LAKESIDE DEVELOPMENT

Development of Regional Impact # 1503

SANDY SPRINGS, GA

TRAFFIC IMPACT STUDY

Prepared for:

Greenstone Properties
3330 Cumberland Blvd, Suite 475
Atlanta, GA 30339

Prepared by:

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August 23, 2007
A&R Project No: 07-077

EXECUTIVE SUMMARY

The purpose of this study is to determine the traffic impact that will result from the expansion of the Lakeside Development located along Glenridge Drive to the northeast of Glenridge Drive and I-285 in Sandy Springs, Georgia. The site currently includes 410,000 s.f. of office space and is proposed to be expanded to include a total of 1,125,000 s.f. of office space. Of the 410,000 s.f. of existing building space, 85,000 s.f. is proposed to be demolished and 800,000 s.f. of new office space is proposed (410k – 85k + 800k = 1,125k). The site also proposes the addition of a 200 room hotel, 300 residential condominiums and 50,000 s.f. of supportive retail / commercial space. The traffic analysis evaluated the following scenarios: existing conditions, the year 2011 without additional traffic generated by the site, and the year 2011 with the traffic generated by the development.

From the existing condition analysis it was found that one of the intersections within the study area is currently not operating at the LOS standard of D. Analysis of the Base Year 2011 revealed that two of the study intersections being analyzed will not meet the required LOS standard.

The Future 2011 traffic including the site-generated traffic was then evaluated using existing lane geometry. Four study network intersections will not meet the required LOS standard after the project is completed if no roadway improvements are implemented. Improvements were recommended to restore these intersections back to the LOS standard. In addition, recommendations to allow the site accesses to operate satisfactorily were identified. Details can be found in the site access analysis section of the report.

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1. PROJECT DESCRIPTION

The purpose of this study is to determine the traffic impact that will result from the expansion of the Lakeside Development located along Glenridge Drive to the northeast of Glenridge Drive and I-285 in Sandy Springs, Georgia. The site currently includes 410,000 s.f. of office space and is proposed to be expanded to include a total of 1,125,000 s.f. of office space. Of the 410,000 s.f. of existing building space, 85,000 s.f. is proposed to be demolished and 800,000 s.f. of new office space is proposed (410k – 85k + 800k = 1,125k). The site also proposes the addition of a 200 room hotel, 300 residential condominiums and 50,000 s.f. of supportive retail/commercial space. The site is currently served by an existing driveway that aligns across from Glenforest Road, which is signalized and will continue to serve as the primary access for the site. The site also proposes two right-in / right-out accesses along Glenridge Drive. In addition, the site proposes an inter access to the adjacent Glenridge 400 Office Park development to the north that has a signalized access point along Glenridge Drive. A location map for the site is shown in Figure 1.

1.1 Site Plan

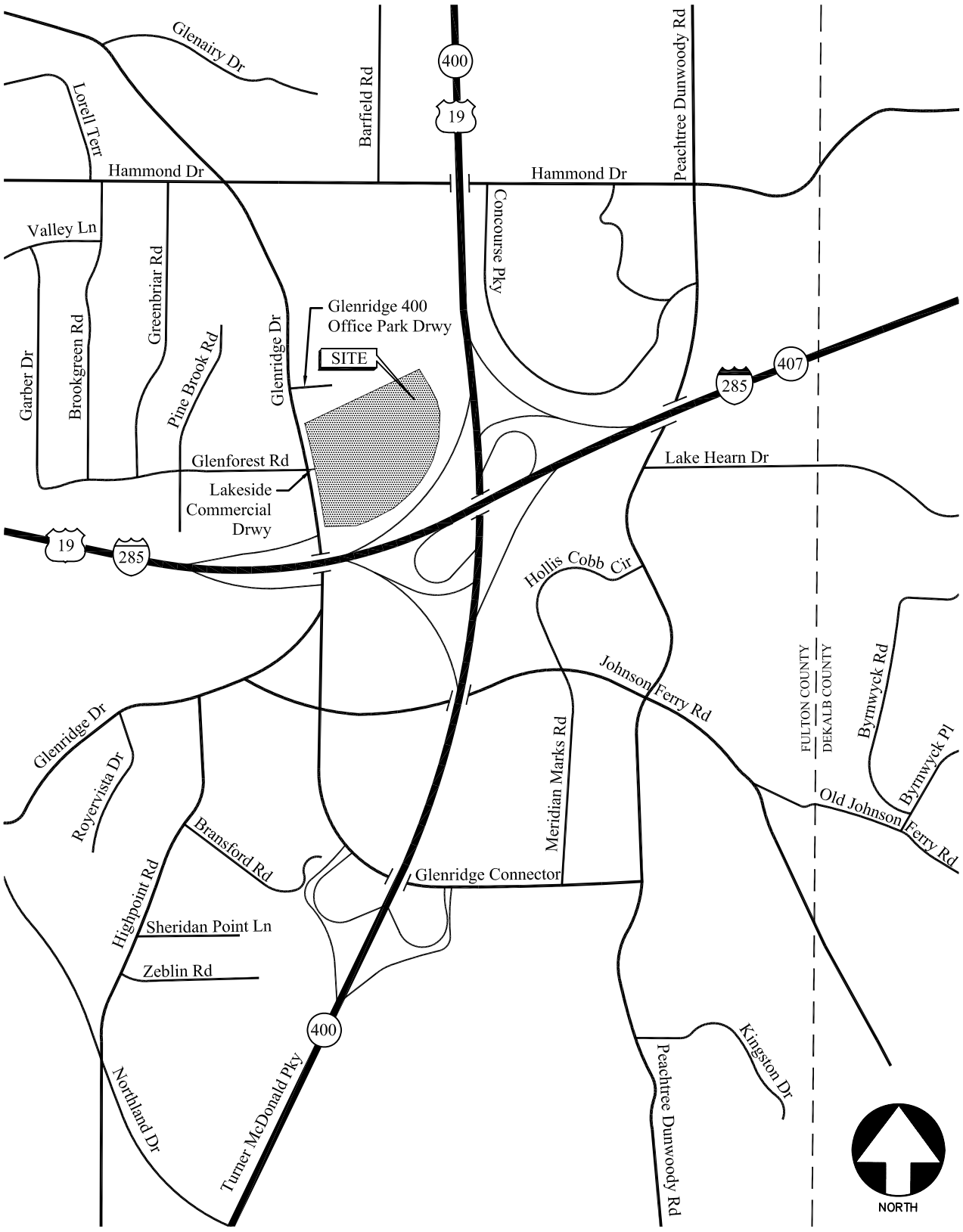
A site plan for this project is shown in Figure 2. A larger size drawing and a digital copy of the site plan are also provided with this report.

1.2 Consistency with Adopted Comprehensive County Plan

The existing site zoning is OI and the proposed zoning is MIX. The future land use plan calls for live / work community and live / work regional. The site is consistent with the areas future land use plan, except a variance will be required to allow for the proposed building heights. .

1.3 Project Phasing

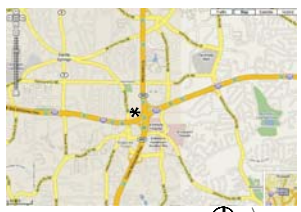
The project's impact has been evaluated in one phase, estimated for completion in the year 2011. This study will evaluate the traffic operations in the vicinity of the site for existing conditions year 2007, the year 2011 without additional traffic generated by the site, and the year 2011 with the additional traffic generated by the development.



LOCATION MAP

FIGURE 1

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SITE LOCATION MAP

NORTH

SITE NOTES

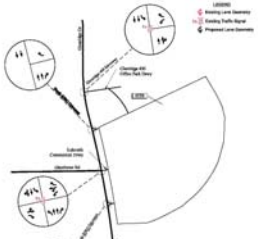
-ITEM #12, THERE ARE NO PROPOSED SINGLE FAMILY RESIDENTIAL LOTS ON THE SITE.
-ITEM #14, NO MAJOR OVERHEAD AND UNDERGROUND ELECTRICAL AND PETROLEUM TRANSMISSION/CONVEYANCE LINES ARE LOCATED ON THE SITE.
-ITEM #16, 100 YEAR FLOOD PLAIN LIMITS DO NOT EXIST ON THE PROPERTY PER FEMA FIRM MAPS.
-ITEM #19, LAKES, STREAMS AND OTHER WATERS DO NOT OCCUR ON THE SITE.
-ITEM #21, THERE ARE NO COMMUNITY WASTEWATER FACILITIES INCLUDING PRELIMINARY AREAS RESERVED FOR SEPTIC DRAIN FIELDS AND POINTS OF ACCESS LOCATED ON THE SITE.
-ITEM #25, THERE ARE NO WETLANDS LOCATED ON THE SITE.
-ITEM #26, THE PROPERTY IS NOT WITHIN THE FAR PART 150 AIRPORT NOISE CONTOUR MAP.
-TOTAL PROPERTY ACREAGE: 26.0353
(LAND LOT 97, 17TH DISTRICT, FULTON COUNTY, GEORGIA)
-CURRENT ZONING CLASSIFICATION: O/I [OFFICE/INSTITUTIONAL]
-PARCEL INCLUDES TRACT 1 LAND AREA: 261,164 SF. AND TRACT 2 LAND AREA: 812,841 SF. FOR A TOTAL OF 1,134,010 SF.
-SETBACKS: 40' FRONT YARD (GLENRIDGE DR.)
10' REAR AND SIDE YARD (GA 400/I-285)
20' SIDE YARD (ADJOINING NORTH PROPERTY LINE W/ GLENRIDGE 400)
5' MINIMUM INTERNAL SETBACKS

BLDG. TYPE	SIZE
EXISTING SF. OFFICE TO REMAIN	324,000 SF
PROPOSED SF. OFFICE	800,000 SF.
TOTAL PROPOSED/ EXISTING - OFFICE/FINANCIAL/INSTITUTIONAL	1,125,000 SF
RESIDENTIAL	300 UNITS (MIN. 750 SF.)
RETAIL	50,000 SF.

SITE PLAN LEGEND

TOTAL AREA OF SITE = 1,134,010 SF. / 100%
BUILDINGS = 416,925 SF. / 36.7%
PROPOSED NUMBER OF PARKING SPACES = 4,300 / 23.0%
TOTAL IMPERVIOUS SURFACE = 693,471 SF. / 61.1%
LANDSCAPING = 440,539 SF. / 38.8%
FLOOD PLAIN = 0 SF. - 0%
UNDEVELOPED AND/OR OPEN SPACE = 440,539 SF. / 38.8%

FLOOR AREA RATIO CALCULATIONS	
RESIDENTIAL	262,500 SF. / 162,500 SF. (5.27 AC) = 2.48 F.A.R.
ALL NON-RESIDENTIAL USES	271,000 SF. / 416,425 SF. (22.76 AC) = 1.38 F.A.R.



FUTURE 2011 SITE ACCESS TRAFFIC CONTROL AND LANE GEOMETRY — FIGURE 12 — A&R Engineering Inc.

A ZONING PLAN
PW-1 SCALE:1"=50'-0"

ENTIRE SITE IS IN JURISDICTION OF CITY OF SANDY SPRINGS, GA

STREETSCAPE STANDARDS	
URBAN DISTRICT	
STRIP BETWEEN STREET AND SIDEWALK - MATERIAL AND WIDTH	THREE FOOT WIDE PLANTED STRIP (GROUNDCOVERS, GRASS)
SIDEWALKS	REQUIRED IN ALL DISTRICTS
WIDTH OF SIDEWALK	SIX FEET
PEDESTRIAN LIGHTS - DISTANCE APART	40-100
PEDESTRIAN LIGHTS - HEIGHT	16 FEET MAXIMUM
STREET TREES - DISTANCE APART	40 FEET ON CENTER
STREET TREES - CALIPER	3 INCH MINIMUM
LANDSCAPE STRIP	TEN FEET WIDE

ITEM #16	HEIGHT MAXIMUM REQUIRED/BLDG	REQUIRED PARKING SPACES	WEEKDAYS 6am-5pm	WEEKDAYS 5pm-1am	WEEKENDS 6am-5pm	WEEKENDS 5pm-1am	NIGHTTIME 1am-6am
			2,043 (100%)	204 (10%)	204 (10%)	104 (5%)	104 (5%)
OFFICE	324,000 SF EXISTING	972 SPACES (3/1000 SF)	350 (60%)	233 (40%)	350 (100%)	175 (10%)	35 (3%)
	500,000 SF PROPOSED	1,200 SPACES (2.4/1000 SF)					
RETAIL	50,000 SF PROPOSED	250 SPACES (5/1000 SF)	150 (75%)	200 (100%)	150 (75%)	200 (100%)	50 (25%)
HOTEL	200 ROOMS PROPOSED	200 SPACES (1/ROOM)					
TOTAL SHARED SPACES (EXCEPT RESIDENTIAL)			2,193 SPACES	654	504	479	387
RESIDENTIAL	300 UNITS PROPOSED						
	1 BDRM. = 60 UNITS	60 UNITS X 1.25 = 75 SPACES					
	2 BDRM. = 210 UNITS	210 UNITS X 1.75 = 368 SPACES					
	3 BDRM. = 30 UNITS	30 UNITS X 2 = 60 SPACES					
		TOTAL RESIDENTIAL SPACES = 503					
TOTAL SPACES ON SITE		2,843 SPACES					

0' 25' 50' 100' NORTH

LANDSCAPE ARCHITECTURE • PLANNING • URBAN DESIGN • ENVIRONMENTAL SERVICES

HGOR
HUGHES | GOOD O'LEARY & RYAN

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ATLANTA • GEORGIA 30328
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EMAIL hgor@hgor.com
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REVISIONS

NO.	DATE	ISSUE
1	07/31/07	CITY COMM.
2		
3		
4		
5		

CLIENT CONTACT INFORMATION:
GREENSTONE PROPERTIES
3550 CUMBERLAND BLVD.
SUITE 475
ATLANTA, GA 30339
PH: 770-436-8222

LAKESIDE OFFICE MASTERPLAN
SANDY SPRINGS, GA
GREENSTONE PROPERTIES
ATLANTA, GA

TITLE
ZONING PLAN

DATE	08-23-07
JOB NO.	07037
DWG FILE	07037PW1
DRAWN BY	BED
CHECKED	CRM
SCALE	1"=50'
SHEET	PW-1
	1 of 1

Not Released for Construction

File Name: N:\2007\07037\Graphics\07037PW1.dwg

2. TRIP GENERATION

Trip generation estimates for the project were based on the rates and equations published in the 7th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. The ITE Trip Generation report contains traffic volume count data collected at similar facilities nationwide. The existing site is proposed to add 715,000 s.f of office space, a 200-room hotel, 300 residential townhouse units and 50,000 s.f of supportive / specialty retail center. Trip generation calculations for the Lakeside Development are shown in Table 1.

TABLE 1
TRIP GENERATION

Land Use	Total Size	A.M. Peak Hour			P.M Peak Hour			24-Hour 2-way
		Enter	Exit	Total	Enter	Exit	Total	
710 – General Office	715,000 s.f.	796	109	905	150	730	880	6,067
310 – Hotel	200 rooms	59	38	97	63	55	118	1,417
232- High-Rise Residential Condominium / Townhouse	300 units	22	94	116	73	44	117	1,355
814 – Specialty Retail Center	50,000 s.f.	173	188	361	62	79	141	2,177
Total		**1,050**	**429**	**1,479**	**348**	**908**	**1,256**	**11,016**

2.1 Net Trip Ends

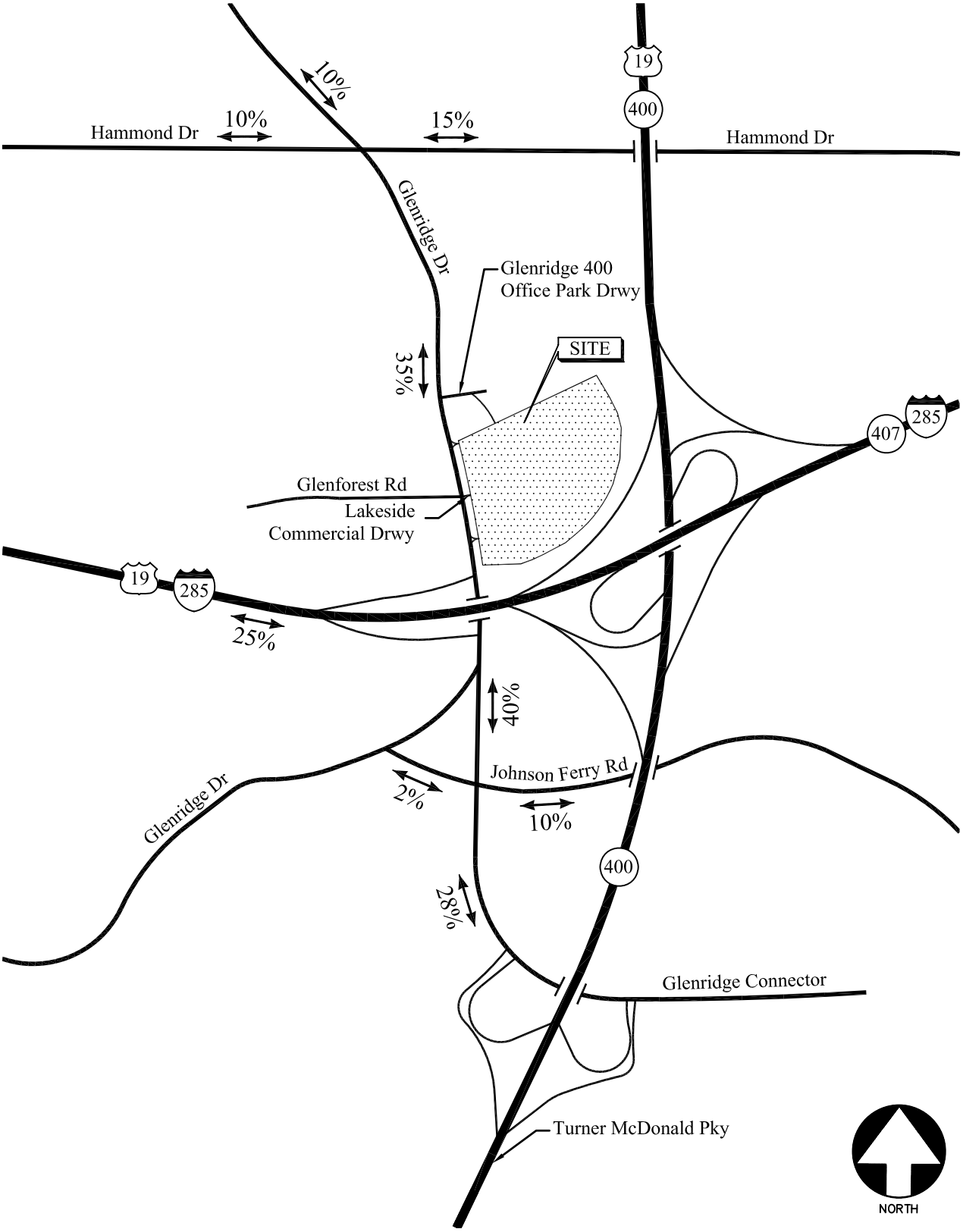
Due to the nature of the development mixed-use reductions have been applied. Trip Generation with the applied reductions is shown in the Table 2. In addition, a 2% transit reduction has been applied since the site is served by MARTA.

TABLE 2
TRIP GENERATION WITH REDUCTIONS

Land Use - Size	A.M. Peak Hour			P.M. Peak Hour			24-Hour
	Enter	Exit	Total	Enter	Exit	Total	2-way
710-General Office - 715,000 s.f	796	109	905	150	730	880	6,067
- Mixed-use Reduction	-3	-2	-5	-2	-3	-5	-97
310 – Hotel - 200 rooms	59	38	97	63	55	118	1,417
232- High-Rise Residential Condominium / Townhouse - 300 units	22	94	116	73	44	117	1,355
- Mixed-use Reduction	-4	-3	-7	-11	-6	-17	-238
814 – Specialty Retail Center - 50,000 s.f	173	188	361	62	79	141	2,177
- Mixed-use Reduction	-4	-6	-10	-7	-12	-19	-294
Transit Reduction - 2%	-21	-8	-29	-7	-18	-25	-208
Totals without Reductions	**1,050**	**429**	**1,479**	**348**	**908**	**1,256**	**11,016**
Totals with Reductions	**1,018**	**410**	**1,428**	**321**	**869**	**1,191**	**10,179**

3. TRIP DISTRIBUTION & ASSIGNMENT

The trip distribution is the percentage of the traffic generated by the site that travels to and from the site on each segment of the surrounding roadway network. The trip distribution was based on the location of major roadways, highways and residential concentrations that will serve the development. The trip distribution is shown in Figure 3. The distribution was discussed and agreed upon in the methodology meeting. The site-generated volumes were then distributed to the surrounding roadway network based on the driver's destination, and the most easily accessible route.



TRIP DISTRIBUTION FIGURE 3

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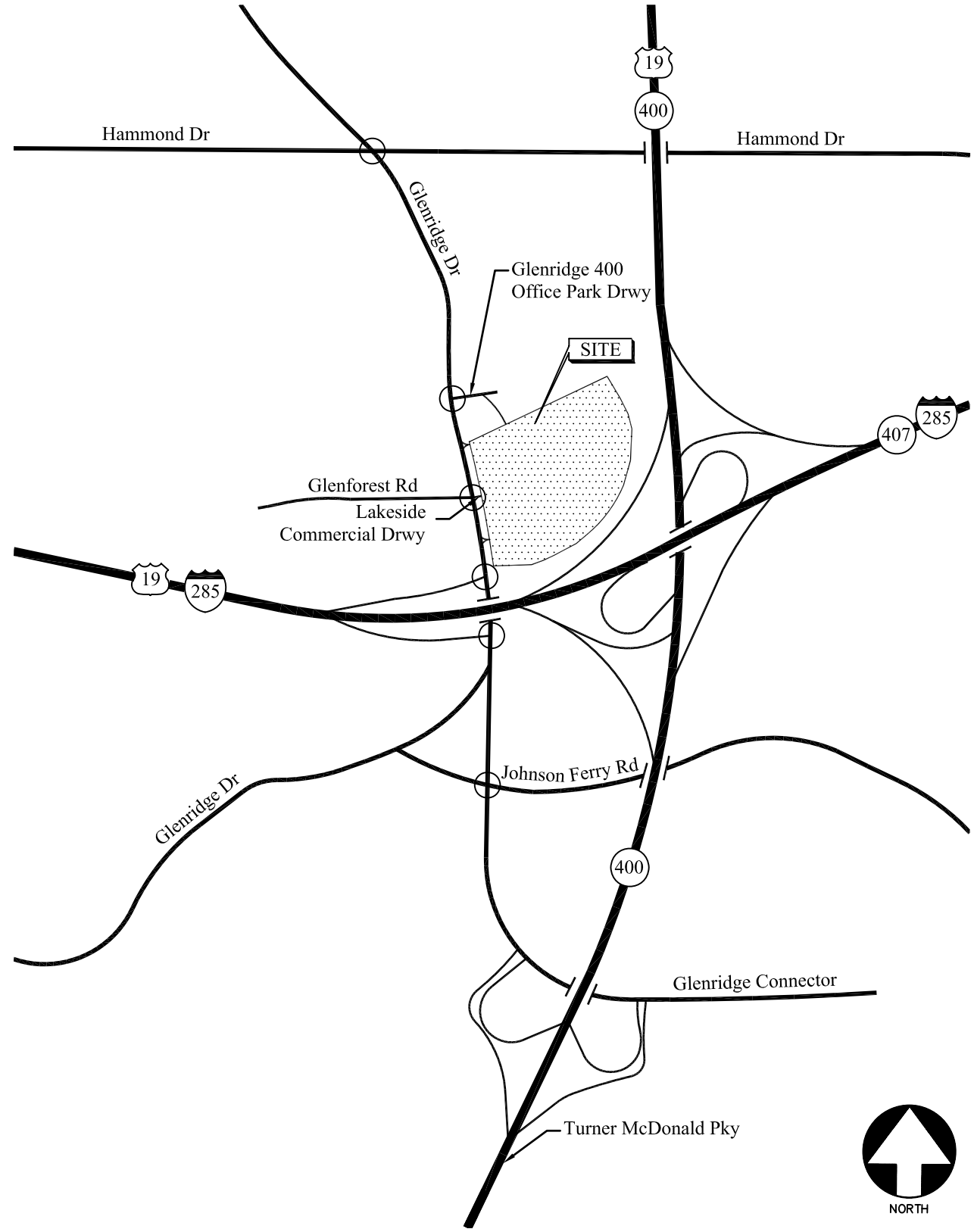
4. STUDY NETWORK DETERMINATION

The study network was determined by evaluating the amount of traffic that the proposed development will add to each roadway segment in the area. According to GRTA requirements, a roadway segment carries a "significant" amount of traffic if the project contributes 7% or more trips to the two-way daily service volumes of the roadway at the appropriate level of service standard. Upon agreement with GRTA a level of service standard of "D" was used for determining the study area network.

The traffic generated by the proposed project was then assigned to the area roadways using the trip distribution to determine the site-generated traffic on each roadway segment. The boundaries of the study network extend to the most distant intersections where at least 7% of the service volumes on the segment are attributed to project traffic. The following intersections fell within the 7% rule and have been included in the traffic study:

1) Glenridge Drive / Hammond Drive
2) Glenridge Drive / Glenridge 400 Office Park Driveway
3) Glenridge Drive / Glenforest Road / Lakeside Driveway
4) Glenridge Drive / I-285 Westbound On-Ramp
5) Glenridge Drive / I-285 Eastbound Off-Ramp
6) Glenridge Connector / Johnson Ferry Road

The study intersections are shown graphically in Figure 4. Other intersections within this corridor, such as unsignalized side streets, right-in / right-out driveways or private driveways were viewed as insignificant and have not been included in the study network.



STUDY INTERSECTIONS

FIGURE 4

A&R Engineering Inc.

5. PLANNED & PROGRAMMED IMPROVEMENTS

The following improvements have been identified in the Atlanta Regional Commission's Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP). These improvements are within the vicinity of the proposed development. Additional improvements for Fulton County have been identified, but they are not relevant to this project. Details of the planned programs can be found in the Appendix.

- FN-103A: Glenridge Drive from SR 9 (Roswell Road) to Glenridge Connector
  - Includes the addition of median and right and left turn lanes.

- FN-103B: Glenridge Drive from SR 9 (Roswell Road) to Johnson Ferry Road
  - Includes the addition of median and right and left turn lanes.

- AR-H-300: I-285 North HOV Lanes from I-75 North in Cobb County to I-85 North in DeKalb County
  - Includes the addition of 1 HOV lane in both directions for 13 miles.

- FN-221: Johnson Ferry Road / Glenridge Drive from Abernathy Road to Hammond Drive
  - Includes widening of Johnson Ferry Road / Glenridge Drive from two lanes to four lanes.

6. EXISTING CONDITIONS

An inventory was performed of the roadways in the area surrounding the site. The following is a brief description of each of these facilities.

6.1 Description of Transportation Facilities in Study Network

I-285

I-285 is a twelve lane (six lanes in each direction) east-west interstate facility to the south of the proposed development.

Glenridge Drive

Glenridge Drive is a four-lane divided roadway with a posted speed limit of 45 mph in the vicinity of the site.

Glenridge Connector

Glenridge Connector is a six-lane divided roadway with a posted speed limit of 45 mph. It runs between Glenridge Drive / Johnson Ferry Road and Peachtree Dunwoody Road.

Johnson Ferry Road

Johnson Ferry Road is an east-west undivided roadway. It extends from SR 141 in the east to Glenridge Connector in the west.

Hammond Drive

Hammond Drive is an east-west four-lane undivided roadway with a posted speed limit of 35 mph in the vicinity of the site. It extends from Ashford Dunwoody Road in the east to Mt Vernon Highway in the west.

6.2 Analysis Summary

Existing traffic counts were performed at the intersections listed in Section 4 - Study Area Network. In addition to traffic counts, intersection geometry data was also obtained. Turning movement counts were collected during the agreed upon hours of 7.00 AM – 9.00 AM and 4.00 PM - 6:00 PM on weekdays. The four consecutive 15-minute interval volumes that summed to produce the highest volume at each intersection during each two-hour period were then determined. These volumes make up the A.M. and P.M peak hour traffic volumes for the intersections counted. The existing traffic volumes are shown in Figure 5 and the existing intersections traffic control and lane geometry for the study area network is shown in Figure 6.

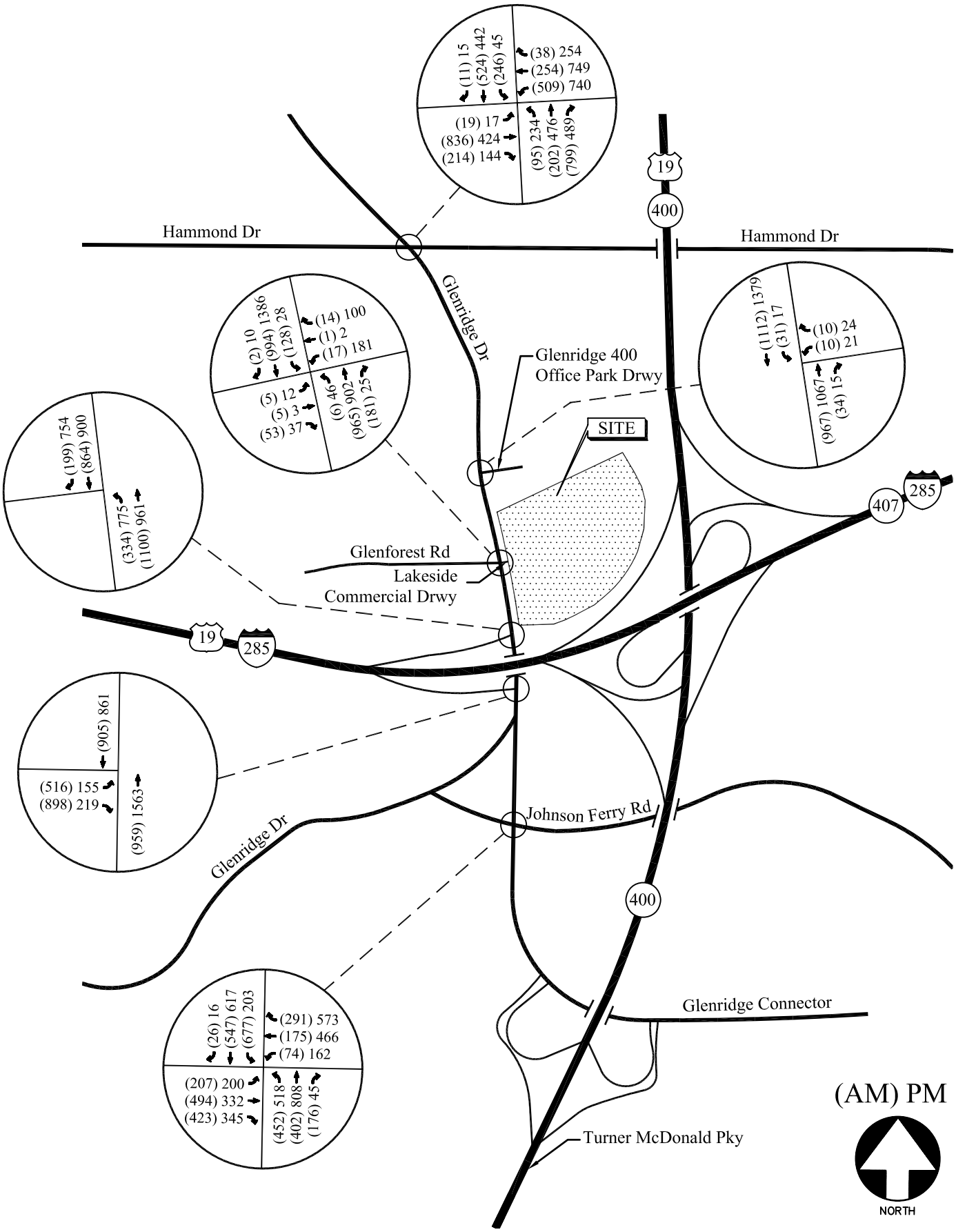
The site-generated volumes shown in Table 2 were distributed to the surrounding roadway network in accordance with the trip distribution. The site-generated volumes for the study intersections are shown in Figure 7. Existing traffic operations were analyzed at all the existing intersections in accordance with the HCM methodology using Synchro software. The results of the analysis are shown in Table 3.

TABLE 3

EXISTING INTERSECTION OPERATIONS

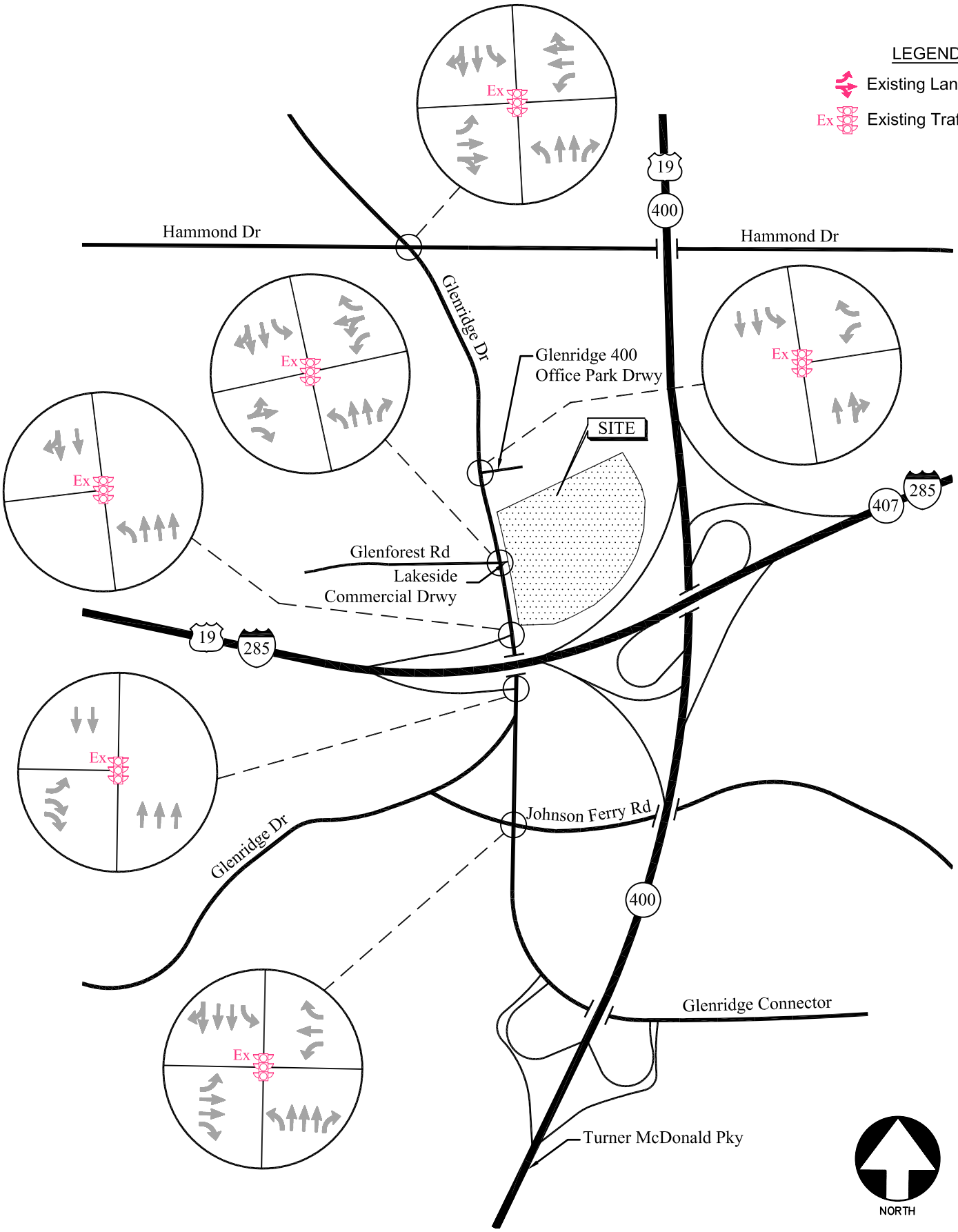
Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
			LOS (Delay)	v/c	LOS (Delay)	v/c
Glenridge Drive / Hammond Drive	E/D	Signalized	F (91.5)	1.10	D (49.6)	0.97
Glenridge Drive / Glenridge 400 Office Park Driveway	D/D	Signalized	A (1.1)	0.36	A (2.3)	0.45
Glenridge Drive / Glenforest Rd / Lakeside Driveway	D/D	Signalized	A (4.1)	0.39	B (10.4)	0.57
Glenridge Drive / I-285 WB On-Ramp	D/D	Signalized	A (0.9)	0.58	B (11.6)	0.85
Glenridge Drive / I-285 EB Off-Ramp	D/D	Signalized	B (15.2)	0.67	A (5.5)	0.45
Glenridge Connector / Johnson Ferry Road	D/D	Signalized	D (44.7)	0.85	D (49.2)	0.88

As shown in Table 3, one of the study intersections is not operating at the required LOS standard.



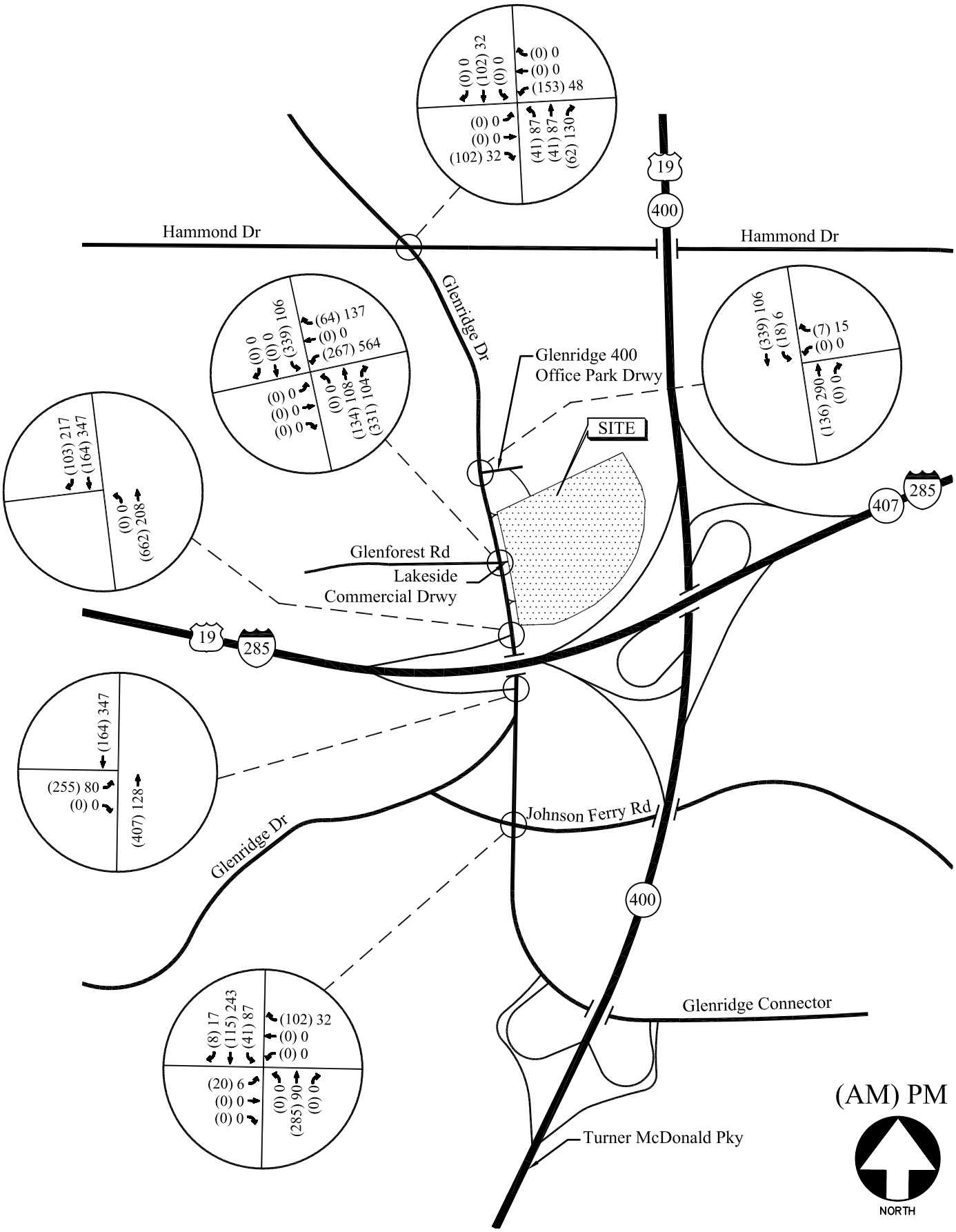
EXISTING WEEKDAY PEAK-HOUR VOLUMES FIGURE 5

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EXISTING TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 6

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SITE GENERATED WEEKDAY PEAK HOUR VOLUMES FIGURE 7

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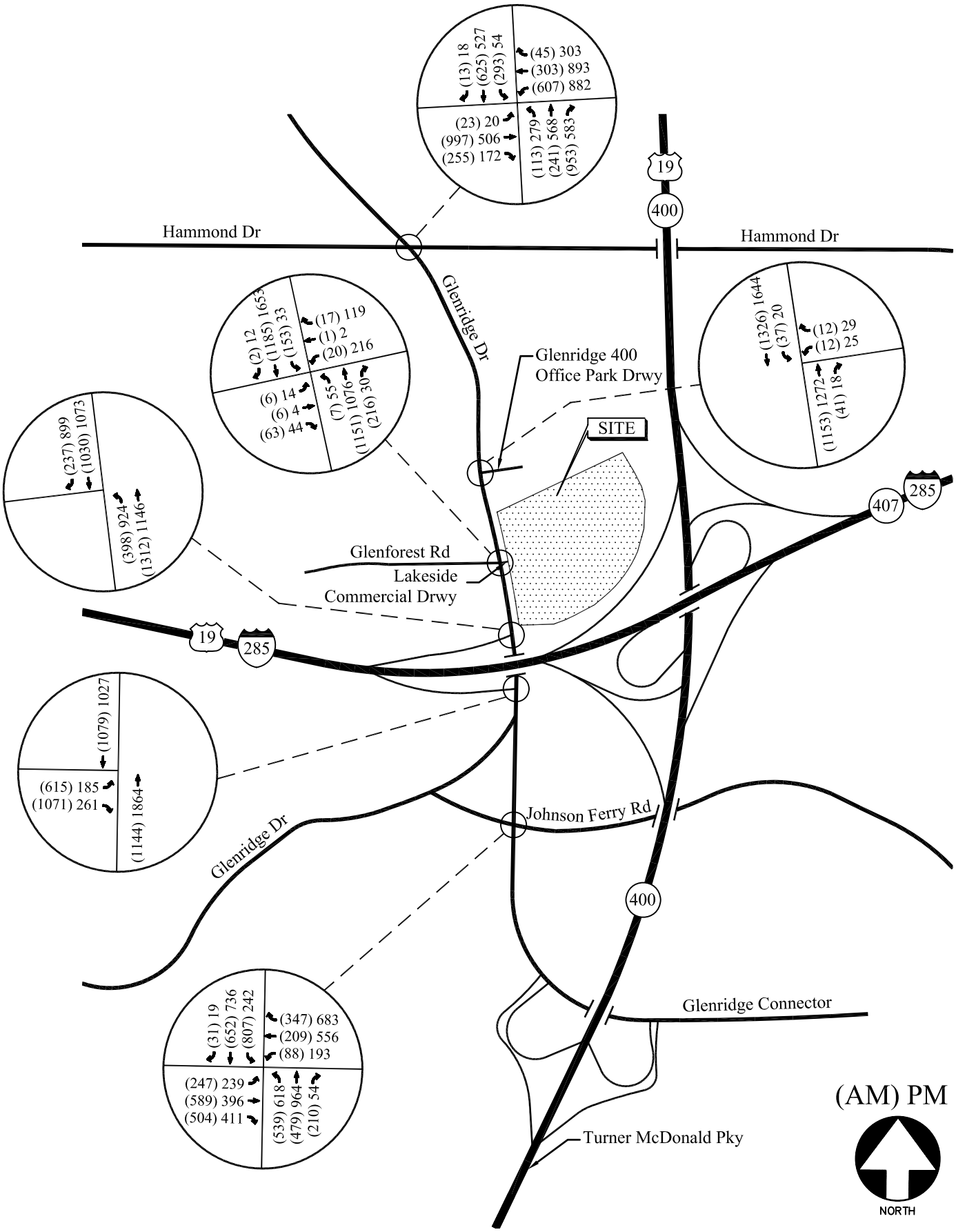
7. FUTURE YEAR BACKGROUND TRAFFIC

In order to evaluate future traffic operations in this area a projection was made of future base year traffic volumes. It was agreed upon with GRTA and the City of Sandy Springs to use a growth factor of 4.5% per year. This growth factor was applied to the existing traffic volumes on the roadways to estimate the future year 2011 traffic volumes prior to the addition of the site-generated volumes. Further details are included in the correspondence section of Appendix. The future year (base) traffic volumes for 2011 at all the study intersections are shown in Figure 8.

A traffic operation analyses for the following Base Scenario was performed:

- Base Year 2011 traffic with existing lane geometry.
- Base Year 2011 traffic with additional recommended improvements to bring all intersections to LOS standard of D.

Results of the analyses for the above scenarios are shown in Tables 4 and 5. Recommendations to bring the intersections back to the LOS standard are discussed after Table 4.



BASE 2011 WEEKDAY PEAK HOUR VOLUMES FIGURE 8

A&R Engineering Inc.

TABLE 4 BASE INTERSECTION OPERATIONS						
Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
			LOS (Delay)	v/c	LOS (Delay)	v/c
Glenridge Drive / Hammond Drive	E/D	Signalized	F (167.9)	1.44	F (89.3)	1.17
Glenridge Drive / Glenridge 400 Office Park Driveway	D/D	Signalized	A (1.3)	0.43	A (2.8)	0.54
Glenridge Drive / Glenforest Rd / Lakeside Driveway	D/D	Signalized	A (5.0)	0.53	B (12.2)	0.69
Glenridge Drive / I-285 WB On-Ramp	D/D	Signalized	A (2.2)	0.71	C (33.3)	1.07
Glenridge Drive / I-285 EB Off-Ramp	D/D	Signalized	B (17.5)	0.79	A (7.4)	0.54
Glenridge Connector / Johnson Ferry Road	D/D	Signalized	E (56.9)	1.02	E (79.7)	1.13

Analysis of the future year (Base 2011) traffic volumes indicates that two of the study intersections will not operate within the LOS standard. The following improvements were identified for those intersections that did not comply with the LOS standard.

- Glenridge Drive / Hammond Drive
  - Add an additional westbound left turn lane on Hammond Drive creating dual left turn lanes with protected only phasing.
  - Convert the northbound through lane on Hammond Drive that is directly adjacent to the northbound right turn lane to be a northbound through / right turn lane and provide permissive + overlap phasing for the northbound right turn movement.

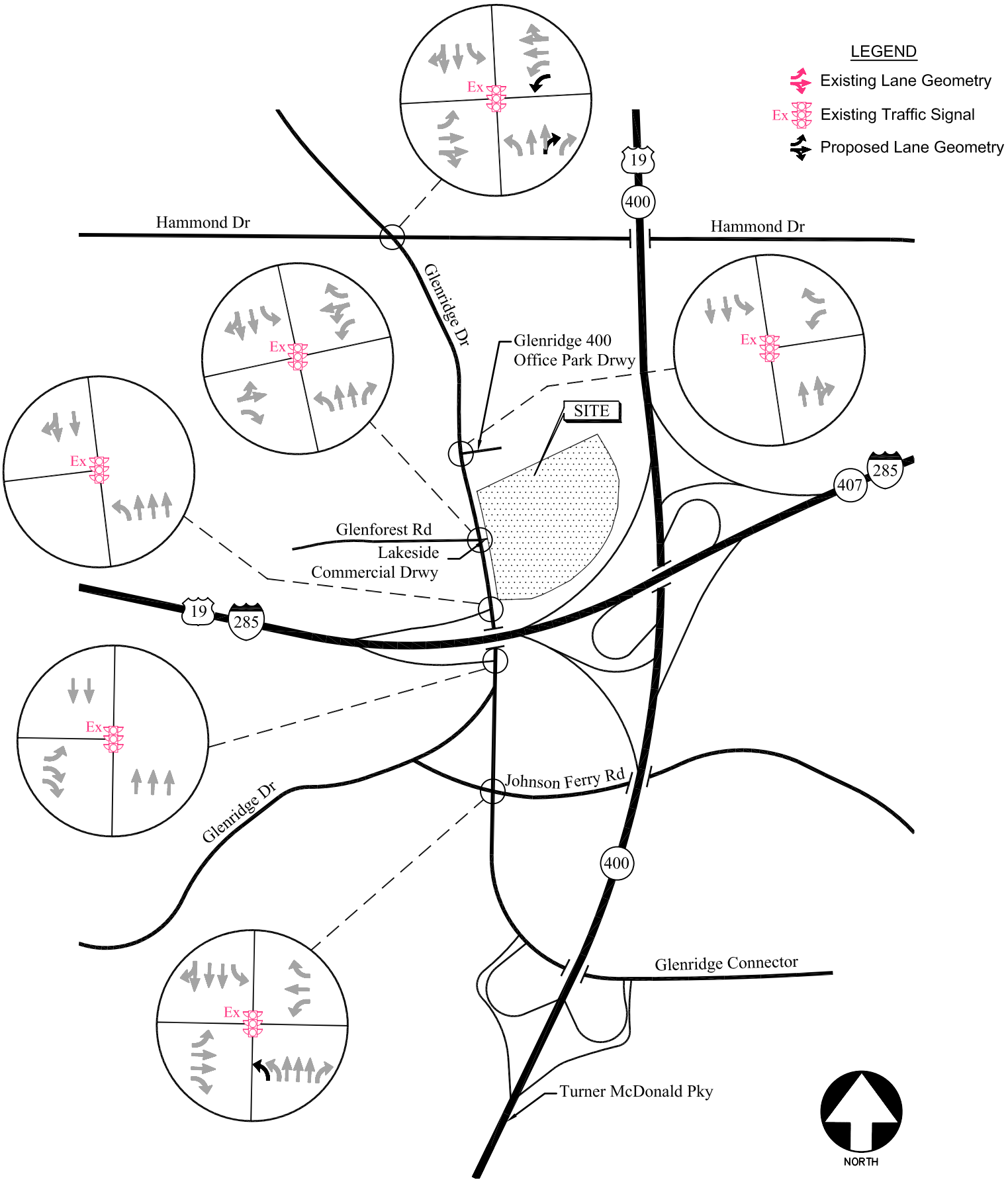
- Glenridge Connector / Johnson Ferry Road
  - Add an additional northbound left turn lane on Glenridge Connector creating dual left turn lanes.
  - Change the westbound right turn phasing on Johnson Ferry Road to permissive + overlap phasing.

The LOS at the above intersections in the year 2011 with just background traffic after the above improvements are implemented is shown in Table 5. The recommended base intersections traffic control and lane geometry are shown in Figure 9.

Table 5

Base Intersection Operations – With Improvements

Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M Peak Hour	
			LOS (Delay)	v/c	LOS (Delay)	v/c
Glenridge Drive / Hammond Drive	E/D	Signalized	E (79.8)	1.04	D (41.9)	0.90
Glenridge Connector / Johnson Ferry Road	D/D	Signalized	D (53.3)	0.98	D (47.7)	0.94



BASE 2011 TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 9

A&R Engineering Inc.

8. FUTURE YEAR TOTAL TRAFFIC

The traffic volumes that will be generated by the proposed development were added to the future base year 2011 traffic volumes in order to determine the traffic volumes that will be on the roadway network after completion of the project. The future traffic volumes for the year 2011 including the site-generated volumes for the study intersections are shown in Figure 10.

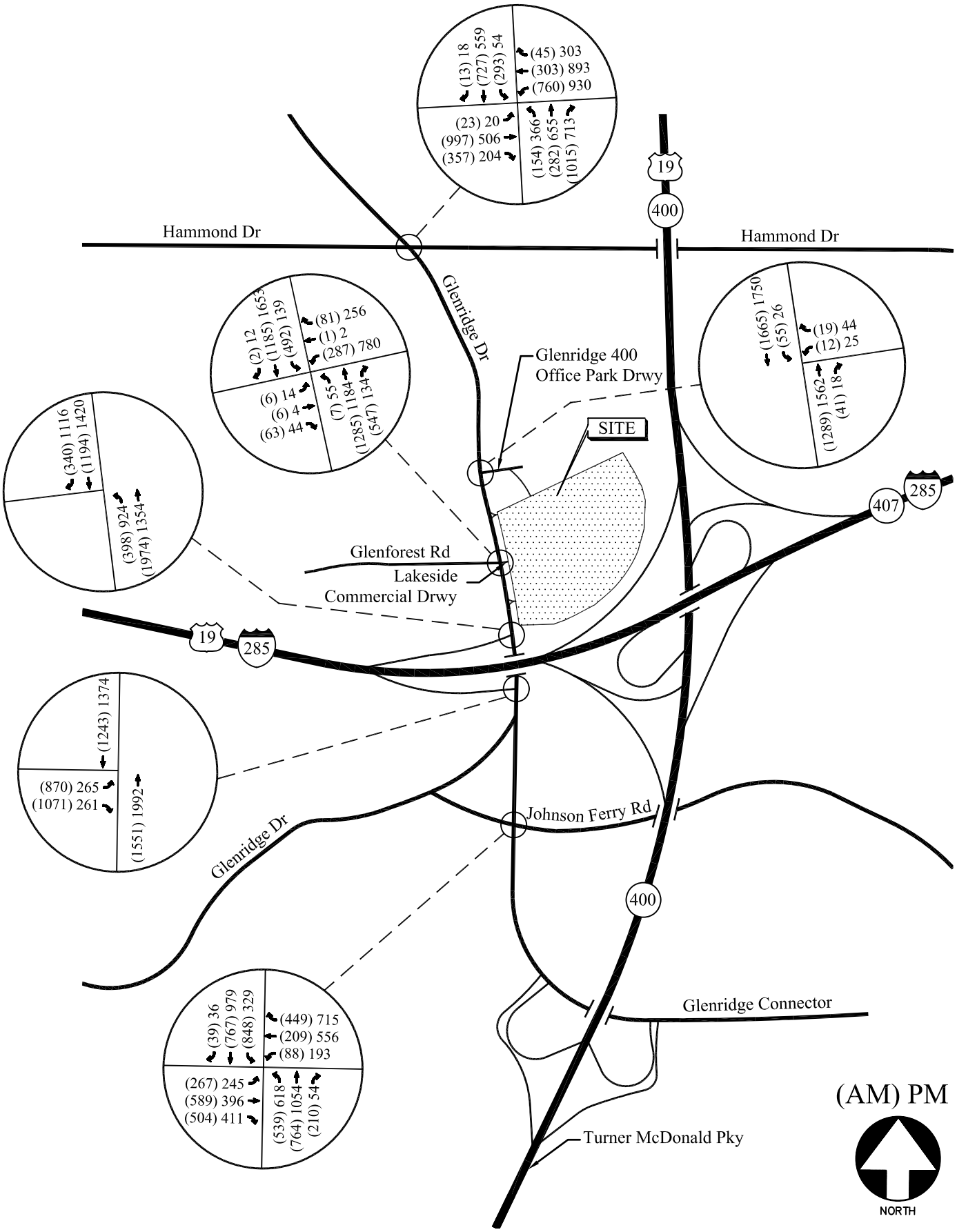
9. FACILITY NEEDS ANALYSIS

9.1 Intersection Analysis

The future year total traffic volumes were used to analyze the study network intersections. Traffic operations analyses for the following scenarios were performed:

- Future Year 2011 Traffic Volumes with site generated traffic and existing lane geometry.
- Future Year 2011 Traffic Volumes with site generated traffic and the recommended improvements to bring all intersections to LOS standard.

The results of the analysis for the above scenarios are shown in Tables 6 and 7. Recommendations to bring the intersections to the LOS standard are discussed after each appropriate section.



FUTURE 2011 WEEKDAY PEAK HOUR VOLUMES FIGURE 10

A&R Engineering Inc.

TABLE 6 FUTURE INTERSECTION OPERATIONS						
Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
			LOS (Delay)	v/c	LOS (Delay)	v/c
Glenridge Drive / Hammond Drive	E/D	Signalized	F (258.1)	1.78	F (115.2)	1.36
Glenridge Drive / Glenridge 400 Office Park Driveway	D/D	Signalized	A (1.9)	0.53	A (2.3)	0.57
Glenridge Drive / Glenforest Rd / Lakeside Driveway	D/D	Signalized	E (58.1)	1.03	E (58.0)	1.08
Glenridge Drive / I-285 WB On-Ramp	D/D	Signalized	A (3.2)	0.73	E (71.6)	1.29
Glenridge Drive / I-285 EB Off-Ramp	D/D	Signalized	C (32.5)	1.03	A (8.3)	0.64
Glenridge Connector / Johnson Ferry Road	D/D	Signalized	E (71.5)	1.12	F (93.3)	1.19

Analysis of the future year 2011 traffic volumes indicates that four of the study intersections will not operate within the LOS standard. The following lists the improvements needed to restore that intersections back to the LOS standard for the future year 2011 traffic:

- Glenridge Drive / Hammond Drive
  - Add an additional westbound left turn lane on Hammond Drive creating dual left turn lanes with protected only phasing.
  - Convert the northbound through lane on Hammond Drive that is directly adjacent to the northbound right turn lane to be a northbound through / right turn lane and provide permissive + overlap phasing for the northbound right turn movement.
  - Add a dedicated eastbound right turn lane on Hammond Drive.

- Glenridge Drive / Glenforest Road / Lakeside Driveway
  - Change the eastbound right turn phasing on Glenforest Road to permissive + overlap phasing.

- Glenridge Drive / I-285 Westbound On-Ramp
  - Change the southbound right turn phasing on Gelnridge Drive to free phasing and add a receiving lane of at least 250 feet on the I-285 Westbound On-Ramp.

- Glenridge Connector / Johnson Ferry Road
  - Add an additional northbound left turn lane on Glenridge Connector creating dual left turn lanes.
  - Add an additional southbound left turn lane on Glenridge Connector creating dual left turn lanes.

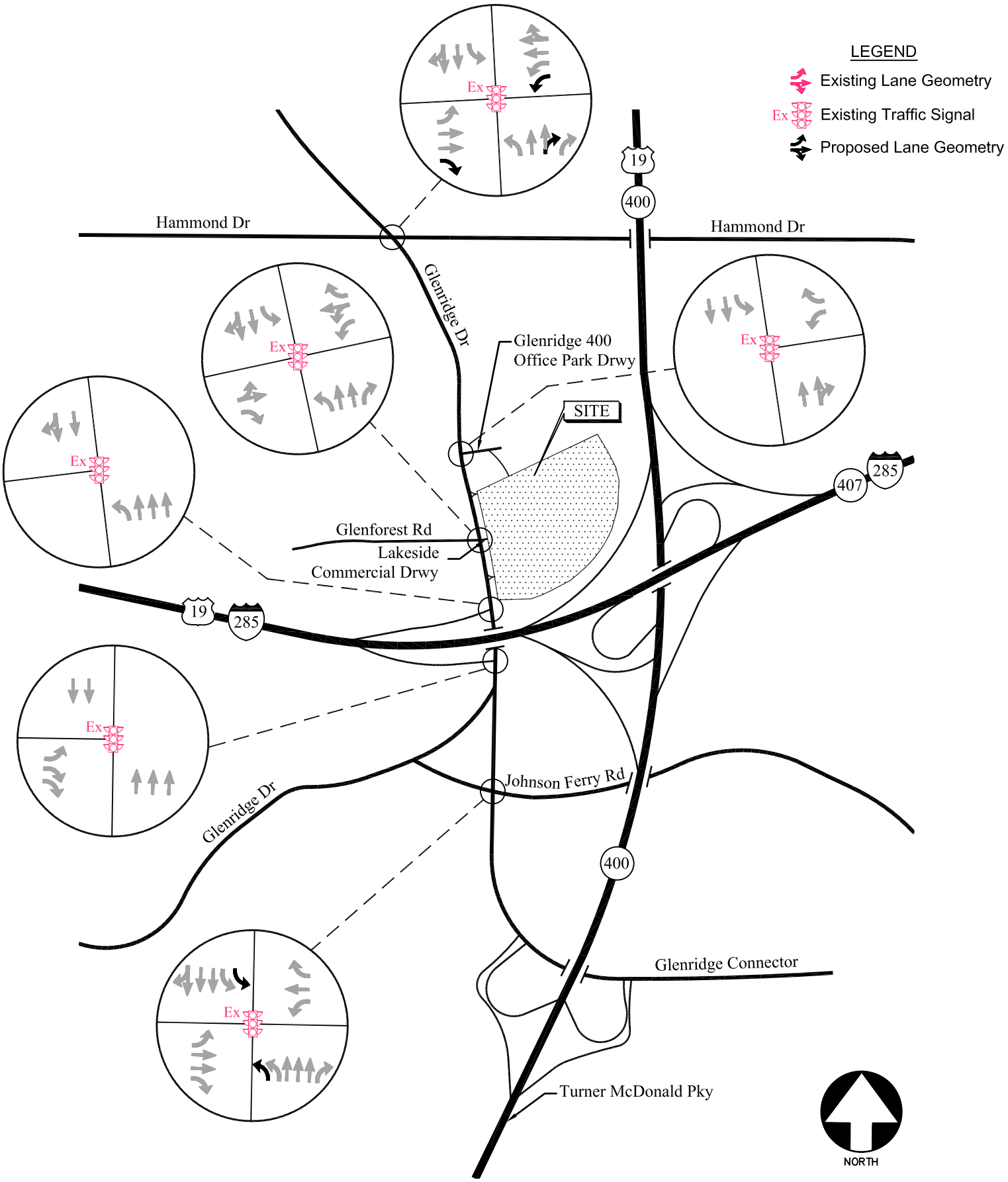
- Change the westbound right turn phasing on Johnson Ferry Road to permissive + overlap phasing.

The LOS for the above intersections in the year 2011 with the addition of site-generated traffic after the implementation of above recommended improvement is shown in Table 7.

TABLE 7
FUTURE INTERSECTION OPERATIONS WITH IMPROVEMENTS

Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M Peak Hour	
			LOS (Delay)	v/c	LOS (Delay)	v/c
Glenridge Drive / Hammond Drive	E/D	Signalized	E (70.8)	1.04	D (42.5)	0.93
Glenridge Drive / Glenforest Rd / Lakeside Driveway	D/D	Signalized	D (53.3)	1.05	D (54.3)	1.08
Glenridge Drive / I-285 WB On-Ramp	D/D	Signalized	A (5.0)	0.58	C (21.6)	0.99
Glenridge Connector / Johnson Ferry Road	D/D	Signalized	D (38.1)	0.82	D (50.6)	0.92

The future intersection traffic control and lane geometry for the study area network needed to bring all intersections to the LOS standard is shown in Figure 11.



FUTURE 2011 TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 11

A&R Engineering Inc.

9.2 Site Access Analysis

The site proposes to have one full access and two right-in/right-out driveways along Glenridge Drive. The site will also have an access to the existing Glenridge 400 Office Park Driveway to the north since the proposed site is inter-connected with the adjacent property. The future traffic volumes at the site driveways are shown in Figure 12. The recommended traffic control and lane geometry at these driveways are presented in the following sections.

The site access analysis was performed for the Future Year 2011 traffic volumes with recommended lane geometry. Results of the analysis are shown in Table 8. The recommended traffic control and lane geometry for the proposed intersections is discussed in the following pages.

TABLE 8
FUTURE SITE DRIVEWAY OPERATIONS

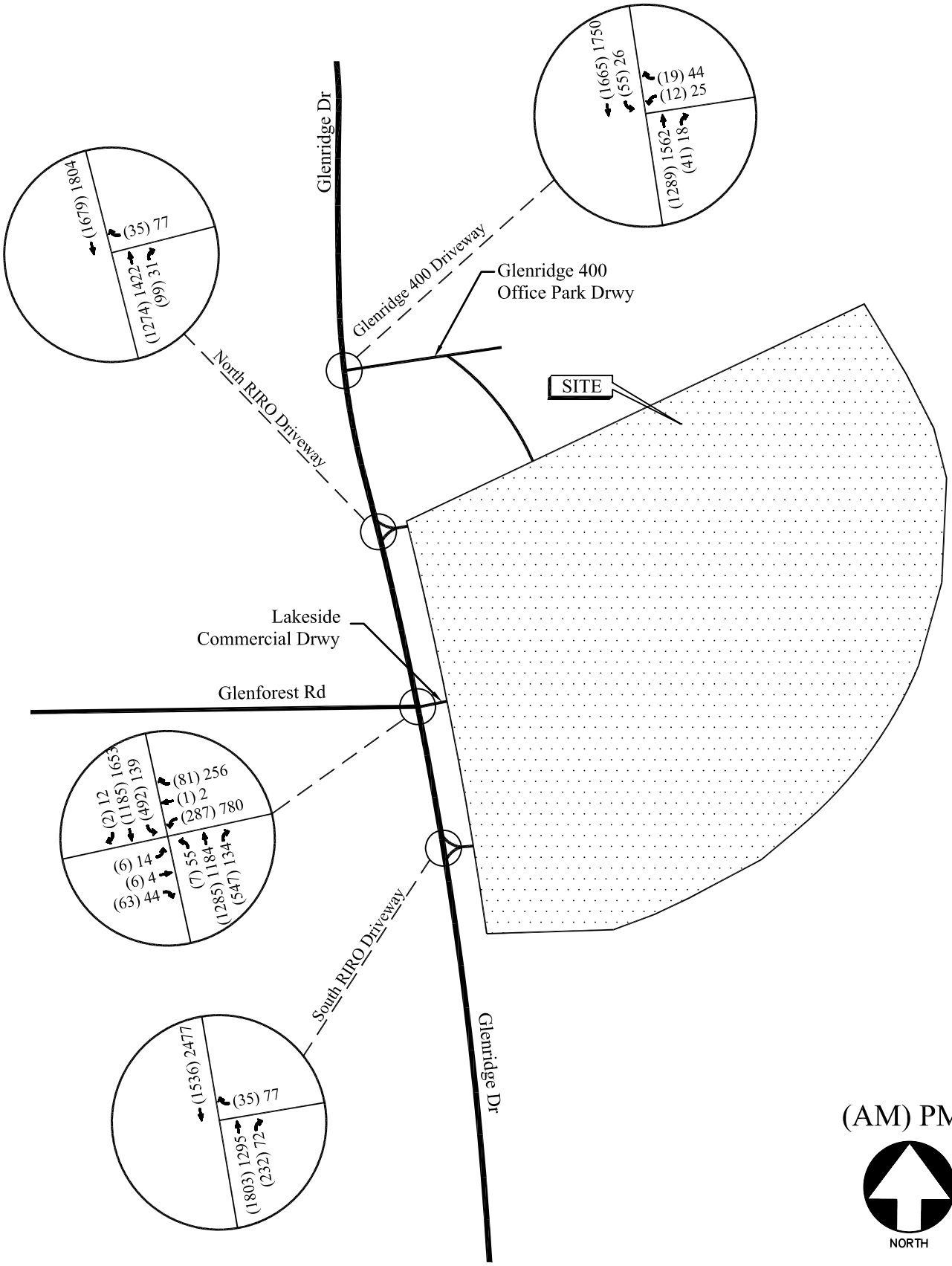
Intersection	AM/PM LOS Standard	Traffic Control	A.M. Peak Hour		P.M. Peak Hour	
			LOS (Delay)	v/c	LOS (Delay)	v/c
Glenridge Drive / Glenridge 400 Office Park Driveway	D/D	Signalized	A (3.0)	0.53	A (2.9)	0.57
Glenridge Drive / Glenforest Rd / Lakeside Driveway	D/D	Signalized	D (53.3)	1.05	D (54.3)	1.08

The following lists the recommended lane geometry improvements for the site driveways.

- Glenridge Drive / Glenforest Road / Lakeside Driveway
  - Change the eastbound right turn phasing on Glenforest Road to permissive + overlap phasing.

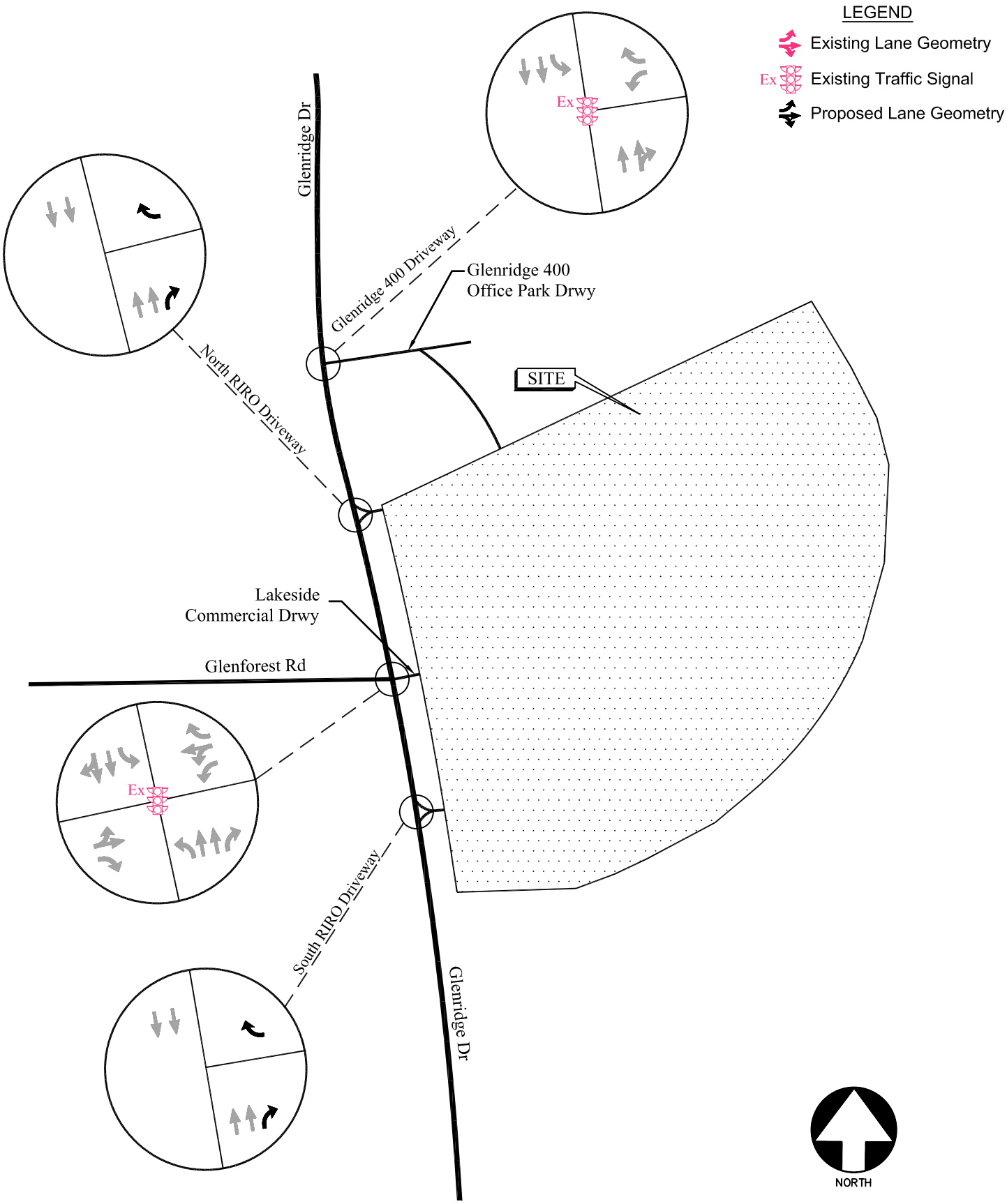
- Glenridge Drive / Right-in / Right-out Driveways
  - Add dedicated northbound right turn lane on Glenridge Drive for traffic entering the development.

The recommended traffic control and lane geometry for the site driveways is shown in Figure 13.



FUTURE 2011 SITE ACCESS PEAK HOUR VOLUMES FIGURE 12

A&R Engineering Inc.



FUTURE 2011 SITE ACCESS TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 13

A&R Engineering Inc.

10. NON-EXPEDITED CRITERIA

10.1 Regional Mobility and Location

1. Quality, Character, Convenience, and Flexibility of Transportation Options
MARTA bus route stops for routes 5 and 87 are located approximately 1/3 mile from the site and the Dunwoody MARTA rail station is located just over 1 mile from the site.

2. Vehicle Miles Traveled
The table below displays the reductions in trip generation due to mixed-use and transit reductions.

24-hour Trip Generation	11,016
- Mixed Use Reductions (internal capture)	-629
- Transit Reduction	-208
Net Trips:	10,179

3. Relationship Between Location of Proposed DRI and Regional Mobility
The proposed DRI is currently served by two MARTA bus routes that run in close proximity to the site. The site is also located within close proximity to numerous major roadway facilities including GA 400 and I-285.

4. Relationship Between Proposed DRI and Existing or Planned Transit Facilities
MARTA bus route 5 and 87 currently runs within close proximity to the site. Details for the MARTA routes are included in the Appendix.

5. Transportation Management Area Designation
The area around the proposed project is designated as a transportation management area and is managed by the Perimeter CID.

6. Offsite Trip Reduction and Trip Reduction Techniques
Due to the nature of the development, there will be significant mixed-use reductions. In addition a transit reduction has also been applied. These reductions have been applied for the AM peak hour, PM peak hour and 24-hour trips projected to be generated by the site.

7. Balance of Land Uses – Jobs/Housing Balance
Please refer to the AOI study submitted along with this report.

8. Relationships between Proposed DRI and Existing Development and Infrastructure
The proposed DRI is located in an area where adequate public facilities will be available to serve the proposed development. Regarding transportation, the traffic study has identified

transportation improvements relating to the site access, along with improvements to the surrounding roadway network, which will allow traffic in the area to operate at the LOS standard.

10.2 Pedestrian and Internal Circulation

Internal roadways will provide adequate circulation of vehicular traffic as designed in the site plan. Vehicles exiting the site will be able to move internally to the site exit without experiencing excessive delays.

11. Other Pertinent Information

At this time no other pertinent information is available with regards to this development. All significant characteristics of the proposed development are fully discussed within this report. Additionally, an Area of Influence study has been prepared and submitted at the same time as the rest of this package.

12. Significant Impact Analysis

There is capacity at all but four study network intersections to accommodate the traffic that will be generated by the proposed project. Among these four, two intersections were below the LOS standard for the base conditions analysis. After the implementation of the recommended improvements, all intersections in the study area network will operate at the LOS standard.

Appendix

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Existing AM Intersection Analysis

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	24	1160	559	354	116	224	841	324	557	16
Act Effct Green (s)	36.0	36.0	68.0	68.0	40.6	32.0	32.0	39.4	31.4	31.4
Actuated g/C Ratio	0.30	0.30	0.57	0.57	0.34	0.27	0.27	0.33	0.26	0.26
v/c Ratio	0.08	1.11	1.18	0.18	0.47	0.24	1.12	0.80	0.60	0.04
Control Delay	31.2	100.3	132.6	11.8	27.9	29.7	86.4	49.9	42.2	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	100.3	132.6	11.8	27.9	29.7	86.4	49.9	42.2	24.6
LOS	C	F	F	B	C	C	F	D	D	C
Approach Delay		98.9		85.7		69.9			44.7	
Approach LOS		F		F		E			D	
Queue Length 50th (ft)	13	~530	~469	60	47	58	~481	193	200	5
Queue Length 95th (ft)	31	#668	#692	78	99	107	#712	227	261	17
Internal Link Dist (ft)		667		649		1719			675	
Turn Bay Length (ft)	220		260		150		50	115		50
Base Capacity (vph)	302	1048	475	1973	254	944	754	404	925	419
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	1.11	1.18	0.18	0.46	0.24	1.12	0.80	0.60	0.04

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 71 (59%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay: 76.2		Intersection LOS: E	
Intersection Capacity Utilization 103.0%		ICU Level of Service G	
Analysis Period (min) 15			
~ Volume exceeds capacity, queue is theoretically infinite.			
Queue shown is maximum after two cycles.			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3415		1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.54	1.00		0.10	1.00		0.25	1.00	1.00	0.58	1.00	1.00
Satd. Flow (perm)	1006	3415		186	3461		469	3539	1583	1083	3539	1583
Volume (vph)	19	836	214	509	254	38	95	202	799	246	524	11
Peak-hour factor, PHF	0.79	0.94	0.79	0.91	0.84	0.73	0.82	0.90	0.95	0.76	0.94	0.69
Adj. Flow (vph)	24	889	271	559	302	52	116	224	841	324	557	16
RTOR Reduction (vph)	0	24	0	0	12	0	0	0	331	0	0	5
Lane Group Flow (vph)	24	1136	0	559	342	0	116	224	510	324	557	11
Turn Type	Perm			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases		6		5	2		7	4		3	8	
Permitted Phases	6			2			4		4	8		8
Actuated Green, G (s)	36.0	36.0		68.0	68.0		40.6	32.0	32.0	39.4	31.4	31.4
Effective Green, g (s)	36.0	36.0		68.0	68.0		40.6	32.0	32.0	39.4	31.4	31.4
Actuated g/C Ratio	0.30	0.30		0.57	0.57		0.34	0.27	0.27	0.33	0.26	0.26
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	302	1025		475	1961		252	944	422	401	926	414
v/s Ratio Prot		0.33		c0.27	0.10		0.03	0.06		c0.05	0.16	
v/s Ratio Perm	0.02			c0.39			0.12		c0.32	0.21		0.01
v/c Ratio	0.08	1.11		1.18	0.17		0.46	0.24	1.21	0.81	0.60	0.03
Uniform Delay, d1	30.1	42.0		48.2	12.5		29.0	34.4	44.0	35.4	38.8	32.9
Progression Factor	1.00	1.00		1.00	1.00		0.83	0.84	0.81	1.00	1.00	1.00
Incremental Delay, d2	0.5	62.8		99.7	0.2		1.3	0.1	113.3	11.4	1.1	0.0
Delay (s)	30.6	104.8		147.9	12.7		25.5	29.0	149.0	46.8	39.9	33.0
Level of Service	C	F		F	B		C	C	F	D	D	C
Approach Delay (s)		103.3			95.5			114.1			42.3	
Approach LOS		F			F			F			D	

Intersection Summary					
HCM Average Control Delay	91.5	HCM Level of Service		F	
HCM Volume to Capacity ratio	1.10				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	103.0%	ICU Level of Service		G	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	20	12	1051	36	1146
Act Effct Green (s)	6.7	6.7	110.7	110.7	110.7
Actuated g/C Ratio	0.06	0.06	0.92	0.92	0.92
v/c Ratio	0.20	0.12	0.32	0.10	0.35
Control Delay	58.3	27.4	0.3	0.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	58.3	27.4	0.3	0.2	0.2
LOS	E	C	A	A	A
Approach Delay	46.7		0.3		0.2
Approach LOS	D		A		A
Queue Length 50th (ft)	15	0	3	0	0
Queue Length 95th (ft)	22	18	3	m0	m0
Internal Link Dist (ft)	313		500		1719
Turn Bay Length (ft)	150			125	
Base Capacity (vph)	590	536	3247	356	3266
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.03	0.02	0.32	0.10	0.35

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 73 (61%), Referenced to phase 2:SBTL and 6:NBT, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.35		
Intersection Signal Delay: 0.9	Intersection LOS: A	
Intersection Capacity Utilization 40.7%	ICU Level of Service A	
Analysis Period (min) 15		

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3517		1770	3539
Flt Permitted	0.95	1.00	1.00		0.27	1.00
Satd. Flow (perm)	1770	1583	3517		500	3539
Volume (vph)	10	10	967	34	31	1112
Peak-hour factor, PHF	0.50	0.83	0.96	0.77	0.86	0.97
Adj. Flow (vph)	20	12	1007	44	36	1146
RTOR Reduction (vph)	0	12	1	0	0	0
Lane Group Flow (vph)	20	0	1050	0	36	1146
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Actuated Green, G (s)	4.5	4.5	107.5		107.5	107.5
Effective Green, g (s)	4.5	4.5	107.5		107.5	107.5
Actuated g/C Ratio	0.04	0.04	0.90		0.90	0.90
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	66	59	3151		448	3170
v/s Ratio Prot	c0.01		0.30			c0.32
v/s Ratio Perm		0.00			0.07	
v/c Ratio	0.30	0.01	0.33		0.08	0.36
Uniform Delay, d1	56.2	55.6	0.9		0.7	1.0
Progression Factor	1.00	1.00	0.06		0.03	0.08
Incremental Delay, d2	2.6	0.1	0.3		0.1	0.1
Delay (s)	58.8	55.7	0.3		0.1	0.2
Level of Service	E	E	A		A	A
Approach Delay (s)	57.6		0.3			0.2
Approach LOS	E		A			A

Intersection Summary				
HCM Average Control Delay	1.1	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.36			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	40.7%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	16	84	12	16	32	8	1005	199	210	1202
Act Effct Green (s)	7.1	7.1	7.1	7.1	120.0	98.1	93.7	93.7	106.8	105.7
Actuated g/C Ratio	0.06	0.06	0.06	0.06	1.00	0.82	0.78	0.78	0.89	0.88
v/c Ratio	0.16	0.49	0.15	0.18	0.02	0.03	0.36	0.16	0.54	0.39
Control Delay	56.1	20.9	56.9	57.1	0.0	0.8	1.4	0.4	11.3	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Total Delay	56.1	20.9	56.9	57.1	0.0	0.8	1.6	0.4	11.3	1.5
LOS	E	C	E	E	A	A	A	A	B	A
Approach Delay	26.6			26.6			1.4			2.9
Approach LOS	C			C			A			A
Queue Length 50th (ft)	12	0	9	12	0	0	21	1	14	33
Queue Length 95th (ft)	24	15	24	10	0	1	59	8	15	59
Internal Link Dist (ft)	582			233			158			93
Turn Bay Length (ft)		150	150		150	55		75	130	
Base Capacity (vph)	372	409	286	336	1583	428	2764	1254	653	3118
Starvation Cap Reductn	0	0	0	0	0	0	708	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.21	0.04	0.05	0.02	0.02	0.49	0.16	0.32	0.39

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 79 (66%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 3.6		Intersection LOS: A	
Intersection Capacity Utilization 50.9%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1817	1583	1681	1706	1583	1770	3539	1583	1770	3537	
Flt Permitted		0.84	1.00	0.75	0.77	1.00	0.22	1.00	1.00	0.26	1.00	
Satd. Flow (perm)		1559	1583	1322	1362	1583	405	3539	1583	482	3537	
Volume (vph)	5	5	53	17	1	14	6	965	181	128	994	2
Peak-hour factor, PHF	0.62	0.62	0.63	0.71	0.25	0.44	0.75	0.96	0.91	0.61	0.83	0.50
Adj. Flow (vph)	8	8	84	24	4	32	8	1005	199	210	1198	4
RTOR Reduction (vph)	0	0	80	0	0	0	0	0	21	0	0	0
Lane Group Flow (vph)	0	16	4	12	16	32	8	1005	178	210	1202	0
Turn Type	Perm		Perm	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Actuated Green, G (s)		6.0	6.0	6.0	6.0	120.0	90.8	89.7	89.7	106.0	100.9	
Effective Green, g (s)		6.0	6.0	6.0	6.0	120.0	90.8	89.7	89.7	106.0	100.9	
Actuated g/C Ratio		0.05	0.05	0.05	0.05	1.00	0.76	0.75	0.75	0.88	0.84	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		78	79	66	68	1583	319	2645	1183	558	2974	
v/s Ratio Prot							0.00	0.28		c0.04	c0.34	
v/s Ratio Perm		0.01	0.00	0.01	c0.01	0.02	0.02		0.11	0.29		
v/c Ratio		0.21	0.05	0.18	0.24	0.02	0.03	0.38	0.15	0.38	0.40	
Uniform Delay, d1		54.7	54.3	54.6	54.8	0.0	3.7	5.3	4.3	3.5	2.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	0.33	0.22	0.05	1.02	0.54	
Incremental Delay, d2		1.3	0.3	1.3	1.8	0.0	0.0	0.4	0.3	0.4	0.4	
Delay (s)		56.0	54.6	56.0	56.6	0.0	1.3	1.6	0.5	4.0	1.6	
Level of Service		E	D	E	E	A	A	A	A	A	A	
Approach Delay (s)		54.8			26.3			1.4			2.0	
Approach LOS		D			C			A			A	

Intersection Summary					
HCM Average Control Delay	4.1	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.39				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	50.9%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	363	1122	909	224
Act Effct Green (s)	116.0	120.0	102.9	102.9
Actuated g/C Ratio	0.97	1.00	0.86	0.86
v/c Ratio	0.75	0.22	0.30	0.16
Control Delay	18.5	0.1	1.5	0.9
Queue Delay	0.0	0.0	0.1	0.0
Total Delay	18.5	0.1	1.6	0.9
LOS	B	A	A	A
Approach Delay		4.6	1.5	
Approach LOS		A	A	
Queue Length 50th (ft)	77	0	31	6
Queue Length 95th (ft)	m149	m0	51	13
Internal Link Dist (ft)		339	233	
Turn Bay Length (ft)				55
Base Capacity (vph)	965	5085	3034	1370
Starvation Cap Reductn	13	0	809	0
Spillback Cap Reductn	0	0	99	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.38	0.22	0.41	0.16

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 74 (62%), Referenced to phase 2:SBT and 6:NBTL, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.75		
Intersection Signal Delay: 3.2	Intersection LOS: A	
Intersection Capacity Utilization 60.3%	ICU Level of Service B	
Analysis Period (min) 15		

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			1.00	0.91	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			1770	5085	3539	1583
Flt Permitted			0.30	1.00	1.00	1.00
Satd. Flow (perm)			550	5085	3539	1583
Volume (vph)	0	0	334	1100	864	199
Peak-hour factor, PHF	0.92	0.92	0.92	0.98	0.95	0.89
Adj. Flow (vph)	0	0	363	1122	909	224
RTOR Reduction (vph)	0	0	0	0	0	13
Lane Group Flow (vph)	0	0	363	1122	909	211
Turn Type			pm+pt			Perm
Protected Phases			1	6	2	
Permitted Phases			6			2
Actuated Green, G (s)			116.0	120.0	102.9	102.9
Effective Green, g (s)			116.0	120.0	102.9	102.9
Actuated g/C Ratio			0.97	1.00	0.86	0.86
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			624	5085	3035	1357
v/s Ratio Prot			c0.04	0.22	0.26	
v/s Ratio Perm			c0.52			0.13
v/c Ratio			0.58	0.22	0.30	0.16
Uniform Delay, d1			0.5	0.0	1.6	1.4
Progression Factor			2.77	1.00	0.67	0.58
Incremental Delay, d2			1.1	0.1	0.2	0.2
Delay (s)			2.5	0.1	1.3	1.1
Level of Service			A	A	A	A
Approach Delay (s)	0.0			0.7	1.3	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	0.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBT	SBT
Lane Group Flow (vph)	607	1009	1054	984
Act Effct Green (s)	43.9	120.0	68.1	68.1
Actuated g/C Ratio	0.37	1.00	0.57	0.57
v/c Ratio	0.94	0.36	0.37	0.49
Control Delay	58.9	0.4	8.4	13.6
Queue Delay	0.0	0.0	0.0	0.3
Total Delay	58.9	0.4	8.4	13.9
LOS	E	A	A	B
Approach Delay	22.4		8.4	13.9
Approach LOS	C		A	B
Queue Length 50th (ft)	453	0	107	240
Queue Length 95th (ft)	462	0	166	349
Internal Link Dist (ft)	644		961	339
Turn Bay Length (ft)				
Base Capacity (vph)	929	2787	2887	2009
Starvation Cap Reductn	0	0	0	418
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.65	0.36	0.37	0.62

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 91 (76%), Referenced to phase 2:SBT and 6:NBT, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.94		
Intersection Signal Delay: 16.1	Intersection LOS: B	
Intersection Capacity Utilization 60.3%	ICU Level of Service B	
Analysis Period (min) 15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.88		0.91	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	2787		5085	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	2787		5085	3539	
Volume (vph)	516	898	0	959	905	0
Peak-hour factor, PHF	0.85	0.89	0.92	0.91	0.92	0.88
Adj. Flow (vph)	607	1009	0	1054	984	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	607	1009	0	1054	984	0
Turn Type		Free				
Protected Phases	8			6	2	
Permitted Phases		Free				
Actuated Green, G (s)	43.9	120.0		68.1	68.1	
Effective Green, g (s)	43.9	120.0		68.1	68.1	
Actuated g/C Ratio	0.37	1.00		0.57	0.57	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	648	2787		2886	2008	
v/s Ratio Prot	c0.34			0.21	c0.28	
v/s Ratio Perm		0.36				
v/c Ratio	0.94	0.36		0.37	0.49	
Uniform Delay, d1	36.7	0.0		14.2	15.5	
Progression Factor	1.00	1.00		0.52	0.74	
Incremental Delay, d2	21.0	0.4		0.3	0.8	
Delay (s)	57.7	0.4		7.7	12.3	
Level of Service	E	A		A	B	
Approach Delay (s)	21.9			7.7	12.3	
Approach LOS	C			A	B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	227	537	475	92	188	342	476	479	196	736	627
Act Effct Green (s)	33.1	21.4	21.4	23.1	15.3	15.3	35.8	17.9	17.9	57.0	39.1
Actuated g/C Ratio	0.28	0.18	0.18	0.19	0.13	0.13	0.30	0.15	0.15	0.48	0.33
v/c Ratio	0.81	0.85	0.71	0.53	0.79	0.68	0.90	0.63	0.49	0.88	0.38
Control Delay	59.4	61.7	10.3	45.0	74.2	12.7	60.7	52.5	10.8	32.6	24.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	61.7	10.3	45.0	74.2	12.7	60.7	52.5	10.8	32.6	24.8
LOS	E	E	B	D	E	B	E	D	B	C	C
Approach Delay		41.5			36.1			48.8			29.0
Approach LOS		D			D			D			C
Queue Length 50th (ft)	145	212	0	54	142	0	353	130	0	503	137
Queue Length 95th (ft)	#233	#294	94	86	#253	66	435	157	68	#747	197
Internal Link Dist (ft)		570			450			677			961
Turn Bay Length (ft)	275		230	205			375		240	405	
Base Capacity (vph)	281	649	678	177	248	507	679	757	402	841	1647
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.83	0.70	0.52	0.76	0.67	0.70	0.63	0.49	0.88	0.38

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 8 (7%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 38.8		Intersection LOS: D	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	5085	1583	1770	5046	
Flt Permitted	0.24	1.00	1.00	0.26	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	442	3539	1583	484	1863	1583	1770	5085	1583	1770	5046	
Volume (vph)	207	494	423	74	175	291	452	402	176	677	547	26
Peak-hour factor, PHF	0.91	0.92	0.89	0.80	0.93	0.85	0.95	0.84	0.90	0.92	0.92	0.81
Adj. Flow (vph)	227	537	475	92	188	342	476	479	196	736	595	32
RTOR Reduction (vph)	0	0	390	0	0	298	0	0	167	0	4	0
Lane Group Flow (vph)	227	537	85	92	188	44	476	479	29	736	623	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4			6			
Actuated Green, G (s)	33.2	21.4	21.4	23.2	15.4	15.4	35.8	17.8	17.8	57.0	39.0	
Effective Green, g (s)	33.2	21.4	21.4	23.2	15.4	15.4	35.8	17.8	17.8	57.0	39.0	
Actuated g/C Ratio	0.28	0.18	0.18	0.19	0.13	0.13	0.30	0.15	0.15	0.48	0.32	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	275	631	282	177	239	203	528	754	235	841	1640	
v/s Ratio Prot	c0.09	c0.15		0.03	0.10		c0.27	0.09		c0.42	0.12	
v/s Ratio Perm	0.13		0.05	0.07		0.03			0.02			
v/c Ratio	0.83	0.85	0.30	0.52	0.79	0.22	0.90	0.64	0.12	0.88	0.38	
Uniform Delay, d1	36.8	47.8	42.8	41.5	50.7	46.9	40.4	48.0	44.3	28.3	31.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.71	0.74	
Incremental Delay, d2	17.9	10.7	0.6	2.6	15.6	0.5	18.5	4.1	1.1	9.4	0.6	
Delay (s)	54.7	58.4	43.4	44.1	66.3	47.4	58.9	52.1	45.4	29.4	23.7	
Level of Service	D	E	D	D	E	D	E	D	D	C	C	
Approach Delay (s)		52.0			52.6			53.8			26.8	
Approach LOS		D			D			D			C	

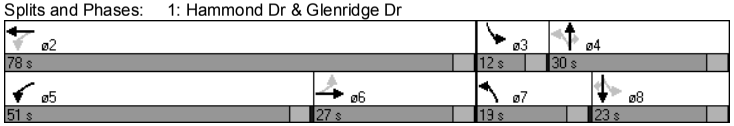
Intersection Summary					
HCM Average Control Delay	44.7	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.85				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	79.3%	ICU Level of Service		D	
Analysis Period (min)	15				
c Critical Lane Group					

Existing PM Intersection Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3405	0	1770	3405	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.267			0.148			0.174			0.354		
Satd. Flow (perm)	497	3405	0	276	3405	0	324	3539	1583	659	3539	1583
Satd. Flow (RTOR)		33			74				237			10
Volume (vph)	17	424	144	740	749	254	234	476	489	45	442	15
Lane Group Flow (vph)	32	628	0	771	1070	0	269	491	532	56	475	24
Turn Type	Perm			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases		6		5	2		7	4		3	8	
Permitted Phases	6			2			4		4	8		8
Total Split (s)	27.0	27.0	0.0	51.0	78.0	0.0	19.0	30.0	30.0	12.0	23.0	23.0
Act Effct Green (s)	23.0	23.0		74.5	74.5		37.5	28.1	28.1	25.8	18.5	18.5
Actuated g/C Ratio	0.19	0.19		0.62	0.62		0.31	0.23	0.23	0.22	0.15	0.15
v/c Ratio	0.34	0.92		1.01	0.50		0.95	0.59	0.96	0.27	0.87	0.10
Control Delay	53.2	65.8		65.4	12.5		72.7	38.9	50.7	33.0	67.1	30.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.2	65.8		65.4	12.5		72.7	38.9	50.7	33.0	67.1	30.9
LOS	D	E		E	B		E	D	D	C	E	C
Approach Delay		65.2			34.7			50.8			62.1	
Approach LOS		E			C			D			E	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 2 (2%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 47.6		Intersection LOS: D	
Intersection Capacity Utilization 95.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Hammond Dr & Glenridge Dr



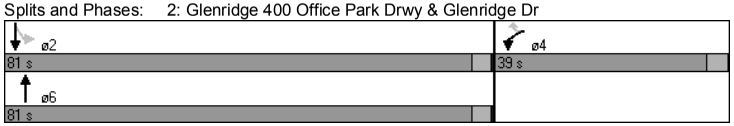
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3406		1770	3404		1770	3539	1583	1770	3539	1583
Flt Permitted	0.27	1.00		0.15	1.00		0.17	1.00	1.00	0.41	1.00	1.00
Satd. Flow (perm)	498	3406		284	3404		320	3539	1583	762	3539	1583
Volume (vph)	17	424	144	740	749	254	234	476	489	45	442	15
Peak-hour factor, PHF	0.53	0.90	0.92	0.96	0.94	0.93	0.87	0.97	0.92	0.80	0.93	0.62
Adj. Flow (vph)	32	471	157	771	797	273	269	491	532	56	475	24
RTOR Reduction (vph)	0	27	0	0	29	0	0	0	182	0	0	8
Lane Group Flow (vph)	32	601	0	771	1041	0	269	491	350	56	475	16
Turn Type	Perm			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases		6		5	2		7	4		3	8	
Permitted Phases	6			2			4		4	8		8
Actuated Green, G (s)	22.2	22.2		73.7	73.7		38.3	28.1	28.1	25.5	19.3	19.3
Effective Green, g (s)	22.2	22.2		73.7	73.7		38.3	28.1	28.1	25.5	19.3	19.3
Actuated g/C Ratio	0.18	0.18		0.61	0.61		0.32	0.23	0.23	0.21	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	92	630		763	2091		283	829	371	214	569	255
v/s Ratio Prot		0.18		c0.40	0.31		c0.12	0.14		0.01	0.13	
v/s Ratio Perm	0.06			c0.22			c0.18		0.22	0.04		0.01
v/c Ratio	0.35	0.95		1.01	0.50		0.95	0.59	0.94	0.26	0.83	0.06
Uniform Delay, d1	42.6	48.4		30.4	12.9		34.3	40.9	45.2	38.5	48.8	42.7
Progression Factor	1.00	1.00		1.00	1.00		0.82	0.86	0.75	1.00	1.00	1.00
Incremental Delay, d2	10.1	26.2		35.2	0.9		39.2	1.1	31.7	0.7	10.2	0.1
Delay (s)	52.7	74.6		65.6	13.7		67.3	36.1	65.7	39.1	59.0	42.8
Level of Service	D	E		E	B		E	D	E	D	E	D
Approach Delay (s)		73.5			35.4			54.8			56.3	
Approach LOS		E			D			D			E	

Intersection Summary					
HCM Average Control Delay	49.6	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.97				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	95.8%	ICU Level of Service		F	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1583	3529	0	1770	3539
Flt Permitted	0.950				0.185	
Satd. Flow (perm)	1770	1583	3529	0	345	3539
Satd. Flow (RTOR)		32	3			
Volume (vph)	21	24	1067	15	17	1379
Lane Group Flow (vph)	24	32	1167	0	24	1436
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Total Split (s)	39.0	39.0	81.0	0.0	81.0	81.0
Act Effct Green (s)	7.0	7.0	110.5		110.5	110.5
Actuated g/C Ratio	0.06	0.06	0.92		0.92	0.92
v/c Ratio	0.23	0.26	0.36		0.08	0.44
Control Delay	58.9	22.8	0.8		0.7	1.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	58.9	22.8	0.8		0.7	1.6
LOS	E	C	A		A	A
Approach Delay	38.2		0.8			1.6
Approach LOS	D		A			A

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 116 (97%), Referenced to phase 2:SBTL and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.44			
Intersection Signal Delay: 2.0		Intersection LOS: A	
Intersection Capacity Utilization 48.1%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Glenridge 400 Office Park Drwy & Glenridge Dr



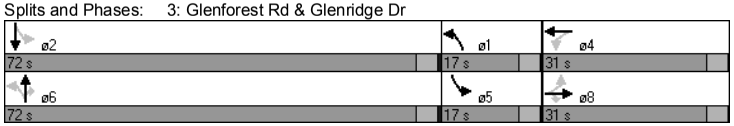
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3530		1770	3539
Flt Permitted	0.95	1.00	1.00		0.24	1.00
Satd. Flow (perm)	1770	1583	3530		441	3539
Volume (vph)	21	24	1067	15	17	1379
Peak-hour factor, PHF	0.88	0.75	0.93	0.75	0.71	0.96
Adj. Flow (vph)	24	32	1147	20	24	1436
RTOR Reduction (vph)	0	31	0	0	0	0
Lane Group Flow (vph)	24	1	1167	0	24	1436
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Actuated Green, G (s)	4.7	4.7	107.3		107.3	107.3
Effective Green, g (s)	4.7	4.7	107.3		107.3	107.3
Actuated g/C Ratio	0.04	0.04	0.89		0.89	0.89
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	69	62	3156		394	3164
v/s Ratio Prot	c0.01		0.33			c0.41
v/s Ratio Perm		0.00			0.05	
v/c Ratio	0.35	0.02	0.37		0.06	0.45
Uniform Delay, d1	56.2	55.4	1.0		0.7	1.1
Progression Factor	1.00	1.00	0.44		0.43	1.16
Incremental Delay, d2	3.0	0.1	0.3		0.1	0.2
Delay (s)	59.2	55.6	0.8		0.4	1.5
Level of Service	E	E	A		A	A
Approach Delay (s)	57.1		0.8			1.5
Approach LOS	E		A			A

Intersection Summary			
HCM Average Control Delay	2.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1799	1583	1681	1688	1583	1770	3539	1583	1770	3532	0
Flt Permitted		0.813		0.739	0.712		0.082			0.234		
Satd. Flow (perm)	0	1514	1583	1308	1260	1583	153	3539	1583	436	3532	0
Satd. Flow (RTOR)			56			120			22		1	
Volume (vph)	12	3	37	181	2	100	46	902	25	28	1386	10
Lane Group Flow (vph)	0	28	56	123	126	120	52	940	40	32	1490	0
Turn Type	Perm		Perm	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Total Split (s)	31.0	31.0	31.0	31.0	31.0	0.0	17.0	72.0	72.0	17.0	72.0	0.0
Act Effct Green (s)		16.7	16.7	16.7	16.7	120.0	94.0	89.6	89.6	93.2	87.7	
Actuated g/C Ratio		0.14	0.14	0.14	0.14	1.00	0.78	0.75	0.75	0.78	0.73	
v/c Ratio		0.13	0.21	0.68	0.72	0.08	0.27	0.36	0.03	0.08	0.58	
Control Delay		43.9	12.6	66.1	70.5	0.1	13.6	5.3	1.6	2.1	4.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	
Total Delay		43.9	12.6	66.1	70.5	0.1	13.6	5.4	1.6	2.1	4.7	
LOS		D	B	E	E	A	B	A	A	A	A	
Approach Delay		23.1			46.1			5.7			4.6	
Approach LOS		C			D			A			A	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 104 (87%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 57.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Glenforest Rd & Glenridge Dr



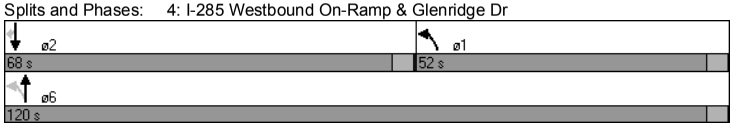
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1799	1583	1681	1688	1583	1770	3539	1583	1770	3534	
Flt Permitted		0.79	1.00	0.74	0.71	1.00	0.13	1.00	1.00	0.28	1.00	
Satd. Flow (perm)		1465	1583	1308	1261	1583	244	3539	1583	513	3534	
Volume (vph)	12	3	37	181	2	100	46	902	25	28	1386	10
Peak-hour factor, PHF	0.60	0.38	0.66	0.74	0.50	0.83	0.89	0.96	0.62	0.88	0.94	0.62
Adj. Flow (vph)	20	8	56	245	4	120	52	940	40	32	1474	16
RTOR Reduction (vph)	0	0	48	0	0	0	0	0	6	0	0	0
Lane Group Flow (vph)	0	28	8	123	126	120	52	940	34	32	1490	0
Turn Type	Perm		Perm	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Actuated Green, G (s)		16.7	16.7	16.7	16.7	120.0	93.2	88.0	88.0	89.4	86.1	
Effective Green, g (s)		16.7	16.7	16.7	16.7	120.0	93.2	88.0	88.0	89.4	86.1	
Actuated g/C Ratio		0.14	0.14	0.14	0.14	1.00	0.78	0.73	0.73	0.74	0.72	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		204	220	182	175	1583	256	2595	1161	417	2536	
v/s Ratio Prot							c0.01	0.27		0.00	c0.42	
v/s Ratio Perm		0.02	0.00	0.09	c0.10	c0.08	0.15		0.02	0.06		
v/c Ratio		0.14	0.04	0.68	0.72	0.08	0.20	0.36	0.03	0.08	0.59	
Uniform Delay, d1		45.3	44.7	49.1	49.4	0.0	11.9	5.8	4.4	6.6	8.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.29	0.77	0.41	0.42	0.43	
Incremental Delay, d2		0.3	0.1	9.5	13.6	0.1	0.4	0.4	0.0	0.1	0.9	
Delay (s)		45.6	44.7	58.6	63.0	0.1	15.7	4.8	1.8	2.9	4.5	
Level of Service		D	D	E	E	A	B	A	A	A	A	
Approach Delay (s)		45.0			41.1			5.3			4.4	
Approach LOS		D			D			A			A	

Intersection Summary					
HCM Average Control Delay	10.4	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.57				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	57.0%	ICU Level of Service		B	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	1770	5085	3539	1583
Flt Permitted			0.228			
Satd. Flow (perm)	0	0	425	5085	3539	1583
Satd. Flow (RTOR)						147
Volume (vph)	0	0	775	961	900	754
Lane Group Flow (vph)	0	0	816	1045	938	785
Turn Type			pm+pt			Perm
Protected Phases			1	6	2	
Permitted Phases			6			2
Total Split (s)	0.0	0.0	52.0	120.0	68.0	68.0
Act Effct Green (s)			116.0	120.0	64.0	64.0
Actuated g/C Ratio			0.97	1.00	0.53	0.53
v/c Ratio			0.86	0.21	0.50	0.86
Control Delay			20.3	0.1	12.0	22.0
Queue Delay			0.0	0.0	0.3	0.8
Total Delay			20.3	0.1	12.3	22.7
LOS			C	A	B	C
Approach Delay				9.0	17.0	
Approach LOS				A	B	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 108 (90%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 95.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 4: I-285 Westbound On-Ramp & Glenridge Dr



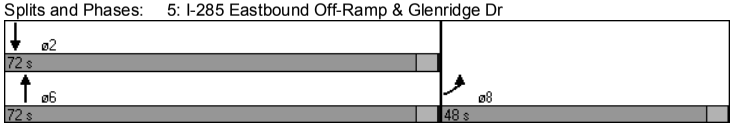
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			1.00	0.91	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			1770	5085	3539	1583
Flt Permitted			0.23	1.00	1.00	1.00
Satd. Flow (perm)			424	5085	3539	1583
Volume (vph)	0	0	775	961	900	754
Peak-hour factor, PHF	0.92	0.92	0.95	0.92	0.96	0.96
Adj. Flow (vph)	0	0	816	1045	938	785
RTOR Reduction (vph)	0	0	0	0	0	69
Lane Group Flow (vph)	0	0	816	1045	938	716
Turn Type			pm+pt			Perm
Protected Phases			1	6	2	
Permitted Phases			6			2
Actuated Green, G (s)			116.0	120.0	64.0	64.0
Effective Green, g (s)			116.0	120.0	64.0	64.0
Actuated g/C Ratio			0.97	1.00	0.53	0.53
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			948	5085	1887	844
v/s Ratio Prot			c0.34	0.21	0.27	
v/s Ratio Perm			c0.49			0.45
v/c Ratio			0.86	0.21	0.50	0.85
Uniform Delay, d1			11.3	0.0	17.8	23.9
Progression Factor			0.61	1.00	0.62	0.64
Incremental Delay, d2			7.5	0.1	0.8	8.7
Delay (s)			14.4	0.1	11.8	23.9
Level of Service			B	A	B	C
Approach Delay (s)	0.0			6.4	17.3	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	2787	0	5085	3539	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	2787	0	5085	3539	0
Satd. Flow (RTOR)		249				
Volume (vph)	155	219	0	1563	861	0
Lane Group Flow (vph)	185	249	0	1611	936	0
Turn Type		Free				
Protected Phases	8			6	2	
Permitted Phases		Free				
Total Split (s)	48.0	0.0	0.0	72.0	72.0	0.0
Act Effct Green (s)	16.4	120.0		95.6	95.6	
Actuated g/C Ratio	0.14	1.00		0.80	0.80	
v/c Ratio	0.76	0.09		0.40	0.33	
Control Delay	69.6	0.1		1.3	3.1	
Queue Delay	0.0	0.0		0.0	0.1	
Total Delay	69.6	0.1		1.3	3.2	
LOS	E	A		A	A	
Approach Delay	29.7			1.3	3.2	
Approach LOS	C			A	A	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 92 (77%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 6.0		Intersection LOS: A	
Intersection Capacity Utilization 95.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 5: I-285 Eastbound Off-Ramp & Glenridge Dr



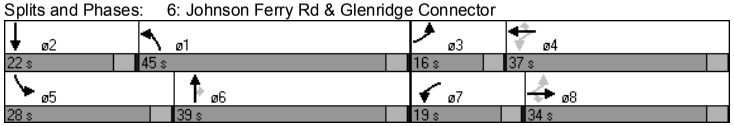
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.88		0.91	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	2787		5085	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	2787		5085	3539	
Volume (vph)	155	219	0	1563	861	0
Peak-hour factor, PHF	0.84	0.88	0.92	0.97	0.92	0.96
Adj. Flow (vph)	185	249	0	1611	936	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	185	249	0	1611	936	0
Turn Type		Free				
Protected Phases	8			6	2	
Permitted Phases		Free				
Actuated Green, G (s)	16.4	120.0		95.6	95.6	
Effective Green, g (s)	16.4	120.0		95.6	95.6	
Actuated g/C Ratio	0.14	1.00		0.80	0.80	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	242	2787		4051	2819	
v/s Ratio Prot	c0.10			c0.32	0.26	
v/s Ratio Perm		0.09				
v/c Ratio	0.76	0.09		0.40	0.33	
Uniform Delay, d1	49.9	0.0		3.6	3.4	
Progression Factor	1.00	1.00		0.28	0.75	
Incremental Delay, d2	13.4	0.1		0.2	0.3	
Delay (s)	63.3	0.1		1.2	2.8	
Level of Service	E	A		A	A	
Approach Delay (s)	27.0			1.2	2.8	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	5.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	5085	1583	1770	5065	0
Flt Permitted	0.133			0.337			0.950			0.950		
Satd. Flow (perm)	248	3539	1583	628	1863	1583	1770	5085	1583	1770	5065	0
Satd. Flow (RTOR)			388			360			56		3	
Volume (vph)	200	332	345	162	466	573	518	808	45	203	617	16
Lane Group Flow (vph)	220	410	388	205	496	644	582	842	56	223	669	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4			6			
Total Split (s)	16.0	34.0	34.0	19.0	37.0	37.0	45.0	39.0	39.0	28.0	22.0	0.0
Act Effct Green (s)	43.5	31.5	31.5	46.5	33.0	33.0	41.0	39.9	39.9	19.1	18.0	
Actuated g/C Ratio	0.36	0.26	0.26	0.39	0.28	0.28	0.34	0.33	0.33	0.16	0.15	
v/c Ratio	0.91	0.44	0.55	0.55	0.97	0.93	0.96	0.50	0.10	0.79	0.88	
Control Delay	68.9	39.1	6.9	30.0	76.3	39.1	67.7	34.1	8.6	49.3	45.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	68.9	39.1	6.9	30.0	76.3	39.1	67.7	34.1	8.6	49.3	45.6	
LOS	E	D	A	C	E	D	E	C	A	D	D	
Approach Delay		33.3			51.4			46.3			46.5	
Approach LOS		C			D			D			D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 60 (50%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 45.0		Intersection LOS: D	
Intersection Capacity Utilization 89.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Johnson Ferry Rd & Glenridge Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	5085	1583	1770	5062	
Flt Permitted	0.13	1.00	1.00	0.36	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	237	3539	1583	677	1863	1583	1770	5085	1583	1770	5062	
Volume (vph)	200	332	345	162	466	573	518	808	45	203	617	16
Peak-hour factor, PHF	0.91	0.81	0.89	0.79	0.94	0.89	0.89	0.96	0.80	0.91	0.95	0.80
Adj. Flow (vph)	220	410	388	205	496	644	582	842	56	223	649	20
RTOR Reduction (vph)	0	0	286	0	0	261	0	0	37	0	3	0
Lane Group Flow (vph)	220	410	102	205	496	383	582	842	19	223	666	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4			6			
Actuated Green, G (s)	43.5	31.5	31.5	46.5	33.0	33.0	41.0	39.9	39.9	19.1	18.0	
Effective Green, g (s)	43.5	31.5	31.5	46.5	33.0	33.0	41.0	39.9	39.9	19.1	18.0	
Actuated g/C Ratio	0.36	0.26	0.26	0.39	0.28	0.28	0.34	0.33	0.33	0.16	0.15	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	239	929	416	385	512	435	605	1691	526	282	759	
v/s Ratio Prot	c0.09	0.12		0.06	c0.27		c0.33	0.17		0.13	c0.13	
v/s Ratio Perm	0.24		0.06	0.15		0.24			0.01			
v/c Ratio	0.92	0.44	0.24	0.53	0.97	0.88	0.96	0.50	0.04	0.79	0.88	
Uniform Delay, d1	31.4	36.9	34.9	25.9	43.0	41.6	38.7	32.0	27.1	48.5	49.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.62	0.63	
Incremental Delay, d2	37.3	0.3	0.3	1.4	31.5	18.4	27.2	1.1	0.1	13.7	13.4	
Delay (s)	68.7	37.2	35.2	27.4	74.5	60.0	65.9	33.1	27.2	43.9	45.0	
Level of Service	E	D	D	C	E	E	E	C	C	D	D	
Approach Delay (s)		43.3			60.4			45.8			44.8	
Approach LOS		D			E			D			D	

Intersection Summary					
HCM Average Control Delay	49.2	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.88				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	89.9%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

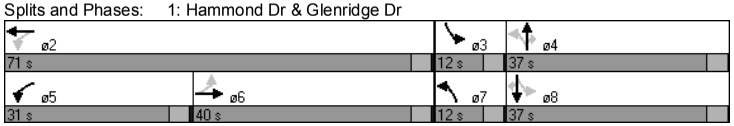
Base AM Intersection Analysis

Base 2011 AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3415	0	1770	3461	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.505			0.100			0.193			0.526		
Satd. Flow (perm)	941	3415	0	186	3461	0	360	3539	1583	980	3539	1583
Satd. Flow (RTOR)		34			26				431			7
Volume (vph)	23	997	255	607	303	45	113	241	953	293	625	13
Lane Group Flow (vph)	29	1384	0	667	423	0	138	268	1003	386	665	19
Turn Type	Perm			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases		6		5	2		7	4		3	8	
Permitted Phases	6			2			4		4	8		8
Total Split (s)	40.0	40.0	0.0	31.0	71.0	0.0	12.0	37.0	37.0	12.0	37.0	37.0
Act Effct Green (s)	36.0	36.0		67.0	67.0		41.0	33.0	33.0	41.0	33.0	33.0
Actuated g/C Ratio	0.30	0.30		0.56	0.56		0.34	0.28	0.28	0.34	0.28	0.28
v/c Ratio	0.10	1.32		1.45	0.22		0.64	0.28	1.34	0.99	0.68	0.04
Control Delay	31.7	185.3		243.8	12.8		37.7	31.4	181.7	81.4	43.1	24.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	185.3		243.8	12.8		37.7	31.4	181.7	81.4	43.1	24.2
LOS	C	F		F	B		D	C	F	F	D	C
Approach Delay		182.2			154.2			139.0			56.6	
Approach LOS		F			F			F			E	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 69 (58%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.45			
Intersection Signal Delay: 136.9		Intersection LOS: F	
Intersection Capacity Utilization 120.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Hammond Dr & Glenridge Dr



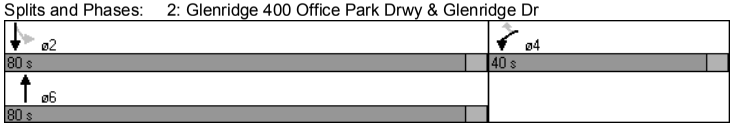
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3415		1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.51	1.00		0.10	1.00		0.19	1.00	1.00	0.53	1.00	1.00
Satd. Flow (perm)	941	3415		186	3461		360	3539	1583	980	3539	1583
Volume (vph)	23	997	255	607	303	45	113	241	953	293	625	13
Peak-hour factor, PHF	0.79	0.94	0.79	0.91	0.84	0.73	0.82	0.90	0.95	0.76	0.94	0.69
Adj. Flow (vph)	29	1061	323	667	361	62	138	268	1003	386	665	19
RTOR Reduction (vph)	0	24	0	0	11	0	0	0	312	0	0	5
Lane Group Flow (vph)	29	1360	0	667	412	0	138	268	691	386	665	14
Turn Type	Perm			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases		6		5	2		7	4		3	8	
Permitted Phases	6			2			4		4	8		8
Actuated Green, G (s)	36.0	36.0		67.0	67.0		41.0	33.0	33.0	41.0	33.0	33.0
Effective Green, g (s)	36.0	36.0		67.0	67.0		41.0	33.0	33.0	41.0	33.0	33.0
Actuated g/C Ratio	0.30	0.30		0.56	0.56		0.34	0.28	0.28	0.34	0.28	0.28
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	282	1025		460	1932		217	973	435	388	973	435
v/s Ratio Prot		0.40		c0.33	0.12		0.04	0.08		c0.07	0.19	
v/s Ratio Perm	0.03			c0.48			0.17		c0.44	0.27		0.01
v/c Ratio	0.10	1.33		1.45	0.21		0.64	0.28	1.59	0.99	0.68	0.03
Uniform Delay, d1	30.3	42.0		48.7	13.3		29.7	34.1	43.5	38.4	38.8	31.8
Progression Factor	1.00	1.00		1.00	1.00		0.91	0.89	0.81	1.00	1.00	1.00
Incremental Delay, d2	0.7	154.0		214.4	0.3		5.8	0.1	274.7	44.1	2.0	0.0
Delay (s)	31.1	196.0		263.1	13.5		32.9	30.7	310.0	82.4	40.8	31.8
Level of Service	C	F		F	B		C	C	F	F	D	C
Approach Delay (s)		192.6			166.3			229.7			55.7	
Approach LOS		F			F			F			E	

Intersection Summary					
HCM Average Control Delay	167.9	HCM Level of Service		F	
HCM Volume to Capacity ratio	1.44				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	120.9%	ICU Level of Service		H	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1583	3518	0	1770	3539
Flt Permitted	0.950				0.160	
Satd. Flow (perm)	1770	1583	3518	0	298	3539
Satd. Flow (RTOR)		14	7			
Volume (vph)	12	12	1153	41	37	1326
Lane Group Flow (vph)	24	14	1254	0	43	1367
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Total Split (s)	40.0	40.0	80.0	0.0	80.0	80.0
Act Effct Green (s)	6.9	6.9	110.5		110.5	110.5
Actuated g/C Ratio	0.06	0.06	0.92		0.92	0.92
v/c Ratio	0.24	0.13	0.39		0.16	0.42
Control Delay	58.9	26.3	0.9		0.1	0.0
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	58.9	26.3	0.9		0.1	0.0
LOS	E	C	A		A	A
Approach Delay	46.9		0.9			0.0
Approach LOS	D		A			A

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 64 (53%), Referenced to phase 2:SBTL and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay: 1.1		Intersection LOS: A	
Intersection Capacity Utilization 46.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Glenridge 400 Office Park Drwy & Glenridge Dr



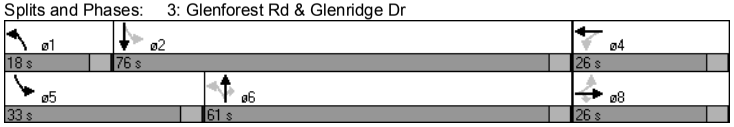
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3517		1770	3539
Flt Permitted	0.95	1.00	1.00		0.22	1.00
Satd. Flow (perm)	1770	1583	3517		401	3539
Volume (vph)	12	12	1153	41	37	1326
Peak-hour factor, PHF	0.50	0.83	0.96	0.77	0.86	0.97
Adj. Flow (vph)	24	14	1201	53	43	1367
RTOR Reduction (vph)	0	13	1	0	0	0
Lane Group Flow (vph)	24	1	1253	0	43	1367
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Actuated Green, G (s)	4.7	4.7	107.3		107.3	107.3
Effective Green, g (s)	4.7	4.7	107.3		107.3	107.3
Actuated g/C Ratio	0.04	0.04	0.89		0.89	0.89
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	69	62	3145		359	3164
v/s Ratio Prot	c0.01		0.36			c0.39
v/s Ratio Perm		0.00			0.11	
v/c Ratio	0.35	0.01	0.40		0.12	0.43
Uniform Delay, d1	56.2	55.4	1.0		0.8	1.1
Progression Factor	1.00	1.00	0.52		0.01	0.01
Incremental Delay, d2	3.0	0.1	0.3		0.1	0.0
Delay (s)	59.2	55.5	0.9		0.1	0.0
Level of Service	E	E	A		A	A
Approach Delay (s)	57.8		0.9			0.0
Approach LOS	E		A			A

Intersection Summary			
HCM Average Control Delay	1.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1818	1583	1681	1704	1583	1770	3539	1583	1770	3539	0
Flt Permitted		0.911		0.744	0.858		0.135			0.104		
Satd. Flow (perm)	0	1697	1583	1317	1518	1583	251	3539	1583	194	3539	0
Satd. Flow (RTOR)			100			39			86			
Volume (vph)	6	6	63	20	1	17	7	1151	216	153	1185	2
Lane Group Flow (vph)	0	20	100	14	18	39	9	1199	237	251	1432	0
Turn Type	Perm		Perm	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Total Split (s)	26.0	26.0	26.0	26.0	26.0	0.0	18.0	61.0	61.0	33.0	76.0	0.0
Act Effct Green (s)		7.3	7.3	7.3	7.3	120.0	94.4	88.9	88.9	104.7	102.8	
Actuated g/C Ratio		0.06	0.06	0.06	0.06	1.00	0.79	0.74	0.74	0.87	0.86	
v/c Ratio		0.19	0.53	0.18	0.20	0.02	0.03	0.46	0.20	0.77	0.47	
Control Delay		56.8	20.5	57.3	57.4	0.0	1.3	2.6	0.9	40.3	2.1	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	
Total Delay		56.8	20.5	57.3	57.4	0.0	1.3	2.7	0.9	40.3	2.2	
LOS		E	C	E	E	A	A	A	A	D	A	
Approach Delay		26.5			25.8			2.4			7.9	
Approach LOS		C			C			A			A	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 76 (63%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 57.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Glenforest Rd & Glenridge Dr



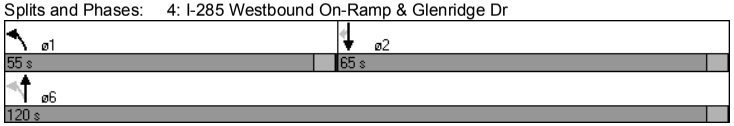
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1817	1583	1681	1703	1583	1770	3539	1583	1770	3538	
Flt Permitted		0.85	1.00	0.74	0.77	1.00	0.19	1.00	1.00	0.19	1.00	
Satd. Flow (perm)		1582	1583	1317	1362	1583	346	3539	1583	359	3538	
Volume (vph)	6	6	63	20	1	17	7	1151	216	153	1185	2
Peak-hour factor, PHF	0.62	0.62	0.63	0.71	0.25	0.44	0.75	0.96	0.91	0.61	0.83	0.50
Adj. Flow (vph)	10	10	100	28	4	39	9	1199	237	251	1428	4
RTOR Reduction (vph)	0	0	94	0	0	0	0	0	22	0	0	0
Lane Group Flow (vph)	0	20	6	14	18	39	9	1199	215	251	1432	0
Turn Type	Perm		Perm	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Actuated Green, G (s)		7.3	7.3	7.3	7.3	120.0	90.0	88.9	88.9	104.7	99.6	
Effective Green, g (s)		7.3	7.3	7.3	7.3	120.0	90.0	88.9	88.9	104.7	99.6	
Actuated g/C Ratio		0.06	0.06	0.06	0.06	1.00	0.75	0.74	0.74	0.87	0.83	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		96	96	80	83	1583	273	2622	1173	452	2937	
v/s Ratio Prot							0.00	0.34		c0.05	0.40	
v/s Ratio Perm		0.01	0.00	0.01	c0.01	0.02	0.02		0.14	c0.43		
v/c Ratio		0.21	0.06	0.18	0.22	0.02	0.03	0.46	0.18	0.56	0.49	
Uniform Delay, d1		53.6	53.1	53.5	53.6	0.0	3.8	6.1	4.7	3.9	2.9	
Progression Factor		1.00	1.00	1.00	1.00	1.00	0.45	0.29	0.15	1.68	0.62	
Incremental Delay, d2		1.1	0.3	1.0	1.3	0.0	0.0	0.6	0.3	1.4	0.6	
Delay (s)		54.7	53.4	54.5	54.9	0.0	1.7	2.3	1.1	7.9	2.4	
Level of Service		D	D	D	D	A	A	A	A	A	A	
Approach Delay (s)		53.6			24.7			2.1			3.2	
Approach LOS		D			C			A			A	

Intersection Summary					
HCM Average Control Delay	5.0	HCM Level of Service		A	
HCM Volume to Capacity ratio	0.53				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	57.5%	ICU Level of Service		B	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	1770	5085	3539	1583
Flt Permitted			0.153			
Satd. Flow (perm)	0	0	285	5085	3539	1583
Satd. Flow (RTOR)						91
Volume (vph)	0	0	398	1312	1030	237
Lane Group Flow (vph)	0	0	433	1339	1084	266
Turn Type			pm+pt			Perm
Protected Phases			1	6	2	
Permitted Phases			6			2
Total Split (s)	0.0	0.0	55.0	120.0	65.0	65.0
Act Effct Green (s)			116.0	120.0	95.6	95.6
Actuated g/C Ratio			0.97	1.00	0.80	0.80
v/c Ratio			0.91	0.26	0.38	0.21
Control Delay			39.1	0.1	2.8	1.6
Queue Delay			0.0	0.0	0.1	0.0
Total Delay			39.1	0.1	2.9	1.6
LOS			D	A	A	A
Approach Delay				9.6	2.6	
Approach LOS				A	A	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 66 (55%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 6.6		Intersection LOS: A	
Intersection Capacity Utilization 70.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: I-285 Westbound On-Ramp & Glenridge Dr



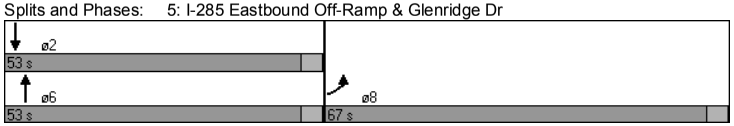
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			1.00	0.91	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			1770	5085	3539	1583
Flt Permitted			0.23	1.00	1.00	1.00
Satd. Flow (perm)			435	5085	3539	1583
Volume (vph)	0	0	398	1312	1030	237
Peak-hour factor, PHF	0.92	0.92	0.92	0.98	0.95	0.89
Adj. Flow (vph)	0	0	433	1339	1084	266
RTOR Reduction (vph)	0	0	0	0	0	19
Lane Group Flow (vph)	0	0	433	1339	1084	247
Turn Type			pm+pt			Perm
Protected Phases			1	6	2	
Permitted Phases			6			2
Actuated Green, G (s)			116.0	120.0	95.6	95.6
Effective Green, g (s)			116.0	120.0	95.6	95.6
Actuated g/C Ratio			0.97	1.00	0.80	0.80
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			603	5085	2819	1261
v/s Ratio Prot			c0.10	0.26	0.31	
v/s Ratio Perm			c0.60			0.16
v/c Ratio			0.72	0.26	0.38	0.20
Uniform Delay, d1			4.6	0.0	3.6	2.9
Progression Factor			1.22	1.00	0.56	0.50
Incremental Delay, d2			3.1	0.1	0.4	0.3
Delay (s)			8.7	0.1	2.3	1.8
Level of Service			A	A	A	A
Approach Delay (s)	0.0			2.2	2.2	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	2.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	2787	0	5085	3539	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	2787	0	5085	3539	0
Satd. Flow (RTOR)		548				
Volume (vph)	615	1071	0	1144	1079	0
Lane Group Flow (vph)	724	1203	0	1257	1173	0
Turn Type		Free				
Protected Phases	8			6	2	
Permitted Phases		Free				
Total Split (s)	67.0	0.0	0.0	53.0	53.0	0.0
Act Effct Green (s)	51.9	120.0		60.1	60.1	
Actuated g/C Ratio	0.43	1.00		0.50	0.50	
v/c Ratio	0.95	0.43		0.49	0.66	
Control Delay	53.8	0.5		13.8	19.8	
Queue Delay	0.0	0.0		0.0	0.3	
Total Delay	53.8	0.5		13.8	20.1	
LOS	D	A		B	C	
Approach Delay	20.5			13.8	20.1	
Approach LOS	C			B	C	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 84 (70%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 18.5		Intersection LOS: B	
Intersection Capacity Utilization 70.6%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: I-285 Eastbound Off-Ramp & Glenridge Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.88		0.91	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	2787		5085	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	2787		5085	3539	
Volume (vph)	615	1071	0	1144	1079	0
Peak-hour factor, PHF	0.85	0.89	0.92	0.91	0.92	0.88
Adj. Flow (vph)	724	1203	0	1257	1173	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	724	1203	0	1257	1173	0
Turn Type		Free				
Protected Phases	8			6	2	
Permitted Phases		Free				
Actuated Green, G (s)	51.9	120.0		60.1	60.1	
Effective Green, g (s)	51.9	120.0		60.1	60.1	
Actuated g/C Ratio	0.43	1.00		0.50	0.50	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	766	2787		2547	1772	
v/s Ratio Prot	c0.41			0.25	c0.33	
v/s Ratio Perm		0.43				
v/c Ratio	0.95	0.43		0.49	0.66	
Uniform Delay, d1	32.7	0.0		19.9	22.4	
Progression Factor	1.00	1.00		0.62	0.73	
Incremental Delay, d2	20.2	0.5		0.4	1.9	
Delay (s)	52.8	0.5		12.8	18.3	
Level of Service	D	A		B	B	
Approach Delay (s)	20.2			12.8	18.3	
Approach LOS	C			B	B	

Intersection Summary			
HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	5085	1583	1770	5045	0
Flt Permitted	0.200			0.250			0.950			0.950		
Satd. Flow (perm)	373	3539	1583	466	1863	1583	1770	5085	1583	1770	5045	0
Satd. Flow (RTOR)			566			408			176		6	
Volume (vph)	247	589	504	88	209	347	539	479	210	807	652	31
Lane Group Flow (vph)	271	640	566	110	225	408	567	570	233	877	747	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4			6			
Total Split (s)	18.0	26.0	26.0	12.0	20.0	20.0	48.0	21.0	21.0	61.0	34.0	0.0
Act Effct Green (s)	34.0	22.1	22.1	23.9	16.0	16.0	40.8	17.0	17.0	57.0	33.2	
Actuated g/C Ratio	0.28	0.18	0.18	0.20	0.13	0.13	0.34	0.14	0.14	0.48	0.28	
v/c Ratio	1.01	0.98	0.75	0.62	0.91	0.72	0.94	0.79	0.62	1.04	0.53	
Control Delay	95.7	79.7	10.7	50.0	89.2	12.7	63.3	58.7	21.5	61.9	26.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	95.7	79.7	10.7	50.0	89.2	12.7	63.3	58.7	21.5	61.9	26.6	
LOS	F	E	B	D	F	B	E	E	C	E	C	
Approach Delay		56.2			41.4			54.3			45.7	
Approach LOS		E			D			D			D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 119 (99%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 50.3		Intersection LOS: D	
Intersection Capacity Utilization 92.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Johnson Ferry Rd & Glenridge Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	5085	1583	1770	5046	
Flt Permitted	0.20	1.00	1.00	0.25	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	373	3539	1583	466	1863	1583	1770	5085	1583	1770	5046	
Volume (vph)	247	589	504	88	209	347	539	479	210	807	652	31
Peak-hour factor, PHF	0.91	0.92	0.89	0.80	0.93	0.85	0.95	0.84	0.90	0.92	0.92	0.81
Adj. Flow (vph)	271	640	566	110	225	408	567	570	233	877	709	38
RTOR Reduction (vph)	0	0	462	0	0	354	0	0	151	0	4	0
Lane Group Flow (vph)	271	640	104	110	225	54	567	570	82	877	743	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4			6			
Actuated Green, G (s)	34.0	22.1	22.1	23.9	16.0	16.0	40.8	17.0	17.0	57.0	33.2	
Effective Green, g (s)	34.0	22.1	22.1	23.9	16.0	16.0	40.8	17.0	17.0	57.0	33.2	
Actuated g/C Ratio	0.28	0.18	0.18	0.20	0.13	0.13	0.34	0.14	0.14	0.48	0.28	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	269	652	292	179	248	211	602	720	224	841	1396	
v/s Ratio Prot	c0.12	0.18		0.04	0.12		c0.32	0.11		c0.50	0.15	
v/s Ratio Perm	c0.17		0.07	0.08		0.03			0.05			
v/c Ratio	1.01	0.98	0.36	0.61	0.91	0.26	0.94	0.79	0.37	1.04	0.53	
Uniform Delay, d1	38.7	48.7	42.7	41.7	51.3	46.7	38.4	49.8	46.6	31.5	36.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.62	0.68	
Incremental Delay, d2	56.8	30.5	0.8	6.1	33.2	0.7	23.2	8.7	4.6	40.4	1.2	
Delay (s)	95.5	79.2	43.5	47.8	84.5	47.3	61.7	58.5	51.2	59.7	26.2	
Level of Service	F	E	D	D	F	D	E	E	D	E	C	
Approach Delay (s)		68.5			58.7			58.6			44.3	
Approach LOS		E			E			E			D	

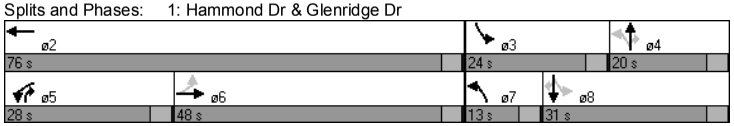
Intersection Summary					
HCM Average Control Delay	56.9	HCM Level of Service		E	
HCM Volume to Capacity ratio	1.02				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	92.0%	ICU Level of Service		F	
Analysis Period (min)	15				
c Critical Lane Group					

Base 2011 AM Improved

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3415	0	3433	3461	0	1770	3072	1441	1770	3539	1583
Flt Permitted	0.505			0.950			0.250			0.200		
Satd. Flow (perm)	941	3415	0	3433	3461	0	466	3072	1441	373	3539	1583
Satd. Flow (RTOR)		38			29			290	38			6
Volume (vph)	23	997	255	607	303	45	113	241	953	293	625	13
Lane Group Flow (vph)	29	1384	0	667	423	0	138	712	559	386	665	19
Turn Type	Perm			Prot			pm+pt		pm+ov	pm+pt		Perm
Protected Phases		6		5	2		7	4	5	3	8	
Permitted Phases	6						4		4	8		8
Total Split (s)	48.0	48.0	0.0	28.0	76.0	0.0	13.0	20.0	28.0	24.0	31.0	31.0
Act Effct Green (s)	44.0	44.0		24.0	72.0		24.9	16.0	44.0	40.0	27.1	27.1
Actuated g/C Ratio	0.37	0.37		0.20	0.60		0.21	0.13	0.37	0.33	0.23	0.23
v/c Ratio	0.08	1.08		0.97	0.20		0.71	1.08	1.01	1.08	0.83	0.05
Control Delay	25.9	87.2		75.9	10.4		45.7	80.3	73.1	105.2	54.6	28.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	87.2		75.9	10.4		45.7	80.3	73.1	105.2	54.6	28.8
LOS	C	F		E	B		D	F	E	F	D	C
Approach Delay		85.9			50.5			74.1			72.4	
Approach LOS		F			D			E			E	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 36 (30%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 71.9		Intersection LOS: E	
Intersection Capacity Utilization 101.3%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: Hammond Dr & Glenridge Dr



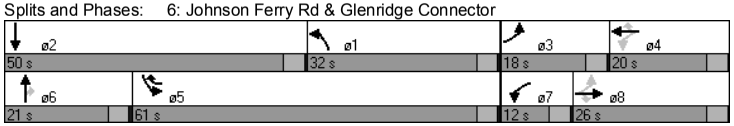
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91	0.91	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.98		1.00	0.91	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3415		3433	3461		1770	3073	1441	1770	3539	1583
Flt Permitted	0.51	1.00		0.95	1.00		0.25	1.00	1.00	0.20	1.00	1.00
Satd. Flow (perm)	941	3415		3433	3461		466	3073	1441	373	3539	1583
Volume (vph)	23	997	255	607	303	45	113	241	953	293	625	13
Peak-hour factor, PHF	0.79	0.94	0.79	0.91	0.84	0.73	0.82	0.90	0.95	0.76	0.94	0.69
Adj. Flow (vph)	29	1061	323	667	361	62	138	268	1003	386	665	19
RTOR Reduction (vph)	0	24	0	0	12	0	0	251	25	0	0	5
Lane Group Flow (vph)	29	1360	0	667	411	0	138	461	534	386	665	14
Turn Type	Perm			Prot			pm+pt		pm+ov	pm+pt		Perm
Protected Phases		6		5	2		7	4	5	3	8	
Permitted Phases	6						4		4	8		8
Actuated Green, G (s)	44.0	44.0		24.0	72.0		24.9	16.0	40.0	40.0	27.1	27.1
Effective Green, g (s)	44.0	44.0		24.0	72.0		24.9	16.0	40.0	40.0	27.1	27.1
Actuated g/C Ratio	0.37	0.37		0.20	0.60		0.21	0.13	0.33	0.33	0.23	0.23
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	345	1252		687	2077		193	410	528	357	799	357
v/s Ratio Prot		c0.40		0.19	0.12		0.05	0.15	c0.20	c0.18	0.19	
v/s Ratio Perm	0.03						0.10		0.17	c0.18		0.01
v/c Ratio	0.08	1.09		0.97	0.20		0.72	1.12	1.01	1.08	0.83	0.04
Uniform Delay, d1	24.8	38.0		47.7	10.9		41.1	52.0	40.0	52.2	44.3	36.3
Progression Factor	1.00	1.00		1.00	1.00		0.81	0.74	0.89	1.00	1.00	1.00
Incremental Delay, d2	0.5	52.2		27.1	0.2		11.4	81.7	41.1	71.1	7.4	0.0
Delay (s)	25.3	90.2		74.8	11.1		44.7	120.1	76.6	123.3	51.7	36.3
Level of Service	C	F		E	B		D	F	E	F	D	D
Approach Delay (s)		88.9			50.1			95.4			77.2	
Approach LOS		F			D			F			E	

Intersection Summary					
HCM Average Control Delay	79.8	HCM Level of Service		E	
HCM Volume to Capacity ratio	1.04				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	101.3%	ICU Level of Service		G	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	3433	5085	1583	1770	5045	0
Flt Permitted	0.200			0.250			0.950			0.950		
Satd. Flow (perm)	373	3539	1583	466	1863	1583	3433	5085	1583	1770	5045	0
Satd. Flow (RTOR)			469			41			176		8	
Volume (vph)	247	589	504	88	209	347	539	479	210	807	652	31
Lane Group Flow (vph)	271	640	566	110	225	408	567	570	233	877	747	0
Turn Type	pm+pt		Perm	pm+pt		pm+ov	Prot		Perm	Prot		
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8		8	4		4			6			
Total Split (s)	18.0	26.0	26.0	12.0	20.0	61.0	32.0	21.0	21.0	61.0	50.0	0.0
Act Effct Green (s)	34.0	22.1	22.1	23.9	16.0	73.0	28.0	17.0	17.0	57.0	46.0	
Actuated g/C Ratio	0.28	0.18	0.18	0.20	0.13	0.61	0.23	0.14	0.14	0.48	0.38	
v/c Ratio	1.01	0.98	0.84	0.62	0.91	0.42	0.71	0.79	0.62	1.04	0.39	
Control Delay	95.7	79.7	21.4	50.0	89.2	6.9	47.9	58.7	21.5	67.6	20.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	95.7	79.7	21.4	50.0	89.2	6.9	47.9	58.7	21.5	67.6	20.1	
LOS	F	E	C	D	F	A	D	E	C	E	C	
Approach Delay		60.3			38.2			47.9			45.7	
Approach LOS		E			D			D			D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 49 (41%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 49.4		Intersection LOS: D	
Intersection Capacity Utilization 92.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Johnson Ferry Rd & Glenridge Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	3433	5085	1583	1770	5046	
Flt Permitted	0.20	1.00	1.00	0.25	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	373	3539	1583	466	1863	1583	3433	5085	1583	1770	5046	
Volume (vph)	247	589	504	88	209	347	539	479	210	807	652	31
Peak-hour factor, PHF	0.91	0.92	0.89	0.80	0.93	0.85	0.95	0.84	0.90	0.92	0.92	0.81
Adj. Flow (vph)	271	640	566	110	225	408	567	570	233	877	709	38
RTOR Reduction (vph)	0	0	383	0	0	16	0	0	151	0	5	0
Lane Group Flow (vph)	271	640	183	110	225	392	567	570	82	877	742	0
Turn Type	pm+pt		Perm	pm+pt		pm+ov	Prot		Perm	Prot		
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8		8	4		4			6			
Actuated Green, G (s)	34.0	22.1	22.1	23.9	16.0	73.0	28.0	17.0	17.0	57.0	46.0	
Effective Green, g (s)	34.0	22.1	22.1	23.9	16.0	73.0	28.0	17.0	17.0	57.0	46.0	
Actuated g/C Ratio	0.28	0.18	0.18	0.20	0.13	0.61	0.23	0.14	0.14	0.48	0.38	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	269	652	292	179	248	963	801	720	224	841	1934	
v/s Ratio Prot	c0.12	0.18		0.04	0.12	0.19	0.17	c0.11		c0.50	0.15	
v/s Ratio Perm	c0.17		0.12	0.08		0.05			0.05			
v/c Ratio	1.01	0.98	0.63	0.61	0.91	0.41	0.71	0.79	0.37	1.04	0.38	
Uniform Delay, d1	38.7	48.7	45.2	41.7	51.3	12.2	42.2	49.8	46.6	31.5	26.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	0.74	
Incremental Delay, d2	56.8	30.5	4.2	6.1	33.2	0.3	2.9	8.7	4.6	40.4	0.5	
Delay (s)	95.5	79.2	49.3	47.8	84.5	12.5	45.1	58.5	51.2	66.5	20.2	
Level of Service	F	E	D	D	F	B	D	E	D	E	C	
Approach Delay (s)		70.7			39.5			51.7			45.2	
Approach LOS		E			D			D			D	

Intersection Summary					
HCM Average Control Delay	53.3	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.98				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	92.0%	ICU Level of Service		F	
Analysis Period (min)	15				
c Critical Lane Group					

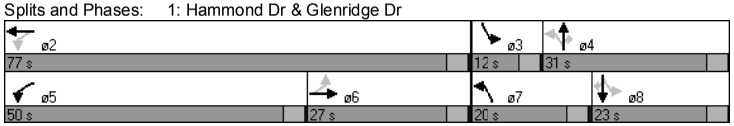
Base PM Intersection Analysis

Base 2011 PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3408	0	1770	3405	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.217			0.148			0.174			0.267		
Satd. Flow (perm)	404	3408	0	276	3405	0	324	3539	1583	497	3539	1583
Satd. Flow (RTOR)		34			72				239			10
Volume (vph)	20	506	172	882	893	303	279	568	583	54	527	18
Lane Group Flow (vph)	38	749	0	919	1276	0	321	586	634	68	567	29
Turn Type	Perm			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases		6		5	2		7	4		3	8	
Permitted Phases	6			2			4		4	8		8
Total Split (s)	27.0	27.0	0.0	50.0	77.0	0.0	20.0	31.0	31.0	12.0	23.0	23.0
Act Effct Green (s)	23.0	23.0		73.0	73.0		39.0	29.5	29.5	26.5	19.0	19.0
Actuated g/C Ratio	0.19	0.19		0.61	0.61		0.32	0.25	0.25	0.22	0.16	0.16
v/c Ratio	0.49	1.10		1.24	0.61		1.08	0.67	1.11	0.36	1.01	0.11
Control Delay	67.0	108.2		148.3	15.2		108.0	46.8	100.3	34.8	91.3	33.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	108.2		148.3	15.2		108.0	46.8	100.3	34.8	91.3	33.2
LOS	E	F		F	B		F	D	F	C	F	C
Approach Delay		106.2			70.9			81.6			83.0	
Approach LOS		F			E			F			F	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 77 (64%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.24			
Intersection Signal Delay: 81.0		Intersection LOS: F	
Intersection Capacity Utilization 111.7%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Hammond Dr & Glenridge Dr



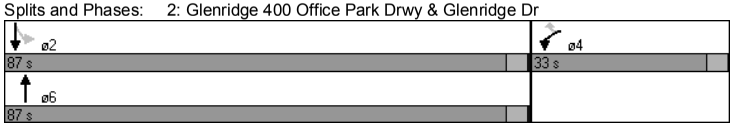
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3407		1770	3404		1770	3539	1583	1770	3539	1583
Flt Permitted	0.22	1.00		0.15	1.00		0.17	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	405	3407		284	3404		313	3539	1583	600	3539	1583
Volume (vph)	20	506	172	882	893	303	279	568	583	54	527	18
Peak-hour factor, PHF	0.53	0.90	0.92	0.96	0.94	0.93	0.87	0.97	0.92	0.80	0.93	0.62
Adj. Flow (vph)	38	562	187	919	950	326	321	586	634	68	567	29
RTOR Reduction (vph)	0	28	0	0	29	0	0	0	180	0	0	8
Lane Group Flow (vph)	38	721	0	919	1247	0	321	586	454	68	567	21
Turn Type	Perm			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases		6		5	2		7	4		3	8	
Permitted Phases	6			2			4		4	8		8
Actuated Green, G (s)	22.2	22.2		72.2	72.2		39.8	29.5	29.5	26.1	19.8	19.8
Effective Green, g (s)	22.2	22.2		72.2	72.2		39.8	29.5	29.5	26.1	19.8	19.8
Actuated g/C Ratio	0.18	0.18		0.60	0.60		0.33	0.25	0.25	0.22	0.16	0.16
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	75	630		741	2048		298	870	389	192	584	261
v/s Ratio Prot		0.21		c0.48	0.37		c0.14	0.17		0.02	0.16	
v/s Ratio Perm	0.09			c0.27			0.21		c0.29	0.06		0.01
v/c Ratio	0.51	1.14		1.24	0.61		1.08	0.67	1.17	0.35	0.97	0.08
Uniform Delay, d1	44.0	48.9		31.1	15.0		34.4	40.9	45.2	38.3	49.8	42.4
Progression Factor	1.00	1.00		1.00	1.00		1.06	1.02	1.07	1.00	1.00	1.00
Incremental Delay, d2	22.4	83.0		119.4	1.4		72.5	1.9	98.0	1.1	29.8	0.1
Delay (s)	66.4	131.9		150.5	16.4		108.8	43.7	146.6	39.4	79.7	42.5
Level of Service	E	F		F	B		F	D	F	D	E	D
Approach Delay (s)		128.7			72.5			99.6			73.9	
Approach LOS		F			E			F			E	

Intersection Summary					
HCM Average Control Delay	89.3	HCM Level of Service	F		
HCM Volume to Capacity ratio	1.17				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0		
Intersection Capacity Utilization	111.7%	ICU Level of Service	H		
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1583	3529	0	1770	3539
Flt Permitted	0.950				0.144	
Satd. Flow (perm)	1770	1583	3529	0	268	3539
Satd. Flow (RTOR)		39	3			
Volume (vph)	25	29	1272	18	20	1644
Lane Group Flow (vph)	28	39	1392	0	28	1712
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Total Split (s)	33.0	33.0	87.0	0.0	87.0	87.0
Act Effct Green (s)	7.2	7.2	107.5		107.5	107.5
Actuated g/C Ratio	0.06	0.06	0.90		0.90	0.90
v/c Ratio	0.26	0.30	0.44		0.12	0.54
Control Delay	59.3	21.9	1.1		0.8	2.4
Queue Delay	0.0	0.0	0.1		0.0	0.0
Total Delay	59.3	21.9	1.2		0.8	2.4
LOS	E	C	A		A	A
Approach Delay	37.5		1.2			2.4
Approach LOS	D		A			A

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 66 (55%), Referenced to phase 2:SBTL and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 2.6		Intersection LOS: A	
Intersection Capacity Utilization 55.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Glenridge 400 Office Park Drwy & Glenridge Dr



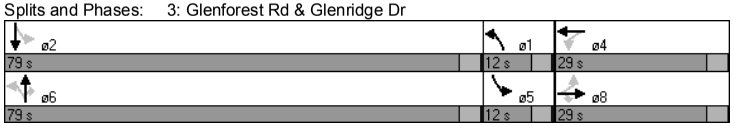
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3530		1770	3539
Flt Permitted	0.95	1.00	1.00		0.18	1.00
Satd. Flow (perm)	1770	1583	3530		341	3539
Volume (vph)	25	29	1272	18	20	1644
Peak-hour factor, PHF	0.88	0.75	0.93	0.75	0.71	0.96
Adj. Flow (vph)	28	39	1368	24	28	1712
RTOR Reduction (vph)	0	37	0	0	0	0
Lane Group Flow (vph)	28	2	1392	0	28	1712
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Actuated Green, G (s)	6.1	6.1	105.9		105.9	105.9
Effective Green, g (s)	6.1	6.1	105.9		105.9	105.9
Actuated g/C Ratio	0.05	0.05	0.88		0.88	0.88
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	90	80	3115		301	3123
v/s Ratio Prot	c0.02		0.39			c0.48
v/s Ratio Perm		0.00			0.08	
v/c Ratio	0.31	0.02	0.45		0.09	0.55
Uniform Delay, d1	54.9	54.1	1.4		0.9	1.6
Progression Factor	1.00	1.00	0.47		0.51	1.30
Incremental Delay, d2	2.0	0.1	0.4		0.1	0.1
Delay (s)	56.9	54.2	1.1		0.5	2.2
Level of Service	E	D	A		A	A
Approach Delay (s)	55.4		1.1			2.1
Approach LOS	E		A			A

Intersection Summary			
HCM Average Control Delay	2.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1801	1583	1681	1688	1583	1770	3539	1583	1770	3532	0
Flt Permitted		0.799		0.735	0.707		0.053			0.193		
Satd. Flow (perm)	0	1488	1583	1301	1251	1583	99	3539	1583	360	3532	0
Satd. Flow (RTOR)			67			143			26		2	
Volume (vph)	14	4	44	216	2	119	55	1076	30	33	1653	12
Lane Group Flow (vph)	0	34	67	146	150	143	62	1121	48	38	1778	0
Turn Type	Perm		Perm	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Total Split (s)	29.0	29.0	29.0	29.0	29.0	0.0	12.0	79.0	79.0	12.0	79.0	0.0
Act Effct Green (s)		18.7	18.7	18.7	18.7	120.0	92.0	86.8	86.8	91.2	84.9	
Actuated g/C Ratio		0.16	0.16	0.16	0.16	1.00	0.77	0.72	0.72	0.76	0.71	
v/c Ratio		0.15	0.22	0.72	0.77	0.09	0.38	0.44	0.04	0.11	0.71	
Control Delay		42.7	11.2	67.1	72.5	0.1	29.9	8.2	3.0	3.1	6.0	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	
Total Delay		42.7	11.2	67.1	72.5	0.1	29.9	8.4	3.0	3.1	6.0	
LOS		D	B	E	E	A	C	A	A	A	A	
Approach Delay		21.8			47.1			9.3			5.9	
Approach LOS		C			D			A			A	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 44 (37%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 12.6		Intersection LOS: B	
Intersection Capacity Utilization 65.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Glenforest Rd & Glenridge Dr



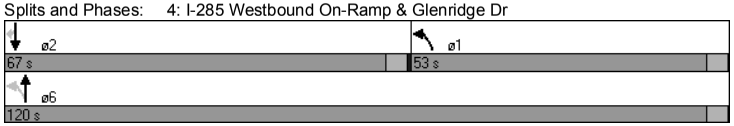
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1802	1583	1681	1687	1583	1770	3539	1583	1770	3534	
Flt Permitted		0.76	1.00	0.73	0.71	1.00	0.08	1.00	1.00	0.21	1.00	
Satd. Flow (perm)		1408	1583	1301	1251	1583	141	3539	1583	400	3534	
Volume (vph)	14	4	44	216	2	119	55	1076	30	33	1653	12
Peak-hour factor, PHF	0.60	0.38	0.66	0.74	0.50	0.83	0.89	0.96	0.62	0.88	0.94	0.62
Adj. Flow (vph)	23	11	67	292	4	143	62	1121	48	38	1759	19
RTOR Reduction (vph)	0	0	57	0	0	0	0	0	8	0	1	0
Lane Group Flow (vph)	0	34	10	146	150	143	62	1121	40	38	1777	0
Turn Type	Perm		Perm	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Actuated Green, G (s)		18.7	18.7	18.7	18.7	120.0	91.2	85.2	85.2	87.4	83.3	
Effective Green, g (s)		18.7	18.7	18.7	18.7	120.0	91.2	85.2	85.2	87.4	83.3	
Actuated g/C Ratio		0.16	0.16	0.16	0.16	1.00	0.76	0.71	0.71	0.73	0.69	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		219	247	203	195	1583	189	2513	1124	338	2453	
v/s Ratio Prot							c0.02	0.32		0.00	c0.50	
v/s Ratio Perm		0.02	0.01	0.11	c0.12	c0.09	0.23		0.03	0.08		
v/c Ratio		0.16	0.04	0.72	0.77	0.09	0.33	0.45	0.04	0.11	0.72	
Uniform Delay, d1		43.8	43.0	48.2	48.6	0.0	23.3	7.4	5.2	9.4	11.3	
Progression Factor		1.00	1.00	1.00	1.00	1.00	1.20	0.94	0.68	0.53	0.36	
Incremental Delay, d2		0.3	0.1	11.5	16.6	0.1	1.0	0.6	0.1	0.1	1.7	
Delay (s)		44.1	43.1	59.7	65.1	0.1	29.1	7.5	3.6	5.1	5.8	
Level of Service		D	D	E	E	A	C	A	A	A	A	
Approach Delay (s)		43.5			42.1			8.4			5.7	
Approach LOS		D			D			A			A	

Intersection Summary					
HCM Average Control Delay	12.2	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.69				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	65.4%	ICU Level of Service		C	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	1770	5085	3539	1583
Flt Permitted			0.165			
Satd. Flow (perm)	0	0	307	5085	3539	1583
Satd. Flow (RTOR)						84
Volume (vph)	0	0	924	1146	1073	899
Lane Group Flow (vph)	0	0	973	1246	1118	936
Turn Type			pm+pt			Perm
Protected Phases			1	6	2	
Permitted Phases			6			2
Total Split (s)	0.0	0.0	53.0	120.0	67.0	67.0
Act Effct Green (s)			116.0	120.0	63.0	63.0
Actuated g/C Ratio			0.97	1.00	0.52	0.52
v/c Ratio			1.09	0.25	0.60	1.07
Control Delay			70.9	0.1	13.2	68.3
Queue Delay			0.0	0.0	0.6	7.0
Total Delay			70.9	0.1	13.8	75.4
LOS			E	A	B	E
Approach Delay				31.1	41.9	
Approach LOS				C	D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 64 (53%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 36.3		Intersection LOS: D	
Intersection Capacity Utilization 111.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 4: I-285 Westbound On-Ramp & Glenridge Dr



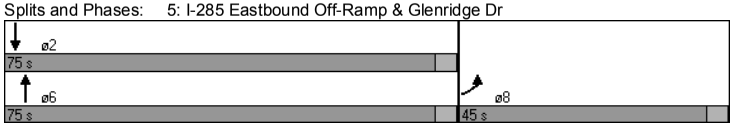
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			1.00	0.91	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			1770	5085	3539	1583
Flt Permitted			0.16	1.00	1.00	1.00
Satd. Flow (perm)			307	5085	3539	1583
Volume (vph)	0	0	924	1146	1073	899
Peak-hour factor, PHF	0.92	0.92	0.95	0.92	0.96	0.96
Adj. Flow (vph)	0	0	973	1246	1118	936
RTOR Reduction (vph)	0	0	0	0	0	40
Lane Group Flow (vph)	0	0	973	1246	1118	896
Turn Type			pm+pt			Perm
Protected Phases			1	6	2	
Permitted Phases			6			2
Actuated Green, G (s)			116.0	120.0	63.0	63.0
Effective Green, g (s)			116.0	120.0	63.0	63.0
Actuated g/C Ratio			0.97	1.00	0.52	0.52
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			894	5085	1858	831
v/s Ratio Prot			c0.44	0.25	0.32	
v/s Ratio Perm			c0.61			0.57
v/c Ratio			1.09	0.25	0.60	1.08
Uniform Delay, d1			18.2	0.0	19.8	28.5
Progression Factor			0.49	1.00	0.61	0.69
Incremental Delay, d2			55.4	0.1	1.0	50.0
Delay (s)			64.3	0.1	13.0	69.8
Level of Service			E	A	B	E
Approach Delay (s)	0.0			28.2	38.9	
Approach LOS	A			C	D	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	2787	0	5085	3539	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	2787	0	5085	3539	0
Satd. Flow (RTOR)		297				
Volume (vph)	185	261	0	1864	1027	0
Lane Group Flow (vph)	220	297	0	1922	1116	0
Turn Type		Free				
Protected Phases	8			6	2	
Permitted Phases		Free				
Total Split (s)	45.0	0.0	0.0	75.0	75.0	0.0
Act Effct Green (s)	18.8	120.0		93.2	93.2	
Actuated g/C Ratio	0.16	1.00		0.78	0.78	
v/c Ratio	0.79	0.11		0.49	0.41	
Control Delay	68.3	0.1		2.0	9.0	
Queue Delay	0.0	0.0		0.0	0.8	
Total Delay	68.3	0.1		2.0	9.8	
LOS	E	A		A	A	
Approach Delay	29.1			2.0	9.8	
Approach LOS	C			A	A	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 103 (86%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 8.4		Intersection LOS: A	
Intersection Capacity Utilization 111.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 5: I-285 Eastbound Off-Ramp & Glenridge Dr



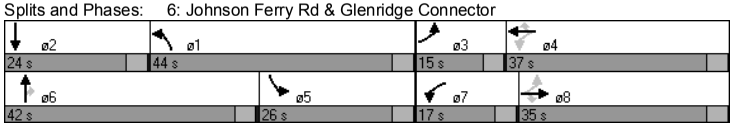
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.88		0.91	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	2787		5085	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	2787		5085	3539	
Volume (vph)	185	261	0	1864	1027	0
Peak-hour factor, PHF	0.84	0.88	0.92	0.97	0.92	0.96
Adj. Flow (vph)	220	297	0	1922	1116	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	220	297	0	1922	1116	0
Turn Type		Free				
Protected Phases	8			6	2	
Permitted Phases		Free				
Actuated Green, G (s)	18.8	120.0		93.2	93.2	
Effective Green, g (s)	18.8	120.0		93.2	93.2	
Actuated g/C Ratio	0.16	1.00		0.78	0.78	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	277	2787		3949	2749	
v/s Ratio Prot	c0.12			c0.38	0.32	
v/s Ratio Perm		0.11				
v/c Ratio	0.79	0.11		0.49	0.41	
Uniform Delay, d1	48.7	0.0		4.8	4.4	
Progression Factor	1.00	1.00		0.33	1.77	
Incremental Delay, d2	14.4	0.1		0.2	0.4	
Delay (s)	63.2	0.1		1.8	8.1	
Level of Service	E	A		A	A	
Approach Delay (s)	26.9			1.8	8.1	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	7.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	5085	1583	1770	5060	0
Flt Permitted	0.129			0.289			0.950			0.950		
Satd. Flow (perm)	240	3539	1583	538	1863	1583	1770	5085	1583	1770	5060	0
Satd. Flow (RTOR)			462			377			68		3	
Volume (vph)	239	396	411	193	556	683	618	964	54	242	736	19
Lane Group Flow (vph)	263	489	462	244	591	767	694	1004	68	266	799	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4			6			
Total Split (s)	15.0	35.0	35.0	17.0	37.0	37.0	44.0	42.0	42.0	26.0	24.0	0.0
Act Effct Green (s)	42.3	31.3	31.3	45.7	33.0	33.0	40.0	38.0	38.0	22.0	20.0	
Actuated g/C Ratio	0.35	0.26	0.26	0.38	0.28	0.28	0.33	0.32	0.32	0.18	0.17	
v/c Ratio	1.17	0.53	0.61	0.73	1.15	1.08	1.18	0.62	0.12	0.82	0.94	
Control Delay	143.5	40.6	7.1	39.5	129.4	80.0	132.7	37.0	7.4	78.0	47.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	143.5	40.6	7.1	39.5	129.4	80.0	132.7	37.0	7.4	78.0	47.5	
LOS	F	D	A	D	F	E	F	D	A	E	D	
Approach Delay		50.2			92.1			73.5			55.1	
Approach LOS		D			F			E			E	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 9 (8%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay: 70.3		Intersection LOS: E	
Intersection Capacity Utilization 104.7%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 6: Johnson Ferry Rd & Glenridge Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	5085	1583	1770	5062	
Flt Permitted	0.13	1.00	1.00	0.29	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	238	3539	1583	548	1863	1583	1770	5085	1583	1770	5062	
Volume (vph)	239	396	411	193	556	683	618	964	54	242	736	19
Peak-hour factor, PHF	0.91	0.81	0.89	0.79	0.94	0.89	0.89	0.96	0.80	0.91	0.95	0.80
Adj. Flow (vph)	263	489	462	244	591	767	694	1004	68	266	775	24
RTOR Reduction (vph)	0	0	341	0	0	273	0	0	46	0	3	0
Lane Group Flow (vph)	263	489	121	244	591	494	694	1004	22	266	797	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4			6			
Actuated Green, G (s)	42.3	31.3	31.3	45.7	33.0	33.0	40.0	38.0	38.0	22.0	20.0	
Effective Green, g (s)	42.3	31.3	31.3	45.7	33.0	33.0	40.0	38.0	38.0	22.0	20.0	
Actuated g/C Ratio	0.35	0.26	0.26	0.38	0.28	0.28	0.33	0.32	0.32	0.18	0.17	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	224	923	413	338	512	435	590	1610	501	325	844	
v/s Ratio Prot	c0.11	0.14		c0.08	c0.32		c0.39	0.20		0.15	c0.16	
v/s Ratio Perm	0.31		0.08	0.20		0.31			0.01			
v/c Ratio	1.17	0.53	0.29	0.72	1.15	1.13	1.18	0.62	0.04	0.82	0.94	
Uniform Delay, d1	33.4	38.0	35.5	27.6	43.5	43.5	40.0	34.9	28.4	47.1	49.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.24	0.54	
Incremental Delay, d2	115.2	0.6	0.4	7.4	89.8	85.4	96.1	1.8	0.2	14.2	19.4	
Delay (s)	148.6	38.6	35.9	35.0	133.3	128.9	136.1	36.7	28.6	72.5	46.1	
Level of Service	F	D	D	C	F	F	F	D	C	E	D	
Approach Delay (s)		61.4			116.2			75.5			52.7	
Approach LOS		E			F			E			D	

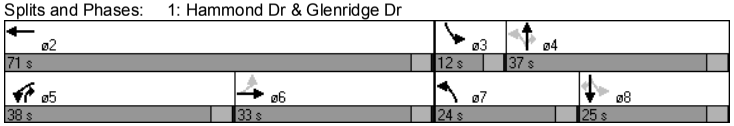
Intersection Summary					
HCM Average Control Delay	79.7	HCM Level of Service		E	
HCM Volume to Capacity ratio	1.13				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		16.0	
Intersection Capacity Utilization	104.7%	ICU Level of Service		G	
Analysis Period (min)	15				
c Critical Lane Group					

Base 2011 PM Improved

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3408	0	3433	3405	0	1770	3366	1441	1770	3539	1583
Flt Permitted	0.217			0.950			0.160			0.327		
Satd. Flow (perm)	404	3408	0	3433	3405	0	298	3366	1441	609	3539	1583
Satd. Flow (RTOR)		36			64			4	157			11
Volume (vph)	20	506	172	882	893	303	279	568	583	54	527	18
Lane Group Flow (vph)	38	749	0	919	1276	0	321	616	604	68	567	29
Turn Type	Perm			Prot			pm+pt		pm+ov	pm+pt		Perm
Protected Phases		6		5	2		7	4	5	3	8	
Permitted Phases	6						4		4	8		8
Total Split (s)	33.0	33.0	0.0	38.0	71.0	0.0	24.0	37.0	38.0	12.0	25.0	25.0
Act Effct Green (s)	29.5	29.5		33.7	67.2		44.8	35.3	73.0	28.3	20.8	20.8
Actuated g/C Ratio	0.25	0.25		0.28	0.56		0.37	0.29	0.61	0.24	0.17	0.17
v/c Ratio	0.38	0.87		0.95	0.66		0.90	0.62	0.64	0.31	0.92	0.10
Control Delay	51.3	53.1		62.4	19.5		60.7	38.5	14.1	29.8	70.8	30.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.3	53.1		62.4	19.5		60.7	38.5	14.1	29.8	70.8	30.7
LOS	D	D		E	B		E	D	B	C	E	C
Approach Delay		53.0			37.4			33.6			64.9	
Approach LOS		D			D			C			E	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 76 (63%), Referenced to phase 2:WBT and 6:EBTL, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.95		
Intersection Signal Delay: 42.2	Intersection LOS: D	
Intersection Capacity Utilization 88.0%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 1: Hammond Dr & Glenridge Dr



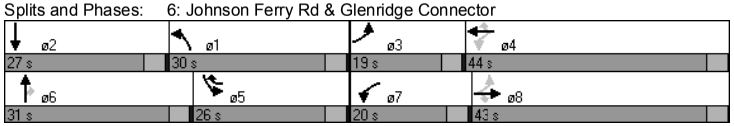
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91	0.91	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.96		1.00	0.99	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3407		3433	3404		1770	3365	1441	1770	3539	1583
Flt Permitted	0.22	1.00		0.95	1.00		0.16	1.00	1.00	0.37	1.00	1.00
Satd. Flow (perm)	405	3407		3433	3404		291	3365	1441	692	3539	1583
Volume (vph)	20	506	172	882	893	303	279	568	583	54	527	18
Peak-hour factor, PHF	0.53	0.90	0.92	0.96	0.94	0.93	0.87	0.97	0.92	0.80	0.93	0.62
Adj. Flow (vph)	38	562	187	919	950	326	321	586	634	68	567	29
RTOR Reduction (vph)	0	27	0	0	29	0	0	3	67	0	0	9
Lane Group Flow (vph)	38	722	0	919	1247	0	321	613	537	68	567	20
Turn Type	Perm			Prot			pm+pt		pm+ov	pm+pt		Perm
Protected Phases		6		5	2		7	4	5	3	8	
Permitted Phases	6						4		4	8		8
Actuated Green, G (s)	28.7	28.7		33.7	66.4		45.6	35.3	69.0	27.9	21.6	21.6
Effective Green, g (s)	28.7	28.7		33.7	66.4		45.6	35.3	69.0	27.9	21.6	21.6
Actuated g/C Ratio	0.24	0.24		0.28	0.55		0.38	0.29	0.57	0.23	0.18	0.18
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	97	815		964	1884		357	990	877	217	637	285
v/s Ratio Prot		c0.21		c0.27	0.37		c0.15	0.18	0.17	0.02	0.16	
v/s Ratio Perm	0.09						c0.19		0.20	0.06		0.01
v/c Ratio	0.39	0.89		0.95	0.66		0.90	0.62	0.61	0.31	0.89	0.07
Uniform Delay, d1	38.3	44.1		42.4	18.9		32.1	36.6	16.7	36.8	48.0	40.9
Progression Factor	1.00	1.00		1.00	1.00		1.05	0.96	0.95	1.00	1.00	1.00
Incremental Delay, d2	11.5	13.5		18.6	1.8		23.0	1.1	1.2	0.8	14.6	0.1
Delay (s)	49.8	57.6		61.0	20.7		56.7	36.1	17.0	37.6	62.6	41.0
Level of Service	D	E		E	C		E	D	B	D	E	D
Approach Delay (s)		57.2			37.6			32.9			59.1	
Approach LOS		E			D			C			E	

Intersection Summary				
HCM Average Control Delay	41.9	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.90			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	88.0%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	3433	5085	1583	1770	5060	0
Flt Permitted	0.103			0.349			0.950			0.950		
Satd. Flow (perm)	192	3539	1583	650	1863	1583	3433	5085	1583	1770	5060	0
Satd. Flow (RTOR)			462			51			68		3	
Volume (vph)	239	396	411	193	556	683	618	964	54	242	736	19
Lane Group Flow (vph)	263	489	462	244	591	767	694	1004	68	266	799	0
Turn Type	pm+pt		Perm	pm+pt		pm+ov	Prot		Perm	Prot		
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8		8	4		4			6			
Total Split (s)	19.0	43.0	43.0	20.0	44.0	26.0	30.0	31.0	31.0	26.0	27.0	0.0
Act Effct Green (s)	55.0	40.1	40.1	53.5	39.3	61.3	26.0	27.7	27.7	22.0	23.7	
Actuated g/C Ratio	0.46	0.33	0.33	0.45	0.33	0.51	0.22	0.23	0.23	0.18	0.20	
v/c Ratio	0.92	0.41	0.55	0.58	0.97	0.92	0.93	0.85	0.16	0.82	0.80	
Control Delay	68.3	32.4	5.5	24.3	69.8	34.7	66.7	52.7	9.8	71.2	33.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	68.3	32.4	5.5	24.3	69.8	34.7	66.7	52.7	9.8	71.2	33.6	
LOS	E	C	A	C	E	C	E	D	A	E	C	
Approach Delay		29.9			46.0			56.5			43.0	
Approach LOS		C			D			E			D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 12 (10%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 45.3		Intersection LOS: D	
Intersection Capacity Utilization 88.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 6: Johnson Ferry Rd & Glenridge Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	3433	5085	1583	1770	5062	
Flt Permitted	0.10	1.00	1.00	0.37	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	186	3539	1583	691	1863	1583	3433	5085	1583	1770	5062	
Volume (vph)	239	396	411	193	556	683	618	964	54	242	736	19
Peak-hour factor, PHF	0.91	0.81	0.89	0.79	0.94	0.89	0.89	0.96	0.80	0.91	0.95	0.80
Adj. Flow (vph)	263	489	462	244	591	767	694	1004	68	266	775	24
RTOR Reduction (vph)	0	0	308	0	0	25	0	0	52	0	2	0
Lane Group Flow (vph)	263	489	154	244	591	742	694	1004	16	266	797	0
Turn Type	pm+pt		Perm	pm+pt		pm+ov	Prot		Perm	Prot		
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8		8	4		4			6			
Actuated Green, G (s)	55.1	40.1	40.1	53.5	39.3	61.3	26.0	27.7	27.7	22.0	23.7	
Effective Green, g (s)	55.1	40.1	40.1	53.5	39.3	61.3	26.0	27.7	27.7	22.0	23.7	
Actuated g/C Ratio	0.46	0.33	0.33	0.45	0.33	0.51	0.22	0.23	0.23	0.18	0.20	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	283	1183	529	436	610	809	744	1174	365	325	1000	
v/s Ratio Prot	c0.12	0.14		0.07	c0.32	0.17	c0.20	c0.20		0.15	0.16	
v/s Ratio Perm	0.31		0.10	0.18		0.30			0.01			
v/c Ratio	0.93	0.41	0.29	0.56	0.97	0.92	0.93	0.86	0.04	0.82	0.80	
Uniform Delay, d1	34.4	30.9	29.5	21.8	39.7	27.0	46.1	44.2	35.9	47.1	45.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.09	0.59	
Incremental Delay, d2	34.8	0.2	0.3	1.6	28.4	15.0	18.5	8.1	0.2	14.2	6.3	
Delay (s)	69.3	31.1	29.8	23.4	68.1	42.1	64.6	52.3	36.1	65.5	33.2	
Level of Service	E	C	C	C	E	D	E	D	D	E	C	
Approach Delay (s)		38.9			48.8			56.5			41.3	
Approach LOS		D			D			E			D	

Intersection Summary					
HCM Average Control Delay	47.7	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.94				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		16.0	
Intersection Capacity Utilization	88.1%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

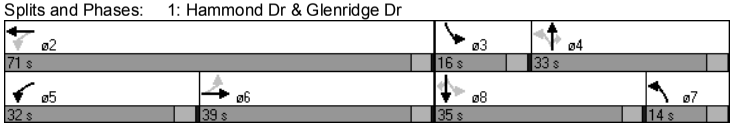
Future AM Intersection Analysis

Future 2011 AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3380	0	1770	3461	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.505			0.103			0.246			0.291		
Satd. Flow (perm)	941	3380	0	192	3461	0	458	3539	1583	542	3539	1583
Satd. Flow (RTOR)		56			26				416			6
Volume (vph)	23	997	357	760	303	45	154	282	1015	293	727	13
Lane Group Flow (vph)	29	1513	0	835	423	0	188	313	1068	386	773	19
Turn Type	Perm			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases		6		5	2		7	4		3	8	
Permitted Phases	6			2			4		4	8		8
Total Split (s)	39.0	39.0	0.0	32.0	71.0	0.0	14.0	33.0	33.0	16.0	35.0	35.0
Act Effct Green (s)	35.0	35.0		67.0	67.0		29.0	29.0	29.0	29.4	29.4	29.4
Actuated g/C Ratio	0.29	0.29		0.56	0.56		0.24	0.24	0.24	0.24	0.24	0.24
v/c Ratio	0.11	1.47		1.76	0.22		0.79	0.37	1.53	1.51	0.89	0.05
Control Delay	32.5	250.5		375.5	12.8		54.8	23.7	264.2	280.2	57.3	26.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.5	250.5		375.5	12.8		54.8	23.7	264.2	280.2	57.3	26.4
LOS	C	F		F	B		D	C	F	F	E	C
Approach Delay		246.4			253.6			191.1			129.8	
Approach LOS		F			F			F			F	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 8 (7%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.76			
Intersection Signal Delay: 207.6		Intersection LOS: F	
Intersection Capacity Utilization 128.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Hammond Dr & Glenridge Dr



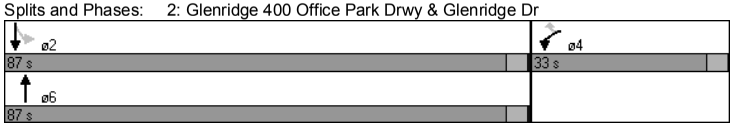
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3381		1770	3461		1770	3539	1583	1770	3539	1583
Flt Permitted	0.51	1.00		0.10	1.00		0.23	1.00	1.00	0.27	1.00	1.00
Satd. Flow (perm)	941	3381		191	3461		428	3539	1583	495	3539	1583
Volume (vph)	23	997	357	760	303	45	154	282	1015	293	727	13
Peak-hour factor, PHF	0.79	0.94	0.79	0.91	0.84	0.73	0.82	0.90	0.95	0.76	0.94	0.69
Adj. Flow (vph)	29	1061	452	835	361	62	188	313	1068	386	773	19
RTOR Reduction (vph)	0	40	0	0	11	0	0	0	315	0	0	5
Lane Group Flow (vph)	29	1473	0	835	412	0	188	313	753	386	773	14
Turn Type	Perm			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases		6		5	2		7	4		3	8	
Permitted Phases	6			2			4		4	8		8
Actuated Green, G (s)	35.0	35.0		67.0	67.0		29.0	29.0	29.0	29.4	29.4	29.4
Effective Green, g (s)	35.0	35.0		67.0	67.0		29.0	29.0	29.0	29.4	29.4	29.4
Actuated g/C Ratio	0.29	0.29		0.56	0.56		0.24	0.24	0.24	0.24	0.24	0.24
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	274	986		475	1932		233	855	383	249	867	388
v/s Ratio Prot		0.44		c0.41	0.12		0.08	0.09		c0.16	0.22	
v/s Ratio Perm	0.03			c0.57			0.12		c0.48	0.22		0.01
v/c Ratio	0.11	1.49		1.76	0.21		0.81	0.37	1.96	1.55	0.89	0.04
Uniform Delay, d1	31.1	42.5		48.2	13.3		46.4	37.9	45.5	42.2	43.8	34.5
Progression Factor	1.00	1.00		1.00	1.00		0.63	0.59	0.66	1.00	1.00	1.00
Incremental Delay, d2	0.8	227.8		349.6	0.3		17.3	0.3	443.0	266.5	11.4	0.0
Delay (s)	31.8	270.3		397.8	13.5		46.7	22.7	473.2	308.7	55.2	34.6
Level of Service	C	F		F	B		D	C	F	F	E	C
Approach Delay (s)		265.8			268.6			332.2			137.9	
Approach LOS		F			F			F			F	

Intersection Summary					
HCM Average Control Delay	258.1	HCM Level of Service		F	
HCM Volume to Capacity ratio	1.78				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	128.1%	ICU Level of Service		H	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1583	3518	0	1770	3539
Flt Permitted	0.950				0.143	
Satd. Flow (perm)	1770	1583	3518	0	266	3539
Satd. Flow (RTOR)		23	8			
Volume (vph)	12	19	1289	41	55	1665
Lane Group Flow (vph)	24	23	1396	0	64	1716
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Total Split (s)	33.0	33.0	87.0	0.0	87.0	87.0
Act Effct Green (s)	7.0	7.0	110.5		110.5	110.5
Actuated g/C Ratio	0.06	0.06	0.92		0.92	0.92
v/c Ratio	0.23	0.20	0.43		0.26	0.53
Control Delay	58.7	23.9	1.5		1.4	0.9
Queue Delay	0.0	0.0	0.3		0.0	0.0
Total Delay	58.7	23.9	1.8		1.4	1.0
LOS	E	C	A		A	A
Approach Delay	41.7		1.8			1.0
Approach LOS	D		A			A

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 21 (18%), Referenced to phase 2:SBTL and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 1.9		Intersection LOS: A	
Intersection Capacity Utilization 56.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Glenridge 400 Office Park Drwy & Glenridge Dr



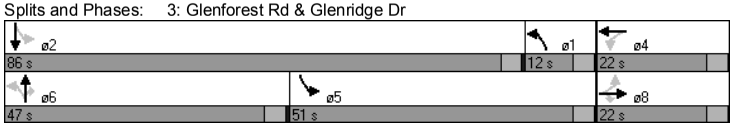
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3519		1770	3539
Flt Permitted	0.95	1.00	1.00		0.18	1.00
Satd. Flow (perm)	1770	1583	3519		343	3539
Volume (vph)	12	19	1289	41	55	1665
Peak-hour factor, PHF	0.50	0.83	0.96	0.77	0.86	0.97
Adj. Flow (vph)	24	23	1343	53	64	1716
RTOR Reduction (vph)	0	22	1	0	0	0
Lane Group Flow (vph)	24	1	1395	0	64	1716
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Actuated Green, G (s)	4.7	4.7	107.3		107.3	107.3
Effective Green, g (s)	4.7	4.7	107.3		107.3	107.3
Actuated g/C Ratio	0.04	0.04	0.89		0.89	0.89
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	69	62	3147		307	3164
v/s Ratio Prot	c0.01		0.40			c0.48
v/s Ratio Perm		0.00			0.19	
v/c Ratio	0.35	0.01	0.44		0.21	0.54
Uniform Delay, d1	56.2	55.4	1.1		0.8	1.3
Progression Factor	1.00	1.00	1.06		0.77	0.60
Incremental Delay, d2	3.0	0.1	0.2		0.1	0.1
Delay (s)	59.2	55.5	1.4		0.8	0.8
Level of Service	E	E	A		A	A
Approach Delay (s)	57.4		1.4			0.8
Approach LOS	E		A			A

Intersection Summary				
HCM Average Control Delay	1.9	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.53			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	56.0%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1818	1583	1681	1686	1583	1770	3539	1583	1770	3539	0
Flt Permitted		0.755		0.744	0.716		0.093			0.085		
Satd. Flow (perm)	0	1406	1583	1317	1267	1583	173	3539	1583	158	3539	0
Satd. Flow (RTOR)			100			184			159		1	
Volume (vph)	6	6	63	287	1	81	7	1285	547	492	1185	2
Lane Group Flow (vph)	0	20	100	202	206	184	9	1339	601	807	1432	0
Turn Type	Perm		Perm	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Total Split (s)	22.0	22.0	22.0	22.0	22.0	0.0	12.0	47.0	47.0	51.0	86.0	0.0
Act Effct Green (s)		18.0	18.0	18.0	18.0	120.0	49.1	43.0	43.0	94.0	91.6	
Actuated g/C Ratio		0.15	0.15	0.15	0.15	1.00	0.41	0.36	0.36	0.78	0.76	
v/c Ratio		0.09	0.31	1.02	1.08	0.12	0.06	1.06	0.90	1.07	0.53	
Control Delay		45.4	11.4	120.0	137.5	0.1	8.9	67.0	32.1	85.2	7.7	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	18.3	0.6	0.0	0.1	
Total Delay		45.4	11.4	120.0	137.5	0.1	8.9	85.3	32.7	85.2	7.8	
LOS		D	B	F	F	A	A	F	C	F	A	
Approach Delay		17.1			88.9			68.8			35.7	
Approach LOS		B			F			E			D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 7 (6%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 54.8		Intersection LOS: D	
Intersection Capacity Utilization 87.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Glenforest Rd & Glenridge Dr



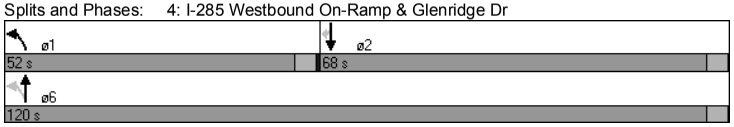
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1817	1583	1681	1687	1583	1770	3539	1583	1770	3538	
Flt Permitted		0.75	1.00	0.74	0.72	1.00	0.10	1.00	1.00	0.09	1.00	
Satd. Flow (perm)		1406	1583	1317	1267	1583	187	3539	1583	170	3538	
Volume (vph)	6	6	63	287	1	81	7	1285	547	492	1185	2
Peak-hour factor, PHF	0.62	0.62	0.63	0.71	0.25	0.44	0.75	0.96	0.91	0.61	0.83	0.50
Adj. Flow (vph)	10	10	100	404	4	184	9	1339	601	807	1428	4
RTOR Reduction (vph)	0	0	85	0	0	0	0	0	106	0	0	0
Lane Group Flow (vph)	0	20	15	202	206	184	9	1339	495	807	1432	0
Turn Type	Perm		Perm	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Actuated Green, G (s)		18.0	18.0	18.0	18.0	120.0	41.4	39.8	39.8	94.0	88.4	
Effective Green, g (s)		18.0	18.0	18.0	18.0	120.0	41.4	39.8	39.8	94.0	88.4	
Actuated g/C Ratio		0.15	0.15	0.15	0.15	1.00	0.34	0.33	0.33	0.78	0.74	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		211	237	198	190	1583	86	1174	525	803	2606	
v/s Ratio Prot							0.00	c0.38		c0.42	0.40	
v/s Ratio Perm		0.01	0.01	0.15	c0.16	0.12	0.03		0.31	0.37		
v/c Ratio		0.09	0.06	1.02	1.08	0.12	0.10	1.14	0.94	1.00	0.55	
Uniform Delay, d1		44.0	43.8	51.0	51.0	0.0	27.4	40.1	39.0	31.8	7.0	
Progression Factor		1.00	1.00	1.00	1.00	1.00	0.72	0.65	0.53	1.04	1.11	
Incremental Delay, d2		0.2	0.1	69.3	89.5	0.1	0.5	73.4	26.4	31.9	0.8	
Delay (s)		44.2	43.9	120.3	140.5	0.1	20.2	99.4	47.1	65.0	8.5	
Level of Service		D	D	F	F	A	C	F	D	E	A	
Approach Delay (s)		43.9			90.0			82.9			28.9	
Approach LOS		D			F			F			C	

Intersection Summary					
HCM Average Control Delay	58.1	HCM Level of Service		E	
HCM Volume to Capacity ratio	1.03				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	87.4%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	1770	5085	3539	1583
Flt Permitted			0.116			
Satd. Flow (perm)	0	0	216	5085	3539	1583
Satd. Flow (RTOR)						119
Volume (vph)	0	0	398	1974	1194	340
Lane Group Flow (vph)	0	0	433	2014	1257	382
Turn Type			pm+pt			Perm
Protected Phases			1	6	2	
Permitted Phases			6			2
Total Split (s)	0.0	0.0	52.0	120.0	68.0	68.0
Act Effct Green (s)			116.0	120.0	90.5	90.5
Actuated g/C Ratio			0.97	1.00	0.75	0.75
v/c Ratio			0.89	0.40	0.47	0.31
Control Delay			34.0	0.1	3.7	2.1
Queue Delay			0.1	0.0	0.3	0.3
Total Delay			34.1	0.1	4.0	2.4
LOS			C	A	A	A
Approach Delay				6.1	3.6	
Approach LOS				A	A	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 116 (97%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 5.1		Intersection LOS: A	
Intersection Capacity Utilization 89.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: I-285 Westbound On-Ramp & Glenridge Dr



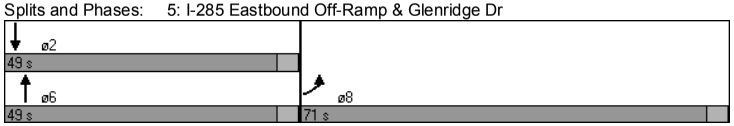
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			1.00	0.91	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			1770	5085	3539	1583
Flt Permitted			0.18	1.00	1.00	1.00
Satd. Flow (perm)			338	5085	3539	1583
Volume (vph)	0	0	398	1974	1194	340
Peak-hour factor, PHF	0.92	0.92	0.92	0.98	0.95	0.89
Adj. Flow (vph)	0	0	433	2014	1257	382
RTOR Reduction (vph)	0	0	0	0	0	29
Lane Group Flow (vph)	0	0	433	2014	1257	353
Turn Type			pm+pt			Perm
Protected Phases			1	6	2	
Permitted Phases			6			2
Actuated Green, G (s)			116.0	120.0	90.5	90.5
Effective Green, g (s)			116.0	120.0	90.5	90.5
Actuated g/C Ratio			0.97	1.00	0.75	0.75
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			583	5085	2669	1194
v/s Ratio Prot			c0.13	0.40	0.36	
v/s Ratio Perm			c0.58			0.22
v/c Ratio			0.74	0.40	0.47	0.30
Uniform Delay, d1			15.0	0.0	5.6	4.7
Progression Factor			1.10	1.00	0.50	0.41
Incremental Delay, d2			1.7	0.1	0.5	0.5
Delay (s)			18.3	0.1	3.3	2.4
Level of Service			B	A	A	A
Approach Delay (s)	0.0			3.3	3.1	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	3.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	2787	0	5085	3539	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	2787	0	5085	3539	0
Satd. Flow (RTOR)		388				
Volume (vph)	870	1071	0	1551	1243	0
Lane Group Flow (vph)	1024	1203	0	1704	1351	0
Turn Type		Free				
Protected Phases	8			6	2	
Permitted Phases		Free				
Total Split (s)	71.0	0.0	0.0	49.0	49.0	0.0
Act Effct Green (s)	67.0	120.0		45.0	45.0	
Actuated g/C Ratio	0.56	1.00		0.38	0.38	
v/c Ratio	1.04	0.43		0.89	1.02	
Control Delay	65.6	0.5		15.6	59.1	
Queue Delay	0.0	0.0		0.0	3.5	
Total Delay	65.6	0.5		15.6	62.6	
LOS	E	A		B	E	
Approach Delay	30.4			15.6	62.6	
Approach LOS	C			B	E	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 116 (97%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 33.9		Intersection LOS: C	
Intersection Capacity Utilization 89.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 5: I-285 Eastbound Off-Ramp & Glenridge Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.88		0.91	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	2787		5085	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	2787		5085	3539	
Volume (vph)	870	1071	0	1551	1243	0
Peak-hour factor, PHF	0.85	0.89	0.92	0.91	0.92	0.88
Adj. Flow (vph)	1024	1203	0	1704	1351	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1024	1203	0	1704	1351	0
Turn Type		Free				
Protected Phases	8			6	2	
Permitted Phases		Free				
Actuated Green, G (s)	67.0	120.0		45.0	45.0	
Effective Green, g (s)	67.0	120.0		45.0	45.0	
Actuated g/C Ratio	0.56	1.00		0.38	0.38	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	988	2787		1907	1327	
v/s Ratio Prot	c0.58			0.34	c0.38	
v/s Ratio Perm		0.43				
v/c Ratio	1.04	0.43		0.89	1.02	
Uniform Delay, d1	26.5	0.0		35.2	37.5	
Progression Factor	1.00	1.00		0.37	0.81	
Incremental Delay, d2	38.5	0.5		2.1	28.3	
Delay (s)	65.0	0.5		15.1	58.5	
Level of Service	E	A		B	E	
Approach Delay (s)	30.1			15.1	58.5	
Approach LOS	C			B	E	

Intersection Summary			
HCM Average Control Delay	32.5	HCM Level of Service	C
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	5085	1583	1770	5045	0
Flt Permitted	0.200			0.250			0.950			0.950		
Satd. Flow (perm)	373	3539	1583	466	1863	1583	1770	5085	1583	1770	5045	0
Satd. Flow (RTOR)			566			528			165		7	
Volume (vph)	267	589	504	88	209	449	539	764	210	848	767	39
Lane Group Flow (vph)	293	640	566	110	225	528	567	910	233	922	882	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4			6			
Total Split (s)	17.0	25.0	25.0	12.0	20.0	20.0	48.0	25.0	25.0	58.0	35.0	0.0
Act Effct Green (s)	33.0	21.1	21.1	23.9	16.0	16.0	40.8	21.0	21.0	54.0	34.2	
Actuated g/C Ratio	0.28	0.18	0.18	0.20	0.13	0.13	0.34	0.18	0.18	0.45	0.28	
v/c Ratio	1.15	1.03	0.76	0.62	0.91	0.79	0.94	1.02	0.56	1.16	0.61	
Control Delay	140.3	91.7	11.1	50.6	89.2	13.6	63.3	84.7	20.1	104.8	28.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	140.3	91.7	11.1	50.6	89.2	13.6	63.3	84.7	20.1	104.8	28.8	
LOS	F	F	B	D	F	B	E	F	C	F	C	
Approach Delay		70.8			38.0			68.8			67.6	
Approach LOS		E			D			E			E	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 44 (37%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 64.4		Intersection LOS: E	
Intersection Capacity Utilization 100.9%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 6: Johnson Ferry Rd & Glenridge Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	5085	1583	1770	5044	
Flt Permitted	0.20	1.00	1.00	0.25	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	373	3539	1583	466	1863	1583	1770	5085	1583	1770	5044	
Volume (vph)	267	589	504	88	209	449	539	764	210	848	767	39
Peak-hour factor, PHF	0.91	0.92	0.89	0.80	0.93	0.85	0.95	0.84	0.90	0.92	0.92	0.81
Adj. Flow (vph)	293	640	566	110	225	528	567	910	233	922	834	48
RTOR Reduction (vph)	0	0	466	0	0	458	0	0	136	0	5	0
Lane Group Flow (vph)	293	640	100	110	225	70	567	910	97	922	877	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4			6			
Actuated Green, G (s)	33.0	21.1	21.1	23.9	16.0	16.0	40.8	21.0	21.0	54.0	34.2	
Effective Green, g (s)	33.0	21.1	21.1	23.9	16.0	16.0	40.8	21.0	21.0	54.0	34.2	
Actuated g/C Ratio	0.28	0.18	0.18	0.20	0.13	0.13	0.34	0.18	0.18	0.45	0.29	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	254	622	278	179	248	211	602	890	277	797	1438	
v/s Ratio Prot	c0.13	0.18		0.04	0.12		0.32	c0.18		c0.52	0.17	
v/s Ratio Perm	c0.19		0.06	0.08		0.04			0.06			
v/c Ratio	1.15	1.03	0.36	0.61	0.91	0.33	0.94	1.02	0.35	1.16	0.61	
Uniform Delay, d1	39.4	49.4	43.5	41.8	51.3	47.2	38.4	49.5	43.5	33.0	37.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.70	0.73	
Incremental Delay, d2	104.3	43.7	0.8	6.1	33.2	0.9	23.2	36.0	3.5	80.1	1.3	
Delay (s)	143.7	93.1	44.3	48.0	84.5	48.1	61.7	85.5	47.0	103.2	28.3	
Level of Service	F	F	D	D	F	D	E	F	D	F	C	
Approach Delay (s)		84.6			57.6			72.3			66.6	
Approach LOS		F			E			E			E	

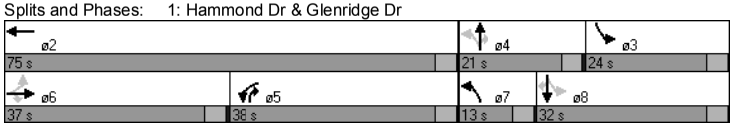
Intersection Summary					
HCM Average Control Delay	71.5	HCM Level of Service		E	
HCM Volume to Capacity ratio	1.12				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	100.9%	ICU Level of Service		G	
Analysis Period (min)	15				
c Critical Lane Group					

Future 2011 AM Improved

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	1583	3433	3461	0	1770	3116	1441	1770	3539	1583
Flt Permitted	0.460			0.950			0.500			0.500		
Satd. Flow (perm)	857	3539	1583	3433	3461	0	931	3116	1441	931	3539	1583
Satd. Flow (RTOR)			161		28			206	36			5
Volume (vph)	23	997	357	760	303	45	154	282	1015	293	727	13
Lane Group Flow (vph)	29	1061	452	835	423	0	188	679	702	386	773	19
Turn Type	Perm		Perm	Prot			pm+pt		pm+ov	pm+pt		Perm
Protected Phases		6		5	2		7	4	5	3	8	
Permitted Phases	6		6				4		4	8		8
Total Split (s)	37.0	37.0	37.0	38.0	75.0	0.0	13.0	21.0	38.0	24.0	32.0	32.0
Act Effct Green (s)	33.0	33.0	33.0	34.0	71.0		17.0	17.0	55.0	28.0	28.0	28.0
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.59		0.14	0.14	0.46	0.23	0.23	0.23
v/c Ratio	0.12	1.09	0.82	0.86	0.21		0.96	1.10	1.03	1.08	0.94	0.05
Control Delay	34.5	97.9	39.2	50.9	10.9		83.7	82.6	52.9	116.1	64.6	29.5
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.5	97.9	39.2	50.9	10.9		83.7	82.6	52.9	116.1	64.6	29.5
LOS	C	F	D	D	B		F	F	D	F	E	C
Approach Delay		79.5			37.4			69.4			80.9	
Approach LOS		E			D			E			F	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 83 (69%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay: 67.4		Intersection LOS: E	
Intersection Capacity Utilization 97.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: Hammond Dr & Glenridge Dr



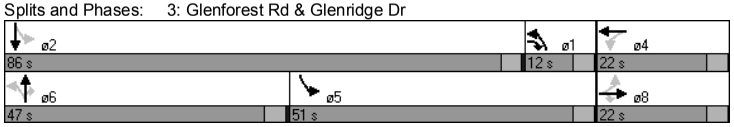
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	0.91	0.91	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.98		1.00	0.92	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3461		1770	3116	1441	1770	3539	1583
Flt Permitted	0.46	1.00	1.00	0.95	1.00		0.50	1.00	1.00	0.50	1.00	1.00
Satd. Flow (perm)	858	3539	1583	3433	3461		931	3116	1441	931	3539	1583
Volume (vph)	23	997	357	760	303	45	154	282	1015	293	727	13
Peak-hour factor, PHF	0.79	0.94	0.79	0.91	0.84	0.73	0.82	0.90	0.95	0.76	0.94	0.69
Adj. Flow (vph)	29	1061	452	835	361	62	188	313	1068	386	773	19
RTOR Reduction (vph)	0	0	117	0	11	0	0	177	21	0	0	4
Lane Group Flow (vph)	29	1061	335	835	412	0	188	502	681	386	773	15
Turn Type	Perm		Perm	Prot			pm+pt		pm+ov	pm+pt		Perm
Protected Phases		6		5	2		7	4	5	3	8	
Permitted Phases	6		6				4		4	8		8
Actuated Green, G (s)	33.0	33.0	33.0	34.0	71.0		17.0	17.0	51.0	28.0	28.0	28.0
Effective Green, g (s)	33.0	33.0	33.0	34.0	71.0		17.0	17.0	51.0	28.0	28.0	28.0
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.59		0.14	0.14	0.42	0.23	0.23	0.23
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	236	973	435	973	2048		195	441	660	357	826	369
v/s Ratio Prot		c0.30		0.24	0.12		0.07	c0.16	c0.29	c0.18	0.22	
v/s Ratio Perm	0.03		0.21				0.06		0.18	0.07		0.01
v/c Ratio	0.12	1.09	0.77	0.86	0.20		0.96	1.14	1.03	1.08	0.94	0.04
Uniform Delay, d1	32.6	43.5	40.0	40.7	11.4		57.4	51.5	34.5	46.6	45.1	35.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.51	0.39	0.21	1.00	1.00	1.00
Incremental Delay, d2	1.1	56.7	12.4	7.6	0.2		52.0	85.5	42.6	71.1	17.6	0.0
Delay (s)	33.7	100.2	52.4	48.3	11.6		81.4	105.5	49.7	117.7	62.7	35.7
Level of Service	C	F	D	D	B		F	F	D	F	E	D
Approach Delay (s)		85.0			36.0			77.6			80.3	
Approach LOS		F			D			E			F	

Intersection Summary					
HCM Average Control Delay	70.8	HCM Level of Service		E	
HCM Volume to Capacity ratio	1.04				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	97.5%	ICU Level of Service		F	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1818	1583	1681	1686	1583	1770	3539	1583	1770	3539	0
Flt Permitted		0.755		0.744	0.716		0.093			0.085		
Satd. Flow (perm)	0	1406	1583	1317	1267	1583	173	3539	1583	158	3539	0
Satd. Flow (RTOR)			67			184			159		1	
Volume (vph)	6	6	63	287	1	81	7	1285	547	492	1185	2
Lane Group Flow (vph)	0	20	100	202	206	184	9	1339	601	807	1432	0
Turn Type	Perm		pm+ov	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Total Split (s)	22.0	22.0	12.0	22.0	22.0	0.0	12.0	47.0	47.0	51.0	86.0	0.0
Act Effct Green (s)		18.0	30.0	18.0	18.0	120.0	51.0	43.0	43.0	94.0	82.0	
Actuated g/C Ratio		0.15	0.25	0.15	0.15	1.00	0.42	0.36	0.36	0.78	0.68	
v/c Ratio		0.09	0.22	1.02	1.08	0.12	0.05	1.06	0.90	1.07	0.59	
Control Delay		45.4	15.5	120.0	137.5	0.1	10.3	69.2	34.7	87.5	11.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	18.3	0.6	0.0	0.1	
Total Delay		45.4	15.5	120.0	137.5	0.1	10.3	87.5	35.3	87.5	11.4	
LOS		D	B	F	F	A	B	F	D	F	B	
Approach Delay		20.5			88.9			71.0			38.9	
Approach LOS		C			F			E			D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 80 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 57.3		Intersection LOS: E	
Intersection Capacity Utilization 87.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Glenforest Rd & Glenridge Dr



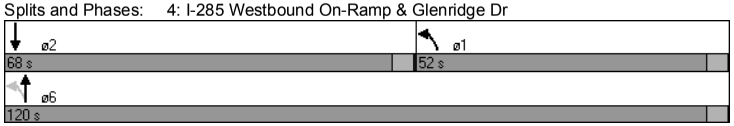
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1817	1583	1681	1687	1583	1770	3539	1583	1770	3538	
Flt Permitted		0.75	1.00	0.74	0.72	1.00	0.09	1.00	1.00	0.09	1.00	
Satd. Flow (perm)		1406	1583	1317	1267	1583	173	3539	1583	159	3538	
Volume (vph)	6	6	63	287	1	81	7	1285	547	492	1185	2
Peak-hour factor, PHF	0.62	0.62	0.63	0.71	0.25	0.44	0.75	0.96	0.91	0.61	0.83	0.50
Adj. Flow (vph)	10	10	100	404	4	184	9	1339	601	807	1428	4
RTOR Reduction (vph)	0	0	52	0	0	0	0	0	102	0	0	0
Lane Group Flow (vph)	0	20	48	202	206	184	9	1339	499	807	1432	0
Turn Type	Perm		pm+ov	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Actuated Green, G (s)		18.0	26.0	18.0	18.0	120.0	51.0	43.0	43.0	94.0	82.0	
Effective Green, g (s)		18.0	26.0	18.0	18.0	120.0	51.0	43.0	43.0	94.0	82.0	
Actuated g/C Ratio		0.15	0.22	0.15	0.15	1.00	0.42	0.36	0.36	0.78	0.68	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		211	396	198	190	1583	180	1268	567	756	2418	
v/s Ratio Prot			0.01				0.00	0.38		c0.42	0.40	
v/s Ratio Perm		0.01	0.02	0.15	c0.16	0.12	0.02		0.32	c0.42		
v/c Ratio		0.09	0.12	1.02	1.08	0.12	0.05	1.06	0.88	1.07	0.59	
Uniform Delay, d1		44.0	37.8	51.0	51.0	0.0	22.3	38.5	36.1	33.4	10.1	
Progression Factor		1.00	1.00	1.00	1.00	1.00	0.89	0.71	0.63	1.13	1.00	
Incremental Delay, d2		0.2	0.1	69.3	89.5	0.1	0.1	40.9	16.9	51.2	1.0	
Delay (s)		44.2	37.9	120.3	140.5	0.1	19.9	68.4	39.8	88.9	11.1	
Level of Service		D	D	F	F	A	B	E	D	F	B	
Approach Delay (s)		39.0			90.0			59.3			39.2	
Approach LOS		D			F			E			D	

Intersection Summary					
HCM Average Control Delay	53.3	HCM Level of Service		D	
HCM Volume to Capacity ratio	1.05				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	87.4%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	1770	5085	3539	1583
Flt Permitted			0.129			
Satd. Flow (perm)	0	0	240	5085	3539	1583
Satd. Flow (RTOR)						55
Volume (vph)	0	0	398	1974	1194	340
Lane Group Flow (vph)	0	0	433	2014	1257	382
Turn Type			pm+pt			Free
Protected Phases			1	6	2	
Permitted Phases			6			Free
Total Split (s)	0.0	0.0	52.0	120.0	68.0	0.0
Act Effct Green (s)			116.0	120.0	64.0	120.0
Actuated g/C Ratio			0.97	1.00	0.53	1.00
v/c Ratio			0.51	0.40	0.67	0.24
Control Delay			20.8	0.1	10.1	0.3
Queue Delay			132.7	0.0	0.6	0.0
Total Delay			153.5	0.1	10.7	0.3
LOS			F	A	B	A
Approach Delay				27.2	8.3	
Approach LOS				C	A	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 70 (58%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 19.6		Intersection LOS: B	
Intersection Capacity Utilization 89.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: I-285 Westbound On-Ramp & Glenridge Dr



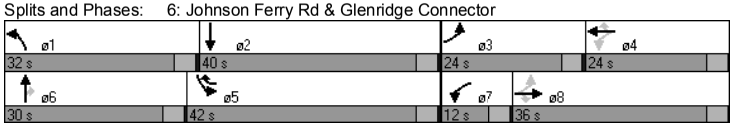
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			1.00	0.91	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			1770	5085	3539	1583
Flt Permitted			0.13	1.00	1.00	1.00
Satd. Flow (perm)			240	5085	3539	1583
Volume (vph)	0	0	398	1974	1194	340
Peak-hour factor, PHF	0.92	0.92	0.92	0.98	0.95	0.89
Adj. Flow (vph)	0	0	433	2014	1257	382
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	433	2014	1257	382
Turn Type			pm+pt			Free
Protected Phases			1	6	2	
Permitted Phases			6			Free
Actuated Green, G (s)			116.0	120.0	64.0	120.0
Effective Green, g (s)			116.0	120.0	64.0	120.0
Actuated g/C Ratio			0.97	1.00	0.53	1.00
Clearance Time (s)			4.0	4.0	4.0	
Vehicle Extension (s)			3.0	3.0	3.0	
Lane Grp Cap (vph)			844	5085	1887	1583
v/s Ratio Prot			c0.21	0.40	c0.36	
v/s Ratio Perm			0.29			0.24
v/c Ratio			0.51	0.40	0.67	0.24
Uniform Delay, d1			11.5	0.0	20.3	0.0
Progression Factor			1.54	1.00	0.42	1.00
Incremental Delay, d2			0.2	0.1	1.4	0.3
Delay (s)			18.0	0.1	10.0	0.3
Level of Service			B	A	A	A
Approach Delay (s)	0.0			3.2	7.7	
Approach LOS	A			A	A	

Intersection Summary			
HCM Average Control Delay	5.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	3433	5085	1583	3433	5045	0
Flt Permitted	0.250			0.322			0.950			0.950		
Satd. Flow (perm)	466	3539	1583	600	1863	1583	3433	5085	1583	3433	5045	0
Satd. Flow (RTOR)			457			74			148		7	
Volume (vph)	267	589	504	88	209	449	539	764	210	848	767	39
Lane Group Flow (vph)	293	640	566	110	225	528	567	910	233	922	882	0
Turn Type	pm+pt		Perm	pm+pt		pm+ov	Prot		Perm	Prot		
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8		8	4		4			6			
Total Split (s)	24.0	36.0	36.0	12.0	24.0	42.0	32.0	30.0	30.0	42.0	40.0	0.0
Act Effct Green (s)	40.8	29.0	29.0	25.8	18.0	56.0	23.9	29.2	29.2	38.0	43.2	
Actuated g/C Ratio	0.34	0.24	0.24	0.22	0.15	0.47	0.20	0.24	0.24	0.32	0.36	
v/c Ratio	0.80	0.75	0.78	0.53	0.81	0.68	0.83	0.74	0.47	0.85	0.48	
Control Delay	48.6	47.8	16.4	38.4	70.8	15.6	56.8	46.9	18.7	30.3	17.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	48.6	47.8	16.4	38.4	70.8	15.6	56.8	46.9	18.7	30.3	17.7	
LOS	D	D	B	D	E	B	E	D	B	C	B	
Approach Delay		36.1			32.9			46.3			24.2	
Approach LOS		D			C			D			C	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 110 (92%), Referenced to phase 2:SBT and 6:NBT, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.85		
Intersection Signal Delay: 34.9	Intersection LOS: C	
Intersection Capacity Utilization 78.1%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 6: Johnson Ferry Rd & Glenridge Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	3433	5085	1583	3433	5044	
Flt Permitted	0.21	1.00	1.00	0.27	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	389	3539	1583	510	1863	1583	3433	5085	1583	3433	5044	
Volume (vph)	267	589	504	88	209	449	539	764	210	848	767	39
Peak-hour factor, PHF	0.91	0.92	0.89	0.80	0.93	0.85	0.95	0.84	0.90	0.92	0.92	0.81
Adj. Flow (vph)	293	640	566	110	225	528	567	910	233	922	834	48
RTOR Reduction (vph)	0	0	347	0	0	39	0	0	112	0	4	0
Lane Group Flow (vph)	293	640	219	110	225	489	567	910	121	922	878	0
Turn Type	pm+pt		Perm	pm+pt		pm+ov	Prot		Perm	Prot		
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8		8	4		4			6			
Actuated Green, G (s)	40.9	29.0	29.0	25.9	18.0	56.0	23.9	29.1	29.1	38.0	43.2	
Effective Green, g (s)	40.9	29.0	29.0	25.9	18.0	56.0	23.9	29.1	29.1	38.0	43.2	
Actuated g/C Ratio	0.34	0.24	0.24	0.22	0.15	0.47	0.20	0.24	0.24	0.32	0.36	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	350	855	383	193	279	739	684	1233	384	1087	1816	
v/s Ratio Prot	c0.13	0.18		0.04	0.12	0.21	c0.17	c0.18		c0.27	0.17	
v/s Ratio Perm	c0.15		0.14	0.09		0.10			0.08			
v/c Ratio	0.84	0.75	0.57	0.57	0.81	0.66	0.83	0.74	0.31	0.85	0.48	
Uniform Delay, d1	32.4	42.1	40.0	39.5	49.3	24.7	46.1	41.9	37.3	38.3	29.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.63	0.55	
Incremental Delay, d2	15.8	3.6	2.1	3.8	15.5	2.2	8.2	4.0	2.1	4.2	0.6	
Delay (s)	48.3	45.7	42.1	43.3	64.8	26.9	54.3	45.9	39.4	28.4	17.0	
Level of Service	D	D	D	D	E	C	D	D	D	C	B	
Approach Delay (s)		44.9			38.9			47.8			22.9	
Approach LOS		D			D			D			C	

Intersection Summary				
HCM Average Control Delay	38.1	HCM Level of Service	D	
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	78.1%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Future PM Intersection Analysis

Future 2011 PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3391	0	1770	3405	0	1770	3539	1583	1770	3539	1583
Flt Permitted	0.217			0.148			0.154			0.235		
Satd. Flow (perm)	404	3391	0	276	3405	0	287	3539	1583	438	3539	1583
Satd. Flow (RTOR)		43			67				265			10
Volume (vph)	20	506	204	930	893	303	366	655	713	54	559	18
Lane Group Flow (vph)	38	784	0	969	1276	0	421	675	775	68	601	29
Turn Type	Perm			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases		6		5	2		7	4		3	8	
Permitted Phases	6			2			4		4	8		8
Total Split (s)	27.0	27.0	0.0	46.0	73.0	0.0	21.0	35.0	35.0	12.0	26.0	26.0
Act Effct Green (s)	23.0	23.0		69.0	69.0		43.0	33.5	33.5	29.5	22.0	22.0
Actuated g/C Ratio	0.19	0.19		0.58	0.58		0.36	0.28	0.28	0.25	0.18	0.18
v/c Ratio	0.49	1.14		1.42	0.64		1.35	0.68	1.22	0.36	0.93	0.10
Control Delay	67.0	123.0		225.9	18.0		204.7	27.4	129.0	32.1	69.7	31.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.0	123.0		225.9	18.0		204.7	27.4	129.0	32.1	69.7	31.1
LOS	E	F		F	B		F	C	F	C	E	C
Approach Delay		120.4			107.7			109.4			64.5	
Approach LOS		F			F			F			E	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 27 (23%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.42			
Intersection Signal Delay: 104.8		Intersection LOS: F	
Intersection Capacity Utilization 121.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 1: Hammond Dr & Glenridge Dr



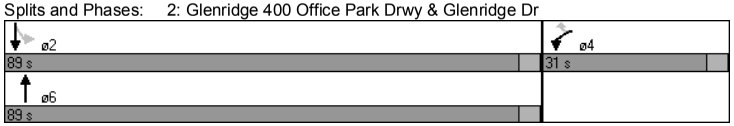
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.96		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3389		1770	3404		1770	3539	1583	1770	3539	1583
Flt Permitted	0.22	1.00		0.15	1.00		0.15	1.00	1.00	0.28	1.00	1.00
Satd. Flow (perm)	405	3389		284	3404		278	3539	1583	524	3539	1583
Volume (vph)	20	506	204	930	893	303	366	655	713	54	559	18
Peak-hour factor, PHF	0.53	0.90	0.92	0.96	0.94	0.93	0.87	0.97	0.92	0.80	0.93	0.62
Adj. Flow (vph)	38	562	222	969	950	326	421	675	775	68	601	29
RTOR Reduction (vph)	0	35	0	0	29	0	0	0	191	0	0	8
Lane Group Flow (vph)	38	749	0	969	1247	0	421	675	584	68	601	21
Turn Type	Perm			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases		6		5	2		7	4		3	8	
Permitted Phases	6			2			4		4	8		8
Actuated Green, G (s)	22.2	22.2		68.2	68.2		43.8	33.5	33.5	29.1	22.8	22.8
Effective Green, g (s)	22.2	22.2		68.2	68.2		43.8	33.5	33.5	29.1	22.8	22.8
Actuated g/C Ratio	0.18	0.18		0.57	0.57		0.36	0.28	0.28	0.24	0.19	0.19
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	75	627		682	1935		313	988	442	192	672	301
v/s Ratio Prot		0.22		c0.50	0.37		c0.19	0.19		0.02	0.17	
v/s Ratio Perm	0.09			c0.31			c0.30		0.37	0.07		0.01
v/c Ratio	0.51	1.19		1.42	0.64		1.35	0.68	1.32	0.35	0.89	0.07
Uniform Delay, d1	44.0	48.9		32.4	17.6		34.1	38.5	43.2	36.0	47.4	39.9
Progression Factor	1.00	1.00		1.00	1.00		1.15	0.61	0.32	1.00	1.00	1.00
Incremental Delay, d2	22.4	102.6		197.9	1.7		173.0	1.7	158.0	1.1	14.4	0.1
Delay (s)	66.4	151.5		230.3	19.3		212.1	25.1	171.9	37.1	61.8	40.0
Level of Service	E	F		F	B		F	C	F	D	E	D
Approach Delay (s)		147.5			110.4			128.0			58.5	
Approach LOS		F			F			F			E	

Intersection Summary					
HCM Average Control Delay	115.2	HCM Level of Service		F	
HCM Volume to Capacity ratio	1.36				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	121.1%	ICU Level of Service		H	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1583	3532	0	1770	3539
Flt Permitted	0.950				0.090	
Satd. Flow (perm)	1770	1583	3532	0	168	3539
Satd. Flow (RTOR)		45	3			
Volume (vph)	25	44	1562	18	26	1750
Lane Group Flow (vph)	28	59	1704	0	37	1823
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Total Split (s)	31.0	31.0	89.0	0.0	89.0	89.0
Act Effct Green (s)	7.4	7.4	107.3		107.3	107.3
Actuated g/C Ratio	0.06	0.06	0.89		0.89	0.89
v/c Ratio	0.25	0.42	0.54		0.25	0.58
Control Delay	58.5	30.2	2.0		0.4	0.3
Queue Delay	0.0	0.0	0.2		0.0	0.1
Total Delay	58.5	30.2	2.2		0.4	0.4
LOS	E	C	A		A	A
Approach Delay	39.3		2.2			0.4
Approach LOS	D		A			A

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 6 (5%), Referenced to phase 2:SBTL and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 2.2		Intersection LOS: A	
Intersection Capacity Utilization 58.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Glenridge 400 Office Park Drwy & Glenridge Dr



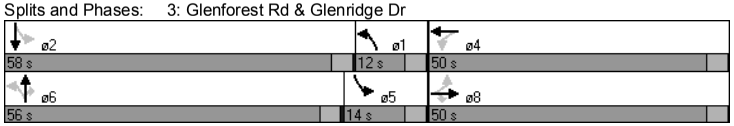
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3532		1770	3539
Flt Permitted	0.95	1.00	1.00		0.13	1.00
Satd. Flow (perm)	1770	1583	3532		237	3539
Volume (vph)	25	44	1562	18	26	1750
Peak-hour factor, PHF	0.88	0.75	0.93	0.75	0.71	0.96
Adj. Flow (vph)	28	59	1680	24	37	1823
RTOR Reduction (vph)	0	43	0	0	0	0
Lane Group Flow (vph)	28	16	1704	0	37	1823
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Actuated Green, G (s)	6.3	6.3	105.7		105.7	105.7
Effective Green, g (s)	6.3	6.3	105.7		105.7	105.7
Actuated g/C Ratio	0.05	0.05	0.88		0.88	0.88
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	93	83	3111		209	3117
v/s Ratio Prot	c0.02		0.48			c0.52
v/s Ratio Perm		0.01			0.16	
v/c Ratio	0.30	0.20	0.55		0.18	0.58
Uniform Delay, d1	54.7	54.4	1.6		1.0	1.8
Progression Factor	1.00	1.00	0.79		0.03	0.10
Incremental Delay, d2	1.8	1.2	0.6		0.2	0.1
Delay (s)	56.6	55.6	1.9		0.2	0.3
Level of Service	E	E	A		A	A
Approach Delay (s)	55.9		1.9			0.3
Approach LOS	E		A			A

Intersection Summary				
HCM Average Control Delay	2.3	HCM Level of Service	A	
HCM Volume to Capacity ratio	0.57			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	58.4%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1801	1583	1681	1686	1583	1770	3539	1583	1770	3532	0
Flt Permitted		0.580		0.735	0.703		0.077			0.083		
Satd. Flow (perm)	0	1080	1583	1301	1244	1583	143	3539	1583	155	3532	0
Satd. Flow (RTOR)			67			122			70		1	
Volume (vph)	14	4	44	780	2	256	55	1184	134	139	1653	12
Lane Group Flow (vph)	0	34	67	527	531	308	62	1233	216	158	1778	0
Turn Type	Perm		Perm	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Total Split (s)	50.0	50.0	50.0	50.0	50.0	0.0	12.0	56.0	56.0	14.0	58.0	0.0
Act Effct Green (s)		47.0	47.0	47.0	47.0	120.0	59.3	52.0	52.0	63.4	55.6	
Actuated g/C Ratio		0.39	0.39	0.39	0.39	1.00	0.49	0.43	0.43	0.53	0.46	
v/c Ratio		0.08	0.10	1.04	1.09	0.19	0.36	0.80	0.30	0.78	1.09	
Control Delay		24.3	6.0	86.0	103.5	0.3	27.4	23.0	8.6	51.4	74.3	
Queue Delay		0.0	0.0	14.9	17.8	0.0	0.0	1.5	0.0	0.0	8.6	
Total Delay		24.3	6.0	100.9	121.3	0.3	27.4	24.5	8.6	51.4	82.9	
LOS		C	A	F	F	A	C	C	A	D	F	
Approach Delay		12.2			86.1			22.3			80.4	
Approach LOS		B			F			C			F	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 5 (4%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 62.7		Intersection LOS: E	
Intersection Capacity Utilization 87.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Glenforest Rd & Glenridge Dr



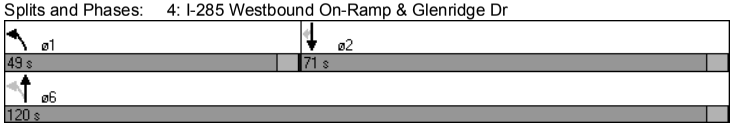
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1802	1583	1681	1686	1583	1770	3539	1583	1770	3534	
Flt Permitted		0.59	1.00	0.73	0.70	1.00	0.08	1.00	1.00	0.08	1.00	
Satd. Flow (perm)		1105	1583	1301	1244	1583	146	3539	1583	154	3534	
Volume (vph)	14	4	44	780	2	256	55	1184	134	139	1653	12
Peak-hour factor, PHF	0.60	0.38	0.66	0.74	0.50	0.83	0.89	0.96	0.62	0.88	0.94	0.62
Adj. Flow (vph)	23	11	67	1054	4	308	62	1233	216	158	1759	19
RTOR Reduction (vph)	0	0	41	0	0	0	0	0	40	0	1	0
Lane Group Flow (vph)	0	34	26	527	531	308	62	1233	176	158	1777	0
Turn Type	Perm		Perm	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Actuated Green, G (s)		47.0	47.0	47.0	47.0	120.0	57.4	51.2	51.2	64.6	54.8	
Effective Green, g (s)		47.0	47.0	47.0	47.0	120.0	57.4	51.2	51.2	64.6	54.8	
Actuated g/C Ratio		0.39	0.39	0.39	0.39	1.00	0.48	0.43	0.43	0.54	0.46	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		433	620	510	487	1583	154	1510	675	215	1614	
v/s Ratio Prot							0.02	0.35		c0.06	c0.50	
v/s Ratio Perm		0.03	0.02	0.41	c0.43	0.19	0.17		0.11	0.33		
v/c Ratio		0.08	0.04	1.03	1.09	0.19	0.40	0.82	0.26	0.73	1.10	
Uniform Delay, d1		22.9	22.6	36.5	36.5	0.0	54.0	30.3	22.2	42.8	32.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	0.76	0.62	0.51	0.73	0.78	
Incremental Delay, d2		0.1	0.0	48.7	67.5	0.3	1.7	4.9	0.9	10.6	54.2	
Delay (s)		23.0	22.6	85.2	104.0	0.3	42.6	23.6	12.3	41.7	79.6	
Level of Service		C	C	F	F	A	D	C	B	D	E	
Approach Delay (s)		22.7			73.4			22.7			76.5	
Approach LOS		C			E			C			E	

Intersection Summary					
HCM Average Control Delay	58.0	HCM Level of Service		E	
HCM Volume to Capacity ratio	1.08				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	87.7%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	1770	5085	3539	1583
Flt Permitted			0.076			
Satd. Flow (perm)	0	0	142	5085	3539	1583
Satd. Flow (RTOR)						50
Volume (vph)	0	0	924	1354	1420	1116
Lane Group Flow (vph)	0	0	973	1472	1479	1162
Turn Type			pm+pt			Perm
Protected Phases			1	6	2	
Permitted Phases			6			2
Total Split (s)	0.0	0.0	49.0	120.0	71.0	71.0
Act Effct Green (s)			116.0	120.0	67.0	67.0
Actuated g/C Ratio			0.97	1.00	0.56	0.56
v/c Ratio			1.30	0.29	0.75	1.28
Control Delay			175.1	0.1	11.5	147.4
Queue Delay			2.3	0.0	5.6	25.0
Total Delay			177.4	0.1	17.1	172.4
LOS			F	A	B	F
Approach Delay				70.7	85.4	
Approach LOS				E	F	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.30			
Intersection Signal Delay: 78.3		Intersection LOS: E	
Intersection Capacity Utilization 127.0%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 4: I-285 Westbound On-Ramp & Glenridge Dr



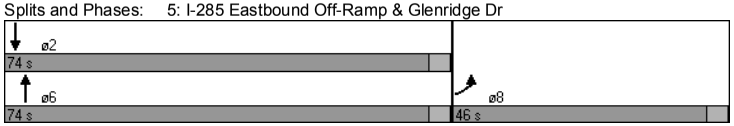
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			1.00	0.91	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			1770	5085	3539	1583
Flt Permitted			0.08	1.00	1.00	1.00
Satd. Flow (perm)			142	5085	3539	1583
Volume (vph)	0	0	924	1354	1420	1116
Peak-hour factor, PHF	0.92	0.92	0.95	0.92	0.96	0.96
Adj. Flow (vph)	0	0	973	1472	1479	1162
RTOR Reduction (vph)	0	0	0	0	0	22
Lane Group Flow (vph)	0	0	973	1472	1479	1140
Turn Type			pm+pt			Perm
Protected Phases			1	6	2	
Permitted Phases			6			2
Actuated Green, G (s)			116.0	120.0	67.0	67.0
Effective Green, g (s)			116.0	120.0	67.0	67.0
Actuated g/C Ratio			0.97	1.00	0.56	0.56
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)			748	5085	1976	884
v/s Ratio Prot			c0.49	0.29	0.42	
v/s Ratio Perm			c0.77			0.72
v/c Ratio			1.30	0.29	0.75	1.29
Uniform Delay, d1			32.8	0.0	20.1	26.5
Progression Factor			1.16	1.00	0.55	0.60
Incremental Delay, d2			143.4	0.1	0.2	131.1
Delay (s)			181.6	0.1	11.3	147.0
Level of Service			F	A	B	F
Approach Delay (s)	0.0			72.4	71.0	
Approach LOS	A			E	E	

Intersection Summary			
HCM Average Control Delay	71.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	127.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	2787	0	5085	3539	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	2787	0	5085	3539	0
Satd. Flow (RTOR)		297				
Volume (vph)	265	261	0	1992	1374	0
Lane Group Flow (vph)	315	297	0	2054	1493	0
Turn Type		Free				
Protected Phases	8			6	2	
Permitted Phases		Free				
Total Split (s)	46.0	0.0	0.0	74.0	74.0	0.0
Act Effct Green (s)	25.1	120.0		86.9	86.9	
Actuated g/C Ratio	0.21	1.00		0.72	0.72	
v/c Ratio	0.85	0.11		0.56	0.58	
Control Delay	66.0	0.1		1.8	8.5	
Queue Delay	1.0	0.0		0.0	0.3	
Total Delay	66.9	0.1		1.8	8.8	
LOS	E	A		A	A	
Approach Delay	34.5			1.8	8.8	
Approach LOS	C			A	A	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 99 (83%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 9.1		Intersection LOS: A	
Intersection Capacity Utilization 127.0%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 5: I-285 Eastbound Off-Ramp & Glenridge Dr



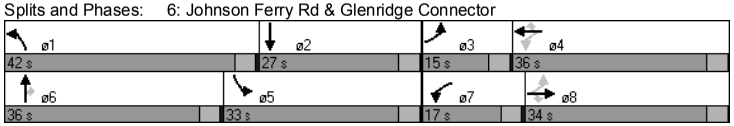
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.88		0.91	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1770	2787		5085	3539	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1770	2787		5085	3539	
Volume (vph)	265	261	0	1992	1374	0
Peak-hour factor, PHF	0.84	0.88	0.92	0.97	0.92	0.96
Adj. Flow (vph)	315	297	0	2054	1493	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	315	297	0	2054	1493	0
Turn Type		Free				
Protected Phases	8			6	2	
Permitted Phases		Free				
Actuated Green, G (s)	25.1	120.0		86.9	86.9	
Effective Green, g (s)	25.1	120.0		86.9	86.9	
Actuated g/C Ratio	0.21	1.00		0.72	0.72	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	370	2787		3682	2563	
v/s Ratio Prot	c0.18			0.40	c0.42	
v/s Ratio Perm		0.11				
v/c Ratio	0.85	0.11		0.56	0.58	
Uniform Delay, d1	45.7	0.0		7.7	7.9	
Progression Factor	1.00	1.00		0.19	0.89	
Incremental Delay, d2	16.9	0.1		0.2	0.6	
Delay (s)	62.6	0.1		1.6	7.6	
Level of Service	E	A		A	A	
Approach Delay (s)	32.2			1.6	7.6	
Approach LOS	C			A	A	

Intersection Summary			
HCM Average Control Delay	8.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	127.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	5085	1583	1770	5055	0
Flt Permitted	0.133			0.281			0.950			0.950		
Satd. Flow (perm)	248	3539	1583	523	1863	1583	1770	5085	1583	1770	5055	0
Satd. Flow (RTOR)			462			413			68		5	
Volume (vph)	245	396	411	193	556	715	618	1054	54	329	979	36
Lane Group Flow (vph)	269	489	462	244	591	803	694	1098	68	362	1076	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4			6			
Total Split (s)	15.0	34.0	34.0	17.0	36.0	36.0	42.0	36.0	36.0	33.0	27.0	0.0
Act Effct Green (s)	41.2	30.2	30.2	44.8	32.0	32.0	38.0	32.0	32.0	29.0	23.0	
Actuated g/C Ratio	0.34	0.25	0.25	0.37	0.27	0.27	0.32	0.27	0.27	0.24	0.19	
v/c Ratio	1.20	0.55	0.62	0.74	1.19	1.11	1.24	0.81	0.14	0.85	1.11	
Control Delay	153.1	41.8	7.4	41.7	143.0	87.8	157.5	46.8	8.7	43.5	91.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	153.1	41.8	7.4	41.7	143.0	87.8	157.5	46.8	8.7	43.5	91.6	
LOS	F	D	A	D	F	F	F	D	A	D	F	
Approach Delay		53.3			100.9			86.7			79.5	
Approach LOS		D			F			F			E	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 41 (34%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.24			
Intersection Signal Delay: 82.2		Intersection LOS: F	
Intersection Capacity Utilization 110.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 6: Johnson Ferry Rd & Glenridge Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	1770	5085	1583	1770	5053	
Flt Permitted	0.13	1.00	1.00	0.28	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	247	3539	1583	530	1863	1583	1770	5085	1583	1770	5053	
Volume (vph)	245	396	411	193	556	715	618	1054	54	329	979	36
Peak-hour factor, PHF	0.91	0.81	0.89	0.79	0.94	0.89	0.89	0.96	0.80	0.91	0.95	0.80
Adj. Flow (vph)	269	489	462	244	591	803	694	1098	68	362	1031	45
RTOR Reduction (vph)	0	0	346	0	0	303	0	0	50	0	4	0
Lane Group Flow (vph)	269	489	116	244	591	500	694	1098	18	362	1072	0
Turn Type	pm+pt		Perm	pm+pt		Perm	Prot		Perm	Prot		
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4			6			
Actuated Green, G (s)	41.2	30.2	30.2	44.8	32.0	32.0	38.0	32.0	32.0	29.0	23.0	
Effective Green, g (s)	41.2	30.2	30.2	44.8	32.0	32.0	38.0	32.0	32.0	29.0	23.0	
Actuated g/C Ratio	0.34	0.25	0.25	0.37	0.27	0.27	0.32	0.27	0.27	0.24	0.19	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	224	891	398	330	497	422	561	1356	422	428	968	
v/s Ratio Prot	c0.11	0.14		c0.08	c0.32		c0.39	0.22		0.20	c0.21	
v/s Ratio Perm	0.30		0.07	0.20		0.32			0.01			
v/c Ratio	1.20	0.55	0.29	0.74	1.19	1.19	1.24	0.81	0.04	0.85	1.11	
Uniform Delay, d1	34.1	39.0	36.3	28.3	44.0	44.0	41.0	41.2	32.6	43.4	48.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.59	0.63	
Incremental Delay, d2	125.1	0.7	0.4	8.4	103.8	105.0	121.4	5.3	0.2	12.7	61.5	
Delay (s)	159.3	39.7	36.7	36.7	147.8	149.0	162.4	46.5	32.8	38.5	92.3	
Level of Service	F	D	D	D	F	F	F	D	C	D	F	
Approach Delay (s)		64.9			131.8			89.2			78.8	
Approach LOS		E			F			F			E	

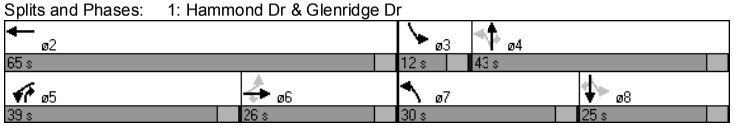
Intersection Summary					
HCM Average Control Delay	93.3	HCM Level of Service		F	
HCM Volume to Capacity ratio	1.19				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		16.0	
Intersection Capacity Utilization	110.1%	ICU Level of Service		H	
Analysis Period (min)	15				
c Critical Lane Group					

Future 2011 PM Improved

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	1583	3433	3405	0	1770	3329	1441	1770	3539	1583
Flt Permitted	0.217			0.950			0.160			0.304		
Satd. Flow (perm)	404	3539	1583	3433	3405	0	298	3329	1441	566	3539	1583
Satd. Flow (RTOR)			193		57			12	155			10
Volume (vph)	20	506	204	930	893	303	366	655	713	54	559	18
Lane Group Flow (vph)	38	562	222	969	1276	0	421	766	684	68	601	29
Turn Type	Perm		Perm	Prot			pm+pt		pm+ov	pm+pt		Perm
Protected Phases		6		5	2		7	4	5	3	8	
Permitted Phases	6		6				4		4	8		8
Total Split (s)	26.0	26.0	26.0	39.0	65.0	0.0	30.0	43.0	39.0	12.0	25.0	25.0
Act Effct Green (s)	22.0	22.0	22.0	35.0	61.0		51.0	41.6	80.6	28.4	21.0	21.0
Actuated g/C Ratio	0.18	0.18	0.18	0.29	0.51		0.42	0.35	0.67	0.24	0.18	0.18
v/c Ratio	0.51	0.87	0.50	0.97	0.73		0.94	0.66	0.67	0.33	0.97	0.10
Control Delay	70.2	62.4	13.0	64.0	24.8		68.9	24.1	6.1	27.5	79.1	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.2	62.4	13.0	64.0	24.8		68.9	24.1	6.1	27.5	79.1	31.8
LOS	E	E	B	E	C		E	C	A	C	E	C
Approach Delay		49.4			41.7			27.6			72.1	
Approach LOS		D			D			C			E	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 59 (49%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 41.9		Intersection LOS: D	
Intersection Capacity Utilization 89.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Hammond Dr & Glenridge Dr



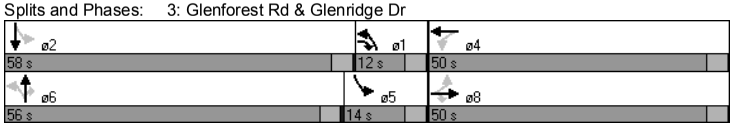
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	0.91	0.91	1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	0.98	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3539	1583	3433	3404		1770	3330	1441	1770	3539	1583
Flt Permitted	0.22	1.00	1.00	0.95	1.00		0.16	1.00	1.00	0.35	1.00	1.00
Satd. Flow (perm)	405	3539	1583	3433	3404		289	3330	1441	647	3539	1583
Volume (vph)	20	506	204	930	893	303	366	655	713	54	559	18
Peak-hour factor, PHF	0.53	0.90	0.92	0.96	0.94	0.93	0.87	0.97	0.92	0.80	0.93	0.62
Adj. Flow (vph)	38	562	222	969	950	326	421	675	775	68	601	29
RTOR Reduction (vph)	0	0	159	0	28	0	0	8	56	0	0	8
Lane Group Flow (vph)	38	562	63	969	1248	0	421	758	628	68	601	21
Turn Type	Perm		Perm	Prot			pm+pt		pm+ov	pm+pt		Perm
Protected Phases		6		5	2		7	4	5	3	8	
Permitted Phases	6		6				4		4	8		8
Actuated Green, G (s)	21.2	21.2	21.2	35.0	60.2		51.8	41.6	76.6	28.0	21.8	21.8
Effective Green, g (s)	21.2	21.2	21.2	35.0	60.2		51.8	41.6	76.6	28.0	21.8	21.8
Actuated g/C Ratio	0.18	0.18	0.18	0.29	0.50		0.43	0.35	0.64	0.23	0.18	0.18
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	72	625	280	1001	1708		446	1154	968	209	643	288
v/s Ratio Prot		c0.16		c0.28	0.37		c0.20	0.23	0.19	0.02	0.17	
v/s Ratio Perm	0.09		0.04				c0.20		0.25	0.06		0.01
v/c Ratio	0.53	0.90	0.23	0.97	0.73		0.94	0.66	0.65	0.33	0.93	0.07
Uniform Delay, d1	44.9	48.4	42.4	41.9	23.5		34.0	33.2	13.4	36.7	48.4	40.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.26	0.64	0.30	1.00	1.00	1.00
Incremental Delay, d2	25.0	18.3	1.9	20.8	2.8		26.4	1.2	1.3	0.9	20.8	0.1
Delay (s)	69.9	66.7	44.2	62.8	26.3		69.2	22.3	5.4	37.6	69.2	40.8
Level of Service	E	E	D	E	C		E	C	A	D	E	D
Approach Delay (s)		60.7			42.0			26.7			65.0	
Approach LOS		E			D			C			E	

Intersection Summary					
HCM Average Control Delay	42.5	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.93				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	89.6%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1801	1583	1681	1686	1583	1770	3539	1583	1770	3532	0
Flt Permitted		0.580		0.735	0.703		0.077			0.083		
Satd. Flow (perm)	0	1080	1583	1301	1244	1583	143	3539	1583	155	3532	0
Satd. Flow (RTOR)			5			122			70		1	
Volume (vph)	14	4	44	780	2	256	55	1184	134	139	1653	12
Lane Group Flow (vph)	0	34	67	527	531	308	62	1233	216	158	1778	0
Turn Type	Perm		pm+ov	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Total Split (s)	50.0	50.0	12.0	50.0	50.0	0.0	12.0	56.0	56.0	14.0	58.0	0.0
Act Effct Green (s)		46.9	57.5	46.9	46.9	120.0	59.4	52.0	52.0	63.5	55.6	
Actuated g/C Ratio		0.39	0.48	0.39	0.39	1.00	0.50	0.43	0.43	0.53	0.46	
v/c Ratio		0.08	0.09	1.04	1.09	0.19	0.36	0.80	0.30	0.77	1.09	
Control Delay		24.4	15.9	86.4	103.9	0.3	30.3	26.1	10.9	45.6	64.5	
Queue Delay		0.0	0.0	62.0	70.0	0.0	0.0	1.5	0.0	0.0	83.6	
Total Delay		24.4	15.9	148.4	174.0	0.3	30.3	27.6	10.9	45.6	148.1	
LOS		C	B	F	F	A	C	C	B	D	F	
Approach Delay		18.8			124.9			25.3			139.7	
Approach LOS		B			F			C			F	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 48 (40%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 97.9		Intersection LOS: F	
Intersection Capacity Utilization 87.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Glenforest Rd & Glenridge Dr



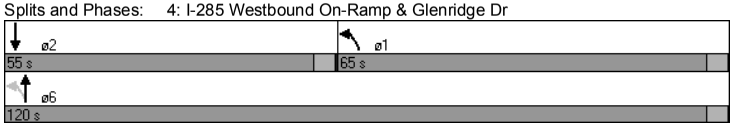
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1802	1583	1681	1686	1583	1770	3539	1583	1770	3534	
Flt Permitted		0.59	1.00	0.73	0.70	1.00	0.08	1.00	1.00	0.08	1.00	
Satd. Flow (perm)		1103	1583	1301	1244	1583	146	3539	1583	154	3534	
Volume (vph)	14	4	44	780	2	256	55	1184	134	139	1653	12
Peak-hour factor, PHF	0.60	0.38	0.66	0.74	0.50	0.83	0.89	0.96	0.62	0.88	0.94	0.62
Adj. Flow (vph)	23	11	67	1054	4	308	62	1233	216	158	1759	19
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	40	0	1	0
Lane Group Flow (vph)	0	34	64	527	531	308	62	1233	176	158	1777	0
Turn Type	Perm		pm+ov	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Actuated Green, G (s)		46.9	53.2	46.9	46.9	120.0	57.5	51.2	51.2	64.7	54.8	
Effective Green, g (s)		46.9	53.2	46.9	46.9	120.0	57.5	51.2	51.2	64.7	54.8	
Actuated g/C Ratio		0.39	0.44	0.39	0.39	1.00	0.48	0.43	0.43	0.54	0.46	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		431	755	508	486	1583	155	1510	675	216	1614	
v/s Ratio Prot			0.00				0.02	0.35		c0.06	c0.50	
v/s Ratio Perm		0.03	0.04	0.41	c0.43	0.19	0.17		0.11	0.33		
v/c Ratio		0.08	0.09	1.04	1.09	0.19	0.40	0.82	0.26	0.73	1.10	
Uniform Delay, d1		23.0	19.3	36.6	36.6	0.0	55.8	30.3	22.2	42.7	32.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	0.87	0.72	0.66	0.59	0.38	
Incremental Delay, d2		0.1	0.0	49.9	68.3	0.3	1.7	4.9	0.9	10.4	54.2	
Delay (s)		23.1	19.4	86.5	104.9	0.3	50.1	26.7	15.7	35.5	66.7	
Level of Service		C	B	F	F	A	D	C	B	D	E	
Approach Delay (s)		20.6			74.2			26.1			64.1	
Approach LOS		C			E			C			E	

Intersection Summary					
HCM Average Control Delay	54.3	HCM Level of Service		D	
HCM Volume to Capacity ratio	1.08				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	87.7%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	0	1770	5085	3539	1583
Flt Permitted			0.073			
Satd. Flow (perm)	0	0	136	5085	3539	1583
Satd. Flow (RTOR)						143
Volume (vph)	0	0	924	1354	1420	1116
Lane Group Flow (vph)	0	0	973	1472	1479	1162
Turn Type			pm+pt			Free
Protected Phases			1	6	2	
Permitted Phases			6			Free
Total Split (s)	0.0	0.0	65.0	120.0	55.0	0.0
Act Effct Green (s)			116.0	120.0	51.0	120.0
Actuated g/C Ratio			0.97	1.00	0.42	1.00
v/c Ratio			1.01	0.29	0.98	0.73
Control Delay			54.5	0.1	38.7	1.4
Queue Delay			1.2	0.0	57.3	0.0
Total Delay			55.7	0.1	96.0	1.4
LOS			E	A	F	A
Approach Delay				22.2	54.4	
Approach LOS				C	D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 28 (23%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 38.9		Intersection LOS: D	
Intersection Capacity Utilization 97.1%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 4: I-285 Westbound On-Ramp & Glenridge Dr



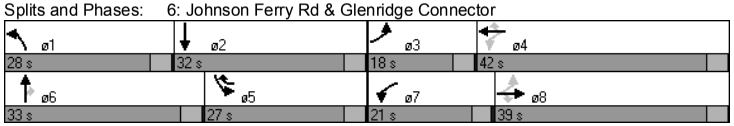
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)			4.0	4.0	4.0	4.0
Lane Util. Factor			1.00	0.91	0.95	1.00
Frt			1.00	1.00	1.00	0.85
Flt Protected			0.95	1.00	1.00	1.00
Satd. Flow (prot)			1770	5085	3539	1583
Flt Permitted			0.07	1.00	1.00	1.00
Satd. Flow (perm)			135	5085	3539	1583
Volume (vph)	0	0	924	1354	1420	1116
Peak-hour factor, PHF	0.92	0.92	0.95	0.92	0.96	0.96
Adj. Flow (vph)	0	0	973	1472	1479	1162
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	973	1472	1479	1162
Turn Type			pm+pt			Free
Protected Phases			1	6	2	
Permitted Phases			6			Free
Actuated Green, G (s)			116.0	120.0	51.0	120.0
Effective Green, g (s)			116.0	120.0	51.0	120.0
Actuated g/C Ratio			0.97	1.00	0.42	1.00
Clearance Time (s)			4.0	4.0	4.0	
Vehicle Extension (s)			3.0	3.0	3.0	
Lane Grp Cap (vph)			962	5085	1504	1583
v/s Ratio Prot			c0.51	0.29	0.42	
v/s Ratio Perm			c0.46			0.73
v/c Ratio			1.01	0.29	0.98	0.73
Uniform Delay, d1			26.0	0.0	34.1	0.0
Progression Factor			0.95	1.00	1.01	1.00
Incremental Delay, d2			29.1	0.1	4.1	0.3
Delay (s)			53.9	0.1	38.4	0.3
Level of Service			D	A	D	A
Approach Delay (s)	0.0			21.5	21.6	
Approach LOS	A			C	C	

Intersection Summary			
HCM Average Control Delay	21.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	3433	5085	1583	3433	5055	0
Flt Permitted	0.114			0.309			0.950			0.950		
Satd. Flow (perm)	212	3539	1583	576	1863	1583	3433	5085	1583	3433	5055	0
Satd. Flow (RTOR)			462			38			68		5	
Volume (vph)	245	396	411	193	556	715	618	1054	54	329	979	36
Lane Group Flow (vph)	269	489	462	244	591	803	694	1098	68	362	1076	0
Turn Type	pm+pt		Perm	pm+pt		pm+ov	Prot		Perm	Prot		
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8		8	4		4			6			
Total Split (s)	18.0	39.0	39.0	21.0	42.0	27.0	28.0	33.0	33.0	27.0	32.0	0.0
Act Effct Green (s)	51.2	37.2	37.2	52.8	38.0	61.0	24.0	29.0	29.0	23.0	28.0	
Actuated g/C Ratio	0.43	0.31	0.31	0.44	0.32	0.51	0.20	0.24	0.24	0.19	0.23	
v/c Ratio	0.99	0.45	0.57	0.61	1.00	0.98	1.01	0.89	0.16	0.55	0.91	
Control Delay	84.6	35.2	6.0	26.9	78.9	46.2	84.7	54.4	9.4	22.3	30.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	84.6	35.2	6.0	26.9	78.9	46.2	84.7	54.4	9.4	22.3	30.8	
LOS	F	D	A	C	E	D	F	D	A	C	C	
Approach Delay		35.1			55.2			64.1			28.7	
Approach LOS		D			E			E			C	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 72 (60%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 47.7		Intersection LOS: D	
Intersection Capacity Utilization 93.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 6: Johnson Ferry Rd & Glenridge Connector



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	1863	1583	3433	5085	1583	3433	5053	
Flt Permitted	0.11	1.00	1.00	0.34	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	200	3539	1583	636	1863	1583	3433	5085	1583	3433	5053	
Volume (vph)	245	396	411	193	556	715	618	1054	54	329	979	36
Peak-hour factor, PHF	0.91	0.81	0.89	0.79	0.94	0.89	0.89	0.96	0.80	0.91	0.95	0.80
Adj. Flow (vph)	269	489	462	244	591	803	694	1098	68	362	1031	45
RTOR Reduction (vph)	0	0	319	0	0	19	0	0	52	0	4	0
Lane Group Flow (vph)	269	489	143	244	591	784	694	1098	16	362	1072	0
Turn Type	pm+pt		Perm	pm+pt		pm+ov	Prot		Perm	Prot		
Protected Phases	3	8		7	4	5	1	6		5	2	
Permitted Phases	8		8	4		4			6			
Actuated Green, G (s)	51.2	37.2	37.2	52.8	38.0	61.0	24.0	29.0	29.0	23.0	28.0	
Effective Green, g (s)	51.2	37.2	37.2	52.8	38.0	61.0	24.0	29.0	29.0	23.0	28.0	
Actuated g/C Ratio	0.43	0.31	0.31	0.44	0.32	0.51	0.20	0.24	0.24	0.19	0.23	
Clearance Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	269	1097	491	420	590	805	687	1229	383	658	1179	
v/s Ratio Prot	c0.12	0.14		0.07	c0.32	0.19	c0.20	c0.22		0.11	c0.21	
v/s Ratio Perm	0.31		0.09	0.18		0.31			0.01			
v/c Ratio	1.00	0.45	0.29	0.58	1.00	0.97	1.01	0.89	0.04	0.55	0.91	
Uniform Delay, d1	35.3	33.1	31.4	22.5	41.0	28.7	48.0	44.0	34.9	43.8	44.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.44	0.43	
Incremental Delay, d2	54.9	0.3	0.3	2.0	37.5	25.3	36.9	10.1	0.2	0.9	10.6	
Delay (s)	90.2	33.4	31.7	24.5	78.5	54.0	84.9	54.1	35.1	20.2	30.0	
Level of Service	F	C	C	C	E	D	F	D	D	C	C	
Approach Delay (s)		45.3			58.5			64.9			27.5	
Approach LOS		D			E			E			C	

Intersection Summary					
HCM Average Control Delay	50.6	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.92				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	93.5%	ICU Level of Service		F	
Analysis Period (min)	15				
c Critical Lane Group					

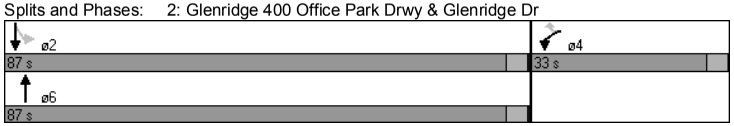
Future Site Access Analysis

Future 2011 AM Site Access Analysis

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1583	3518	0	1770	3539
Flt Permitted	0.950				0.143	
Satd. Flow (perm)	1770	1583	3518	0	266	3539
Satd. Flow (RTOR)		23	8			
Volume (vph)	12	19	1289	41	55	1665
Lane Group Flow (vph)	24	23	1396	0	64	1716
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Total Split (s)	33.0	33.0	87.0	0.0	87.0	87.0
Act Effct Green (s)	7.0	7.0	110.5		110.5	110.5
Actuated g/C Ratio	0.06	0.06	0.92		0.92	0.92
v/c Ratio	0.23	0.20	0.43		0.26	0.53
Control Delay	58.7	23.9	1.5		4.1	3.1
Queue Delay	0.0	0.0	0.1		0.0	0.0
Total Delay	58.7	23.9	1.6		4.1	3.1
LOS	E	C	A		A	A
Approach Delay	41.7		1.6			3.1
Approach LOS	D		A			A

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 81 (68%), Referenced to phase 2:SBTL and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 3.0		Intersection LOS: A	
Intersection Capacity Utilization 56.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Glenridge 400 Office Park Drwy & Glenridge Dr



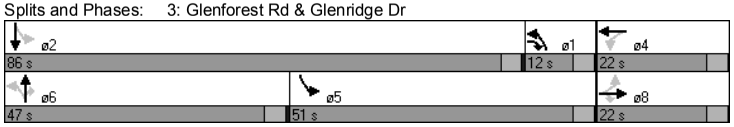
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	0.99		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3519		1770	3539
Flt Permitted	0.95	1.00	1.00		0.18	1.00
Satd. Flow (perm)	1770	1583	3519		343	3539
Volume (vph)	12	19	1289	41	55	1665
Peak-hour factor, PHF	0.50	0.83	0.96	0.77	0.86	0.97
Adj. Flow (vph)	24	23	1343	53	64	1716
RTOR Reduction (vph)	0	22	1	0	0	0
Lane Group Flow (vph)	24	1	1395	0	64	1716
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Actuated Green, G (s)	4.7	4.7	107.3		107.3	107.3
Effective Green, g (s)	4.7	4.7	107.3		107.3	107.3
Actuated g/C Ratio	0.04	0.04	0.89		0.89	0.89
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	69	62	3147		307	3164
v/s Ratio Prot	c0.01		0.40			c0.48
v/s Ratio Perm		0.00			0.19	
v/c Ratio	0.35	0.01	0.44		0.21	0.54
Uniform Delay, d1	56.2	55.4	1.1		0.8	1.3
Progression Factor	1.00	1.00	1.05		1.95	1.90
Incremental Delay, d2	3.0	0.1	0.2		0.7	0.3
Delay (s)	59.2	55.5	1.4		2.3	2.8
Level of Service	E	E	A		A	A
Approach Delay (s)	57.4		1.4			2.8
Approach LOS	E		A			A

Intersection Summary			
HCM Average Control Delay	3.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1818	1583	1681	1686	1583	1770	3539	1583	1770	3539	0
Flt Permitted		0.755		0.744	0.716		0.093			0.085		
Satd. Flow (perm)	0	1406	1583	1317	1267	1583	173	3539	1583	158	3539	0
Satd. Flow (RTOR)			67			184			159		1	
Volume (vph)	6	6	63	287	1	81	7	1285	547	492	1185	2
Lane Group Flow (vph)	0	20	100	202	206	184	9	1339	601	807	1432	0
Turn Type	Perm		pm+ov	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Total Split (s)	22.0	22.0	12.0	22.0	22.0	0.0	12.0	47.0	47.0	51.0	86.0	0.0
Act Effct Green (s)		18.0	30.0	18.0	18.0	120.0	51.0	43.0	43.0	94.0	82.0	
Actuated g/C Ratio		0.15	0.25	0.15	0.15	1.00	0.42	0.36	0.36	0.78	0.68	
v/c Ratio		0.09	0.22	1.02	1.08	0.12	0.05	1.06	0.90	1.07	0.59	
Control Delay		45.4	15.5	120.0	137.5	0.1	10.3	69.2	34.7	87.5	11.3	
Queue Delay		0.0	0.0	0.0	0.0	0.0	0.0	18.3	0.6	0.0	0.1	
Total Delay		45.4	15.5	120.0	137.5	0.1	10.3	87.5	35.3	87.5	11.4	
LOS		D	B	F	F	A	B	F	D	F	B	
Approach Delay		20.5			88.9			71.0			38.9	
Approach LOS		C			F			E			D	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 80 (67%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 57.3		Intersection LOS: E	
Intersection Capacity Utilization 87.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Glenforest Rd & Glenridge Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1817	1583	1681	1687	1583	1770	3539	1583	1770	3538	
Flt Permitted		0.75	1.00	0.74	0.72	1.00	0.09	1.00	1.00	0.09	1.00	
Satd. Flow (perm)		1406	1583	1317	1267	1583	173	3539	1583	159	3538	
Volume (vph)	6	6	63	287	1	81	7	1285	547	492	1185	2
Peak-hour factor, PHF	0.62	0.62	0.63	0.71	0.25	0.44	0.75	0.96	0.91	0.61	0.83	0.50
Adj. Flow (vph)	10	10	100	404	4	184	9	1339	601	807	1428	4
RTOR Reduction (vph)	0	0	52	0	0	0	0	0	102	0	0	0
Lane Group Flow (vph)	0	20	48	202	206	184	9	1339	499	807	1432	0
Turn Type	Perm		pm+ov	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Actuated Green, G (s)		18.0	26.0	18.0	18.0	120.0	51.0	43.0	43.0	94.0	82.0	
Effective Green, g (s)		18.0	26.0	18.0	18.0	120.0	51.0	43.0	43.0	94.0	82.0	
Actuated g/C Ratio		0.15	0.22	0.15	0.15	1.00	0.42	0.36	0.36	0.78	0.68	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		211	396	198	190	1583	180	1268	567	756	2418	
v/s Ratio Prot			0.01				0.00	0.38		c0.42	0.40	
v/s Ratio Perm		0.01	0.02	0.15	c0.16	0.12	0.02		0.32	c0.42		
v/c Ratio		0.09	0.12	1.02	1.08	0.12	0.05	1.06	0.88	1.07	0.59	
Uniform Delay, d1		44.0	37.8	51.0	51.0	0.0	22.3	38.5	36.1	33.4	10.1	
Progression Factor		1.00	1.00	1.00	1.00	1.00	0.89	0.71	0.63	1.13	1.00	
Incremental Delay, d2		0.2	0.1	69.3	89.5	0.1	0.1	40.9	16.9	51.2	1.0	
Delay (s)		44.2	37.9	120.3	140.5	0.1	19.9	68.4	39.8	88.9	11.1	
Level of Service		D	D	F	F	A	B	E	D	F	B	
Approach Delay (s)		39.0			90.0			59.3			39.2	
Approach LOS		D			F			E			D	

Intersection Summary					
HCM Average Control Delay	53.3	HCM Level of Service		D	
HCM Volume to Capacity ratio	1.05				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	87.4%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Satd. Flow (prot)	0	1611	3539	1583	0	3539
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	1583	0	3539
Volume (vph)	0	35	1274	99	0	1679
Lane Group Flow (vph)	0	38	1385	108	0	1825
Sign Control	Yield		Free			Free

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Yield		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	35	1274	99	0	1679
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	38	1385	108	0	1825
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			370			383
pX, platoon unblocked	0.71	0.65			0.65	
vC, conflicting volume	2297	692			1385	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1894	0			1052	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	95			100	
cM capacity (veh/h)	44	704			427	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	38	692	692	108	912	912
Volume Left	0	0	0	0	0	0
Volume Right	38	0	0	108	0	0
cSH	704	1700	1700	1700	1700	1700
Volume to Capacity	0.05	0.41	0.41	0.06	0.54	0.54
Queue Length 95th (ft)	4	0	0	0	0	0
Control Delay (s)	10.4	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	10.4	0.0			0.0	
Approach LOS	B					

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	49.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Satd. Flow (prot)	0	1611	3539	1583	0	3539
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	1583	0	3539
Volume (vph)	0	35	1803	232	0	1536
Lane Group Flow (vph)	0	38	1960	252	0	1670
Sign Control	Yield		Free			Free

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Yield		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	35	1803	232	0	1536
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	38	1960	252	0	1670
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			246			305
pX, platoon unblocked	0.79					
vC, conflicting volume	2795	980			1960	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3008	980			1960	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	85			100	
cM capacity (veh/h)	8	249			293	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	38	980	980	252	835	835
Volume Left	0	0	0	0	0	0
Volume Right	38	0	0	252	0	0
cSH	249	1700	1700	1700	1700	1700
Volume to Capacity	0.15	0.58	0.58	0.15	0.49	0.49
Queue Length 95th (ft)	13	0	0	0	0	0
Control Delay (s)	22.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s)	22.0	0.0			0.0	
Approach LOS	C					

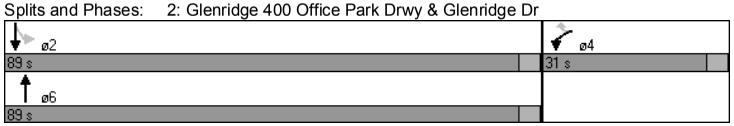
Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	59.8%	ICU Level of Service		B
Analysis Period (min)	15			

Future 2011 PM Site Access Analysis

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	1770	1583	3532	0	1770	3539
Flt Permitted	0.950				0.090	
Satd. Flow (perm)	1770	1583	3532	0	168	3539
Satd. Flow (RTOR)		45	3			
Volume (vph)	25	44	1562	18	26	1750
Lane Group Flow (vph)	28	59	1704	0	37	1823
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Total Split (s)	31.0	31.0	89.0	0.0	89.0	89.0
Act Effct Green (s)	7.4	7.4	107.3		107.3	107.3
Actuated g/C Ratio	0.06	0.06	0.89		0.89	0.89
v/c Ratio	0.25	0.42	0.54		0.25	0.58
Control Delay	58.5	30.2	2.1		1.9	1.5
Queue Delay	0.0	0.0	0.0		0.0	0.1
Total Delay	58.5	30.2	2.1		1.9	1.6
LOS	E	C	A		A	A
Approach Delay	39.3		2.1			1.6
Approach LOS	D		A			A

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 33 (28%), Referenced to phase 2:SBTL and 6:NBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay: 2.8		Intersection LOS: A	
Intersection Capacity Utilization 58.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Glenridge 400 Office Park Drwy & Glenridge Dr



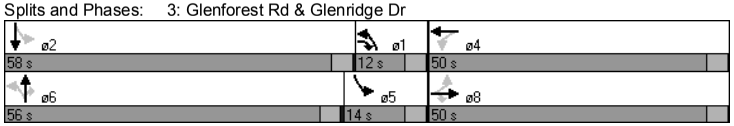
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frt	1.00	0.85	1.00		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	3532		1770	3539
Flt Permitted	0.95	1.00	1.00		0.13	1.00
Satd. Flow (perm)	1770	1583	3532		237	3539
Volume (vph)	25	44	1562	18	26	1750
Peak-hour factor, PHF	0.88	0.75	0.93	0.75	0.71	0.96
Adj. Flow (vph)	28	59	1680	24	37	1823
RTOR Reduction (vph)	0	43	0	0	0	0
Lane Group Flow (vph)	28	16	1704	0	37	1823
Turn Type		Perm			Perm	
Protected Phases	4		6			2
Permitted Phases		4			2	
Actuated Green, G (s)	6.3	6.3	105.7		105.7	105.7
Effective Green, g (s)	6.3	6.3	105.7		105.7	105.7
Actuated g/C Ratio	0.05	0.05	0.88		0.88	0.88
Clearance Time (s)	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	93	83	3111		209	3117
v/s Ratio Prot	c0.02		0.48			c0.52
v/s Ratio Perm		0.01			0.16	
v/c Ratio	0.30	0.20	0.55		0.18	0.58
Uniform Delay, d1	54.7	54.4	1.6		1.0	1.8
Progression Factor	1.00	1.00	0.83		0.08	0.58
Incremental Delay, d2	1.8	1.2	0.6		0.8	0.4
Delay (s)	56.6	55.6	1.9		0.9	1.4
Level of Service	E	E	A		A	A
Approach Delay (s)	55.9		1.9			1.4
Approach LOS	E		A			A

Intersection Summary			
HCM Average Control Delay	2.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Satd. Flow (prot)	0	1801	1583	1681	1686	1583	1770	3539	1583	1770	3532	0
Flt Permitted		0.580		0.735	0.703		0.077			0.083		
Satd. Flow (perm)	0	1080	1583	1301	1244	1583	143	3539	1583	155	3532	0
Satd. Flow (RTOR)			5			122			70		1	
Volume (vph)	14	4	44	780	2	256	55	1184	134	139	1653	12
Lane Group Flow (vph)	0	34	67	527	531	308	62	1233	216	158	1778	0
Turn Type	Perm		pm+ov	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Total Split (s)	50.0	50.0	12.0	50.0	50.0	0.0	12.0	56.0	56.0	14.0	58.0	0.0
Act Effct Green (s)		46.9	57.5	46.9	46.9	120.0	59.4	52.0	52.0	63.5	55.6	
Actuated g/C Ratio		0.39	0.48	0.39	0.39	1.00	0.50	0.43	0.43	0.53	0.46	
v/c Ratio		0.08	0.09	1.04	1.09	0.19	0.36	0.80	0.30	0.77	1.09	
Control Delay		24.4	15.9	86.4	103.9	0.3	30.3	26.1	10.9	45.6	64.5	
Queue Delay		0.0	0.0	62.0	70.0	0.0	0.0	1.5	0.0	0.0	83.6	
Total Delay		24.4	15.9	148.4	174.0	0.3	30.3	27.6	10.9	45.6	148.1	
LOS		C	B	F	F	A	C	C	B	D	F	
Approach Delay		18.8			124.9			25.3			139.7	
Approach LOS		B			F			C			F	

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 48 (40%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 97.9		Intersection LOS: F	
Intersection Capacity Utilization 87.7%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Glenforest Rd & Glenridge Dr



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor		1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frt		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.97	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1802	1583	1681	1686	1583	1770	3539	1583	1770	3534	
Flt Permitted		0.59	1.00	0.73	0.70	1.00	0.08	1.00	1.00	0.08	1.00	
Satd. Flow (perm)		1103	1583	1301	1244	1583	146	3539	1583	154	3534	
Volume (vph)	14	4	44	780	2	256	55	1184	134	139	1653	12
Peak-hour factor, PHF	0.60	0.38	0.66	0.74	0.50	0.83	0.89	0.96	0.62	0.88	0.94	0.62
Adj. Flow (vph)	23	11	67	1054	4	308	62	1233	216	158	1759	19
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	40	0	1	0
Lane Group Flow (vph)	0	34	64	527	531	308	62	1233	176	158	1777	0
Turn Type	Perm		pm+ov	Perm		Free	pm+pt		Perm	pm+pt		
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4		Free	6		6	2		
Actuated Green, G (s)		46.9	53.2	46.9	46.9	120.0	57.5	51.2	51.2	64.7	54.8	
Effective Green, g (s)		46.9	53.2	46.9	46.9	120.0	57.5	51.2	51.2	64.7	54.8	
Actuated g/C Ratio		0.39	0.44	0.39	0.39	1.00	0.48	0.43	0.43	0.54	0.46	
Clearance Time (s)		4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		431	755	508	486	1583	155	1510	675	216	1614	
v/s Ratio Prot			0.00				0.02	0.35		c0.06	c0.50	
v/s Ratio Perm		0.03	0.04	0.41	c0.43	0.19	0.17		0.11	0.33		
v/c Ratio		0.08	0.09	1.04	1.09	0.19	0.40	0.82	0.26	0.73	1.10	
Uniform Delay, d1		23.0	19.3	36.6	36.6	0.0	55.8	30.3	22.2	42.7	32.6	
Progression Factor		1.00	1.00	1.00	1.00	1.00	0.87	0.72	0.66	0.59	0.38	
Incremental Delay, d2		0.1	0.0	49.9	68.3	0.3	1.7	4.9	0.9	10.4	54.2	
Delay (s)		23.1	19.4	86.5	104.9	0.3	50.1	26.7	15.7	35.5	66.7	
Level of Service		C	B	F	F	A	D	C	B	D	E	
Approach Delay (s)		20.6			74.2			26.1			64.1	
Approach LOS		C			E			C			E	

Intersection Summary					
HCM Average Control Delay	54.3	HCM Level of Service		D	
HCM Volume to Capacity ratio	1.08				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	87.7%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Satd. Flow (prot)	0	1611	3539	1583	0	3539
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	1583	0	3539
Volume (vph)	0	77	1422	31	0	1804
Lane Group Flow (vph)	0	84	1546	34	0	1961
Sign Control	Yield		Free			Free

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Yield		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	77	1422	31	0	1804
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	84	1546	34	0	1961
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			370			383
pX, platoon unblocked	0.77	0.69			0.69	
vC, conflicting volume	2526	773			1546	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2052	221			1341	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	84			100	
cM capacity (veh/h)	37	540			352	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	84	773	773	34	980	980
Volume Left	0	0	0	0	0	0
Volume Right	84	0	0	34	0	0
cSH	540	1700	1700	1700	1700	1700
Volume to Capacity	0.16	0.45	0.45	0.02	0.58	0.58
Queue Length 95th (ft)	14	0	0	0	0	0
Control Delay (s)	12.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	12.9	0.0			0.0	
Approach LOS	B					

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	53.2%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Satd. Flow (prot)	0	1611	3539	1583	0	3539
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	1583	0	3539
Volume (vph)	0	77	1295	72	0	2477
Lane Group Flow (vph)	0	84	1408	78	0	2692
Sign Control	Yield		Free			Free

Intersection Summary			
Control Type: Unsignalized			
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Yield		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	77	1295	72	0	2477
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	84	1408	78	0	2692
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			246			305
pX, platoon unblocked	0.55					
vC, conflicting volume	2754	704			1408	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3376	704			1408	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	78			100	
cM capacity (veh/h)	3	380			481	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	84	704	704	78	1346	1346
Volume Left	0	0	0	0	0	0
Volume Right	84	0	0	78	0	0
cSH	380	1700	1700	1700	1700	1700
Volume to Capacity	0.22	0.41	0.41	0.05	0.79	0.79
Queue Length 95th (ft)	21	0	0	0	0	0
Control Delay (s)	17.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	C					
Approach Delay (s)	17.1	0.0			0.0	
Approach LOS	C					

Intersection Summary					
Average Delay		0.3			
Intersection Capacity Utilization		71.8%	ICU Level of Service		C
Analysis Period (min)		15			

Traffic Volume Worksheets

07-077 Lakeside DRI
Traffic Volumes
Future Conditions

A&R Engineering
August-07

Hammond Drive / Glenridge Drive

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	95	202	799	1096	246	524	11	781	19	836	214	1069	509	254	38	801
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	113	241	953	1307	293	625	13	931	23	997	255	1275	607	303	45	955
Total New Trips	41	41	62	144	0	102	0	102	0	0	102	102	153	0	0	153
Future Traffic Volumes:	154	282	1015	1451	293	727	13	1033	23	997	357	1377	760	303	45	1108

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	234	476	489	1199	45	442	15	502	17	424	144	585	740	749	254	1743
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	279	568	583	1430	54	527	18	599	20	506	172	698	882	893	303	2079
Total New Trips	87	87	130	304	0	32	0	32	0	0	32	32	48	0	0	48
Future Traffic Volumes:	366	655	713	1734	54	559	18	631	20	506	204	730	930	893	303	2127

07-077 Lakeside DRI

Traffic Volumes
Future Conditions

A&R Engineering
August-07

Glenridge Drive / Glenridge 400 Office Park Driveway

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	967	34	1001	31	1112	0	1143	0	0	0	0	10	0	10	20
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	0	1153	41	1194	37	1326	0	1363	0	0	0	0	12	0	12	24
Total New Trips	0	136	0	136	18	339	0	357	0	0	0	0	0	0	7	7
Future Traffic Volumes:	0	1289	41	1330	55	1665	0	1720	0	0	0	0	12	0	19	31

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	1067	15	1082	17	1379	0	1396	0	0	0	0	21	0	24	45
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	0	1272	18	1290	20	1644	0	1665	0	0	0	0	25	0	29	54
Total New Trips	0	290	0	290	6	106	0	112	0	0	0	0	0	0	15	15
Future Traffic Volumes:	0	1562	18	1580	26	1750	0	1777	0	0	0	0	25	0	44	69

07-077 Lakeside DRI
Traffic Volumes
Future Conditions

A&R Engineering
August-07

Glenridge Drive / Glenforest Road / Lakeside Commercial Complex Driveway

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	6	965	181	1152	128	994	2	1124	5	5	53	63	17	1	14	32
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	7	1151	216	1374	153	1185	2	1340	6	6	63	75	20	1	17	38
Total New Trips	0	134	331	465	339	0	0	339	0	0	0	0	267	0	64	331
Future Traffic Volumes:	7	1285	547	1839	492	1185	2	1679	6	6	63	75	287	1	81	369

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	46	902	25	973	28	1386	10	1424	12	3	37	52	181	2	100	283
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	55	1076	30	1160	33	1653	12	1698	14	4	44	62	216	2	119	337
Total New Trips	0	108	104	212	106	0	0	106	0	0	0	0	564	0	137	701
Future Traffic Volumes:	55	1184	134	1372	139	1653	12	1804	14	4	44	62	780	2	256	1038

07-077 Lakeside DRI

Traffic Volumes
Future Conditions

A&R Engineering
August-07

Glenridge Drive / I-285 Westbound On-Ramp

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	334	1100	0	1434	0	864	199	1063	0	0	0	0	0	0	0	0
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	398	1312	0	1710	0	1030	237	1268	0	0	0	0	0	0	0	0
Total New Trips	0	662	0	662	0	164	103	267	0	0	0	0	0	0	0	0
Future Traffic Volumes:	398	1974	0	2372	0	1194	340	1535	0	0	0	0	0	0	0	0

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	775	961	0	1736	0	900	754	1654	0	0	0	0	0	0	0	0
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	924	1146	0	2070	0	1073	899	1972	0	0	0	0	0	0	0	0
Total New Trips	0	208	0	208	0	347	217	564	0	0	0	0	0	0	0	0
Future Traffic Volumes:	924	1354	0	2278	0	1420	1116	2536	0	0	0	0	0	0	0	0

07-077 Lakeside DRI

Traffic Volumes
Future Conditions

A&R Engineering
August-07

Glenridge Drive / I-285 Eastbound Off-Ramp

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	959	0	959	0	905	0	905	516	0	898	1414	0	0	0	0
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	0	1144	0	1144	0	1079	0	1079	615	0	1071	1686	0	0	0	0
Total New Trips	0	407	0	407	0	164	0	164	255	0	0	255	0	0	0	0
Future Traffic Volumes:	0	1551	0	1551	0	1243	0	1243	870	0	1071	1941	0	0	0	0

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	1563	0	1563	0	861	0	861	155	0	219	374	0	0	0	0
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	0	1864	0	1864	0	1027	0	1027	185	0	261	446	0	0	0	0
Total New Trips	0	128	0	128	0	347	0	347	80	0	0	80	0	0	0	0
Future Traffic Volumes:	0	1992	0	1992	0	1374	0	1374	265	0	261	526	0	0	0	0

07-077 Lakeside DRI
Traffic Volumes
Future Conditions

A&R Engineering
August-07

Glenridge Connector / Johnson Ferry Road

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	452	402	176	1030	677	547	26	1250	207	494	423	1124	74	175	291	540
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	539	479	210	1228	807	652	31	1491	247	589	504	1340	88	209	347	644
Total New Trips	0	285	0	285	41	115	8	164	20	0	0	20	0	0	102	102
Future Traffic Volumes:	539	764	210	1513	848	767	39	1655	267	589	504	1360	88	209	449	746

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	518	808	45	1371	203	617	16	836	200	332	345	877	162	466	573	1201
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	618	964	54	1635	242	736	19	997	239	396	411	1046	193	556	683	1432
Total New Trips	0	90	0	90	87	243	17	347	6	0	0	6	0	0	32	32
Future Traffic Volumes:	618	1054	54	1725	329	979	36	1344	245	396	411	1052	193	556	715	1464

07-077 Lakeside DRI
Traffic Volumes
Future Conditions

A&R Engineering
August-07

Glenridge Drive / North Right In-Right Out Driveway

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	984	0	984	0	1124	0	1124	0	0	0	0	0	0	0	0
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	0	1173	0	1173	0	1340	0	1340	0	0	0	0	0	0	0	0
Total New Trips	0	101	99	200	0	339	0	339	0	0	0	0	0	0	35	35
Future Traffic Volumes:	0	1274	99	1373	0	1679	0	1679	0	0	0	0	0	0	35	35

P.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	1014	0	1014	0	1424	0	1424	0	0	0	0	0	0	0	0
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	0	1209	0	1209	0	1698	0	1698	0	0	0	0	0	0	0	0
Total New Trips	0	213	31	244	0	106	0	106	0	0	0	0	0	0	77	77
Future Traffic Volumes:	0	1422	31	1453	0	1804	0	1804	0	0	0	0	0	0	77	77

07-077 Lakeside DRI

Traffic Volumes
Future Conditions

A&R Engineering
August-07

Glenridge Drive / South Right In-Right Out Driveway

A.M. Peak Hour

Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	1152	0	1152	0	1064	0	1064	0	0	0	0	0	0	0	0
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	0	1374	0	1374	0	1269	0	1269	0	0	0	0	0	0	0	0
Total New Trips	0	429	232	661	0	267	0	267	0	0	0	0	0	0	35	35
Future Traffic Volumes:	0	1803	232	2035	0	1536	0	1536	0	0	0	0	0	0	35	35

P.M. Peak Hour

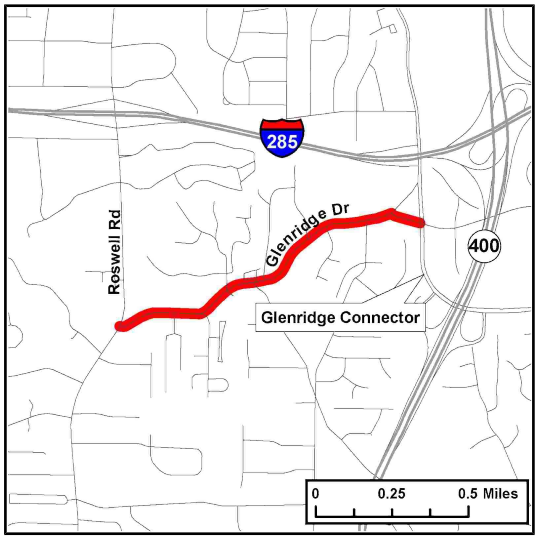
Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	973	0	973	0	1604	0	1604	0	0	0	0	0	0	0	0
Growth Factor (%):	4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5		4.5	4.5	4.5	
Base Condition:	0	1160	0	1160	0	1913	0	1913	0	0	0	0	0	0	0	0
Total New Trips	0	135	72	207	0	564	0	564	0	0	0	0	0	0	77	77
Future Traffic Volumes:	0	1295	72	1367	0	2477	0	2477	0	0	0	0	0	0	77	77

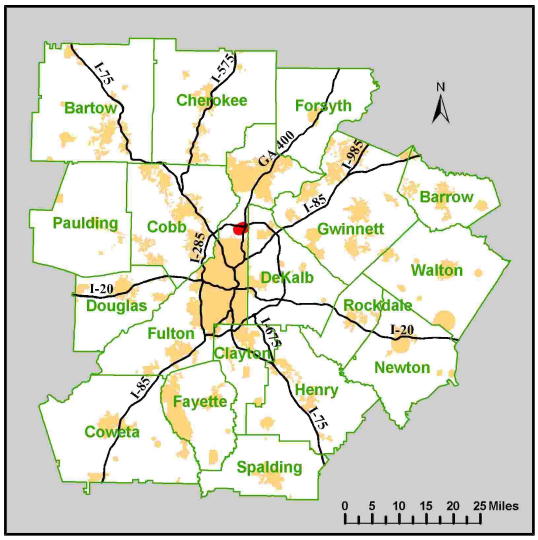
Planned and Programmed Improvements

FN-103A

Atlanta Region - Mobility2030 Transportation Plan
PROJECT FACT SHEET

Short Title	GLENRIDGE DRIVE FROM SR 9 (ROSWELL ROAD) TO GLENRIDGE CONNECTOR
GDOT Project No.	753054-
Federal ID No.	STP-9258(3)
Status	Programmed
Detailed Description and Justification	FN 103A includes improvements along Glenridge Drive from the Glenridge Connector to Roswell Rd/SR 9. Improvements include adding a median and right and left turn lanes. The purpose of this project is to create a median barrier/crash cushion, improving safety along this corridor.
Service Type	Roadway Operational Upgrades
Sponsor	GRTA
Jurisdiction	Fulton (North)
Existing Thru Lane	2 *(applicable for road projects only)*
Planned Thru Lane	2 *(applicable for road projects only)*
Corridor Length	1.16 miles *(not applicable for all project types)*
Network Year	2010 *(required if modeled for conformity)*
Completion Date	2007
Analysis Level	Exempt from Air Quality Analysis (40 CFR 93)





Phase Status & Funding Information for 06-11 TIP		FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
				FEDERAL	STATE	BONDS	LOCAL/OTHER
PE	State Bonds	AUTH	**$0,000**	$0,000	$0,000	$0,000	$0,000
ROW	State Bonds	AUTH	**$0,000**	$0,000	$0,000	$0,000	$0,000
CST	State Bonds	2007	**$3,300,000**	$0,000	$0,000	$3,300,000	$0,000
				$0,000	**$0,000**	**$3,300,000**	**$0,000**

PE: Preliminary Engineering / Design / Study ROW: Right-of-way Acquistion CST: Construction / Implementation

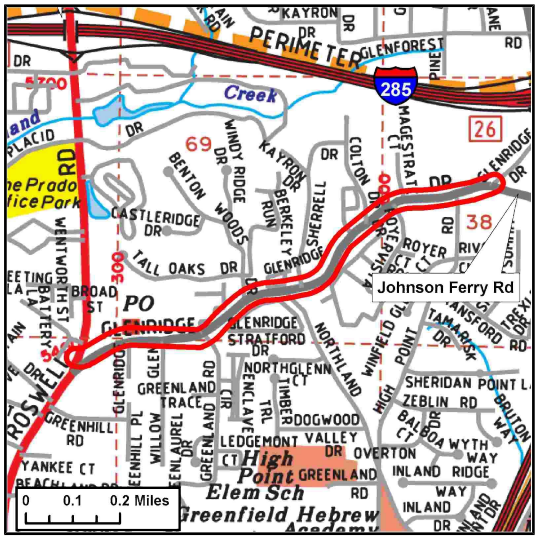
? For additional information about this project, please visit the Atlanta Regional Commission at www.atlantaregional.com or call (404) 463-3100.

Report Generated: 6/12/2007

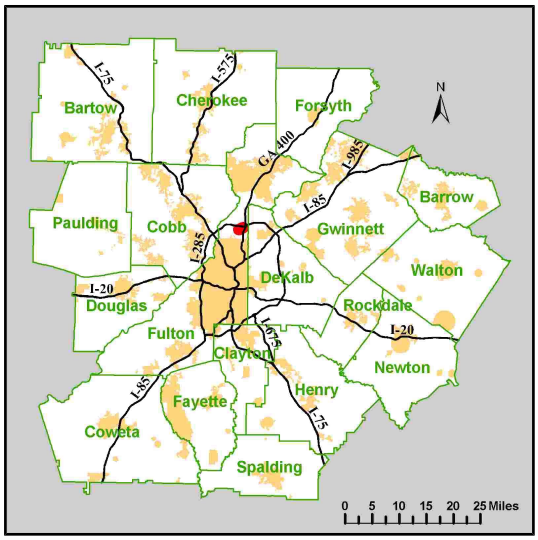
FN-103B

Atlanta Region - Mobility2030 Transportation Plan
PROJECT FACT SHEET

Short Title	GLENRIDGE DRIVE FROM SR 9 (ROSWELL ROAD) TO JOHNSON FERRY ROAD
GDOT Project No.	N/A
Federal ID No.	
Status	Long Range
Detailed Description and Justification	FN 103B includes improvements along Glenridge Drive from the Roswell Rd/SR 9 to Johnson Ferry Road. Improvements include adding a median and right and left turn lanes. The purpose of this project is to create a median barrier/crash cushion, improving safety along this corridor.
Service Type	General Purpose Roadway Capacity
Sponsor	City of Sandy Springs
Jurisdiction	Fulton (North)
Existing Thru Lane	2 *(applicable for road projects only)*
Planned Thru Lane	4 *(applicable for road projects only)*
Corridor Length	1.02 miles *(not applicable for all project types)*
Network Year	2020 *(required if modeled for conformity)*
Completion Date	2020
Analysis Level	In the Region's Air Quality Conformity Analysis



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Phase Status & Funding Information for 06-11 TIP		FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
				FEDERAL	STATE	BONDS	LOCAL/OTHER
PE	Local Jurisdiction/Municipality Funds	LR 2014-2020	**$100,000**	$0,000	$0,000	$0,000	$100,000
ROW	Local Jurisdiction/Municipality Funds	LR 2014-2020	**$1,000,000**	$0,000	$0,000	$0,000	$1,000,000
CST	General Federal Aid - 2014-2030	LR 2014-2020	**$5,385,600**	$4,308,480	$0,000	$0,000	$1,077,120
				$4,308,480	**$0,000**	**$0,000**	**$2,177,120**

PE: Preliminary Engineering / Design / Study ROW: Right-of-way Acquistion CST: Construction / Implementation

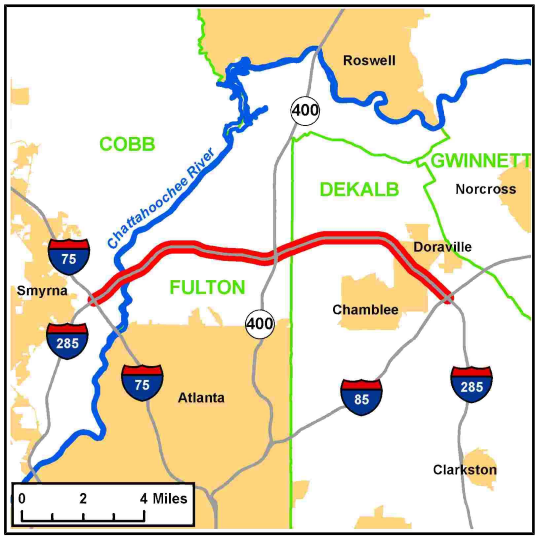
? For additional information about this project, please visit the Atlanta Regional Commission at www.atlantaregional.com or call (404) 463-3100.

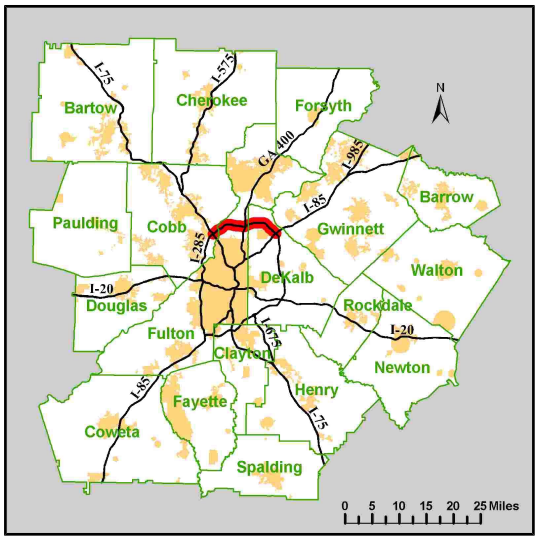
Report Generated: 6/12/2007

AR-H-300

Atlanta Region - Mobility2030 Transportation Plan
PROJECT FACT SHEET

Short Title	I-285 NORTH HOV LANES FROM I-75 NORTH IN COBB COUNTY TO I-85 NORTH IN DEKALB COUNTY
GDOT Project No.	0001758
Federal ID No.	NHS-0001-00(758)
Status	Programmed
Detailed Description and Justification	Addition of 1 HOV lane in both directions for 13 miles from I-75 to I-85. Dedicated HOV-only ramps will be provided but have not been determined at this time. The HOV lanes will be barrier-separated with median breaks in certain locations to allow for ingress and egress from the HOV lanes as well as emergency vehicle access.
Service Type	HOV Lanes
Sponsor	GDOT
Jurisdiction	Multi-County
Existing Thru Lane	0 *(applicable for road projects only)*
Planned Thru Lane	2/4 *(applicable for road projects only)*
Corridor Length	13.1 miles *(not applicable for all project types)*
Network Year	2015 *(required if modeled for conformity)*
Completion Date	2015
Analysis Level	In the Region's Air Quality Conformity Analysis





Phase Status & Funding Information for 06-11 TIP		FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
				FEDERAL	STATE	BONDS	LOCAL/OTHER
PE	National Highway System	2006	**$0,000**	$0,000	$0,000	$0,000	$0,000
PE	Interstate Maintenance	2007	**$1,250,000**	$1,125,000	$125,000	$0,000	$0,000
PE	National Highway System	2007	**$0,000**	$0,000	$0,000	$0,000	$0,000
PE	SAFETEA-LU Earmark	2007	**$3,750,000**	$3,000,000	$750,000	$0,000	$0,000
PE	GRV BONDS (GARVEE Bond Program)	2009	**$30,000,000**	$0,000	$0,000	$30,000,000	$0,000
ROW	GRV BONDS (GARVEE Bond Program)	2010	**$99,000,000**	$0,000	$0,000	$99,000,000	$0,000
CST	National Highway System	LR 2012-2020	**$407,000,000**	$325,600,000	$81,400,000	$0,000	$0,000
				$329,725,000	**$82,275,000**	**$129,000,000**	**$0,000**

PE: Preliminary Engineering / Design / Study ROW: Right-of-way Acquistion CST: Construction / Implementation

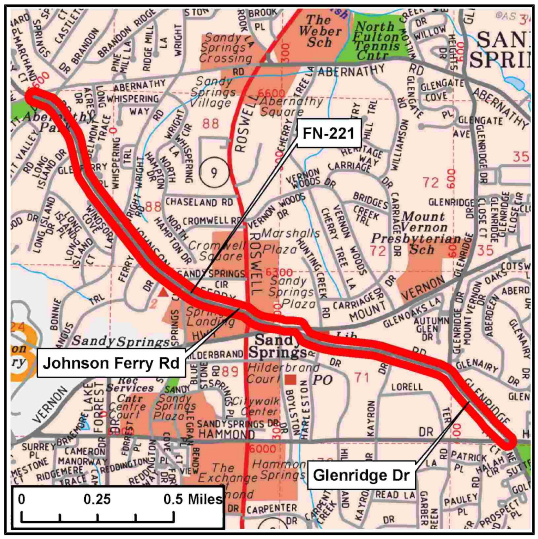
? For additional information about this project, please visit the Atlanta Regional Commission at www.atlantaregional.com or call (404) 463-3100.

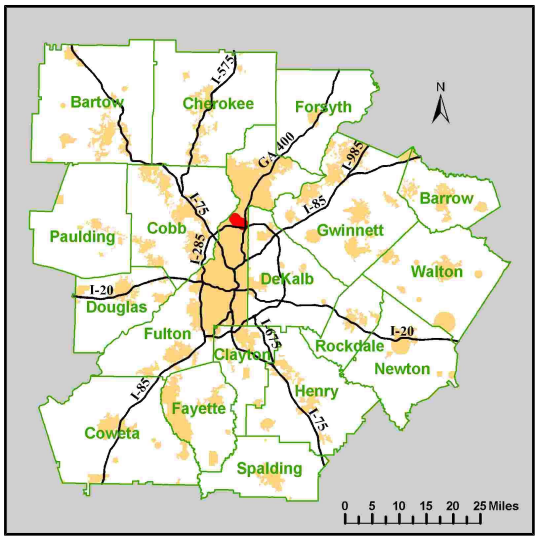
Report Generated: 6/12/2007

FN-221

Atlanta Region - Mobility2030 Transportation Plan
PROJECT FACT SHEET

Short Title	JOHNSON FERRY ROAD / GLENRIDGE DRIVE (INCLUDE ONE-WAY PAIR) FROM ABERNATHY ROAD TO HAMMOND DRIVE
GDOT Project No.	751420-
Federal ID No.	STP-9252(7)
Status	Programmed
Detailed Description and Justification	This project is the widening of Johnson Ferry Road/Glenridge Parkway from Abernathy Road to Hammond Drive. This project will be 3.24 miles in length.
Service Type	General Purpose Roadway Capacity
Sponsor	City of Sandy Springs
Jurisdiction	Fulton (North)
Existing Thru Lane	2 *(applicable for road projects only)*
Planned Thru Lane	4 *(applicable for road projects only)*
Corridor Length	3 miles *(not applicable for all project types)*
Network Year	2020 *(required if modeled for conformity)*
Completion Date	2013
Analysis Level	In the Region's Air Quality Conformity Analysis





Phase Status & Funding Information for 06-11 TIP		FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
				FEDERAL	STATE	BONDS	LOCAL/OTHER
PE	High Priority Projects from TEA-21	2007	**$0,000**	$0,000	$0,000	$0,000	$0,000
PE	SAFETEA-LU Earmark	2007	**$0,000**	$0,000	$0,000	$0,000	$0,000
ROW	Local Jurisdiction/Municipality Funds	2009	**$700,000**	$0,000	$0,000	$0,000	$700,000
ROW	SAFETEA-LU Earmark	2009	**$647,000**	$517,600	$129,400	$0,000	$0,000
CST	STP - Urban (>200K) (ARC)	2011	**$2,204,000**	$1,763,200	$440,800	$0,000	$0,000
CST	SAFETEA-LU Earmark	2011	**$2,500,000**	$2,000,000	$500,000	$0,000	$0,000
CST	SAFETEA-LU Earmark	2011	**$1,481,000**	$1,184,800	$296,200	$0,000	$0,000
				$5,465,600	**$1,366,400**	**$0,000**	**$700,000**

PE: Preliminary Engineering / Design / Study ROW: Right-of-way Acquistion CST: Construction / Implementation

? For additional information about this project, please visit the Atlanta Regional Commission at www.atlantaregional.com or call (404) 463-3100.

Report Generated: 6/12/2007

MARTA Information

Route 87 - Roswell Rd. - Description

Return to Route 87 home page

Void links have been placed on all headings in this description, use the tab key to navigate between sections.

FROM DUNWOODY STN. TO NORTH SPRINGS STATION: Right onto Hammond Dr.

1. Right onto Roswell Rd.
2. Right onto Dunwoody Place
3. Continue onto Ga. 400 Southbound
4. Right onto Ramp North Springs Station

back to top

FROM DUNWOODY STATION TO DUNWOODY PLACE & ROSWELL RD. VIA Right onto Hammond Dr.

1. Right onto Roswell Rd.
2. Right onto Dunwoody Pl.
3. End of Line

back to top

FROM DUNWOODY STATION TO DUNWOODY PLACE & ROSWELL RD. VIA Right onto Hammond Dr.

1. Right onto Roswell Rd.
2. Right onto Dunwoody Pl.
3. End of Line

back to top

FROM NORTH SPRINGS STATION TO DUNWOODY STATION VIA: Continue onto Ga 400 Northbound

1. Right onto Ramp Northridge Rd.
2. Continue onto - Northridge Rd.
3. Right onto Dunwoody Pl.
4. Left onto Roswell Rd.
5. Left onto Hammond Dr.

6. Left onto into Dunwoody Stn.

back to top

FROM DUNWOODY PLACE AND ROSWELL RD TO DUNWOODY STATION: Continue onto Dunwoody Place

1. Right onto Northridge Rd.
2. Left onto Roswell Rd.
3. Left onto Hammond Dr.
4. Left onto into Dunwoody Station

back to top

FROM DUNWOODY PLACE AND ROSWELL RD TO DUNWOODY STATION: Continue onto Dunwoody Place

1. Right onto Northridge Rd.
2. Left onto Roswell Rd.
3. Left onto Hammond Dr.
4. Left onto into Dunwoody Station

back to top

Return to Route 87 home page

Home | Getting There | How To Ride MARTA | News Room | Working At MARTA
Vendor Opportunities | Board of Directors | MARTA Police | Contact Us

Route 5 - Sandy Springs - Description

Return to Route 5 home page

Void links have been placed on all headings in this description, use the tab key to navigate between sections.

FROM LINDBERGH STATION TO DUNWOODY STATION VIA: Left onto Morosgo Dr.

1. Right onto Sidney Marcus Blvd.
2. Left onto Piedmont Rd.
3. Right onto Roswell Rd.
4. Right onto Mt. Vernon Rd.
5. Right onto Johnson Ferry Rd.
6. Right onto Glenridge Dr.
7. Left onto Hammond Dr.
8. Left onto DUNWOODY STATION.
9. MILES 9.67

back to top

FROM DUNWOODY STATION TO LINDBERGH STATION VIA: Left onto Perimeter Center Pkwy.

1. Right onto Hammond Dr.
2. Right onto Glenridge Dr.
3. Left onto Johnson Ferry
4. Left onto Mt. Vernon
5. Left onto Roswell Rd.
6. Left onto Piedmont Rd.
7. Right onto Sidney Marcus Blvd.
8. Left onto Sidney Marcus Dr. across Morosgo to Bus Intermodal. Entrance.

back to top

FROM DUNWOODY STATION TO LINDBERGH STATION VIA: KINGSPORT DR.

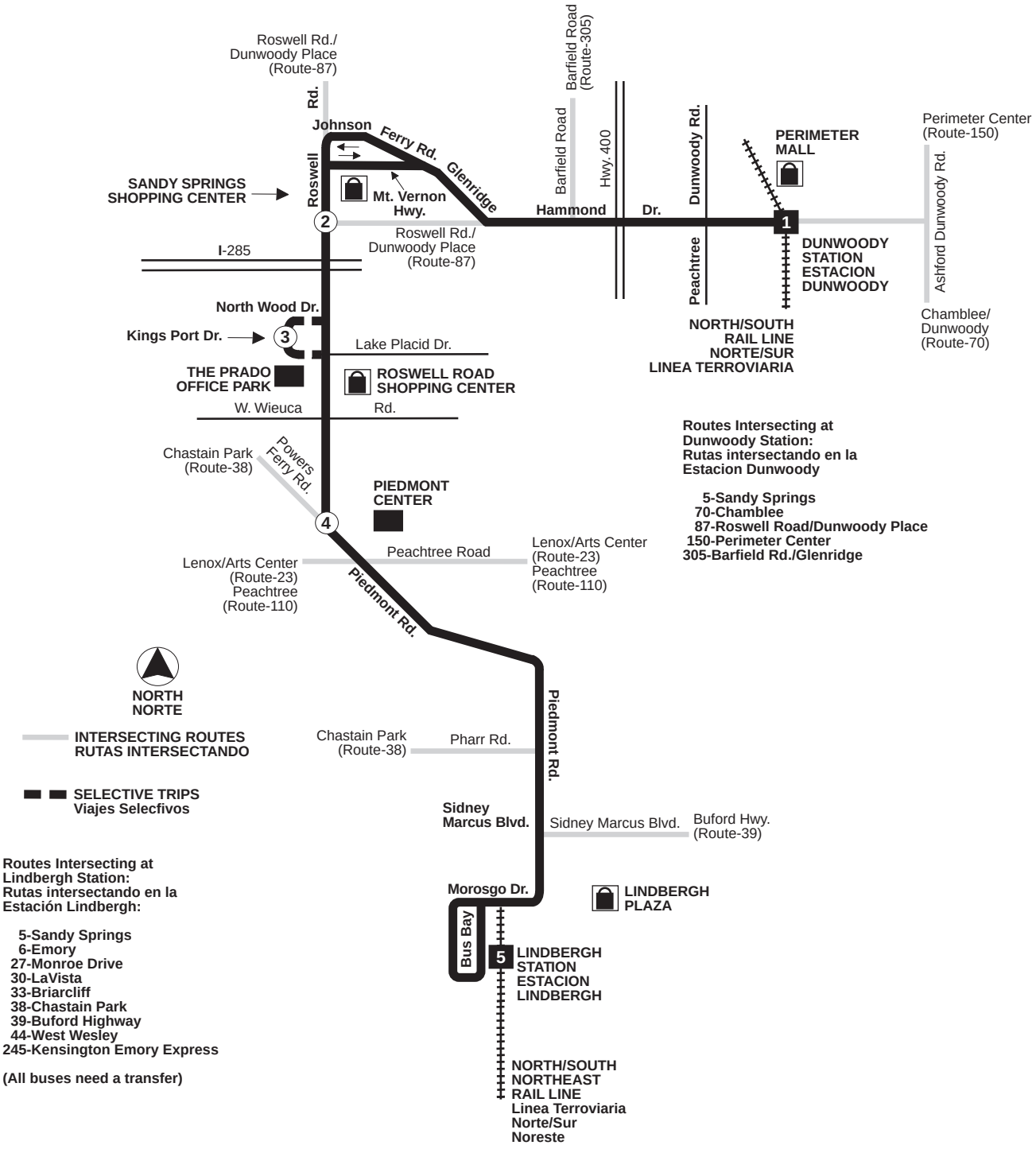
1. Left onto Perimeter Center Pkwy.
2. Right onto Hammond Dr.
3. Right onto Glenridge Dr.
4. Left onto Johnson Ferry

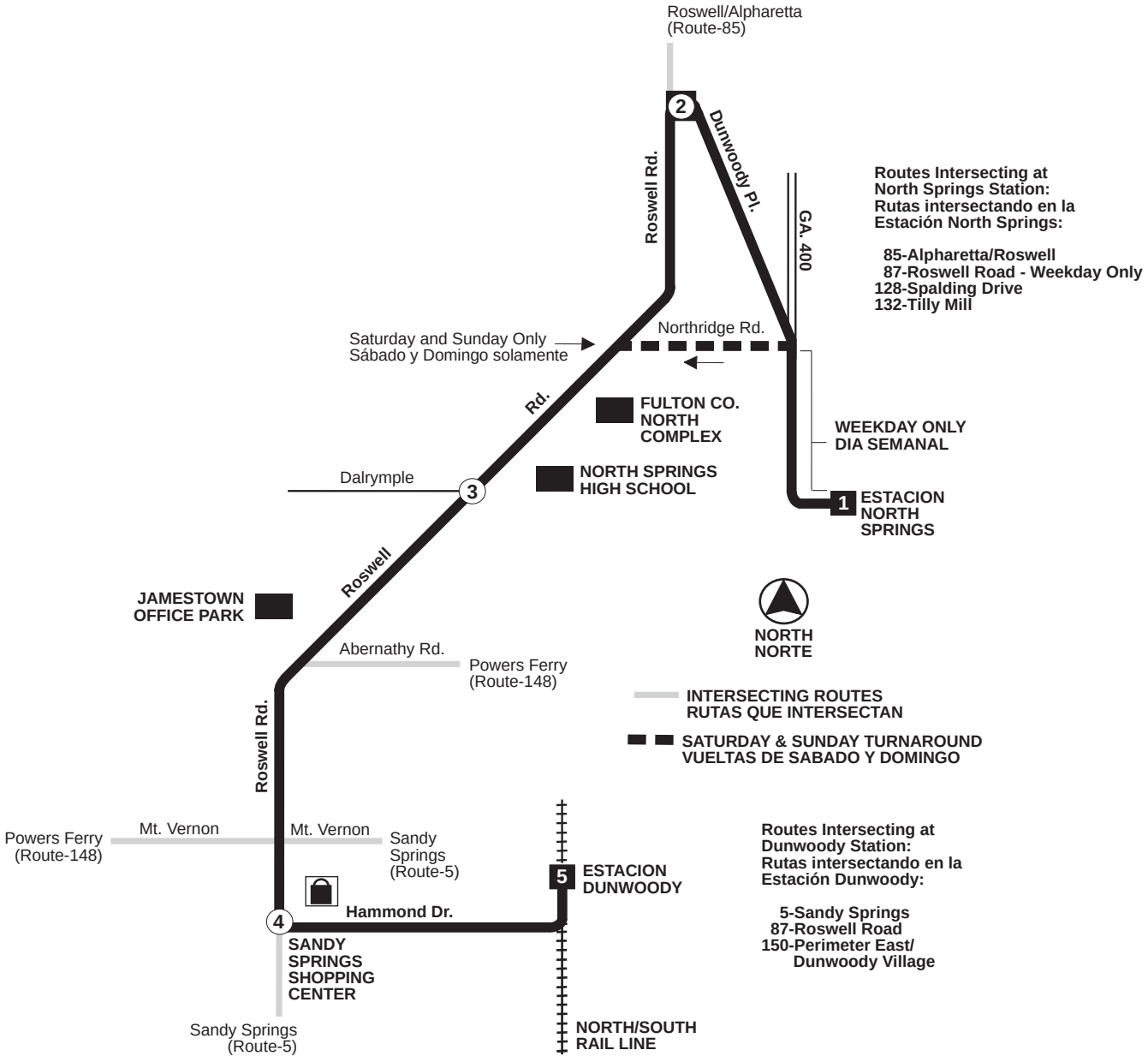
5. Left onto Mount Vernon Hwy.
6. Left onto Roswell Rd. Pass over I-285.
7. Right onto Northwood Dr.
8. Left onto Kingsport Dr.
9. Left onto Lake Placid Dr.
10. Right onto Roswell Rd.
11. Left onto Piedmont Rd.
12. Right onto Sidney Marcus Blvd.
13. Left onto Sidney Marcus Dr.
14. Continue onto across to Bus Bay

back to top

Return to Route 5 home page

Home | Getting There | How To Ride MARTA | News Room | Working At MARTA
Vendor Opportunities | Board of Directors | MARTA Police | Contact Us


Roswell Rd./
Dunwoody Place
(Route-87)
Rd.
Johnson
Ferry Rd.
Glenridge
Roswell
SANDY SPRINGS
SHOPPING CENTER
Mt. Vernon
Hwy.
2
Roswell Rd./
Dunwoody Place
(Route-87)
I-285
North Wood Dr.
Kings Port Dr.
3
Lake Placid Dr.
THE PRADO
OFFICE PARK
ROSWELL ROAD
SHOPPING CENTER
W. Wieuca
Rd.
Chastain Park
(Route-38)
Powers
Ferry Rd.
PIEDMONT
CENTER
4
Peachtree Road
Lenox/Arts Center
(Route-23)
Peachtree
(Route-110)
Lenox/Arts Center
(Route-23)
Peachtree
(Route-110)
Piedmont Rd.
NORTH
NORTE
INTERSECTING ROUTES
RUTAS INTERSECTANDO
SELECTIVE TRIPS
Viajes Selecfivos
Chastain Park
(Route-38)
Pharr Rd.
Piedmont Rd.
Sidney
Marcus Blvd.
Sidney Marcus Blvd.
Buford Hwy.
(Route-39)
Morosgo Dr.
LINDBERGH
PLAZA
Bus Bay
5
LINDBERGH
STATION
ESTACION
LINDBERGH
NORTH/SOUTH
NORTHEAST
RAIL LINE
Linea Terroviaria
Norte/Sur
Noreste
Barfield Road
(Route-305)
Barfield Road
Hwy. 400
Hammond
Dr.
Dunwoody Rd.
Peachtree
PERIMETER
MALL
1
DUNWOODY
STATION
ESTACION
DUNWOODY
NORTH/SOUTH
RAIL LINE
NORTE/SUR
LINEA TERROVIARIA
Perimeter Center
(Route-150)
Ashford Dunwoody Rd.
Chamblee/
Dunwoody
(Route-70)
Routes Intersecting at
Dunwoody Station:
Rutas intersectando en la
Estacion Dunwoody
5-Sandy Springs
70-Chamblee
87-Roswell Road/Dunwoody Place
150-Perimeter Center
305-Barfield Rd./Glenridge
Routes Intersecting at
Lindbergh Station:
Rutas intersectando en la
Estación Lindbergh:
5-Sandy Springs
6-Emory
27-Monroe Drive
30-LaVista
33-Briarcliff
38-Chastain Park
39-Buford Highway
44-West Wesley
245-Kensington Emory Express
(All buses need a transfer)


Roswell/Alpharetta
(Route-85)
2
Dunwoody Pl.
Roswell Rd.
GA. 400
Routes Intersecting at
North Springs Station:
Rutas intersectando en la
Estación North Springs:
85-Alpharetta/Roswell
87-Roswell Road - Weekday Only
128-Spalding Drive
132-Tilly Mill
Saturday and Sunday Only
Sábado y Domingo solamente
Northridge Rd.
Rd.
FULTON CO.
NORTH
COMPLEX
WEEKDAY ONLY
DIA SEMANAL
Dalrymple
3
NORTH SPRINGS
HIGH SCHOOL
1
ESTACION
NORTH
SPRINGS
Roswell
JAMESTOWN
OFFICE PARK
NORTH
NORTE
Abernathy Rd.
Powers Ferry
(Route-148)
INTERSECTING ROUTES
RUTAS QUE INTERSECTAN
SATURDAY & SUNDAY TURNAROUND
VUELTAS DE SABADO Y DOMINGO
Roswell Rd.
Powers Ferry
(Route-148)
Mt. Vernon
Mt. Vernon
Sandy
Springs
(Route-5)
5
ESTACION
DUNWOODY
Routes Intersecting at
Dunwoody Station:
Rutas intersectando en la
Estación Dunwoody:
5-Sandy Springs
87-Roswell Road
150-Perimeter East/
Dunwoody Village
Hammond Dr.
4
SANDY
SPRINGS
SHOPPING
CENTER
Sandy Springs
(Route-5)
NORTH/SOUTH
RAIL LINE

Correspondence

Brannon Sabbarese

From: Gena Wilder [GWilder@GRTA.org]
Sent: Monday, July 30, 2007 9:13 AM
To: Brannon Sabbarese; Moore, Mark
Cc: Abdul Amer
Subject: RE: GRTA Letter of Understanding for DRI #1503 - Lakeside

Brannon,
Please go ahead with 4.5%.
Thanks,
Gena

From: Brannon Sabbarese [mailto:bSabbarese@areng.com]
Sent: Tuesday, July 24, 2007 9:33 AM
To: Moore, Mark
Cc: Gena Wilder; Abdul Amer
Subject: FW: GRTA Letter of Understanding for DRI #1503 - Lakeside

Mark,

GRTA sent out the LOU for the Lakeside DRI yesterday. They were not sure how to account for future growth. In the meeting earlier this month, we talked about using a higher growth factor than I had calculated for the area, but you had mentioned something about other developments in the area. It did not seem that any significant analysis was done for those other developments, so I would have to do the traffic distribution for some of them from scratch. Do you object to using a higher growth factor, 4.5%, in lieu of adding all the other proposed development traffic in the area?

Thanks,

Brannon M. Sabbarese
Project Manager
A&R Engineering, Inc.
2160 Kingston Court, Suite O
Marietta, GA 30067
Tel:(770) 690-9255
Fax:(770) 690-9210
www.areng.com.

From: Gena Wilder [mailto:GWilder@GRTA.org]
Sent: Monday, July 23, 2007 6:06 PM
To: Brannon Sabbarese
Cc: Abdul Amer
Subject: FW: GRTA Letter of Understanding for DRI #1503 - Lakeside

Brannon,
Did we agree to use a growth rate of 4.5% for this one? Or add the growth from the condos and townhomes property? My notes say two different things.
Thanks,
Gena

From: Gena Wilder
Sent: Monday, July 23, 2007 6:04 PM
To: 'cmutter@hgor.com'; 'cscott@greenstone-properties.com'; 'Jessica Hill (jlhill@seyfarth.com)'; 'michael.zehner@sandyspringsga.org'; 'mark.moore@sandyspringsga.org'; 'patrice.ruffin@sandyspringsga.org'; 'Brannon Sabbarese'; 'mike.lobdell@dot.state.ga.us'; 'aamer@areng.com'; Annaka Woodruff (awoodruf@dca.state.ga.us); Ben Buchan (ben.buchan@dot.state.ga.us); Benecia Dennard; Brian Borden; Darby Mori; District 7; DRI; Gena Wilder; Hal Wilson (hal.wilson@dot.state.ga.us); Jim Frederick (jfrederi@dca.state.ga.us); Kirk Fjelstul; Laura Beall; Robin Cailloux; Scott Pendergrast (spendergrast@itsmarta.com); Shaun Green; Steve Walker (steven.walker@dot.state.ga.us); Stuart Dorfman (sdorfman@dca.state.ga.us); William Mecke; Zhuan Loo; Kris Morley-Nikfar (kmorley-nikfar@atlantaregional.com); M. Haley Fleming (hfleming@atlantaregional.com); Susie Dunn (sdunn@atlantaregional.com); Alania Stewart (alania.stewart@dot.state.ga.us); Alex Laffey (alex.laffey@dot.state.ga.us); Patrick Allen (patrick.allen@dot.state.ga.us)
Subject: GRTA Letter of Understanding for DRI #1503 - Lakeside

Please see the attached for the GRTA Letter of Understanding for DRI #1503 – Lakeside.

Thanks,
Gena Wilder

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.476 / Virus Database: 269.10.14/912 - Release Date: 7/22/2007 7:02 PM

No virus found in this outgoing message.
Checked by AVG Free Edition.
Version: 7.5.476 / Virus Database: 269.10.16/914 - Release Date: 7/23/2007 7:45 PM

No virus found in this incoming message.
Checked by AVG Free Edition.
Version: 7.5.476 / Virus Database: 269.10.25/926 - Release Date: 7/29/2007 11:14 PM

Proposed Facility Site Plan