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Note: The Area of Influence analysis is included in the Appendix.

EXECUTIVE SUMMARY

This report presents the analysis of the anticipated traffic impacts of a proposed +/- 79.53-acre mixed-use development in DeKalb County, Georgia. This report is being prepared as part of a submittal requesting rezoning from R-100 (Single Family Residential) to a combination of C-1 (Local Commercial) & RM-HD (Multifamily Residential District). Because the proposed development will exceed 400,000 square feet, it is a Development of Regional Impact (DRI) and is subject to Georgia Regional Transportation Authority (GRTA) and Atlanta Regional Commission (ARC) review.

The proposed mixed-use development is expected to consist of approximately 681 residential units (garden flats) and 143,400 square feet of commercial space. The development is scheduled to be completed in phases with full buildout by the year 2013.

Capacity analyses were performed for the Existing 2008 Conditions, Projected 2013 No-Build Conditions, and Projected 2013 Build Conditions at six intersections. This study network consists of:

1. Flat Shoals Parkway (SR 155) at Clifton Springs Road
2. Flat Shoals Parkway (SR 155) at I-285 Eastbound Ramp
3. Flat Shoals Parkway (SR 155) at I-285 Westbound Ramp
4. Flat Shoals Parkway (SR 155) at Waldrop Road
5. Flat Shoals Road (SR 155) at Candler Road
6. Clifton Springs Road at Panthersville Road

Each of the above listed intersections was analyzed for the Existing 2008 Conditions, the 2013 No-Build Conditions, and the 2013 Build Conditions. Based on the existing 2008 conditions, one of the study intersections currently operate below the acceptable Level of Service standard (LOS D) during at least one of the peak hours. The Projected 2013 No-Build Conditions represent the existing traffic volumes grown at 2% per year for five years along all roadway links. The Projected 2013 Build Conditions adds the project trips associated with the Flat Shoals development to the Projected 2013 No-Build Conditions. Per GRTA's Letter of Understanding, improvements were identified at intersections that will be necessary to maintain the Level of Service standard (LOS D or E) within the study network. The summary of the recommended improvements are listed below:

2013 No-Build recommended improvements (includes background traffic growth and excludes the Flat Shoals DRI development):

Flat Shoals Parkway (SR 155) at I-285 Eastbound Ramps (Intersection #3)

- Install an additional eastbound left-turn lane and right-turn lane along the off-ramp.

Flat Shoals Parkway (SR 155) at Clifton Springs Road/Columbia Drive (Intersection #4)

- Install an additional westbound left-turn lane (creating dual left-turns) along Columbia Drive and provide protected-only left-turn signal phase (green arrow).
- Install a northbound right-turn lane along Flat Shoals Parkway.

Flat Shoals Parkway (SR 155) at Waldrop Road (Intersection #5)

- Install a westbound left-turn lane along Waldrop Road.

2013 Build recommended improvements (2013 No-Build Conditions plus the traffic associated with the Flat Shoals DRI development):

Flat Shoals Parkway (SR 155) at Clifton Springs Road/Columbia Drive (Intersection #4)

- Install an additional eastbound left-turn lane (creating dual left-turns) along Clifton Springs Road and provide protected-only left-turn signal phase (green arrow).

The recommended driveway improvements are listed below:

Clifton Springs Road at Driveway #1 (Full-movement Unsignalized)

- Install separate northbound left-turn lane and right-turn lane exiting driveway.
- Provide center two-way left turn lane along Clifton Road between Driveway #1 and Flat Shoals Parkway. This improvement would provide a westbound left-turn lane at driveways #1 and #2.

Clifton Springs Road at Driveway #1 (Full-movement Unsignalized)

- Install separate northbound left-turn lane and right-turn lane exiting driveway.

Clifton Springs Road at Driveway #3 (Right-in/right-out driveway)

- Install right-in/right-out driveway.

Flat Shoals Parkway (SR 155) at Driveway #4 (Right-in/right-out driveway)

- Install right-in/right-out driveway.
- Install a southbound right-turn lane along Flat Shoals Parkway.

Flat Shoals Parkway (SR 155) at Driveway #5 (New Median Opening/Full-movement Unsignalized)

- Install new median opening aligned with existing DeKalb County Public Library driveway.
- Install a northbound left-turn lane along Flat Shoals Parkway.
- Install a southbound left-turn lane along Flat Shoals Parkway.
- Install a southbound right-turn lane along Flat Shoals Parkway.
- Install separate eastbound left-turn lane and shared through/right-turn lane exiting the driveway.

1.0 PROJECT DESCRIPTION

1.1 Introduction

This report presents the analysis of the anticipated traffic impacts of a proposed approximate +/-79.53-acre mixed-use development in DeKalb County, Georgia. This report is being prepared as part of a submittal requesting rezoning from R-100 (Single Family Residential) to a combination of C-1 (Local Commercial) & RM-HD (Multifamily Residential District). Because the proposed development will exceed 400,000 square feet, it is a Development of Regional Impact (DRI) and is subject to Georgia Regional Transportation Authority (GRTA) and Atlanta Regional Commission (ARC) review.

The proposed development is expected to consist of approximately 681 residential units (garden flats) and 143,400 square feet of commercial space. The development is scheduled to be completed in two phases with full buildout by the year 2013.

A summary of the proposed land-uses and densities can be found below in **Table 1.**

Table 1
Proposed Land Uses

Residential Units (garden flats)	681 units
Commercial Space	143,400 square feet

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

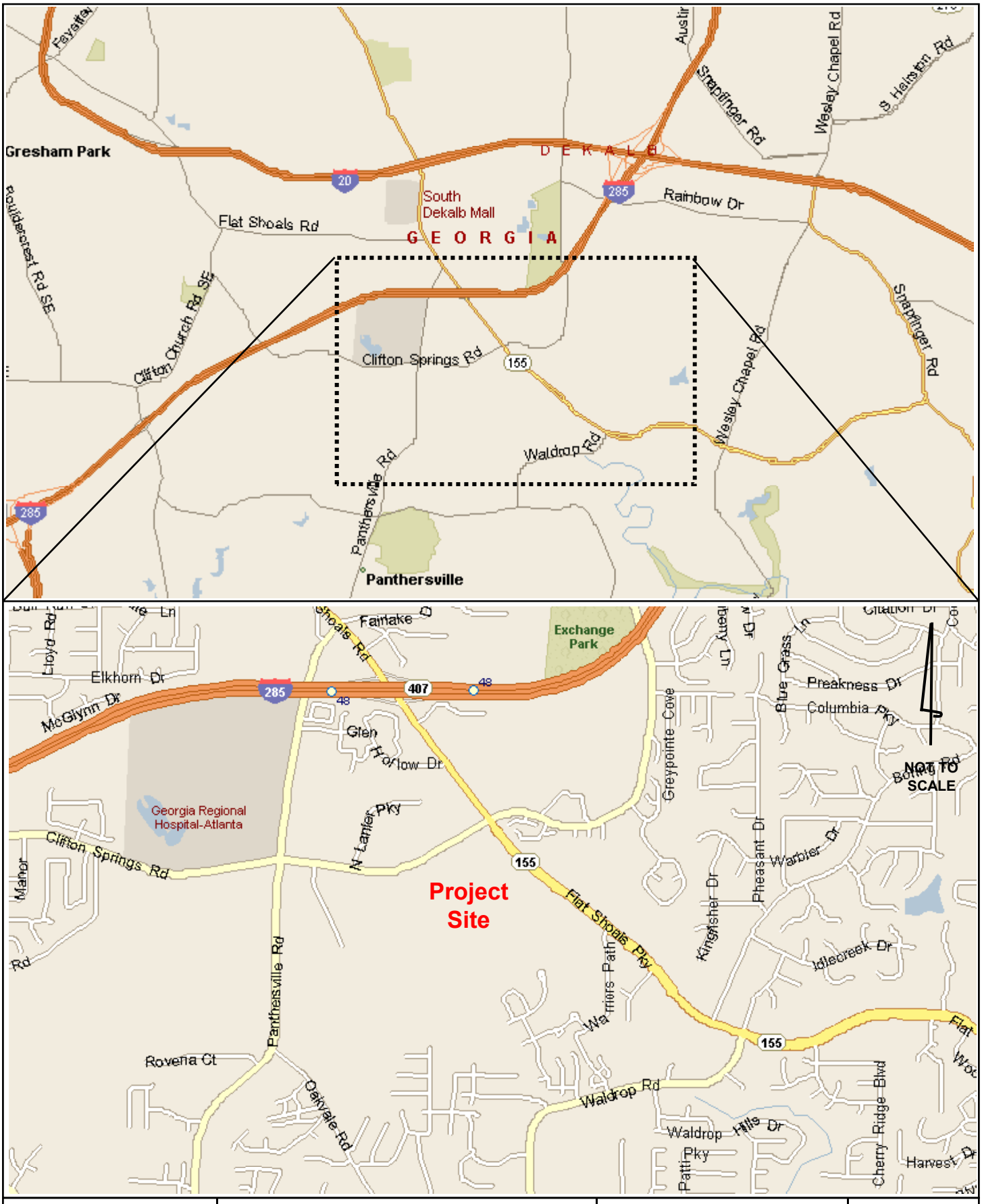
1.2 Site Plan Review

The proposed site, located along the west side of Flat Shoals Parkway and south side of Clifton Springs Road, is currently wooded with two residential homes. The site has roadway frontage along both Flat Shoals Parkway and Clifton Springs Road. The proposed retail is located along the site frontage and accessed from either road. The proposed residential units are located in the southern half of the development and accessed from either road. The development proposes open space in the southern portion of the site along the South River. The development proposed a trail connection to a proposed DeKalb County Multi-Use Trail along the South River. The development also proposes a network of pedestrian connections internal to the site and to connect to existing sidewalks along the roadway frontage.

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

1.3 Site Access

Access to the development is proposed at five locations: two access locations along Flat Shoals Parkway and three access locations along Clifton Springs Road. A new median opening is proposed along Flat Shoals Parkway, approximately 820 feet south of the signalized intersection of Clifton Springs Road. A right-in/right-out driveway is proposed along Flat Shoals Parkway, approximately halfway between Clifton Springs Road and the proposed median opening. One right-in/right-out driveway, and two full movement driveways are proposed along Clifton Springs Road. The three driveways are located at approximately 270 feet, 610 feet, and 870 feet from the intersection of Flat Shoals Parkway. Pedestrian access will be provided at all site driveways.



Kimley-Horn and Associates, Inc.	**Flat Shoals DRI Transportation Analysis**	**Site Location**	**Figure 1**

Kimley-Horn and Associates, Inc.	**Flat Shoals DRI Transportation Analysis**	**Aerial**	**Figure 2**

Flat Shoals

PROJECT SUMMARY

Acreage (Gross)	±79.53 ac.
County District:	15th
Current Land-Use:	Suburban
Proposed Land-Use:	Neighborhood Center
Existing Zoning:	R-100
Proposed Zoning:	
Tract A	C-1
Tract B	RM-HD
Total Residential Units:	681
Total Commercial Area:	143,400s.f.

CONTACT INFORMATION

APPLICANT REPRESENTATIVE:
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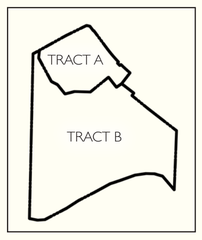
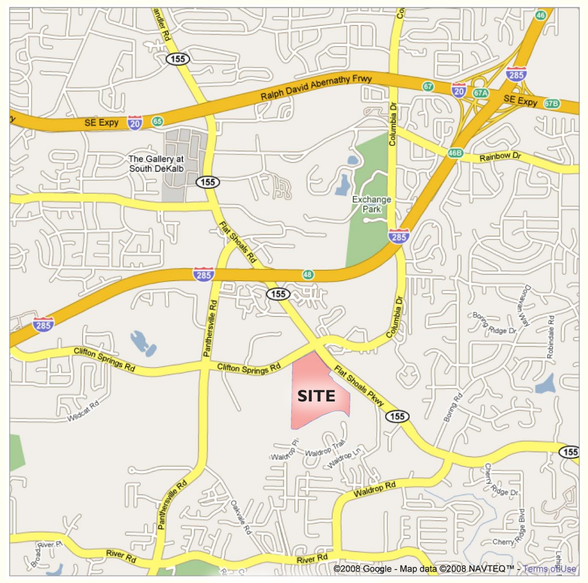
KIMLEY-HORN & ASSOCIATES,INC.
(770)825-0744
CONTACT: ANDREW ANTWEILER / JOHN WALKER

TRACT KEY





Vicinity Map N.T.S.

Existing Intersection
• Existing Traffic Signal

ZONED: C-1 LAND USE: LIGHT INDUSTRIAL
ZONED: PSD LAND USE: SUBURBAN
ZONED: R-A8 LAND USE: SUBURBAN
ZONED: M LAND USE: LIGHT INDUSTRIAL
ZONED: NS LAND USE: SUBURBAN
ZONED: R-100 LAND USE: SUBURBAN
ZONED: OI LAND USE: SUBURBAN
ZONED: RM-85 LAND USE: SUBURBAN

Access Point #1
Access Point #2
Access Point #3
Access Point #4
Access Point #5

N/F QUICKTRIP 736 DB. 16226 PG. 0457
N/F PANOLA CAR WASH PARTNERS, LLC DB. 19987 PG. 0003
N/F DEKALB COUNTY (HEALTH DEPARTMENT)
N/F MEDSHARE INTERNATIONAL INC. DB. 19640 PG. 0164
N/F FREDRICKS DEVELOPMENT CORP. (UNRECORDED) C.C.CROSS (UNRECORDED) MARY KELLER COBB (UNRECORDED)
N/F DEKALB COUNTY (LIBRARY)
N/F KELPEN HOMES R OR / KELPEN AGNES P DB. 05843 PG. 0588
N/F STONE MOUNTAIN INDUSTRIAL PARK, INC. DB. 5839 PG. 166
N/F WALDROP STATION PHASE II PB. 140 PG. 146
N/F WALDROP STATION PHASE 3 PB. 143 PG. 22

CLIFTON SPRINGS ROAD (R/W Varies)
CLIFTON SPRINGS ROAD (PRIVATE ROAD)
FLAT SHOALS PARKWAY (R/W VARIES)
Flat Shoals Parkway / SR 155 (R/W Varies)
Columbia Drive
Service Road
South River

TRACT A
TRACT B

Existing Marta Stop
Existing House and surrounding out-buildings (to be removed)
Potential Detention Area
Common Area
Open Space
100-Year Flood Plain
Private Trail Connection
Proposed Public Trail Connection to Future DeKalb County Multi-Use Trail (Pending Review and Recommendations by DeKalb County Parks and Recreation Department)
T.P.O.B. Tract A
P.O.B. Tract A and Tract B

Road A, Road B, Road C, Road D, Road E, Road F, Road G, Road H, Road I
C1, C2, C3, C4, C5, C6, C7, C8, C9, C10
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13
Sidewalk

PROJECT NOTES: One existing house and four out-buildings on site will be removed.

Flat Shoals Development Program for DRI

Building ID	Description/Product Type	Phase	Area (acres)	Open Space (acres)	Building Height	Residential Units	Gross Commercial Area (s.f.)	Residential Density (units/acre)	FAR
Tract A (Proposed C-1)									
C1	Commercial	1			1 Story		7,000		
C2	Commercial	1			1 Story		7,000		
C3	Commercial	1			1 Story		7,000		
C4	Commercial	1			1 Story		7,000		
C5	Commercial	1			1 Story		3,200		
C6	Commercial	1			1 Story		4,900		
C7	Commercial	1			1 Story		9,800		
C8	Commercial	1			1 Story		4,900		
C9	Commercial	1			1 Story		80,000		
C10	Commercial	1			1 Story		12,600		
Total			16.24	1.89 (12%)			143,400		0.20
Tract B (Proposed RM-HD)									
R1	Multi-Family Residential*	1			3/4 Story Split Level	63			
R2	Multi-Family Residential*	1			3 Story	32			
R3	Multi-Family Residential*	1			3 Story	42			
R4	Multi-Family Residential*	1			3/4 Story Split Level	49			
R5	Multi-Family Residential*	1			3/4 Story Split Level	38			
R6	Multi-Family Residential*	1			3/4 Story Split Level	63			
R7	Multi-Family Residential*	1			3/4 Story Split Level	54			
R8	Multi-Family Residential*	1			3/4 Story Split Level	63			
R9	Multi-Family Residential*	1			3/4 Story Split Level	63			
R10	Multi-Family Residential*	1			3/4 Story Split Level	54			
R11	Multi-Family Residential*	1			3/4 Story Split Level	49			
R12	Multi-Family Residential*	1			3 Story	48			
R13	Multi-Family Residential*	1			3/4 Story Split Level	63			
Total			63.29	35.37 (56%)		681		10.75	0.25
Grand Total			79.53	37.26 (47%)		681	143,400	10.75	0.24

*NOTE: Residential units calculated at 1,000 s.f. per unit.

Flat Shoals Parking Program		
	Parking Required	Parking Provided
Commercial	645 (5.5 per 1000s.f.)*	645
Residential	1192 (1.75 per unit)	1211

*Requesting reduction from DeKalb County to 4.5 per 1000 s.f.

TRANSPORTATION LEGEND

- Existing Roadway Laneage
- Proposed Driveway
- No-Build Improvements
- Build Improvements
- Existing Traffic Signal
- XX AM Peak Hour Traffic Volumes
- (XX) PM Peak Hour Traffic Volumes

LEGEND

- Multi-Family Residential
- Multi-Family Residential
- Commercial

DRI SITE PLAN (DRI ID: 1850)

DEKALB COUNTY, GA
July 24, 2008

0 50' 100' 200'

HGOR Planners & Landscape Architects

1.4 Bicycle and Pedestrian Facilities

Sidewalks currently exist along the site frontage along Flat Shoals Parkway. Sidewalks do not currently exist along site frontage along Clifton Springs Road. There are no dedicated bike lanes in the area.

1.5 Transit Facilities

MARTA currently serves the area. A MARTA bus stop is located along the site frontage of Clifton Springs Road. A MARTA bus shelter is located across the street. MARTA bus routes 114 and 15 serve the area, with route 114 providing a connection to MARTA rail service at the Avondale Station and route 15 providing a connection to MARTA rail service at the Decatur Station.

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 the Georgia DOT was analyzed to help determine a background traffic growth rate. Based on the recent trends in traffic along the area roadways, as well as the population growth rates of DeKalb County, and a growth rate of 2.0% per year along all roadways was agreed upon during the methodology meeting with GRTA staff.

2.2 Traffic Data Collection

Vehicle turning movement counts were performed from 7:00 - 9:00 AM and 4:00 - 6:00 PM at six intersections within the study network. Four of the intersections were counted during the month of May (when school was in session); two intersections were counts during the month of June. The morning and afternoon peak hours varied between the six intersections and are listed below:

1. Flat Shoals Road (SR 155) at Candler Road *
    - 7:15 – 8:15 AM Peak Hour, 4:30-5:30 PM Peak Hour
2. Flat Shoals Parkway (SR 155) at I-285 Westbound Ramp
    - 7:30 – 8:30 AM Peak Hour, 5:00 – 6:00 PM Peak Hour
3. Flat Shoals Parkway (SR 155) at I-285 Eastbound Ramp
    - 7:15 – 8:15 AM Peak Hour, 5:00 – 6:00 PM Peak Hour
4. Flat Shoals Parkway (SR 155) at Clifton Springs Road
    - 7:15 – 8:15 AM Peak Hour, 4:45 – 5:45 PM Peak Hour
5. Flat Shoals Parkway (SR 155) at Waldrop Road *
    - 7:15 – 8:15 AM Peak Hour, 5:15 – 6:15 PM Peak Hour
6. Clifton Springs Road at Panthersville Road
    - 7:15 – 8:15 AM Peak Hour, 4:15 – 5:15 PM Peak Hour

*It should be noted two intersection counts were performed June 19th after DeKalb County Schools were dismissed for the summer. To account for school traffic, the June intersection counts were factored up based on an adjustment factor. The adjustment factor was determined by comparing tube counts performed in May and June along Flat Shoals Parkway, south of Clifton Springs Road. The AM peak hour volumes were adjusted 9.5% and the PM peak hour volumes were adjusted 6.0%.

All raw count data is included in the Appendix.

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 6.0.

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 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.

3.0 STUDY NETWORK

3.1 Gross Trip Generation

As stated earlier, the proposed development will consist of approximately 681 residential units and 143,400 square feet of commercial space.

Traffic for these land uses was calculated using equations contained in the *Institute of Transportation Engineers' (ITE) Trip Generation Manual, Seventh Edition, 2003*. Gross trips generated are displayed below in **Table 2**.

Table 2
Flat Shoals DRI
Gross Trip Generation

Land Use	ITE Code	Daily Traffic		AM Peak Hour		PM Peak Hour	
		Enter	Exit	Enter	Exit	Enter	Exit
Build-Out (Year 2013)							
681 Residential Units	*230*	1,639	1,639	41	199	194	96
143,400 SF Commercial Space	*820*	4,292	4,292	118	76	381	413
Total		**5,931**	**5,931**	**159**	**275**	**575**	**509**

3.2 Trip Distribution

The directional distribution and assignment of new project trips was based on the project land uses, a review of development in the area, combined with engineering judgment and discussions with GRTA staff at the Pre-Application meeting.

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 GRTA's Letter of Understanding.

3.4 Study Network Determination

A general study area was determined using the 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) be considered for analysis. This general study area was refined during the methodology meeting, and includes the following intersections:

- Flat Shoals Parkway (SR 155) at Clifton Springs
- Flat Shoals Parkway (SR 155) at I-285 Eastbound
- Flat Shoals Parkway (SR 155) at I-285 Westbound Ramp
- Flat Shoals Parkway (SR 155) at Waldrop Road
- Flat Shoals Road (SR 155) at Candler Road
- Clifton Springs Road at Panthersville Road
- All proposed site driveways

Each of the above listed intersections was analyzed for the Existing 2008 Condition, the 2013 No-build Condition, and the 2013 Build Condition. The 2013 No-build condition represents the existing traffic volumes grown at 2.0% per year for five years. The 2013 Build condition adds the project trips associated with the Flat Shoals DRI development to the 2013 No-Build condition. (Note: The proposed site driveways were only analyzed for the 2013 Build conditions.)

3.5 Existing Facilities

Roads in the study network were inventoried to obtain geometric characteristics, posted speed limits, and the GDOT Roadway Functional Classifications. A description follows:

Roadway	Number of Lanes	Posted Speed Limit (MPH)	GDOT Functional Classification
Flat Shoals Parkway (SR 155)	4	45	Urban Minor Arterial
Clifton Springs Road	4	35	Urban Collector Street
Panthersville Road	2/4	45	Urban Minor Arterical
Columbia Drive	2	35	Urban Collector Street

Flat Shoals Parkway (SR 155) is a two-way, divided, north-south oriented roadway that extends from Clifton Springs Road to the south (along the site frontage). The posted speed limit along the site frontage is 45 MPH. On May 15, 2008, the average daily traffic volume (ADT) south of Clifton Springs Road (along the site frontage) was 36,536 vehicles.

Clifton Springs Road is a two-way, undivided, east-west oriented roadway that extends from Clifton Church Road to Flat Shoals Parkway. Between Flat Shoals Parkway and Panthersville Road, there are two through lanes in each direction and no dedicated left-turn lanes. The posted speed limit along the site frontage is 35 MPH. On June 19, 2008, the average daily traffic volume (ADT) west of Flat Shoals Parkway (along the site frontage) was 13,867 vehicles.

Panthersville Road is a two-way, north-south oriented roadway that extends from Flat Shoals Road to Bouldercrest Road. North of Clifton Springs Road the road is four-lanes, undivided; south of Clifton Springs Road, the road is two-lanes, undivided.

Columbia Road is a two-way, two-lane undivided, primarily north-south oriented roadway that extends from Flat Shoals Parkway to Glenwood Road.

4.0 TRIP GENERATION

As stated earlier, trips associated with the proposed development were estimated using the ITE *Trip Generation Manual*, Seventh Edition (2003), using equations in where available.

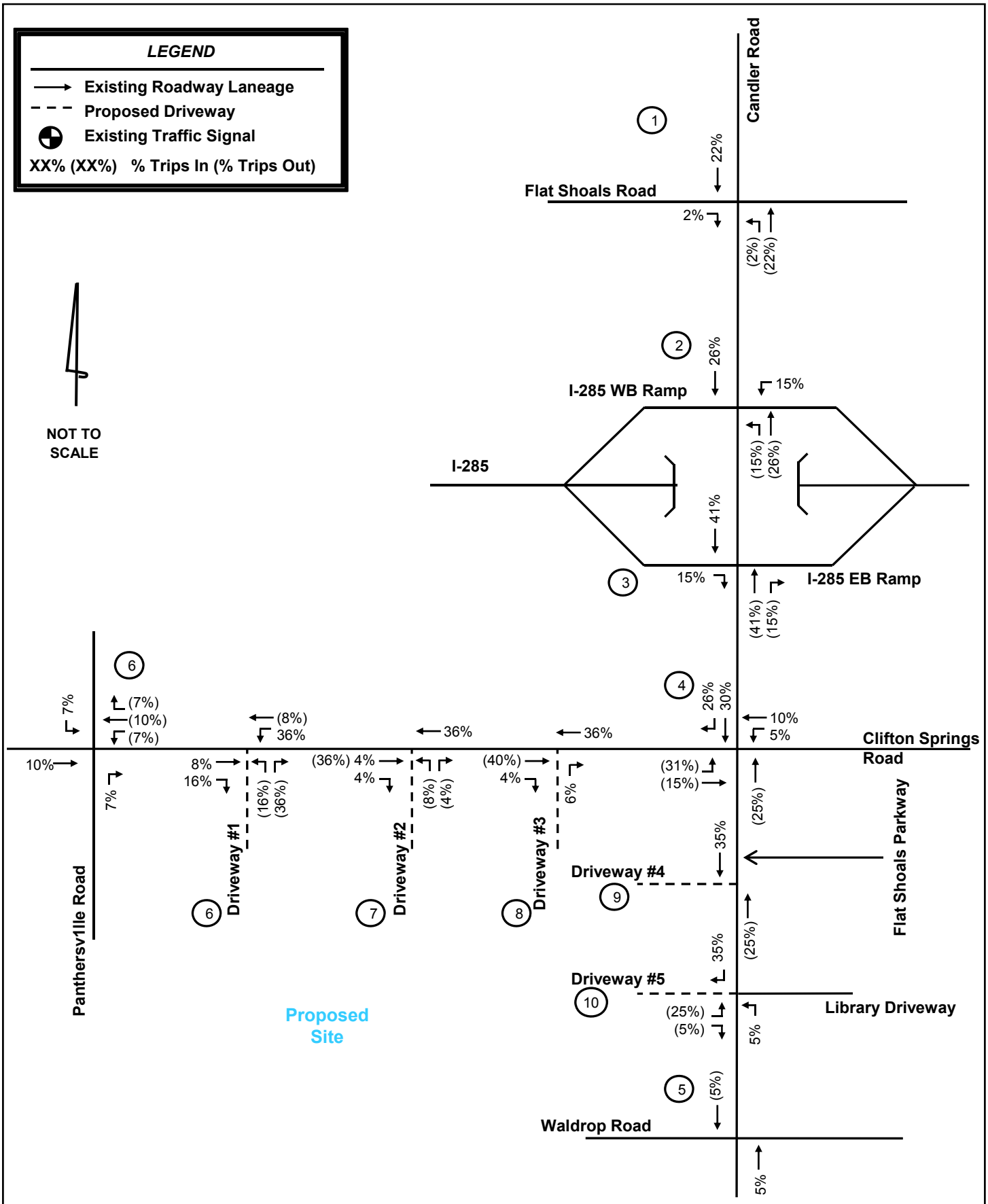
Mixed-use and pass-by reductions were taken according to the *ITE Trip Generation Handbook, 2004*. The ITE pass-by reduction calculation of thirty-five percent of project trips was less than ten percent of the adjacent street volume, therefore the GRTA ten percent limit was not applied. An alternative mode reduction of 4% was taken to account for the existing MARTA transit service in the area. The total trips generated and analyzed in the report are listed below in **Table 3**.

Table 3
Flat Shoals DRI
Net Trip Generation

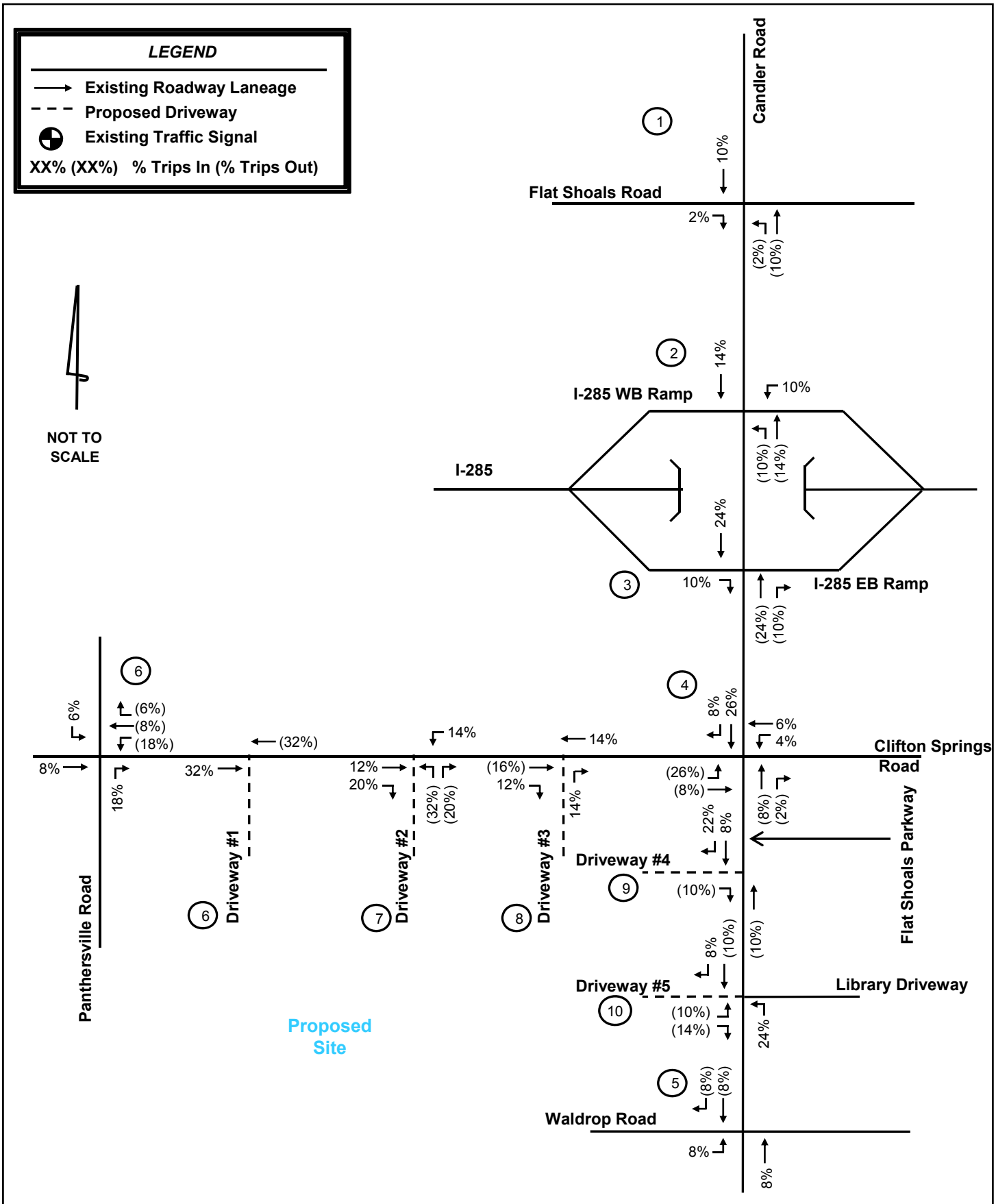
Land Use	Daily Traffic		AM Peak Hour		PM Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Build-Out (Year 2013)						
Gross Trips	**5,931**	**5,931**	**159**	**275**	**575**	**509**
Internal Capture Reductions	*-858*	*-858*	*-0*	*-0*	*-84*	*-84*
Alternative Mode Reductions	*-203*	*-203*	*-7*	*-11*	*-20*	*-17*
Pass-by Reductions	*-1,299*	*-1,299*	*-0*	*-0*	*--120*	*-119*
New Trips	**7,142**	**7,142**	**152**	**264**	**351**	**289**

5.0 TRIP DISTRIBUTION AND ASSIGNMENT

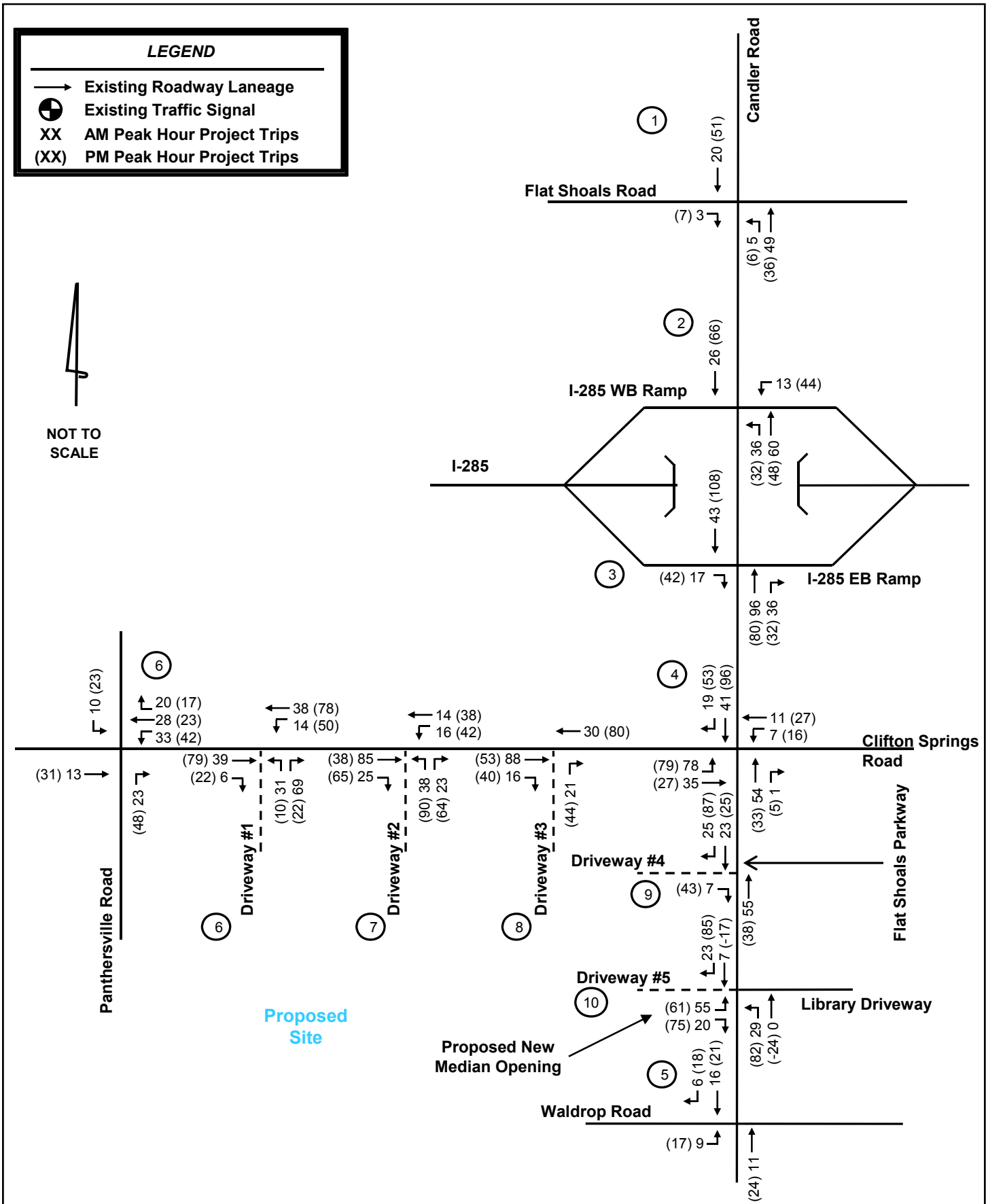
New trips were distributed onto the roadway network using the percentages agreed to during the methodology meeting. **Figure 4 and Figure 5** display the expected percentages for the development throughout the roadway network. These percentages were applied to the new trips generated by the development (see Table 3, above), and the volumes were assigned to the roadway network. The expected peak hour turning movements generated by the proposed development are shown in **Figure 6**.



Kimley-Horn and Associates, Inc.	**Flat Shoals DRI Transportation Analysis**	**Residential Distribution**	**Figure 4**



Kimley-Horn and Associates, Inc.	**Flat Shoals DRI Transportation Analysis**	**Retail Distribution**	**Figure 5**



Kimley-Horn and Associates, Inc.	Flat Shoals DRI Transportation Analysis	Project Trips	Figure 6

6.0 TRAFFIC ANALYSIS

6.1 Existing Traffic

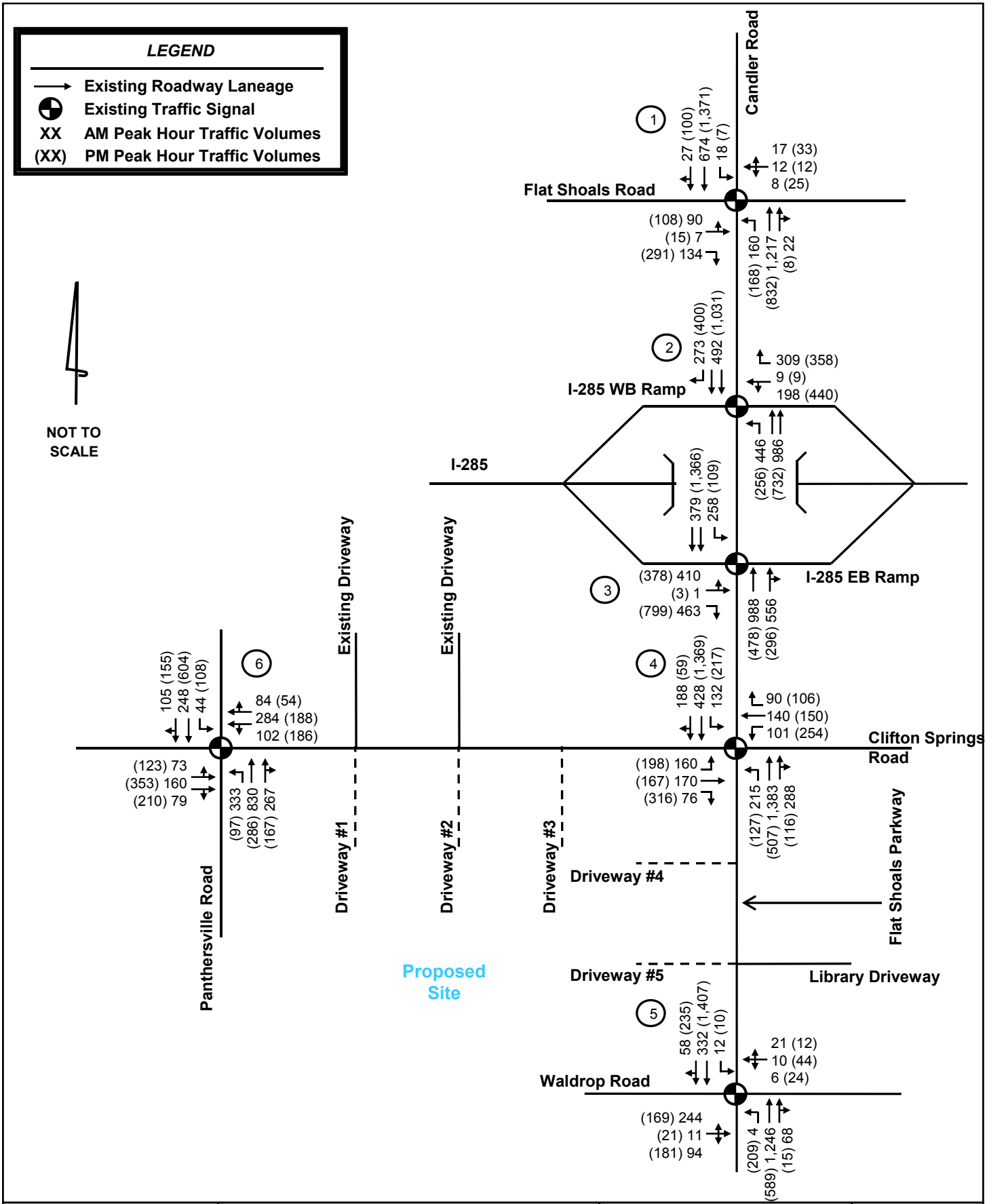
The existing 2008 traffic volumes and laneage are shown in **Figure 7**. These volumes were input in Synchro 6.0 and an Existing Conditions analysis was performed. The results are displayed below in **Table 4**.

Table 4
Flat Shoals DRI
Existing 2008 Intersection Levels of Service
(delay in seconds)

	Intersection	Control	AM Peak Hour	PM Peak Hour
1	Flat Shoals Road (SR 155) at Candler Road	Signal	B (16.8)	C (27.3)
2	Flat Shoals Parkway (SR 155) at I-285 Westbound Ramp	Signal	B (29.5)	C (29.6)
3	Flat Shoals Parkway (SR 155) at I-285 Eastbound Ramp	Signal	E (63.5)	F*
4	Flat Shoals Parkway (SR 155) at Clifton Springs Road	Signal	D (40.6)	D (47.3)
5	Clifton Springs Road at Waldrop Road	Signal	D (43.6)	D (53.4)
6	Clifton Springs Road at Panthersville Road	Signal	C (22.2)	C (26.9)

*Long delay expected.

As shown in Table 4, the intersection of Flat Shoals Parkway (SR 155) at I-285 Eastbound Ramp currently operates below the acceptable Level of Service standard (LOS D). The Level of Service standard for this intersection will be LOS E for the purpose of this study, in accordance to the Letter of Understanding issued by GRTA.



Kimley-Horn and Associates, Inc.	**Flat Shoals DRI Transportation Analysis**	**Existing 2008 Conditions**	**Figure 7**

6.2 2013 No-Build Traffic

The existing traffic volumes were grown at 2.0% per year for five years along all roadway links within the study network. These volumes were input in Synchro 6.0, and analyses of the projected No-build conditions were performed. The results are displayed below in **Table 5.** The projected volumes, laneage, and recommended intersection control for the year 2013 No-Build condition are illustrated in **Figure 8.**

Table 5
Flat Shoals DRI
No-Build 2013 Intersection Levels of Service
(delay in seconds)

	Intersection	Control	LOS Standard	AM Peak Hour	PM Peak Hour
1	Flat Shoals Road (SR 155) at Candler Road	Signal	LOS D	B (17.9)	C (33.7)
2	Flat Shoals Parkway (SR 155) at I-285 Westbound Ramp	Signal	LOS D	D (40.0)	C (34.2)
3	Flat Shoals Parkway (SR 155) at I-285 Eastbound Ramp	Signal	LOS E	F (84.2)	F *
4	Flat Shoals Parkway (SR 155) at Clifton Springs Road	Signal	LOS D	E (56.1)	E (56.7)
5	Clifton Springs Road at Waldrop Road	Signal	LOS D	E (71.2)	E (60.7)
6	Clifton Springs Road at Panthersville Road	Signal	LOS D	C (23.9)	C (29.0)

*Long delay expected.

As shown in Table 5, three intersections are projected to operate below the acceptable Level of Service standard of (LOS D) for two of the intersections and (LOS E) for one of the intersections. Per GRTA's Letter of Understanding, improvements were recommended at those intersections until the Level of Service was elevated to the GRTA standard. The intersection improvements are listed below. The 2013 No-Build with Improvement intersection Level of Service are displayed in **Table 6**.

Flat Shoals Parkway (SR 155) at I-285 Eastbound Ramps (Intersection #3)

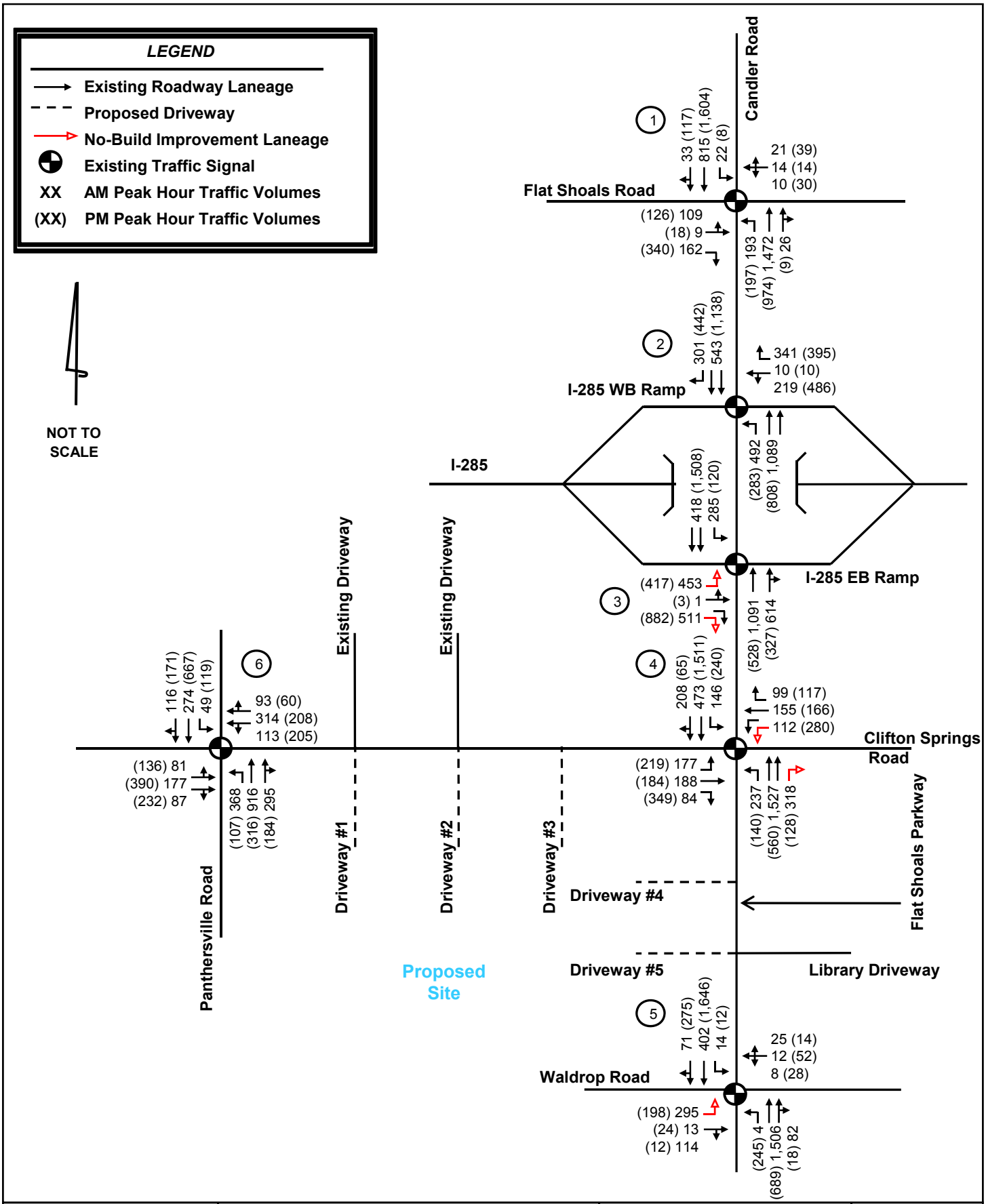
- Install an additional eastbound left-turn lane and right-turn lane along the off-ramp.

Flat Shoals Parkway (SR 155) at Clifton Springs Road/Columbia Drive (Intersection #4)

- Install an additional westbound left-turn lane (creating dual left-turns) along Columbia Drive and provide protected-only left-turn signal phase (green arrow).
- Install a northbound right-turn lane along Flat Shoals Parkway.

Flat Shoals Parkway (SR 155) at Waldrop Road (Intersection #5)

- Install a westbound left-turn lane along Waldrop Road.



Kimley-Horn and Associates, Inc.	Flat Shoals DRI Transportation Analysis	2013 No-Build Conditions	Figure 8

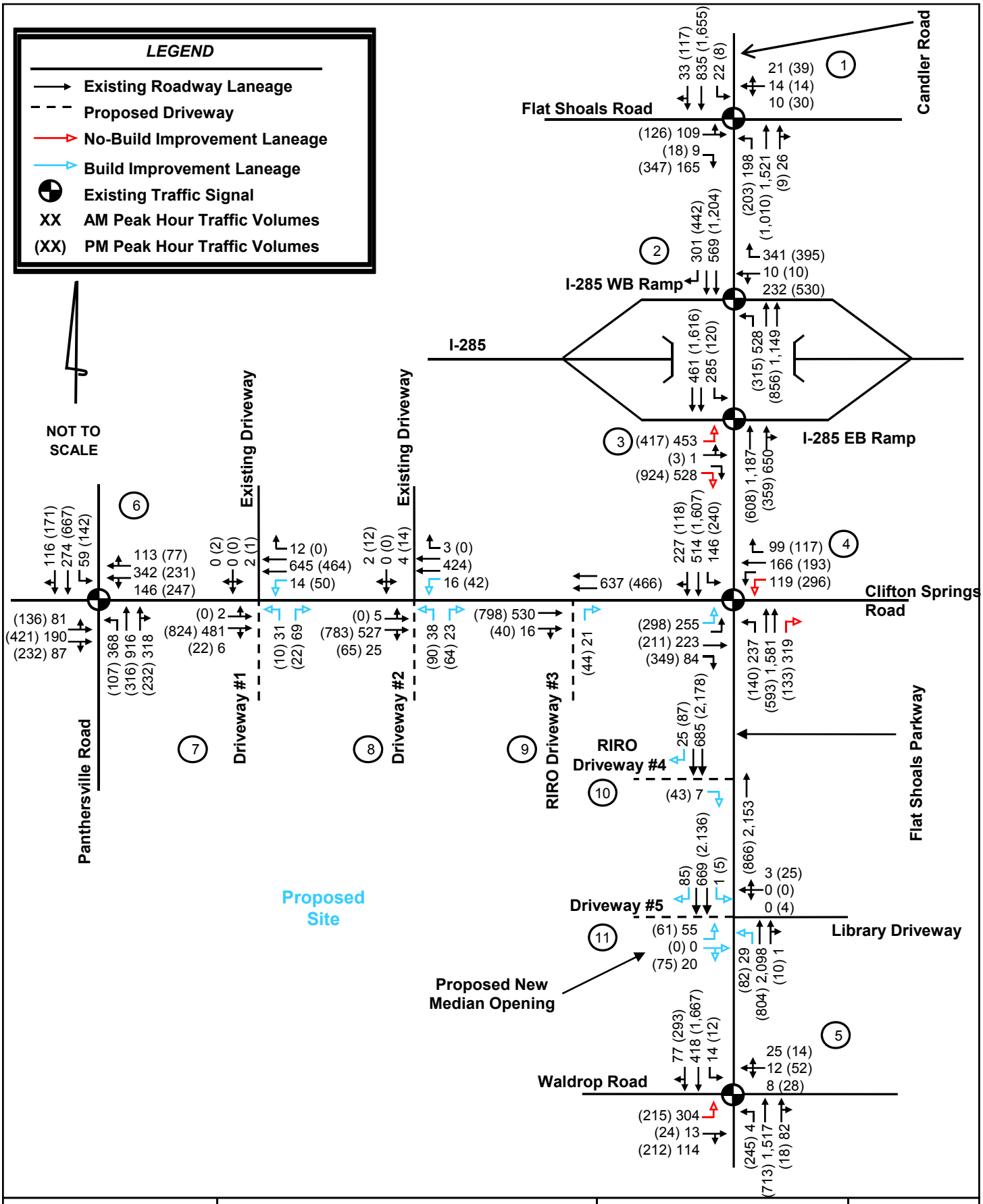
In addition to these intersection improvements, it should be noted the 2013 No-Build conditions analysis indicated the Flat Shoals Parkway at I-285 Westbound Ramp operated at an acceptable level of service; however, the off-ramp *approach LOS* was projected to operate at LOS F during the AM peak hour and LOS E during the PM peak hour. Based on GRTA methodology, no improvements were necessary at the intersection; however, likely improvement recommendations would be an additional westbound left-turn lane and right-turn lane along the off-ramp.

Table 6
Flat Shoals DRI
No-Build 2013 Intersection Levels of Service IMPROVED
(delay in seconds)

	Intersection	Control	LOS Standard	AM Peak Hour	PM Peak Hour
3	Flat Shoals Parkway (SR 155) at I-285 Eastbound Ramp	Signal	LOS E	E (56.0)	D (52.3)
4	Flat Shoals Parkway (SR 155) at Clifton Springs Road	Signal	LOS D	D (39.5)	D (53.9)
5	Clifton Springs Road at Waldrop Road	Signal	LOS D	D (44.1)	C (29.2)

6.3 2013 Build Traffic

The traffic associated with the proposed development (Flat Shoals) was added to the 2013 No-build volumes. These volumes were input into Synchro 6.0 and analyses of the projected 2013 Build conditions were performed. The results of the study intersection analyses and proposed driveway analyses are displayed below in **Table 7**. The projected volumes, laneage, and recommended intersection control for the year 2013 Build condition are illustrated in **Figure 9.**



Kimley-Horn and Associates, Inc.	**Flat Shoals DRI Transportation Analysis**	**2013 Build Conditions**	**Figure 9**

Table 7
Flat Shoals DRI
Build 2013 Intersection Levels of Service
(delay in seconds)

	Intersection	Control	LOS Standard	AM Peak Hour	PM Peak Hour
1	Flat Shoals Road (SR 155) at Candler Road	Signal	LOS D	C (22.4)	D (35.2)
2	Flat Shoals Parkway (SR 155) at I-285 Westbound Ramp	Signal	LOS D	D (50.5)	D (40.4)
3	Flat Shoals Parkway (SR 155) at I-285 Eastbound Ramp	Signal	LOS E	E (64.0)	E (60.2)
4	Flat Shoals Parkway (SR 155) at Clifton Springs Road	Signal	LOS D	D (47.5)	E (69.5)
5	Clifton Springs Road at Waldrop Road	Signal	LOS D	C (21.0)	C (29.5)
6	Clifton Springs Road at Panthersville Road	Signal	LOS D	C (27.9)	D (39.9)
7	Clifton Springs Road at Full-movement Driveway #1	Unsignalized	LOS D	NB - B (14.6) SB – D (28.6)	NB - C (20.2) SB – C (15.7)
8	Clifton Springs Road at Full-movement Driveway #2	Unsignalized	LOS D	NB – C (20.7) SB – C (20.6)	NB – F (59.7) SB – C(21.9)
9	Clifton Springs Road at RIRO Driveway #3	Unsignalized	LOS D	NB - B (10.3)	NB - B (12.1)
10	Flat Shoals Parkway at RIRO Driveway #4	Unsignalized	LOS D	EB - B (10.0)	EB - C (18.8)
11	Flat Shoals Parkway at Full-movement Driveway #5	Unsignalized	LOS D	EB – E (40.9) WB – C (22.8)	EB – F* WB – C (20.4)

As shown in Table 7, one study intersection is projected to operate below the acceptable Level of Service standard of (LOS D). Per GRTA's Letter of Understanding, improvements were recommended at the intersection until the Level of Service was elevated to the GRTA standard. The intersection improvement is listed below. The 2013 No-Build with Improvement intersection Level of Service is displayed in **Table 8**.

Flat Shoals Parkway (SR 155) at Clifton Springs Road/Columbia Drive (Intersection #4)

- Install an additional eastbound left-turn lane (creating dual left-turns) along Clifton Springs Road and provide protected-only left-turn signal phase (green arrow).

The five proposed project driveways are expected to operate at a level of service typical of similar driveways located in the area. The proposed new median opening/full-movement Driveway #5 is expected to operate at LOS F during the PM peak hour; however, during other times of the day the driveway is expected to operate with low

delay. The benefit of the proposed new median opening is northbound entering traffic along Flat Shoals Parkway will be able to make a left-turn prior to traveling through the signalized intersection of Clifton Springs Road. The new median opening will reduce project traffic at this busy signalized intersection. The median opening will also allow exiting project traffic to make a left-turn to travel north. When the exiting left-turn vehicles experience some delay, they have the option of exiting at one of the driveways along Clifton Springs Road and turning at the existing traffic signal.

The two right-in/right-out driveways are expected to operate acceptably.

The two full-movement driveways along Clifton Springs Road (#1 and #2) are expected operate acceptably – with Driveway #2 operating at LOS F only during the PM peak hour. A recommended improvement is made at both driveways to improve the level of service and expected traffic operation. Clifton Springs Road is currently a four-lane undivided roadway at the proposed driveway #1 and #2 locations. The current roadway does not provide for separating westbound left-turn vehicles (vehicles entering the proposed driveways) and westbound through vehicles. The additional recommended improvement is to provide a center two-way left-turn lane between driveway #1 and Flat Shoals Parkway. This improvement would provide a westbound left-turn lane at driveways #1 and #2. This recommended improvement is made instead of recommending right-turn deceleration lanes. The improved intersection Level of Service for Driveway #1 and Driveway #2 are displayed in Table 8.

Table 8
Flat Shoals DRI
Build 2013 Intersection Levels of Service IMPROVED
(delay in seconds)

	Intersection	Control	LOS Standard	AM Peak Hour	PM Peak Hour
4	Flat Shoals Parkway (SR 155) at Clifton Springs Road	Signal	LOS D	D (45.3)	D (54.9)
7	Clifton Springs Road at Driveway #1	Unsignalized	LOS D	NB – B (12.3) SB – C (18.4)	NB – B (15.0) SB – B (12.7)
8	Clifton Springs Road at Driveway #2	Unsignalized	LOS D	NB – B (14.8) SB – C (15.2)	NB – C (23.3) SB – C (15.2)

The recommended driveway improvements are listed below:

Clifton Springs Road at Driveway #1 (Full-movement Unsignalized)

- Install separate northbound left-turn lane and right-turn lane exiting driveway.
- Provide center two-way left turn lane along Clifton Road between Driveway #1 and Flat Shoals Parkway. This improvement would provide a westbound left-turn lane at driveways #1 and #2.

Clifton Springs Road at Driveway #1 (Full-movement Unsignalized)

- Install separate northbound left-turn lane and right-turn lane exiting driveway.

Clifton Springs Road at Driveway #3 (Right-in/right-out driveway)

- Install right-in/right-out driveway.

Flat Shoals Parkway (SR 155) at Driveway #4 (Right-in/right-out driveway)

- Install right-in/right-out driveway.
- Install a southbound right-turn lane along Flat Shoals Parkway.

Flat Shoals Parkway (SR 155) at Driveway #5 (New Median Opening/Full-movement Unsignalized)

- Install new median opening aligned with existing DeKalb County Public Library driveway.
- Install a northbound left-turn lane along Flat Shoals Parkway.
- Install a southbound left-turn lane along Flat Shoals Parkway.
- Install a southbound right-turn lane along Flat Shoals Parkway.
- Install separate eastbound left-turn lane and shared through/right-turn lane exiting the driveway.

7.0 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. According to ARC's Transportation Improvement Program, Envision 6 Regional Transportation Plan, Regional Transportation Improvement Program, GDOT's Construction Work Program, and the STIP several projects are programmed for the area. Information on the projects is included in the Appendix.

Project #	Build Out Year	Project Description
ARC DK-268B GDOT #0003102	2009	SR 155 (Candler Road) pedestrian and landscape enhancements from I-285 south to SR 154 (Memorial Drive), including improving traffic signals and pedestrian signals.
ARC DK-338 GDOT #0006894	2020	Widening of Panthersville Road from 2 to 4 lanes from Clifton Springs Road to SR 155 (Flat Shoals Parkway). The project will also incorporate bike lanes and sidewalks. (Note: This section of roadway is four lanes today.)
ARC DK-339 GDOT #0006895	2020	Widening of Columbia Drive from 2 to 4 lanes from SR 155 (Flat Shoals Parkway) to Rainbow Drive. The project will also incorporate bike lanes and sidewalks.
ARC DK-343 GDOT #0006898	2020	Widening of Rainbow Drive from 2 to 4 lanes from SR 155 (Candler Road) to Wesley Chapel Road. The project will also incorporate bike lanes and sidewalks.
ARC DK-AR-206 GDOT #713290	2020	Interchange improvements at I-285 and SR 155 (Flat Shoals Parkway) to include additional turn lanes and capacity on the bridge, improved signalization, and bicycle and pedestrian facitilies.
ARC DK-AR-BP061 GDOT #0008216	2009	Installation of sidewalks along Rainbow Drive from Candler Road to Columbia Drive.

There is also a proposed multi-use bike/ped facility, "South River Trail", along the south side of the property, along the South River. The proposed development incorporates accommodating this future trail and providing a trail head.

8.0 INGRESS/EGRESS ANALYSIS

Vehicular access to the development is proposed at five locations: two access locations along Flat Shoals Parkway and three access locations along Clifton Springs Road. A new median opening is proposed along Flat Shoals Parkway, approximately 820 feet south of the signalized intersection of Clifton Springs Road. A right-in/right-out driveway is proposed along Flat Shoals Parkway, approximately halfway between Clifton Springs Road and the proposed median opening. One right-in/right-out driveway, and two full movement driveways are proposed along Clifton Springs Road. The three driveways are located at approximately 270 feet, 610 feet, and 870 feet from the intersection of Flat Shoals Parkway. Pedestrian access will be provided at all site driveways.

9.0 INTERNAL CIRCULATION ANALYSIS

The proposed development will generate trips between the residential and retail uses of the development. Using the *ITE Trip Generation Handbook, 2004* as a reference, 14.47% of the gross daily trips would be internal, 15.50% of the PM trips would be internal.

10.0 COMPLIANCE WITH COMPREHENSIVE PLAN ANALYSIS

The DeKalb County Existing Land Use Map indicates the site is Low Density Residential and Parks, Recreation, Open Space. The Future Land Use Map identifies the site as Suburban. The Atlanta Region Unified Growth Policy Map identifies the area as Suburban Neighborhoods.

The site is located within the Candler Road/Flat Shoals Parkway LCI Study Area, which was performed in 2007. The LCI plan recommended the site's Future Land Use plan be "Residential/Mixed".

The site is not located in the Candler Road Overlay District along Candler Road (Flat Shoals Road), which exists to the north, between I-285 and I-20. The site is located in the I-20 Overlay District.

11.0 NON-EXPEDITED CRITERIA

11.1 Quality, Character, Convenience, and Flexibility of Transportation Options

There are currently transit opportunities in the vicinity of the proposed development. The development will be primarily served by vehicular access.

11.2 Vehicle Miles Traveled

The following table displays the reduction in traffic generation due to internal capture, pass-by trips, and alternative mode reductions (transit).

	Build-out Total
Daily Gross Trip Generation:	11,862
(-)Mixed-use reductions (internal capture)	-1,716
(-)Pass-by trips	-2,598
(-)Alternative modes	-406
Net Trips:	7,142

11.3 Relationship Between Location of Proposed DRI and Regional Mobility

The proposed development is not located within an urban core, activity center, or town center; however it is adjacent to a MARTA bus stop and shelter; and it is not part of an infill initiative. The development is located along SR 155 (Flat Shoals Parkway) a four-lane divided highway, which provides access to I-285 and I-20 to the north.

11.4 Relationship Between Proposed DRI and Existing or Planned Transit Facilities

MARTA currently serves the area. A MARTA bus stop is located along the site frontage of Clifton Springs Road. A MARTA bus shelter is located across the street. MARTA bus routes 114 and 15 serve the area, with route 114 providing a connection to MARTA rail service at the Avondale Station and route 15 providing a connection to MARTA rail service at the Decatur Station.

11.5 Transportation Management Area Designation

The proposed development is not located within an established TMA.

11.6 Offsite Trip Reduction and Trip Reduction Techniques

The proposed development will generate trips between the residential and retail uses of the development. Using the *ITE Trip Generation Handbook, 2004* as a reference, 14.47% of the gross daily trips would be internal, 15.50% of the PM trips would be internal.

Pass-by reductions were taken according to the *ITE Trip Generation Handbook, 2004* and GRTA guidelines for the retail portion of the development. The GRTA's 10% limit test was not applied for the weekday PM peak hour since the total pass-by trips were expected to be less than 10% of the adjacent street traffic.

11.7 Balance of Land Uses – Jobs/Housing Balance

Please refer to the Area of Influence Analysis, located in Section 12.0 of the report.

11.8 Relationship Between Proposed DRI and Existing Development and Infrastructure

The development is located in an area where the existing infrastructure is expected to be adequate to serve the needs of the development upon build-out (2013).

12.0 AREA OF INFLUENCE

The Area of Influence analysis was performed as a separate analysis. The Area of Influence report and information is located in the first section of the Appendix.

13.0 ARC'S AIR QUALITY BENCHMARK

The mixed-use development is proposed to contain both residential and retail uses. The residential use is the dominant use, totaling an expected 681,000 SF. The 143,400 square feet of retail space is approximately 17% of the total development. These aspects meets two of ARC's VMT credits for a total of an 8% reduction in vehicle miles traveled. The development is located adjacent to existing MARTA bus stops; this meets an ARC VMT credit for 3% reduction. The development proposes a network of sidewalks within the site and connecting to existing sidewalks, which meets the ARC bicycle and pedestrian criteria for a 4% reduction. The total reduction for the proposed development is 16%. These reductions are displayed below in **Table 9**.

Table 9 ARC VMT Reductions	
Mixed-Use where Residential is the dominant use	
Project where residential is the dominant use and the density is greater than 10 dwelling units/acre	-4%
Project contains a mix of uses; where residential is the dominant use and the retail gross floor area is greater than 10% of total	-4%
Project is located within ¼ mile of a MARTA bus stop	-3%
Pedestrian networks (sidewalks) in development that meet Density 'target' and connect to adjoining uses	-5%
Total Reductions	**16%**