recommended improvements:*

- Veterans Memorial Highway at Riverview Road (Intersection #2)
  - Install a traffic signal (if warranted).
- South Cobb Drive at I-285 Northbound Ramps (Intersection #11)
  - Construct a westbound right-turn lane along South Cobb Drive.
  - Maintain the existing westbound shared through/right-turn lane.
- Highlands Parkway at Oakdale Road (Intersection #14)
  - Construct a 2<sup>nd</sup> northbound right-turn lane along Oakdale Road.

*Build 2018 recommended improvements (includes background traffic growth and the Riverview on the Chattahoochee DRI project traffic); these improvements are in addition to the Existing 2010 and No-Build 2018 recommended improvements:*

- South Cobb Drive at Riverview Road (Intersection #9)
  - Construct two (2) northbound left-turn lanes along Riverview Road.

*The following improvements are the recommended driveway configurations for access locations along Riverview Road:*

- Riverview Road at Armstrong Place Extension (Driveway 1) / Driveway 2 (Intersection #15)
  - Provide full access.
  - ALTERNATE OPTION A:
    - Install a traffic signal if warranted.
    - Construct one (1) northbound left-turn lane along Riverview Road.
    - Construct one (1) southbound left-turn lane along Riverview Road.
    - Construct one (1) eastbound shared left-turn/through/right-turn lane along Armstrong Place Extension (Driveway 1).
    - Construct one (1) westbound shared left-turn/through/right-turn lane along Driveway 2.
  - ALTERNATE OPTION B:
    - Construct a single-lane modern roundabout.
  - ALTERNATE OPTION C:
    - Install STOP control on the side-street approaches, allowing free-flow conditions on Riverview Road (in lieu of a traffic signal).
    - Provide left-turn lanes along Riverview Road, as listed in Alternate Option A.
- Riverview Road at Nichols Drive / Driveway 3 (Intersection #6)
  - Provide full access.
  - ALTERNATE OPTION A:
    - Install a traffic signal if warranted.
    - Construct one (1) northbound left-turn lane along Riverview Road.
    - Construct one (1) southbound left-turn lane along Riverview Road.
    - Maintain one (1) eastbound shared left-turn/through/right-turn lane along Nichols Drive.
    - Construct one (1) westbound shared left-turn/through/right-turn lane along Driveway 3.
  - ALTERNATE OPTION B:
    - Construct a single-lane modern roundabout.
  - ALTERNATE OPTION C:
    - Install a traffic signal if warranted, as listed in Option A.
    - Provide left-turn lanes along Riverview Road, as listed in Alternate Option A.
    - Construct a 2<sup>nd</sup> eastbound approach lane along Nichols Drive, consisting of a left-turn lane and a shared through/right-turn lane.
    - Construct a 2-lane westbound approach along Driveway 3, consisting of a left-turn lane and a shared through/right-turn lane.

- Riverview Road at Driveway 4 / Driveway 5 (Intersection #16)
  - Provide full access.
  - Construct one (1) northbound left-turn lane along Riverview Road.
  - Construct one (1) southbound left-turn lane along Riverview Road.
  - Construct one (1) eastbound shared left-turn/through/right-turn lane along Driveway 4.
  - Construct one (1) westbound shared left-turn/through/right-turn lane along Driveway 5.
- Riverview Road at Nichols Drive Extension (Driveway 6) / Driveway 7 (Intersection #17)
  - Provide full access.
  - Construct one (1) eastbound shared left-turn/through/right-turn lane along Nichols Drive Extension (Driveway 6).
  - Construct one (1) westbound shared left-turn/through/right-turn lane along Driveway 7.
- Riverview Road at Dickerson Drive / Driveway 8 (Intersection #7)
  - Provide full access.
  - Construct one (1) northbound left-turn lane along Riverview Road.
  - Construct one (1) southbound left-turn lane along Riverview Road.
  - Construct one (1) westbound shared left-turn/through/right-turn lane along Driveway 8.
- Riverview Road at Driveway 9 (Intersection #18)
  - Provide full access.
  - Construct one (1) westbound shared left-turn/right-turn lane along Driveway 9.
- Nichols Drive at Driveway 10/Driveway 11 (Intersection #19)
  - Provide full access.
  - Construct one (1) northbound shared left-turn/through/right-turn lane along Driveway 10.
  - Construct one (1) southbound shared left-turn/through/right-turn lane along Driveway 11.
- Driveways 12-19 along Nichols Drive and Nichols Drive Extension
  - Provide full access as shown on the GRTA Site Plan.
- Driveways 20-30 along Armstrong Place and Armstrong Place Extension
  - Provide full access as shown on the GRTA Site Plan.
- Driveway 31 along Dickerson Drive
  - Provide full access as shown on the GRTA Site Plan.



## 1.0 PROJECT DESCRIPTION

### 1.1 Introduction

This report presents the analysis of the anticipated traffic impacts associated with the proposed Riverview on the Chattahoochee site on approximately 81.95 acres. A request for re-zoning was filed in Cobb County, Georgia. Because the project is a mixed-use development exceeding 400,000 gross square feet (SF), the proposed development is considered a Development of Regional Impact (DRI) and is subject to Georgia Regional Transportation Authority (GRTA) and Atlanta Regional Commission (ARC) review. This document is being submitted under non-expedited review.

The development is scheduled to be completed by 2018, and this analysis will consider the full build-out of the proposed site in 2018. The proposed development is located along both sides of Riverview Road, between Veterans Memorial Highway (SR 8/US 78/US 278) and Freeman Parkway, and directly adjacent to Dickerson Drive and Nichols Drive. A summary of the proposed land uses and densities is provided below in **Table 1**.

<b>Table 1</b> <b>Riverview on the Chattahoochee DRI</b> <b>Proposed Land Uses</b>	
Single-Family	155 Units
Apartments	850 Units
Condo/Townhouse	497 Units
Senior Living	200 Units
Industrial	65,000 SF
Office	30,000 SF
Retail	95,000 SF

**Figure 1** and **Figure 2** provide a location map and an aerial photograph of the site.

## 1.2 Site Plan Review

The development plan is proposed on approximately 81.95 acres in Cobb County. The current zoning is R-20 (Residential) and HI (Heavy Industrial), and the proposed zoning is Conditional Planned Village Community. The Cobb County Future Land Use Map 2010 designates the area as Industrial. The property currently consists of a combination of industrial uses and undeveloped property.

Nichols Drive currently intersects Riverview Road and terminates via a cul-de-sac near the northwest corner of the site. The development will extend Nichols Drive to create a “loop” that connects to Riverview Road.

Armstrong Place currently intersects Nichols Drive and terminates via cul-de-sac near the southwest corner of the site. The development will extend Armstrong Place to create a “loop” that connects to Riverview Road.

The development proposes a multi-use trail beside the Chattahoochee River, from the northern site boundary (near the senior living land use) to the southern site boundary (near the community common area). A walking path is also proposed throughout the site between Riverview Road and the western boundary of the site. Sidewalks are proposed along both sides of all public road frontages that are adjacent to the site, and bicycle lanes are proposed along Riverview Road on the site frontage.

The proposed site is located directly adjacent to the Chattahoochee River Corridor Tributary Protection Area.

A transit stop is proposed on the site, on the southeast quadrant of the Riverview Road at Armstrong Place (Driveway 1)/Driveway 2 intersection.

**Figure 3** is a small-scale copy of the site plan. A full-size site plan consistent with the GRTA Site Plan Guidelines is also being submitted as part of the DRI Review Package.

## 1.3 Site Access

Vehicular access to the Riverview on the Chattahoochee site is proposed along Riverview Road at six (6) intersections. Two (2) of the intersections are where public roads currently intersect (Nichols Drive and Dickerson Drive), two (2) of the intersections are where public roads are proposed to be extended and intersect (Armstrong Place Extension and Nichols Drive Extension), and two (2) of the intersections are where private driveway connections are proposed. These six (6) intersections will serve two (2) existing public roads and nine (9) proposed access locations. The approximate amount of site frontage along Riverview Road is as follows:

- Riverview Road – Approximately 3,100’ of frontage along the east side (toward river)
- Riverview Road – Approximately 2,400’ of frontage along the west side

Access is also proposed along Nichols Drive/Nichols Drive Extension at nine (9) locations via one (1) existing public road and ten (10) proposed driveways. Additionally, access is also proposed along Armstrong Place/Armstrong Place Extension at eleven (11) locations via eleven (11) proposed driveways. Finally, access is proposed along Dickerson Drive at one (1) location via one (1) proposed driveway.

The existing traffic volumes along Nichols Drive and Armstrong Place are extremely low; therefore, a detailed analysis was not performed at most of the proposed driveways along Nichols Drive/Nichols Drive Extension, Armstrong Place/Armstrong Place Extension, and Dickerson Drive. The only exception is that Nichols Drive at Driveway 10/Driveway 11 was analyzed for Build 2018 conditions. This is in accordance with discussions with GRTA.

A description of the nine (9) proposed driveways along Riverview Road is below:

<u>Driveway #</u>	<u>Access</u>	<u>Road</u>	<u>Location</u>
Driveway 1	Full	Eastbound Approach on Riverview Road	Approximately 500' south of Nichols Drive; <i>Identified as Armstrong Place Extension</i>
Driveway 2	Full	Westbound Approach on Riverview Road	Directly across from Armstrong Place Extension (Driveway 1)
Driveway 3	Full	Westbound Approach on Riverview Road	Directly across from Nichols Drive
Driveway 4	Full	Eastbound Approach on Riverview Road	Approximately 725' north of Nichols Drive and approximately 800' south of Dickerson Drive
Driveway 5	Full	Westbound Approach on Riverview Road	Directly across from Driveway 4
Driveway 6	Full	Eastbound Approach on Riverview Road	Approximately 1,175' north of Nichols Drive and approximately 350' south of Dickerson Drive; <i>Identified as Nichols Drive Extension</i>
Driveway 7	Full	Westbound Approach on Riverview Road	Directly across from Nichols Drive Extension (Driveway 6)
Driveway 8	Full	Westbound Approach on Riverview Road	Directly across from Dickerson Drive
Driveway 9	Full	Westbound Approach on Riverview Road	Approximately 700' north of Dickeson Drive

A description of the ten (10) proposed driveways along Nichols Drive/Nichols Drive Extension is below:

<u>Driveway #</u>	<u>Access</u>	<u>Road</u>	<u>Location</u>
Driveway 10	Full	Northbound Approach on Nichols Drive	Approximately 400' west of Riverview Road and approximately 325' east of Armstrong Place
Driveway 11	Full	Southbound Approach on Nichols Drive	Directly across from Driveway 10
Driveway 12	Full	Northbound Approach on Nichols Drive	Approximately 625' west of Riverview Road and approximately 100' east of Armstrong Place
Driveway 13	Full	Westbound Approach on Nichols Drive	Approximately 625' north of Armstrong Place
Driveway 14	Full	Eastbound Approach on Nichols Drive Ext	Approximately 975' north of Armstrong Place
Driveway 15	Full	Eastbound Approach on Nichols Drive Ext	Approximately 1,100' north of Armstrong Place
Driveway 16	Full	Northbound Approach on Nichols Drive Ext	Approximately 600' west of Riverview Road
Driveway 17	Full	Southbound Approach on Nichols Drive Ext	Directly across from Driveway 16
Driveway 18	Full	Northbound Approach on Nichols Drive Ext	Approximately 400' west of Riverview Road
Driveway 19	Full	Southbound Approach on Nichols Drive Ext	Approximately 200' west of Riverview Road

A description of the eleven (11) proposed driveways along Armstrong Place/Armstrong Place Extension is below:

<u>Driveway #</u>	<u>Access</u>	<u>Road</u>	<u>Location</u>
Driveway 20	Full	Southbound Approach on Armstrong Place Ext	Approximately 225' west of Riverview Road
Driveway 21	Full	Northbound Approach on Armstrong Place Ext	Approximately 275' west of Riverview Road
Driveway 22	Full	Southbound Approach on Armstrong Place Ext	Approximately 325' west of Riverview Road
Driveway 23	Full	Northbound Approach on Armstrong Place Ext	Approximately 450' west of Riverview Road
Driveway 24	Full	Northbound Approach on Armstrong Place Ext	Approximately 600' west of Riverview Road
Driveway 25	Full	Southbound Approach on Armstrong Place Ext	Approximately 725' west of Riverview Road
Driveway 26	Full	Eastbound Approach on Armstrong Place Ext	Approximately 625' south of Nichols Drive
Driveway 27	Full	Eastbound Approach on Armstrong Place Ext	Approximately 525' south of Nichols Drive
Driveway 28	Full	Westbound Approach on Armstrong Place	Approximately 425' south of Nichols Drive
Driveway 29	Full	Westbound Approach on Armstrong Place	Approximately 325' south of Nichols Drive
Driveway 30	Full	Westbound Approach on Armstrong Place	Approximately 250' south of Nichols Drive

A description of the one (1) proposed driveway along Dickerson Drive is below:

<u>Driveway #</u>	<u>Access</u>	<u>Road</u>	<u>Location</u>
Driveway 31	Full	Northbound Approach on Dickerson Drive	Approximately 225' west of Riverview Road

### *1.4 Bicycle and Pedestrian Facilities*

Sidewalks and bicycle lanes do not exist along Riverview Road, Dickerson Drive, or Nichols Drive in the vicinity of the proposed site. Sidewalks are proposed along both sides of these three (3) public roads as part of the proposed development. Bicycle lanes are proposed along Riverview Road on the site frontage.

The development proposes a multi-use trail beside the Chattahoochee River, from the northern site boundary (near the senior living land use) to the southern site boundary (near the community common area). A walking path is also proposed throughout the site between Riverview Road and the western boundary of the site. Sidewalks are proposed along both sides of all public road frontages that are adjacent to the site.

### *1.5 Transit Facilities*

There are two (2) MARTA bus routes within 0.75 miles of the proposed site.

- Route 50 travels between the Bankhead Station and the Bankhead Court Apartments. The closest intersection along the route is Veterans Memorial Highway/Maynard Road.
- Route 57 travels between the Hamilton E. Holmes Station and the Bankhead Court Apartments. The closest intersection along the route is Veterans Memorial Highway/Maynard Road.

There is one (1) Cobb County Transit (CCT) bus route within 0.5 miles of the proposed site.

- Route 35 travels from the Wellstar Cobb Hospital to the Hamilton E. Holmes MARTA Station. The closest intersection along the route is Discovery Boulevard/Veterans Memorial Highway.

A transit stop is proposed on the site, on the southeast quadrant of the Riverview Road at Armstrong Place (Driveway 1)/Driveway 2 intersection.

## **2.0 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. Historical traffic count data from GDOT was reviewed for the area surrounding the proposed development, growth rates were discussed during the Pre-Application meeting with GRTA, ARC, GDOT, and Cobb County staff.

The background growth rate used for this analysis was 2% per year along all adjacent roadways.

## 2.2 Traffic Data Collection

Weekday peak hour turning movement counts were collected on August 24-26, 2010; AM and PM peak hour turning movement counts were performed at fourteen (14) intersections. It should be noted that Cobb County School System began on August 5, 2010. The morning and afternoon peak hours varied between the intersections and are shown in **Table 2**.

<b>Table 2</b> <b>Riverview on the Chattahoochee DRI</b> <b>Peak Hour Summary</b>			
<u>Intersection</u>		<u>AM Peak Hour</u>	<u>PM Peak Hour</u>
1	Veterans Memorial Highway at Oakdale Road/Discovery Blvd	7:00 – 8:00	5:00 – 6:00
2	Veterans Memorial Highway at Riverview Road	7:00 – 8:00	4:45 – 5:45
3	Donald Lee Hollowell Parkway at Fulton Industrial Blvd	7:15 – 8:15	5:00 – 6:00
4	Donald Lee Hollowell Parkway at I-285 Southbound Ramps	7:15 – 8:15	5:00 – 6:00
5	Donald Lee Hollowell Parkway at I-285 Northbound Ramps	7:15 – 8:15	5:00 – 6:00
6	Riverview Road at Nichols Drive	7:00 – 8:00	4:45 – 5:45
7	Riverview Road at Dickerson Drive	7:00 – 8:00	4:45 – 5:45
8	Riverview Road at Freeman Parkway	7:00 – 8:00	4:30 – 5:30
9	South Cobb Drive at Riverview Road/Maner Road	7:15 – 8:15	4:30 – 5:30
10	South Cobb Drive at I-285 Southbound Ramps	7:15 – 8:15	4:45 – 5:45
11	South Cobb Drive at I-285 Northbound Ramps	7:30 – 8:30	4:45 – 5:45
12	Oakdale Road at Dickerson Drive	7:15 – 8:15	5:00 – 6:00
13	Oakdale Road at Freeman Parkway	7:30 – 8:30	5:00 – 6:00
14	Highlands Parkway at Oakdale Road	7:30 – 8:30	5:00 – 6:00

The peak hour turning movement counts also collected heavy vehicle data. Below is a summary of the heavy vehicle data along roads in the near vicinity of the site:

<u>Roadway</u>	<u>AM Peak Hour</u>	<u>PM Peak Hour</u>
Riverview Road, south of site	5.3%	6.8%
Riverview Road, north of site	4.7%	5.6%
Dickerson Drive	5.2%	9.7%
Nichols Drive	40.9%	36.4%
Freeman Parkway	6.5%	9.5%

AADT information is provided by the Georgia Department of Transportation (GDOT) at the following locations:

<u>Roadway</u>	<u>2009 AADT</u>
Oakdale Road, south of Dickerson Drive (TC 2319)	10,180
Veterans Memorial Highway, west of Riverview Road (TC 2303)	23,220

Using the August 2010 traffic data and historical K values along Riverview Road, the approximate 24-hour traffic volumes were calculated at the following locations:

<u>Roadway</u>	<u>2010 ADT</u>
Riverview Road, south of Nichols Drive	4,050
Riverview Road, north of Freeman Parkway	4,450
Dickerson Drive, west of Riverview Road	600
Nichols Drive, west of Riverview Road	200

### 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 7.0*.

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.

Levels of service for unsignalized intersections, with all way stop control, 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.

Levels of service for unsignalized intersections, with stop control on the minor street only, are reported for the side street approaches. Low levels of service for side street approaches are not uncommon, as vehicles may experience delay in turning onto a major roadway.

Volume to capacity (v/c) ratio is reported in similar fashion as LOS for each intersection type. The v/c ratio measures the level of congestion at an intersection or a side street approach.



### 3.0 STUDY NETWORK

#### 3.1 Gross Trip Generation

Traffic for these proposed land uses and densities were calculated using equations contained in the *Institute of Transportation Engineers' (ITE) Trip Generation Manual, Seventh Edition, 2003*. Average rates were used only when equations were not provided. Additionally, project traffic associated with the industrial land use was calculated using 55% of ITE (Seventh Edition) values. Gross trips generated are displayed in **Table 3**.

<b>Table 3</b> <b>Riverview on the Chattahoochee DRI</b> <b>Gross Trip Generation</b>							
Land Use	ITE Code	Daily Traffic		AM Peak Hour		PM Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
65,000 SF Industrial	150	162	162	28	6	7	19
155 Single Family Units	210	778	778	30	88	100	59
850 Apartment Units	220	2,630	2,630	84	336	315	170
497 Condo/Townhouse Units	230	1,254	1,254	32	154	150	74
200 Senior Living Units	252	315	315	7	9	13	9
30,000 SF Office	710	264	264	63	9	19	93
95,000 SF Retail	820	3,284	3,284	93	59	290	315
<b>Total</b>		<b>8,687</b>	<b>8,687</b>	<b>337</b>	<b>661</b>	<b>894</b>	<b>739</b>

#### 3.2 Trip Distribution

The directional distribution and assignment of new project trips was based on a review of the land uses in the area, driving the study network and study intersections, engineering judgment, and methodology discussions with GRTA, ARC, GDOT, and Cobb County staff.

#### 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. Additionally, all LOS standards shall be constrained by a maximum volume-to-capacity (v/c) ratio of 1.2.

### 3.4 Study Network Determination

A general study area was determined using 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 Cobb County staff, and includes the following intersections in **Table 4**.

<b>Table 4</b> <b>Riverview on the Chattahoochee DRI</b> <b>Intersection Control Summary</b>		
<u>Intersection</u>		<u>Existing Control</u>
1	Veterans Memorial Highway at Oakdale Road/Discovery Blvd	Signal
2	Veterans Memorial Highway at Riverview Road	Southbound Stop
3	Donald Lee Hollowell Parkway at Fulton Industrial Blvd	Signal
4	Donald Lee Hollowell Parkway at I-285 Southbound Ramps	Signal
5	Donald Lee Hollowell Parkway at I-285 Northbound Ramps	Signal
6	Riverview Road at Nichols Drive	Eastbound Stop
7	Riverview Road at Dickerson Drive	Eastbound Stop
8	Riverview Road at Freeman Parkway	Eastbound Stop
9	South Cobb Drive at Riverview Road/Maner Road	Signal
10	South Cobb Drive at I-285 Southbound Ramps	Signal
11	South Cobb Drive at I-285 Northbound Ramps	Signal
12	Oakdale Road at Dickerson Drive	Westbound Stop
13	Oakdale Road at Freeman Parkway	Westbound Stop
14	Highlands Parkway at Oakdale Road	Signal

Each of the above listed intersections was analyzed for the Existing 2010 Conditions, the No-Build 2018 Conditions, and the Build 2018 Conditions. The No-Build 2018 Conditions represent the existing traffic volumes grown for eight (8) years at 2% per year throughout the study network. The Build 2018 Conditions adds the project trips associated with the Riverview on the Chattahoochee development to the No-Build 2018 Conditions.

### 3.5 Existing Facilities

Roadway classification descriptions for the entire study area are provided in **Table 5**.

<b>Table 5</b> <b>Riverview on the Chattahoochee DRI</b> <b>Roadway Classification</b>				
<b>Roadway</b>	<b>Route</b>	<b>Lanes</b>	<b>Posted Speed Limit (MPH)</b>	<b>GDOT Functional Classification</b>
Veterans Memorial Highway	SR 8/US 78/US 278	4	45	Principal Arterial
Donald Lee Hollowell Parkway	SR 8/US 78/US 278	4	45	Principal Arterial
South Cobb Drive	SR 280	4 / 6	45	Principal/Minor Arterial
Fulton Industrial Boulevard	SR 70	4	45	Minor Arterial
Oakdale Road	---	2	40	Minor Arterial
Discovery Boulevard	---	2	40	Minor Arterial
Highlands Parkway	---	4	45	Minor Arterial/Local Road
Riverview Road	---	2	35	Local Road
Maner Road	---	2	35	Local Road
Dickerson Drive	---	2	25	Local Road
Nichols Drive	---	2	25	Local Road
Freeman Parkway	---	2	NP	Local Road

## 4.0 TRIP GENERATION

As stated earlier, trips associated with the proposed development were estimated using the *Institute of Transportation Engineers' (ITE) Trip Generation Manual, Seventh Edition, 2003*, using equations where available. Additionally, project traffic associated with the industrial land use was calculated using 55% of ITE (Seventh Edition) values.

Mixed-use vehicle trip reductions were taken according to the *ITE Trip Generation Handbook, Second Edition, 2004*. Total internal capture and vehicle trip reduction between the proposed land uses is expected to be 8.91% for the weekday and 9.71% for the PM peak hour.

Alternative transportation mode (walking, bicycle, and transit) reductions were not applied for this project.

Pass-by reductions were calculated according to the equation for Land Use 820 in the *ITE Trip Generation Handbook, Second Edition, 2004*. For the retail uses, a 34% pass-by reduction was applied for the weekday and for the PM peak hour.

The total (net) trips generated and analyzed in this report are listed in **Table 6**.

<b>Table 6</b> <b>Riverview on the Chattahoochee DRI</b> <b>Net Trip Generation</b>						
	Daily Traffic		AM Peak Hour		PM Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
<b>Gross Project Trips</b>	<b>8,687</b>	<b>8,687</b>	<b>337</b>	<b>661</b>	<b>894</b>	<b>740</b>
<i>Mixed-Use Reduction</i>	- 760	- 760	- 0	- 0	- 78	- 78
<i>Alternative Mode Reduction</i>	- 0	- 0	- 0	- 0	- 0	- 0
<i>Pass-By Reduction (34% used)</i>	- 988	- 988	- 0	- 0	- 90	- 90
<b>Net New Trips</b>	<b>6,939</b>	<b>6,939</b>	<b>337</b>	<b>661</b>	<b>726</b>	<b>572</b>

## 5.0 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 Cobb County staff. **Figure 4** (residential) and **Figure 5** (non-residential) display the expected trip percentages for the development throughout the roadway network. These percentages were applied to the new trips generated by the development, and the volumes were assigned to the roadway network.

The expected peak hour turning movements generated by the proposed development are shown in **Figure 6A and 6B**.

## 6.0 TRAFFIC ANALYSIS

### 6.1 Existing 2010 Conditions

The observed existing peak hour traffic volumes were input in *Synchro 7.0*, and capacity analyses were performed for the AM and PM peak hours. The existing peak hour traffic volumes are shown in **Figure 7**.

Two (2) of the fourteen (14) study intersections currently operate below the acceptable Level of Service standard (LOS D) during the AM Peak Hour and/or the PM Peak Hour. These intersections' No-Build and Build Peak Hour LOS standard, therefore, is LOS E per GRTA guidelines. Based on the Existing 2010 Conditions, the following improvements result in the following intersections operating at LOS D or better:

- Veterans Memorial Highway at Riverview Road (Intersection #2)
  - Construct a southbound right-turn lane along Riverview Road.
  - Construct a westbound right-turn lane along Veterans Memorial Highway.
- Highlands Parkway at Oakdale Road (Intersection #14)
  - Construct a 2<sup>nd</sup> westbound left-turn lane along Highlands Parkway.
  - Construct a 2<sup>nd</sup> southbound receiving lane along Oakdale Road to accommodate this improvement.

The Existing 2010 levels of service with existing geometry are displayed in **Table 7**; the levels of service with all improvements (Existing) are shown in **Table 8**.

**Table 7**  
**Riverview on the Chattahoochee DRI**  
**Existing 2010 Intersection Levels of Service**

	Intersection	Control	LOS Std.	AM Peak Hour		PM Peak Hour	
				LOS	v/c	LOS	v/c
1	Veterans Memorial Hwy at Oakdale Rd / Discovery Blvd	Signal	D	C (32.7)	0.79	C (23.1)	0.79
2	Veterans Memorial Hwy at Riverview Rd	SB Stop	D/E	D (32.8)	0.33	F (178.2)	1.27
3	Donald Lee Hollowell Pkwy at Fulton Industrial Blvd	Signal	D	C (27.7)	0.67	D (38.8)	0.75
4	Donald Lee Hollowell Pkwy at I-285 Southbound Ramps	Signal	D	B (15.4)	0.65	B (14.9)	0.65
5	Donald Lee Hollowell Pkwy at I-285 Northbound Ramps	Signal	D	C (24.7)	0.55	C (31.2)	0.56
6	Riverview Rd at Nichols Dr	EB Stop	D	B (12.8)	0.03	B (11.3)	0.05
7	Riverview Rd at Dickerson Dr	EB Stop	D	B (13.5)	0.16	B (11.9)	0.03
8	Riverview Rd at Freeman Pkwy	EB Stop	D	B (12.0)	0.09	B (12.4)	0.09
9	South Cobb Dr at Riverview Rd / Maner Rd	Signal	D	C (26.7)	0.79	B (18.6)	0.57
10	South Cobb Dr at I-285 Southbound Ramps	Signal	D	C (27.2)	0.84	C (24.1)	0.74
11	South Cobb Dr at I-285 Northbound Ramps	Signal	D	D (39.8)	0.88	D (37.0)	0.79
12	Oakdale Rd at Dickerson Dr	WB Stop	D	B (14.2)	0.03	C (15.2)	0.23
13	Oakdale Rd at Freeman Pkwy	WB Stop	D	C (16.3)	0.10	C (15.2)	0.15
14	Highlands Pkwy at Oakdale Rd	Signal	D/E	D (37.4)	0.70	F (94.3)	0.85

**Table 8**  
**Riverview on the Chattahoochee DRI**  
**Existing 2010 Intersection Levels of Service IMPROVED**

	Intersection	Control	LOS Std.	AM Peak Hour		PM Peak Hour	
				LOS	v/c	LOS	v/c
2	Veterans Memorial Hwy at Riverview Rd	SB Stop	D/E	D (29.4)	0.28	E (49.5)	0.87
14	Highlands Pkwy at Oakdale Rd	Signal	D/E	D (37.2)	0.70	D (46.1)	0.66

## 6.2 Projected No-Build 2018 Conditions

To account for growth in the vicinity of the proposed development, the existing traffic volumes were increased for eight (8) years at 2% per year throughout the study network. These volumes were input into *Synchro 7.0* with existing roadway geometry, and capacity analyses were performed. The intersection laneage and traffic volumes for the year No-Build 2018 Conditions are shown in **Figure 8**.

Three (3) of the fourteen (14) study intersections are projected to operate below the acceptable Level of Service standard during the AM Peak Hour and/or PM peak hour. Following implementation of the improvements recommended in the 2010 Existing Conditions analysis, three (3) intersections are still projected to operate below the acceptable Level of Service standard. Based on the No-Build 2018 Conditions, the following improvements result in the following intersections operating above their LOS standard; these are in addition to the improvements noted under the Existing 2010 improvements from Section 6.1:

- Veterans Memorial Highway at Riverview Road (Intersection #2)
  - Install a traffic signal (if warranted).
- South Cobb Drive at I-285 Northbound Ramps (Intersection #11)
  - Construct a westbound right-turn lane along South Cobb Drive.
  - Maintain the existing westbound shared through/right-turn lane.
- Highlands Parkway at Oakdale Road (Intersection #14)
  - Construct a 2<sup>nd</sup> northbound right-turn lane along Oakdale Road.

The Projected No-Build 2018 levels of service with existing geometry are displayed in **Table 9**; the levels of service with all improvements (Existing and No-Build) are shown in **Table 10**.

**Table 9**  
**Riverview on the Chattahoochee DRI**  
**No-Build 2018 Intersection Levels of Service**

	Intersection	Control	LOS Std.	AM Peak Hour		PM Peak Hour	
				LOS	v/c	LOS	v/c
1	Veterans Memorial Hwy at Oakdale Rd / Discovery Blvd	Signal	D	D (40.8)	0.91	C (29.2)	0.98
2	Veterans Memorial Hwy at Riverview Rd	SB Stop	D/E	F (72.5)	0.61	F (430.4)	1.85
3	Donald Lee Hollowell Pkwy at Fulton Industrial Blvd	Signal	D	C (34.9)	0.79	D (45.3)	0.90
4	Donald Lee Hollowell Pkwy at I-285 Southbound Ramps	Signal	D	B (19.0)	0.78	B (19.1)	0.81
5	Donald Lee Hollowell Pkwy at I-285 Northbound Ramps	Signal	D	C (27.0)	0.65	C (33.3)	0.67
6	Riverview Rd at Nichols Dr	EB Stop	D	B (13.8)	0.05	B (12.1)	0.06
7	Riverview Rd at Dickerson Dr	EB Stop	D	C (15.2)	0.22	B (12.7)	0.04
8	Riverview Rd at Freeman Pkwy	EB Stop	D	B (13.0)	0.11	B (13.6)	0.12
9	South Cobb Dr at Riverview Rd / Maner Rd	Signal	D	D (41.9)	0.96	C (23.1)	0.65
10	South Cobb Dr at I-285 Southbound Ramps	Signal	D	D (53.0)	1.09	C (29.2)	0.88
11	South Cobb Dr at I-285 Northbound Ramps	Signal	D	E (66.2)	1.05	D (45.8)	0.93
12	Oakdale Rd at Dickerson Dr	WB Stop	D	C (16.1)	0.05	C (18.0)	0.32
13	Oakdale Rd at Freeman Pkwy	WB Stop	D	C (19.2)	0.14	C (17.7)	0.21
14	Highlands Pkwy at Oakdale Rd	Signal	D/E	E (56.8)	0.86	F (149.5)	1.02

**Table 10**  
**Riverview on the Chattahoochee DRI**  
**No-Build 2018 Intersection Levels of Service IMPROVED**

	Intersection	Control	LOS Std.	AM Peak Hour		PM Peak Hour	
				LOS	v/c	LOS	v/c
2	Veterans Memorial Hwy at Riverview Rd	No Build Signal	D/E	B (12.8)	0.48	D (38.5)	0.82
11	South Cobb Dr at I-285 Northbound Ramps	Signal	D	D (46.1)	0.97	D (38.2)	0.86
14	Highlands Pkwy at Oakdale Rd	Signal	D/E	D (35.0)	0.61	E (68.7)	0.77



### 6.3 *Projected Build 2018 Conditions*

The traffic associated with the proposed development was added to the No-Build 2018 volumes. These volumes were then input into *Synchro 7.0* with existing roadway geometry. The intersection laneage and traffic volumes for the year Build 2018 Conditions are shown in **Figure 9A and 9B**.

Four (4) of the fourteen (14) study intersections are projected to operate below the acceptable Level of Service standard during the AM Peak Hour and/or PM Peak Hour. Following implementation of the improvements recommended in the 2010 Existing Conditions analysis and the 2018 No Build Conditions analysis, one (1) intersection is still projected to operate below the acceptable Level of Service standard. Based on the Build 2018 Conditions, the following improvements result in the following intersections operating above their LOS standard; these are in addition to the improvements noted under the Existing 2010 improvements from Section 6.1 and the No-Build 2018 improvements from Section 6.2:

- South Cobb Drive at Riverview Road (Intersection #9)
  - Construct two (2) northbound left-turn lanes along Riverview Road.

The Projected Build 2018 levels of service with existing geometry are displayed in **Table 11**; the levels of service with all improvements (Existing, No-Build, and Build) are shown in **Table 12**.

**Table 11**  
**Riverview on the Chattahoochee DRI**  
**Build 2018 Intersection Levels of Service**

Intersection		Control	LOS Std.	AM Peak Hour		PM Peak Hour	
				LOS	v/c	LOS	v/c
1	Veterans Memorial Hwy at Oakdale Rd / Discovery Blvd	Signal	D	D (44.4)	0.94	C (32.8)	0.96
2	Veterans Memorial Hwy at Riverview Rd	SB Stop	D/E	F *	9.68	F *	6.31
3	Donald Lee Hollowell Pkwy at Fulton Industrial Blvd	Signal	D	D (42.7)	0.90	D (52.8)	1.00
4	Donald Lee Hollowell Pkwy at I-285 Southbound Ramps	Signal	D	B (18.7)	0.85	C (20.7)	0.86
5	Donald Lee Hollowell Pkwy at I-285 Northbound Ramps	Signal	D	C (28.5)	0.68	D (36.4)	0.76
6	Riverview Rd at Nichols Dr	EB Stop	D	See Table 13		See Table 13	
7	Riverview Rd at Dickerson Dr	EB Stop	D	See Table 13		See Table 13	
8	Riverview Rd at Freeman Pkwy	EB Stop	D	C (17.8)	0.27	D (31.6)	0.62
9	South Cobb Dr at Riverview Rd / Maner Rd	Signal	D	F (92.8)	1.20	C (31.3)	0.79
10	South Cobb Dr at I-285 Southbound Ramps	Signal	D	D (53.7)	1.09	C (30.9)	0.90
11	South Cobb Dr at I-285 Northbound Ramps	Signal	D	E (77.5)	1.10	D (48.9)	0.96
12	Oakdale Rd at Dickerson Dr	WB Stop	D	C (19.0)	0.23	C (22.1)	0.49
13	Oakdale Rd at Freeman Pkwy	WB Stop	D	D (34.3)	0.56	C (20.5)	0.40
14	Highlands Pkwy at Oakdale Rd	Signal	D/E	E (72.9)	0.92	F (167.7)	1.15

\* - Denotes that long delays are anticipated on the STOP controlled approach.

**Table 12**  
**Riverview on the Chattahoochee DRI**  
**Build 2018 Intersection Levels of Service IMPROVED**

Intersection	Control	LOS Std.	AM Peak Hour		PM Peak Hour	
			LOS	v/c	LOS	v/c
2 Veterans Memorial Hwy at Riverview Rd	No Build Signal	D/E	B (18.8)	0.79	C (29.9)	0.92
9 South Cobb Dr at Riverview Rd / Maner Rd	Signal	D	D (36.9)	0.74	C (34.7)	0.75
11 South Cobb Dr at I-285 Northbound Ramps	Signal	D	D (45.2)	1.00	D (40.5)	0.89
14 Highlands Pkwy at Oakdale Rd	Signal	D/E	C (34.5)	0.64	E (79.9)	0.82

## 7.0 INGRESS/EGRESS ANALYSIS

Vehicular access to the Riverview on the Chattahoochee site is proposed along Riverview Road at six (6) intersections. Two (2) of the intersections are where public roads currently intersect (Nichols Drive and Dickerson Drive), two (2) of the intersections are where public roads are proposed to be extended and intersect (Armstrong Place Extension and Nichols Drive Extension), and two (2) of the intersections are where private driveway connections are proposed. These six (6) intersections will serve two (2) existing public roads and nine (9) proposed access locations. The approximate amount of site frontage along Riverview Road is as follows:

- Riverview Road – Approximately 3,100' of frontage along the east side (toward river)
- Riverview Road – Approximately 2,400' of frontage along the west side

Access is also proposed along Nichols Drive/Nichols Drive Extension at nine (9) locations via one (1) existing public road and ten (10) proposed driveways. Additionally, access is also proposed along Armstrong Place/Armstrong Place Extension at eleven (11) locations via eleven (11) proposed driveways. Finally, access is proposed along Dickerson Drive at one (1) location via one (1) proposed driveway.

The existing traffic volumes along Nichols Drive and Armstrong Place are extremely low; therefore, a detailed analysis was not performed at most of the proposed driveways along Nichols Drive/Nichols Drive Extension, Armstrong Place/Armstrong Place Extension, and Dickerson Drive. The only exception is that Nichols Drive at Driveway 10/Driveway 11 was analyzed for Build 2018 conditions. This is in accordance with discussions with GRTA.

A description of the nine (9) proposed driveways along Riverview Road is below:

<u>Driveway #</u>	<u>Access</u>	<u>Road</u>	<u>Location</u>
Driveway 1	Full	Eastbound Approach on Riverview Road	Approximately 500' south of Nichols Drive; <i>Identified as Armstrong Place Extension</i>
Driveway 2	Full	Westbound Approach on Riverview Road	Directly across from Armstrong Place Extension (Driveway 1)
Driveway 3	Full	Westbound Approach on Riverview Road	Directly across from Nichols Drive
Driveway 4	Full	Eastbound Approach on Riverview Road	Approximately 725' north of Nichols Drive and approximately 800' south of Dickerson Drive
Driveway 5	Full	Westbound Approach on Riverview Road	Directly across from Driveway 4
Driveway 6	Full	Eastbound Approach on Riverview Road	Approximately 1,175' north of Nichols Drive and approximately 350' south of Dickerson Drive; <i>Identified as Nichols Drive Extension</i>
Driveway 7	Full	Westbound Approach on Riverview Road	Directly across from Nichols Drive Extension (Driveway 6)
Driveway 8	Full	Westbound Approach on Riverview Road	Directly across from Dickerson Drive
Driveway 9	Full	Westbound Approach on Riverview Road	Approximately 700' north of Dickerson Drive

A description of the ten (10) proposed driveways along Nichols Drive/Nichols Drive Extension is below:

<u>Driveway #</u>	<u>Access</u>	<u>Road</u>	<u>Location</u>
Driveway 10	Full	Northbound Approach on Nichols Drive	Approximately 400' west of Riverview Road and approximately 325' east of Armstrong Place
Driveway 11	Full	Southbound Approach on Nichols Drive	Directly across from Driveway 10
Driveway 12	Full	Northbound Approach on Nichols Drive	Approximately 625' west of Riverview Road and approximately 100' east of Armstrong Place
Driveway 13	Full	Westbound Approach on Nichols Drive	Approximately 625' north of Armstrong Place
Driveway 14	Full	Eastbound Approach on Nichols Drive Ext	Approximately 975' north of Armstrong Place
Driveway 15	Full	Eastbound Approach on Nichols Drive Ext	Approximately 1,100' north of Armstrong Place
Driveway 16	Full	Northbound Approach on Nichols Drive Ext	Approximately 600' west of Riverview Road
Driveway 17	Full	Southbound Approach on Nichols Drive Ext	Directly across from Driveway 16
Driveway 18	Full	Northbound Approach on Nichols Drive Ext	Approximately 400' west of Riverview Road
Driveway 19	Full	Southbound Approach on Nichols Drive Ext	Approximately 200' west of Riverview Road

A description of the eleven (11) proposed driveways along Armstrong Place/Armstrong Place Extension is below:

<u>Driveway #</u>	<u>Access</u>	<u>Road</u>	<u>Location</u>
Driveway 20	Full	Southbound Approach on Armstrong Place Ext	Approximately 225' west of Riverview Road
Driveway 21	Full	Northbound Approach on Armstrong Place Ext	Approximately 275' west of Riverview Road
Driveway 22	Full	Southbound Approach on Armstrong Place Ext	Approximately 325' west of Riverview Road
Driveway 23	Full	Northbound Approach on Armstrong Place Ext	Approximately 450' west of Riverview Road
Driveway 24	Full	Northbound Approach on Armstrong Place Ext	Approximately 600' west of Riverview Road
Driveway 25	Full	Southbound Approach on Armstrong Place Ext	Approximately 725' west of Riverview Road
Driveway 26	Full	Eastbound Approach on Armstrong Place Ext	Approximately 625' south of Nichols Drive
Driveway 27	Full	Eastbound Approach on Armstrong Place Ext	Approximately 525' south of Nichols Drive
Driveway 28	Full	Westbound Approach on Armstrong Place	Approximately 425' south of Nichols Drive
Driveway 29	Full	Westbound Approach on Armstrong Place	Approximately 325' south of Nichols Drive
Driveway 30	Full	Westbound Approach on Armstrong Place	Approximately 250' south of Nichols Drive

A description of the one (1) proposed driveway along Dickerson Drive is below:

<u>Driveway #</u>	<u>Access</u>	<u>Road</u>	<u>Location</u>
Driveway 31	Full	Northbound Approach on Dickerson Drive	Approximately 225' west of Riverview Road

Capacity analyses were performed for the year Build 2018 Conditions. The intersection laneage and traffic volumes for the year Build 2018 Conditions are shown in **Figure 9B**.

The following improvements are the recommended driveway configurations for access locations:

- Riverview Road at Armstrong Place Extension (Driveway 1) / Driveway 2 (Intersection #15)
  - Provide full access.
  - ALTERNATE OPTION A:
    - Install a traffic signal if warranted.
    - Construct one (1) northbound left-turn lane along Riverview Road.
    - Construct one (1) southbound left-turn lane along Riverview Road.
    - Construct one (1) eastbound shared left-turn/through/right-turn lane along Armstrong Place Extension (Driveway 1).
    - Construct one (1) westbound shared left-turn/through/right-turn lane along Driveway 2.
  - ALTERNATE OPTION B:
    - Construct a single-lane modern roundabout.
  - ALTERNATE OPTION C:
    - Install STOP control on the side-street approaches, allowing free-flow conditions on Riverview Road (in lieu of a traffic signal).
    - Provide left-turn lanes along Riverview Road, as listed in Alternate Option A.
- Riverview Road at Nichols Drive / Driveway 3 (Intersection #6)
  - Provide full access.
  - ALTERNATE OPTION A:
    - Install a traffic signal if warranted.
    - Construct one (1) northbound left-turn lane along Riverview Road.
    - Construct one (1) southbound left-turn lane along Riverview Road.
    - Maintain one (1) eastbound shared left-turn/through/right-turn lane along Nichols Drive.
    - Construct one (1) westbound shared left-turn/through/right-turn lane along Driveway 3.
  - ALTERNATE OPTION B:
    - Construct a single-lane modern roundabout.
  - ALTERNATE OPTION C:
    - Install a traffic signal if warranted, as listed in Option A.
    - Provide left-turn lanes along Riverview Road, as listed in Alternate Option A.
    - Construct a 2<sup>nd</sup> eastbound approach lane along Nichols Drive, consisting of a left-turn lane and a shared through/right-turn lane.
    - Construct a 2-lane westbound approach along Driveway 3, consisting of a left-turn lane and a shared through/right-turn lane.

- Riverview Road at Driveway 4 / Driveway 5 (Intersection #16)
  - Provide full access.
  - Construct one (1) northbound left-turn lane along Riverview Road.
  - Construct one (1) southbound left-turn lane along Riverview Road.
  - Construct one (1) eastbound shared left-turn/through/right-turn lane along Driveway 4.
  - Construct one (1) westbound shared left-turn/through/right-turn lane along Driveway 5.
- Riverview Road at Nichols Drive Extension (Driveway 6) / Driveway 7 (Intersection #17)
  - Provide full access.
  - Construct one (1) eastbound shared left-turn/through/right-turn lane along Nichols Drive Extension (Driveway 6).
  - Construct one (1) westbound shared left-turn/through/right-turn lane along Driveway 7.
- Riverview Road at Dickerson Drive / Driveway 8 (Intersection #7)
  - Provide full access.
  - Construct one (1) northbound left-turn lane along Riverview Road.
  - Construct one (1) southbound left-turn lane along Riverview Road.
  - Construct one (1) westbound shared left-turn/through/right-turn lane along Driveway 8.
- Riverview Road at Driveway 9 (Intersection #18)
  - Provide full access.
  - Construct one (1) westbound shared left-turn/right-turn lane along Driveway 9.
- Nichols Drive at Driveway 10/Driveway 11 (Intersection #19)
  - Provide full access.
  - Construct one (1) northbound shared left-turn/through/right-turn lane along Driveway 10.
  - Construct one (1) southbound shared left-turn/through/right-turn lane along Driveway 11.
- Driveways 12-19 along Nichols Drive and Nichols Drive Extension
  - Provide full access as shown on the GRTA Site Plan.
- Driveways 20-30 along Armstrong Place and Armstrong Place Extension
  - Provide full access as shown on the GRTA Site Plan.
- Driveway 31 along Dickerson Drive
  - Provide full access as shown on the GRTA Site Plan.

The levels of service for the site driveways and the intersection geometry stated above are shown in **Table 13**. It should be noted that the existing traffic volumes along Nichols Drive and Armstrong Place are extremely low; therefore, a detailed analysis was not performed at most of the proposed driveways along Nichols Drive/Nichols Drive Extension, Armstrong Place/Armstrong Place Extension, and Dickerson Drive. The only exception is that Nichols Drive at Driveway 10/Driveway 11 was analyzed for Build 2018 conditions. This is in accordance with discussions with GRTA.



Table 13 Riverview on the Chattahoochee DRI Build 2018 Intersection Levels of Service – Driveways							
Intersection		Control	LOS Std.	AM Peak Hour		PM Peak Hour	
				LOS	v/c	LOS	v/c
<u>ALTERNATE OPTION A</u>							
15	Riverview Rd at Armstrong Pl Extension (Driveway 1) / Driveway 2	Build Signal	D	B (10.2)	0.50	B (12.8)	0.58
6	Riverview Rd at Nichols Dr / Driveway 3	Build Signal	D	B (14.5)	0.58	B (19.7)	0.57
16	Riverview Road at Driveway 4 / Driveway 5	EB Stop WB Stop	D	C (16.3) D (26.4)	0.26 0.16	D (26.2) E (35.5)	0.38 0.23
17	Riverview Road at Nichols Dr Extension (Driveway 6) / Driveway 7	EB Stop WB Stop	D	D (32.9) C (22.9)	0.43 0.15	D (33.0) C (23.3)	0.34 0.09
7	Riverview Rd at Dickerson Dr / Driveway 8	EB Stop WB Stop	D	F (55.6) D (25.9)	0.69 0.16	D (29.3) D (28.8)	0.42 0.10
18	Riverview Rd at Driveway 9	WB Stop	D	C (18.9)	0.11	C (15.3)	0.04
19	Nichols Dr at Driveway 10 / Driveway 11	NB Stop SB Stop	D	A (8.9) B (11.0)	0.07 0.11	A (9.0) B (11.9)	0.06 0.11
<u>ALTERNATE OPTION B</u>							
15	Riverview Rd at Armstrong Pl Extension (Driveway 1) / Driveway 2	Modern Round- about	D	A (5.3)	0.57	A (6.7)	0.75
6	Riverview Rd at Nichols Dr / Driveway 3	Modern Round- about	D	A (6.1)	0.67	A (7.7)	0.73
<u>ALTERNATE OPTION C</u>							
15	Riverview Rd at Armstrong Pl Extension (Driveway 1) / Driveway 2	EB Stop WB Stop	D	C (22.3) D (26.3)	0.30 0.10	F (63.4) F (117.7)	0.65 0.57
6	Riverview Rd at Nichols Dr / Driveway 3	Build Signal	D	B (13.3)	0.53	B (16.2)	0.56

## 8.0 IDENTIFICATION OF PROGRAMMED PROJECTS

The *TIP*, *STIP*, *RTP*, and *GDOT's Construction Work Program* were searched for currently programmed transportation projects within the vicinity of the proposed development. The identified projects are listed in **Table 14**. **Figure 10** shows the locations of the programmed transportation projects.

<b>Table 14</b> <b>Riverview on the Chattahoochee DRI</b> <b>Programmed Improvements</b>			
<b>No.</b>	<b>Year</b>	<b>Project Number</b>	<b>Project Description</b>
1	2013	ARC CO-395 GDOT 0009210	Intersection improvements at the intersection of Veterans Memorial Highway and Oakdale Rd/Discovery Blvd. This project is a northbound right-turn lane along Discovery Blvd and an additional northbound and southbound thru-lane along Oakdale Rd./Discovery Blvd.
2	2030	ARC CO-175 GDOT 752760	Widening of South Cobb Dr (SR 280) from 4 lanes to 6 lanes between Atlanta Rd (SR 5) and Bolton Rd (SR 70).
3	2030	ARC CO-AR-304 GDOT 0006048	Interchange reconstruction along I-285 at South Cobb Dr (SR 280). Modifications will include adding a second left turn lane to northbound I-285.
4	2030	ARC AT-001 GDOT 750780	Widening of Donald Lee Hollowell Pkwy (US 278) from Harwell Rd to H.E. Holmes Drive. The roadway will become a 4 lane section with sidewalks and bike lanes.
5	2030	ARC AT-AR-214 GDOT 713690	Reconstruction of the interchange at I-285 and Veterans Memorial Highway (US 278). This project also includes a collector-distributor system from I-20 to Bolton Rd. (SR 70).
6	2030	ARC AR-H-302 GDOT 0003433	The addition of two managed lanes in each direction between I-20 and I-75 along I-285. The locations of the dedicated ramps have not been determined at this time.
7	2020	ARC CO-347 GDOT n/a	This project involves enhancing Buckner Road from Oakdale Road to Veterans Memorial Highway. The work includes geometric improvements, curb and gutter, widened travel lanes, and sidewalks.
8	2013	ARC CO-352 GDOT 0007538	This project involves enhancing Queens Mill Road from Mableton Parkway to Veterans Memorial Highway. The work includes geometric improvements, curb and gutter, widened travel lanes, and sidewalks.

## 9.0 INTERNAL CIRCULATION ANALYSIS

Nichols Drive currently intersects Riverview Road and terminates via a cul-de-sac near the northwest corner of the site. The development will extend Nichols Drive to create a “loop” that connects to Riverview Road.

Armstrong Place currently intersects Nichols Drive and terminates via cul-de-sac near the southwest corner of the site. The development will extend Armstrong Place to create a “loop” that connects to Riverview Road.

Access to the various land uses are proposed along Riverview Road, Dickerson Drive, Nichols Drive, Armstrong Place, the proposed Nichols Drive Extension, and the proposed Armstrong Place Extension. It is anticipated that there will be internal trips that travel across Riverview Road since there are residential, office, and retail uses on both sides of Riverview Road. Internal to the site, a roadway network is proposed that will provide vehicular and pedestrian connections between Riverview Road, Nichols Drive, and the proposed Nichols Drive Extension.

Mixed-use reductions were calculated according to the *ITE Trip Generation Handbook, Second Edition, 2004*. Total internal capture and vehicle trip reduction between the proposed land uses is expected to be 8.91% for the weekday and 9.71% for the PM peak hour. This is the interaction between the residential, office, and retail land uses.

## 10.0 COMPLIANCE WITH COMPREHENSIVE PLAN ANALYSIS

The proposed development is mixed-use with residential, office, retail, and industrial components. The current zoning is R-20 (Residential) and HI (Heavy Industrial), and the proposed zoning is Conditional Planned Village Community. The Cobb County Future Land Use Map 2010 designates the area as Industrial. The ARC Unified Growth Policy Map identifies the site as a combination of Urban Neighborhoods and Regional Center.

## 11.0 NON-EXPEDITED CRITERIA

### 11.1 Vehicle Miles of Travel

**Table 15** displays the reduction in traffic generation due to internal capture, alternative mode, and pass-by reductions.

<b>Table 15 Vehicle Mile Reductions</b>	
	Weekday
Daily Gross Trip Generation:	<b>17,373</b>
(-)Mixed-use reductions (internal capture)	- 1,520
(-)Alternative modes	- 0
(-)Pass-by trips	- 1,976
Net Trips:	<b>13,877</b>

### 11.2 Transportation and Traffic Analysis

#### 11.2.1 Planned and Programmed Improvements

The proposed project is not anticipated to preclude any transportation infrastructure improvement projects as identified by Cobb County.

#### 11.2.2 Preserving Regional Mobility

This project is proximate to I-285, Veterans Memorial Highway (SR 8/US 78/US 278), and South Cobb Drive (SR 280). I-285 is an interstate principal arterial, and the other two (2) roads are principal arterials.

#### 11.2.3 Safe and Efficient Operations

Pedestrians and bicyclists were taken into consideration when formulating and testing recommended improvements as outlined in this report. The results of this traffic study represent a list of recommendations that not only address transportation enhancements for vehicular traffic, but also for pedestrians and bicyclists. The recommendations are intended to provide solutions that are context sensitive and create safe conditions and aim at balancing the mobility needs of all modes.

#### 11.2.4 Minimize Congestion

The recommendations as described in this report are targeted at reducing vehicular congestion to standards as described earlier in this report. Recommendations reflect the goal of vehicular congestion mitigation, particularly the mixed-use nature of this development. The residential, office, retail, and industrial uses are proposed to accommodate pedestrians and bicyclists along the internal roads.

### 11.3 Relationship of Existing Development and Infrastructure

The development is located in an area where the existing infrastructure is adequate to serve the needs of the development upon build-out (2018).

## 12.0 ARC'S AIR QUALITY BENCHMARK

The proposed development is located on approximately 81.95 acres and includes 1,702 residential units. Because the dominant use is residential and the site exceeds 20 dwelling units per acre, this meets the ARC criteria for a 6% VMT reduction.

The proposed development will contain a pedestrian network within the site that includes sidewalks along public road frontage, a multi-use trail adjacent to the Chattahoochee River, and a walking path throughout the site. This anticipated pedestrian and bicycle internal network that connects to adjoining uses meets the ARC criteria for a 5% VMT reduction (Density 'target' also satisfied).

The proposed development earns a score of 11% VMT reduction for the ARC criteria. These reductions are displayed in **Table 16**.

<b>Table 16</b> <b>ARC VMT Reductions</b>	
<b>Projects where residential is the dominant use</b>	
Project is greater than 15 dwelling units/acre	- 6%
Bike/ped networks in development connecting to land uses within/adjoining the site (Density 'target' also satisfied)	- 5%
<b>Total Reductions</b>	<b>- 11%</b>