Transportation Analysis

Lindbergh Mixed-Use DRI# 1590 City of Atlanta, Georgia

Prepared for: Gables Residential

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EXECUTIVE SUMMARY

This report presents the analysis of the anticipated traffic impacts of a proposed approximate 13.69-acre mixeduse redevelopment (Gables-Lindbergh) located within the City of Atlanta in Fulton County, Georgia. The project is located along the east side of Piedmont Road, north of Lindbergh Drive and South of Morosgo Drive. Because the mixed-use project will exceed 400,000 square feet of mixed-use development floor area, 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 approximately 330 apartment units, a 96,369 square foot (SF) grocery store, a 45,000 SF fitness center, and 17,700 SF of retail shops. The development is scheduled to be completed by the year 2011. The current zoning is SPI15SA8, with proposed zoning to SPI155A3 to accommodate the proposed development.

The results of the detailed intersection analysis for the 2011 "No-Build" Conditions (background traffic growth not including the traffic associated with the proposed development) and 2011 "Build" Conditions (background traffic growth plus the traffic associated with the proposed Gables Lindbergh redevelopment) identified improvements that will be necessary in order to maintain the Level-of-Service standard (LOS D) within the study network. These improvements are listed below:

2011 "No-Build" Conditions Improvements (includes background traffic growth but does not include the proposed Gables Lindbergh DRI project traffic):

Piedmont Road @ Morosgo Drive (Intersection #4)

• Optimize signal timings during the PM peak hour.

2011 "Build" Conditions Improvements (adds the proposed Gables Lindbergh DRI project traffic to the 2011 "No-Build" Conditions):

Piedmont Road @ Morosgo Drive (Intersection #4)

• Optimize signal timings during the PM peak hour.

Lindbergh Drive @ Morosgo Way/Driveway #5 (Intersection #13)

• Install a traffic signal, if warranted and approved by the City of Atlanta.

1.0 PROJECT DESCRIPTION

1.1 Introduction

This report presents the analysis of the anticipated traffic impacts of a proposed approximate 13.69-acre mixeduse redevelopment (Gables-Lindbergh) located within the City of Atlanta in Fulton County, Georgia. The project is located along the east side of Piedmont Road, north of Lindbergh Drive and South of Morosgo Drive. Because the mixed-use project will exceed 400,000 square feet of mixed-use development floor area, 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 approximately 330 apartment units, a 96,369 square foot (SF) grocery store, a 45,000 SF fitness center, and 17,700 SF of retail shops. The development is scheduled to be completed by the year 2011. The current zoning is SPI15SA8, with proposed zoning to SPI155A3 to accommodate the proposed development.

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

Table 1 Gables Lindbergh Proposed Land Uses			
Apartments	330 Units		
Grocery Store	96,369 SF		
Fitness Center	45,000 SF		
Retail	17,700 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 to be completed by the year 2011. The development is generally located along Piedmont Road, north of Lindbergh Drive and South of Morosgo Drive in the City of Atlanta and Fulton County, Georgia. For more detail, refer to the included site plan.

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

The development is surrounded by four public roadways including Piedmont Road, Morosgo Drive, Lindbergh Drive, and Adina Drive. The project site is proposed to have vehicular access via two full-movement driveways along Morosgo Drive, two full-movement driveways along Adina Drive, and two full-movement driveways along Lindbergh Drive.

The City of Atlanta will be the permitting agency for the driveways along Morosgo Drive and Adina Drive while The Georgia Department of Transportation will be the permitting agency for the driveways along Lindbergh Drive.







Lindbergh Mixed-Use DRI Transportation Analysis

Site Aerial

Figure 2

1.4 Bicycle and Pedestrian Facilities

Bicycle and pedestrian facilities are currently in place along all adjacent roadways.

1.5 Transit Facilities

The proposed development is located approximately 250 yards east of the Lindbergh MARTA station located at Piedmont Road and Lindbergh Drive. This station lies on the North-South MARTA rail line (10 - 20 minute) headways) which intersects the East-West rail line (to the south) at the Five Points station. Nine MARTA bus routes operate from this station including the following:

- Route 5 Sandy Springs (15-minute headways)
- Route 6 Emory (20-minute headways)
- Route 27 Monroe Drive / Cheshire Bridge (30-minute headways)
- Route 30 La Vista (45-minute headways)
- Route 33 Briarcliff (40-minute headways)
- Route 38 Chastain Park (60 minute headways)
- Route 39 Buford Highway (12-minute headways)
- Route 44 West Wesley Road (30-minute headways)
- Route 245 Kensington / Emory Express (20-minute headways)

Gwinett County Transit operates an express bus which serves the Lindbergh MARTA Station. Route 410 - Discover Mills to MARTA Lindbergh Station operates during the peak periods with a 45-minute headway.

Given the numerous transit options within the vicinity of the project (for both residential and non-residential trips) and the overall project location within the developing area of Lindbergh, transit is a viable option for many of the residents, workers, and other patrons of the new development, and an alternative mode reduction of 10% was applied for both residential and non-residential uses, consistent with GRTA's Letter of Understanding.

2.0 TRAFFIC ANALYSES METHODOLOGY AND ASSUMPTIONS

2.1 Growth Rate

Background traffic is defined as expected traffic on the roadway network in future year(s) absent the construction and opening of the proposed project. Historical traffic count data from the Georgia DOT was reviewed for the area surrounding the proposed development, and growth rates of 2.0% per year along all roadways were agreed upon during the methodology and pre-application meetings with GRTA and ARC staff. Additionally, the 2011 "No-Build" Conditions include projected trips generated by the following developments:

- DRI # 921: Lindmont Redevelopment (Lindbergh Drive @ Piedmont Road)
 - 400 apartments, 275 condos, 600 high rise condos, and 114 townhomes

2.2 Traffic Data Collection

2007 weekday peak hour turning movement counts were conducted at six signalized intersections and two unsignalized intersections from 7:00-9:00 AM and 4:30-6:30 PM during a typical weekday. The weekday morning and weekday afternoon varied between the following 17 intersections:

1.	Piedmont Road at Garson Drive	(8:00-9:00 AM, 5:00-6:00 PM)
2.	Piedmont Road at Lindbergh Drive	(8:15-9:15 AM, 5:00-6:00 PM)

3.	Piedmont Road at Lindbergh Way	(8:30-9:30 AM, 5:00-6:00 PM)
4.	Piedmont Road at Morosgo Drive	(7:45-8:45 AM, 5:15-6:15 PM)
5.	Piedmont Road at Sidney Marcus Boulevard	(8:15-9:15 AM, 5:15-6:15 PM)
6.	Adina Drive at Lindbergh Drive	(8:00-9:00 AM, 5:00-6:00 PM)
7.	Adina Drive (Access Road) at Morosgo Drive	(8:15-9:15 AM, 5:15-6:15 PM)
8.	Access Road at Sidney Marcus Boulevard	(8:00-9:00 AM, 4:45-5:45 PM)
13.	Morosgo Way at Lindbergh Drive	(8:00-9:00 AM, 5:00-6:00 PM)

Counts were projected for the intersection at site driveways using turning movement counts at adjacent intersections. The nine counts listed above were taken during January, September and October. Therefore, the observed volumes between intersections may not balance. Instead of balancing the observed volumes throughout the network, the worst peak hour for each intersection was used.

It should be noted that the traffic counter provided passenger vehicle and truck counts separately. The passenger vehicles and trucks were combined to determine the peak hour, peak hour factor, and heavy vehicle percentage at each intersection. All raw count data is included in the Appendix.

2.3 Detailed Intersection Analysis

Level-of-service (LOS) is used to describe the operating characteristics of a road segment or intersection in relation to its capacity. LOS is defined as a qualitative measure that describes operational conditions and motorists perceptions within a traffic stream. The Highway Capacity Manual defines six Levels-of-Service, LOS A through LOS F, with A being the best and F being the worst. Level-of-Service analyses were conducted at all intersections within the study network using *Synchro Professional, Version 6.0*.

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

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

3.0 Study Network

3.1 Gross Trip Generation

As stated earlier, the proposed development is expected to consist of 330 apartment units, a 96,369 square foot (SF) grocery store, a 45,000 SF fitness center, and 17,700 SF of retail shops. The development is scheduled to be completed by the year 2011.

Traffic for these land uses was calculated using equations contained in the *Institute of Transportation Engineers'* (*ITE*) *Trip Generation Manual, Seventh Edition, 2003.* Average rates were used only when equations were not provided. Gross trips generated are displayed below in **Table 2**.

Table 2 Gables Lindbergh Gross Trip Generation Build-Out Year 2011						
Land Use	ITE Code	Daily	AM Peak Hour		PM Peak Hour	
			Enter	Exit	Enter	Exit
330 Apartment Units	220	2,134	33	132	199	129
45,000 SF Health/Fitness Club	492	1,482	23	31	182	93
17,700 SF Shopping Center	820	2,204	34	21	200	96
96,369 SF Supermarket	850	7,843	348	222	906	462
Total 13,663 438 406 1,487 780						

3.2 Trip Distribution

The directional distribution and assignment of new project trips was based on results obtained from engineering judgment and discussions with GRTA staff at the methodology meeting.

3.3 Level-of-Service Standards

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

3.4 Study Network Determination

A general study area was determined using the 7% rule. This rule recommends that all intersections and segments be analyzed which are impacted to the extent that the traffic from the proposed site is 7% or more of the Service Volume of the facility (at a previously established LOS standard) be considered for analysis. This general study area was refined during the methodology meeting, and includes the following intersections:

- Piedmont Road @ Garson Drive (Signalized)
- Piedmont Road @ Lindbergh Drive (Signalized)
- Piedmont Road @ Lindbergh Way (Signalized)
- Piedmont Road @ Morosgo Drive (Signalized)

- Piedmont Road @ Sidney Marcus Boulevard (Signalized)
- Adina Drive @ Lindbergh Drive (Signalized)
- Adina Drive @ Morosgo Drive (Unsignalized)
- Sidney Marcus Boulevard @ Access Road (Signalized)
- Lindbergh Drive @ Morosgo Way (Unsignalized)

Each of the above listed intersections was analyzed for the Existing 2007 Condition, the 2011 "No-Build" Conditions, and the 2011 "Build" Conditions. The 2011 "No-Build" Conditions represent the existing traffic volumes grown at 2.0% per year for 4 years in addition to trips from the following development:

- DRI # 921: Lindmont Redevelopment (Lindbergh Drive @ Piedmont Road)
 - 400 apartments, 275 condos, 600 high rise condos, and 114 townhomes

The 2011 "Build" Conditions adds the projected trips associated with the proposed Gables Lindbergh development to the 2011 "No-Build" Conditions. All of the study intersections identified above plus the site driveways were analyzed for the Weekday AM and PM peak periods.

3.5 Existing Facilities

The following section provides a written description of the study area facilities, followed by **Table 3** displaying the functional classification of study-area facilities.

Piedmont Road

 Piedmont Road is an Urban Minor Arterial with three lanes in each direction south of Lindbergh Drive and two lanes in each direction north of Lindbergh Drive. Piedmont Road begins to the north of Roswell Road and extends south of I-85 where it becomes Piedmont Avenue.

Sidney Marcus Boulevard

• Sidney Marcus Boulevard is four-lane Urban Minor Arterial than is oriented east-west. Sidney Marcus Boulevard begins at Piedmont Road and extends to Buford Highway.

Morosgo Drive

• Morosgo Drive is a two-lane Urban Local Arterial that is oriented east-west. Morosgo Drive begins at Camellia Lane, intersects Piedmont Road, and terminates east of Adina Drive.

Lindbergh Drive

• Lindbergh Drive is a four-lane Urban Minor Street which is oriented east-west. Lindbergh Drive begins at Peachtree Road to the west and continues to Cheshire Bridge Road were it becomes LaVista Road.

Adina Drive

• Adina Drive is a two-lane Urban Local Street that begins south of Lindbergh Drive and extends to Morosgo Drive.

"Access Road"

• The "Access Road" is a four-lane private drive that provides internal connection to adjacent retail. The "Access Road" aligns with Adina Drive at Morosgo Drive and extends to Sidney Marcus Boulevard.

Table 3 Gables Lindbergh Study Area Roadways Classifications				
Roadway	Number of Lanes	GDOT Functional Classification		
Piedmont Road (south of Lindbergh Way)	6	Urban Minor Arterial		
Piedmont Road (north of Lindbergh Way)	5	Urban Minor Arterial		
Sidney Marcus Boulevard	5	Urban Minor Arterial		
Morosgo Drive	2	Urban Local Street		
Lindbergh Drive	4	Urban Minor Arterial		
Adina Drive	2	Urban Local Street		
"Access Road"	4	Private Drive		

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.

Mixed-use and pass-by reductions were taken according to the *ITE Trip Generation Handbook, 2003* and GRTA guidelines. Internal capture was taken where possible. The proposed site has a mix of uses and therefore qualified for mixed use reductions. Pass-by reductions were taken consistent with ITE guidelines. Due to its location along two MARTA bus routes a 10% mode reduction was also assumed. The total trips generated and analyzed in the report are listed below in **Table 4**.



Table 4 Gables Lindbergh Net Trip Generation Build-Out Year 2011						
Land Use	Daily ⁻	Traffic	AM Pea	ak Hour	PM Pea	k Hour
	Enter	Exit	Enter	Exit	Enter	Exit
Gross Trips	6832	6832	438	406	780	707
Residential Trips						
Mixed-Use Reductions	-379	-379	0	0	-40	-37
Alternative Mode Reductions (10%)	-69	-69	-3	-13	-9	-3
Adjusted Residential Trips	620	620	30	119	80	30
Retail Trips						
Mixed-Use Reductions	-349	-349	0	0	-36	-33
Alternative Mode Reductions (10%)	-467	-467	-38	-24	-52	-51
Pass By Reductions (Limited by GRTA 10% Rule)	-1590	-1590	0	0	-176	-176
Adjusted Retail Trips	2618	2618	344	219	294	287
Other Non-Residential Trips					•	
Mixed-Use Reductions	-39	-39	0	0	-4	-4
Alternative Mode Reductions (10%)	-70	-70	-2	-3	-9	-9
Adjusted Other Non-Residential Trips	632	632	21	28	80	77
New Trips	3869	3869	395	366	454	394
Driveway Volumes	5459	5459	395	366	630	570

5.0 TRIP DISTRIBUTION AND ASSIGNMENT

New trips were distributed onto the roadway network using the percentages agreed to during methodology discussions with GRTA staff. The expected residential and non-residential trip percentages for the development throughout the roadway network are shown in **Figures 4** and **5**, respectively. These percentages were applied to the new trips generated by the development (see Table 4, 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**.







6.0 TRAFFIC ANALYSIS

6.1 Existing 2007 Traffic

The existing 2007 traffic volumes are shown in **Figure 7**. These volumes were input in Synchro 6.0 and an Existing Conditions analysis was performed for the weekday AM and PM peak hours as well as the Saturday midday peak hour. The results are displayed below in **Table 5**. Levels-of-Service (LOS) and delay in seconds are reported for the overall intersection when signalized, while levels-of-service are reported for the minor street approach only for unsignalized intersections.

Table 5 Gables Lindbergh Existing 2007 Intersection Levels-of-Service (delay in seconds)							
	Intersection Control AM Peak Hour Hour						
1	Piedmont Road at Garson Drive	Signal	C (21.1)	C (23.9)			
2	Piedmont Road at Lindbergh Drive	Signal	B (13.1)	B (14.2)			
3	Piedmont Road at Lindbergh Way	Signal	C (23.5)	C (21.2)			
4	Piedmont Road at Morosgo Drive	Signal	C (25.9)	E (56.6)			
5	Piedmont Road at Sidney Marcus Boulevard	Signal	C (33.5)	C (34.0)			
6	Adina Drive at Lindbergh Drive	Signal	C (21.3)	C (24.2)			
7	Adina Drive (Access Road) at Morosgo Drive	All-Way Stop	B (11.8)	B (11.0)			
8	Access Road at Sidney Marcus Boulevard	Signal	B (17.9)	B (18.2)			
12	Maraga Way at Lindharah Driva	NB STOP	D (33.0)	C (21.1)			
15		SB STOP	D (26.0)	D (28.2)			

As can be seen from the data displayed in the table above, the Highway Capacity Manual (HCM) method of evaluating LOS indicates that only one of the intersections currently operate below the standard of LOS D. The study area surrounding the proposed development is regarded as being heavily congested, specifically along Piedmont Road.

Additionally, based on discussions with GRTA staff at the methodology meeting, a queue analysis was performed along Piedmont Road. The five study intersections along Piedmont Road are displayed in **Table 6** below. These results indicate areas of sub-standard performance along Piedmont Road at Morosgo Drive.



	Table 6 Gables Lindbergh Existing 2007 Intersection Queues (for informational purposes)						
			Queue Length in Feet				
	Intersection	NB	SB	EB	WB		
1	Piedmont Road at Garson Drive			·	·		
	AM Peak	436'	154'	301'	-		
	PM Peak	239'	284'	544'	-		
2	Piedmont Road at Lindbergh Drive						
	AM Peak	28'	138'	225'	-		
	PM Peak	26'	148'	227'	-		
3	Piedmont Road at Lindbergh Way						
	AM Peak	302'	234'	-	264'		
	PM Peak	226'	232'	-	206'		
4	Piedmont Road at Morosgo Drive						
	AM Peak	433'	415'	54'	152'		
	PM Peak	382'	894'	104'	245'		
5	Piedmont Road at Sidney Marcus Boulevard						
	AM Peak	513'	272'	96'	273'		
	PM Peak	406'	457'	86'	434'		

6.2 Projected 2011 "No-Build" Traffic

The existing 2007 traffic volumes were grown at 2.0% per year for 4 years along all roadway links within the study network. Additionally, volumes obtained from traffic impact studies on other area developments were included, consistent with the GRTA Letter of Understanding. These developments included:

- DRI # 921: Lindmont Redevelopment (Lindbergh Drive @ Piedmont Road)
 - 400 apartments, 275 condos, 600 high rise condos, and 114 townhomes

These volumes were input in Synchro 6.0, and analyses of the Projected 2011 "No-Build" conditions were performed. The results are displayed below in **Table 7**, and corresponding volumes are shown in **Figure 8**. Levels of service and delay in seconds are reported for the overall intersection when signalized, while levels of service are reported for the minor street approach only for unsignalized intersections.



Table 7 Gables Lindbergh 2011 No-Build Intersection Levels-of-Service (delay in seconds)							
	Intersection Control LOS AM Peak PM Pe Standard Hour Hou						
1	Piedmont Road at Garson Drive	Signal	D	C (29.8)	C (29.8)		
2	Piedmont Road at Lindbergh Drive	Signal	D	B (14.0)	B (17.7)		
3	Piedmont Road at Lindbergh Way	Signal	D	C (27.8)	C (22.0)		
4	Piedmont Road at Morosgo Drive	Signal	D - AM E - PM	C (30.9)	F (91.3)		
5	Piedmont Road at Sidney Marcus Boulevard	Signal	D	C (36.9)	D (37.5)		
6	Adina Drive at Lindbergh Drive	Signal	D	C (28.3)	C (34.8)		
7	Adina Drive (Access Road) at Morosgo Drive	All-Way Stop	D	C (16.8)	B (13.7)		
8	Access Road at Sidney Marcus Boulevard	Signal	D	B (19.9)	C (22.3)		
12	Morocco Way at Lindbargh Driva	NB STOP	D	E (41.9)	E (49.5)		
13	Morosgo Way at Lindbergh Drive	SB STOP	D	E (49.3)	F (71.4)		

The results of the No-Build Conditions analysis indicate that two intersections are projected to operate below the standard of LOS D.

Additionally, a queue analysis was performed along Piedmont Road for the No-Build Conditions analysis, based on discussions with GRTA staff at the methodology meeting. The five study intersections along Piedmont Road are displayed in **Table 8** below.

	Table 8 Gables Lindbergh 2011 No-Build Intersection Queues (for informational purposes)						
			Queue Length in Feet				
Intersection		NB	SB	EB	WB		
1	Piedmont Road at Garson Drive		·	·			
	AM Peak	619'	188'	313'	115'		
	PM Peak	687'	534'	500'	82'		
2	Piedmont Road at Lindbergh Drive						
	AM Peak	32'	164'	245'	-		
	PM Peak	39'	679'	259'	-		
3	Piedmont Road at Lindbergh Way						
	AM Peak	328'	257'	-	315'		
	PM Peak	273'	232'	-	236'		
4	Piedmont Road at Morosgo Drive						
	AM Peak	622'	568'	58'	165'		
	PM Peak	580'	1052'	111'	268'		
5	Piedmont Road at Sidney Marcus Boulevard						
	AM Peak	645'	316'	103'	320'		
	PM Peak	474'	581'	129'	348'		

An improvement was identified to mitigate the delays and queues projected for the No-Build Conditions. These improvements are listed and discussed, by intersection, below:

Piedmont Road @ Morosgo Drive (Intersection #4)

• Optimize signal timings during the PM peak hour.

Under No-Build Conditions, at the intersection of Piedmont Road at Morosgo Drive over 300 vehicles are expected to make a westbound left-turn. This movement warrants a substantial amount of green time to process over 300 vehicles, thus taking away green time from northbound and southbound approaches on Piedmont Road. Consideration should be given to the installation of an additional westbound left-turn lane.

Table 9 shows the Projected 2011 "No-Build" LOS with the addition of the recommended improvements.

Table 9 Gables Lindbergh Projected 2011 No-Build IMPROVED Intersection Levels-of-Service (delay in seconds)					
	Intersection Control LOS AM Peak PM Pea Standard Hour Hour				
4	Piedmont Road at Morosgo Drive	Signal	D - AM E - PM	C (23.7)	D (39.3)

6.3 Projected 2011 "Build" Traffic

The traffic associated with the proposed development (Gables Lindbergh) was added to the 2011 "No-Build" volumes. These volumes were then input into Synchro 6.0. The results of the analyses are displayed in **Table 10**, and corresponding volumes are shown in **Figure 9**.

Table 10 Gables Lindbergh Projected 2011 Build Intersection Levels-of-Service (delay in seconds)					
	Intersection	Control	LOS Standard	AM Peak Hour	PM Peak Hour
1	Piedmont Road at Garson Drive	Signal	D	C (34.1)	D (40.5)
2	Piedmont Road at Lindbergh Drive	Signal	D	B (16.0)	C (23.9)
3	Piedmont Road at Lindbergh Way	Signal	D	D (37.1)	C (26.0)
4	Piedmont Road at Morosgo Drive	Signal	D - AM E - PM	C (34.5)	F (90.6)
5	Piedmont Road at Sidney Marcus Boulevard	Signal	D	D (39.4)	D (39.1)
6	Adina Drive at Lindbergh Drive	Signal	D	D (38.0)	D (45.8)
7	Adina Drive (Access Road) at Morosgo Drive	All-Way Stop	D	C (20.4)	C (15.1)
8	Access Road at Sidney Marcus Boulevard	Signal	D	C (20.8)	C (24.0)
9	Morosgo Drive & Driveway #1	NB STOP	D	B (14.4)	F (103.0)
10	Morosgo Drive & Driveway #2	NB STOP	D	C (22.3)	F (62.5)
11	Adina Drive & Driveway #3	EB STOP	D	C (16.4)	C (21.2)
12	Adina Drive & Driveway #4	EB STOP	D	C (19.9)	C (21.8)
12	Maragaa Way/Drivayay #5 at Lindbargh Driva	NB STOP	D	F (815.1)	F (Err)
15	Morosgo Way/Driveway #5 at Lindbergh Drive	SB STOP	D	F (Err)	F (Err)
14	Lindbergh Drive & Driveway #6	SB STOP	D	B (14.5)	B (13.8)



The results of the Build Conditions analysis indicate that four intersections are projected to operate below the standard of LOS D.

The northbound and southbound approaches at Morosgo Drive at Driveway #1 and Morosgo Drive at Driveway #2 are projected to operate at an LOS F during both the AM and PM peak hours. It is not uncommon for side street traffic to experience low Levels of Service. Because of the relatively low volume of left-turning vehicles at the intersections in question (Morosgo Drive at Driveway #1 and Morosgo Drive at Driveway #2), it is unlikely that a signal warrant will be met. Furthermore, Morosgo Drive at Driveway #1 is less than 500 feet east of the signalized intersection of Piedmont Road at Morosgo Drive, which is closer than GDOT signal spacing requirements. No geometric improvements or signalization of the intersections is recommended.

Additionally, a queue analysis was performed along Piedmont Road for the No-Build Conditions analysis, based on discussions with GRTA staff at the methodology meeting. The five study intersections along Piedmont Road are displayed in **Table 11** below.

	Table 11 Gables Lindbergh Projected 2011 Build Intersection Queues (for informational purposes)					
			Queue Len	gth in Feet		
Intersection		NB	SB	EB	WB	
1	Piedmont Road at Garson Drive					
	AM Peak	672'	217'	316'	113'	
	PM Peak	583'	563'	633'	149'	
2	Piedmont Road at Lindbergh Drive					
	AM Peak	34'	441'	269'	-	
	PM Peak	36'	760'	259'	-	
3	Piedmont Road at Lindbergh Way					
	AM Peak	325'	260'	-	446'	
	PM Peak	278'	238'	-	330'	
4	Piedmont Road at Morosgo Drive					
	AM Peak	632'	590'	58'	165'	
	PM Peak	585'	1012'	111'	285'	
5	Piedmont Road at Sidney Marcus Boulevard					
	AM Peak	711'	362'	103'	337'	
	PM Peak	507'	688'	129'	369'	

Improvements were identified to mitigate the delays and queues projected for the Build Conditions. These improvements are in addition to the No-Build improvements and are listed and discussed, by intersection, below:

Piedmont Road @ Morosgo Drive (Intersection #4)

• Optimize signal timings during the PM peak hour.

Morosgo Way/Driveway #5 @ Lindbergh Drive (Intersection #13)

With the increase of traffic as a result of the proposed development, delays and queues are increased along the minor legs of this unsignalized intersection. Signalization would be required to improve the LOS. We recommend:

• Install a traffic signal, if warranted and approved by the City of Atlanta.

The improvements listed above were input into Synchro and the roadway network was then re-analyzed. The LOS rating of the intersections identified as projected to operate below the LOS standard are displayed in the **Table 12** below, with the adjusted LOS ratings as a result of the recommended improvements.

Table 12 Gables Lindbergh Projected 2011 Build IMPROVED Intersection Levels-of-Service (delay in seconds)						
Intersection Control LOS AM Peak PM Standard Hour H					PM Peak Hour	
4	Piedmont Road at Morosgo Drive	Signal	D - AM E - PM	C (26.1)	D (40.7)	
13	Morosgo Way/Driveway #5 at Lindbergh Drive	Signal	D	C (27.8)	C (26.2)	

Once more, at the intersection of Piedmont Road at Morosgo Drive over 300 vehicles are expected to make a westbound left-turn, under No-Build Conditions. This movement warrants a substantial amount of green time to process over 300 vehicles, thus taking away green time from northbound and southbound approaches on Piedmont Road. Consideration should be given to the installation of an additional westbound left-turn lane.

7.0 IDENTIFICATION OF PROGRAMMED PROJECTS

According to ARC's Transportation Improvement Program, Regional Transportation Improvement Program, GDOT's Construction Work Program, and the STIP the following projects are programmed or planned to be completed by the respective years:

2008	AT-AR-212A/B	I-85 North at GA 400 – Widening of I-85 and additional Directional Ramps
2011-12	AR-450A/B	Beltline multi-use path phase 1 and 2
2020	AR-450 C/D	Beltline multi-use path phase 3 and 4
2020:	M-AR-288	Bus High-Speed Premium Transit from MARTA Lindbergh Station to Emory / Centers for Disease Control
2025:	AR-910	Bus Rapid Transit from Pleasant Hill Road to MARTA Lindbergh Station

Additionally, the Piedmont Area Transportation Study (through the Buckhead Community Improvement District) is currently underway, which is intended to "identify measures that will improve access and mobility along portions of Piedmont Road (SR 237) and Roswell Road (US 19/SR9) in the Buckhead community of Atlanta. The goal of the study is to identify measures to improve traffic mobility, enhance the pedestrian environment, create better access to public transit, initiate intra-district transportation alternatives, encourage better integration of land uses, and improve linkages to the region's automobile, transit, and bicycle networks". Programmed Improvements are shown in **Figure 10**.

8.0 INGRESS/EGRESS ANALYSIS

Access for residents and patrons of the retail, is proposed via two full-movement driveways along Morosgo Drive, two full-movement driveways along Adina Drive, one full-movement driveway along Lindbergh Drive and one right-in/right-out driveway along Lindbergh Drive. The driveways will be internally connected as to allow motorists to enter in one driveway and exit another driveway. Below is a description of recommended drive geometries.

Morosgo Drive @ Driveway #1

• The proposed full-movement driveway should consist of one southbound ingress lane and one northbound egress lane, side-street stop-controlled.

Morosgo Drive @ Driveway #2

• The proposed full-movement driveway should consist of one southbound ingress lane and one northbound egress lane, side-street stop-controlled.

Adina Drive @ Driveway #3

• The proposed full-movement driveway should consist of one westbound ingress lane and one eastbound egress lane, side-street stop-controlled.

Adina Drive @ Driveway #4

• The proposed full-movement driveway should consist of one westbound ingress lane and one eastbound egress lane, side-street stop-controlled.

Lindbergh Drive @ Driveway #5

• The proposed full-movement driveway should consist of one northbound ingress lane and one southbound egress lane, traffic signal (if warranted).

Lindbergh Drive @ Driveway #6

• The proposed right-in/right-out driveway should consist of one northbound ingress lane and one southbound egress lane (right-turn lane only), side-street stop-controlled.



9.0 INTERNAL CIRCULATION ANALYSIS

As previously mentioned, each parcel is surrounded by an extensive existing roadway network. Internal circulation within the development as a whole will occur along these roadways (both for vehicles and pedestrians). Pedestrians are able to travel between uses easily as the uses are either housed in one building (or connecting facilities) or attractive pedestrian connections will be provided.

10.0 COMPLIANCE WITH COMPREHENSIVE PLAN ANALYSIS

The existing zoning is SPI15SA8, with a proposed rezoning to SPI155A3 to accommodate the proposed development. The 15 year Future Land Use Plan for the City of Atlanta designates the area as a combination of High Density Commercial along Piedmont Road and High Density Residential for the balance of the site.

11.0 NON-EXPEDITED CRITERIA

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

MARTA bus routes currently serve the proposed site, and a MARTA rail station is located approximately 250 yards from the site.

11.2 Vehicle Miles Traveled

The following table displays the reduction in traffic generation due to internal capture, alternative modes, and pass-by trips.

Table 13 Gables Lindbergh Vehicle Trip Reductions				
Daily Gross Trip Generation:	13,663			
(-)Mixed-use reductions (internal capture)	-1,533			
(-)Alternative modes	-1,213			
(-)Pass-by trips	-3,179			
Net Trips:	7,738			

11.3 Relationship Between Location of Proposed DRI and Regional Mobility

The proposed development is located within an urban core. It is situated along nine MARTA bus routes (which operate along Piedmont Road) and is approximately 250 yards from a MARTA rail stations. Lindbergh Drive has access to Buford Highway approximately 300 yards from the project. Additionally, the project is located in the vicinity of Sidney Marcus Boulevard which connects to GA-400 which provides direct connections to I-85.

11.4 Relationship Between Proposed DRI and Existing or Planned Transit Facilities

Nine MARTA bus routes access the proposed development:

- Route 5 Sandy Springs (15-minute headways)
- Route 6 Emory (20-minute headways)
- Route 27 Monroe Drive / Cheshire Bridge (30-minute headways)
- Route 30 La Vista (45-minute headways)
- Route 33 Briarcliff (40-minute headways)
- Route 38 Chastain Park (60 minute headways)

- Route 39 Buford Highway (12-minute headways)
- Route 44 West Wesley Road (30-minute headways)
- Route 245 Kensington / Emory Express (20-minute headways)

Gwinett County Transit operates an express bus which serves the Lindbergh MARTA Station. Route 410 - Discover Mills to MARTA Lindbergh Station operates during the peak periods with a 45-minute headway. Pedestrian facilities are currently in place along all adjacent roadways. Given the numerous transit options within the vicinity of the project (for both residential and non-residential trips) and the overall project location within the developing area of Lindbergh, transit is a viable option for many of the residents, workers, and other patrons of the new development.

11.5 Transportation Management Area Designation

The development is located within the Buckhead Area Transportation Management Area.

11.6 Offsite Trip Reduction and Trip Reduction Techniques

Mixed-use, alternative mode, and pass-by trip reductions were taken according to the *ITE Trip Generation Handbook, 1998.* Calculating internal capture resulted in a reduction of 11.08% of daily gross trips and 10.36% of PM peak trips. The proximity to MARTA bus routes and enhanced walkability within the proposed development warranted an alternative mode reduction of 10%. Pass-by reductions for the retail land uses were taken at 34%, per ITE.

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 adequate to serve the needs of the development upon build-out (2011).

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 (Lindbergh Drive at Piedmont 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 Area of Influence (located within Fulton and DeKalb Counties) can be seen in **Figure 11**. Information obtained from the census tracts can be seen in **Table 14**.

Table 14 Census Tract Information				
Total Households	137,061			
Population in Households	276,900			
Average household size	2.02			
Workers per Household	1.22			
Owner Occupied	43.11%			
Rental Occupied	56.89%			

As can be seen from the table above, the total population within the Area of Influence is 276,900, residing within 137,061 households (an average of 2.02 people per household). The AOI area totals 52,636 acres.

Using the above calculated average of 2.02 persons per household, it can be anticipated that the proposed DRI will house approximately 667 people (330 proposed dwelling units multiplied by 2.02). Based on information obtained from the Census Tracts, it is estimated that approximately 402 of these expected 667 residents would be workers. 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.

It is expected that many apartments are available in the vicinity of the project (Zip code 30324) at the time of this report.

12.3 Development Housing Analysis

The development plan provides for apartments for rent in two price ranges within the proposed development. **Table 15**, below, displays the number of units for rent, the average rent price for those units, and the number of workers expected to reside in the homes.

Table 15 Estimated Workers per Household						
Tier	Description	Number of Units	Average Price	Number of Workers		
A1	One Bedroom Apartment	180	\$1,085/month	220		
A2	Two Bedroom Apartment	150	\$1,320/month	182		

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 Fulton and DeKalb counties 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 16**, on the following page.

13.0 ARC'S AIR QUALITY BENCHMARK

The proposed development is expected to consist of approximately 330 residential units, a 96,369 square foot (SF) grocery store, a 45,000 SF fitness center, and 17,700 SF of retail shops. Using the Department of Community Affairs required estimation of 1,800 SF per residential dwelling unit for DRIs, the total development square footage (for the purpose of these calculations) equals 753,069 SF.

Because residential is the dominant use (based on square footage using the Department of Community Affairs estimation of 1,800 SF per residential unit) and the proposed development contains more than 15 dwelling units per acre, the development meets the ARC criteria (1 B), for a 6% reduction.

Again, because the proposed development contains a mix of uses (with residential as the dominant use) and at least 10% of the floor area is retail (159,069 SF retail / 753,069 total calculated SF \sim 21% retail), this mixed use development meets the ARC criteria (2 C) for an additional 4% reduction.

MARTA bus routes serve a stop within ¹/₄ mile walking distance of the proposed site, so the proposed development is eligible for an additional 3% reduction.

The Lindbergh MARTA rail station is within ½ mile walking distance of the proposed site, so the proposed development is eligible for an additional 5% reduction.

The site is located within the Buckhead Area Transportation Management Association (BATMA), so the proposed development is eligible for an additional 5% reduction.

There will be bike and pedestrian networks providing connections to uses within the site. The development meets the ARC criteria (6 E) for an additional 5% reduction since the development also meets the mixed use target and connects to adjacent uses.

The proposed development meets the ARC criteria for a total 27% VMT reduction. These reductions are displayed below in **Table 17**.

Table 17 Gables Lindbergh ARC VMT Reductions	
Mixed-Use Projects where Residential is t	he dominant use
Meets the relative density target (1B)	-6%
Contains a 'mix' of uses (2C)	-4%
<¼ mile from a MARTA bus stop (4A)	-3%
< ¹ / ₂ mile from a MARTA rail station (4B)	-5%
Within a Transportation Management Association (5B)	-5%
Bike/ped networks provided, meets a mixed use 'target', and connects to adjacent uses (6E)	-4%
Total Reductions	27%