TRANSPORTATION AND PLANNING ANALYSIS

for

GRTA Application for DRI Review

VILLA MORE (DRI 1510)

Gwinnett County, Georgia

Prepared For:

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TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF TABLES

LIST OF FIGURES

SECTION I
EXECUTIVE SUMMARY

INTRODUCTION

This traffic and planning analysis has been prepared to assess transportation impacts related to the proposed Villa More mixed use development in Gwinnett County, Georgia. The project will consist of 324 residential dwelling units (d.u.'s), 162,000 square feet (s.f.) of office/commercial space and a 300 room hotel. The property is approximately 9.5 acres in size. The project site is located along the west side of Steve Reynolds Boulevard (this report assumes that Steve Reynolds Boulevard runs in a north-south orientation), and on the north side of Shackleford Road (this report assumes that Shackleford Road runs in an east-west orientation). Initial site construction is expected to begin in 2008 with full build out in 2011.

The methodology and assumptions used in this study are based on Georgia Regional Transportation Authority's (GRTA) Development of Regional Impact (DRI) procedures for non-expedited reviews and the July 30, 2007 letter of understanding from GRTA to the Y-Group regarding DRI 1510 Villa More. The completed GRTA DRI Non-Expedited Review Package Checklist is included in Appendix A.

This study has been prepared in accordance with the following standards and data sources:

- *GRTA DRI Review Package, Technical Guidelines*, GRTA, 2002
- *Procedures and Principles for GRTA Development of Regional Impact Review*, GRTA, 2002
- *Area of Influence (AOI) Guidebook for Non-Expedited Reviews*, GRTA, 2003
- *Traffic Access and Impact Studies for Site Development*, Institute of Transportation Engineers.
- *Trip Generation*, 7th Edition, Institute of Transportation Engineers.
- *Trip Generation Handbook*, 2003 Edition, Institute of Transportation Engineers.
- *Manual on Uniform Traffic Control Devices (MUTCD),* 2003 Edition, AASHTO.
- *Highway Capacity Manual 2000*, Transportation Research Board (TRB).
- *Regulations for Driveway and Encroachment Control,* 2004 Edition, Georgia Department of Transportation (GDOT), State Traffic Safety & Design Engineer.
- *Annual Traffic Counts,* Georgia Department of Transportation (GDOT), Office of Transportation.

Project Description

The proposed project is a mixed use development. The proposed land uses on the site include:

- Condominium – 324 d.u.'s
- Commercial (Retail) – 105,000 s.f.
- Office – 57,000 s.f.
- Hotel – 300 rooms

The site will have one (1) right in-right out (RIRO) access driveway along Steve Reynolds Boulevard, one (1) right in-right out access driveway along Shackleford Road and one (1) full access driveway along Shackleford Road. The full access driveway along Shackleford Road will be shared with the Louise Radloff Middle School. Initial site construction is expected to begin in 2008 with full build out in 2011.

Scope of Traffic Impact Study

The scope of the traffic impact study was developed based on GRTA's guidelines and discussions at the July 30, 2007 Methodology and Pre-Application meeting held at the GRTA's office. From this information, the following intersections require analysis:

- Steve Reynolds Blvd/I-85 SB Ramp
- Steve Reynolds Blvd/I-85 NB Ramp
- Steve Reynolds Blvd/Site Access (Right In-Right Out)
- Steve Reynolds Blvd/Shackleford Road
- Steve Reynolds Blvd/Club Drive
- Shackleford Rd/East Site Access (Right In-Right Out)
- Shackleford Rd/School Access (Full Access)
- Shackleford Rd/Club Drive

The following scenarios were evaluated as part of this analysis:

- Year 2007 "Existing" conditions
- Year 2011 "No Build" conditions
- Year 2011 "Build" conditions

The remainder of this report presents the following analysis:

- A description of the proposed DRI along with an attached site plan;

- A description of the Area of Influence (AOI) for the proposed DRI and information describing the number of jobs by salary range, number of housing units and existing land use in the AOI;

- An analysis of the transportation impacts of the proposed DRI including traffic impacts in the vicinity of the proposed development;

- Identification of planned and programmed transportation improvements within the Study Network;

- Identification of transportation services and access improvements that are required to serve the proposed DRI which may require federal or state funding; and

- A detailed assessment of the extent to which the proposed DRI may satisfy the DRI review

criteria for non-expedited DRI Review.

SUMMARY OF FINDINGS

Findings

The following are the findings from the traffic analysis:

- The proposed development is expected to generate 9,487 daily, 508 A.M. peak hour (269 in, 239 out), and 824 P.M. peak hour (409 in, 415 out) gross trips.

- All study area intersections and roadway segments currently operate at LOS D or better for existing conditions.

- All study area intersections and roadway segments are projected to operate at LOS D or better for the 2011 "No Build" condition with improvements to the Steve Reynolds Boulevard/Shackleford Road and Steve Reynolds Boulevard/Club Drive intersections. These improvements are discussed under the Recommendations section below.

- All study area intersections are projected to operate at LOS D or better for the 2011 "Build" condition with signalization of the Shackleford Road/Shared Site Access intersection.

Recommendations

The following improvements are required to meet GRTA standards for the 2011 "No Build" condition:

- Modify the westbound approach at the Steve Reynolds Boulevard/Shackleford Road intersection to allow westbound right turn lanes out of the outside through lane.

- Install an additional through lane southbound along Steve Reynolds Boulevard at the Steve Reynolds Boulevard/Club Drive intersection.

The following improvement is required to meet GRTA standards for the 2011 "Build" condition:

- Signalize the Shackleford Road/Shared Site Access intersection.

In addition to the improvements required to meet GRTA standards, the following intersection geometry improvements are recommended at the project site access driveways:

- Install a southbound right-turn lane along Steve Reynolds Boulevard and an eastbound right-turn only lane exiting the site at the Steve Reynolds Boulevard/Site Access intersection.

- Install a westbound right-turn lane along Shackleford Road and a southbound right-turn only lane exiting the site at the Shackleford Road/East Site Access intersection.

SECTION II
PROJECT DESCRIPTION

PROJECT PHASING AND LAND USE

The project site is located along the west side of Steve Reynolds Boulevard, and on the north side of Shackleford Road. Figure 1 shows the project vicinity. An aerial photograph of the site is shown in Figure 2. Initial site construction is expected to begin in 2008 with full build out in 2011.

As stated in the previous section, the proposed project is a mixed use development. The proposed land uses on the site is shown in Table 1.

Table 1. Villa More Project Land Use Summary

Land Use	Amount
Condominium	324 d.u.'s
Commercial (Retail)	105,000 s.f.
Office	57,000 s.f.
Hotel	300 rooms

SITE PLAN

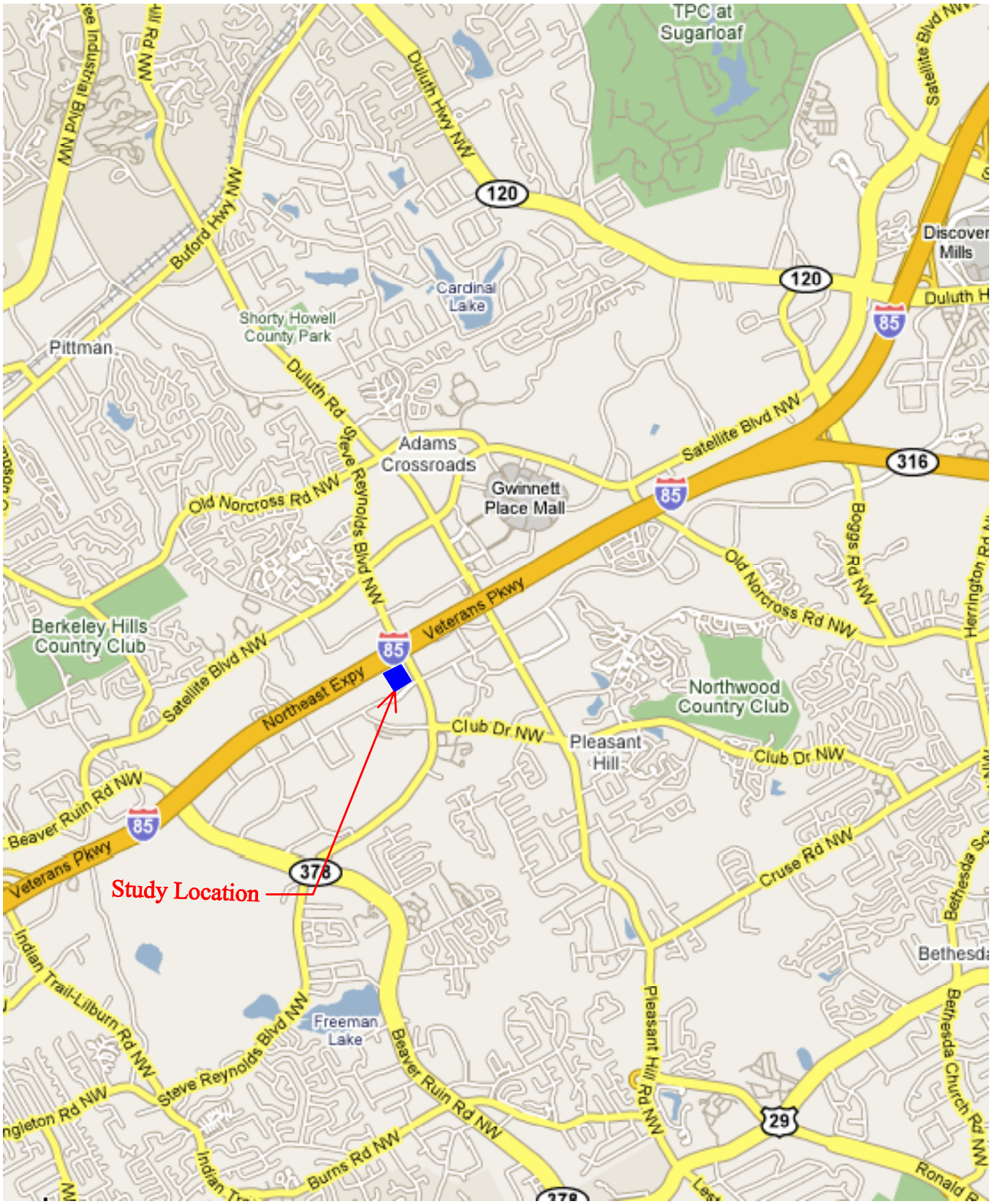
The site plan is shown in Figure 3. A full size copy of the site plan is provided with the application package and electronically.

SITE ACCESS

The site will have one (1) right in-right out access driveway along Steve Reynolds Boulevard, one (1) right in-right out access driveway along Shackleford Road and one (1) full access driveway along Shackleford Road. The full access driveway along Shackleford Road will be shared with the Louise Radloff Middle School. Currently the shared driveway is used for bus traffic only and has minimal traffic volumes during the A.M. and P.M. peak hours.

BICYCLE AND PEDESTRIAN FACILITIES ON SITE

Currently along the site frontage, no sidewalks or bicycle lanes exist along Steve Reynolds Boulevard or Shackleford Road. Currently there is a sidewalk along the east side of Steve Reynolds Boulevard across from the site. East of Steve Reynolds Boulevard there are sidewalks along both sides of Shackleford Road.



GRESHAM SMITH AND PARTNERS

LEGEND

Figure 1

Site Vicinity Map

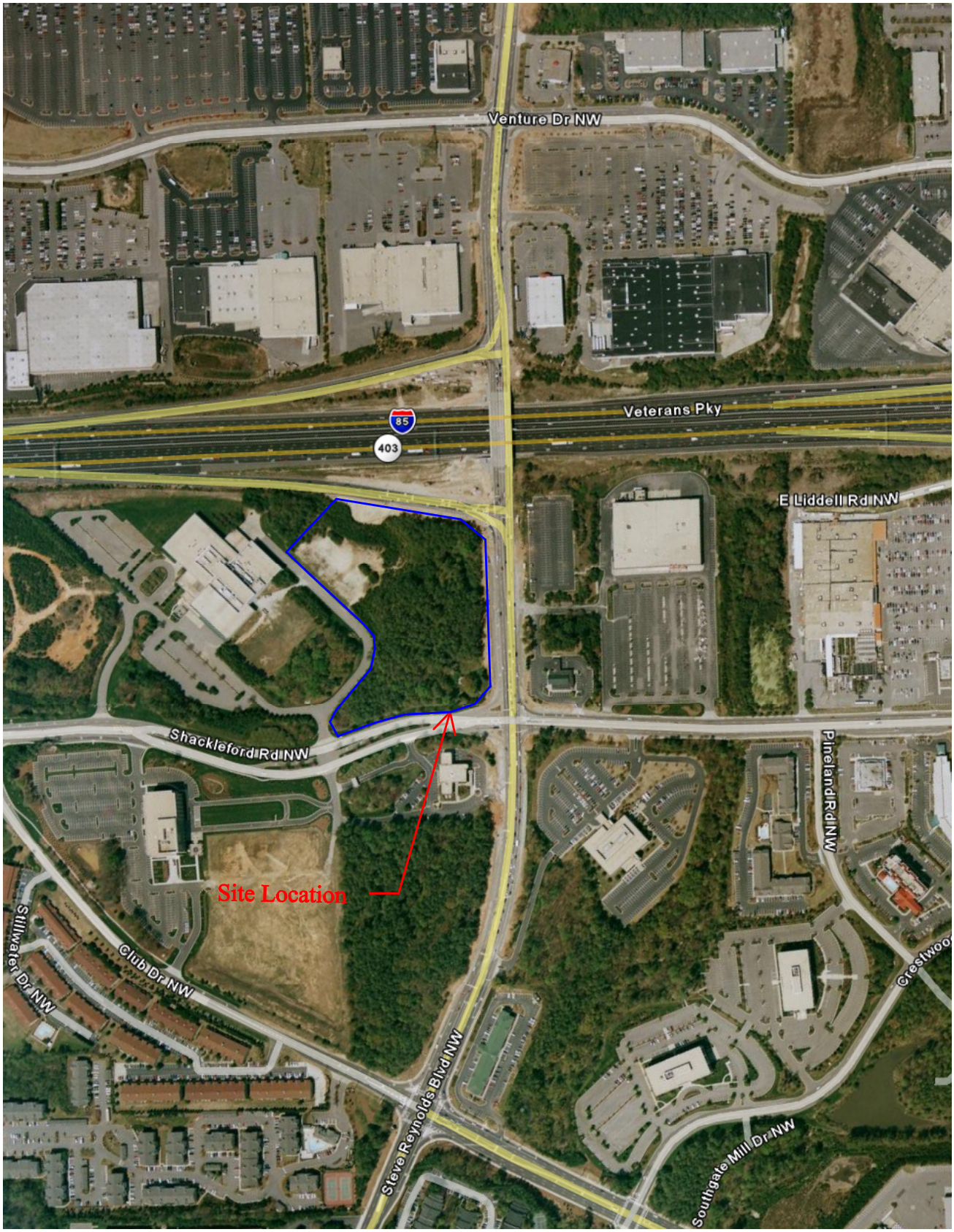


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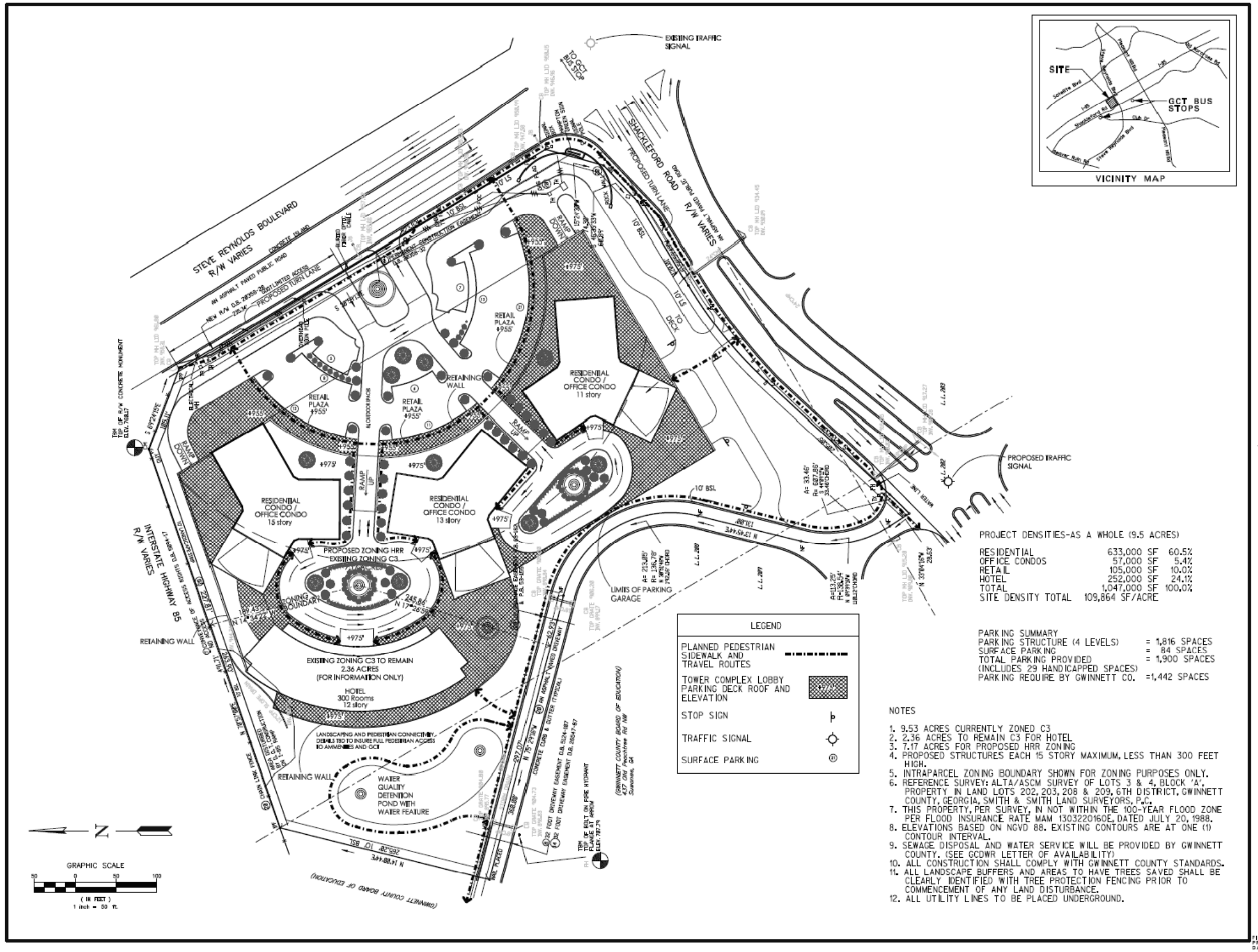
Figure 2

Site Aerial Map



VICINITY MAP

LEGEND

PLANNED PEDESTRIAN SIDEWALK AND TRAVEL ROUTES	
TOWER COMPLEX LOBBY PARKING DECK ROOF AND ELEVATION	#975'
STOP SIGN	
TRAFFIC SIGNAL	
SURFACE PARKING	P

PROJECT DENSITIES-AS A WHOLE (9.5 ACRES)

RESIDENTIAL	633,000 SF	60.5%
OFFICE CONDOS	57,000 SF	5.4%
RETAIL	105,000 SF	10.0%
HOTEL	252,000 SF	24.1%
TOTAL	1,047,000 SF	100.0%
SITE DENSITY TOTAL	109,864 SF/ACRE	

PARKING SUMMARY

PARKING STRUCTURE (4 LEVELS)	= 1,816 SPACES
SURFACE PARKING	= 84 SPACES
TOTAL PARKING PROVIDED (INCLUDES 29 HANDICAPPED SPACES)	= 1,900 SPACES
PARKING REQUIRE BY GWINNETT CO.	=1,442 SPACES

NOTES

1. 9.53 ACRES CURRENTLY ZONED C3
2. 2.36 ACRES TO REMAIN C3 FOR HOTEL
3. 7.17 ACRES FOR PROPOSED HRR ZONING
4. PROPOSED STRUCTURES EACH 15 STORY MAXIMUM, LESS THAN 300 FEET HIGH.
5. INTRAPARCEL ZONING BOUNDARY SHOWN FOR ZONING PURPOSES ONLY.
6. REFERENCE SURVEY: ALTA/ASCM SURVEY OF LOTS 3 & 4, BLOCK 'A', PROPERTY IN LAND LOTS 202, 203, 208 & 209, 6TH DISTRICT, GWINNETT COUNTY, GEORGIA, SMITH & SMITH LAND SURVEYORS, P.C.
7. THIS PROPERTY, PER SURVEY, IN NOT WITHIN THE 100-YEAR FLOOD ZONE PER FLOOD INSURANCE RATE MAM 13032201606, DATED JULY 20, 1988.
8. ELEVATIONS BASED ON NGVD 88. EXISTING CONTOURS ARE AT ONE (1) CONTOUR INTERVAL.
9. SEWAGE DISPOSAL AND WATER SERVICE WILL BE PROVIDED BY GWINNETT COUNTY. (SEE GCDWR LETTER OF AVAILABILITY)
10. ALL CONSTRUCTION SHALL COMPLY WITH GWINNETT COUNTY STANDARDS.
11. ALL LANDSCAPE BUFFERS AND AREAS TO HAVE TREES SAVED SHALL BE CLEARLY IDENTIFIED WITH TREE PROTECTION FENCING PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE.
12. ALL UTILITY LINES TO BE PLACED UNDERGROUND.

G S & P
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Fort Lauderdale
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VILLA MORE
Gwinnett County, GA

REVISION		
No. -	Date -	Revision
1	9.16.07	DRI UPDATE
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	. .	
	. .	
	. .	
	. .	

RZ-1

FILE: VMC101.dgn
PROJECT: 23823.80
DATE: 7/9/07

LEGEND

Figure 3
Site Plan

Sidewalks will be constructed along all site boundaries with public roadways (Steve Reynolds Boulevard and Shackleford Road) and along the shared site access roadway (the site access roadway is shared with the Louise Radloff Middle School). Bicycle racks are planned at strategic locations throughout the project site.

The proposed on site pedestrian/bicycle path system will connect the commercial portion of the project with the residential and hotel portions of the project. The interconnected pedestrian/bicycle path system will provide a safe, convenient and inviting alternative to driving, especially for internal site trips, thereby reducing on-site and off-site vehicular traffic generation. Given the high density nature of the project and proximity of land uses to one another, it is anticipated that almost all internal trips will be made by walking.

TRANSIT SERVICE

Gwinnett County Transit (GCT) provides bus transit service in the study location vicinity and there are currently two (2) bus routes that stop near the site, both within ¼ mile of the site. Gwinnett County Transit Local Route 30 (Norcross/Technology Park area) stops at the Shackleford Road/Club Drive intersection, approximately 0.22 miles southwest of the Villa More site. Route 30 weekday service runs on an approximate 15 to 30 minute headway beginning at 6:00 A.M. and ending at 10:20 P.M. Saturday service runs on an approximate 60 minute headway beginning at 6:30 A.M. and ending at 9:00 P.M. Route 30 does not operate currently on Sundays.

Gwinnett County Transit Express route 102A (Gwinnett Place Mall) stops at the Shackleford Road/Pineland Road intersection, approximately 0.23 miles northeast of the Villa More site. Route 102A weekday service runs on approximate 30 minute headway from 7:20 A.M. to 9:55 A.M. and from 3:10 P.M. to 7:11 P.M. and does not operate on weekends.

PARKING

Table 2 shows the parking requirements under the Gwinnett County code. Although the final number of provided parking is not known at this time in the development process, it is the developer's intent to provide approximately the minimum number of spaces that would be allowed under Gwinnett County code and not "over park" the site. The present concept plan provides for 1900 spaces on-site, primarily in a four-story parking deck structure. (including 29 handicap and 84 surface spaces). The final space provision will be a function of design development in concert with Gwinnett County staff requirements.

Table 2. Vills More Parking Requirements

Land Use	Amount	Requirement	Required Number of Parking Spaces
Condominium	324 d.u.'s	1 ½ - 3 per d.u.	486 - 972
Retail/Office	162,000 s.f.	2–5 per 1,000 s.f. (varies)	276 - 612
Hotel	300 rooms	1 – 2 per room + banquet	680 - 1360
Total Required			1442 - 2944

COMPLIANCE WITH COMPREHENSIVE PLANS

The proposed DRI as a mixed use development project not only meets the intent of the comprehensive plan, but also addresses the goals of Gwinnett County's comprehensive plan. By encouraging a mix of uses that minimize traffic generation through pedestrian/bicycle friendly travel ways, the project will minimize additional traffic on Steve Reynolds Boulevard and other area roadways. The site is currently zoned C-3 (Highway Business District). Under the proposed rezoning, 2.3 acres will remain C-3 for the proposed hotel. The balance (7.71 acres) is proposed for HRR (high rise residential).

SECTION III
TRAFFIC ANALYSIS METHODOLOGY & ASSUMPTIONS

GROWTH RATE AND METHODOLOGY

Future traffic volumes without the project were derived by using an annual growth rated developed based on GDOT'S *Annual Traffic Count Data* as well as population growth rates of Gwinnett County from the 1990 to 2000 Census. Based on discussions with GRTA a 4.5 percent annual growth rate was used in this analysis. The annual growth rate was applied to all the traffic volumes at the intersection(s) along that roadway, including the side street.

The following formula was used for the traffic projections:

$$F = P (1+i)^n$$

Where:
F = Projected traffic, vehicles per hour
P = 2007 peak hour traffic volume, vehicles per hour
i = growth rate per year (4.5 percent or .045)
n = number of years in projection, 4 for 2011

TRAFFIC DATA COLLECTION

A.M. and P.M. peak hour traffic volumes were obtained at the study area intersections by All Traffic Data Services, Inc. during late August 2007 (the second week of school in Gwinnett County). 24 hour bi-directional traffic counts were conducted along Steve Reynolds Boulevard north of Shackleford Road and along Shackleford Road west of Steve Reynolds Boulevard by All Traffic Data Services, Inc during August 2007.

Based on these counts, the 24 hour daily bi-directional volume along Steve Reynolds Boulevard north of Shackleford Road is approximately 39,000. The existing 24 hour daily bi-directional along Shackleford Road west of Steve Reynolds Boulevard is approximately 7,000.

The existing A/M. and P.M. peak hour counts along Steve Reynolds Boulevard and Shackleford Road were adjusted to better balance the counts between intersections where appropriate. Existing A.M. and P.M. peak hour turning movements are presented in Figure 4. Appendix B contains the existing traffic counts data sheets.

DETAILED INTERSECTION ANALYSIS METHODOLOGY

A detailed intersection analysis was undertaken using the methodologies outlined in the *2000 Highway Capacity Manual* (HCM) and the Synchro 7.0 software program. According to the HCM, there are six levels of service (LOS) by which the operational performance of an intersection may

be described. These levels of service range between LOS "A" which indicates a relatively free-flowing condition and LOS "F" which indicates conditions near or at operational breakdown. Appendix C contains a detailed description of the LOS ranges for signalized and unsignalized intersections.

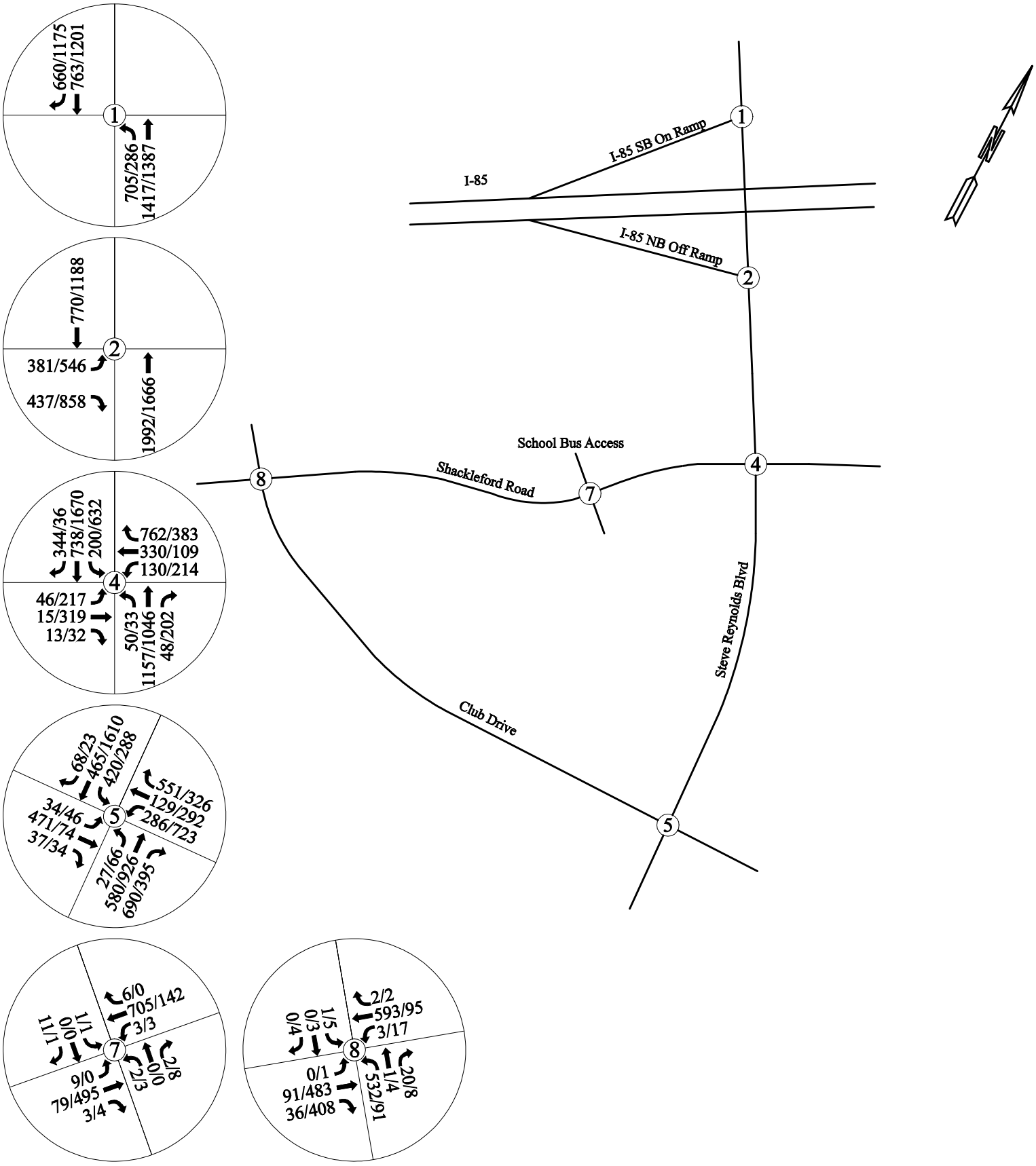
For signalized intersections, the overall intersection level of service and delay are reported. For unsignalized intersections, the level of service and delay reported is for the worst approach or conflicting movement.

Based on information provided by GRTA, the LOS standard for detailed intersection analysis should be LOS D. However if an intersection currently operates at LOS E or LOS F for a particular time period (i.e. A.M. or P.M. peak hour), the LOS standard will be LOS E for that particular time period.

PLANNING LEVEL SEGMENT ANALYSIS METHODOLOGY

A planning level segment analysis was undertaken based on existing and future ADT and Table 5 in the *GRTA DRI Review Technical Guidelines.* Appendix C contains a copy of Table 5.

Based on information provided by GRTA, the LOS standard for planning level segment analysis should be LOS D. However if a roadway segment currently operates at LOS E or LOS F, the LOS standard will be LOS E for that particular time period.



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LEGEND

➡ Turning Movement

XX/XX A.M./P.M. Peak Hour Volume

Figure 4

Existing A.M. and P.M. Peak Hour Traffic Volumes

SECTION IV
STUDY NETWORK

GROSS TRIP GENERATION

Estimates of daily, A.M. peak hour and P.M. peak hour trips generated by the proposed project for the proposed development were developed from rates published in *Trip Generation*, 7th Edition (Institute of Transportation Engineers, 2003). The trip generation rates and resulting trip generation are shown in Table 3. The proposed development is expected to generate 9,487 average weekday daily, 508 A.M. peak hour (269 in, 239 out), and 824 P.M. peak hour (409 in, 415 out) trips. This gross trip generation is before internal and pass-by trip reductions, which will be discussed later in this report.

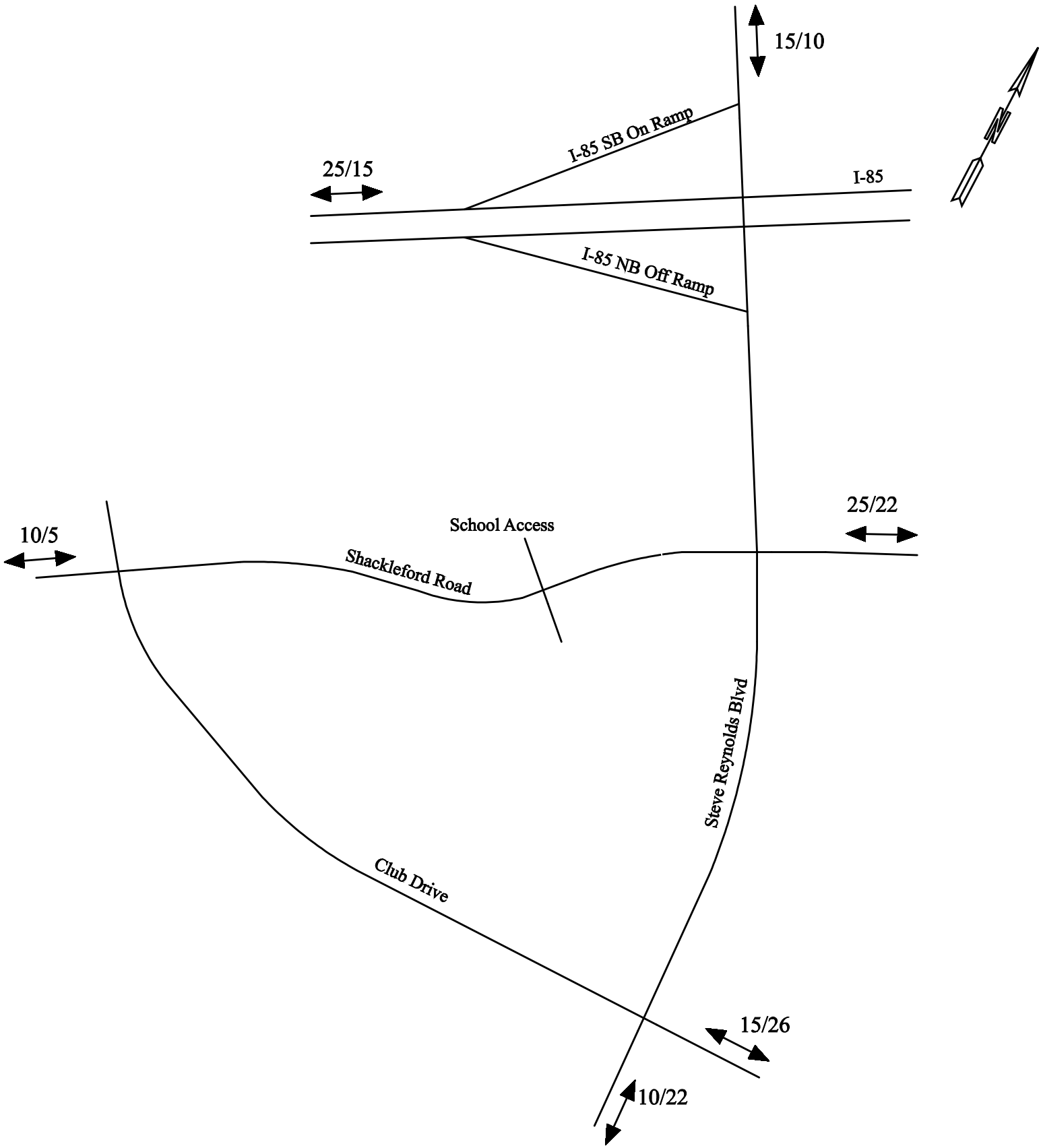
Table 3. Gross Trip Generation for Villa More

Land Use Description and ITE Land Use Code	Avg. Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Trip Generation Rates							
Condominium[1] (230)	5.86	0.07	0.37	0.44	0.35	0.17	0.52
Shopping Center[2] (820)	42.94	0.63	0.40	1.03	1.80	1.95	3.75
Office[2] (710)	11.01	1.36	0.19	1.55	0.25	1.24	1.49
Hotel[3] (310)	8.17	0.34	0.22	0.56	0.31	0.28	0.59
Trip Generation							
Condominium – 324 d.u.	1,899	23	120	143	113	55	168
Shopping Center – 105,000 s.f.	4,509	66	42	108	189	205	394
Office – 57,000 s.f.	628	78	11	89	14	71	85
Hotel – 300 rooms	2,451	102	66	168	93	84	177
Total for Villa More	9,487	269	239	508	409	415	824

Note: (1) Rate per dwelling unit (d.u.).
(2) Rate per 1,000 square feet (s.f.).
(3) Rate per room.

TRIP DISTRIBUTION

Trip distribution is the percentage of site traffic that travels on the various roadways to and from the site. A generalized trip distribution for the A.M. and P.M. peak hour was developed from the existing traffic counts, locations of major employment/retail centers, and logical travel paths to and from major travel corridors. The estimated trip distribution by land use is shown in Table 4 and Figure 5.



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XX/XX Residential and Hotel/ Comericial Distribution

Figure 5

Trip Distribution

Table 4. Directional Distribution of Villa More Traffic by Land Use

Direction (to and from)	Percent	
	Residential/Hotel	Office/Retail
Steve Reynolds Blvd to and from the north	15%	10%
I-85 to and from the south	25%	15%
Steve Reynolds Blvd to and from the south	10%	22%
Shackleford Rd to and from east	25%	22%
Shackleford Rd to and from west	10%	5%
Club Drive to and from east	15%	26%
Total	100%	100%

STUDY NETWORK DETERMINATION

The study network was determined by evaluating the amount of traffic that the proposed development will add to each roadway segment in the vicinity of the project site. According to GRTA guidelines, a roadway segment carries a "significant" amount of traffic of the project's gross traffic volumes (before mixed-use or pass-by reductions) constitute more than seven (7) percent of the two-way service volumes of a roadway segment at LOS D. Based on the cross-section of each roadway and the number of signals per mile, a maximum average daily traffic (ADT) volume within each LOS is defined. These ADT's were determined for each roadway segment in the vicinity of the project site in accordance with Table 5 in the *GRTA DRI Review Technical Guidelines*. Appendix C contains a copy of this table.

Distributed site generated gross traffic volumes for each segment was divided by the appropriate two-way volumes to determine the percentage of the service volume that will be used by the project. The boundaries of the study network extend to the most distant intersections where more than seven (7) percent of the service volumes of the roadway segment are used by project traffic. Table 6 shows the study area determination calculations. As shown in Table 5, the only three (3) segments where more than seven (7) percent of the service volumes of the roadway segment are used by project traffic are along Steve Reynolds Boulevard and Shackleford Road along the site frontage.

Table 5. Study Network Determination

Roadway	Section	Daily Traffic Assignment	Daily Capacity	Percent of Daily Capacity	Presumptive Impact
Steve Reynolds Blvd	North of I-85	991	32,500	3.0%	No
	Between I-85 Ramps	1,790	48,900	3.7%	No
	I-85 Ramp to Site Access	2,590	48,900	5.3%	No
	Site Access to Shackleford Rd	**4,363**	**54,500**	**8.0%**	**Yes**
	Shackleford Rd to Club Dr	2,722	48,900	5.6%	No
	South of Club Dr	1,186	32,500	3.6%	No
Shackleford Rd	East of Steve Reynolds Blvd	1,838	32,500	5.7%	No
	S. Reynolds Blvd to East Site Access	**5,245**	**32,500**	**16.1%**	**Yes**
	East Site Access to Shared Site Access	**2,902**	**32,500**	**8.9%**	**Yes**
	Site Access to Club Dr	608	32,500	1.9%	No
	West of Club Dr	608	14,900	4.1%	No
Club Dr	East of Steve Reynolds Blvd	1,536	48,900	3.1%	No

STUDY ELEMENTS

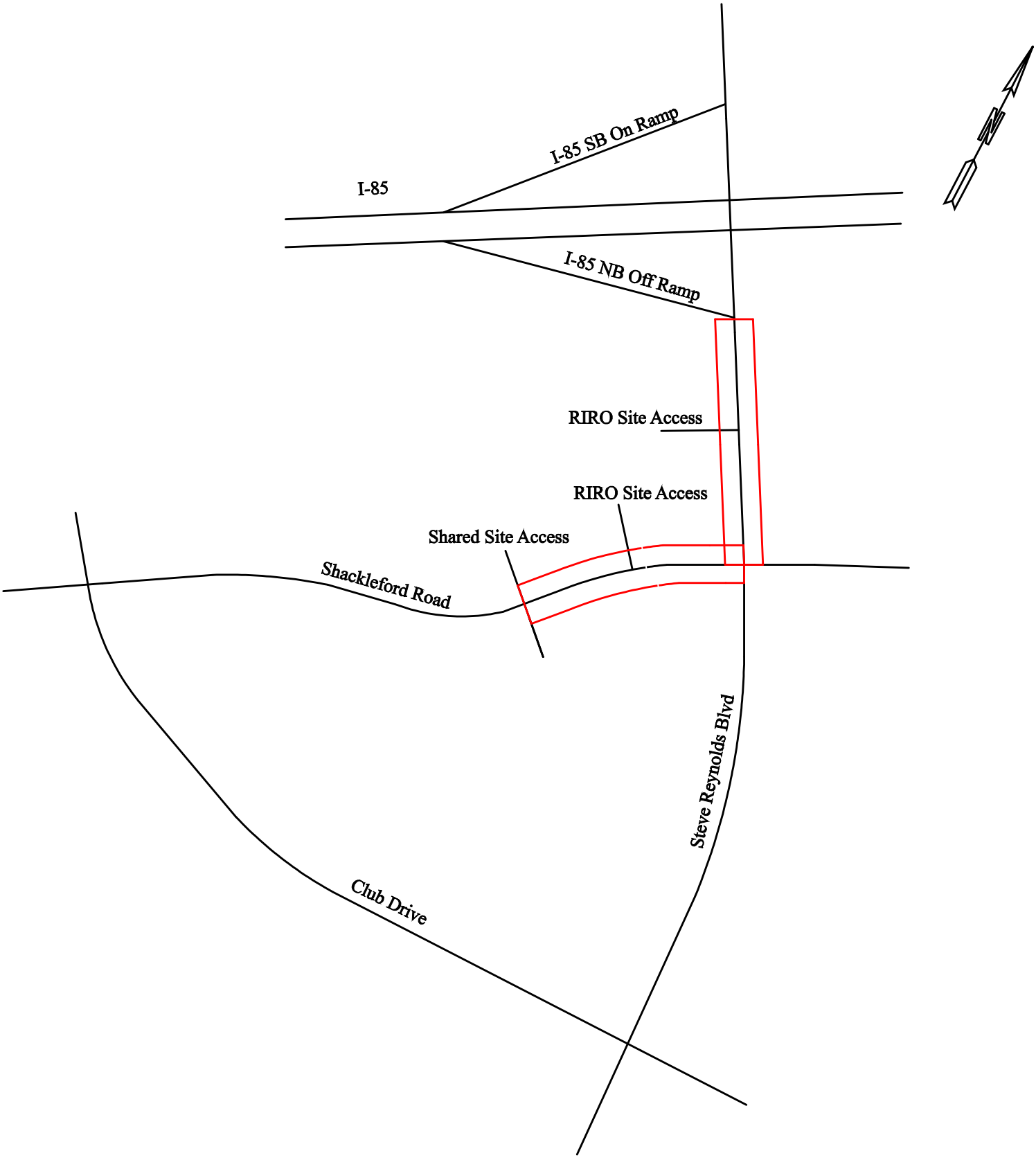
Based on the study network determination described in the previous section and discussions with GRTA staff, the following intersections and roadway sections are analyzed as part of this study:

- Steve Reynolds Blvd/I-85 SB Ramp
- Steve Reynolds Blvd/I-85 NB Ramp
- Steve Reynolds Blvd/Site Access (Right In-Right Out)
- Steve Reynolds Blvd/Shackleford Road
- Steve Reynolds Blvd/Club Drive
- Shackleford Rd/East Site Access (Right In-Right Out)
- Shackleford Rd/School Access (Full Access)
- Shackleford Rd/Club Drive

The following roadway segments were identified for planning level segment analysis:

- Steve Reynolds Boulevard along the site frontage
- Shackleford Road along the site frontage

Based on the proposed land uses and intensities for Villa More, peak hour analysis is provided for the weekday morning and evening peak hours. In accordance with GRTA guidelines, a LOS standard of LOS D was chosen based on classifications ranging from major arterials to local roadways in a suburban area. The study network is shown in Figure 6.



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Greater than 7 % of Daily Capacity

Figure 6

Study Network

EXISTING FACILITIES

The following provides a description of the existing street system in the study area including a description of street classifications and characteristics:

Steve Reynolds Boulevard: Steve Reynolds is a north-south six-lane urban collector street with a speed limit of 45 mph in the vicinity of site. Between the Steve Reynolds Boulevard/I-85 NB Ramp and Steve Reynolds Boulevard/Shackleford Road intersections, Steve Reynolds has three through lanes in the NB direction and in the SB direction there are two left turn lanes and three through lanes, with the outside through lane operates as a through-right lane.

Shackleford Road: Shackleford Road is a two-lane east-west local street with a posted speed limit of 40 mph in the vicinity of site.

Club Drive: Club Drive is two-lanes between Shackleford Road and Steve Reynolds Boulevard and is six-lanes east of Steve Reynolds Boulevard. Club Drive is a local street with a posted speed limit of 45 mph in the vicinity of site.

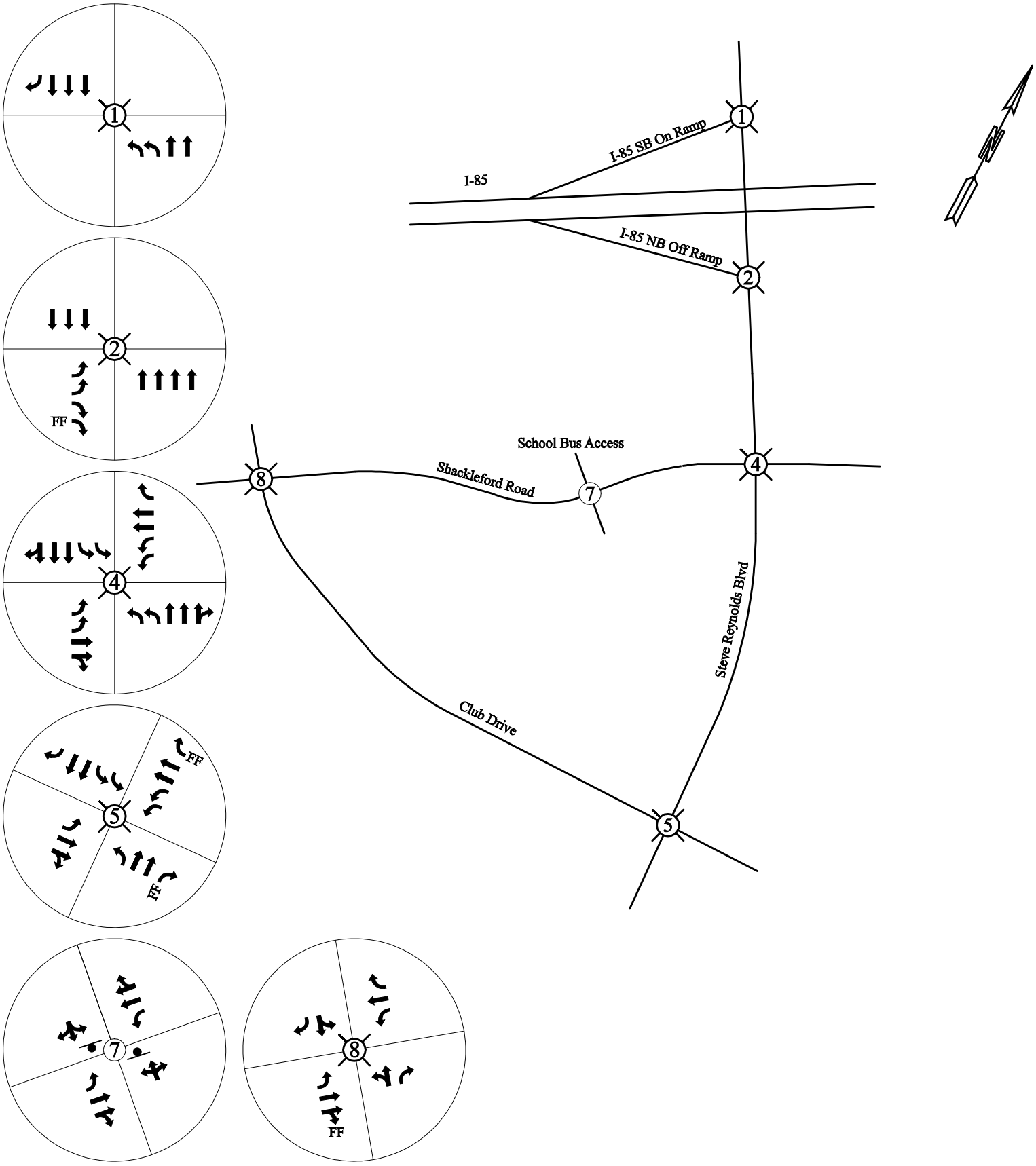
Currently the Steve Reynolds/Shackleford Road, Steve Reynolds/Club Drive, Shackleford Road/Club Drive, Steve Reynolds/I-85 NB Ramp and Steve Reynolds/I-85 SB Ramp intersections operate under signal control. The Shackleford Road/School Access intersection currently operates under two-way stop sign control, with Shackleford Road having the right-of-way. Figure 7 shows the existing lane configurations and traffic control at these intersections.

IDENTIFICATION OF PROGRAMMED PROJECTS

A review of the Atlanta Regional Commission's Mobility 2030 Regional Transportation Plan revealed several long term transportation projects in the vicinity of the proposed development. The following projects were identified:

- I-85 North Ramp Meters (GDOT # 0006397)
- I-85 North Bus Rapid Transit (ARC # AR-905A/B)
- Pleasant Hill Road ATMS (GDOT # 0006827)
- West Liddell Road Connector/ Club Drive Connector from Satellite Boulevard to Shackleford Road (GDOT # 0006926)
- West Liddell Road/ Club Drive Connector at I-85 North Bridge (ARC # GW-309B)
- Shackleford Road/Breckenridge Road/North Brown Road Connector ATMS from Steve Reynolds Boulevard to Old Peachtree Road (ARC # GW-320)

The I-85 North Ramp Meters project is from SR 13 in the City of Atlanta to Pleasant Hill Road in Gwinnett County and is currently under construction. The I-85 North Bus Rapid Transit (BRT) is between the Doraville MARTA Station and Sugarloaf Parkway. The Pleasant Hill Road ATMS is from US 29 to Steve Reynolds Boulevard. Construction is expected to begin in 2010 per the GDOT Construction Work Program (See Appendix D).



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- Lane Usage
- Traffic Signal
- Stop Sign
- FF Free Flow

Figure 7

Existing Lane Configurations and Traffic Control

The West Liddell Road Connector/ Club Drive Connector from Satellite Boulevard to Shackleford Road project consists of widening the existing West Liddell Road, and also an extension across I-85 to Shackleford Road. Construction is expected to begin in 2010 per the GDOT Construction Work Program (See Appendix D). Since this roadway project is will not be opened by the time the Villa More project is built out, it was not included in the traffic analysis.

SECTION V
TRIP GENERATION, DISTRIBUTION & ASSIGNMENT

INTERNAL CAPTURE

Due to the mixed use nature of the project, there will be internal trips between the residential uses, the retail uses and the office uses. Mixed-use reductions were taken in accordance with the procedures outlined in the *Trip Generation Handbook* (Institute of Transportation Engineers, 2003). According to GRTA guidelines, these percentages should be adjusted in accordance with the distance between the various land uses on site. Based on these guidelines, full mixed-use reductions were applied to the development. Appendix E contains the worksheets that document the internal trip percentages used and the internal trip calculations for daily, A.M. peak hour and P.M. peak hour trips.

ALTERNATIVE MODES OF TRANSPORTATION

Due to proximity of off-site transit within ¼ of the site, a two (2) percent reduction to the trip generation was taken for alternative modes of transportation.

PASS-BY TRIPS

An adjustment was taken for pass-by trips based on pass-by percentages documented in *Trip Generation Handbook*. A pass-by trip is generally defined as a trip attracted from traffic passing the site in route to a primary destination. These trips are not new trips to the adjacent roadway, but are assigned at the project driveway. For purposes of this study, Pass-By trips come from traffic along Steve Reynolds Boulevard and Shackleford Road. The pass-by trip formulas outlined in the *Trip Generation Handbook* yield a pass-by percentage of approximately 38 percent during the P.M. peak hour for Shopping Centers (see page 43). The same percentage of pass-by trips was assumed during the A.M. peak hour and over the entire day. The pass-by percentage reduction was applied to the retail trips after taking the reduction for internal capture.

According to GRTA procedures, pass-by traffic cannot be more than ten (10) percent of the through traffic pass a site. This is referred to as a pass-by trips limits test. As shown in Table 6 the pass-by trips calculated using the ITE methodology is less than the ten (10) percent limit, therefore the actual ITE pass-by trip percentages were used in this analysis.

The net trip generation for the site, will all the appropriate reductions, is presented in Table 7. The proposed development is expected to generate 6,787 average weekday daily, 436 A.M. peak hour (228 in, 208 out), and 579 P.M. peak hour (288 in, 291 out) new trips.

Table 6. Pass-By Trips Limits Test

Time Period	Existing Traffic	Pass-By Trips	Percent of Existing Traffic	Is ITE Percentage Okay?
Daily	46,071	1,537	3.34%	Okay
AM Peak Hour	4,045	36	0.89%	Okay
PM Peak Hour	4,730	131	2.77%	Okay

Note: (1) Pass-By percentage calculated using Pass-By trips equation for P.M. peak hours for Shopping Centers from ITE Trip Generation Handbook, 2003, page 43. This number represents the P.M. peak hour Pass-By percentage. Daily and A.M. peak hour percentage were assumed to be the same as the P.M. peak hour.

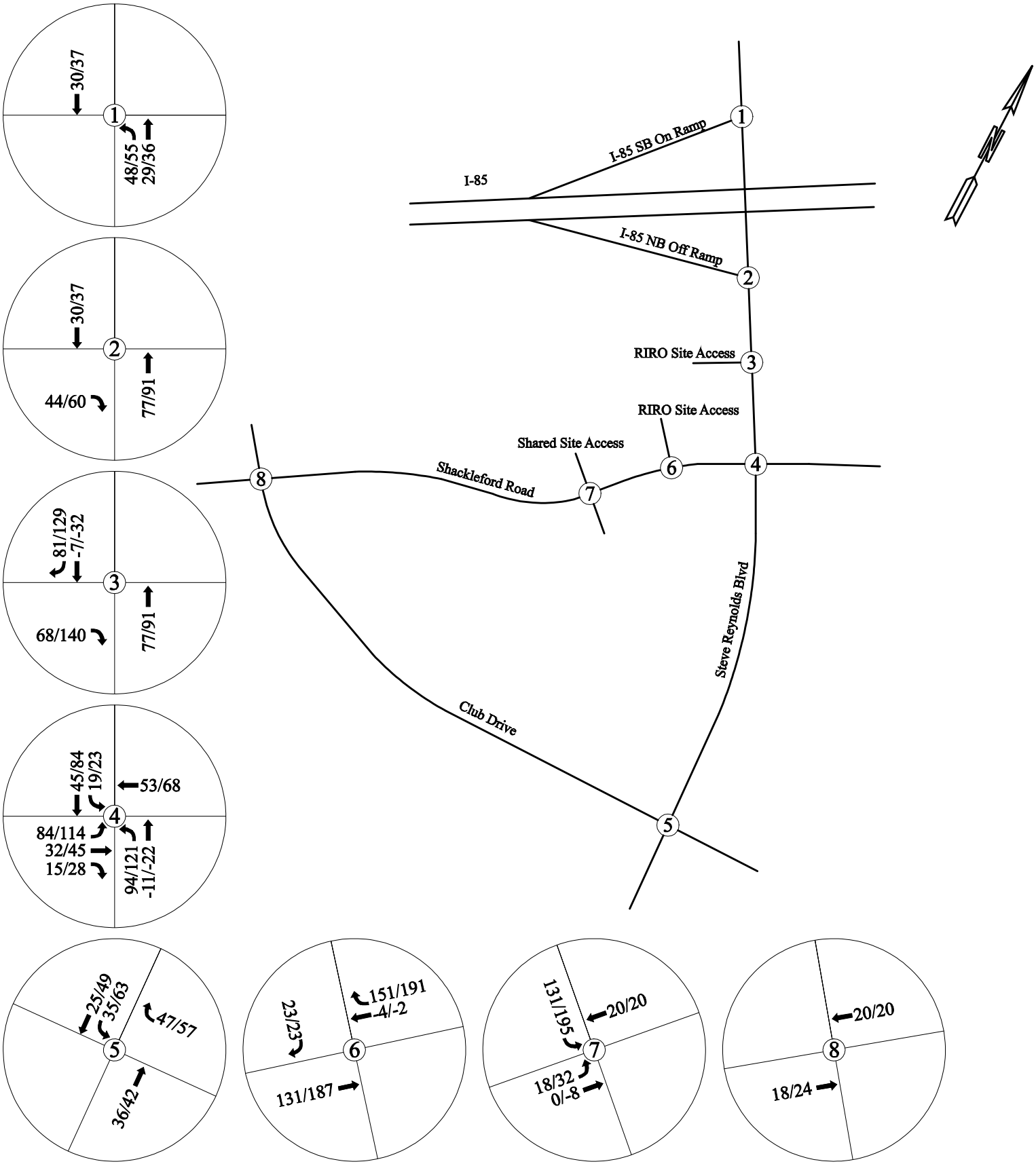
Table 7. Net Trip Generation for Villa More

Land Use Description	Avg. Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
324 d.u. Residential							
Total	1,663	19	118	137	101	45	146
Internal Capture	182	1	4	5	14	7	21
Transit Trips	30	0	2	2	2	1	3
Net New Auto Trips	1,451	18	112	130	85	37	122
105,000 s.f. Shopping Center							
Total	4,509	66	42	108	189	205	394
Internal Capture	500	8	6	14	21	29	50
Pass-By	1,537	22	14	36	64	67	131
Transit Trips	50	1	0	1	2	2	4
Net New Auto Trips	2,422	35	22	57	102	107	209
57,000 s.f. Office							
Total	628	78	11	89	14	71	85
Internal Capture	106	1	2	3	4	5	9
Transit Trips	10	2	0	2	0	1	1
Net New Auto Trips	512	75	9	84	10	65	75
300 room Hotel							
Total	2,869	107	68	175	105	94	199
Internal Capture	418	5	2	7	12	10	22
Transit Trips	49	2	1	3	2	2	4
Net New Auto Trips	2,402	100	65	165	91	82	173
Total Gross Trips	9,669	270	239	509	409	415	824
Total Reductions	2,882	42	31	73	121	124	245
Net New Trips	**6,787**	**228**	**208**	**436**	**288**	**291**	**579**

TRIP DISTRIBUTION & ASSIGNMENT

Net new trips generated by the project site, shown in Table 7, were assigned to the study area network according to the appropriate distributions shown in Table 4 and Figure 5 and the proposed

site layout (including driveway type and location). Consideration was given to the driver's on-site origin/destination and the ease of access for each turning movement for all study intersections and site driveways. The resulting trip assignment of project generated trips is shown in Figure 8. It should be noted that the trips shown on Figure 8 include Pass-By trips so the volumes may not balance between external intersections and include some negative numbers at the site access intersections along Steve Reynolds Boulevard and Shackleford Road.



GRESHAM SMITH AND PARTNERS

LEGEND

➡ Turning Movement

XX/XX A.M./P.M. Peak Hour Volume

Figure 8

Trip Assignment

SECTION VI
TRAFFIC ANALYSIS

EXISTING TRAFFIC VOLUMES AND LEVELS OF SERVICE

Based on the existing lane configurations and traffic control presented in Figure 7, and the existing traffic volumes presented in Figure 4, peak hour traffic operations were analyzed at the study area intersections. Existing A.M. and P.M. peak hour levels of service are summarized in Table 8 for the study area intersections. As indicated in Table 8, all the study area intersections are projected to operate at LOS D or better in the A.M. and P.M. peak hours under existing conditions. Appendix F contains the level of service worksheets for the Existing condition.

Table 8. 2007 Existing Intersection Levels of Service

	A.M. Peak Hour		P.M. Peak Hour	
Signalized Intersection	LOS	Delay (sec)	LOS	Delay (sec)
Steve Reynolds/I-85 On-Ramp	B	10.2	B	10.8
Steve Reynolds/I-85 Off-Ramp	B	13.4	B	18.6
Steve Reynolds/Shackleford Road	D	38.1	C	26.2
Steve Reynolds/Club Drive	C	33.1	D	37.4
Shackleford Road/Club Drive	C	32.8	C	33.0
Unsignalized Intersection				
Shackleford Road/Shared Site Access	B	11.8	B	11.9

Based on the existing roadway segment cross-sections, and the existing daily volumes shown in Table 9, a planning level segment analysis was conducted along the study area roadway segments. Existing roadway segment levels of service are summarized in Table 9 for the study area roadway segments. As indicated in Table 9, all study area roadway segments are currently operating at LOS D or better.

Table 9. 2007 Existing Roadway Segment Levels of Service

Roadway	Segment	Daily Capacity	24 Hour Bi-Directional Volumes	Level of Service
Steve Reynolds Blvd	I-85 Ramp to Site Access	54,500	39,062	D
	Site Access to Shackleford Rd	54,500	39,062	D
Shackleford Rd	Steve Reynolds Blvd to East Site Access	32,500	7,008	C
	East Site Access to Shared Site Access	32,500	7,008	C

2011 "NO BUILD" TRAFFIC VOLUMES AND LEVELS OF SERVICE

This section will describe development of the no-build condition in 2011, which includes future "No Build" traffic volume projections anticipated roadway improvements. As stated previously, construction is expected to begin in 2008 with full build out in 2011. The analysis year for traffic impact analysis was considered to be Year 2011.

The 2011 "No Build" condition traffic volumes were derived by using an annual growth rate of 4.5 percent, as documented previously in the report. The annual growth rate was applied to all the traffic volumes at the intersection(s) along that roadway, including the side street.

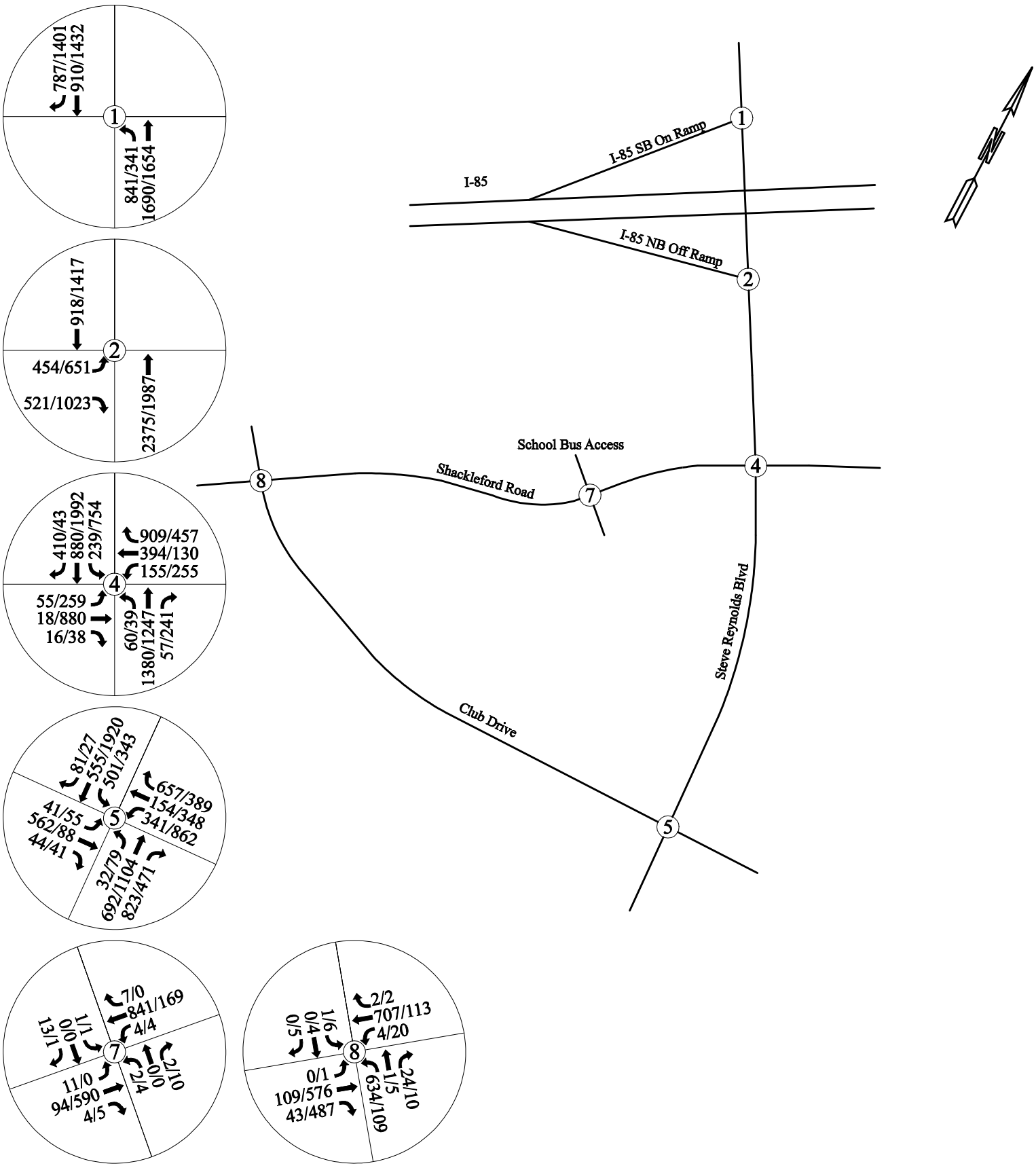
The 2011 "No Build" traffic volumes are shown in Figure 9. Levels of service were calculated at the study area intersections with the 2011 "No Build" traffic volumes and the existing lane configuration shown in Figure 7. The results of the intersection LOS analysis are shown in Table 10. As indicated in Table 10, all the study area intersections are projected to operate at LOS D or better in the A.M. and P.M. peak hours in the 2011 "No Build" condition with the exception of the Steve Reynolds/Shackleford Road and Steve Reynolds/Club Drive intersections. Appendix G contains the level of service worksheets for the 2011 "No Build" condition.

Table 10. 2011 "Build" Intersection Levels of Service

	A.M. Peak Hour		P.M. Peak Hour	
Signalized Intersection	LOS	Delay (sec)	LOS	Delay (sec)
Steve Reynolds/I-85 On-Ramp	B	13.8	C	27.4
Steve Reynolds/I-85 Off-Ramp	B	12.7	C	21.6
Steve Reynolds/Shackleford Road	E	66.9	C	31.9
Steve Reynolds/Club Drive	D	52.3	E	61.6
Shackleford Road/Club Drive	D	44.8	C	27.7
Unsignalized Intersection				
Shackleford Road/Shared Site Access	B	11.4	B	13.2

Two (2) of the intersections failed to meet acceptable LOS standards for the year 2011 "No Build" condition. Per GRTA's Letter of Understanding guidelines, improvements were made to the intersections until the LOS was elevated to LOS "D". In order to maintain the LOS "D" standard for the 2011 "No Build" condition, the following improvements were assumed:

- Modify the westbound approach at the Steve Reynolds Boulevard/Shackleford Road intersection to allow westbound right turn lanes out of the outside through lane. The lane usage would be a right, through-right and through for these movements. This improvement



GRESHAM SMITH AND PARTNERS

LEGEND

➡ Turning Movement

XX/XX A.M./P.M. Peak Hour Volume

Figure 9

2011 "No Build" A.M. and P.M. Peak Hour Traffic Volumes

does not require any additional roadway widening, but would require striping and traffic signal modifications.

- Install an additional through lane southbound along Steve Reynolds Boulevard at the Steve Reynolds Boulevard/Club Drive intersection. This lane can be provided by converting the existing southbound right turn lane into a shared through-right turn lane. Since the southbound right turn volume is relatively low, there would still be ample capacity for the southbound right turn movement.

It should be noted the "No Build" improvements do not take into account the planned West Liddell Road/Club Drive Connector roadway project. This project will provide an alternative four-lane roadway across I-85. This project will provide additional north-south roadway capacity for the immediate area and may relieve some traffic demand on Steve Reynolds Boulevard.

Levels of service were calculated at the study area intersections with the 2011 "No Build" traffic volumes and the improvements described above. The results of the intersection LOS analysis are shown in Table 11. As indicated in Table 11, both intersections are projected to operate at LOS D or better in the A.M. and P.M. peak hours in the 2011 "No Build With Improvements" condition. Appendix G contains the level of service worksheets for the 2011 "No Build With Improvements" condition.

Table 11. 2011 "No Build With Improvements" Intersection Levels of Service

	A.M. Peak Hour		P.M. Peak Hour	
Signalized Intersection	LOS	Delay (sec)	LOS	Delay (sec)
Steve Reynolds/Shackleford Road	C	31.9	C	28.9
Shackleford Road/Club Drive	D	51.5	D	36.7

Based on the existing roadway segment cross-sections, and the 2011 "No Build" 24 Hour Bi-Directional volumes shown in Table 12, a planning level segment analysis was conducted along the study area roadway segments. 2011 "No Build" roadway segment levels of service are summarized in Table 12 for the study area roadway segments. As indicated in Table 12, all study area roadway segments are projected to operate at LOS D or better in the 2011 "No Build" condition.

Table 12. 2011 "No Build" Roadway Segment Levels of Service

Roadway	Segment	Daily Capacity	24 Hour Bi-Directional Volumes	Level of Service
Steve Reynolds Blvd	I-85 Ramp to Site Access	54,500	46,582	D
	Site Access to Shackleford Rd	54,500	46,582	D
Shackleford Rd	Steve Reynolds Blvd to East Site Access	32,500	8,358	C
	East Site Access to Shared Site Access	32,500	8,358	C

2011 "BUILD" TRAFFIC VOLUMES AND LEVELS OF SERVICE

The traffic volumes shown in Figures 9 (2011 "No Build A.M. and P.M. Peak Hour Traffic Volumes) and Figure 8 (Trip Distribution and Assignment) were combined to arrive at the 2011 "Build" A.M. and P.M. peak hour traffic volumes. Figure 10 shows the A.M. and P.M. peak hour traffic volumes.

Based on the traffic volumes shown in Figure 10, the existing lane configurations shown in Figure 8 and the proposed 2011 "No Build" improvements described in the previous section, levels of service were calculated for the 2011 "Build" traffic volume conditions for the A.M. and P.M. peak hours. As indicated in Table 13, all movements at the study area intersections are projected to operate at LOS D or better in the A.M. and P.M. peak hours in the 2011 "Build" condition with the exception of the Shackleford Road/Shared Site Access Driveway. Appendix H contains the level of service worksheets for the 2011 "Build" condition.

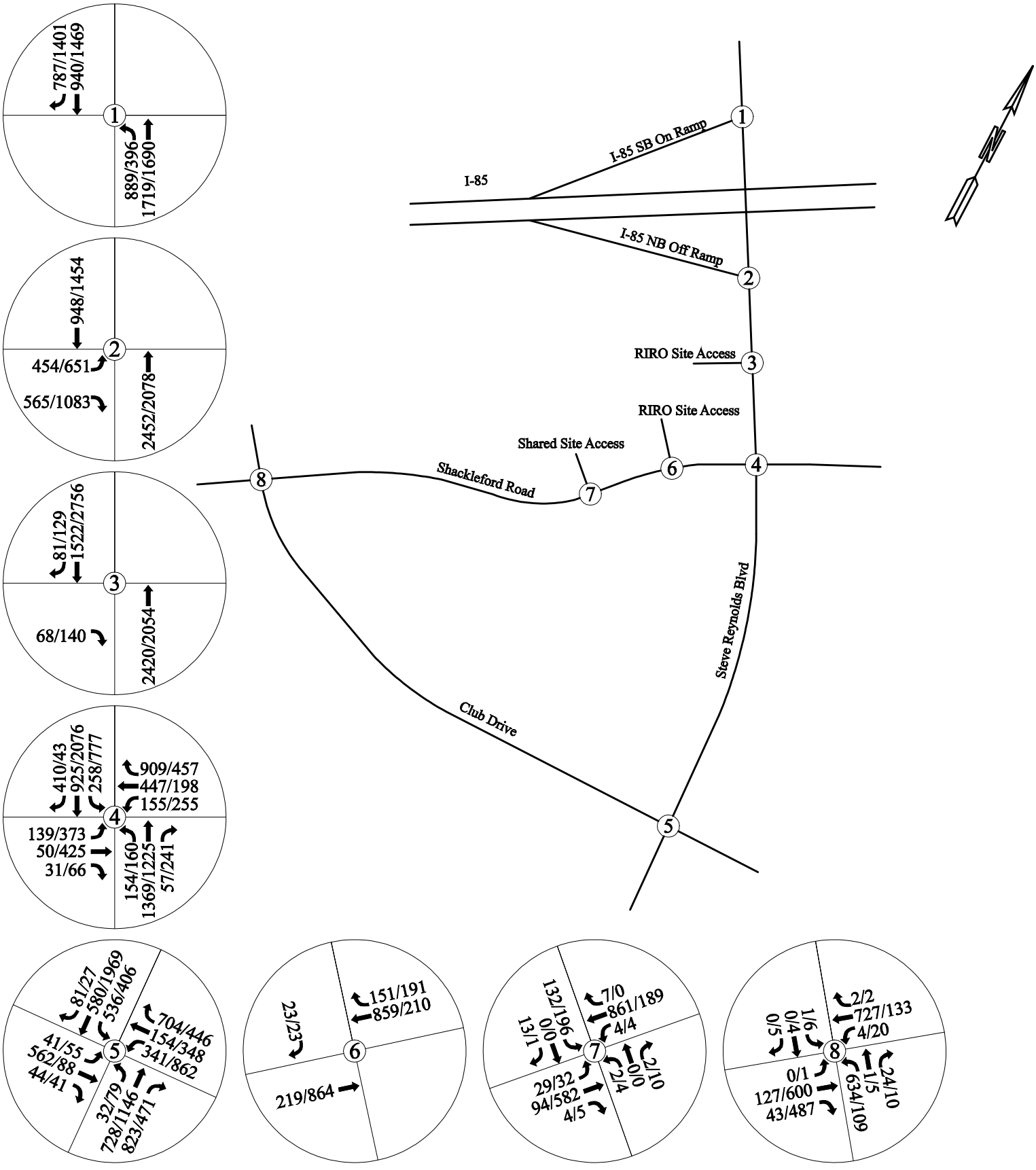
Table 13. 2011 "Build" Intersection Levels of Service

	A.M. Peak Hour		P.M. Peak Hour	
Signalized Intersection[1]	LOS	Delay (sec)	LOS	Delay (sec)
Steve Reynolds/I-85 On-Ramp	B	15.6	C	30.8
Steve Reynolds/I-85 Off-Ramp	B	15.0	C	23.9
Steve Reynolds/Shackleford Road	D	35.5	D	37.1
Steve Reynolds/Club Drive	D	53.9	D	36.1
Shackleford Road/Club Drive	D	45.1	C	27.2
Unsignalized Intersection				
Shackleford Road/East Site Access	B	11.8	A	9.0
Shackleford Road/Shared Site Access	F	83.6	E	39.5

Note: (1) Due to limitations in the Highway Capacity Manual methodologies, the Steve Reynolds Boulevard/RIRO Access could not be analyzed. However since a separate southbound right turn lane will be provided and no left turns will be allowed at the driveway, it is not anticipated that there will be any LOS issues at this intersection.

One (1) of the intersections failed to meet acceptable LOS standards for the year 2011 "Build" condition. Per GRTA's Letter of Understanding guidelines, improvements were made to the intersections until the LOS was elevated to LOS "D". In order to maintain the LOS "D" standard for the 2011 "Build" condition, the following improvement was assumed:

- Signalize the Shackleford Road/Shared Site Access intersection. This intersection is approximately 670 feet from the traffic signal at the Steve Reynolds Boulevard/Shackleford Road intersection and 1,290 feet from the traffic signal at the Shackleford Road/Club Drive



GRESHAM SMITH AND PARTNERS

LEGEND

➡ Turning Movement

XX/XX A.M./P.M. Peak Hour Volume

Figure 10

2011 " Build" A.M. and P.M. Peak Hour Traffic Volumes

intersection.

Levels of service were calculated at the study area intersections with the 2011 "Build" traffic volumes and the proposed traffic signal at the Shackleford Road/School Bus Access intersection. The results of the intersection LOS analysis are shown in Table 14. As indicated in Table 14, this intersection is projected to operate at LOS B or better in the A.M. and P.M. peak hours in the 2011 "Build With Improvements" condition. Appendix H contains the level of service worksheets for the 2011 "Build With Improvements" condition.

Table 14. 2011 "No Build With Improvements" Intersection Levels of Service

	A.M. Peak Hour		P.M. Peak Hour	
Signalized Intersection	LOS	Delay (sec)	LOS	Delay (sec)
Shackleford Road/Shared Site Access	A	9.7	B	19.0

Based on the existing roadway segment cross-sections, and the 2011 "Build" 24 Hour Bi-Directional volumes shown in Table 15, a planning level segment analysis was conducted along the study area roadway segments. 2011 "Build" roadway segment levels of service are summarized in Table 15 for the study area roadway segments. As indicated in Table 15, all study area roadway segments are projected to operate at LOS D or better in the 2011 "Build" condition.

Table 15. 2011 "Build" Roadway Segment Levels of Service

Roadway	Segment	Daily Capacity	Existing 24 Hour Bi-Directional Volumes	Level of Service
Steve Reynolds Blvd	I-85 Ramp to Site Access	54,500	48,858	D
	Site Access to Shackleford Rd	54,500	50,403	D
Shackleford Rd	Steve Reynolds Blvd to East Site Access	32,500	12,954	D
	East Site Access to Shared Site Access	32,500	10,906	D

SECTION VII
OFF-SITE FACILITIES NEEDS

Based on this analysis presented in this report, two (2) intersections within the study network will operate below the LOS standard without additional improvements in the 2011 "No Build" condition. The following improvements are required to meet GRTA standards for the 2011 "No Build" condition:

- Modify the westbound approach at the Steve Reynolds Boulevard/Shackleford Road intersection to allow westbound right turn lanes out of the outside through lane. The lane usage would be a right, through-right and through for these movements. This improvement does not require any additional roadway widening, but would require striping and traffic signal modifications.

- Install an additional through lane southbound along Steve Reynolds Boulevard at the Steve Reynolds Boulevard/Club Drive intersection. This lane can be provided by converting the existing southbound right turn lane into a shared through-right turn lane. Since the southbound right turn volume is relatively low, there would still be ample capacity for the southbound right turn movement.

Based on this analysis presented in this report, one (1) intersection within the study network will operate below the LOS standard without additional improvements in the 2011 "Build" condition. The following improvement is required to meet GRTA standards for the 2011 "Build" condition:

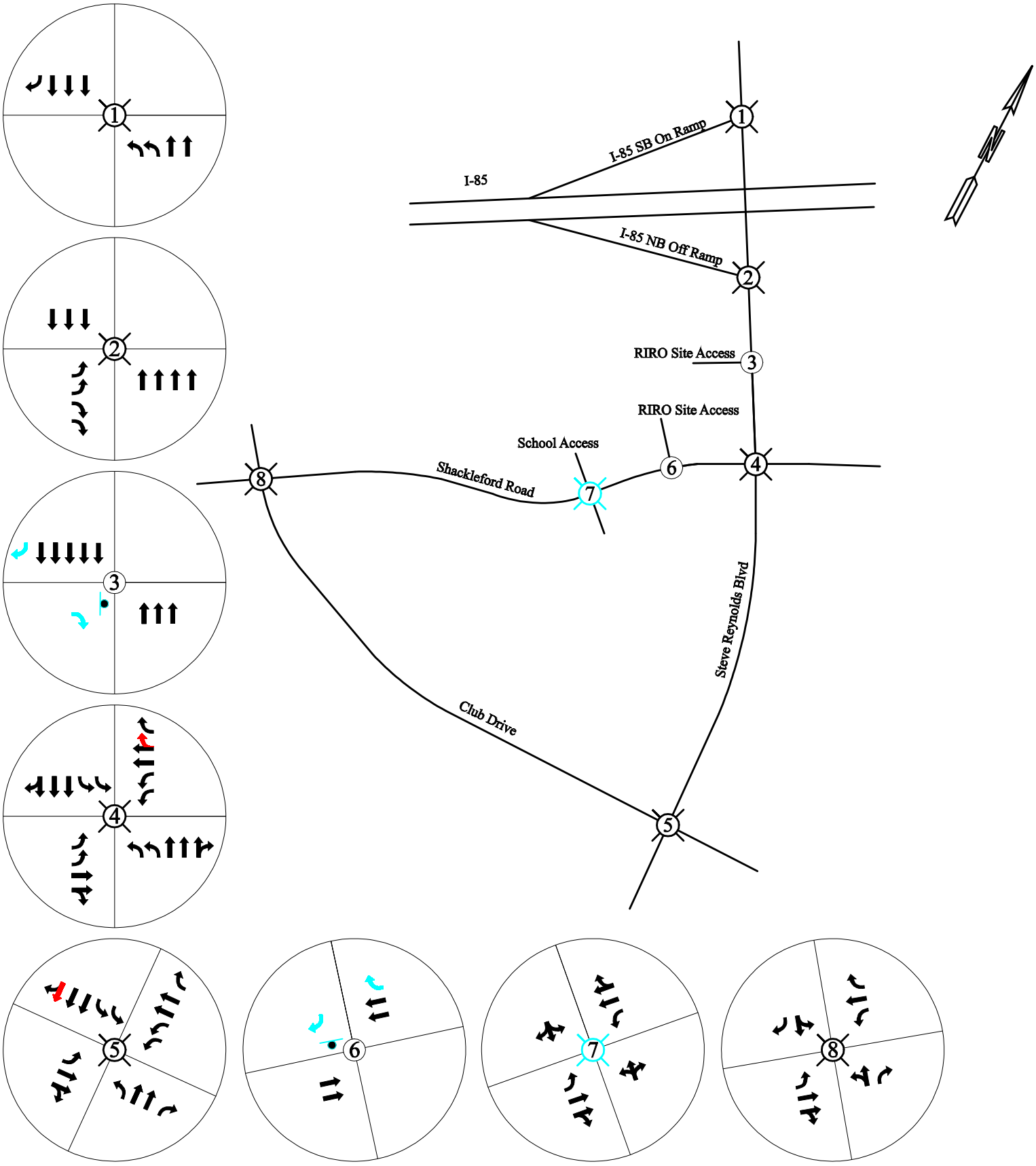
- Signalize the Shackleford Road/Shared Site Access intersection. This intersection is approximately 670 feet from the traffic signal at the Steve Reynolds Boulevard/Shackleford Road intersection and 1,290 feet from the traffic signal at the Shackleford Road/Club Drive intersection.

In addition to the improvements required to meet GRTA standards, the following intersection geometry improvements are recommended at the project site access driveways:

- Install a southbound right-turn lane along Steve Reynolds Boulevard and an eastbound right-turn only lane exiting the site at the Steve Reynolds Boulevard/Site Access intersection.

- Install a westbound right-turn lane along Shackleford Road and a southbound right-turn only lane exiting the site at the Shackleford Road/East Site Access intersection.

These improvements are shown in Figure 11.



GRESHAM SMITH AND PARTNERS

LEGEND

- Traffic Signal
- Proposed Build Traffic Signal
- Stop Sign
- FF Free Flow
- Lane Usage
- Proposed No-Build Lane Usage
- Proposed Build Lane Usage

Figure 11

Future with Required Improvements Lane Configurations and Traffic Control

SECTION VIII
SITE ACCESS & INTERNAL CIRCULATION

SITE ACCESS

The site will have one (1) right in-right out access driveway along Steve Reynolds Boulevard, one (1) right in-right out access driveway along Shackleford Road and one (1) full access driveway along Shackleford Road. The full access driveway along Shackleford Road will be shared with the Louise Radloff Middle School. Currently the shared driveway is used for bus traffic only and has minimal traffic volumes during the A.M. and P.M. peak hours.

INTERNAL CIRCULATION

Villa More is designed with a variety of alternative accesses to/from Steve Reynolds Boulevard and Shackleford Road. The two (2) proposed right in-right out access driveways will provide access for the majority of vehicles entering and exiting the site. Left turns into and out of the site will be accommodated at the full access driveway along Shackleford Road. The full access driveway along Shackleford Road will be shared with the Louise Radloff Middle School. Since traffic will be spread out over three access locations, no one access driveway will be overburdened by site traffic volumes.

As part of the project, sidewalks will be constructed along all site boundaries with public roadways (Steve Reynolds Boulevard and Shackleford Road) and along the shared site access roadway along with appropriate internal site connections. Bicycle racks are planned at strategic locations throughout the project site.

The proposed on site pedestrian/bicycle path system will connect the commercial portion of the project with the residential and hotel portions of the project. The interconnected pedestrian/bicycle path system will provide a safe, convenient and inviting alternative to driving, especially for internal site trips, thereby reducing on-site and off-site vehicular traffic generation. Given the high density nature of the project and proximity of land uses to one another, it is anticipated that almost all internal trips will be made by walking thereby reducing on-site traffic volumes.

SECTION IX
AREA OF INFLUENCE ANALYSIS

The Area of Influence (AOI) analysis meets the requirements of the *Procedures and Principles for GRTA Development of Regional Impact Review*, Section 3-102.D pertaining to criteria for non-expedited review. The methodology, data sources and findings are documented below.

AREA OF INFLUENCE CHARACTERISTICS

The Area of Influence for the Villa More development 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 (Steve Reynolds Boulevard/Shackleford Road). 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 AOI is presented in Figure 12. The AOI statistics and their corresponding sources are presented in Table 16.

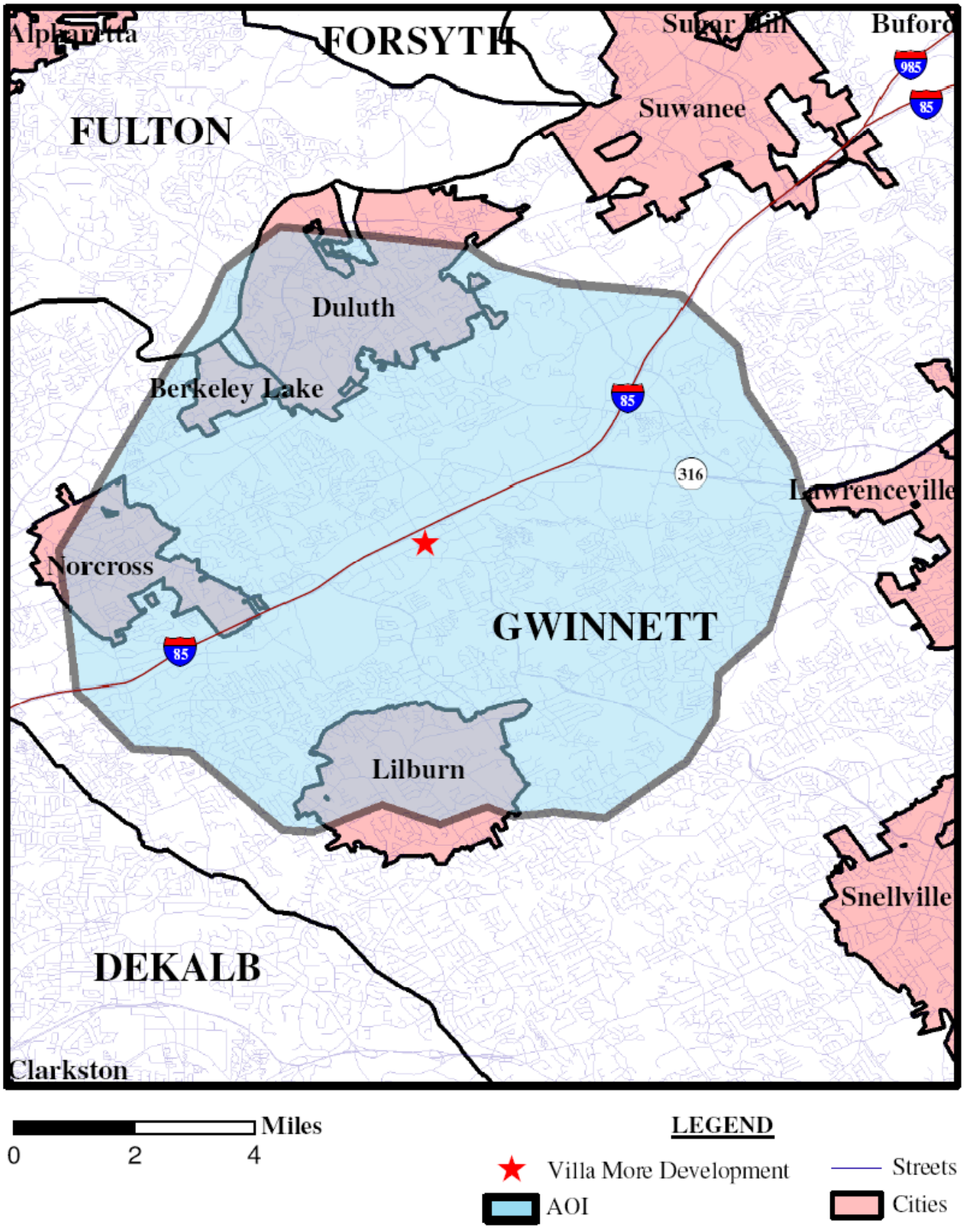
Table 16. AOI Overview

Land Use Data	Amount	Data Source
Land Area (acres)	49,970	Calculated from ARC GIS Data
Population	183,790	U.S. Census Data, Year 2000
Households	66,260	U.S. Census Data, Year 2000
Workforce	105,470	U.S. Census Data, Year 2000
Employment in AOI	119,190	ARC Projected Data, Year 1999

The AOI falls within six jurisdictions including the City of Berkeley Lake, the City of Duluth, the City of Lilburn, the City of Norcross, the City of Johns Creek, and unincorporated Gwinnett County. A detailed breakdown is shown in Table 17.

Table 17. Jurisdictional Breakdown of the AOI

Jurisdiction	Acres	Percent of AOI
City of Berkeley Lake	720	1.44%
City of Duluth	4,490	8.98%
City of Lilburn	3,110	6.22%
City of Norcross	2,310	4.62%
City of Johns Creek	420	0.84%
Unincorporated Gwinnett County	38,920	77.89%
Total	49,970	100.0%



GRESHAM SMITH AND PARTNERS

Figure 12

Area of Influence

LAND USES

According to ARC's 1999 Land Use/Land Cover GIS data set, the most prevalent land use within the AOI is residential, which accounts for approximately 54 percent of the land area. Table 18 shows the breakdown of various land uses within the AOI.

Table 18. Existing (Year 1999) Land Uses within the AOI

Land Use	Acres	Percent of AOI
Agricultural	590	1.18%
Cemeteries	80	0.16%
Commercial	4,980	9.97%
Forest	6,850	13.71%
Industrial	5,190	10.39%
Institutional	770	1.54%
Parks/Recreation	1,470	2.94%
Residential (low density)	900	1.80%
Residential (med-high density)	23,860	47.75%
Residential (high density)	2,130	4.26%
Wetlands	900	1.80%
Transportation/Communications/Utilities	260	0.52%
Other or transitional areas	2,030	4.06%
Total	49,970	100.00%

POPULATION

The year 2000 Census reported approximately 183,790 persons living within the AOI in 66,260 households, as shown in Table 16. The average household size is 2.77 persons per household. Between the 1990 Census and the 2000 Census, population within the AOI increased by approximately 69,650 persons, or a 61.0 percent increase during that ten year period. This is an increase of approximately 4.88 percent per year.

HOUSING

Based on the year 2000 Census data, there were approximately 66,260 households in the AOI, of which 65,840 households were occupied. Monthly payments for both owner-occupied and renter-occupied housing within the AOI are shown in Table 19. Based on the data shown in Table 19, the median monthly income spent on housing in the AOI was approximately $870.

Table 19. Existing (Year 2000) Census Data for Monthly Income Spent for Housing within the AOI[1]

Range of Monthly Income for Housing	Owner-Occupied Housing Units in the AOI	Renter-Occupied Housing Units in the AOI[2]	Total Occupied Housing Units in the AOI
$499 or less	4,550	1,590	6,140
$500 to $599	770	2,410	3,180
$600 to $699	1,260	6,610	7,870
$700 to $799	1,970	8,550	10,520
$800 to $899	3,440	4,100	7,540
$900 to $999	4,100	2,200	6,300
$1,000 to $1,249	10,040	1,520	11,560
$1,250 to $1,499	6,040	200	6,240
$1,500 to $1,999	4,110	70	4,180
$2000 or more	2,260	50	2,310
Total	38,540	27,300	65,840
Median Monthly Income for Housing: $870			

Note: (1) Based on Table 2.1 of the *Area of Influence Guidebook for Non-Expedited Review*.
(2) Housing units with "no cash rent" are excluded from this table.

In addition to the Census data compiled as above, current housing costs within the AOI were obtained from recent sales prices and actual surveyed rental rates. The following data sources used for this purpose:

- Recent home resale prices published in the Atlanta Journal Constitution;
- Rental costs obtained from a sample survey of rental properties within the AOI.

The existing typical rental apartment monthly rent ranges from $440 to $2,190 with the median monthly rent being approximately $850. Recent home sales range from $85,000 to $1,950,000 with a median price of $163,900. The mortgage for the median priced house would be approximately $935 per month.

Data for both monthly rental apartments and recent home sales and related statistics are provided in Appendix I.

EMPLOYMENT CHARACTERISTICS

Based on ARC data, the total employment in the AOI for the year 1999 was 119,190. Between the years 1990 and 1999, employment within the AOI increased by 57,130 jobs, or a 92.1 percent increase during that nine year period. This is an increase of approximately 7.52 percent per year. The total employment estimate for the year 2010 based on the ARC data is 140,120. Employment data was obtained from ARC GIS data for the year 1999 and is summarized by Standard Industrial Classification (SIC) categories in Table 20.

Based on 2000 Census data, the workforce in the AOI for the year 2000 was 105,470. The workforce for the year 2000 is summarized by North American Industry Classification System (NAICS) categories in Table 21.

Table 20. Existing (Year 1999) Employment within the AOI

SIC Employment Category	Jobs	Percent of Jobs within the AOI
Construction	8,630	7.24%
Retail Trade	25,380	21.29%
Wholesale Trade	21,200	17.79%
Manufacturing	15,860	13.31%
Transportation, Communication and Utilities	5,280	4.43%
Finance, Insurance and Real Estate	7,260	6.09%
Services (Includes Miscellaneous)	28,180	23.64%
Government	6,180	5.18%
Other Employment	1,220	1.02%
Total for all Industry groups	119,190	100.00%

Table 21. Existing (Year 2000) Census Data for Workforce within the AOI

NAICS Category	Workers	Percent of Workers within the AOI
Agriculture, Forestry, Fishing and Hunting, and Mining	260	0.25%
Construction	9,650	9.15%
Manufacturing	11,850	11.24%
Wholesale trade	6,130	5.81%
Retail trade	13,470	12.77%
Transportation, Warehousing and Utilities	3,870	3.67%
Information	6,370	6.04%
Finance, Insurance and Real Estate	8,490	8.05%
Professional	14,010	13.28%
Educational, Health and Social Services	11,300	10.71%
Recreation/Accommodation and Food Services	7,880	7.47%
Other services	5,420	5.14%
Public administration	2,680	2.54%
Armed Forces	4,090	3.88%
Total	105,470	100.00%

INCOME

Annual income of the resident population was last reported for the year 1999 (in 1999 dollars) in the 2000 Census. The median household income in the AOI in the year 1999 was $56,500. Salary ranges within the AOI for the year 1999 are shown in Table 22.

Table 23. Existing (Year 2000) Census Data for Household Salaries within the AOI

Household Annual Salary Range (in 1999 dollars)	Households	Percent of Households within the AOI
Less than $10,000	2,330	2.10%
$10,000 to $14,999	1,860	1.60%
$15,000 to $19,999	2,360	2.00%
$20,000 to $24,999	3,410	2.90%
$25,000 to $29,999	3,360	3.30%
$30,000 to $34,999	4,130	3.80%
$35,000 to $39,999	4,470	4.20%
$40,000 to $44,999	4,440	5.00%
$45,000 to $49,999	3,990	4.40%
$50,000 to $59,999	7,750	10.00%
$60,000 to $74,999	9,190	14.40%
$75,000 to $99,999	9,410	20.80%
$100,000 to $124,999	4,740	12.40%
$125,000 to $149,999	2,080	5.70%
$150,000 to $199,999	1,640	4.40%
$200,000 or more	1,100	2.90%
Total	66,260	100.00%
Median Household Income: $56,500		

SECTION X
ASSESSMENT OF GRTA DRI CRITERIA

CRITERIA 1-3 (IMPROVED REGIONAL MOBILITY)

The design of the site is consistent with regional development goals of reducing miles traveled as well as total trips. The Villa More development is designed with a mix of complementary land uses. For example, the vertical nature of the site layout will provide a compact overall site that facilitates a "live-work-play" environment. The inclusion of service retail type uses along with a pedestrian/bicycle friendly design will encourage residential to retail trips and office to retail trips to stay on site, thereby reducing the need to travel off site.

Sidewalks will be constructed along all site boundaries within public roadways (Steve Reynolds Boulevard and Shackleford Road) and along the shared site access roadway (the site access roadway is shared with the Louise Radloff Middle School). Bicycle racks are planned at strategic locations throughout the project site.

The proposed on site pedestrian/bicycle path system will connect the commercial portion of the project with the residential and hotel portions of the project. The interconnected pedestrian/bicycle path system will provide a safe, convenient and inviting alternative to driving, especially for internal site trips, thereby reducing on-site and off-site vehicular traffic generation. Given the high density nature of the project and proximity of land uses to one another, it is anticipated that almost all internal trips will be made by walking thereby reducing on-site traffic volumes.

CRITERION 4 (TRANSPORTATION MANAGEMENT AREA)

The project is not located within an established Transportation Management Area (TMA).

CRITERION 5 (PROXIMITY TO TRANSIT FACILITIES)

Gwinnett County Transit (GCT) provides bus transit service in the study location vicinity and there are currently two (2) bus routes that stop near the site, both within ¼ of a mile. Gwinnett County Transit Local Route 30 (Norcross/Technology Park area) stops at the Shackleford Road/Club Drive intersection, approximately 0.22 miles southwest of the Villa More site. Route 30 weekday service runs on an approximate 15 to 30 minute headway beginning at 6:00 A.M. and ending at 10:20 P.M. Saturday service runs on an approximate 60 minute headway beginning at 6:30 A.M. and ending at 9:00 P.M. Route 30 does not operate currently on Sundays.

Gwinnett County Transit Express route 102A (Gwinnett Place Mall) stops at the Shackleford Road/Pineland Road intersection, approximately 0.23 miles northeast of the Villa More site. Route 102A weekday service runs on a approximate 30 minute headway from 7:20 A.M. to 9:55 A.M. and from 3:10 P.M. to 7:11 P.M. and does not operate on weekends.

CRITERION 6 (VEHICULAR TRIP REDUCTION)

Based on ITE mixed-use methodology, on a daily basis, 12.3 percent of trips will be internal trips, which represents a substantial reduction in overall trip generation that could occur if complementary uses were not located within the same site. During the weekday morning and evening, on site gross trip generation is reduced by 5.5 percent and 12.4 percent, respectively. Given the site's proximity to bus transit stops, a two (2) percent reduction in external auto trips is also anticipated.

In addition, interception of retail pass-by traffic results in a further reduction of new trip generation due to the site's location along an existing heavily traveled corridor (Steve Reynolds Boulevard). When pass-by trips are included, a 29.8 percent reduction of daily trips, 14.3 percent reduction of A.M. peak hour trips and 29.7 percent reduction of P.M. peak hour trips would be expected from the gross trip generation.

CRITERION FOR MIX OF USES (RULE SUBSECTION 3-103.A.7.A)

The analysis in this section is based on the methodologies and assumptions outlined in GRTA's *Area of Influence Guidebook for Non-Expedited Reviews*. Since the Villa More development is a mixed use development, Subsection 3-103.A.7.a was used to analyze the on site land use balance. The central task under this section is to compare the characteristics of workers in the DRI with the housing opportunities within the DRI. The specific criterion is found on page 8 of the *Area of Influence Guidebook for Non-Expedited Reviews*, and is presented below:

> *Does the DRI contain a mix of uses which are reasonably anticipated to contribute to a balancing of land uses such that it would be affordable for at least ten percent (10%) of the persons who are reasonably anticipated to be employed in the proposed DRI to have opportunity to reside within the DRI (Rule Subsection 3-103.A.7.a)?*

As stated in previous sections of this report, the Villa More development will contain a total of 324 residential units, 300 hotel rooms, 57,000 s.f. of office space and 105,000 s.f. of retail space. The total number of jobs available in the DRI is determined by dividing the non-residential building space in the DRI by an acceptable standard square footage per worker. In this study, it is assumed that there will be one worker for every 300 s.f. of office space and one worker for every 500 s.f. of retail space. The labor force within the DRI is estimated by assuming that each housing unit in the DRI forms a separate household and that there will be 1.5 workers per household. These assumptions are consistent with the guidelines entailed in the *Area of Influence Guidebook for Non-Expedited Reviews*. Table 23 shows the projected number of on-site jobs and potential on-site labor force for the Villa More development. Based on these projections, the Villa More development will have fewer on-site jobs than on-site potential labor force and is therefore considered a "predominantly employment" based DRI in this study.

Table 23. DRI Employment Housing Balance Analysis

On-Site Jobs[1]	Amount	Jobs
Retail	105,000 s.f.	210
Office	57,000 s.f.	190
Hotel	300 units	171
Total Jobs	571	
On-Site Potential Labor Force[2]	Amount	Workers
Residential high-rise Condo	324 d.u.	486
Total Work Force	486	

Note: (1) Calculated based on Data Table A of the *Area of Influence Guidebook for Non-Expedited Review*.
(2) The potential labor force was estimated by assuming 1.5 workers per dwelling unit.

Based on the number of jobs shown in Table 23, and Table 1.1 of the *Area of Influence Guidebook for Non-Expedited Review*, a breakdown of the estimated number of employees by job type, anticipated monthly salary (both for the employee and the household) and affordable household monthly payment is shown in Table 24. The monthly household salary was calculated to be 1.5 times the monthly employee salary based on the assumption that there are on an average 1.5 workers per household. Affordable monthly housing payments was calculated to be 30% of the monthly household salary based on the assumption that the maximum housing costs that a typical household incurs is not more that 30% of the total household income. These assumptions are consistent with the guidelines entailed in the *Area of Influence Guidebook for Non-Expedited Reviews*.

Table 25 shows a cost breakdown and estimated monthly mortgage payment for residential units within the Villa More development. As shown in Table 26, anticipated houses prices will range from under $249,999 to more than $1,000,000. These figures translate to between $1,425 and $5,690 in monthly mortgage costs, based on a mortgage calculation for a 30-year conventional loan with a 6.5% annual interest rate and 10% down payment. The required minimum monthly household income to live within the Villa More development would range between $4,750 and $18,970 depending on the unit type.

Table 24. Employment, Salary and Affordable Monthly Housing Payment in Villa More[1]

Land Use, Type of Occupation and Percent of Jobs	Number of Employees in DRI	Monthly Employee Salary ($)	Monthly Household Salary ($)	Affordable Monthly Housing Payment[2]
Retail (210 jobs)				
Manager (15 %)	32	$ 2,500	$ 3,750	$ 1,125
Sales Staff (85 %)	178	$ 1,700	$ 2,550	$ 765
Office (190 jobs)				
Executive/Manager (15 %)	29	$ 6,300	$ 9,450	$ 2,835
Technical Occupation (15 %)	29	$ 4,000	$ 6,000	$ 1,800
Office & Admin Support (40 %)	75	$ 2,300	$ 3,450	$ 1,035
Computer Occupations (15 %)	29	$ 4,900	$ 7,350	$ 2,205
FIRE[3] (10 %)	19	$ 4,200	$ 6,300	$ 1,890
Construction (5 %)	9	$ 3,000	$ 4,500	$ 1,350
Hotel (171 jobs)				
Manager (15 %)	26	$ 3,200	$ 4,850	$ 1,440
Service Staff (85 %)	145	$ 2,200	$ 3,300	$ 990
Total Employees in DRI	571			
Average				$ 1,185
Median				$ 990

Note: (1) This table is based on data provided in Table 1.1 of the Area of Influence Guidebook for Non-Expedited Review. Job percentages by land use type are estimated by Gresham Smith & Partners based on discussion with the developer regarding market conditions in the area and potential office tenants.
(2) 30 percent of Monthly Household Income.
(3) FIRE is an abbreviation for Finance, Insurance and Real Estate job type.

Table 25. Cost Breakdown of Residential Units within the Villa More development

Estimated House Price Range	Number of Units	Estimated Maximum Monthly Mortgage Payment[1]	Estimated Required Minimum Monthly Household Salary[2]
Under $249,999	32	$1,425	$4,750
$300,000- $399,999	81	$2,280	$7,600
$400,000- $449,999	81	$2,560	$8,535
$449,999- $599,999	65	$3,415	$11,385
$600,000- $749,999	49	$4,270	$14,235
Above $1,000,000	16	$5,690	$18,970

Note: (1) The estimated monthly mortgage payment assumes a 30 year mortgage at 6.5 percent interest with a 10 percent down payment
(2) Based on 30 percent of household income going toward mortgage costs.

A comparison of the housing affordability data (Table 24) and the housing cost data (Table 25) was undertaken to determine what percentage of employees will have affordable housing opportunities within the Villa More development. Assuming that each worker working in the DRI forms a separate household (based on the *Area of Influence Guidebook for Non-Expedited Review*), 90 (32 plus 58) households (or employees within the DRI) working in the DRI can find affordable housing in the DRI. This is approximately 16% of the total households (or employees within the DRI) working in the DRI. Based on this analysis, the proposed development will exceed the requirements of Subsection 3-103.A.7a. The results are summarized in Table 26.

Table 26. Number of Households and Housing Units in the DRI by Range of Monthly Income[1]

Range of Monthly Income for Housing	Number of Households With Workers Working in the DRI	Number of Housing Units in the DRI (owner and renter combined)
$499 or less	0	0
$500 to $599	0	0
$600 to $699	0	0
$700 to $799	178	0
$800 to $899	0	0
$900 to $999	145	0
$1,000 to $1,249	108	0
$1,250 to $1,499	34	32
$1,500 to $1,999	48	0
$2000 or more	58	292
Total	571	324

Note: (1) Based on Table 1.2 of the *Area of Influence Guidebook for Non-Expedited Review*.

CRITERION FOR OPPORTUNITIES FOR WORKERS OF THE DRI TO LIVE IN THE AREA OF INFLUENCE (RULE SUBSECTION 3-103.A.7.B)

The analysis in this section is based on the methodologies and assumptions outlined in GRTA's *Area of Influence Guidebook for Non-Expedited Reviews*. Since the Villa More development is a "predominately employment" DRI (i.e. there are more on-site employment opportunities than potential resident workers), Subsection 3-103.A.7.b was used to analyze the AOI land use balance. The central task under this section is to compare the characteristics of workers in the DRI with the housing opportunities within the AOI. The specific criterion is found on page 16 of the *Area of Influence Guidebook for Non-Expedited Reviews*, and is presented below:

> *The DRI is located in an Area of Influence where the proposed DRI is reasonably anticipated to contributed to a balancing of land uses within the Area of Influence such that it would be affordable for at least twenty-five percent (25%) of the persons who are reasonably anticipated to be employed in the proposed DRI to have opportunity to reside*

within the Area of Influence (Rule Subsection 3-103.A.7.b).

Based on the data shown in Table 20, the average and median monthly income spent on housing in the AOI was approximately $870. Based on recently sales data within the AOI, the monthly mortgage for the median priced house is approximately $935. The median monthly rent for an apartment in the AOI is $850 based on website surveys. The median affordable monthly housing payment for employees working in the Villa More development is $990 as shown in Table 24, which is higher than the median monthly housing expense for housing in the AOI.

A comparison of housing opportunities within the AOI and employees who would work within the Villa More development is shown in Table 27. As shown is Table 27, there is ample housing opportunities for all expected workers within the AOI. For example, 31 percent of workers would be expected to afford a monthly housing payment of $700 to $799 while 42 percent of the housing opportunities within the AOI are within that price range or less. The percentage of workers who can afford housing at a particular price range is always less than or equal to the percentage of housing opportunities within the AOI at that particular price range. Therefore all potential workers (100 percent) would be able to find affordable housing opportunities within the AOI. Based on this analysis, the proposed project will exceed the requirements of Subsection 3-103.A.7.b.

Table 27. Comparison of Housing Opportunities within the AOI and DRI Worker Affordability[1]

Range of Monthly Income for Housing	Total Occupied Housing Units in the AOI[2]	Cumulative Percentage	Number of Households with One or More Workers Working in the DRI	Percentage
$499 or less	6,140	9%	0	0%
$500 to $599	3,180	14%	0	0%
$600 to $699	7,870	26%	0	0%
$700 to $799	10,520	42%	178	31%
$800 to $899	7,540	54%	0	0%
$900 to $999	6,300	63%	145	25%
$1,000 to $1,249	11,560	81%	108	19%
$1,250 to $1,499	6,240	90%	34	6%
$1,500 to $1,999	4,180	96%	48	8%
$2000 or more	2,310	100%	58	10%
Total	65,840		571	100%

Note: (1) Based on Table 2.2 of the Area of Influence Guidebook for Non-Expedited Review.
(2) See Table 20.

CRITERION 8 (RELATIONSHIP TO EXISTING DEVELOPMENT & INFRASTRUCTURE)

The development is currently going through the Gwinnett County zoning process. The site is currently zoned C-3 (Highway Business District). Under the proposed rezoning, 2.3 acres will remain C-3 for the proposed hotel. The balance (7.71 acres) is proposed for HRR (high rise residential). The proposed development meets the intent of the comprehensive plan, and also addresses the goals of Gwinnett County's comprehensive plan. The character and intensity of proposed development is consistent with other existing developments within the DRI. Given the project's proximity to I-85, Steve Reynolds Boulevard and Shackleford Road, there is available infrastructure to accommodate the proposed development.

SECTION XI
ASSESSMENT OF ARC AIR QUALITY CRITERIA

This section of the study presents an analysis of the Villa More development in relation to its compliance with the air quality guidelines established by the Atlanta Regional Commission (ARC). The ARC procedure for reviewing and approving Developments of Regional Impact (DRI) requires the establishment of Air Quality "Performance Benchmarks." These benchmarks are necessary for the region to identify air quality progress in accordance with federal air quality regulations.

ARC guidelines indicate that a reduction in emissions from 250 to 214 tons per day is needed to bring the region into compliance with the National Ambient Air Quality Standards (NAAQS). This desired reduction applies to all developments reviewed by the ARC. Each development must incorporate transportation-related measures that contribute to a 15% reduction in vehicle miles traveled (VMT), which are directly linked to improvements in air quality. Roadway infrastructure and non-vehicular connectivity features such as walking trails, bike lanes, sidewalks, and public transit concepts are a few proactive solutions that would contribute to VMT reductions.

The Villa More development is a mixed-use development, containing 324 residential units, 300 hotel rooms, 57,000 s.f. of office space and 105,000 s.f. of retail space on approximately 9.5 acres of land area. The following assessment is based on ARC's technical fact sheet titled "*Air Quality Benchmarks for DRI Evaluations*", 2005. The Benchmark criteria used in this assessment were 1(b), 2(c), 4 and 6(e).

1. Projects that meet the relevant density target levels will receive the following VMT credits:

   b. For projects where Residential is the dominant use:
      Between 10 and 15 dwelling units/acre (-4%)
      Greater than 15 dwelling units/acre (-6%)

   The Villa More development meets this criterion for a 6% reduction because the residential component is the dominant use and the residential density is greater than 15 dwelling units/acre.

2. Projects that contain a 'mix' of uses will receive the following VMT credits:

   c. For projects where Residential is the dominant use:
      If at least 10% of gross floor area is retail space (-4%)
      If at least 10% of gross floor area is office (-4%)
      If both target levels are met (-9%)

   The Villa More development meets this criterion for a 4% reduction because the residential component is the dominant use and 10% of the gross floor area is retail space.

4. Proximity to Public Transportation:

   For all project types:
   If the project is located within 1/4 mile of a bus stop (-3%)

   The Villa More development meets this criterion for a 3% reduction because there is a Gwinnett County Transit stop within a quarter mile of the development site.

6. Projects that contain bicycle or pedestrian facilities within the site receive the following VMT credits:

   e. Bike/pedestrian networks in developments that meet one Density or Mixed Use target' and connect to adjoining uses (-5%)

   The Villa More development contains bike and pedestrian networks that connect the land uses within the site and also connect to land uses adjoining the site. As the development meets the criterion 1(b) as shown earlier, the above ARC criterion is met by the development for a 5% reduction.

Based on the data and information presented in this study, it is concluded that the Villa More development coincides with the air quality guidelines set out by the ARC. As shown above, the Villa More development exceeds the ARC criteria for a total of 18% VMT reduction, 15% being the minimum required VMT reduction.