Transportation Analysis

Eastside Village
DRI #1402
City of Snellville, Georgia

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019635000

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EXECUTIVE SUMMARY

This report presents the analysis of the anticipated traffic impacts of a proposed 43.85-acre development (Eastside Village) in the City of Snellville, Georgia. This report is being prepared as part of a submittal requesting rezoning from RS150 (Single Family Residence District) to R-HOP-CC (Continuous Campus Care District). Because the mixed-use project will exceed 400,000 square feet, the proposed development 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 60 duplex units, 346 independent living dwelling units, a 200-bed assisted living facility, a 120-bed nursing home facility, an activity center, and 51,500 SF of medical office space. The development is scheduled to be completed in one phase by the year 2012. For the purposes of the traffic analysis, one build-out phase will be analyzed for the year 2012.

Based on the existing 2007 conditions, one of the six study area intersections currently operate below the acceptable Level of Service standard (LOS D).

The results of the detailed intersection analysis for the 2012 No-Build (excluding the traffic associated with the Eastside Village development) and 2012 Build conditions (including the traffic associated with the Eastside Village development) identified improvements that will be necessary in order to maintain the Level of Service standard (LOS D or E) within the study network. Per GRTA's Letter of Understanding guidelines, improvements were made to the intersections until the Level of Service was elevated to an appropriate range. These improvements are listed below:

2012 No-Build recommended improvements (includes background traffic growth but does not include the Eastside Village DRI project traffic):

Tree Lane @ Webb Gin House Road (Intersection #1)

- Install a westbound right-turn lane along Tree Lane.
- Install a southbound left-turn lane along Webb Gin House Road.
- Install a northbound right-turn lane along Webb Gin House Road
- To satisfy a level-of-service 'E' standard, a traffic signal would need to be installed. However, a traffic signal may or may not be warranted based on the projected 2012 No-Build conditions. A traffic signal warrant analysis report should be performed prior to traffic signal being installed at this location.

The following intersection geometry and improvements are recommended at the project site driveways:

Tree Lane @ New Hampton Drive/ Driveway #1 (Intersection #6)

- Install a westbound right-turn lane along Tree Lane.

Tree Lane @ Proposed Driveway #2 (Intersection #7)

- Install a southbound right-turn lane along Tree Lane.
- Recommend align driveway with u-turn along Tree Lane.
- Driveway exit lane should be right-turn only.

1.0 PROJECT DESCRIPTION

1.1 Introduction

This report presents the analysis of the anticipated traffic impacts of a proposed 43.85-acre development (Eastside Village) in the City of Snellville, Georgia. This report is being prepared as part of a submittal requesting rezoning from RS150 (Single Family Residence District) to R-HOP-CC (Continuous Campus Care District). Because the mixed-use project will exceed 400,000 square feet, the proposed development 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 60 duplex units, 346 independent living dwelling units, a 200-bed assisted living facility, a 120-bed nursing home facility, an activity center, and 51,500 SF of medical office space. The development is scheduled to be completed in one phase by the year 2012. For the purposes of the traffic analysis, one build-out phase will be analyzed for the year 2012.

The Gwinnett County 2020 Future Land Use Plan designates this area as Low Density Residential, Commercial/Retail, and Office/Professional land uses.

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

Table 1
Proposed Land Uses

Residential Duplexes	60 dwelling units
Residential Independent Living	346 dwelling units
Residential Assisted Living	200 beds
Residential Nursing Home	60 dwelling units / 120 beds
Medical Offices	51,500 SF

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

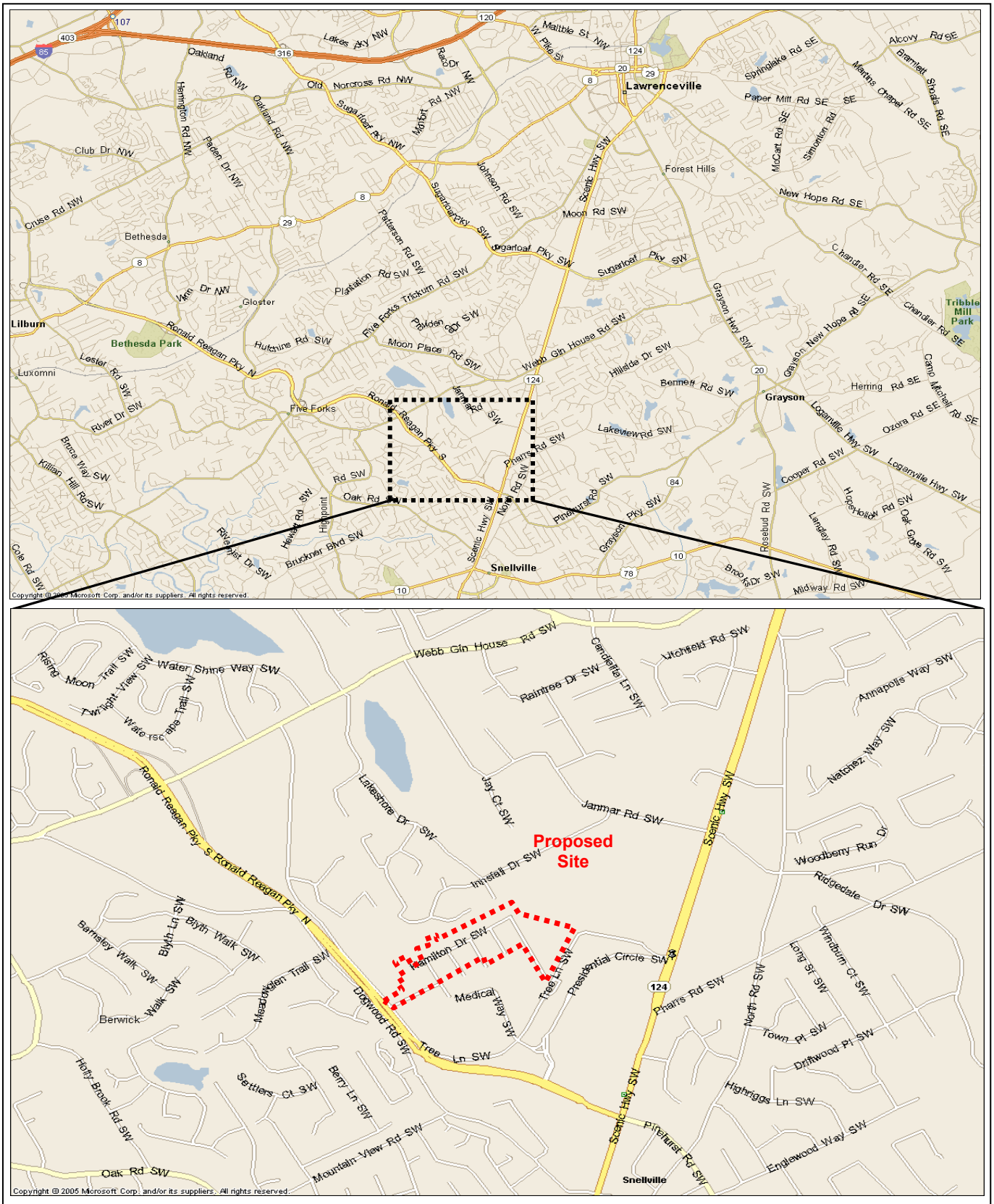
1.2 Site Plan Review

The development plan is proposed to be completed in one phase. The proposed site is located in the City of Snellville, Georgia along the north side of Tree Lane and adjacent to the Emory Eastside Medical Center Hospital, near the major intersection of SR 124 (Scenic Highway) and Ronald Reagan Parkway.

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

Vehicular access to the development is proposed at two locations along Tree Lane. The vehicular access located to the west (Driveway #1) is in the location of the existing New Hampton Drive and will serve as a full-movement driveway. The second access point (Driveway #2) located to the east along Tree Lane will serve as a right-in/right-out driveway and provide ingress to the site from the existing u-turn location along Tree Lane. Both driveways are internally connected by roadways. A third access location, a cross access connection, is proposed to provide connectivity to the existing Emory Eastside Medical Center Hospital from the proposed driveway. The



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

Kimley-Horn and Associates, Inc.	**Eastside Village DRI Transportation Analysis**	**Site Aerial**	**Figure 2**

predominant existing land uses surrounding the site are medical office, hospital, residential to the north, and retail to the east.

1.4 Bicycle and Pedestrian Facilities

Pedestrian facilities currently exist along parts of Tree Lane as well as most roads in the area. The proposed development will provide pedestrian access in accordance with Gwinnett County development requirements.

1.5 Transit Facilities

There is currently no transit service in the vicinity of the proposed development.

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 Georgia DOTand Gwinnett County DOT was reviewed for the area surrounding the proposed development, as well as population growth rates of Gwinnett County from the 1990 to 2000 Census. A background growth rate of 2.0% per year along Scenic Highway and Ronald Reagan Parkway and 4.0% per year along all other roads were agreed upon during the Pre-Application meeting with GRTA staff.

2.2 Traffic Data Collection

2007 weekday peak hour turning movement counts were conducted at two signalized intersections and three unsignalized intersections between 7:00-9:00 AM and 4:00-6:00 PM in June 2007. The morning and afternoon peak hours varied between the five intersections as follows:

- Tree Lane @ Webb Gin House Road (Unsignalized) (AM Peak 7:45-8:45, PM Peak 4:45-5:45)
- Tree Lane @ Medical Way (Unsignalized) (AM Peak 7:45-8:45, PM Peak 4:15-5:15)
- Tree Lane/Presidential Circle @ Scenic Highway (SR 124) (Signalized) (AM Peak 7:15-8:15, PM Peak 4:30-5:30)
- Presidential Circle @ Medical Way (Unsignalized) (AM Peak 7:45-8:45, PM Peak 4:30-5:30)
- Presidential Circle @ Ronald Reagan Parkway (Signalized) (AM Peak 7:00-8:00, PM Peak 4:45-5:45)

All raw count data is included in the Appendix.

In Addition, a 24-hour automatic traffic tube count was conducted along three roadways on May, 17, 2007 (while school was in session) and again on June 19, 2007 (when the intersection counts were conducted). The 24-Hour Tube Counts performed during the month of May were compared to the 24-Hour Tube Counts performed in the month of June in order to adjust the June Weekday AM and PM Turning Movement Counts to account for the absence of school traffic.

An adjustment factor of 0.93 was applied to the June intersection volumes to account for the absence of school traffic. This adjustment factor was applied to the intersection listed below:

- Tree Lane @ Webb Gin House Road

An adjustment factor of 0.95 was applied to the June intersection volumes to account for the absence of school traffic. This adjustment factor was applied to the intersections listed below:

- Tree Lane @ Medical Way
- Presidential Circle @ Medical Way
- Tree Lane @ New Hampton Drive/ Driveway 1
- Tree Lane @ Driveway 2

An adjustment factor of 0.99 was applied to the June intersection volumes to account for the absence of school traffic. This adjustment factor was applied to the intersections listed below:

- Tree Lane/Presidential Circle @ Scenic Highway (SR 124)
- Presidential Circle @ Ronald Reagan Parkway

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

The proposed development is expected to consist of 60 duplex units, 346 independent living dwelling units, a 200-bed assisted living facility, a 120-bed nursing home facility, an activity center, and 51,500 SF of medical office space. The development is scheduled to be completed in one phase by the year 2012. For the purposes of the traffic analysis, one build-out phase will be analyzed for the year 2012.

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 on the following page in **Table 2**.

Table 2 Eastside Village DRI Gross Trip Generation						
Land Use	ITE Code	Daily Traffic	AM Peak Hour		PM Peak Hour	
		Total	Enter	Exit	Enter	Exit
Build-Out (Year 2012)						
60 Apartments	*220*	511	7	26	33	18
346 Senior Adult Housing-Detached	*251*	1,555	31	50	73	47
200 beds Assisted Living	*254*	419	18	10	19	25
120 beds Nursing Home	*620*	282	--	--	9	17
51,500 SF Medical-Dental Office Building	*720*	1,891	101	27	46	124
Total		**4,658**	**157**	**113**	**180**	**231**

3.2 Trip Distribution

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

The traffic analysis includes the anticipated internal capture between the residential, office, and nursing home uses within the proposed development. Internal capture percentages for the project of 0.82% daily and 0.97% PM peak hour were calculated based on ITE's rates.

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 agreed to during the Pre-Application meeting, and includes the following intersections:

- Tree Lane @ Webb Gin House Road (Unsignalized)
- Tree Lane @ Medical Way (Unsignalized)
- Tree Lane/Presidential Circle @ Scenic Highway (SR 124) (Signalized)
- Presidential Circle @ Medical Way (Unsignalized)
- Presidential Circle @ Ronald Reagan Parkway (Signalized)
- Tree Lane @ New Hampton Drive/ Driveway 1 (Unsignalized)
- Tree Lane @ Driveway 2 (Unsignalized) [2012 Build Condition only]

Each of the above listed intersections was analyzed for the Existing 2007 Condition, the 2012 No-Build Condition, and the 2012 Build Condition. The 2012 No-Build condition represents the existing traffic volumes grown at 2.0% per year along Scenic Highway and Ronald Reagan Parkway and 4.0% per year along all other roads for five years. The 2012 Build condition adds the projected trips associated with the Eastside Village development to the 2012 No-Build condition. Additionally, the proposed project Driveway #2 was only analyzed for the 2012 Build Condition for the AM and PM peak hour.

3.5 Existing Facilities

Tree Lane is a two-lane generally east-west oriented roadway between Webb Gin House Rd SW and Scenic Hwy SW. A portion of Tree Lane is one way. The speed limit along Tree Lane is 35 MPH. The 2005 ADT between Webb Gin House Road and Medical Way was 3,899 (Gwinnett DOT).

Scenic Highway (SR 124) is a five-lane north-south oriented roadway. The speed limit between Tree Lane and Ronald Reagan Parkway is 45 MPH. The 2006 ADT between Ronald Reagan Parkway and Webb Gin House Road was 39,252 (Gwinnett DOT).

Ronald Reagan Parkway is a four-lane divided east-west oriented roadway between Scenic Hwy (SR 124) and Pleasant Hill Road NW. The speed limit along Ronald Reagan Parkway ranges between 35 MPH and 45 MPH. The 2006 ADT between Webb Gin House Road and Scenic Highway (SR 124) was 28,112 (Gwinnett DOT).

Webb Ginn House Road is a two-lane east-west oriented roadway between Dogwood Rd SW/Holly Brook Rd SW and Grayson Highway SE. The speed limit along Webb Ginn House Road is 45 MPH. The 2005 ADT between Dogwood Road and Moon Place Road was 18,709 (Gwinnett DOT).

Presidential Circle is a four-lane divided north-south oriented roadway between Scenic Highway (SR 124) and Medical Way. A portion of Presidential Circle is one way. The speed limit along Presidential Circle is 35 MPH. The 2005 ADT between Ronald Reagan Parkway and Scenic Highway was 9,008 (Gwinnett DOT).

Medical Way is a two-lane generally east-west oriented roadway between Emory Eastside Medical Center Hospital and Presidential Circle. The speed limit is not posted along Medical Way.

Roadway	Road Type	Number of Lanes	Posted Speed Limit (MPH)	GDOT Functional Classification
Tree Lane	Two-Way	2	35	Urban Local Street
Scenic Highway (SR 124)	Two-Way	4	45	Urban Principal Arterial
Ronald Reagan Parkway	Two-Way	4/2	45/35	Urban Freeways and Expressways
Webb Gin House Road	Two-Way	2/3	45	Urban Local Street
Presidential Circle	Two-Way	4/2	35	Urban Local Street
Medical Way	Two-Way	2	N.P.	Urban Local Street

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 where available.

Internal capture reductions were applied to trips between the residential, office, and nursing home uses of the development. The internal capture worksheets are included in the Appendix.

Pass-by reductions were not taken for this analysis. Additionally, alternate mode reductions were not considered given the nature of the proposed development and the absence of transit. The total trips generated and analyzed in the report are listed below in **Table 3**.

Table 3
Eastside Village DRI
Net Trip Generation

Land Use	Daily Traffic	AM Peak Hour		PM Peak Hour	
	Total	Enter	Exit	Enter	Exit
Build-Out (Year 2012)					
Gross Trips	**4,658**	**157**	**113**	**180**	**231**
Internal Capture	*-38*	*0*	*0*	*-2*	*-2*
Driveway Volumes	*4,620*	*157*	*113*	*178*	*229*
New Trips	**4,620**	**157**	**113**	**178**	**229**

5.0 TRIP DISTRIBUTION AND ASSIGNMENT

New trips were distributed onto the roadway network using the percentages agreed to during the Pre-Application meeting. **Figure 4 and Figure 5** displays 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.**

Proposed Site

Hospital

Cross-Access Connection

Webb Gin House Road

Tree Lane

Medical Way

Driveway #1

Driveway #2

Presidential Circle

SR 124 (Scenic Highway)

Ronald Reagan Parkway

1 — 5% / (5%) (15%) / 15%

2 — (35%) / 5% / 5% / 35%

3 — 20% / (20%) / 10%

4 — (35%) / (20%) (50%) / 10% / 30%

5 — (15%) (35%) / 20% / 10%

6 — (20%) (35%) / 35% / 20%

7 — 30% / (35%) / 5%

NOT TO SCALE

LEGEND

- Proposed Roadway
- Turning Movement
- One-Way Street
- Existing Traffic Signal
- XX% Entering Trip Distribution
- (XX%) Exiting Trip Distribution

Figure 4

Residential Trip Distribution

Eastside Village DRI
Transportation Analysis

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Proposed Site

Hospital

Webb Gin House Road

Tree Lane

Medical Way

Cross-Access Connection

Driveway #1

Driveway #2

Presidential Circle

SR 124 (Scenic Highway)

Ronald Reagan Parkway

1 5% (5%) (15%) 15%

2 (45%) 5% 5% 25%

3 30% (30%) 10%

4 (30%) (40%) 30%

5 (20%) (20%) 10% 20%

6 (20%) (25%) 25% 20%

7 (45%) 40% 5%

LEGEND

- Proposed Roadway
- Turning Movement
- One-Way Street
- Existing Traffic Signal
- XX% Entering Trip Distribution
- (XX%) Exiting Trip Distribution

NOT TO SCALE

Figure 5

Non-Residential Trip Distribution

Eastside Village DRI Transportation Analysis

Kimley-Horn and Associates, Inc.

Proposed Site

Hospital

Webb Gin House Road

Tree Lane

Medical Way

Cross-Access Connection

Driveway #1

Driveway #2

Presidential Circle

Ronald Reagan Parkway

SR 124 (Scenic Highway)

1

8 (9)

5 (11)
17 (34)

(27) 23

2

42 (92)

8 (9)
45 (58)

(68) 37

(58) 25
(103) 54

3

41 (40)

(58) 25

(18) 16

4

6 (13)

(54) 47

5

18 (40)
35 (61)

21 (31)
0 (0)

(22) 26
(0) 0

6

22 (45)
37 (68)

45 (58)

(35) 31

7

LEGEND

- Proposed Roadway
- Turning Movement
- One-Way Street
- Existing Traffic Signal
- XX AM Peak Hour Project Trips
- (XX) PM Peak Hour Project Trips

Figure 6

Peak Hour Project Trips

Eastside Village DRI
Transportation Analysis

Kimley-Horn and Associates, Inc.

Proposed Site

Hospital

Webb Gin House Road

Medical Way

Tree Lane

Driveway #1

Driveway #2

Cross-Access Connection

Presidential Circle

SR 124 (Scenic Highway)

Ronald Reagan Parkway

1062 (680)
59 (61)

14 (63)
24 (49)

(1137) 461
(47) 49

0 (1)
1 (2)

2 (3)
16 (98)

(0) 1
(79) 30

11 (11)
38 (27)
69 (131)

(1) 4
(89) 22
(8) 4

(3) 0
(6) 7
(360) 63

107 (12)
90 (56)
236 (73)

(176) 21
(7) 14
(427) 121

64 (39)
73 (77)
9 (1)

6 (16)
4 (1)
19 (22)

(86) 368
(243) 25
(11) 32

103 (94)
969 (1450)

(349) 45
(30) 5

(17) 18
(1414) 1288

183 (206)
84 (284)

193 (134)
1638 (631)

(259) 84
(1295) 464

NOT TO SCALE

LEGEND

- Proposed Roadway
- Existing Traffic Signal
- Existing Roadway Laneage
- XX AM Peak Hour Project Trips
- (XX) PM Peak Hour Project Trips

Figure 7

2007 Existing Conditions

Eastside Village DRI Transportation Analysis

Kimley-Horn and Associates, Inc.

Proposed Site

Hospital

Webb Gin House Road

Tree Lane

Medical Way

Presidential Circle

Driveway #1

Driveway #2

Cross-Access Connection

Ronald Reagan Parkway

SR 124 (Scenic Highway)

1 — 1389 (890) / 77 (80)

18 (82)
31 (64)

(1487) 603
(61) 64

6 — 0 (1) / 1 (3)

3 (4)
20 (126)

(0) 1
(101) 38

2 — 14 (14)
49 (35)
88 (168)

(1) 5
(114) 28
(10) 5

4 — 137 (15)
115 (72)
302 (93)

82 (50)
93 (99)
12 (1)

(4) 0
(8) 9
(461) 81

(225) 27
(9) 18
(547) 155

8 (20)
5 (1)
24 (28)

(110) 471
(311) 32
(14) 41

3 — 115 (105)
1081 (1617)

(389) 50
(33) 6

(19) 20
(1577) 1436

5 — 204 (230)
94 (317)

(289) 94
(1444) 517

215 (149)
1827 (704)

LEGEND

- Proposed Roadway
- Existing Roadway Laneage
- No-Build Roadway Laneage
- Existing Traffic Signal
- No-Build Traffic Signal
- XX — AM Peak Hour Project Trips
- (XX) — PM Peak Hour Project Trips

NOT TO SCALE

Figure 8

2012 No-Build Conditions

Eastside Village DRI
Transportation Analysis

Kimley-Horn and Associates, Inc.

Proposed Site

Hospital

Webb Gin House Road

Tree Lane

Driveway #1

Driveway #2

Cross-Access Connection

Medical Way

Presidential Circle

SR 124 (Scenic Highway)

Ronald Reagan Parkway

1 — 1389 (890) 85 (89) — 23 (93) 48 (98) — (1487) 603 (88) 87

2 — 14 (14) 49 (35) 130 (260) — (1) 5 (114) 28 (10) 5

3 — 156 (145) 1081 (1617) — (447) 75 (33) 6 — (37) 36 (1577) 1436

4 — 145 (24) 115 (72) 347 (151) — 82 (50) 93 (99) 12 (1) — 8 (20) 11 (14) 24 (28)

5 — 222 (270) 129 (378) — 236 (180) 1827 (704) — (311) 120 (1444) 517

6 — 22 (46) 38 (71) — 48 (62) 20 (126) — (35) 32 (101) 38

7 — 57 (58) 175 (155) — 42 (92) — (9) 8

(4) 0 (8) 9 (529) 118

(283) 52 (9) 18 (650) 209

(164) 518 (311) 32 (14) 41

LEGEND

- Proposed Roadway
- Existing Roadway Laneage
- No-Build Roadway Laneage
- Build Roadway Laneage
- Existing Traffic Signal
- No-Build Traffic Signal
- XX AM Peak Hour Project Trips
- (XX) PM Peak Hour Project Trips

NOT TO SCALE

Figure 9

2012 Build Conditions

Eastside Village DRI Transportation Analysis

Kimley-Horn and Associates, Inc.

6.0 TRAFFIC ANALYSIS

6.1 Existing Traffic

The existing traffic volumes 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
Eastside Village DRI
Existing 2007 Intersection Levels of Service
(delay in seconds)

	Intersection	Control	AM Peak Hour	PM Peak Hour
1	Tree Lane @ Webb Gin House Road	Unsignalized	WB: F (70.6)	WB: F (*)
2	Tree Lane @ Medical Way	All-Way STOP	A (9.2)	B (11.8)
3	Tree Lane/Presidential Circle @ Scenic Highway (SR 124)	Signalized	A (4.6)	B (16.4)
4	Presidential Circle @ Medical Way	Unsignalized	EB: B (14.2) WB: D (29.3)	EB: C (15.4) WB: C (18.9)
5	Presidential Circle @ Ronald Reagan Parkway	Signalized	B (11.8)	C (22.8)
6	Tree Lane @ New Hampton Drive / Driveway #1	Unsignalized	SB: A (8.9)	SB: A (9.6)

*Long delays expected.

As you can see in Table 4, the intersection of Tree Lane at Webb Gin House Road currently operates below the acceptable Level of Service standard (LOS D) during the AM and PM peak hour. Per GRTA's Letter of Understanding, the LOS standard for the Tree Lane @ Webb Gin House Road intersection will be LOS E during the AM peak hour and PM peak hour.

6.2 2012 No-Build Traffic

The existing traffic volumes were grown at 2.0% per year along Scenic Highway and Ronald Reagan Parkway and 4.0% per year along all other roads 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 for the year 2012 No-Build conditions are shown in **Figure 8**.

Table 5
Eastside Village DRI
2012 No-Build Intersection Levels of Service
(delay in seconds)

	Intersection	Control	LOS Standard	AM Peak Hour	PM Peak Hour
1	Tree Lane @ Webb Gin House Road	Unsignalized	E	WB: F (*)	WB: F (*)
2	Tree Lane @ Medical Way	All-Way STOP	D	B (11.0)	C (20.0)
3	Tree Lane/Presidential Circle @ Scenic Highway (SR 124)	Signalized	D	A (5.0)	B (18.5)
4	Presidential Circle @ Medical Way	Unsignalized	D	EB: D (23.0) WB: F (68.6)	EB: D (27.5) WB: E (36.6)
5	Presidential Circle @ Ronald Reagan Parkway	Signalized	D	B (13.8)	C (25.6)
6	Tree Lane @ New Hampton Drive / Driveway #1	Unsignalized	D	SB: A (9.0)	SB: B (10.1)

*Long delays expected.

Two of the intersections failed to meet acceptable Level of Service standards for the year 2012 No-Build condition. Per GRTA's Letter of Understanding guidelines, improvements were made to one intersection until the Level of Service was elevated to an appropriate range. The 2012 No-Build with Improvement intersection analysis improved Levels of Service are displayed below in **Table 6**.

After additional analysis at the intersection of Presidential Circle and Medical Way (Intersection #4), it was determined to provide the GRTA LOS standard for the westbound, private driveway approach would require converting the unsignalized intersection to either an all-way stop control or a signalized intersection. However, the traffic volumes are not expected to warrant an all-way stop or traffic signal. Therefore, no improvements are recommended at the intersection for the 2012 No-Build conditions.

Table 6
Eastside Village DRI
2012 No-Build with Improvement Intersection Levels of Service
(delay in seconds)

	Intersection	Control	LOS Standard	AM Peak Hour	PM Peak Hour
1	Tree Lane @ Webb Gin House Road	New Signal	E	WB: B (13.4)	WB: E (59.4)

The 2012 No-Build improvements made to the intersection are shown in Figure 8, and are listed below:

Tree Lane @ Webb Gin House Road (Intersection #1)

- Install a westbound right-turn lane along Tree Lane.
- Install a southbound left-turn lane along Webb Gin House Road.
- Install a northbound right-turn lane along Webb Gin House Road
- To satisfy a level-of-service 'E' standard, a traffic signal would need to be installed. However, a traffic signal may or may not be warranted based on the projected 2012 No-Build conditions. A traffic signal warrant analysis report should be performed prior to traffic signal being installed at this location.

6.3 2012 Build Traffic

The traffic associated with the proposed development (Eastside Village) was added to the 2012 No-Build volumes. These volumes were then input into the 2012 No-Build with Improvement roadway network and analyzed with Synchro 6.0. The results of the analyses are displayed in **Table 7**. The projected volumes for the year 2012 Build conditions are shown in **Figure 9.**

Table 7
Eastside Village DRI
2012 Build Intersection Levels of Service
(delay in seconds)

	Intersection	Control	LOS Standard	AM Peak Hour	PM Peak Hour
1	Tree Lane @ Webb Gin House Road	Signalized	E	B (16.0)	E (74.4)
2	Tree Lane @ Medical Way	All-Way STOP	D	B (13.9)	F (51.3)
3	Tree Lane/Presidential Circle @ Scenic Highway (SR 124)	Signalized	D	A (6.7)	C (21.4)
4	Presidential Circle @ Medical Way	Unsignalized	D	EB: F (57.7) WB: F (*)	EB: F (84.1) WB: F (91.1)
5	Presidential Circle @ Ronald Reagan Parkway	Signalized	D	B (17.1)	C (34.7)
6	Tree Lane @ New Hampton Drive / Driveway 1	Unsignalized	D	SB: B (10.8)	SB: B (14.8)
7	Tree Lane @ Proposed Driveway 2	Unsignalized	D	EB: A (9.5) WB: B (10.6)	EB: B (9.6) WB: B (10.5)

*Long delays expected.

As shown in Table 7, two of the unsignalized intersections failed to meet the acceptable Level of Service standard for the year 2012 Build condition. Tree Lane at Medical Way (Intersection #2) failed to meet the acceptable Level of Service standard for the PM peak hour. Presidential Circle at Medical Way failed to meet the acceptable Level of Service standard for the AM peak hour and the PM peak hour.

After additional analysis at the intersection of Tree Lane and Medical Way (Intersection #2), it was determined to provide the GRTA LOS standard would require converting the unsignalized intersection to a signalized intersection. However, the traffic volumes are not expected to warrant a traffic signal. Therefore, no improvements are recommended at the intersection for the 2012 Build conditions.

As discussed earlier in Section 6.2, 2012 No-Build Traffic, it was determined for Presidential Circle and Medical Way (Intersection #4) to provide the GRTA LOS standard would require converting the unsignalized intersection to either an all-way stop control or a signalized intersection. However, the traffic volumes are not expected to warrant an all-way stop or traffic signal. Therefore, no improvements are recommended at the intersection for the 2012 Build conditions.

The two proposed project driveways were analyzed for the 2012 Build condition.

The following intersection geometry and improvements are recommended at the project site driveways:

Tree Lane @ New Hampton Drive/ Driveway #1 (Intersection #6)

- Install a westbound right-turn lane along Tree Lane.

Tree Lane @ Proposed Driveway #2 (Intersection #7)

- Install a southbound right-turn lane along Tree Lane.
- Recommend align driveway with u-turn along Tree Lane.
- Driveway exit lane should right-turn only.

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. Several projects are programmed for the area surrounding the study network. Information on the projects is included in the Appendix. **Figure 10** illustrates the programmed projects listed below.

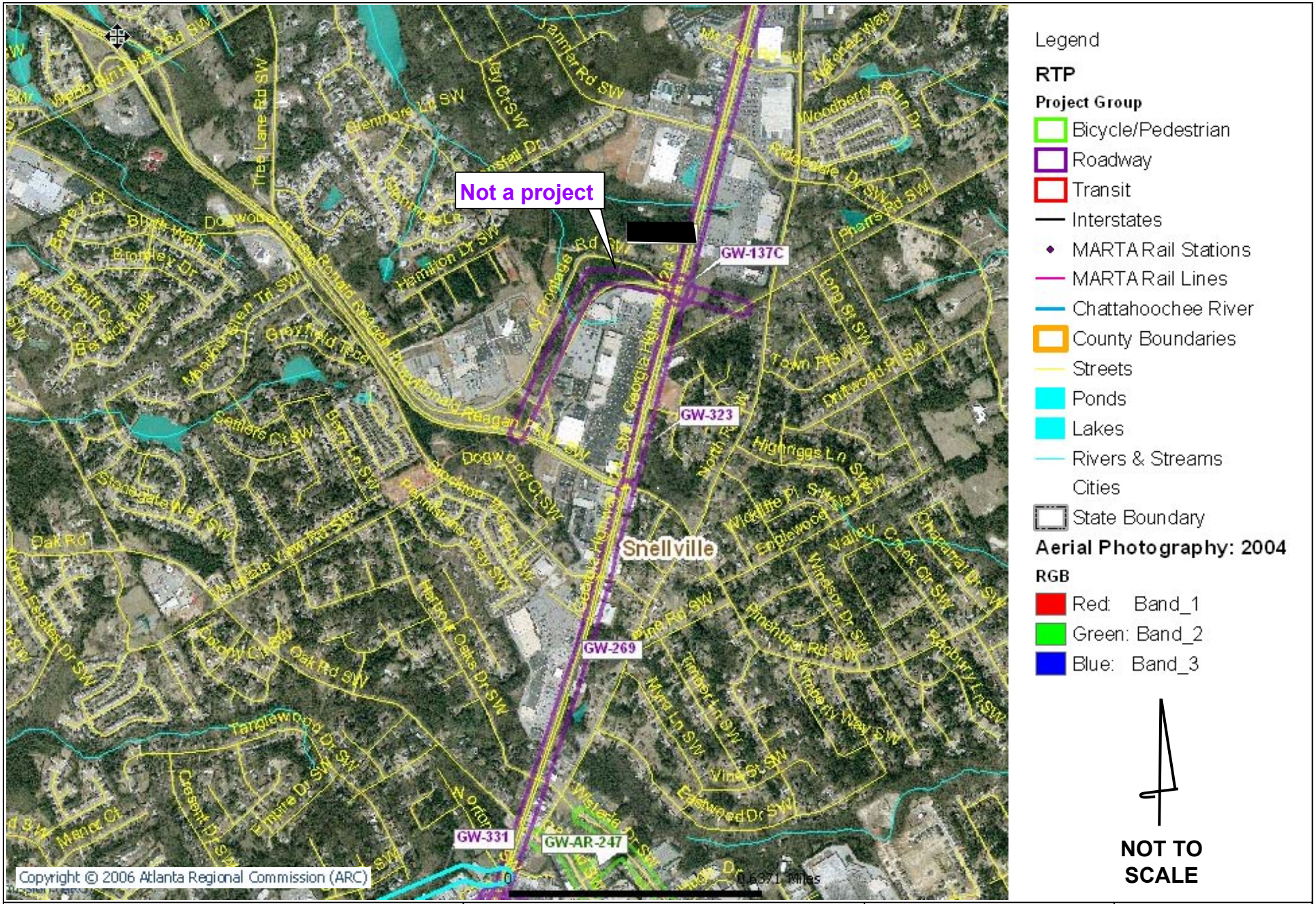
1. GW-323	SR 124 (Scenic Highway) ATMS from US 78 to US 29 – ITS Smart Corridor
2. GW-269	SR 124 (Scenic Highway) from US 78 (Main Street in City of Snellville) to Ronald Reagan Parkway – Roadway Capacity

8.0 INGRESS/EGRESS ANALYSIS

Vehicular access to the development is proposed at two locations along Tree Lane. The vehicular access located to the west (Driveway #1) is in the location of the existing New Hampton Drive and will serve as a full-movement driveway. The second access point (Driveway #2) located to the east along Tree Lane will serve as a right-in/right-out driveway and provide ingress to the site from the existing u-turn location along Tree Lane. Both driveways are internally connected by roadways. A third access location, a cross access connection, is proposed to provide connectivity to the existing Emory Eastside Medical Center Hospital from the proposed driveway. The predominant existing land uses surrounding the site are medical office, hospital, residential, hotel, and retail to the east.

9.0 INTERNAL CIRCULATION ANALYSIS

The proposed development will generate trips between the residential, medical-office, and nursing home uses. Using the *ITE Trip Generation Handbook, 1998* as a reference, 0.82% of the gross daily trips would be internal and 0.97% of the PM peak hour trips would be internal.



Kimley-Horn and Associates, Inc.	Eastside Village DRI Transportation Analysis	Programmed Improvements	Figure 10

10.0 COMPLIANCE WITH COMPREHENSIVE PLAN ANALYSIS

The Gwinnett County 2020 Future Land Use Plan designates this area as Low Density Residential, Commercial/Retail, and Office/Professional land uses.

11.0 NON-EXPEDITED CRITERIA

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

There is currently no fixed-transit service in the vicinity of this project. Pedestrian facilities currently exist along parts of Tree Lane as well as most roads in the area. The proposed development will provide pedestrian access in accordance with Gwinnett County development requirements.

11.2 Vehicle Miles Traveled

The following table displays the reduction in traffic generation due to mixed-use reductions (internal capture).

	Build-out Total
Daily Gross Trip Generation:	4,658
(-)Mixed-use reductions (internal capture)	-39
Net Trips:	4,620

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; it is not within walking distance of a rail station or transit facility; and it is not part of an infill initiative. The proposed development is located along SR 24 (Scenic Highway) which provides access to the north and south. The network of roads provides vehicular travel in all directions; Ronald Reagan Parkway is located to the west of the site and Scenic Highway (SR 124) is located to the east.

11.4 Relationship Between Proposed DRI and Existing or Planned Transit Facilities

The proposed DRI is not located near any existing or planned transit facilities or bus stops.

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

It is expected that some vehicular trips will be reduced due to the proximity of the Emory Eastside Medical Center Hospital.

No pass-by trip reductions were taken for this analysis.

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 (2012).

12.0 AREA OF INFLUENCE

This section will describe the Area of Influence (AOI) demographics, AOI average wage levels, expected DRI housing costs, and the availability of jobs within the AOI that would reasonably position employees to purchase housing within the proposed DRI.

12.1 Criteria

As part of the non-expedited review process for a DRI, an Area of Influence Analysis must be performed to determine the impact of the proposed development on the balance of housing and jobs within the immediate area surrounding the proposed development. For this proposed development expansion, the non-expedited review criterion is as follows:

This section is included to satisfy the following GRTA Non-expedited review criteria:

> 7. The proposed DRI:
>
> (c) Is located in an area of influence with employment opportunities which are such that at least twenty-five percent (25%) of the persons that are reasonably anticipated to live in the proposed DRI and are reasonably expected to be employed will have an opportunity to find employment appropriate to such persons' qualifications and experience within the Area of Influence.

12.2 Study Area Determination and Characteristics

The Area of Influence is comprised of the area within six road-miles of the proposed development. To determine the AOI, *TransCAD* was used to measure six road miles from the nearest intersection to the project (Ronald Reagan Parkway South at SR 124 (Scenic Highway)). The population and housing statistics for the AOI were determined by taking the area outlined in *TransCAD*, creating a boundary in GIS format, and overlaying the boundary with a GIS layer containing census tract information. The Area of Influence (located within Gwinnett County) can be seen in **Figure 11**. Information obtained from the census tracts can be seen in **Table 8**.

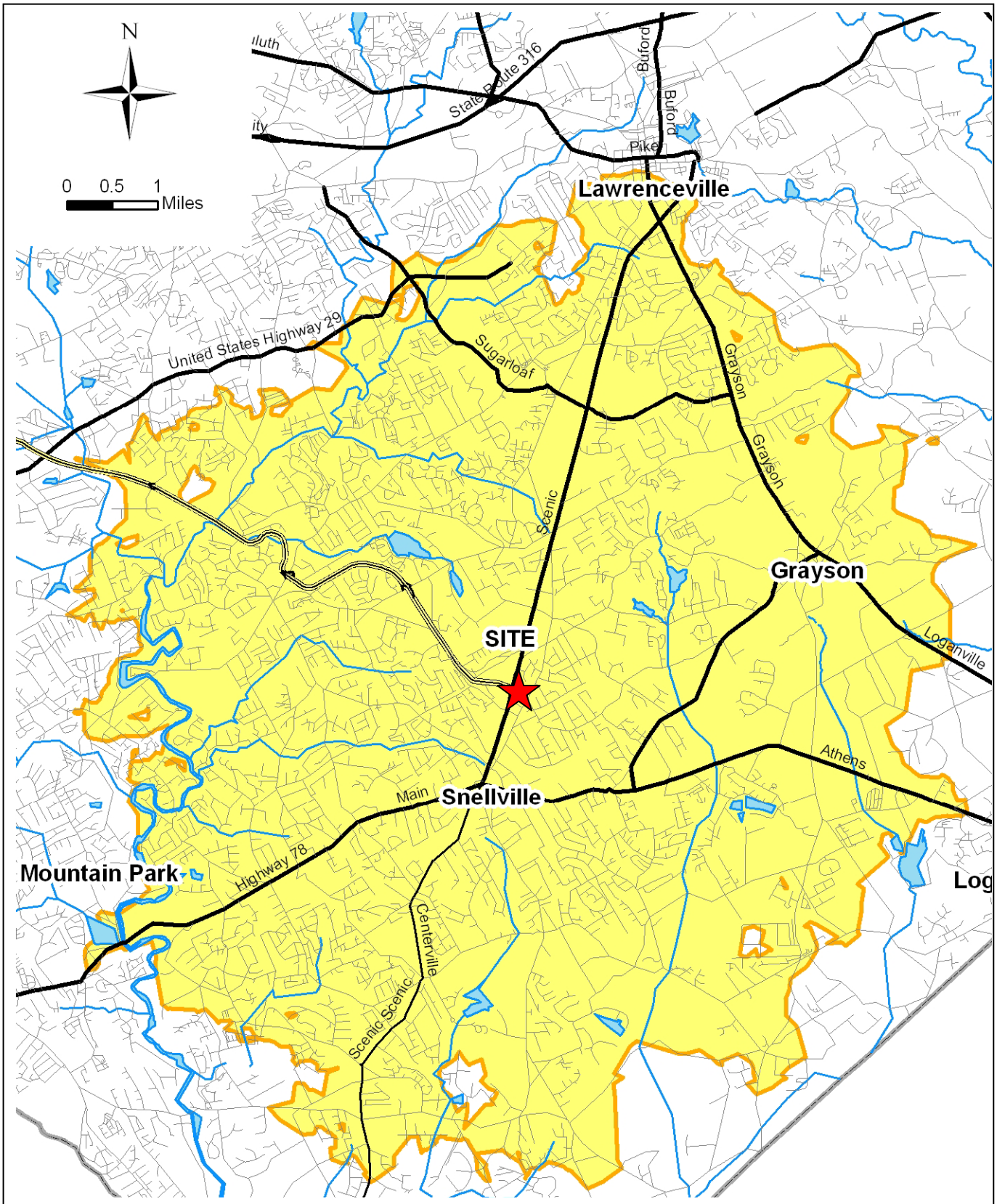
Table 8
Census Tract Information

Total Households	34,985
Population in Households	105,937
Average household size	3.03
Total Workers	55,606
Workers per Household	1.59
Owner Occupied	85.9%
Rental Occupied	14.1%

As can be seen from the table above, the total population within the Area of Influence is 105,937, residing within 34,985 households (an average of 3.03 people per household). The AOI area totals 46,046 acres.

Using the above calculated average of 1.59 persons per household, it can be anticipated that the proposed DRI will house approximately 1,230 people (406 proposed dwelling units multiplied by 3.03). Based on information obtained from the Census Tracts, it is estimated that approximately 646 of these expected 1,230 residents would be workers. Note: it was assumed that no employees would reside in the assisted living area or nursing home. The remainder of this section will demonstrate the availability of jobs for these expected workers within the development at or above the necessary income level to afford housing within the DRI.

The Atlanta Journal-Constitution website was researched to find current listings of houses for sale in the vicinity of the proposed development (30346 Zip Code). At the time of this report, about 50 homes were listed for sale in the area, ranging in price from $115,900 to $725,000.



Kimley-Horn and Associates, Inc.	**Eastside DRI Transportation Analysis**	**Area of Influence**	**Figure 11**

12.3 Development Housing Analysis

The development plan provides for houses for sale in one price range within the proposed development. **Table 9**, below, displays the number of units for sale, the average sale price for those units, and the number of workers expected to reside in the homes.

Table 9
Estimated Workers per Household

Tier	Description	Number of Units	Average Price	Number of Workers
1	Duplex	60	$225,000	95
2	Independent Living	173	$200,000	276
3	Independent Living	173	$250,000	275

In order to determine the number of jobs available within the AOI that would provide adequate income, information about the types of jobs within the AOI and the average salaries for these positions was collected first. Information about the types of jobs available within the AOI was obtained from Claritas, a data solutions company. A map with the boundary of the AOI was sent to Claritas, and a report containing the types of employment opportunities and number of each type of job was compiled. The Claritas report is included in the Appendix of this report. Next, the Georgia Department of Labor website was researched to obtain average salary information for the positions available within the AOI. Average salary information for jobs in Gwinnett County was matched to the jobs existing within the AOI. This information (also available in the Appendix), along with the information provided by Claritas, is included in the **Table 10**, on the following page.

Table 10
AOI Jobs and Average Salaries

Industry / Business Type	# Businesses	# Employees	Average Salary
Retail Trade	846	12,240	$27,092
Building Materials and Garden Supply	54	1,231	-
General Merchandise Stores	32	1,627	-
Food Stores	79	1,699	-
Auto Dealers and Gas Stations	117	1,294	-
Apparel and Accessory Stores	43	308	-
Home Furniture, Furnishings, and Equipment	109	660	-
Eating and Drinking Places	194	3,833	-
Miscellaneous Retail Stores	219	1,588	-
Finance	377	2,870	$57,876
Banks, Savings and Lending Institutions	103	1,156	-
Securities and Commodity Brokers	30	121	-
Insurance Carriers and Agencies	103	476	-
Real Estate Trusts, Holdings, and Other Investments	140	1,117	-
Services	1,813	17,908	-
Hotels and Other Lodging	7	47	$13,364
Personal Services	477	2,037	-
Business Services	426	2,276	$63,960
Motion Picture and Amusement	114	868	$52,936
Health Services	293	4,995	$37,024
Legal Services	96	344	$63,960
Education Services	73	4,383	$26,832
Social Services	100	1,312	$37,024
Miscellaneous, Membership Organizations and Nonclassified	229	1,647	-
Agriculture	116	605	$31,928
Mining	3	13	$47,944
Construction	453	2,979	$43,628
Manufacturing	126	1,413	$51,064
Transportation, Communication/Public Utilities	117	1,233	$56,836
Wholesale Trade	140	820	$59,124
Public Administration	90	6,592	$40,196
Total	4,081	46,673	-

12.4 Affordable Housing Analysis

It was assumed that no more than one third of an individual's income would be used for apartment rent each month. The income required to purchase a home at the approximate price range was calculated and is displayed in **Table 11**. Because there is an average of 1.52 workers expected per household, the required income was divided by 1.52 to determine the average salary each worker within the development would be expected to earn in order to provide their "fair share" of the housing costs. This methodology assumes an equal burden on all workers within the development, and is considered to be a conservative approach since it eliminates the lower paying positions within the AOI from consideration in the analysis. Table 11 also displays the number of workers expected in each price range, as well as the number of jobs available at the necessary average income level to afford housing within that price range. As can be seen in the table, it is expected that all of the workers living within the DRI would be able to find employment within the AOI, thus satisfying the GRTA requirement of 25%.

Table 11
Expected Workers

	Average Rent Price	Necessary Income per Expected Worker	Expected Worker per Price Range	Jobs at or above Necessary Income
	$225,000	$25,120	95	42,943
	$200,000	$28,260	276	26,320
	$250,000	$31,400	275	26,320
Percent of expected workers likely to find necessary employment within the AOI				**100%**

13.0 ARC'S AIR QUALITY BENCHMARK

The proposed development is expected to consist of 60 duplex units, 346 independent living dwelling units, a 200-bed assisted living facility, a 120-bed nursing home facility, an activity center, and 51,500 SF of medical office space on approximately 43.85 acres. The project meets the ARC density target ARC criteria (1 b) for a 6% reduction because the residential component is the dominant use and the residential density is greater than 15 units/acre.

The project's residential component is the dominant use; however, the office gross floor area is approximately 7.75%. The development meets the ARC criteria (2 c) for a 3% reduction (we have applied 75% of the total reduction possible.

The primarily residential development contains medical office space and will direct connections between the residential and office space uses of the development. Pedestrians will be able to access other developments located along Tree Lane, Medical Way, and the surrounding roads. This pedestrian network meets the ARC criteria (6 e) for a 5% reduction.

The proposed development meets the ARC criteria for a total 14% VMT reduction. These reductions are displayed below in **Table 13**.

Table 12
ARC VMT Reductions

Mixed-Use Projects where Residential is the dominant use	
Residential density greater than 15 dwelling units/acre	-6%
Mix of uses where office space is greater than 7.5% of gross floor area	-3%
Bike/ped networks in development that meet one Density 'target' and connect to adjoining uses	-5%
Total Reductions	**14%**