JOHNSON FERRY EAST MIXED-USE DEVELOPMENT

Development of Regional Impact # 1237

DEKALB COUNTY, GA

TRAFFIC IMPACT STUDY

Prepared for:

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FOR
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November 3, 2006
A&R Project No: 06-090

EXECUTIVE SUMMARY

The purpose of this study is to determine the traffic impact that will result from the proposed redevelopment of the existing Johnson Ferry East site located to the northeast of Johnson Ferry Road at Donaldson Drive in Dekalb County, Georgia. The development is proposed to be comprised of 80,000 s.f. of retail space and 836 residential units. The traffic analysis includes the evaluation of 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 conditions analysis it was found that two intersections within the study area are currently not operating at the required LOS standard of D. Analysis of the Base Year 2011 revealed three of the intersections being analyzed will not be up to the LOS standard if no roadway improvements are implemented. Improvements were recommended at the intersections to restore them to the 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 again recommended to restore these intersections back to the LOS standard.

Detailed segment analysis of Ashford Dunwoody Road and Johnson Ferry Road revealed that both the roadways will operate at an acceptable LOS for all base and future conditions after the implementation of the recommended improvements. All improvements necessary at the study network intersections may require federal and / or state funds to serve the proposed DRI. Additionally, 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 proposed redevelopment of the existing Johnson Ferry East site located to the northeast of Johnson Ferry Road at Donaldson Drive in Dekalb County, Georgia. The development is proposed to have 80,000 s.f. of retail space, 436 senior adult houses, 149 townhome units, 51 single family detached houses and 200 mid-rise apartment units (total of 836 residential units). The site is proposed to have three driveways along Johnson Ferry Road and two along Donaldson Drive. A location map for the site is shown in Figure 1.

1.1 Site Plan

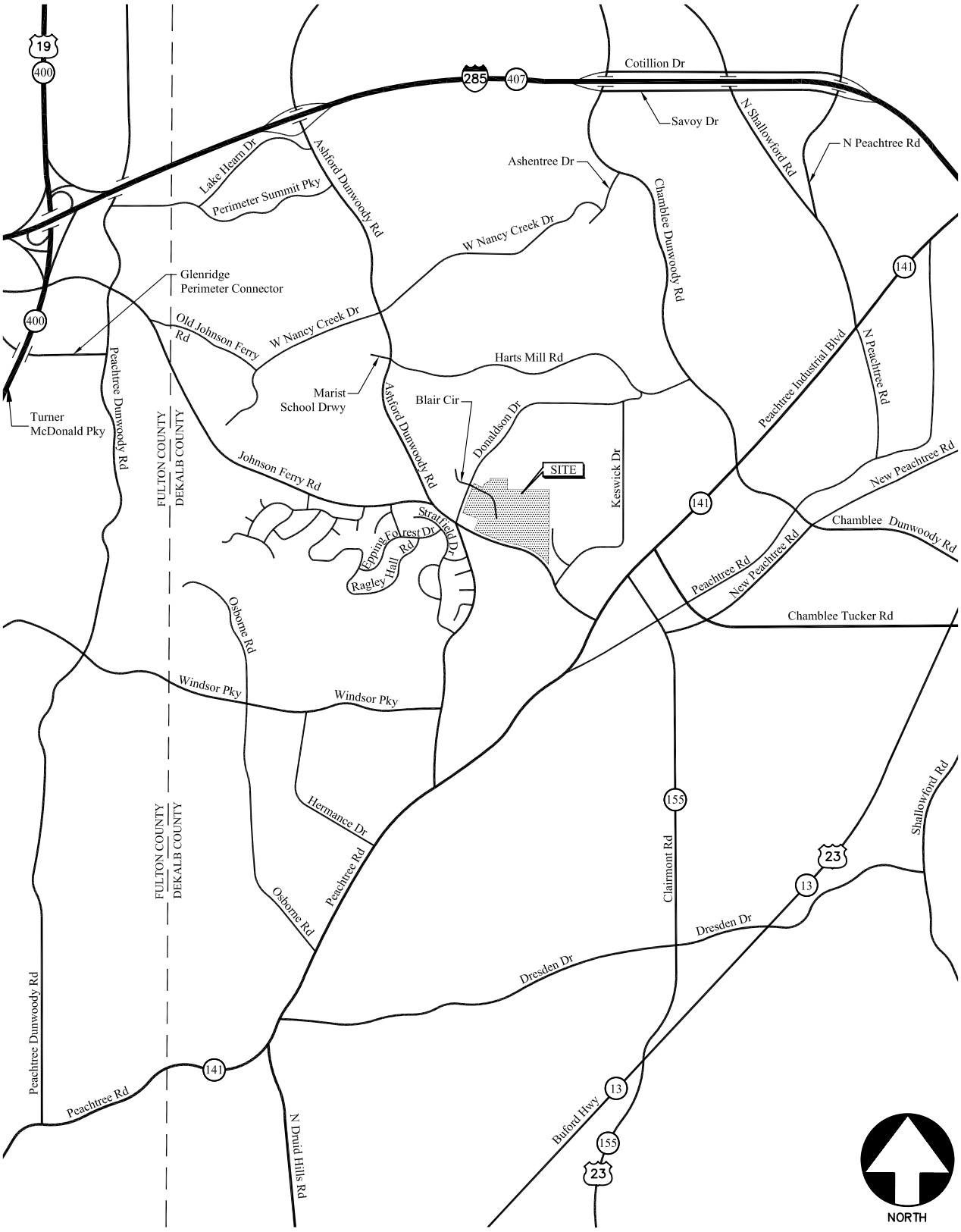
A site plan for this project is shown in Figure 2. A larger size drawing and a digital copy of the site plan are also provided with this report.

1.2 Consistency with Adopted Comprehensive Plan

The existing zoning is RM-75. The DRI trigger for this development is the rezoning application. The proposed zoning for the development is PC-2. The zoning is consistent with the future plans for Dekalb County.

1.3 Project Phasing

The project's impact will be evaluated in one phase, estimated for completion in the year 2011. This study will include the evaluation of the traffic operations in the vicinity of the site for existing conditions (year 2006), 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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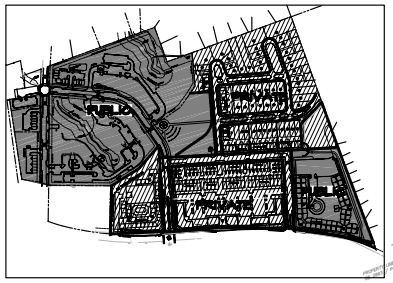


PUBLIC TO PRIVATE DELINEATION
SCALE: 1"=400'-0"

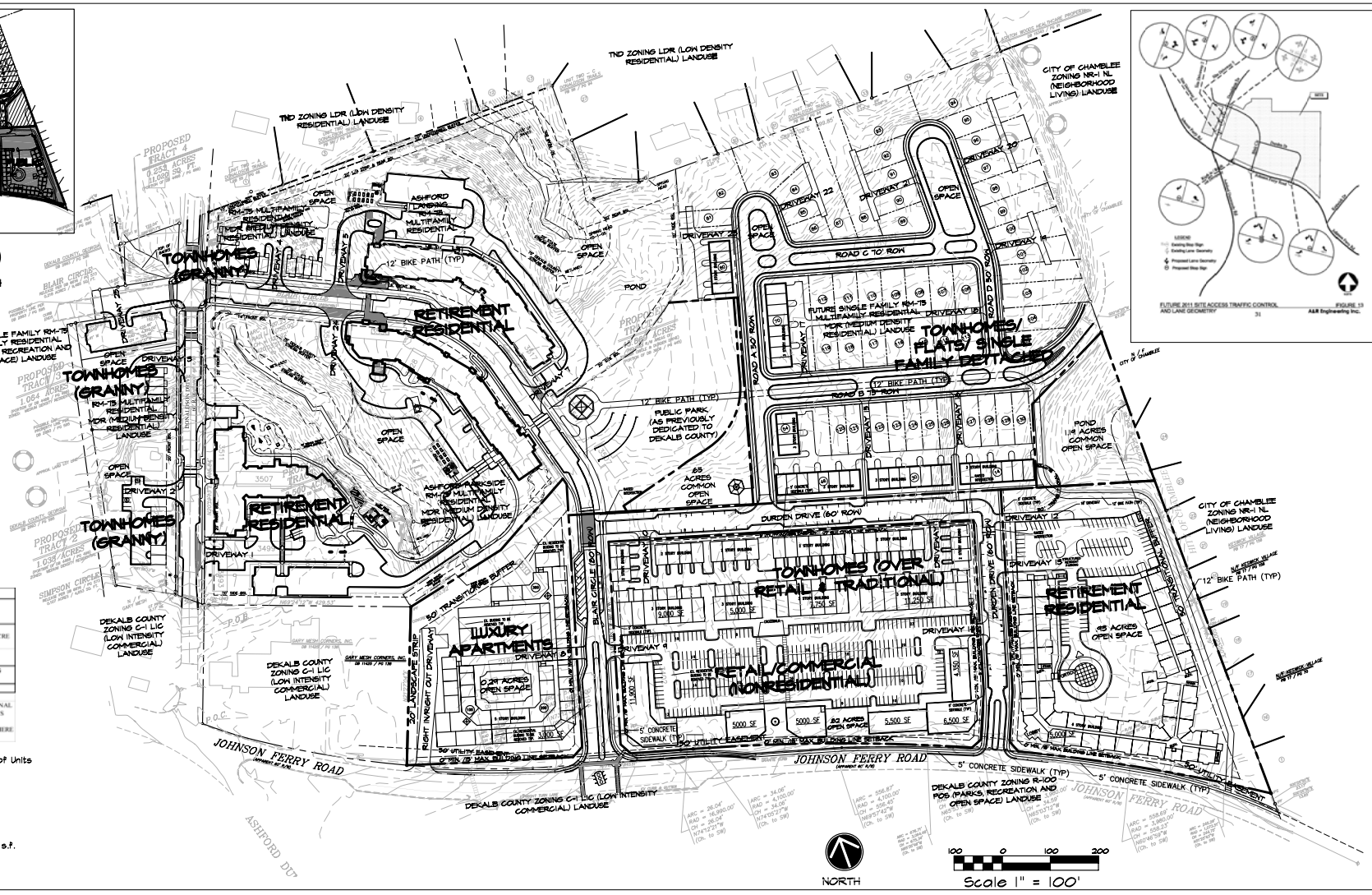
NORTH

LOCATION MAP
NOT TO SCALE

SITE TOTAL ACREAGE: 56.550			
LAND USE	ACREAGE	SITE DENSITY	
TOTAL SQUARE FEET OF NON-RESIDENTIAL	80000.00	1414.61	SQUARE FEET/ACRE
TOTAL NUMBER OF UNITS	836.00	14.78	UNITS/ACRE
TOTAL NUMBER OF PARKING PROVIDED		TOTAL NUMBER OF PARKING REQUIRED	
1417		1228.50	

19.87 ACRES OF OPEN SPACE EXCLUDING DEDICATED PARK		2.91 ACRES OF PARK DEDICATED PARK SPACE	NOTE: ALL INTERNAL INTERSECTIONS SHALL HAVE CROSSWALKS WHERE APPLICABLE

Type of Unit	Number of Units
Senior (Granny) Townhomes (rent)	20
Luxury Apartments (rent)	200
Townhouse/Flats (sale)	78
Townhouse (over retail & Traditional)	50
Single Family Detached (sale)	51
Retirement Residential (rent)	436
Retail/Commercial	80,000 s.f.



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GRTA DRI Submittal

JOHNSON FERRY EAST MASTER PLAN

DeKalb County, Georgia
LOCATED IN LAND LOTS 301 & 306
18TH DISTRICT

November 3, 2006

AEC, Inc.
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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 proposed development will consist of 80,000 s.f. of retail space and 836 residential units (436 senior adult houses, 149 townhome units, 51 single family detached houses and 200 mid-rise apartment units). Trip generation calculations for the Johnson Ferry East mixed-use development without any reductions are shown in Table 1.

TABLE 1
TRIP GENERATION

Land Use	Total Size	A.M. Peak Hour			P.M. Peak Hour			24-Hour
		Enter	Exit	Totals	Enter	Exit	Totals	2-way
210 – Single Family Detached Housing	51 units	11	34	45	37	21	58	560
223 – Mid-Rise Apartment	200 units	21	48	69	49	36	85	1,412
230 – Residential Condominium/Townhouse	149 units	12	59	71	56	27	83	901
252 – Senior Adult Housing - Attached	436 units	16	19	35	29	19	48	1,517
820-Shopping Center	80,000 s.f.	84	53	137	259	281	540	5,874
	Totals:	144	213	357	430	384	814	10,264

2.1 Net Trip Ends

Due to the nature of the development mixed-use and pass-by reductions have been applied. The reduction calculations for Johnson Ferry East mixed-use development are shown in Table 2. In addition, at the time the traffic counts were collected approximately 230 apartment units within the site were occupied. These units will eventually be demolished. The trips generated by the 230 apartment units were deducted from the net trip generation for the site. The estimated trip generation for these units is also shown in Table 2.

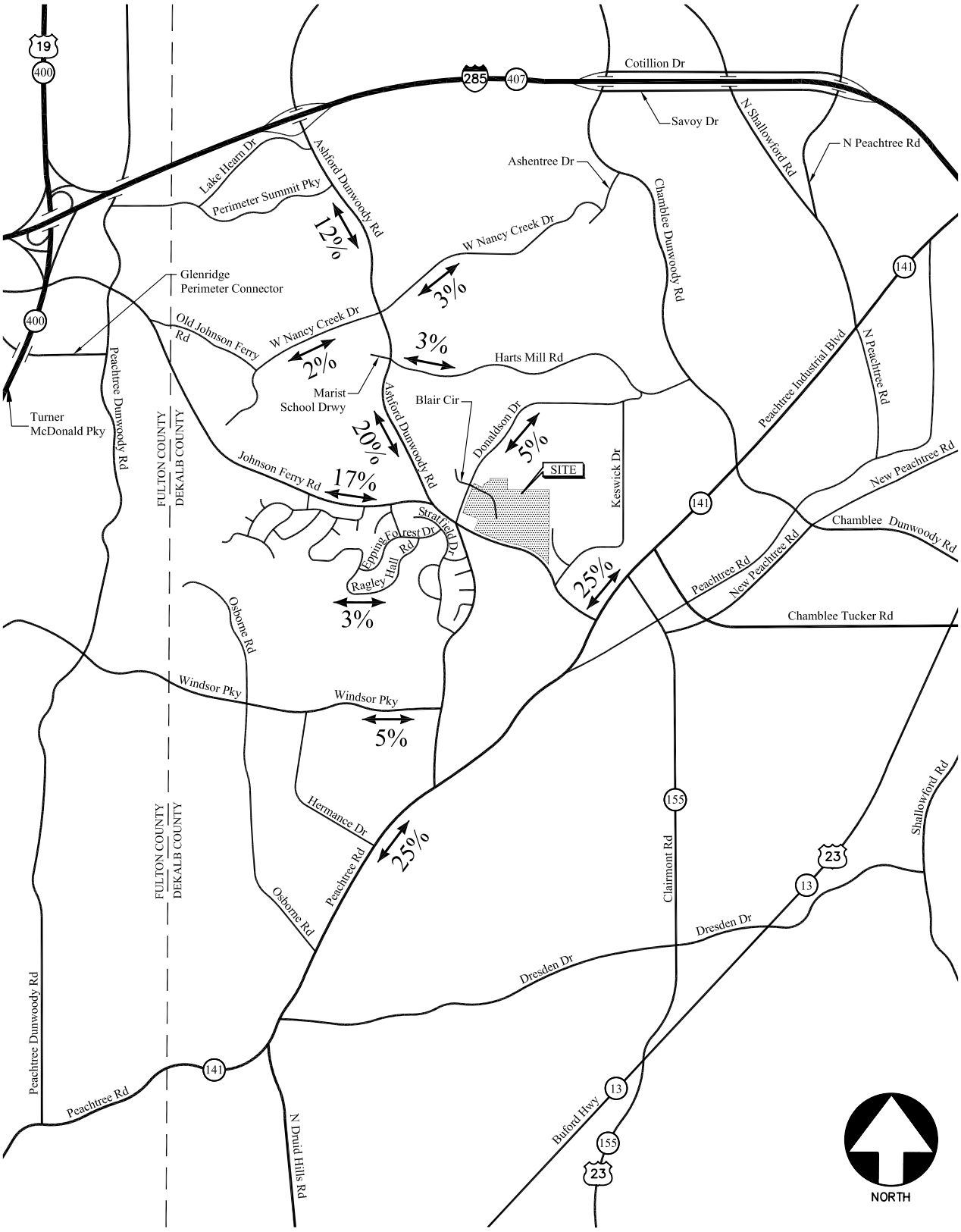
TABLE 2
TRIP GENERATION WITH REDUCTIONS

Land Use	Total Size	A.M. Peak Hour			P.M. Peak Hour			24-Hour
		Enter	Exit	Totals	Enter	Exit	Totals	2-way
Residential	836 units	60	160	220	171	103	274	4,390
Mixed Use Reductions:		*-3*	*-1*	*-4*	*-34*	*-23*	*-57*	*-587*
820-Shopping Center	80,000 s.f.	84	53	137	259	281	540	5,874
Mixed Use Reductions:		*-1*	*-3*	*-4*	*-23*	*-34*	*-57*	*-587*
*- Pass-By Reduction**		*0*	*0*	*0*	*-98*	*-103*	*-200*	*-2,000*
Existing Apartment Trip Reduction		*-23*	*-93*	*-116*	*-94*	*-50*	*-144*	*-1,533*
Total Trips:		**144**	**213**	**357**	**430**	**384**	**814**	**10,264**
Net Trips (Without Existing Apartment Trip Reduction):		**140**	**209**	**349**	**275**	**225**	**500**	**7,090**
Net Trips (With Existing Apartment Trip Reduction):		**117**	**116**	**233**	**181**	**175**	**356**	**5,557**

* Pass-by reductions are not available for the AM peak hour. 24-Hour pass-by reductions were calculated by assuming the PM peak hour is 10% of the 24-Hour reduction.

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 distribution was based on the location of major roadways, highways, employment centers and residential concentrations in the vicinity of the site. The distributions were discussed and agreed upon in the methodology meeting. The trip distribution is shown in Figure 3. The site generated traffic based on this distribution is shown in Figure 4. 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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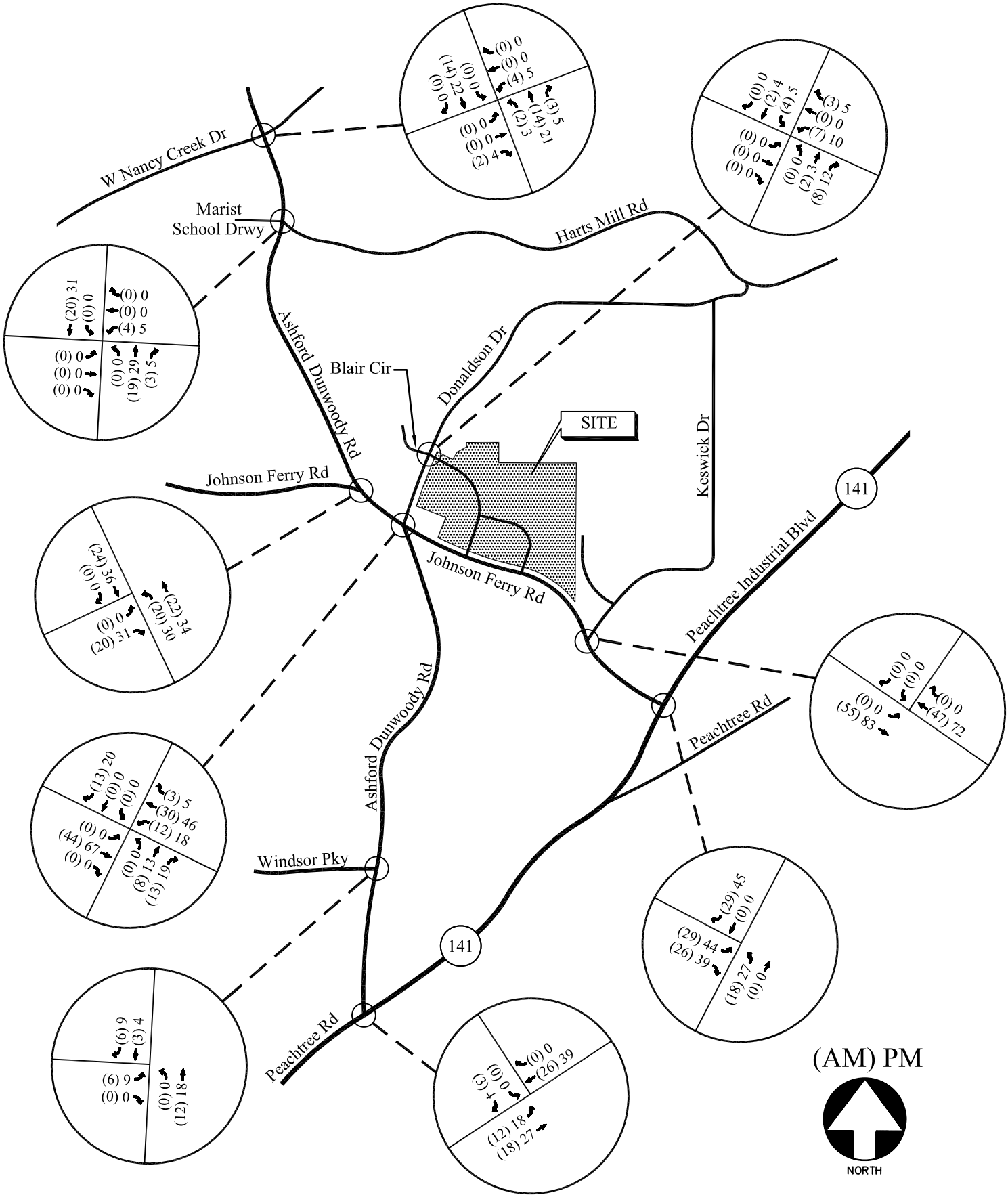


SITE GENERATED WEEKDAY PEAK HOUR VOLUMES FIGURE 4

A&R Engineering Inc.

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:

- Ashford Dunwoody Road at West Nancy Creek Drive
- Ashford Dunwoody Road at Harts Mill Road / Marist School driveway
- Ashford Dunwoody Road at Johnson Ferry Road
- Ashford Dunwoody Road / Donaldson Drive at Johnson Ferry Road
- Ashford Dunwoody Road at Windsor Parkway
- Ashford Dunwoody Road at Peachtree Road
- Johnson Ferry Road at Peachtree Industrial Boulevard
- Johnson Ferry Road at Keswick Drive
- Donaldson Drive at Blair Circle

The study network is shown in Figure 5. 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. In addition to the above intersections, the site driveways along Johnson Ferry Road and Donaldson Drive have been included in the analysis during the A.M. peak hour and P.M. peak hour as agreed upon in the methodology meeting.

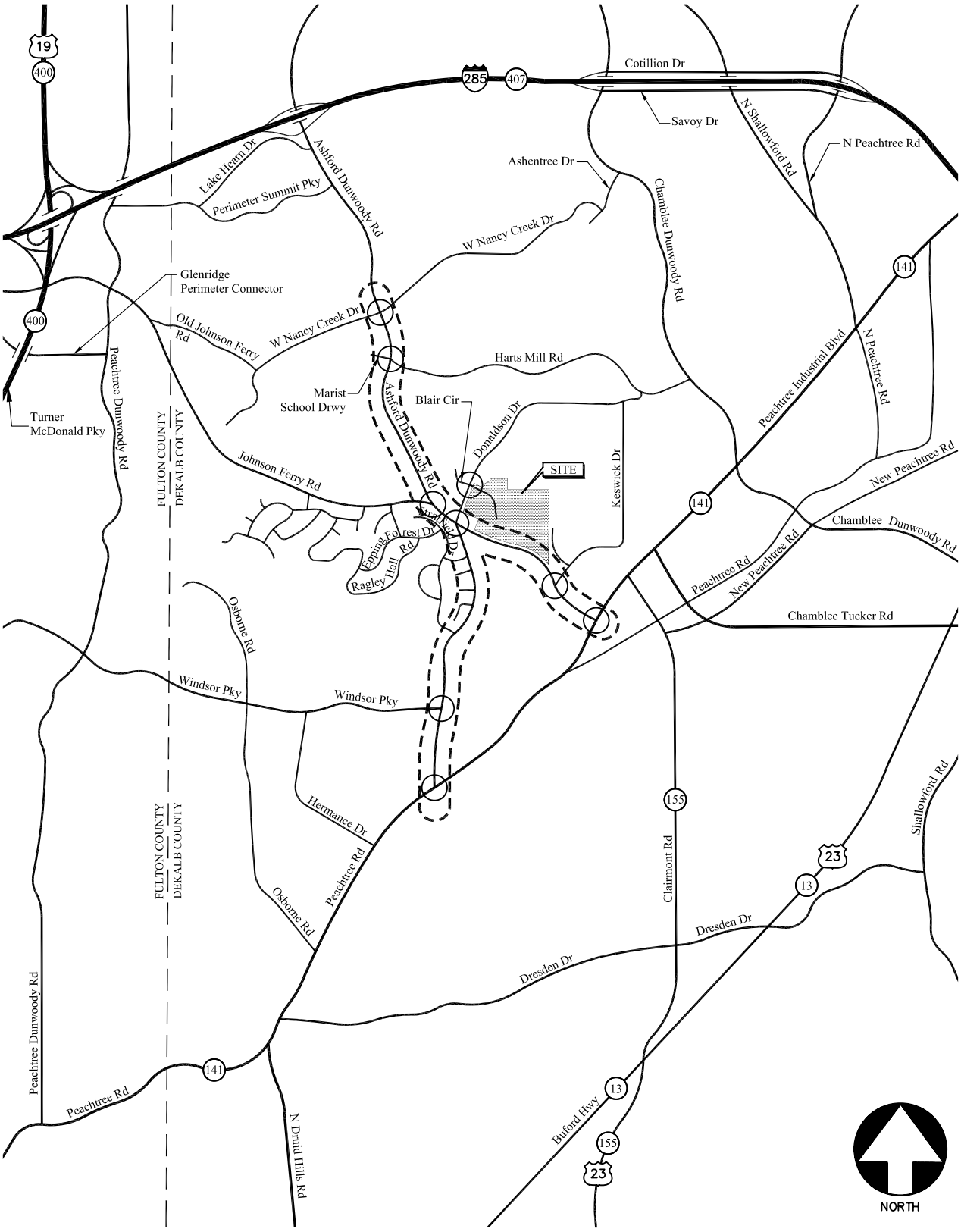
Roadway segment analysis for the existing, base, base improved, future and future improved conditions has been conducted for the following roadway segments:

- Ashford Dunwoody Road between West Nancy Creek Drive and Peachtree Road.
- Johnson Ferry Road between Ashford Dunwoody Road and Peachtree Industrial Boulevard.

LEGEND

- - - - Roadway segments included in the Study

◯ - Intersections included in the Study



STUDY NETWORK FIGURE 5

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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 Dekalb County are planned; however, they are not relevant to this project. Details of the planned programs can be found in the Appendix.

- DK-320A2: Johnson Ferry Road from Ashford Dunwoody Road to Fulton County Line
  - Includes addition of sidewalks along 18 corridors of Johnson Ferry Road.

- DK-AR-BP047: Ashford Dunwoody Road from West Nancy Creek Road to Perimeter Summit Parkway and Perimeter Summit Parkway from Ashford Dunwoody Road to Lake Hearn Road
  - Includes addition of sidewalks and bike lanes along Ashford Dunwoody Road and Perimeter Summit Parkway.

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

Ashford Dunwoody Road

Ashford Dunwoody Road is a north-south two-lane undivided roadway that runs between Mount Vernon Road in the north and Peachtree Road in the south. Ashford Dunwoody Road has a posted speed limit of 35 mph in the vicinity of the site.

Johnson Ferry Road

Johnson Ferry Road is a northwest-southeast two-lane undivided roadway running from Glenridge Drive in the northwest to Peachtree Industrial Boulevard in the southeast. Johnson Ferry Road has a posted speed limit of 35 mph and provides some access points to the proposed development.

West Nancy Creek Drive

West Nancy Creek Drive is an east-west two-lane roadway with a posted speed limit of 25 mph. West Nancy Creek Drive forms a four-legged signalized intersection with Ashford Dunwoody Road.

Harts Mill Road

Harts Mill Road is an east-west two-lane roadway extending between Ashford Dunwoody Road in the west and Chamblee Dunwoody Road in the east. Harts Mill Road has a posted speed limit of 35 mph.

Donaldson Drive

Donaldson Drive is a two-lane roadway with a posted speed limit of 25 mph. Donaldson Drive provides two access points to the proposed site.

Peachtree Road

Peachtree Road is a northeast-southwest four-lane undivided roadway that runs between US 19 in the southwest and Peachtree Industrial Boulevard / SR 141 in the northeast. It has a posted speed limit of 45 mph in the vicinity of the site.

Peachtree Industrial Boulevard

Peachtree Industrial Boulevard is a four-lane undivided roadway with a posted speed limit of 45 mph in the vicinity of the site.

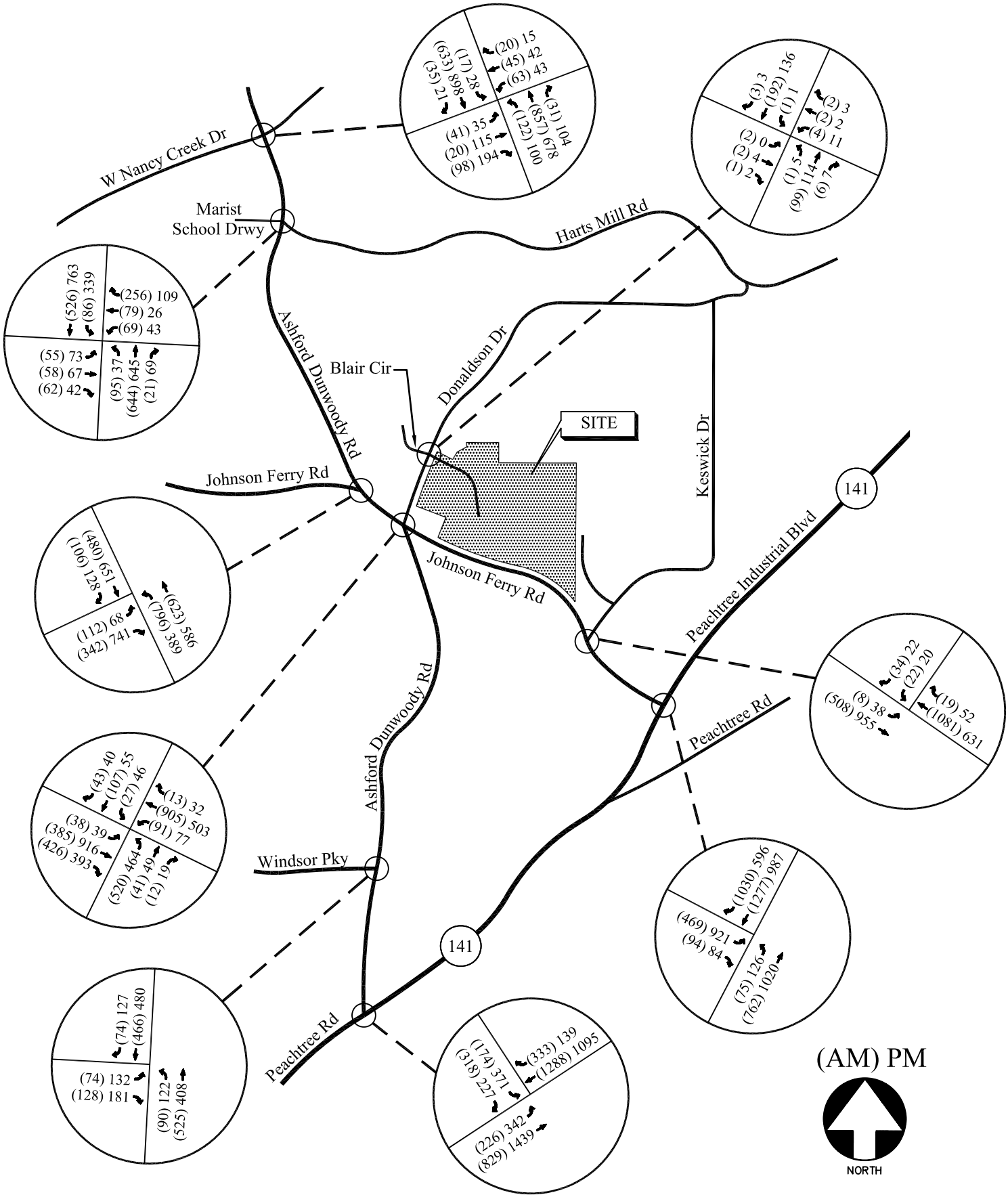
Keswick Drive

Keswick Drive is a north-south two-lane roadway that runs from Donaldson Drive in the north to Johnson Ferry Road in the south.

6.2 Analysis Summary

Existing traffic counts were collected 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 6**.** Additionally, the existing intersection traffic control and lane geometry for the study area network is shown in Figure 7.

The site-generated volumes shown in Table 2 were distributed to the surrounding roadway network in accordance with the trip distribution. 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.



EXISTING WEEKDAY PEAK-HOUR VOLUMES

FIGURE 6

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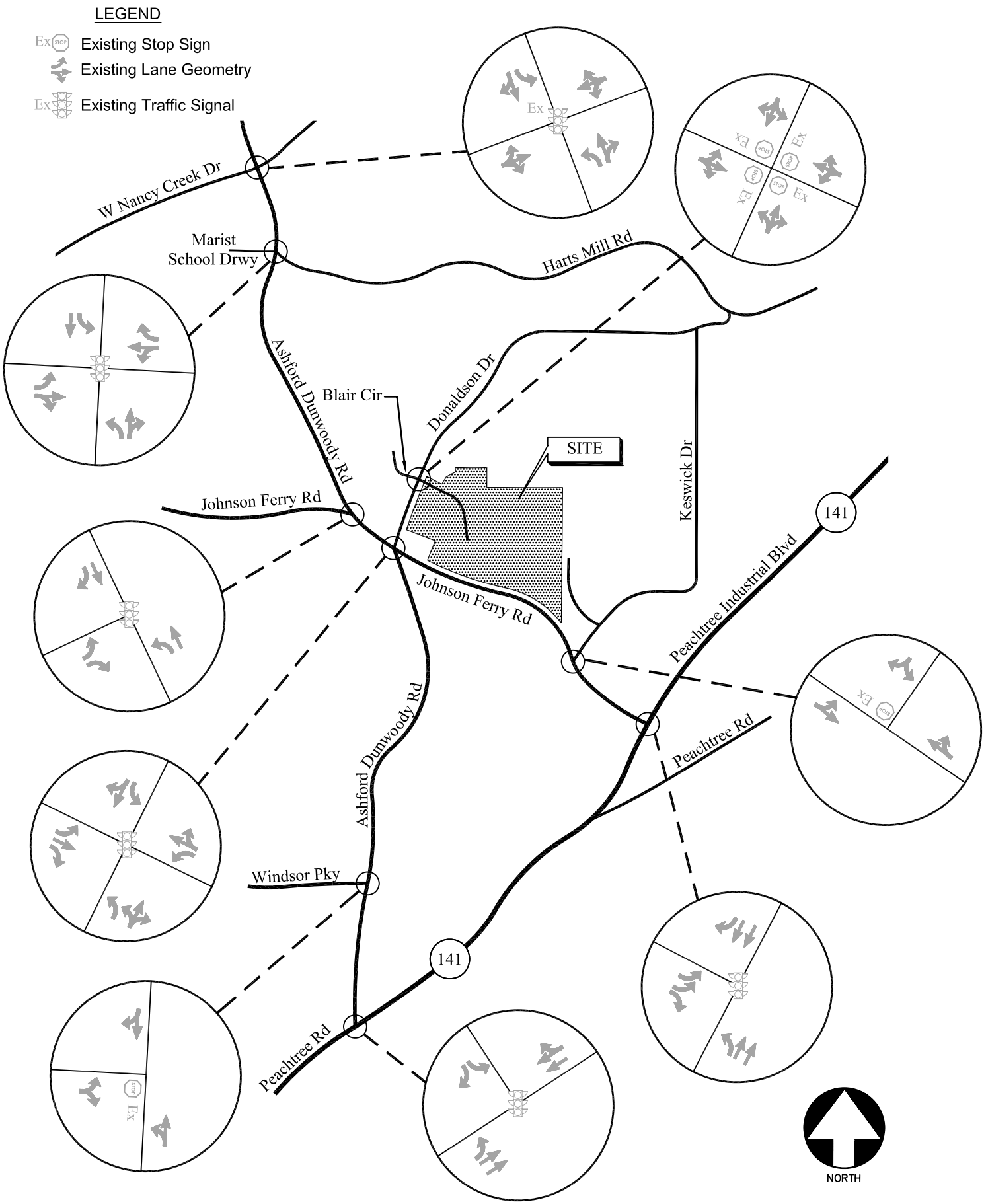

EXISTING TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 7

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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*
Ashford Dunwoody Road at West Nancy Creek Drive	D/D	Signalized	B (17.5)	0.72	C (31.7)	0.88
Ashford Dunwoody Road at Harts Mill Road / Marist School driveway	D/D	Signalized	C (21.5)	0.60	B (17.5)	0.65
Ashford Dunwoody Road at Johnson Ferry Road	D/D	Signalized	C (25.7)	0.89	C (30.6)	0.93
Ashford Dunwoody Road / Donaldson Drive at Johnson Ferry Road	D/D	Signalized	D (43.3)	0.90	D (41.0)	0.87
Ashford Dunwoody Road at Windsor Parkway -Eastbound Approach (Windsor Parkway) -Northbound Left (Ashford Dunwoody Road)	 E/E D/D	Stop Controlled on Windsor Parkway	 F (59.3) A (2.4)	 - -	 F (180.9) A (3.5)	 - -
Ashford Dunwoody Road at Peachtree Road	D/D	Signalized	B (18.9)	0.81	C (25.7)	0.90
Johnson Ferry Road at Peachtree Industrial Boulevard	D/D	Signalized	B (16.1)	0.74	C (20.9)	0.69
Johnson Ferry Road at Keswick Drive -Eastbound Left (Johnson Ferry Road) -Southbound Approach (Keswick Drive)	 D/D E/E	Stop Controlled on Keswick Drive	 A (0.4) E (44.1)	 - -	 A (1.4) E (44.5)	 - -
Donaldson Drive at Blair Circle -Eastbound Approach (Blair Circle) -Westbound Approach (Blair Circle) -Northbound Approach (Donaldson Drive) -Southbound Approach (Donaldson Drive)	 D/D D/D D/D D/D	All-Way Stop Controlled	 A (7.8) A (7.8) A (7.9) A (8.6)	 - - - -	 A (7.4) A (7.7) A (7.9) A (8.0)	 - - - -

* v/c ratios are not calculated for unsignalized intersections.

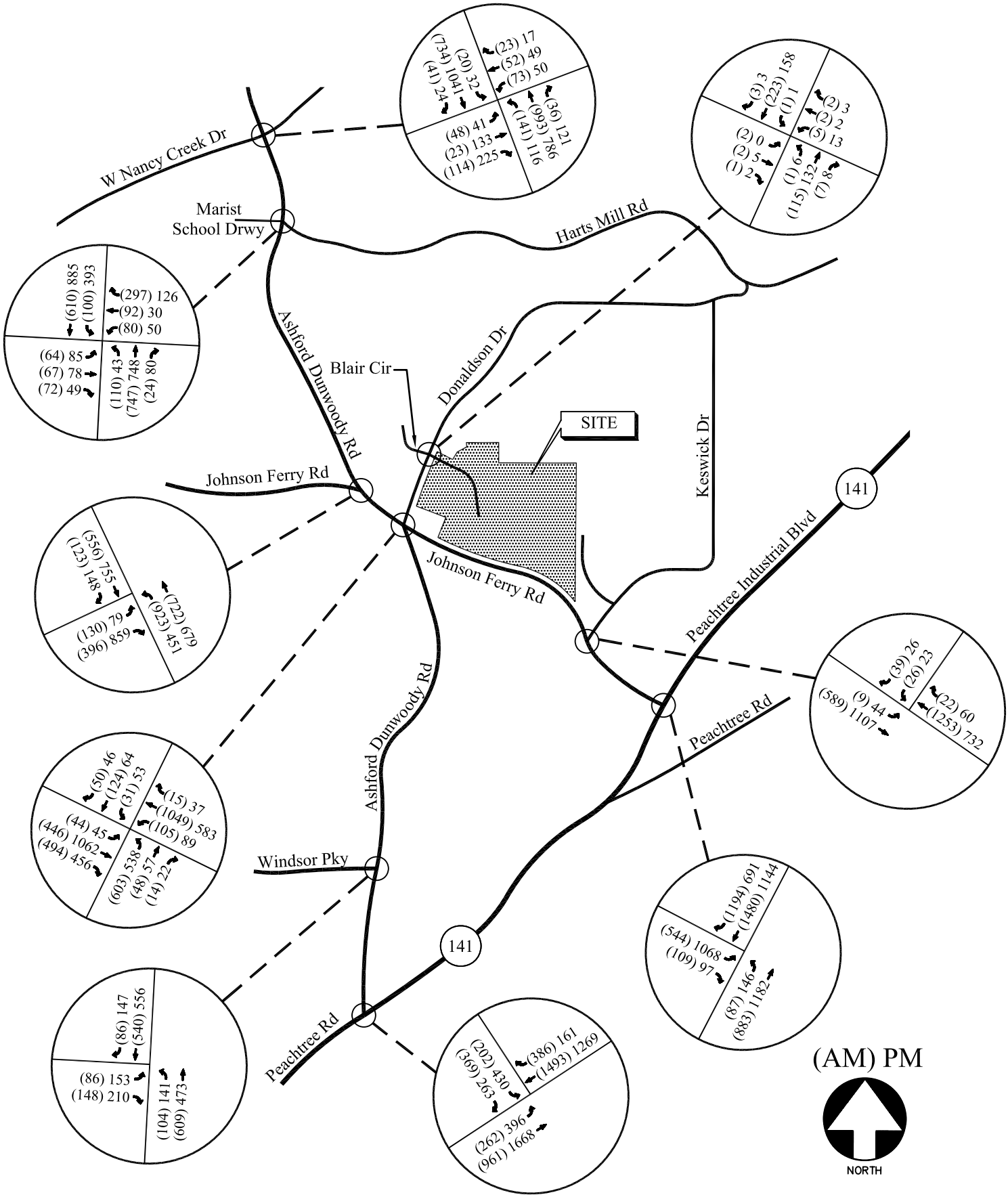
7. FUTURE YEAR BACKGROUND TRAFFIC

In order to evaluate future traffic operations in this area a projection was made of future base year traffic volumes. The Georgia Department of Transportation collected ADT's in the vicinity of the site over the last several years. Using this information, the annual growth factor was estimated to be 3%. 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.

Traffic operation analyses for the following Base Scenarios were 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*
Ashford Dunwoody Road at West Nancy Creek Drive	D/D	Signalized	C (21.0)	0.84	D (53.0)	1.02
Ashford Dunwoody Road at Harts Mill Road / Marist School driveway	D/D	Signalized	C (22.9)	0.72	C (25.8)	0.83
Ashford Dunwoody Road at Johnson Ferry Road	D/D	Signalized	D (50.0)	1.01	D (49.8)	1.07
Ashford Dunwoody Road / Donaldson Drive at Johnson Ferry Road	D/D	Signalized	E (74.4)	1.04	E (72.4)	1.00
Ashford Dunwoody Road at Windsor Parkway -Eastbound Approach (Windsor Parkway) -Northbound Left (Ashford Dunwoody Road)	 E/E D/D	Stop Controlled on Windsor Parkway	 F (190.5) A (2.9)	 - -	 F (462.0) A (4.2)	 - -
Ashford Dunwoody Road at Peachtree Road	D/D	Signalized	C (27.0)	0.95	D (43.1)	1.02
Johnson Ferry Road at Peachtree Industrial Boulevard	D/D	Signalized	C (22.2)	0.89	C (29.5)	0.82
Johnson Ferry Road at Keswick Drive -Eastbound Left (Johnson Ferry Road) -Southbound Approach (Keswick Drive)	 D/D E/E	Stop Controlled on Keswick Drive	 A (0.5) F (92.9)	 - -	 A (2.1) F (91.8)	 - -
Donaldson Drive at Blair Circle -Eastbound Approach (Blair Circle) -Westbound Approach (Blair Circle) -Northbound Approach (Donaldson Drive) -Southbound Approach (Donaldson Drive)	 D/D D/D D/D D/D	All-Way Stop Controlled	 A (7.9) A (7.9) A (8.1) A (9.0)	 - - - -	 A (7.6) A (7.9) A (8.1) A (8.2)	 - - - -

* v/c ratios are not calculated for unsignalized intersections.

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

- Ashford Dunwoody Road / Donaldson Drive at Johnson Ferry Road
    - It is recommended to restrict the eastbound left, southbound left and southbound through movements at the intersection. All other movements at the intersection should remain. A raised concrete island is recommended on Donaldson Drive to help enforce the restricted movements for Donaldson Drive. The southbound right turn movement should be yield controlled and the southbound approach should be removed from the traffic signal operation at the intersection. It is further recommended that Blair Circle be extended to Johnson Ferry Road to allow vehicles currently traveling Donaldson Drive an alternate route to access Johnson Ferry Road.

- Ashford Dunwoody Road at Windsor Parkway

- A signal warrant analysis for the peak hours was performed to determine if the peak hour signal warrant will be met at this intersection. The traffic conditions will warrant at least the peak hour signal warrant required for installation of a traffic signal for the Base 2011 volumes. Therefore, a traffic signal is recommended at this intersection. A detailed signal warrant analysis should be completed prior to the installation of a traffic signal at this location.

- Johnson Ferry Road at Keswick Drive
  - The intersection will operate at LOS F with delays of 92.9 and 91.8 seconds for the southbound approach (Keswick Drive) during the AM and PM Peak hours respectively. The analysis revealed the addition of a left or right turn lane will not improve the LOS service at this intersection. In addition, the turning movement volumes at the intersection are insignificant (less than 50) and do not justify signalizing the intersection or any other improvements. Therefore, no improvements are recommended at this intersection.

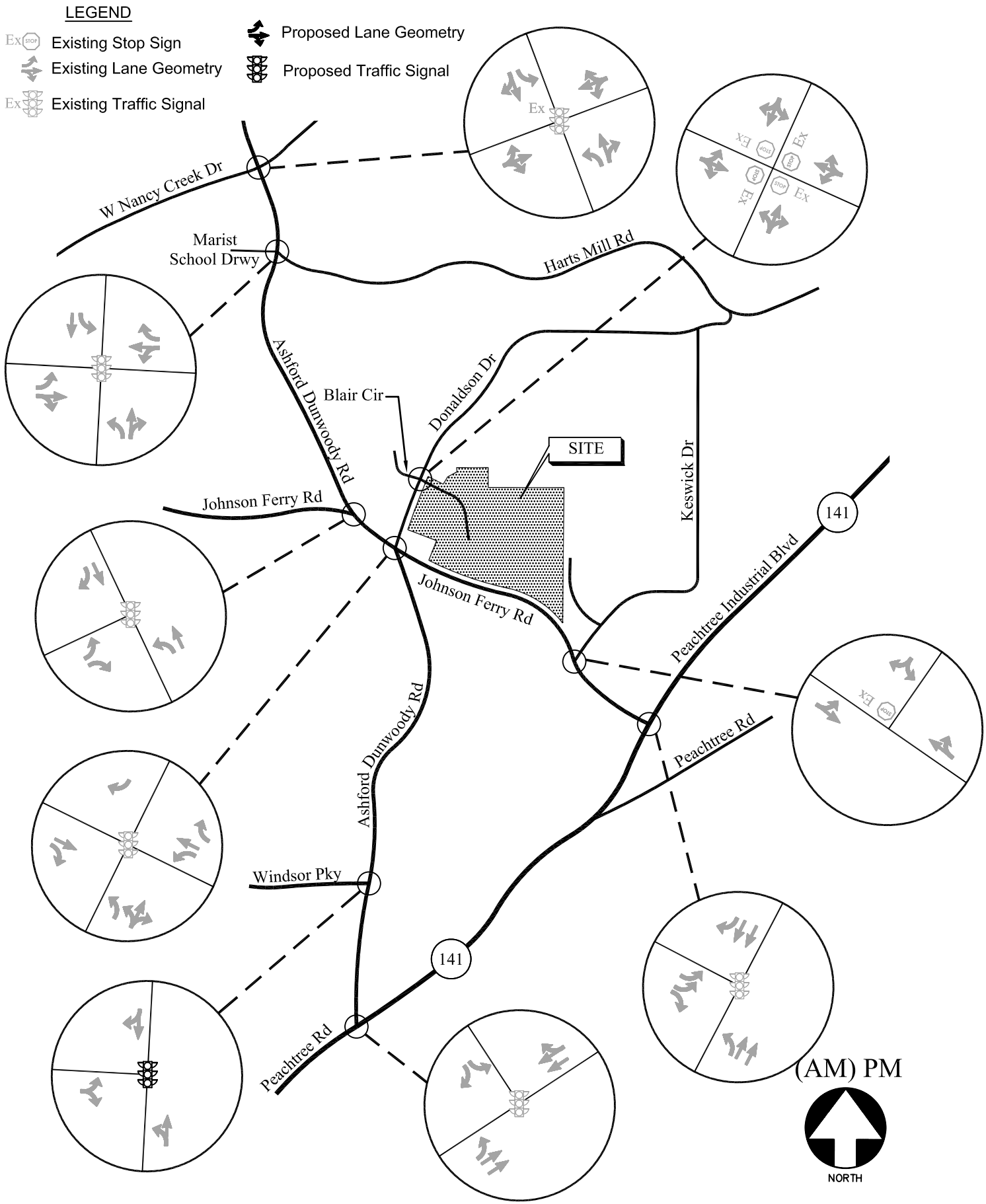
The LOS at the above intersections in the year 2011 with just background traffic after the above improvements are implemented is shown in Table 5. The recommended base intersection traffic control and lane geometry is shown in Figure 9.

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*
Ashford Dunwoody Road / Donaldson Drive at Johnson Ferry Road	D/D	Signalized	B (17.8)	0.85	C (28.9)	0.93
Ashford Dunwoody Road at Windsor Parkway -Eastbound Approach (Windsor Parkway) -Northbound Left (Ashford Dunwoody Road)	D/D	Signalized	B (15.8)	0.71	C (24.8)	0.87
Johnson Ferry Road at Keswick Drive -Eastbound Left (Johnson Ferry Road) -Southbound Approach (Keswick Drive)	D/D E/E	Stop Controlled on Keswick Drive	A (0.5) F (92.9)	- -	A (2.1) F (91.8)	- -

* v/c ratios are not calculated for unsignalized intersections.



BASE 2011 TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 9

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8. FUTURE YEAR TOTAL TRAFFIC

The traffic volumes that will be generated by the proposed development were then 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.

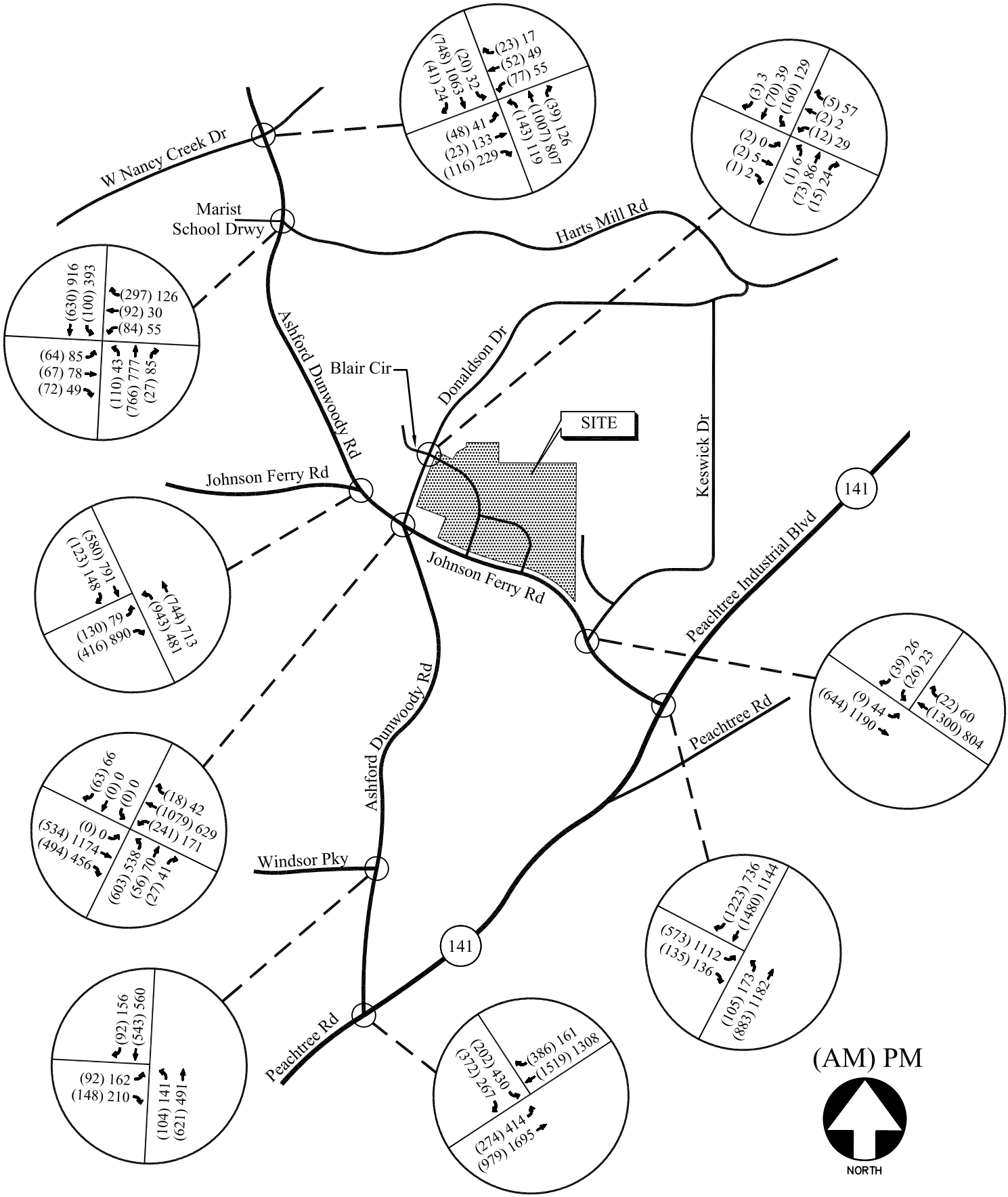
9. FACILITY NEEDS ANALYSIS

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 back to the LOS standard are discussed after each appropriate section.



FUTURE 2011 WEEKDAY PEAK HOUR VOLUMES FIGURE 10

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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*
Ashford Dunwoody Road at West Nancy Creek Drive	D/D	Signalized	C (22.1)	0.86	D (46.6)	1.00
Ashford Dunwoody Road at Harts Mill Road / Marist School driveway	D/D	Signalized	C (25.9)	0.72	C (26.7)	0.88
Ashford Dunwoody Road at Johnson Ferry Road	D/D	Signalized	E (61.6)	1.05	E (71.1)	1.16
Ashford Dunwoody Road / Donaldson Drive at Johnson Ferry Road	D/D	Signalized	F (83.6)	1.07	F (86.7)	1.09
Ashford Dunwoody Road at Windsor Parkway -Eastbound Approach (Windsor Parkway) -Northbound Left (Ashford Dunwoody Road)	 E/E D/D	Stop Controlled on Windsor Parkway	 F (228.5) A (2.9)	 - -	 F (677.9) A (4.2)	 - -
Ashford Dunwoody Road at Peachtree Road	D/D	Signalized	C (30.9)	0.94	D (41.5)	1.06
Johnson Ferry Road at Peachtree Industrial Boulevard	D/D	Signalized	C (25.9)	0.92	C (27.8)	0.82
Johnson Ferry Road at Keswick Drive -Eastbound Left (Johnson Ferry Road) -Southbound Approach (Keswick Drive)	 D/D E/E	Stop Controlled on Keswick Drive	 A (0.5) F (121.2)	 - -	 A (2.5) F (115.8)	 - -
Donaldson Drive at Blair Circle -Eastbound Approach (Blair Circle) -Westbound Approach (Blair Circle) -Northbound Approach (Donaldson Drive) -Southbound Approach (Donaldson Drive)	 D/D D/D D/D D/D	All-Way Stop Controlled	 A (8.0) A (8.1) A (8.2) A (9.2)	 - - - -	 A (7.8) A (8.3) A (8.5) A (8.8)	 - - - -

* v/c ratios are not calculated for unsignalized intersections.

Analysis of the future year 2011 traffic volumes indicates that five of the study intersections will not operate within the LOS standard. Following are the improvements needed to restore all intersections to the LOS standard for the future year 2011 traffic:

- Ashford Dunwoody Road at Johnson Ferry Road
  - It is recommended to restrict the eastbound left, southbound left and southbound through movements at the intersection. All other movements at the intersection should remain. A raised concrete island is recommended on Donaldson Drive to help enforce the restricted movements for Donaldson Drive. The southbound right turn movement should be yield controlled and the southbound approach should be removed from the traffic signal operation at the intersection.

- Ashford Dunwoody Road / Donaldson Drive at Johnson Ferry Road
  - The southbound approach on Ashford Dunwoody Road currently includes

a right turn lane with approximately 500 feet of storage lane. It is recommended that this southbound right turn lane be converted to a shared through / right turn lane. Ashford Dunwoody Road currently includes two receiving through lanes traveling southbound away from the intersection.

- Ashford Dunwoody Road at Windsor Parkway
  - A signal warrant analysis for the peak hours was performed to determine if the peak hour warrant will be met at this intersection. The traffic conditions will warrant at least the peak hour signal warrant required for installation of a traffic signal for the Future 2011 volumes after the addition of site-generated traffic. Therefore, a traffic signal is recommended at this intersection. A detailed signal warrant analysis should be completed prior to the installation of a traffic signal at this location.

- Ashford Dunwoody Road at Keswick Drive
  - The intersection will operate at LOS F with delays of 121.2 and 115.8 seconds for the southbound approach during the AM and PM Peak hours, respectively. The analysis revealed the addition of a left or right turn lane will not improve the LOS service at this intersection. In addition, the turning movement volumes at the intersection are insignificant and do not justify signalizing the intersection or any other improvements. Therefore, no improvements are recommended at this intersection.

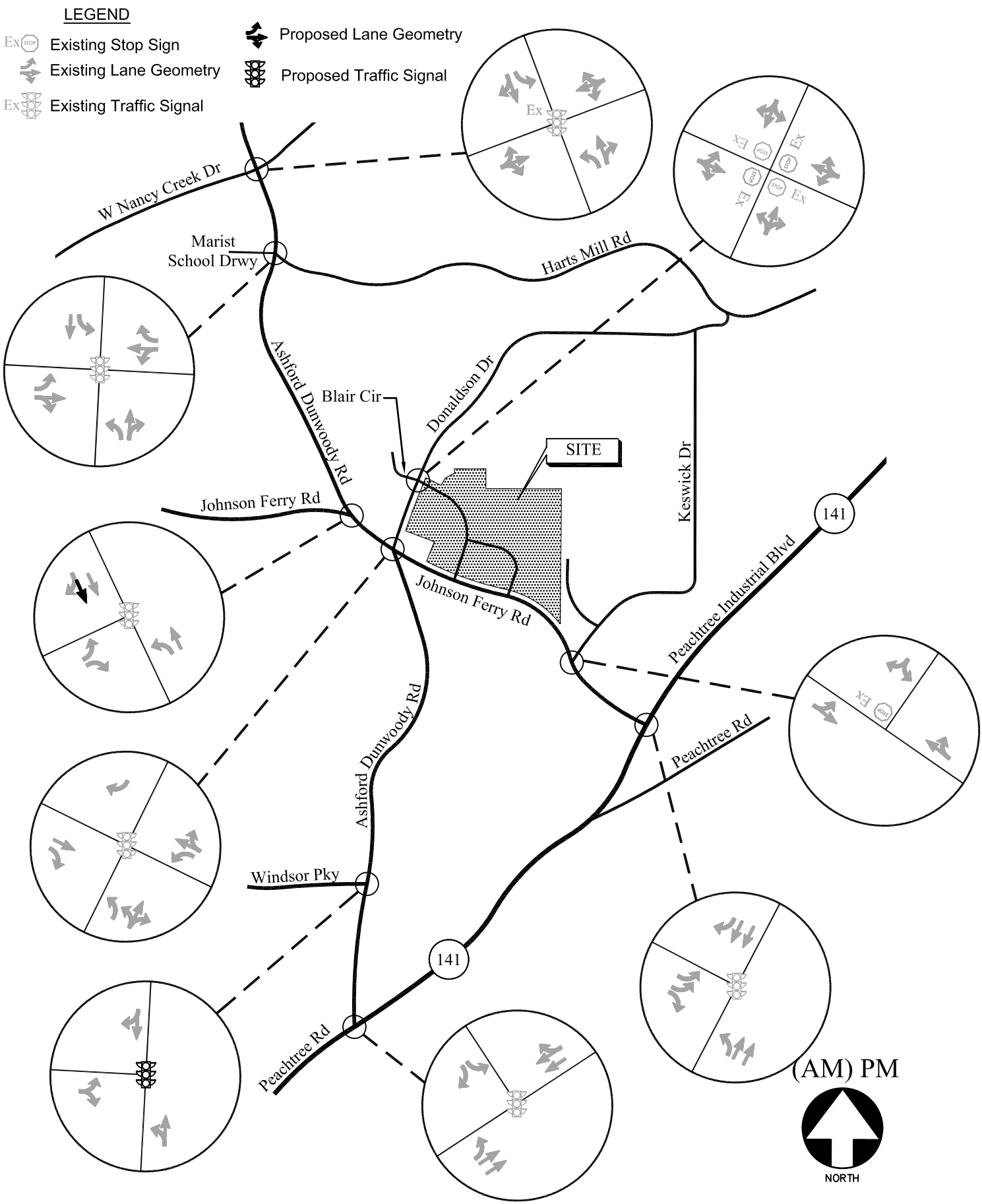
The LOS for the above listed intersections in the year 2011 with the addition of site-generated traffic after the implementation of the above recommended improvements is shown in Table 7. The recommended future intersection traffic control and lane geometry is shown in Figure 11.

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*
Ashford Dunwoody Road at Johnson Ferry Road	D/D	Signalized	B (15.8)	0.87	C (34.4)	1.01
Ashford Dunwoody Road / Donaldson Drive at Johnson Ferry Road	D/D	Signalized	C (30.5)	0.92	D (41.4)	0.97
Ashford Dunwoody Road at Windsor Parkway	D/D	Signalized	B (16.3)	0.73	C (33.8)	0.99
Johnson Ferry Road at Keswick Drive -Eastbound Left (Johnson Ferry Road) -Southbound Approach (Keswick Drive)	D/D E/E	Stop Controlled on Keswick Drive	A (0.6) F (121.2)	- -	A (2.9) F (115.8)	- -

* v/c ratios are not calculated for unsignalized intersections.



FUTURE 2011 TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 11

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9.2 Roadway Segment Analysis

Detailed Segment Analysis

In addition to intersection analysis, detailed segment analysis was conducted for Ashford Dunwoody Road between West Nancy Creek Drive and Peachtree Road, and for Johnson Ferry Road between Ashford Dunwoody Road and Peachtree Industrial Boulevard for existing, base, base improved, future and future improved conditions. Results of the analyses are included in Table 8.

TABLE 8
DETAILED SEGMENT ANALYSIS

Ashford Dunwoody Road				
	A.M. Peak Hour		P.M. Peak Hour	
Scenario	NB	SB	NB	SB
Existing Year 2006	C	C	C	C
Base Year 2011	C	C	C	C
Base Year 2011 - Improved	C	C	C	C
Future Year 2011	D	C	D	C
Future Year 2011 - Improved	C	C	C	C
Johnson Ferry Road				
	A.M. Peak Hour		P.M. Peak Hour	
	EB	WB	EB	WB
Existing Year 2006	C	C	C	B
Base Year 2011	C	E	E	B
Base Year 2011 - Improved	C	D	D	C
Future Year 2011	C	E	E	C
Future Year 2011 - Improved	C	C	D	C

The results of the detailed segment analysis reveal that Ashford Dunwoody Road will operate at acceptable levels of service during all analyzed scenarios. Johnson Ferry Road will operate at LOS E in a number of the unimproved conditions. With the recommended improvements, Johnson Ferry Road will operate at an acceptable LOS for all conditions.

9.3 Site Access Analysis

A total of seven driveways are proposed for the Johnson Ferry East mixed-use development; two full access and one right in / right out driveways on Johnson Ferry Road and four full access driveways on Donaldson Drive. Two of the driveways, Donaldson Drive at Blair Circle and Johnson Ferry Road at Durden Drive currently exist. In the future Blair Circle will be extended to form another site access point on Johnson Ferry Road. 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 9. Traffic control and lane geometry recommended for the intersections to operate at the LOS standard are discussed in the following pages.

TABLE 9

FUTURE 2011 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*
Donaldson Drive at Blair Circle						
-Eastbound Approach (Blair Circle)	D/D	All-Way Stop Controlled	A (7.9)	-	A (7.8)	-
-Westbound Approach (Blair Circle)	D/D		A (8.0)	-	A (8.2)	-
-Northbound Approach (Donaldson Drive)	D/D		A (7.8)	-	A (8.3)	-
-Southbound Approach (Donaldson Drive)	D/D		A (9.3)	-	A (9.2)	-
Donaldson Drive at Site Driveway 1						
-Westbound Approach (Site Driveway 1)	D/D	Stop Controlled on Site Driveway 1	A (9.1)	-	A (9.4)	-
-Southbound Left (Donaldson Drive)	D/D		A (0.3)	-	A (0.8)	-
Donaldson Drive at Site Driveway 2						
-Eastbound Approach (Site Driveway 2)	D/D	Stop Controlled on Site Driveway 2	A (9.1)	-	A (9.1)	-
-Northbound Left (Donaldson Drive)	D/D		A (0.1)	-	A (0.1)	-
Donaldson Drive at Site Driveway 3						
-Eastbound Approach (Site Driveway 3)	D/D	Stop Controlled on Site Driveway 3	A (9.1)	-	A (9.1)	-
-Northbound Left (Donaldson Drive)	D/D		A (0.1)	-	A (0.1)	-
Johnson Ferry Road at Blair Circle	D/D	Signalized	B (17.8)	0.86	B (17.6)	0.80
Johnson Ferry Road at Durden Drive						
-Eastbound Left (Johnson Ferry Road)	D/D	Stop Controlled on Durden Drive	B (12.1)	-	A (9.7)	-
-Southbound Approach (Durden Drive)	D/D		E (46.0)	-	F (4009.1)	-

* v/c ratios are not calculated for unsignalized intersections.

If any site accesses experience decreased level of service in the future after the addition of the site generated traffic, alternate routes will be utilized to exit the development. The following lists the recommended lane geometry for the site driveways.

- Donaldson Drive at Blair Circle

- No improvements are required at this existing intersection. The intersection will operate at an acceptable LOS after the addition of site-generated traffic.

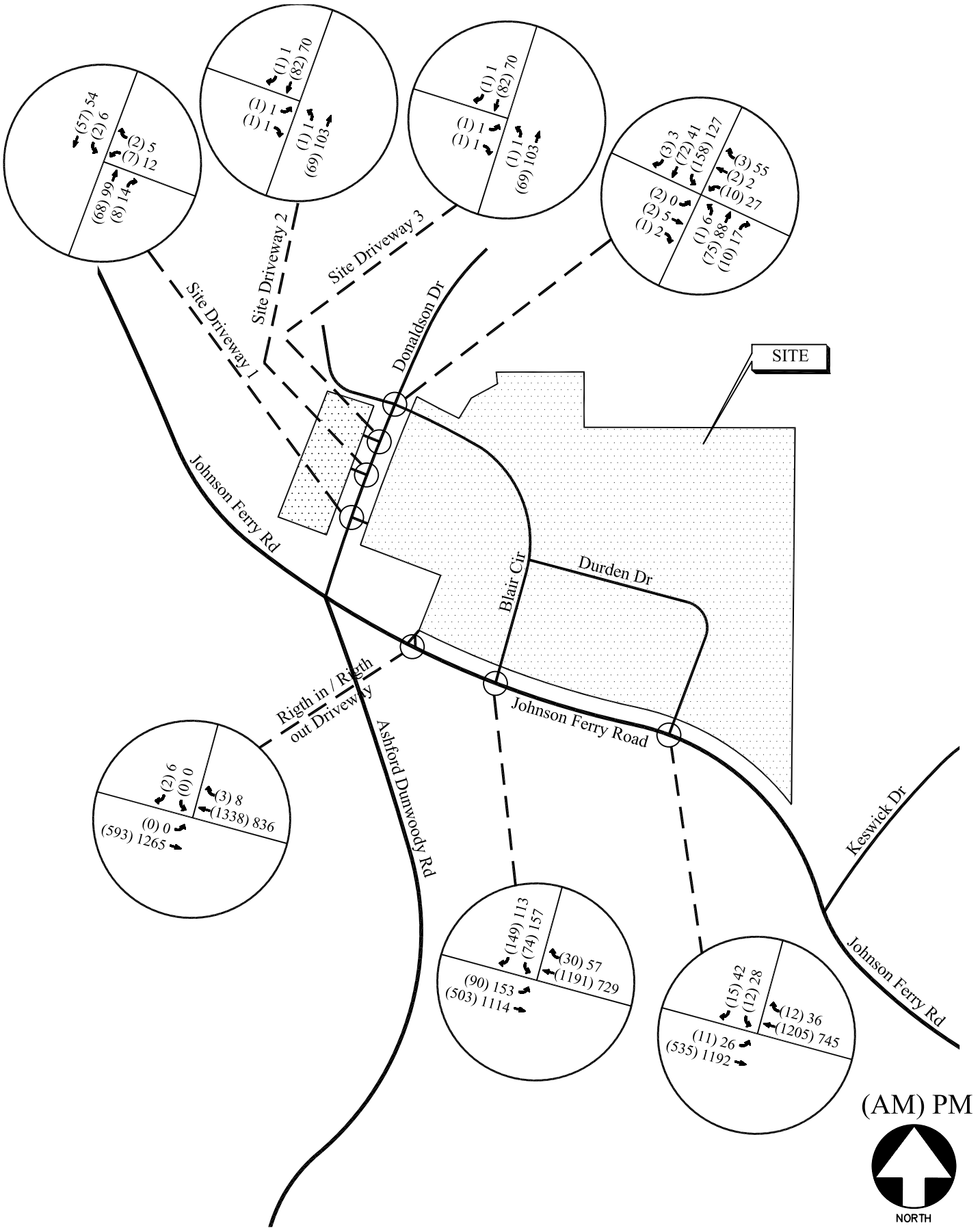
- Donaldson Drive at Site Driveway 1
  - It is recommended that the intersection have a stop controlled side street (Site Driveway 1), with Donaldson Drive remaining free flow.
  - The westbound approach to the intersection should have a shared left / right turn lane for traffic exiting the proposed development.
  - It is also recommended that a northbound right turn lane be added on Donaldson Drive for traffic entering the development.

- Donaldson Drive at Site Driveway 2 / Donaldson Drive at Site Driveway 3
  - It is recommended that the intersections have a stop controlled side streets (Site Driveway 2, Site Driveway 3), with Donaldson Drive remaining free flow.
  - The eastbound approaches to the intersections should have a shared left / right turn lane for traffic exiting the proposed development.

- Johnson Ferry Road at Blair Circle
  - In the future, the intersection will have the necessary traffic volumes to satisfy signal warrants 1, 2 and 3. Therefore, a traffic signal is recommended at this intersection. A detailed signal warrant analysis will be prepared and submitted to the county at a later date.
  - The southbound approach to the intersection should have separate left and right turn lanes for traffic exiting the proposed development.
  - Dedicated eastbound left and westbound right turn lanes should be installed on Johnson Ferry Road for traffic entering the proposed development.

- Johnson Ferry Road at Durden Drive
  - It is recommended that the intersection have a stop controlled side street (Durden Drive), with Johnson Ferry Road remaining free flow.
  - The southbound approach to the intersection should have a separate left and right turn lanes for traffic exiting the proposed development.
  - For entering traffic, it is recommended that dedicated eastbound left and westbound right turn lanes be installed on Johnson Ferry Road.
  - After the improvements, the driveway will operate at LOS E in the AM peak hour and LOS F in the PM peak hour. It is not uncommon for a side street to operate at a decreased LOS during the peak hours. Alternate driveways will be used to exit the development if excessive delays are experienced in the future peak hours. .

The future driveway traffic control and lane geometry is shown in Figure 13.



FUTURE 2011 SITE ACCESS PEAK HOUR VOLUMES FIGURE 12

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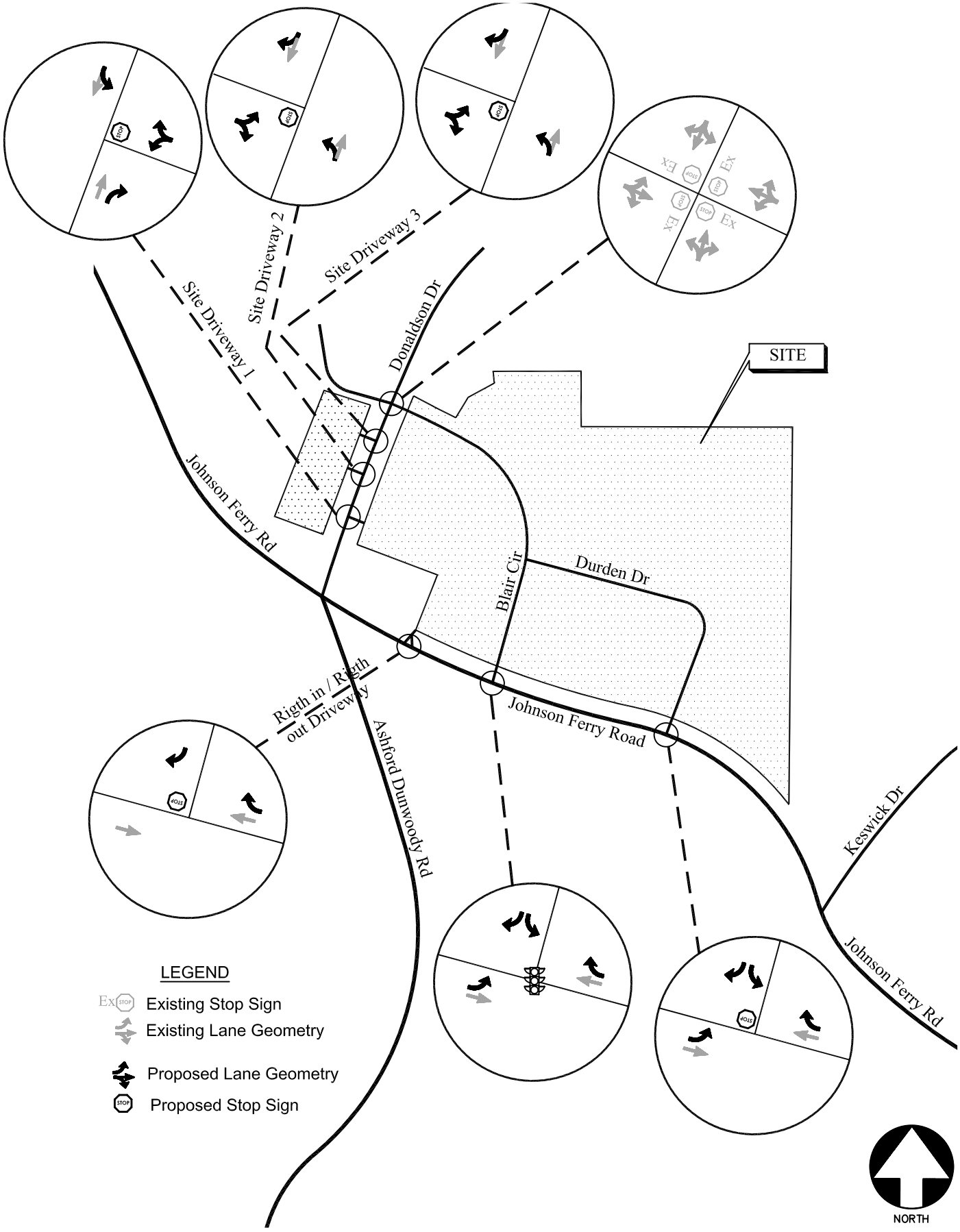

FUTURE 2011 SITE ACCESS TRAFFIC CONTROL AND LANE GEOMETRY

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

A MARTA bus route currently serves the proposed site and a MARTA rail station is located approximately 1 mile from the site. A multi use trail is also proposed through the site that will tie into the PATH foundations multi use trail network.

2. Vehicle Miles Traveled

The table below displays the reductions in trip generation due to mixed-use and pass-by reductions.

24-hour Trip Generation	10,264
- Mixed Use Reductions (internal capture)	-1,174
- Pass-by reductions	-2,000
Net Trips:	7,090

3. Relationship Between Location of Proposed DRI and Regional Mobility

The proposed DRI is currently served by a MARTA bus route and is located approximately 1 mile from a MARTA rail station.

4. Relationship Between Proposed DRI and Existing or Planned Transit Facilities

MARTA bus route 29 currently serves the proposed site and the Chamblee rail station is located approximately 1 mile from the site. Details for MARTA bus route 29 are included in the Appendix. In addition, a multiple use trail is proposed through the site. This trail is proposed to tie into the PATH foundations network of multi use trails. This trail will promote increased pedestrian and bicycle use within and through the development.

5. Transportation Management Area Designation

The area around the proposed project is not designated as a transportation management area.

6. Offsite Trip Reduction and Trip Reduction Techniques

Due to the nature of the development, there will be significant mixed-use and pass by trip reductions. 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. DeKalb County Water and Sewer authority will provide water and wastewater services for the 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

The proposed project will provide pedestrian walkways in all directions to connect the site with adjacent pedestrian facilities. The network of sidewalks will provide adequate pedestrian access to the various land uses within the development.

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 along with the traffic analysis.

12. Significant Impact Analysis

Due to the annual growth in the county in addition to the site generated traffic a number of intersection improvements will be required to bring the intersections in the vicinity of the site to the LOS standard. Even with the annual growth and the addition of the site generated traffic, the implementation of the recommended improvements will allow all intersections in the study area network to operate at acceptable levels of service.

Appendix

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Existing AM Intersection Analysis

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	167	136	128	935	18	703
Act Effct Green (s)	17.0	17.0	90.8	90.8	83.0	83.0
Actuated g/C Ratio	0.14	0.14	0.76	0.76	0.69	0.69
v/c Ratio	0.63	0.76	0.23	0.67	0.08	0.55
Control Delay	41.1	72.3	3.5	7.1	7.7	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.1	72.3	3.5	7.1	7.7	11.9
LOS	D	E	A	A	A	B
Approach Delay	41.1	72.3		6.6		11.8
Approach LOS	D	E		A		B
Queue Length 50th (ft)	79	97	6	49	4	248
Queue Length 95th (ft)	148	163	20	565	13	390
Internal Link Dist (ft)	989	884		1033		1098
Turn Bay Length (ft)			60		150	
Base Capacity (vph)	325	229	550	1404	249	1280
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.59	0.23	0.67	0.07	0.55

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 23 (19%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 15.4		Intersection LOS: B	
Intersection Capacity Utilization 73.2%		ICU Level of Service D	
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	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1686			1780		1770	1853		1770	1848	
Flt Permitted		0.86			0.57		0.32	1.00		0.18	1.00	
Satd. Flow (perm)		1467			1047		602	1853		335	1848	
Volume (vph)	41	20	98	63	45	20	122	857	31	17	633	35
Peak-hour factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	43	21	103	67	48	21	128	902	33	18	666	37
RTOR Reduction (vph)	0	51	0	0	6	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	116	0	0	130	0	128	934	0	18	701	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		17.0			17.0		88.4	88.4		80.6	80.6	
Effective Green, g (s)		17.0			17.0		88.4	88.4		80.6	80.6	
Actuated g/C Ratio		0.14			0.14		0.74	0.74		0.67	0.67	
Clearance Time (s)		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	
Lane Grp Cap (vph)		208			148		545	1365		256	1241	
v/s Ratio Prot							0.02	c0.50		0.00	c0.38	
v/s Ratio Perm		0.08			c0.12		0.15			0.05		
v/c Ratio		0.56			0.88		0.23	0.68		0.07	0.57	
Uniform Delay, d1		48.0			50.5		10.8	8.4		11.5	10.4	
Progression Factor		1.00			1.00		0.40	0.51		1.00	1.00	
Incremental Delay, d2		3.2			40.1		0.2	2.4		0.1	1.9	
Delay (s)		51.3			90.6		4.5	6.7		11.7	12.3	
Level of Service		D			F		A	A		B	B	
Approach Delay (s)		51.3			90.6			6.4			12.3	
Approach LOS		D			F			A			B	

Intersection Summary					
HCM Average Control Delay	17.5	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.72				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	73.2%	ICU Level of Service		D	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	62	135	168	291	101	707	98	598
Act Effct Green (s)	18.9	18.9	18.9	18.9	87.9	82.1	90.2	83.2
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.73	0.68	0.75	0.69
v/c Ratio	0.40	0.44	0.75	0.59	0.22	0.56	0.26	0.46
Control Delay	51.0	33.9	67.4	9.7	2.0	3.9	5.2	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.0	33.9	67.4	9.7	2.0	3.9	5.2	8.5
LOS	D	C	E	A	A	A	A	A
Approach Delay		39.3	30.8			3.6		8.0
Approach LOS		D	C			A		A
Queue Length 50th (ft)	44	64	126	0	3	35	12	146
Queue Length 95th (ft)	81	116	184	65	5	166	m34	210
Internal Link Dist (ft)		528	850			3492		1033
Turn Bay Length (ft)					60		90	
Base Capacity (vph)	239	448	344	603	549	1268	454	1292
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.30	0.49	0.48	0.18	0.56	0.22	0.46

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 14.1 Intersection LOS: B
Intersection Capacity Utilization 67.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.92			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1718			1820	1583	1770	1854		1770	1863	
Flt Permitted	0.43	1.00			0.61	1.00	0.37	1.00		0.29	1.00	
Satd. Flow (perm)	801	1718			1139	1583	687	1854		546	1863	
Volume (vph)	55	58	62	69	79	256	95	644	21	86	526	0
Peak-hour factor, PHF	0.89	0.89	0.89	0.88	0.88	0.88	0.94	0.94	0.94	0.88	0.88	0.88
Adj. Flow (vph)	62	65	70	78	90	291	101	685	22	98	598	0
RTOR Reduction (vph)	0	36	0	0	0	245	0	1	0	0	0	0
Lane Group Flow (vph)	62	99	0	0	168	46	101	706	0	98	598	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	18.9	18.9			18.9	18.9	87.9	82.1		90.3	83.3	
Effective Green, g (s)	18.9	18.9			18.9	18.9	87.9	82.1		90.3	83.3	
Actuated g/C Ratio	0.16	0.16			0.16	0.16	0.73	0.68		0.75	0.69	
Clearance Time (s)	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	
Lane Grp Cap (vph)	126	271			179	249	556	1268		482	1293	
v/s Ratio Prot		0.06					0.01	c0.38		c0.01	0.32	
v/s Ratio Perm	0.08				c0.15	0.03	0.12			0.14		
v/c Ratio	0.49	0.36			0.94	0.18	0.18	0.56		0.20	0.46	
Uniform Delay, d1	46.2	45.2			50.0	43.9	5.4	9.7		6.2	8.3	
Progression Factor	1.00	1.00			1.00	1.00	0.22	0.20		0.94	0.79	
Incremental Delay, d2	3.0	0.8			49.1	0.4	0.1	1.6		0.2	1.0	
Delay (s)	49.2	46.0			99.1	44.2	1.3	3.6		6.0	7.5	
Level of Service	D	D			F	D	A	A		A	A	
Approach Delay (s)		47.0			64.3			3.3			7.3	
Approach LOS		D			E			A			A	

Intersection Summary

HCM Average Control Delay	21.5	HCM Level of Service		C		
HCM Volume to Capacity ratio	0.60					
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0		
Intersection Capacity Utilization	67.9%	ICU Level of Service		C		
Analysis Period (min)	15					
c Critical Lane Group						

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	120	368	829	649	545	120
Act Effct Green (s)	15.5	74.0	96.5	96.5	38.0	38.0
Actuated g/C Ratio	0.13	0.62	0.80	0.80	0.32	0.32
v/c Ratio	0.53	0.38	0.96	0.43	0.92	0.21
Control Delay	57.6	12.9	24.3	5.6	56.8	8.1
Queue Delay	0.0	0.0	5.8	1.2	0.0	0.0
Total Delay	57.6	12.9	30.1	6.8	56.8	8.1
LOS	E	B	C	A	E	A
Approach Delay	23.9			19.9	48.0	
Approach LOS	C			B	D	
Queue Length 50th (ft)	88	133	375	172	379	10
Queue Length 95th (ft)	151	196	m#440	m187	#600	m39
Internal Link Dist (ft)	1388			639	3492	
Turn Bay Length (ft)	60					300
Base Capacity (vph)	236	972	866	1498	590	583
Starvation Cap Reductn	0	0	30	593	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.38	0.99	0.72	0.92	0.21

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 116 (97%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 27.7 Intersection LOS: C
Intersection Capacity Utilization 85.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.10	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	177	1863	1863	1583
Volume (vph)	112	342	796	623	480	106
Peak-hour factor, PHF	0.93	0.93	0.96	0.96	0.88	0.88
Adj. Flow (vph)	120	368	829	649	545	120
RTOR Reduction (vph)	0	0	0	0	0	82
Lane Group Flow (vph)	120	368	829	649	545	38
Turn Type		pt+ov	pm+pt			Perm
Protected Phases	4	5 4	5	2	6	
Permitted Phases			2	2		6
Actuated Green, G (s)	15.5	74.0	96.5	96.5	38.0	38.0
Effective Green, g (s)	15.5	74.0	96.5	96.5	38.0	38.0
Actuated g/C Ratio	0.13	0.62	0.80	0.80	0.32	0.32
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)	229	976	866	1498	590	501
v/s Ratio Prot	c0.07	0.23	c0.43	0.35	0.29	
v/s Ratio Perm			c0.33			0.02
v/c Ratio	0.52	0.38	0.96	0.43	0.92	0.08
Uniform Delay, d1	48.8	11.5	27.6	3.5	39.6	28.7
Progression Factor	1.00	1.00	0.47	1.44	0.89	1.41
Incremental Delay, d2	2.2	0.2	9.3	0.3	20.5	0.3
Delay (s)	51.0	11.7	22.1	5.4	55.8	40.6
Level of Service	D	B	C	A	E	D
Approach Delay (s)	21.4			14.8	53.1	
Approach LOS	C			B	D	

Intersection Summary

HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	39	393	435	93	936	295	302	31	172
Act Effct Green (s)	65.5	59.5	84.5	69.6	64.8	21.0	21.0	16.0	16.0
Actuated g/C Ratio	0.55	0.50	0.70	0.58	0.54	0.18	0.18	0.13	0.13
v/c Ratio	0.26	0.43	0.39	0.18	0.93	1.00	1.02	0.13	0.69
Control Delay	12.0	9.2	4.5	10.2	39.8	94.1	96.5	47.5	60.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.0	9.2	4.5	10.2	39.8	94.1	96.5	47.5	60.6
LOS	B	A	A	B	D	F	F	D	E
Approach Delay		7.0			37.1		95.3		58.6
Approach LOS		A			D		F		E
Queue Length 50th (ft)	5	99	73	33	731	~240	~248	22	118
Queue Length 95th (ft)	m7	m124	m94	m35	#1019	m#364	m#373	50	#190
Internal Link Dist (ft)		639			1689		1125		869
Turn Bay Length (ft)	60			550		110		135	
Base Capacity (vph)	181	923	1114	513	1005	294	297	236	250
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.43	0.39	0.18	0.93	1.00	1.02	0.13	0.69

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 16 (13%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 41.9 Intersection LOS: D
Intersection Capacity Utilization 89.2% ICU Level of Service E
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.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.95	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1859		1681	1690		1770	1783	
Flt Permitted	0.07	1.00	1.00	0.39	1.00		0.95	0.96		0.95	1.00	
Satd. Flow (perm)	125	1863	1583	728	1859		1681	1690		1770	1783	
Volume (vph)	38	385	426	91	905	13	520	41	12	27	107	43
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.96	0.96	0.96	0.87	0.87	0.87
Adj. Flow (vph)	39	393	435	93	923	13	542	43	12	31	123	49
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	12	0
Lane Group Flow (vph)	39	393	435	93	936	0	295	300	0	31	160	0
Turn Type	pm+pt		pt+ov	pm+pt			Split			Split		
Protected Phases	1	6	6 4	5	2		4	4		8	8	
Permitted Phases	6			2								
Actuated Green, G (s)	63.3	59.5	84.5	70.7	63.2		21.0	21.0		16.0	16.0	
Effective Green, g (s)	63.3	59.5	84.5	70.7	63.2		21.0	21.0		16.0	16.0	
Actuated g/C Ratio	0.53	0.50	0.70	0.59	0.53		0.18	0.18		0.13	0.13	
Clearance Time (s)	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	
Lane Grp Cap (vph)	118	924	1115	494	979		294	296		236	238	
v/s Ratio Prot	c0.01	0.21	0.27	0.01	c0.50		0.18	c0.18		0.02	c0.09	
v/s Ratio Perm	0.16			0.10								
v/c Ratio	0.33	0.43	0.39	0.19	0.96		1.00	1.01		0.13	0.67	
Uniform Delay, d1	26.1	19.3	7.2	12.0	27.1		49.5	49.5		45.9	49.5	
Progression Factor	0.86	0.41	0.51	0.90	1.04		0.98	0.98		1.00	1.00	
Incremental Delay, d2	1.2	1.0	0.7	0.1	14.8		45.3	48.0		1.1	14.1	
Delay (s)	23.6	8.9	4.4	10.9	42.9		93.7	96.4		47.0	63.6	
Level of Service	C	A	A	B	D		F	F		D	E	
Approach Delay (s)		7.3			40.0			95.1			61.1	
Approach LOS		A			D			F			E	

Intersection Summary

HCM Average Control Delay	43.3	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.90				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		16.0	
Intersection Capacity Utilization	89.2%	ICU Level of Service		E	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	74	128	90	525	466	74
Peak Hour Factor	0.80	0.80	0.94	0.94	0.95	0.95
Hourly flow rate (vph)	92	160	96	559	491	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1279	529	568			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1279	529	568			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	44	71	90			
cM capacity (veh/h)	166	549	1004			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	252	654	568
Volume Left	92	96	0
Volume Right	160	0	78
cSH	297	1004	1700
Volume to Capacity	0.85	0.10	0.33
Queue Length 95th (ft)	183	8	0
Control Delay (s)	59.3	2.4	0.0
Lane LOS	F	A	
Approach Delay (s)	59.3	2.4	0.0
Approach LOS	F		

Intersection Summary			
Average Delay		11.2	
Intersection Capacity Utilization		83.6%	ICU Level of Service E
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	251	921	1821	179	328
Act Effct Green (s)	95.0	95.0	75.0	17.0	37.0
Actuated g/C Ratio	0.79	0.79	0.62	0.14	0.31
v/c Ratio	0.83	0.33	0.84	0.71	0.63
Control Delay	54.6	3.9	16.0	57.1	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.6	3.9	16.0	57.1	28.5
LOS	D	A	B	E	C
Approach Delay		14.7	16.0	38.6	
Approach LOS		B	B	D	
Queue Length 50th (ft)	134	86	255	134	196
Queue Length 95th (ft)	#244	107	285	m#230	285
Internal Link Dist (ft)		720	4601	1766	
Turn Bay Length (ft)	600				150
Base Capacity (vph)	343	2802	2161	251	556
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	0.73	0.33	0.84	0.71	0.59

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 80 (67%), Referenced to phase 2:WBT and 6:EBTL, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.84		
Intersection Signal Delay: 18.8		Intersection LOS: B
Intersection Capacity Utilization 78.4%		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.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3430		1770	1583
Flt Permitted	0.05	1.00	1.00		0.95	1.00
Satd. Flow (perm)	94	3539	3430		1770	1583
Volume (vph)	226	829	1288	333	174	318
Peak-hour factor, PHF	0.90	0.90	0.89	0.89	0.97	0.97
Adj. Flow (vph)	251	921	1447	374	179	328
RTOR Reduction (vph)	0	0	18	0	0	31
Lane Group Flow (vph)	251	921	1803	0	179	297
Turn Type	pm+pt					pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Actuated Green, G (s)	95.0	95.0	75.0		17.0	33.0
Effective Green, g (s)	95.0	95.0	75.0		17.0	33.0
Actuated g/C Ratio	0.79	0.79	0.62		0.14	0.28
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)	298	2802	2144		251	488
v/s Ratio Prot	c0.11	0.26	0.53		c0.10	0.08
v/s Ratio Perm	c0.55					0.11
v/c Ratio	0.84	0.33	0.84		0.71	0.61
Uniform Delay, d1	39.3	3.5	17.8		49.2	37.9
Progression Factor	1.00	1.00	0.65		0.83	0.75
Incremental Delay, d2	18.9	0.3	3.9		15.4	2.1
Delay (s)	58.2	3.8	15.4		56.3	30.4
Level of Service	E	A	B		E	C
Approach Delay (s)		15.5	15.4		39.5	
Approach LOS		B	B		D	

Intersection Summary			
HCM Average Control Delay	18.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	499	100	83	847	1330	1073
Act Effct Green (s)	23.0	23.0	89.0	89.0	80.1	80.1
Actuated g/C Ratio	0.19	0.19	0.74	0.74	0.67	0.67
v/c Ratio	0.76	0.26	0.30	0.32	0.56	0.81
Control Delay	41.9	4.5	6.7	4.8	12.3	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	4.5	6.7	4.8	12.3	8.9
LOS	D	A	A	A	B	A
Approach Delay	35.6			4.9	10.8	
Approach LOS	D			A	B	
Queue Length 50th (ft)	178	5	14	96	280	91
Queue Length 95th (ft)	m236	m10	m22	106	348	321
Internal Link Dist (ft)	1185			682	1179	
Turn Bay Length (ft)	375	550	90			135
Base Capacity (vph)	658	384	289	2625	2361	1329
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.26	0.29	0.32	0.56	0.81

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 23 (19%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 74.6%		ICU Level of Service D	
Analysis Period (min) 15			

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

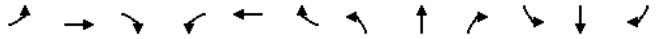
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.14	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	264	3539	3539	1583
Volume (vph)	469	94	75	762	1277	1030
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.96	0.96
Adj. Flow (vph)	499	100	83	847	1330	1073
RTOR Reduction (vph)	0	81	0	0	0	278
Lane Group Flow (vph)	499	19	83	847	1330	795
Turn Type		Perm	pm+pt			Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Actuated Green, G (s)	23.0	23.0	89.0	89.0	79.3	79.3
Effective Green, g (s)	23.0	23.0	89.0	89.0	79.3	79.3
Actuated g/C Ratio	0.19	0.19	0.74	0.74	0.66	0.66
Clearance Time (s)	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
Lane Grp Cap (vph)	658	303	267	2625	2339	1046
v/s Ratio Prot	c0.15		0.01	c0.24	0.38	
v/s Ratio Perm		0.01	0.22			c0.50
v/c Ratio	0.76	0.06	0.31	0.32	0.57	0.76
Uniform Delay, d1	45.9	39.7	7.8	5.3	11.1	13.9
Progression Factor	0.74	0.36	0.95	0.84	1.00	1.00
Incremental Delay, d2	7.8	0.4	0.6	0.3	1.0	5.2
Delay (s)	41.6	14.5	8.0	4.7	12.1	19.0
Level of Service	D	B	A	A	B	B
Approach Delay (s)	37.0			5.0	15.2	
Approach LOS	D			A	B	

Intersection Summary				
HCM Average Control Delay	16.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	8	508	1081	19	22	34
Peak Hour Factor	0.96	0.96	0.97	0.97	0.78	0.78
Hourly flow rate (vph)	8	529	1114	20	28	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			1265			
pX, platoon unblocked						
vC, conflicting volume	1134				1670	1124
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1134				1670	1124
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				73	83
cM capacity (veh/h)	616				104	250

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	538	1134	72
Volume Left	8	0	28
Volume Right	0	20	44
cSH	616	1700	161
Volume to Capacity	0.01	0.67	0.45
Queue Length 95th (ft)	1	0	51
Control Delay (s)	0.4	0.0	44.1
Lane LOS	A		E
Approach Delay (s)	0.4	0.0	44.1
Approach LOS			E

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	2	1	4	2	2	1	99	6	1	192	3
Peak Hour Factor	0.42	0.42	0.42	0.67	0.67	0.67	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	5	5	2	6	3	3	1	119	7	1	231	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	12	12	128	236
Volume Left (vph)	5	6	1	1
Volume Right (vph)	2	3	7	4
Hadj (s)	-0.01	-0.02	0.00	0.03
Departure Headway (s)	4.7	4.7	4.2	4.1
Degree Utilization, x	0.02	0.02	0.15	0.27
Capacity (veh/h)	701	702	838	865
Control Delay (s)	7.8	7.8	7.9	8.6
Approach Delay (s)	7.8	7.8	7.9	8.6
Approach LOS	A	A	A	A

Intersection Summary				
Delay		8.3		
HCM Level of Service		A		
Intersection Capacity Utilization		20.9%	ICU Level of Service	A
Analysis Period (min)		15		

Existing PM Intersection Analysis

Queues
1: West Nancy Creek Drive & Ashford Dunwoody Road

Existing PM
11/1/2006

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	410	107	105	823	29	967
Act Effct Green (s)	29.1	29.1	76.4	76.4	70.9	70.9
Actuated g/C Ratio	0.24	0.24	0.64	0.64	0.59	0.59
v/c Ratio	0.93	0.42	0.49	0.71	0.15	0.88
Control Delay	68.0	40.9	22.6	9.0	12.6	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.0	40.9	22.6	9.0	12.6	32.7
LOS	E	D	C	A	B	C
Approach Delay	68.0	40.9		10.5		32.1
Approach LOS	E	D		B		C
Queue Length 50th (ft)	272	64	17	173	9	629
Queue Length 95th (ft)	#395	121	m52	252	23	#948
Internal Link Dist (ft)	989	884		1033		1098
Turn Bay Length (ft)			60		150	
Base Capacity (vph)	465	268	215	1166	221	1098
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.40	0.49	0.71	0.13	0.88

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 41 (34%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 30.3 Intersection LOS: C
Intersection Capacity Utilization 84.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
1: West Nancy Creek Drive & Ashford Dunwoody Road

Existing PM
11/1/2006

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	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.98		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1712			1787		1770	1826		1770	1856	
Flt Permitted		0.96			0.52		0.09	1.00		0.15	1.00	
Satd. Flow (perm)		1649			951		164	1826		276	1856	
Volume (vph)	35	115	194	43	42	15	100	678	104	28	898	21
Peak-hour factor, PHF	0.84	0.84	0.84	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	137	231	46	45	16	105	714	109	29	945	22
RTOR Reduction (vph)	0	39	0	0	5	0	0	4	0	0	1	0
Lane Group Flow (vph)	0	371	0	0	102	0	105	819	0	29	966	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		29.1			29.1		74.8	74.8		69.3	69.3	
Effective Green, g (s)		29.1			29.1		74.8	74.8		69.3	69.3	
Actuated g/C Ratio		0.24			0.24		0.62	0.62		0.58	0.58	
Clearance Time (s)		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	
Lane Grp Cap (vph)		400			231		231	1138		210	1072	
v/s Ratio Prot							0.04	c0.45		0.00	c0.52	
v/s Ratio Perm		c0.22			0.11		0.25			0.07		
v/c Ratio		0.93			0.44		0.45	0.72		0.14	0.90	
Uniform Delay, d1		44.4			38.5		42.4	15.4		17.2	22.3	
Progression Factor		1.00			1.00		0.58	0.37		1.00	1.00	
Incremental Delay, d2		27.2			1.3		1.1	3.2		0.3	12.1	
Delay (s)		71.6			39.9		25.8	8.9		17.5	34.4	
Level of Service		E			D		C	A		B	C	
Approach Delay (s)		71.6			39.9			10.8			33.9	
Approach LOS		E			D			B			C	

Intersection Summary

HCM Average Control Delay	31.7	HCM Level of Service	C		
HCM Volume to Capacity ratio	0.88				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0		
Intersection Capacity Utilization	84.4%	ICU Level of Service	E		
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	90	135	80	127	39	752	361	812
Act Effct Green (s)	13.3	13.3	13.3	13.3	81.5	75.6	98.7	92.6
Actuated g/C Ratio	0.11	0.11	0.11	0.11	0.68	0.63	0.82	0.77
v/c Ratio	0.65	0.63	0.63	0.44	0.11	0.65	0.70	0.57
Control Delay	71.3	55.0	71.4	12.8	3.1	11.2	12.5	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.3	55.0	71.4	12.8	3.1	11.2	12.5	4.2
LOS	E	D	E	B	A	B	B	A
Approach Delay		61.5	35.5			10.8		6.7
Approach LOS		E	D			B		A
Queue Length 50th (ft)	68	84	60	0	3	142	60	87
Queue Length 95th (ft)	107	128	105	49	8	549	m82	m200
Internal Link Dist (ft)		528	850			3492		1033
Turn Bay Length (ft)					60		90	
Base Capacity (vph)	179	271	164	335	371	1158	605	1437
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.50	0.49	0.38	0.11	0.65	0.60	0.57

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 27 (23%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 15.7		Intersection LOS: B	
Intersection Capacity Utilization 77.6%		ICU Level of Service D	
Analysis Period (min) 15			

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

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	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.94			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1755			1806	1583	1770	1836		1770	1863	
Flt Permitted	0.65	1.00			0.48	1.00	0.26	1.00		0.24	1.00	
Satd. Flow (perm)	1218	1755			895	1583	490	1836		445	1863	
Volume (vph)	73	67	42	43	26	109	37	645	69	339	763	0
Peak-hour factor, PHF	0.81	0.81	0.81	0.86	0.86	0.86	0.95	0.95	0.95	0.94	0.94	0.94
Adj. Flow (vph)	90	83	52	50	30	127	39	679	73	361	812	0
RTOR Reduction (vph)	0	20	0	0	0	113	0	3	0	0	0	0
Lane Group Flow (vph)	90	115	0	0	80	14	39	749	0	361	812	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	13.3	13.3			13.3	13.3	77.7	74.0		98.7	91.0	
Effective Green, g (s)	13.3	13.3			13.3	13.3	77.7	74.0		98.7	91.0	
Actuated g/C Ratio	0.11	0.11			0.11	0.11	0.65	0.62		0.82	0.76	
Clearance Time (s)	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	
Lane Grp Cap (vph)	135	195			99	175	357	1132		595	1413	
v/s Ratio Prot		0.07					0.00	c0.41		c0.10	0.44	
v/s Ratio Perm	0.07				c0.09	0.01	0.07			0.39		
v/c Ratio	0.67	0.59			0.81	0.08	0.11	0.66		0.61	0.57	
Uniform Delay, d1	51.2	50.8			52.1	47.9	17.1	14.9		21.0	6.2	
Progression Factor	1.00	1.00			1.00	1.00	0.53	0.52		0.50	0.47	
Incremental Delay, d2	11.8	4.8			36.6	0.2	0.1	2.9		0.8	0.8	
Delay (s)	63.0	55.5			88.7	48.1	9.2	10.7		11.3	3.7	
Level of Service	E	E			F	D	A	B		B	A	
Approach Delay (s)		58.5			63.8			10.6			6.1	
Approach LOS		E			E			B			A	

Intersection Summary					
HCM Average Control Delay	17.5	HCM Level of Service		B	
HCM Volume to Capacity ratio	0.65				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	77.6%	ICU Level of Service		D	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	72	780	401	604	693	136
Act Effct Green (s)	16.0	63.5	96.0	96.0	48.5	48.5
Actuated g/C Ratio	0.13	0.53	0.80	0.80	0.40	0.40
v/c Ratio	0.31	0.93	0.57	0.41	0.92	0.19
Control Delay	50.9	45.5	20.2	9.1	43.3	3.8
Queue Delay	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay	50.9	45.5	20.2	9.5	43.3	3.8
LOS	D	D	C	A	D	A
Approach Delay	45.9			13.8	36.8	
Approach LOS	D			B	D	
Queue Length 50th (ft)	51	534	199	244	470	5
Queue Length 95th (ft)	98	#817	m263	m275	#748	m28
Internal Link Dist (ft)	1388			639	3492	
Turn Bay Length (ft)	60					300
Base Capacity (vph)	236	844	711	1490	753	716
Starvation Cap Reductn	0	0	0	437	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.92	0.56	0.57	0.92	0.19

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 10 (8%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 31.1		Intersection LOS: C	
Intersection Capacity Utilization 86.8%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			
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	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.08	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	142	1863	1863	1583
Volume (vph)	68	741	389	586	651	128
Peak-hour factor, PHF	0.95	0.95	0.97	0.97	0.94	0.94
Adj. Flow (vph)	72	780	401	604	693	136
RTOR Reduction (vph)	0	0	0	0	0	76
Lane Group Flow (vph)	72	780	401	604	693	60
Turn Type		pt+ov	pm+pt			Perm
Protected Phases	4	5 4	5	2	6	
Permitted Phases			2	2		6
Actuated Green, G (s)	16.0	63.5	96.0	96.0	48.5	48.5
Effective Green, g (s)	16.0	63.5	96.0	96.0	48.5	48.5
Actuated g/C Ratio	0.13	0.53	0.80	0.80	0.40	0.40
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)	236	838	704	1490	753	640
v/s Ratio Prot	0.04	c0.49	0.21	0.32	c0.37	
v/s Ratio Perm			0.25			0.04
v/c Ratio	0.31	0.93	0.57	0.41	0.92	0.09
Uniform Delay, d1	47.0	26.2	24.2	3.6	33.9	22.1
Progression Factor	1.00	1.00	0.86	2.35	0.77	0.71
Incremental Delay, d2	0.7	16.7	0.7	0.5	15.8	0.2
Delay (s)	47.7	42.9	21.5	8.9	42.0	16.1
Level of Service	D	D	C	A	D	B
Approach Delay (s)	43.3			13.9	37.7	
Approach LOS	D			B	D	

Intersection Summary				
HCM Average Control Delay	30.6	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.93			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	86.8%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	40	935	401	85	588	280	286	51	105
Act Effct Green (s)	62.7	62.7	86.7	64.8	64.8	20.0	20.0	16.0	16.0
Actuated g/C Ratio	0.52	0.52	0.72	0.54	0.54	0.17	0.17	0.13	0.13
v/c Ratio	0.10	0.96	0.35	0.48	0.59	1.00	1.01	0.22	0.41
Control Delay	17.4	39.1	6.0	22.1	14.6	91.9	92.6	49.1	41.6
Queue Delay	0.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	55.8	6.0	22.1	14.6	91.9	92.6	49.1	41.6
LOS	B	E	A	C	B	F	F	D	D
Approach Delay		40.1			15.5		92.2		44.0
Approach LOS		D			B		F		D
Queue Length 50th (ft)	16	~647	101	19	315	~187	~190	36	57
Queue Length 95th (ft)	m17	m#873	m108	m39	400	m#313	m#320	75	114
Internal Link Dist (ft)		639			1689		1125		869
Turn Bay Length (ft)	60			550		110		135	
Base Capacity (vph)	399	973	1143	186	999	280	284	236	254
Starvation Cap Reductn	0	68	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	1.03	0.35	0.46	0.59	1.00	1.01	0.22	0.41

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 106 (88%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 45.0 Intersection LOS: D
Intersection Capacity Utilization 83.9% ICU Level of Service E
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.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.95	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1846		1681	1688		1770	1746	
Flt Permitted	0.34	1.00	1.00	0.07	1.00		0.95	0.96		0.95	1.00	
Satd. Flow (perm)	630	1863	1583	130	1846		1681	1688		1770	1746	
Volume (vph)	39	916	393	77	503	32	464	49	19	46	55	40
Peak-hour factor, PHF	0.98	0.98	0.98	0.91	0.91	0.91	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	40	935	401	85	553	35	494	52	20	51	61	44
RTOR Reduction (vph)	0	0	0	0	2	0	0	3	0	0	22	0
Lane Group Flow (vph)	40	935	401	85	586	0	280	284	0	51	83	0
Turn Type	pm+pt		pt+ov	pm+pt			Split			Split		
Protected Phases	1	6	6 4	5	2		4	4		8	8	
Permitted Phases	6			2								
Actuated Green, G (s)	61.9	61.9	85.9	63.2	63.2		20.0	20.0		16.0	16.0	
Effective Green, g (s)	61.9	61.9	85.9	63.2	63.2		20.0	20.0		16.0	16.0	
Actuated g/C Ratio	0.52	0.52	0.72	0.53	0.53		0.17	0.17		0.13	0.13	
Clearance Time (s)	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	
Lane Grp Cap (vph)	371	961	1133	152	972		280	281		236	233	
v/s Ratio Prot	0.00	c0.50	0.25	0.03	c0.32		0.17	c0.17		0.03	c0.05	
v/s Ratio Perm	0.05			0.27								
v/c Ratio	0.11	0.97	0.35	0.56	0.60		1.00	1.01		0.22	0.36	
Uniform Delay, d1	22.4	28.2	6.5	56.8	19.7		50.0	50.0		46.4	47.3	
Progression Factor	1.04	0.98	0.83	0.95	0.63		0.87	0.87		1.00	1.00	
Incremental Delay, d2	0.0	12.3	0.3	3.5	2.2		47.1	49.3		2.1	4.2	
Delay (s)	23.4	40.0	5.7	57.3	14.5		90.6	92.6		48.5	51.6	
Level of Service	C	D	A	E	B		F	F		D	D	
Approach Delay (s)		29.5			19.9			91.6			50.6	
Approach LOS		C			B			F			D	

Intersection Summary

HCM Average Control Delay	41.0	HCM Level of Service		D	
HCM Volume to Capacity ratio	0.87				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		16.0	
Intersection Capacity Utilization	83.9%	ICU Level of Service		E	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	132	181	122	408	480	127
Peak Hour Factor	0.93	0.93	0.95	0.95	0.94	0.94
Hourly flow rate (vph)	142	195	128	429	511	135
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1265	578	646			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1265	578	646			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	12	62	86			
cM capacity (veh/h)	161	515	940			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	337	558	646
Volume Left	142	128	0
Volume Right	195	0	135
cSH	268	940	1700
Volume to Capacity	1.26	0.14	0.38
Queue Length 95th (ft)	408	12	0
Control Delay (s)	180.9	3.5	0.0
Lane LOS	F	A	
Approach Delay (s)	180.9	3.5	0.0
Approach LOS	F		

Intersection Summary			
Average Delay		40.8	
Intersection Capacity Utilization		89.6%	ICU Level of Service E
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	360	1515	1419	412	252
Act Effct Green (s)	81.0	81.0	54.7	31.0	57.3
Actuated g/C Ratio	0.68	0.68	0.46	0.26	0.48
v/c Ratio	0.92	0.63	0.89	0.90	0.33
Control Delay	62.5	12.6	20.5	65.1	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	62.5	12.6	20.5	65.1	17.8
LOS	E	B	C	E	B
Approach Delay		22.2	20.5	47.1	
Approach LOS		C	C	D	
Queue Length 50th (ft)	218	319	166	309	113
Queue Length 95th (ft)	#386	385	182	#498	177
Internal Link Dist (ft)		720	4601	1766	
Turn Bay Length (ft)	600				150
Base Capacity (vph)	416	2389	1593	457	790
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	0.87	0.63	0.89	0.90	0.32

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: 0.92
Intersection Signal Delay: 25.8 Intersection LOS: C
Intersection Capacity Utilization 84.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3479		1770	1583
Flt Permitted	0.07	1.00	1.00		0.95	1.00
Satd. Flow (perm)	127	3539	3479		1770	1583
Volume (vph)	342	1439	1095	139	371	227
Peak-hour factor, PHF	0.95	0.95	0.87	0.87	0.90	0.90
Adj. Flow (vph)	360	1515	1259	160	412	252
RTOR Reduction (vph)	0	0	8	0	0	13
Lane Group Flow (vph)	360	1515	1411	0	412	239
Turn Type	pm+pt					pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Actuated Green, G (s)	81.0	81.0	54.7		31.0	53.3
Effective Green, g (s)	81.0	81.0	54.7		31.0	53.3
Actuated g/C Ratio	0.68	0.68	0.46		0.26	0.44
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)	391	2389	1586		457	756
v/s Ratio Prot	c0.17	0.43	0.41		c0.23	0.06
v/s Ratio Perm	c0.45					0.09
v/c Ratio	0.92	0.63	0.89		0.90	0.32
Uniform Delay, d1	38.3	11.1	29.9		43.0	21.6
Progression Factor	1.00	1.00	0.42		0.95	0.96
Incremental Delay, d2	26.7	1.3	7.1		23.3	0.2
Delay (s)	65.0	12.4	19.5		64.2	21.0
Level of Service	E	B	B		E	C
Approach Delay (s)		22.5	19.5		47.8	
Approach LOS		C	B		D	

Intersection Summary			
HCM Average Control Delay	25.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	980	89	142	1146	1018	614
Act Effct Green (s)	44.0	44.0	68.0	68.0	52.0	52.0
Actuated g/C Ratio	0.37	0.37	0.57	0.57	0.43	0.43
v/c Ratio	0.78	0.14	0.45	0.57	0.66	0.68
Control Delay	16.2	1.3	25.0	13.4	29.7	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.2	1.3	25.0	13.4	29.7	13.5
LOS	B	A	C	B	C	B
Approach Delay	15.0			14.7	23.6	
Approach LOS	B			B	C	
Queue Length 50th (ft)	222	5	36	242	323	133
Queue Length 95th (ft)	m247	m7	m58	m276	398	269
Internal Link Dist (ft)	1185			682	1179	
Turn Bay Length (ft)	375	550	90			135
Base Capacity (vph)	1259	637	313	2005	1534	906
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.14	0.45	0.57	0.66	0.68

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 9 (8%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 18.4		Intersection LOS: B	
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
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	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.16	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	292	3539	3539	1583
Volume (vph)	921	84	126	1020	987	596
Peak-hour factor, PHF	0.94	0.94	0.89	0.89	0.97	0.97
Adj. Flow (vph)	980	89	142	1146	1018	614
RTOR Reduction (vph)	0	56	0	0	0	220
Lane Group Flow (vph)	980	33	142	1146	1018	394
Turn Type		Perm	pm+pt			Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Actuated Green, G (s)	44.0	44.0	68.0	68.0	52.0	52.0
Effective Green, g (s)	44.0	44.0	68.0	68.0	52.0	52.0
Actuated g/C Ratio	0.37	0.37	0.57	0.57	0.43	0.43
Clearance Time (s)	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
Lane Grp Cap (vph)	1259	580	313	2005	1534	686
v/s Ratio Prot	c0.29		0.05	c0.32	c0.29	
v/s Ratio Perm		0.02	0.21			0.25
v/c Ratio	0.78	0.06	0.45	0.57	0.66	0.57
Uniform Delay, d1	33.7	24.6	33.7	16.7	27.0	25.7
Progression Factor	0.40	0.21	0.86	0.74	1.00	1.00
Incremental Delay, d2	2.5	0.1	0.7	0.8	2.3	3.5
Delay (s)	16.0	5.1	29.6	13.2	29.3	29.1
Level of Service	B	A	C	B	C	C
Approach Delay (s)	15.1			15.0	29.3	
Approach LOS	B			B	C	

Intersection Summary			
HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	38	955	631	52	20	22
Peak Hour Factor	0.96	0.96	0.91	0.91	0.75	0.75
Hourly flow rate (vph)	40	995	693	57	27	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			1265			
pX, platoon unblocked						
vC, conflicting volume	751				1796	722
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	751				1796	722
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				68	93
cM capacity (veh/h)	859				84	427

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1034	751	56
Volume Left	40	0	27
Volume Right	0	57	29
cSH	859	1700	145
Volume to Capacity	0.05	0.44	0.39
Queue Length 95th (ft)	4	0	41
Control Delay (s)	1.4	0.0	44.5
Lane LOS	A		E
Approach Delay (s)	1.4	0.0	44.5
Approach LOS			E

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	4	2	11	2	3	5	114	7	1	136	3
Peak Hour Factor	0.50	0.50	0.50	0.80	0.80	0.80	0.93	0.93	0.93	0.92	0.92	0.92
Hourly flow rate (vph)	0	8	4	14	2	4	5	123	8	1	148	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	12	20	135	152
Volume Left (vph)	0	14	5	1
Volume Right (vph)	4	4	8	3
Hadj (s)	-0.17	0.06	0.01	0.02
Departure Headway (s)	4.4	4.6	4.1	4.1
Degree Utilization, x	0.01	0.03	0.16	0.17
Capacity (veh/h)	757	725	850	858
Control Delay (s)	7.4	7.7	7.9	8.0
Approach Delay (s)	7.4	7.7	7.9	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.9		
HCM Level of Service		A		
Intersection Capacity Utilization		24.0%	ICU Level of Service	A
Analysis Period (min)		15		

Base AM Intersection Analysis

Base 2011 AM

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	195	157	148	1083	21	816
Act Effct Green (s)	19.4	19.4	88.4	88.4	80.6	80.6
Actuated g/C Ratio	0.16	0.16	0.74	0.74	0.67	0.67
v/c Ratio	0.68	0.85	0.33	0.79	0.14	0.66
Control Delay	44.6	83.1	5.5	10.8	9.2	15.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	83.1	5.5	10.8	9.2	15.3
LOS	D	F	A	B	A	B
Approach Delay	44.6	83.1		10.2		15.1
Approach LOS	D	F		B		B
Queue Length 50th (ft)	97	111	19	167	5	363
Queue Length 95th (ft)	180	#220	m41	#826	14	503
Internal Link Dist (ft)	989	884		1033		1098
Turn Bay Length (ft)			60		150	
Base Capacity (vph)	318	208	445	1366	182	1243
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.75	0.33	0.79	0.12	0.66

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 10 (8%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 19.4 Intersection LOS: B
Intersection Capacity Utilization 82.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1686			1780		1770	1853		1770	1848	
Flt Permitted		0.85			0.56		0.24	1.00		0.09	1.00	
Satd. Flow (perm)		1452			1020		455	1853		166	1848	
Volume (vph)	48	23	114	73	52	23	141	993	36	20	734	41
Peak-hour factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	24	120	78	55	24	148	1045	38	21	773	43
RTOR Reduction (vph)	0	49	0	0	6	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	146	0	0	151	0	148	1082	0	21	814	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		19.4			19.4		86.0	86.0		78.2	78.2	
Effective Green, g (s)		19.4			19.4		86.0	86.0		78.2	78.2	
Actuated g/C Ratio		0.16			0.16		0.72	0.72		0.65	0.65	
Clearance Time (s)		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	
Lane Grp Cap (vph)		235			165		440	1328		143	1204	
v/s Ratio Prot							0.03	c0.58		0.00	c0.44	
v/s Ratio Perm		0.10			c0.15		0.21			0.09		
v/c Ratio		0.62			0.92		0.34	0.81		0.15	0.68	
Uniform Delay, d1		46.9			49.5		18.1	11.6		18.8	13.0	
Progression Factor		1.00			1.00		0.46	0.51		1.00	1.00	
Incremental Delay, d2		4.8			45.9		0.3	4.3		0.5	3.1	
Delay (s)		51.7			95.4		8.7	10.2		19.3	16.1	
Level of Service		D			F		A	B		B	B	
Approach Delay (s)		51.7			95.4			10.0			16.2	
Approach LOS		D			F			B			B	

Intersection Summary

HCM Average Control Delay	21.0	HCM Level of Service		C	
HCM Volume to Capacity ratio	0.84				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	82.6%	ICU Level of Service		E	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	72	156	196	338	117	821	114	693
Act Effct Green (s)	22.3	22.3	22.3	22.3	77.7	77.7	78.6	78.6
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.65	0.65	0.66	0.66
v/c Ratio	0.43	0.44	0.80	0.65	0.36	0.68	0.33	0.57
Control Delay	49.2	33.5	69.5	14.4	6.3	8.6	9.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Total Delay	49.2	33.5	69.5	14.5	6.3	8.7	9.3	8.4
LOS	D	C	E	B	A	A	A	A
Approach Delay		38.4	34.7			8.4		8.5
Approach LOS		D	C			A		A
Queue Length 50th (ft)	50	77	147	38	16	230	15	164
Queue Length 95th (ft)	90	131	211	116	33	324	m34	m215
Internal Link Dist (ft)		528	850			3492		1033
Turn Bay Length (ft)					60		90	
Base Capacity (vph)	226	462	328	607	333	1200	345	1220
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	6	0	35	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.34	0.60	0.56	0.35	0.70	0.33	0.57

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 9 (8%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 16.8		Intersection LOS: B	
Intersection Capacity Utilization 77.1%		ICU Level of Service D	
Analysis Period (min) 15			

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

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	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.92			1.00	0.85	1.00	1.00		1.00	1.00	
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1718			1820	1583	1770	1854		1770	1863	
Flt Permitted	0.41	1.00			0.59	1.00	0.25	1.00		0.25	1.00	
Satd. Flow (perm)	761	1718			1104	1583	473	1854		472	1863	
Volume (vph)	64	67	72	80	92	297	110	747	24	100	610	0
Peak-hour factor, PHF	0.89	0.89	0.89	0.88	0.88	0.88	0.94	0.94	0.94	0.88	0.88	0.88
Adj. Flow (vph)	72	75	81	91	105	338	117	795	26	114	693	0
RTOR Reduction (vph)	0	35	0	0	0	229	0	1	0	0	0	0
Lane Group Flow (vph)	72	121	0	0	196	109	117	820	0	114	693	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	22.3	22.3			22.3	22.3	77.7	77.7		78.6	78.6	
Effective Green, g (s)	22.3	22.3			22.3	22.3	77.7	77.7		78.6	78.6	
Actuated g/C Ratio	0.19	0.19			0.19	0.19	0.65	0.65		0.65	0.65	
Clearance Time (s)	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	
Lane Grp Cap (vph)	141	319			205	294	383	1200		396	1220	
v/s Ratio Prot		0.07					0.02	c0.44		0.02	c0.37	
v/s Ratio Perm	0.09				c0.18	0.07	0.18			0.17		
v/c Ratio	0.51	0.38			0.96	0.37	0.31	0.68		0.29	0.57	
Uniform Delay, d1	43.9	42.8			48.4	42.7	11.3	13.4		19.2	11.4	
Progression Factor	1.00	1.00			1.00	1.00	0.38	0.38		0.54	0.53	
Incremental Delay, d2	3.1	0.8			49.9	0.8	0.4	2.8		0.3	1.4	
Delay (s)	47.0	43.5			98.3	43.5	4.7	7.8		10.6	7.5	
Level of Service	D	D			F	D	A	A		B	A	
Approach Delay (s)		44.6			63.6			7.4			7.9	
Approach LOS		D			E			A			A	

Intersection Summary					
HCM Average Control Delay	22.9	HCM Level of Service		C	
HCM Volume to Capacity ratio	0.72				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	77.1%	ICU Level of Service		D	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	140	426	961	752	632	140
Act Effct Green (s)	15.8	75.0	96.2	96.2	37.0	37.0
Actuated g/C Ratio	0.13	0.62	0.80	0.80	0.31	0.31
v/c Ratio	0.60	0.43	1.10	0.50	1.10	0.24
Control Delay	60.6	13.2	65.3	6.3	102.1	9.5
Queue Delay	0.0	0.0	9.0	1.6	0.0	0.0
Total Delay	60.6	13.2	74.3	7.8	102.1	9.5
LOS	E	B	E	A	F	A
Approach Delay	24.9			45.1	85.3	
Approach LOS	C			D	F	
Queue Length 50th (ft)	104	158	~770	244	~544	29
Queue Length 95th (ft)	173	229	m411	m193	#760	m65
Internal Link Dist (ft)	1388			639	3492	
Turn Bay Length (ft)	60					300
Base Capacity (vph)	236	981	876	1493	574	575
Starvation Cap Reductn	0	0	17	529	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.43	1.12	0.78	1.10	0.24

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 51.5 Intersection LOS: D
Intersection Capacity Utilization 97.6% ICU Level of Service F
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.
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	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.10	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	182	1863	1863	1583
Volume (vph)	130	396	923	722	556	123
Peak-hour factor, PHF	0.93	0.93	0.96	0.96	0.88	0.88
Adj. Flow (vph)	140	426	961	752	632	140
RTOR Reduction (vph)	0	0	0	0	0	86
Lane Group Flow (vph)	140	426	961	752	632	54
Turn Type		pt+ov	pm+pt			Perm
Protected Phases	4	5 4	5	2	6	
Permitted Phases			2	2		6
Actuated Green, G (s)	15.8	75.0	96.2	96.2	37.0	37.0
Effective Green, g (s)	15.8	75.0	96.2	96.2	37.0	37.0
Actuated g/C Ratio	0.13	0.62	0.80	0.80	0.31	0.31
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)	233	989	876	1494	574	488
v/s Ratio Prot	c0.08	0.27	c0.50	0.40	0.34	
v/s Ratio Perm			c0.38			0.03
v/c Ratio	0.60	0.43	1.10	0.50	1.10	0.11
Uniform Delay, d1	49.1	11.5	34.6	4.0	41.5	29.7
Progression Factor	1.00	1.00	0.63	1.49	0.93	1.24
Incremental Delay, d2	4.3	0.3	45.7	0.1	65.0	0.4
Delay (s)	53.4	11.8	67.4	6.0	103.5	37.3
Level of Service	D	B	E	A	F	D
Approach Delay (s)	22.1			40.4	91.5	
Approach LOS	C			D	F	

Intersection Summary

HCM Average Control Delay	50.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	455	504	107	1085	343	350	36	200
Act Effct Green (s)	58.3	58.3	84.3	60.4	60.4	22.0	22.0	16.0	16.0
Actuated g/C Ratio	0.49	0.49	0.70	0.50	0.50	0.18	0.18	0.13	0.13
v/c Ratio	0.26	0.50	0.45	0.30	1.16	1.11	1.13	0.15	0.80
Control Delay	17.9	10.1	4.6	14.2	105.0	118.4	121.9	47.9	70.5
Queue Delay	0.0	0.0	0.0	0.0	2.7	5.8	5.9	0.0	0.0
Total Delay	17.9	10.1	4.6	14.2	107.7	124.2	127.8	47.9	70.5
LOS	B	B	A	B	F	F	F	D	E
Approach Delay		7.7			99.3		126.0		67.0
Approach LOS		A			F		F		E
Queue Length 50th (ft)	7	108	69	41	~1038	~320	~328	25	142
Queue Length 95th (ft)	m11	m141	m79	m43	m#1175	m#372	m#382	56	#247
Internal Link Dist (ft)		639			1689		1125		869
Turn Bay Length (ft)	60			550		110		135	
Base Capacity (vph)	180	905	1112	355	936	308	311	236	250
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	5	4	4	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.50	0.45	0.30	1.17	1.13	1.14	0.15	0.80

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.16
Intersection Signal Delay: 73.4 Intersection LOS: E
Intersection Capacity Utilization 100.7% 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.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.95	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1859		1681	1689		1770	1783	
Flt Permitted	0.08	1.00	1.00	0.30	1.00		0.95	0.96		0.95	1.00	
Satd. Flow (perm)	144	1863	1583	557	1859		1681	1689		1770	1783	
Volume (vph)	44	446	494	105	1049	15	603	48	14	31	124	50
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.96	0.96	0.96	0.87	0.87	0.87
Adj. Flow (vph)	45	455	504	107	1070	15	628	50	15	36	143	57
RTOR Reduction (vph)	0	0	0	0	1	0	0	2	0	0	12	0
Lane Group Flow (vph)	45	455	504	107	1084	0	343	348	0	36	188	0
Turn Type	pm+pt		pt+ov	pm+pt			Split			Split		
Protected Phases	1	6	6 4	5	2		4	4		8	8	
Permitted Phases	6			2								
Actuated Green, G (s)	58.3	58.3	84.3	59.6	59.6		22.0	22.0		16.0	16.0	
Effective Green, g (s)	58.3	58.3	84.3	59.6	59.6		22.0	22.0		16.0	16.0	
Actuated g/C Ratio	0.49	0.49	0.70	0.50	0.50		0.18	0.18		0.13	0.13	
Clearance Time (s)	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	
Lane Grp Cap (vph)	157	905	1112	354	923		308	310		236	238	
v/s Ratio Prot	0.02	0.24	c0.32	0.02	c0.58		0.20	c0.21		0.02	c0.11	
v/s Ratio Perm	0.12			0.13								
v/c Ratio	0.29	0.50	0.45	0.30	1.17		1.11	1.12		0.15	0.79	
Uniform Delay, d1	51.3	21.0	7.8	18.2	30.2		49.0	49.0		46.0	50.4	
Progression Factor	0.55	0.42	0.48	0.77	0.89		0.97	0.97		1.00	1.00	
Incremental Delay, d2	0.5	1.1	0.7	0.2	84.5		74.1	77.7		1.4	22.8	
Delay (s)	28.7	9.9	4.5	14.4	111.4		121.9	125.4		47.4	73.2	
Level of Service	C	A	A	B	F		F	F		D	E	
Approach Delay (s)		8.0			102.7			123.7			69.3	
Approach LOS		A			F			F			E	

Intersection Summary

HCM Average Control Delay	74.4	HCM Level of Service		E	
HCM Volume to Capacity ratio	1.04				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	100.7%	ICU Level of Service		G	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	86	148	104	609	540	86
Peak Hour Factor	0.80	0.80	0.94	0.94	0.95	0.95
Hourly flow rate (vph)	108	185	111	648	568	91
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1483	614	659			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1483	614	659			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	11	62	88			
cM capacity (veh/h)	121	492	929			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	292	759	659
Volume Left	108	111	0
Volume Right	185	0	91
cSH	232	929	1700
Volume to Capacity	1.26	0.12	0.39
Queue Length 95th (ft)	374	10	0
Control Delay (s)	190.5	2.9	0.0
Lane LOS	F	A	
Approach Delay (s)	190.5	2.9	0.0
Approach LOS	F		

Intersection Summary			
Average Delay		33.9	
Intersection Capacity Utilization		95.3%	ICU Level of Service F
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	291	1068	2112	208	380
Act Effct Green (s)	96.0	96.0	76.0	16.0	36.0
Actuated g/C Ratio	0.80	0.80	0.63	0.13	0.30
v/c Ratio	0.98	0.38	0.96	0.88	0.77
Control Delay	83.5	3.9	24.0	76.6	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	83.5	3.9	24.0	76.6	38.9
LOS	F	A	C	E	D
Approach Delay		20.9	24.0	52.2	
Approach LOS		C	C	D	
Queue Length 50th (ft)	175	101	272	159	250
Queue Length 95th (ft)	#357	123	#969	m#289	m#375
Internal Link Dist (ft)		720	4601	1766	
Turn Bay Length (ft)	600				150
Base Capacity (vph)	298	2831	2191	236	496
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	0.98	0.38	0.96	0.88	0.77

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: 0.98		
Intersection Signal Delay: 27.1		Intersection LOS: C
Intersection Capacity Utilization 89.3%		ICU Level of Service E
Analysis Period (min) 15		

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3430		1770	1583
Flt Permitted	0.05	1.00	1.00		0.95	1.00
Satd. Flow (perm)	93	3539	3430		1770	1583
Volume (vph)	262	961	1493	386	202	369
Peak-hour factor, PHF	0.90	0.90	0.89	0.89	0.97	0.97
Adj. Flow (vph)	291	1068	1678	434	208	380
RTOR Reduction (vph)	0	0	19	0	0	22
Lane Group Flow (vph)	291	1068	2093	0	208	358
Turn Type	pm+pt					pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Actuated Green, G (s)	96.0	96.0	76.0		16.0	32.0
Effective Green, g (s)	96.0	96.0	76.0		16.0	32.0
Actuated g/C Ratio	0.80	0.80	0.63		0.13	0.27
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)	298	2831	2172		236	475
v/s Ratio Prot	c0.13	0.30	0.61		c0.12	0.10
v/s Ratio Perm	c0.65					0.13
v/c Ratio	0.98	0.38	0.96		0.88	0.75
Uniform Delay, d1	44.0	3.4	20.7		51.1	40.4
Progression Factor	1.00	1.00	0.57		0.83	0.79
Incremental Delay, d2	45.3	0.4	11.4		33.0	6.3
Delay (s)	89.3	3.8	23.3		75.2	38.4
Level of Service	F	A	C		E	D
Approach Delay (s)		22.1	23.3		51.4	
Approach LOS		C	C		D	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	579	116	97	981	1542	1244
Act Effct Green (s)	22.0	22.0	90.0	90.0	79.0	79.0
Actuated g/C Ratio	0.18	0.18	0.75	0.75	0.66	0.66
v/c Ratio	0.92	0.30	0.43	0.37	0.66	0.94
Control Delay	57.2	4.2	11.2	4.6	14.3	20.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.2	4.2	11.2	4.6	14.3	20.3
LOS	E	A	B	A	B	C
Approach Delay	48.4			5.2	17.0	
Approach LOS	D			A	B	
Queue Length 50th (ft)	215	3	13	103	350	298
Queue Length 95th (ft)	m#319	m10	m21	m118	433	#957
Internal Link Dist (ft)	1185			682	1179	
Turn Bay Length (ft)	375	550	90			135
Base Capacity (vph)	629	385	240	2654	2330	1329
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.30	0.40	0.37	0.66	0.94

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 25 (21%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 19.0		Intersection LOS: B	
Intersection Capacity Utilization 85.4%		ICU Level of Service E	
Analysis Period (min) 15			

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

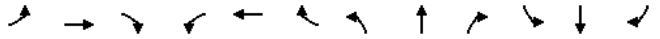
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.10	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	184	3539	3539	1583
Volume (vph)	544	109	87	883	1480	1194
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.96	0.96
Adj. Flow (vph)	579	116	97	981	1542	1244
RTOR Reduction (vph)	0	95	0	0	0	287
Lane Group Flow (vph)	579	21	97	981	1542	957
Turn Type		Perm	pm+pt			Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Actuated Green, G (s)	22.0	22.0	90.0	90.0	79.0	79.0
Effective Green, g (s)	22.0	22.0	90.0	90.0	79.0	79.0
Actuated g/C Ratio	0.18	0.18	0.75	0.75	0.66	0.66
Clearance Time (s)	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
Lane Grp Cap (vph)	629	290	231	2654	2330	1042
v/s Ratio Prot	c0.17		0.02	c0.28	0.44	
v/s Ratio Perm		0.01	0.29			c0.60
v/c Ratio	0.92	0.07	0.42	0.37	0.66	0.92
Uniform Delay, d1	48.1	40.6	10.8	5.2	12.4	17.7
Progression Factor	0.75	0.30	1.48	0.81	1.00	1.00
Incremental Delay, d2	20.2	0.5	1.1	0.4	1.5	14.1
Delay (s)	56.3	12.5	17.2	4.6	13.9	31.8
Level of Service	E	B	B	A	B	C
Approach Delay (s)	49.0			5.7	21.9	
Approach LOS	D			A	C	

Intersection Summary			
HCM Average Control Delay	22.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	9	589	1253	22	26	39
Peak Hour Factor	0.96	0.96	0.97	0.97	0.78	0.78
Hourly flow rate (vph)	9	614	1292	23	33	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			1265			
pX, platoon unblocked						
vC, conflicting volume	1314				1935	1303
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1314				1935	1303
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				53	75
cM capacity (veh/h)	526				71	196

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	623	1314	83
Volume Left	9	0	33
Volume Right	0	23	50
cSH	526	1700	115
Volume to Capacity	0.02	0.77	0.72
Queue Length 95th (ft)	1	0	99
Control Delay (s)	0.5	0.0	92.9
Lane LOS	A		F
Approach Delay (s)	0.5	0.0	92.9
Approach LOS			F

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	2	1	5	2	2	1	115	7	1	223	3
Peak Hour Factor	0.42	0.42	0.42	0.67	0.67	0.67	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	5	5	2	7	3	3	1	139	8	1	269	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	12	13	148	273
Volume Left (vph)	5	7	1	1
Volume Right (vph)	2	3	8	4
Hadj (s)	-0.01	0.01	0.00	0.03
Departure Headway (s)	4.8	4.8	4.2	4.1
Degree Utilization, x	0.02	0.02	0.17	0.31
Capacity (veh/h)	677	674	829	859
Control Delay (s)	7.9	7.9	8.1	9.0
Approach Delay (s)	7.9	7.9	8.1	9.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay		8.7		
HCM Level of Service		A		
Intersection Capacity Utilization		22.6%	ICU Level of Service	A
Analysis Period (min)		15		

Base 2011 AM Improved

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBR
Lane Group Flow (vph)	500	504	234	1085	343	350	57
Act Effct Green (s)	67.4	102.4	81.0	81.0	31.0	31.0	120.0
Actuated g/C Ratio	0.56	0.85	0.68	0.68	0.26	0.26	1.00
v/c Ratio	0.48	0.37	0.45	0.86	0.79	0.80	0.04
Control Delay	6.6	1.0	6.7	15.8	48.7	48.9	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	1.0	6.7	15.8	48.7	48.9	0.0
LOS	A	A	A	B	D	D	A
Approach Delay	3.8			14.2		48.8	
Approach LOS	A			B		D	
Queue Length 50th (ft)	72	19	44	509	235	240	0
Queue Length 95th (ft)	m78	m22	m48	m543	m#393	m#404	0
Internal Link Dist (ft)	639			422		1125	
Turn Bay Length (ft)		150	500		110		
Base Capacity (vph)	1046	1350	530	1255	434	438	1611
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.37	0.44	0.86	0.79	0.80	0.04

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 114 (95%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 18.3 Intersection LOS: B
Intersection Capacity Utilization 81.2% 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.
m Volume for 95th percentile queue is metered by upstream signal.

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
Lane Util. Factor		1.00	1.00	1.00	1.00		0.95	0.95				1.00
Frt		1.00	0.85	1.00	1.00		1.00	0.99				0.86
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.96				1.00
Satd. Flow (prot)		1863	1583	1770	1859		1681	1689				1611
Flt Permitted		1.00	1.00	0.34	1.00		0.95	0.96				1.00
Satd. Flow (perm)		1863	1583	641	1859		1681	1689				1611
Volume (vph)	0	490	494	229	1049	15	603	48	14	0	0	50
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.96	0.96	0.96	0.87	0.87	0.87
Adj. Flow (vph)	0	500	504	234	1070	15	628	50	15	0	0	57
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	500	504	234	1085	0	343	349	0	0	0	57
Turn Type			custom	pm+pt			Perm					Free
Protected Phases		6	6 4	5	2			4				
Permitted Phases				2			4					Free
Actuated Green, G (s)		67.4	102.4	81.0	81.0		31.0	31.0				120.0
Effective Green, g (s)		67.4	102.4	81.0	81.0		31.0	31.0				120.0
Actuated g/C Ratio		0.56	0.85	0.68	0.68		0.26	0.26				1.00
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)		1046	1351	523	1255		434	436				1611
v/s Ratio Prot		0.27	0.32	0.04	c0.58							
v/s Ratio Perm				0.27			0.20	0.21				0.04
v/c Ratio		0.48	0.37	0.45	0.86		0.79	0.80				0.04
Uniform Delay, d1		15.8	1.9	9.6	15.2		41.5	41.6				0.0
Progression Factor		0.35	0.31	0.72	0.71		0.93	0.93				1.00
Incremental Delay, d2		0.8	0.4	0.3	4.0		9.3	9.7				0.0
Delay (s)		6.4	1.0	7.2	14.9		47.8	48.3				0.0
Level of Service		A	A	A	B		D	D				A
Approach Delay (s)		3.7			13.5			48.0			0.0	
Approach LOS		A			B			D			A	

Intersection Summary

HCM Average Control Delay	17.8	HCM Level of Service		B		
HCM Volume to Capacity ratio	0.85					
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0		
Intersection Capacity Utilization	81.2%	ICU Level of Service		D		
Analysis Period (min)	15					

c Critical Lane Group

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	293	759	659
Act Effct Green (s)	20.9	91.1	91.1
Actuated g/C Ratio	0.17	0.76	0.76
v/c Ratio	0.85	0.72	0.47
Control Delay	58.1	11.7	2.7
Queue Delay	0.0	0.0	0.0
Total Delay	58.1	11.7	2.7
LOS	E	B	A
Approach Delay	58.1	11.7	2.7
Approach LOS	E	B	A
Queue Length 50th (ft)	173	299	37
Queue Length 95th (ft)	221	m242	43
Internal Link Dist (ft)	1135	1766	3191
Turn Bay Length (ft)			
Base Capacity (vph)	428	1051	1391
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.68	0.72	0.47

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 72 (60%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 95.3% ICU Level of Service F
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	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.91			1.00	0.98	
Flt Protected	0.98			0.99	1.00	
Satd. Flow (prot)	1673			1849	1828	
Flt Permitted	0.98			0.79	1.00	
Satd. Flow (perm)	1673			1467	1828	
Volume (vph)	86	148	104	609	540	86
Peak-hour factor, PHF	0.80	0.80	0.94	0.94	0.95	0.95
Adj. Flow (vph)	108	185	111	648	568	91
RTOR Reduction (vph)	55	0	0	0	4	0
Lane Group Flow (vph)	238	0	0	759	655	0
Turn Type			Perm			
Protected Phases	8			6	2	
Permitted Phases			6			
Actuated Green, G (s)	20.9			91.1	91.1	
Effective Green, g (s)	20.9			91.1	91.1	
Actuated g/C Ratio	0.17			0.76	0.76	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	291			1114	1388	
v/s Ratio Prot	c0.14				0.36	
v/s Ratio Perm				c0.52		
v/c Ratio	0.82			0.68	0.47	
Uniform Delay, d1	47.7			7.2	5.4	
Progression Factor	1.00			1.04	0.27	
Incremental Delay, d2	16.3			1.3	1.0	
Delay (s)	64.0			8.7	2.5	
Level of Service	E			A	A	
Approach Delay (s)	64.0			8.7	2.5	
Approach LOS	E			A	A	

Intersection Summary

HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Base PM Intersection Analysis

Base 2011 PM

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	475	125	122	954	34	1121
Act Effct Green (s)	31.0	31.0	74.4	74.4	69.0	69.0
Actuated g/C Ratio	0.26	0.26	0.62	0.62	0.58	0.58
v/c Ratio	1.02	0.55	0.66	0.84	0.21	1.05
Control Delay	86.9	46.9	32.0	11.0	14.2	67.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.9	46.9	32.0	11.0	14.2	67.4
LOS	F	D	C	B	B	E
Approach Delay	86.9	46.9		13.4		65.8
Approach LOS	F	D		B		E
Queue Length 50th (ft)	~359	79	41	138	11	~946
Queue Length 95th (ft)	#505	148	m62	#914	26	#1209
Internal Link Dist (ft)	989	884		1033		1098
Turn Bay Length (ft)			60		150	
Base Capacity (vph)	465	227	186	1135	181	1069
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.55	0.66	0.84	0.19	1.05

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 112 (93%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 48.6 Intersection LOS: D
Intersection Capacity Utilization 96.3% ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.98		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1712			1788		1770	1826		1770	1857	
Flt Permitted		0.96			0.47		0.06	1.00		0.06	1.00	
Satd. Flow (perm)		1648			858		118	1826		118	1857	
Volume (vph)	41	133	225	50	49	17	116	786	121	32	1041	24
Peak-hour factor, PHF	0.84	0.84	0.84	0.93	0.93	0.93	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	49	158	268	54	53	18	122	827	127	34	1096	25
RTOR Reduction (vph)	0	39	0	0	5	0	0	4	0	0	1	0
Lane Group Flow (vph)	0	436	0	0	120	0	122	950	0	34	1120	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		31.0			31.0		72.8	72.8		67.4	67.4	
Effective Green, g (s)		31.0			31.0		72.8	72.8		67.4	67.4	
Actuated g/C Ratio		0.26			0.26		0.61	0.61		0.56	0.56	
Clearance Time (s)		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	
Lane Grp Cap (vph)		426			222		204	1108		124	1043	
v/s Ratio Prot							0.05	c0.52		0.01	c0.60	
v/s Ratio Perm		c0.26			0.14		0.32			0.14		
v/c Ratio		1.02			0.54		0.60	0.86		0.27	1.07	
Uniform Delay, d1		44.5			38.4		49.7	19.3		24.1	26.3	
Progression Factor		1.00			1.00		0.56	0.25		1.00	1.00	
Incremental Delay, d2		50.0			2.5		3.0	5.6		1.2	50.0	
Delay (s)		94.5			40.9		30.8	10.5		25.3	76.3	
Level of Service		F			D		C	B		C	E	
Approach Delay (s)		94.5			40.9			12.8			74.8	
Approach LOS		F			D			B			E	

Intersection Summary

HCM Average Control Delay		53.0	HCM Level of Service		D	
HCM Volume to Capacity ratio		1.02				
Actuated Cycle Length (s)		120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization		96.3%	ICU Level of Service		F	
Analysis Period (min)		15				

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	105	156	93	147	45	871	418	941
Act Effct Green (s)	14.8	14.8	14.8	14.8	66.2	66.2	88.3	88.3
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.55	0.55	0.74	0.74
v/c Ratio	0.72	0.66	0.79	0.45	0.25	0.86	0.82	0.69
Control Delay	77.3	56.2	91.3	12.1	14.2	30.0	22.7	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.3	56.2	91.3	12.1	14.2	30.0	22.7	2.6
LOS	E	E	F	B	B	C	C	A
Approach Delay		64.7	42.8			29.2		8.8
Approach LOS		E	D			C		A
Queue Length 50th (ft)	78	98	70	0	16	627	194	139
Queue Length 95th (ft)	125	150	#141	52	31	#850	m186	m139
Internal Link Dist (ft)		528	850			3492		1033
Turn Bay Length (ft)					60		90	
Base Capacity (vph)	166	268	135	350	198	1016	511	1371
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.58	0.69	0.42	0.23	0.86	0.82	0.69

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 108 (90%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.86		
Intersection Signal Delay: 23.7	Intersection LOS: C	
Intersection Capacity Utilization 90.8%	ICU Level of Service E	
Analysis Period (min) 15		

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.94			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1755			1806	1583	1770	1836		1770	1863	
Flt Permitted	0.62	1.00			0.43	1.00	0.13	1.00		0.13	1.00	
Satd. Flow (perm)	1146	1755			803	1583	239	1836		236	1863	
Volume (vph)	85	78	49	50	30	126	43	748	80	393	885	0
Peak-hour factor, PHF	0.81	0.81	0.81	0.86	0.86	0.86	0.95	0.95	0.95	0.94	0.94	0.94
Adj. Flow (vph)	105	96	60	58	35	147	45	787	84	418	941	0
RTOR Reduction (vph)	0	19	0	0	0	129	0	3	0	0	0	0
Lane Group Flow (vph)	105	137	0	0	93	18	45	868	0	418	941	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	14.8	14.8			14.8	14.8	65.4	65.4		87.5	87.5	
Effective Green, g (s)	14.8	14.8			14.8	14.8	65.4	65.4		87.5	87.5	
Actuated g/C Ratio	0.12	0.12			0.12	0.12	0.55	0.55		0.73	0.73	
Clearance Time (s)	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	
Lane Grp Cap (vph)	141	216			99	195	203	1001		527	1358	
v/s Ratio Prot		0.08					0.01	c0.47		c0.18	0.51	
v/s Ratio Perm	0.09				c0.12	0.01	0.11			0.39		
v/c Ratio	0.74	0.63			0.94	0.09	0.22	0.87		0.79	0.69	
Uniform Delay, d1	50.8	50.0			52.2	46.6	18.5	23.5		31.4	8.9	
Progression Factor	1.00	1.00			1.00	1.00	0.83	0.86		0.62	0.23	
Incremental Delay, d2	19.0	5.9			70.1	0.2	0.5	9.5		0.8	0.3	
Delay (s)	69.8	56.0			122.3	46.9	15.8	29.8		20.2	2.3	
Level of Service	E	E			F	D	B	C		C	A	
Approach Delay (s)		61.5			76.1			29.1			7.8	
Approach LOS		E			E			C			A	

Intersection Summary					
HCM Average Control Delay	25.8	HCM Level of Service		C	
HCM Volume to Capacity ratio	0.83				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0	
Intersection Capacity Utilization	90.8%	ICU Level of Service		E	
Analysis Period (min)	15				

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	83	904	465	700	803	157
Act Effct Green (s)	16.0	63.0	96.0	96.0	49.0	49.0
Actuated g/C Ratio	0.13	0.52	0.80	0.80	0.41	0.41
v/c Ratio	0.35	1.09	0.67	0.47	1.06	0.22
Control Delay	52.0	86.6	19.8	1.5	74.2	6.8
Queue Delay	0.0	0.0	0.0	0.5	2.6	0.0
Total Delay	52.0	86.6	19.8	1.9	76.8	6.8
LOS	D	F	B	A	E	A
Approach Delay	83.7			9.0	65.3	
Approach LOS	F			A	E	
Queue Length 50th (ft)	59	~787	151	2	~676	23
Queue Length 95th (ft)	111	#1036	m171	m8	#933	m57
Internal Link Dist (ft)	1388			639	3492	
Turn Bay Length (ft)	60					300
Base Capacity (vph)	236	831	696	1490	761	723
Starvation Cap Reductn	0	0	0	362	0	0
Spillback Cap Reductn	0	0	0	0	5	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	1.09	0.67	0.62	1.06	0.22

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 50.1 Intersection LOS: D
Intersection Capacity Utilization 99.6% ICU Level of Service F
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.
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	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.08	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	141	1863	1863	1583
Volume (vph)	79	859	451	679	755	148
Peak-hour factor, PHF	0.95	0.95	0.97	0.97	0.94	0.94
Adj. Flow (vph)	83	904	465	700	803	157
RTOR Reduction (vph)	0	0	0	0	0	76
Lane Group Flow (vph)	83	904	465	700	803	81
Turn Type		pt+ov	pm+pt			Perm
Protected Phases	4	5 4	5	2	6	
Permitted Phases			2	2		6
Actuated Green, G (s)	16.0	63.0	96.0	96.0	49.0	49.0
Effective Green, g (s)	16.0	63.0	96.0	96.0	49.0	49.0
Actuated g/C Ratio	0.13	0.52	0.80	0.80	0.41	0.41
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)	236	831	697	1490	761	646
v/s Ratio Prot	0.05	c0.57	0.24	0.38	c0.43	
v/s Ratio Perm			0.30			0.05
v/c Ratio	0.35	1.09	0.67	0.47	1.06	0.12
Uniform Delay, d1	47.3	28.5	29.0	3.8	35.5	22.1
Progression Factor	1.00	1.00	0.64	0.25	0.85	1.06
Incremental Delay, d2	0.9	57.9	1.1	0.5	43.3	0.3
Delay (s)	48.2	86.4	19.6	1.4	73.6	23.7
Level of Service	D	F	B	A	E	C
Approach Delay (s)	83.1			8.7	65.5	
Approach LOS	F			A	E	

Intersection Summary

HCM Average Control Delay	49.8	HCM Level of Service	D
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	1084	465	98	682	325	331	59	122
Act Effct Green (s)	59.0	59.0	80.0	61.9	61.9	21.0	21.0	16.0	16.0
Actuated g/C Ratio	0.49	0.49	0.67	0.52	0.52	0.18	0.18	0.13	0.13
v/c Ratio	0.24	1.18	0.44	0.54	0.71	1.11	1.11	0.25	0.48
Control Delay	17.4	114.0	5.8	35.0	17.4	105.0	106.0	49.8	45.1
Queue Delay	0.0	37.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	151.3	5.8	35.0	17.4	105.0	106.0	49.8	45.1
LOS	B	F	A	D	B	F	F	D	D
Approach Delay		105.0			19.7		105.5		46.6
Approach LOS		F			B		F		D
Queue Length 50th (ft)	18	~1009	84	34	431	~290	~293	42	70
Queue Length 95th (ft)	m17	m#890	m75	m50	515	m#331	m#337	84	133
Internal Link Dist (ft)		639			1689		1125		869
Turn Bay Length (ft)	60			550		110		135	
Base Capacity (vph)	205	916	1055	183	954	294	298	236	254
Starvation Cap Reductn	0	61	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	1.27	0.44	0.54	0.71	1.11	1.11	0.25	0.48

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 88 (73%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 81.1 Intersection LOS: F
Intersection Capacity Utilization 94.6% ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.95	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.99		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1846		1681	1688		1770	1746	
Flt Permitted	0.13	1.00	1.00	0.08	1.00		0.95	0.96		0.95	1.00	
Satd. Flow (perm)	237	1863	1583	142	1846		1681	1688		1770	1746	
Volume (vph)	45	1062	456	89	583	37	538	57	22	53	64	46
Peak-hour factor, PHF	0.98	0.98	0.98	0.91	0.91	0.91	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	46	1084	465	98	641	41	572	61	23	59	71	51
RTOR Reduction (vph)	0	0	0	0	2	0	0	2	0	0	22	0
Lane Group Flow (vph)	46	1084	465	98	680	0	325	329	0	59	100	0
Turn Type	pm+pt		pt+ov	pm+pt			Split			Split		
Protected Phases	1	6	6 4	5	2		4	4		8	8	
Permitted Phases	6			2								
Actuated Green, G (s)	58.2	58.2	79.2	61.1	61.1		21.0	21.0		16.0	16.0	
Effective Green, g (s)	58.2	58.2	79.2	61.1	61.1		21.0	21.0		16.0	16.0	
Actuated g/C Ratio	0.49	0.49	0.66	0.51	0.51		0.18	0.18		0.13	0.13	
Clearance Time (s)	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	
Lane Grp Cap (vph)	190	904	1045	192	940		294	295		236	233	
v/s Ratio Prot	0.01	c0.58	0.29	0.04	c0.37		0.19	c0.19		0.03	c0.06	
v/s Ratio Perm	0.11			0.22								
v/c Ratio	0.24	1.20	0.44	0.51	0.72		1.11	1.11		0.25	0.43	
Uniform Delay, d1	22.1	30.9	9.8	50.0	22.9		49.5	49.5		46.6	47.8	
Progression Factor	1.06	1.03	1.13	0.74	0.61		0.57	0.57		1.00	1.00	
Incremental Delay, d2	0.1	90.7	0.1	1.5	3.1		74.7	77.5		2.5	5.7	
Delay (s)	23.5	122.6	11.2	38.6	17.1		103.1	105.7		49.1	53.5	
Level of Service	C	F	B	D	B		F	F		D	D	
Approach Delay (s)		87.3			19.8			104.5			52.1	
Approach LOS		F			B			F			D	

Intersection Summary

HCM Average Control Delay	72.4	HCM Level of Service		E	
HCM Volume to Capacity ratio	1.00				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	94.6%	ICU Level of Service		F	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	153	210	141	473	556	147
Peak Hour Factor	0.93	0.93	0.95	0.95	0.94	0.94
Hourly flow rate (vph)	165	226	148	498	591	156
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1464	670	748			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1464	670	748			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	51	83			
cM capacity (veh/h)	117	457	861			

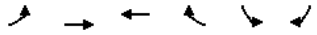
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	390	646	748
Volume Left	165	148	0
Volume Right	226	0	156
cSH	205	861	1700
Volume to Capacity	1.90	0.17	0.44
Queue Length 95th (ft)	707	16	0
Control Delay (s)	462.0	4.2	0.0
Lane LOS	F	A	
Approach Delay (s)	462.0	4.2	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	102.6		
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	417	1756	1644	478	292
Act Effct Green (s)	81.0	81.0	54.0	31.0	58.0
Actuated g/C Ratio	0.68	0.68	0.45	0.26	0.48
v/c Ratio	1.04	0.74	1.04	1.05	0.38
Control Delay	96.5	15.0	47.7	100.1	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	96.5	15.0	47.7	100.1	22.8
LOS	F	B	D	F	C
Approach Delay		30.6	47.7	70.8	
Approach LOS		C	D	E	
Queue Length 50th (ft)	~297	420	~724	~392	133
Queue Length 95th (ft)	#500	507	#806	#607	214
Internal Link Dist (ft)		720	4601	1766	
Turn Bay Length (ft)	600				150
Base Capacity (vph)	402	2389	1574	457	772
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	1.04	0.74	1.04	1.05	0.38

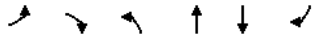
Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 88 (73%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.05			
Intersection Signal Delay: 43.5		Intersection LOS: D	
Intersection Capacity Utilization 96.0%		ICU Level of Service F	
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	WBT	WBR	SBL	SBR
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	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3479		1770	1583
Flt Permitted	0.07	1.00	1.00		0.95	1.00
Satd. Flow (perm)	128	3539	3479		1770	1583
Volume (vph)	396	1668	1269	161	430	263
Peak-hour factor, PHF	0.95	0.95	0.87	0.87	0.90	0.90
Adj. Flow (vph)	417	1756	1459	185	478	292
RTOR Reduction (vph)	0	0	8	0	0	7
Lane Group Flow (vph)	417	1756	1636	0	478	285
Turn Type	pm+pt					pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Actuated Green, G (s)	81.0	81.0	54.0		31.0	54.0
Effective Green, g (s)	81.0	81.0	54.0		31.0	54.0
Actuated g/C Ratio	0.68	0.68	0.45		0.26	0.45
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)	401	2389	1566		457	765
v/s Ratio Prot	c0.20	0.50	0.47		c0.27	0.07
v/s Ratio Perm	c0.50					0.11
v/c Ratio	1.04	0.74	1.04		1.05	0.37
Uniform Delay, d1	45.1	12.6	33.0		44.5	21.8
Progression Factor	1.00	1.00	0.36		1.07	1.13
Incremental Delay, d2	55.7	2.1	33.4		54.1	0.3
Delay (s)	100.8	14.6	45.2		101.7	24.9
Level of Service	F	B	D		F	C
Approach Delay (s)		31.2	45.2		72.5	
Approach LOS		C	D		E	

Intersection Summary			
HCM Average Control Delay	43.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1136	103	164	1328	1179	712
Act Effct Green (s)	46.0	46.0	66.0	66.0	50.9	50.9
Actuated g/C Ratio	0.38	0.38	0.55	0.55	0.42	0.42
v/c Ratio	0.86	0.15	0.72	0.68	0.78	0.80
Control Delay	24.9	3.5	35.2	27.6	34.7	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	3.5	35.2	27.6	34.7	21.7
LOS	C	A	D	C	C	C
Approach Delay	23.2			28.4	29.8	
Approach LOS	C			C	C	
Queue Length 50th (ft)	482	14	83	397	413	242
Queue Length 95th (ft)	m401	m13	m114	m460	504	431
Internal Link Dist (ft)	1185			682	1179	
Turn Bay Length (ft)	375	550	90			135
Base Capacity (vph)	1316	670	241	1946	1502	889
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.15	0.68	0.68	0.78	0.80

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 10 (8%), Referenced to phase 2:SBT and 6:NBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 27.6		Intersection LOS: C	
Intersection Capacity Utilization 80.2%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

HCM Signalized Intersection Capacity Analysis
7: Johnson Ferry Road & Peachtree Industrial Boulevard

Base PM
11/1/2006

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	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.08	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	151	3539	3539	1583
Volume (vph)	1068	97	146	1182	1144	691
Peak-hour factor, PHF	0.94	0.94	0.89	0.89	0.97	0.97
Adj. Flow (vph)	1136	103	164	1328	1179	712
RTOR Reduction (vph)	0	64	0	0	0	217
Lane Group Flow (vph)	1136	39	164	1328	1179	495
Turn Type		Perm	pm+pt			Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Actuated Green, G (s)	46.0	46.0	66.0	66.0	50.9	50.9
Effective Green, g (s)	46.0	46.0	66.0	66.0	50.9	50.9
Actuated g/C Ratio	0.38	0.38	0.55	0.55	0.42	0.42
Clearance Time (s)	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
Lane Grp Cap (vph)	1316	607	233	1946	1501	671
v/s Ratio Prot	c0.33		0.07	c0.38	c0.33	
v/s Ratio Perm		0.02	0.32			0.31
v/c Ratio	0.86	0.07	0.70	0.68	0.79	0.74
Uniform Delay, d1	34.1	23.4	24.2	19.5	29.8	29.0
Progression Factor	0.69	0.74	1.07	1.34	1.00	1.00
Incremental Delay, d2	0.8	0.0	5.4	1.1	4.2	7.1
Delay (s)	24.4	17.3	31.3	27.1	34.0	36.1
Level of Service	C	B	C	C	C	D
Approach Delay (s)	23.8			27.6	34.8	
Approach LOS	C			C	C	

Intersection Summary				
HCM Average Control Delay	29.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

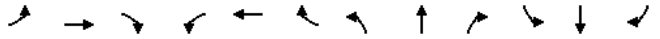
HCM Unsignalized Intersection Capacity Analysis
8: Johnson Ferry Road & Keswick Drive

Base PM
11/1/2006

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	44	1107	732	60	23	26
Peak Hour Factor	0.96	0.96	0.91	0.91	0.75	0.75
Hourly flow rate (vph)	46	1153	804	66	31	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			1265			
pX, platoon unblocked						
vC, conflicting volume	870				2082	837
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	870				2082	837
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				44	91
cM capacity (veh/h)	774				55	366

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1199	870	65
Volume Left	46	0	31
Volume Right	0	66	35
cSH	774	1700	100
Volume to Capacity	0.06	0.51	0.65
Queue Length 95th (ft)	5	0	81
Control Delay (s)	2.1	0.0	91.8
Lane LOS	A		F
Approach Delay (s)	2.1	0.0	91.8
Approach LOS			F

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	5	2	13	2	3	6	132	8	1	158	3
Peak Hour Factor	0.50	0.50	0.50	0.80	0.80	0.80	0.93	0.93	0.93	0.92	0.92	0.92
Hourly flow rate (vph)	0	10	4	16	2	4	6	142	9	1	172	3

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	14	23	157	176
Volume Left (vph)	0	16	6	1
Volume Right (vph)	4	4	9	3
Hadj (s)	-0.14	0.08	0.01	0.02
Departure Headway (s)	4.5	4.7	4.2	4.2
Degree Utilization, x	0.02	0.03	0.18	0.20
Capacity (veh/h)	729	701	842	849
Control Delay (s)	7.6	7.9	8.1	8.2
Approach Delay (s)	7.6	7.9	8.1	8.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay		8.1		
HCM Level of Service		A		
Intersection Capacity Utilization		25.9%	ICU Level of Service	A
Analysis Period (min)		15		

Base 2011 PM Improved

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBR
Lane Group Flow (vph)	1130	465	168	682	325	331	51
Act Effct Green (s)	76.0	104.0	88.0	88.0	24.0	24.0	120.0
Actuated g/C Ratio	0.63	0.87	0.73	0.73	0.20	0.20	1.00
v/c Ratio	0.96	0.34	0.93	0.50	0.97	0.97	0.03
Control Delay	17.7	0.8	85.2	6.7	80.7	81.4	0.0
Queue Delay	40.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.4	0.8	85.2	6.7	80.7	81.4	0.0
LOS	E	A	F	A	F	F	A
Approach Delay	41.6			22.2		81.0	
Approach LOS	D			C		F	
Queue Length 50th (ft)	484	25	80	153	275	278	0
Queue Length 95th (ft)	m394	m20	#221	177	m#346	m#350	0
Internal Link Dist (ft)	639			422		1125	
Turn Bay Length (ft)		150	500		110		
Base Capacity (vph)	1180	1372	180	1356	336	340	1611
Starvation Cap Reductn	148	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.34	0.93	0.50	0.97	0.97	0.03

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 76 (63%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 43.9 Intersection LOS: D
Intersection Capacity Utilization 93.8% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

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
Lane Util. Factor		1.00	1.00	1.00	1.00		0.95	0.95				1.00
Frt		1.00	0.85	1.00	0.99		1.00	0.99				0.86
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.96				1.00
Satd. Flow (prot)		1863	1583	1770	1846		1681	1688				1611
Flt Permitted		1.00	1.00	0.05	1.00		0.95	0.96				1.00
Satd. Flow (perm)		1863	1583	93	1846		1681	1688				1611
Volume (vph)	0	1107	456	153	583	37	538	57	22	0	0	46
Peak-hour factor, PHF	0.98	0.98	0.98	0.91	0.91	0.91	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	0	1130	465	168	641	41	572	61	23	0	0	51
RTOR Reduction (vph)	0	0	0	0	2	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	1130	465	168	680	0	325	329	0	0	0	51
Turn Type			custom	pm+pt			Perm					Free
Protected Phases		6	6 4	5	2			4				
Permitted Phases				2			4					Free
Actuated Green, G (s)		76.0	104.0	88.0	88.0		24.0	24.0				120.0
Effective Green, g (s)		76.0	104.0	88.0	88.0		24.0	24.0				120.0
Actuated g/C Ratio		0.63	0.87	0.73	0.73		0.20	0.20				1.00
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)		1180	1372	180	1354		336	338				1611
v/s Ratio Prot		c0.61	0.29	c0.06	0.37							
v/s Ratio Perm				0.62			0.19	0.19				0.03
v/c Ratio		0.96	0.34	0.93	0.50		0.97	0.97				0.03
Uniform Delay, d1		20.5	1.5	49.7	6.8		47.6	47.7				0.0
Progression Factor		0.66	0.51	0.94	0.81		1.13	1.13				1.00
Incremental Delay, d2		2.7	0.1	43.7	1.2		26.0	26.9				0.0
Delay (s)		16.2	0.8	90.5	6.6		79.9	81.0				0.0
Level of Service		B	A	F	A		E	F				A
Approach Delay (s)		11.7			23.2			80.5			0.0	
Approach LOS		B			C			F			A	

Intersection Summary

HCM Average Control Delay	28.9	HCM Level of Service	C			
HCM Volume to Capacity ratio	0.93					
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0			
Intersection Capacity Utilization	93.8%	ICU Level of Service	F			
Analysis Period (min)	15					

c Critical Lane Group

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	391	646	747
Act Effct Green (s)	27.1	84.9	84.9
Actuated g/C Ratio	0.23	0.71	0.71
v/c Ratio	0.93	0.88	0.58
Control Delay	68.1	15.9	11.5
Queue Delay	0.0	0.0	0.0
Total Delay	68.1	15.9	11.5
LOS	E	B	B
Approach Delay	68.1	15.9	11.5
Approach LOS	E	B	B
Queue Length 50th (ft)	256	231	377
Queue Length 95th (ft)	#433	m213	521
Internal Link Dist (ft)	1135	1766	3191
Turn Bay Length (ft)			
Base Capacity (vph)	447	731	1288
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.87	0.88	0.58

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 103 (86%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 25.5 Intersection LOS: C
Intersection Capacity Utilization 102.3% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.97	
Flt Protected	0.98			0.99	1.00	
Satd. Flow (prot)	1682			1842	1810	
Flt Permitted	0.98			0.57	1.00	
Satd. Flow (perm)	1682			1065	1810	
Volume (vph)	153	210	141	473	556	147
Peak-hour factor, PHF	0.93	0.93	0.95	0.95	0.94	0.94
Adj. Flow (vph)	165	226	148	498	591	156
RTOR Reduction (vph)	42	0	0	0	8	0
Lane Group Flow (vph)	349	0	0	646	739	0
Turn Type			Perm			
Protected Phases	8			6	2	
Permitted Phases			6			
Actuated Green, G (s)	27.1			84.9	84.9	
Effective Green, g (s)	27.1			84.9	84.9	
Actuated g/C Ratio	0.23			0.71	0.71	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	380			753	1281	
v/s Ratio Prot	c0.21				0.41	
v/s Ratio Perm				c0.61		
v/c Ratio	0.92			0.86	0.58	
Uniform Delay, d1	45.4			13.1	8.7	
Progression Factor	1.00			0.63	1.07	
Incremental Delay, d2	26.6			3.9	1.8	
Delay (s)	72.0			12.1	11.1	
Level of Service	E			B	B	
Approach Delay (s)	72.0			12.1	11.1	
Approach LOS	E			B	B	

Intersection Summary

HCM Average Control Delay	24.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Future AM Intersection Analysis

Future 2011 AM

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	197	161	151	1101	21	830
Act Effct Green (s)	20.0	20.0	87.8	87.8	80.0	80.0
Actuated g/C Ratio	0.17	0.17	0.73	0.73	0.67	0.67
v/c Ratio	0.67	0.88	0.35	0.81	0.14	0.67
Control Delay	43.6	87.3	6.6	12.0	9.3	15.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.6	87.3	6.6	12.0	9.3	15.9
LOS	D	F	A	B	A	B
Approach Delay	43.6	87.3		11.3		15.8
Approach LOS	D	F		B		B
Queue Length 50th (ft)	98	116	19	209	5	374
Queue Length 95th (ft)	181	#234	m47	#1031	14	520
Internal Link Dist (ft)	989	884		1033		1098
Turn Bay Length (ft)			60		150	
Base Capacity (vph)	319	202	431	1357	182	1234
Starvation Cap Reductn	0	0	0	1	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.80	0.35	0.81	0.12	0.67

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 55 (46%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 84.3% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.98		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1685			1780		1770	1852		1770	1848	
Flt Permitted		0.85			0.56		0.23	1.00		0.07	1.00	
Satd. Flow (perm)		1459			1014		433	1852		139	1848	
Volume (vph)	48	23	116	77	52	23	143	1007	39	20	748	41
Peak-hour factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	51	24	122	82	55	24	151	1060	41	21	787	43
RTOR Reduction (vph)	0	50	0	0	5	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	147	0	0	156	0	151	1100	0	21	828	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		20.0			20.0		85.4	85.4		77.6	77.6	
Effective Green, g (s)		20.0			20.0		85.4	85.4		77.6	77.6	
Actuated g/C Ratio		0.17			0.17		0.71	0.71		0.65	0.65	
Clearance Time (s)		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	
Lane Grp Cap (vph)		243			169		424	1318		125	1195	
v/s Ratio Prot							0.03	c0.59		0.00	c0.45	
v/s Ratio Perm		0.10			c0.15		0.22			0.10		
v/c Ratio		0.60			0.92		0.36	0.83		0.17	0.69	
Uniform Delay, d1		46.3			49.2		19.6	12.3		20.5	13.6	
Progression Factor		1.00			1.00		0.54	0.54		1.00	1.00	
Incremental Delay, d2		4.2			47.2		0.4	4.9		0.6	3.3	
Delay (s)		50.5			96.4		11.0	11.5		21.1	16.9	
Level of Service		D			F		B	B		C	B	
Approach Delay (s)		50.5			96.4			11.4			17.0	
Approach LOS		D			F			B			B	

Intersection Summary

HCM Average Control Delay	22.1	HCM Level of Service		C	
HCM Volume to Capacity ratio	0.86				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	84.3%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	72	156	200	338	117	844	114	716
Act Effct Green (s)	23.3	23.3	23.3	23.3	84.7	78.9	84.7	78.9
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.71	0.66	0.71	0.66
v/c Ratio	0.42	0.42	0.81	0.64	0.31	0.69	0.41	0.58
Control Delay	48.2	32.5	69.9	15.2	11.2	20.0	8.4	8.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	48.2	32.5	69.9	15.2	11.2	20.2	8.4	8.6
LOS	D	C	E	B	B	C	A	A
Approach Delay		37.4	35.6			19.1		8.6
Approach LOS		D	D			B		A
Queue Length 50th (ft)	49	76	149	44	28	404	10	160
Queue Length 95th (ft)	90	129	216	123	67	623	m19	m245
Internal Link Dist (ft)		528	850			3492		1033
Turn Bay Length (ft)					60		90	
Base Capacity (vph)	215	453	310	592	407	1220	309	1225
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	6	0	46	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.33	0.34	0.65	0.58	0.29	0.72	0.37	0.58

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: 0.81			
Intersection Signal Delay: 20.8		Intersection LOS: C	
Intersection Capacity Utilization 78.3%		ICU Level of Service D	
Analysis Period (min) 15			

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

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	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.92			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00			0.98	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1718			1820	1583	1770	1853		1770	1863	
Flt Permitted	0.41	1.00			0.60	1.00	0.28	1.00		0.21	1.00	
Satd. Flow (perm)	769	1718			1118	1583	517	1853		384	1863	
Volume (vph)	64	67	72	84	92	297	110	766	27	100	630	0
Peak-hour factor, PHF	0.89	0.89	0.89	0.88	0.88	0.88	0.94	0.94	0.94	0.88	0.88	0.88
Adj. Flow (vph)	72	75	81	95	105	338	117	815	29	114	716	0
RTOR Reduction (vph)	0	35	0	0	0	218	0	1	0	0	0	0
Lane Group Flow (vph)	72	121	0	0	200	120	117	843	0	114	716	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	23.3	23.3			23.3	23.3	84.7	78.9		84.7	78.9	
Effective Green, g (s)	23.3	23.3			23.3	23.3	84.7	78.9		84.7	78.9	
Actuated g/C Ratio	0.19	0.19			0.19	0.19	0.71	0.66		0.71	0.66	
Clearance Time (s)	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	
Lane Grp Cap (vph)	149	334			217	307	425	1218		338	1225	
v/s Ratio Prot		0.07					0.01	c0.45		c0.02	0.38	
v/s Ratio Perm	0.09				c0.18	0.08	0.18			0.22		
v/c Ratio	0.48	0.36			0.92	0.39	0.28	0.69		0.34	0.58	
Uniform Delay, d1	43.0	41.9			47.5	42.2	16.9	12.9		23.1	11.4	
Progression Factor	1.00	1.00			1.00	1.00	1.20	1.15		0.47	0.55	
Incremental Delay, d2	2.5	0.7			39.9	0.8	0.3	2.8		0.4	1.5	
Delay (s)	45.5	42.6			87.4	43.0	20.7	17.7		11.2	7.7	
Level of Service	D	D			F	D	C	B		B	A	
Approach Delay (s)		43.5			59.5			18.1			8.2	
Approach LOS		D			E			B			A	

Intersection Summary					
HCM Average Control Delay	25.9	HCM Level of Service		C	
HCM Volume to Capacity ratio	0.72				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	78.3%	ICU Level of Service		D	
Analysis Period (min)	15				
c Critical Lane Group					

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	140	447	982	775	659	140
Act Effct Green (s)	16.0	74.0	96.0	96.0	38.0	38.0
Actuated g/C Ratio	0.13	0.62	0.80	0.80	0.32	0.32
v/c Ratio	0.59	0.46	1.14	0.52	1.12	0.24
Control Delay	60.2	14.2	99.4	3.2	102.2	4.7
Queue Delay	0.0	0.0	11.8	0.9	0.0	0.0
Total Delay	60.2	14.2	111.2	4.1	102.2	4.7
LOS	E	B	F	A	F	A
Approach Delay	25.2			64.0	85.1	
Approach LOS	C			E	F	
Queue Length 50th (ft)	104	173	~837	74	~582	13
Queue Length 95th (ft)	173	249	m603	m63	#788	m21
Internal Link Dist (ft)	1388			639	3492	
Turn Bay Length (ft)	60					300
Base Capacity (vph)	236	976	858	1490	590	584
Starvation Cap Reductn	0	0	20	423	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.46	1.17	0.73	1.12	0.24

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 11 (9%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 62.1 Intersection LOS: E
Intersection Capacity Utilization 100.0% ICU Level of Service F
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.
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	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.10	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	177	1863	1863	1583
Volume (vph)	130	416	943	744	580	123
Peak-hour factor, PHF	0.93	0.93	0.96	0.96	0.88	0.88
Adj. Flow (vph)	140	447	982	775	659	140
RTOR Reduction (vph)	0	0	0	0	0	83
Lane Group Flow (vph)	140	447	982	775	659	57
Turn Type		pt+ov	pm+pt			Perm
Protected Phases	4	5 4	5	2	6	
Permitted Phases			2	2		6
Actuated Green, G (s)	16.0	74.0	96.0	96.0	38.0	38.0
Effective Green, g (s)	16.0	74.0	96.0	96.0	38.0	38.0
Actuated g/C Ratio	0.13	0.62	0.80	0.80	0.32	0.32
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)	236	976	858	1490	590	501
v/s Ratio Prot	c0.08	0.28	c0.51	0.42	0.35	
v/s Ratio Perm			c0.40			0.04
v/c Ratio	0.59	0.46	1.14	0.52	1.12	0.11
Uniform Delay, d1	48.9	12.3	35.2	4.1	41.0	29.1
Progression Factor	1.00	1.00	1.25	0.72	0.78	0.54
Incremental Delay, d2	4.0	0.3	66.5	0.1	70.3	0.4
Delay (s)	52.9	12.6	110.4	3.1	102.4	16.1
Level of Service	D	B	F	A	F	B
Approach Delay (s)	22.2			63.0	87.3	
Approach LOS	C			E	F	

Intersection Summary

HCM Average Control Delay	61.6	HCM Level of Service	E
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	45	500	504	119	1119	355	359	36	215
Act Effct Green (s)	59.3	59.3	84.3	61.4	61.4	21.0	21.0	16.0	16.0
Actuated g/C Ratio	0.49	0.49	0.70	0.51	0.51	0.18	0.18	0.13	0.13
v/c Ratio	0.26	0.54	0.45	0.36	1.18	1.21	1.21	0.15	0.86
Control Delay	24.4	19.3	4.4	16.8	111.8	144.5	144.5	47.9	76.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.4	19.3	4.4	16.8	111.8	144.5	144.5	47.9	76.9
LOS	C	B	A	B	F	F	F	D	E
Approach Delay		12.3			102.6		144.5		72.7
Approach LOS		B			F		F		E
Queue Length 50th (ft)	15	182	58	40	~1064	~345	~348	25	153
Queue Length 95th (ft)	m20	m190	m85	m50	m#1180	m#390	m#392	56	#274
Internal Link Dist (ft)		639			393		1125		305
Turn Bay Length (ft)	60					110		135	
Base Capacity (vph)	180	921	1112	333	952	294	297	236	251
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.54	0.45	0.36	1.18	1.21	1.21	0.15	0.86

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 119 (99%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.21
Intersection Signal Delay: 80.4 Intersection LOS: F
Intersection Capacity Utilization 103.9% 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.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.95	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1858		1681	1685		1770	1769	
Flt Permitted	0.08	1.00	1.00	0.27	1.00		0.95	0.96		0.95	1.00	
Satd. Flow (perm)	141	1863	1583	500	1858		1681	1685		1770	1769	
Volume (vph)	44	490	494	117	1079	18	603	56	27	31	124	63
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.96	0.96	0.96	0.87	0.87	0.87
Adj. Flow (vph)	45	500	504	119	1101	18	628	58	28	36	143	72
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	15	0
Lane Group Flow (vph)	45	500	504	119	1119	0	355	357	0	36	200	0
Turn Type	pm+pt		pt+ov	pm+pt			Split			Split		
Protected Phases	1	6	6 4	5	2		4	4		8	8	
Permitted Phases	6			2								
Actuated Green, G (s)	59.3	59.3	84.3	60.6	60.6		21.0	21.0		16.0	16.0	
Effective Green, g (s)	59.3	59.3	84.3	60.6	60.6		21.0	21.0		16.0	16.0	
Actuated g/C Ratio	0.49	0.49	0.70	0.50	0.50		0.18	0.18		0.13	0.13	
Clearance Time (s)	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	
Lane Grp Cap (vph)	157	921	1112	334	938		294	295		236	236	
v/s Ratio Prot	0.02	c0.27	0.32	0.02	c0.60		0.21	c0.21		0.02	c0.11	
v/s Ratio Perm	0.13			0.16								
v/c Ratio	0.29	0.54	0.45	0.36	1.19		1.21	1.21		0.15	0.85	
Uniform Delay, d1	51.3	21.0	7.8	18.4	29.7		49.5	49.5		46.0	50.8	
Progression Factor	0.78	0.84	0.46	0.93	0.89		0.73	0.73		1.00	1.00	
Incremental Delay, d2	0.5	1.1	0.7	0.3	92.1		110.6	111.0		1.4	29.8	
Delay (s)	40.7	18.8	4.2	17.4	118.6		146.7	147.0		47.4	80.6	
Level of Service	D	B	A	B	F		F	F		D	F	
Approach Delay (s)		12.7			108.9			146.8			75.8	
Approach LOS		B			F			F			E	

Intersection Summary

HCM Average Control Delay	83.6	HCM Level of Service		F		
HCM Volume to Capacity ratio	1.07					
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0		
Intersection Capacity Utilization	103.9%	ICU Level of Service		G		
Analysis Period (min)	15					

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	92	148	104	621	543	92
Peak Hour Factor	0.80	0.80	0.94	0.94	0.95	0.95
Hourly flow rate (vph)	115	185	111	661	572	97
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1502	620	668			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1502	620	668			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	2	62	88			
cM capacity (veh/h)	118	488	921			

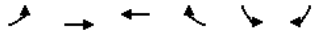
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	300	771	668
Volume Left	115	111	0
Volume Right	185	0	97
cSH	222	921	1700
Volume to Capacity	1.35	0.12	0.39
Queue Length 95th (ft)	415	10	0
Control Delay (s)	228.5	2.9	0.0
Lane LOS	F	A	
Approach Delay (s)	228.5	2.9	0.0
Approach LOS	F		

Intersection Summary			
Average Delay		40.7	
Intersection Capacity Utilization		96.8%	ICU Level of Service F
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	304	1088	2141	208	384
Act Effct Green (s)	96.0	96.0	75.0	16.0	37.0
Actuated g/C Ratio	0.80	0.80	0.62	0.13	0.31
v/c Ratio	0.97	0.38	0.99	0.88	0.76
Control Delay	86.0	3.9	29.8	83.4	44.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	86.0	3.9	29.8	83.4	44.1
LOS	F	A	C	F	D
Approach Delay		21.8	29.8	57.9	
Approach LOS		C	C	E	
Queue Length 50th (ft)	184	103	790	154	247
Queue Length 95th (ft)	#367	126	#1008	m#285	m355
Internal Link Dist (ft)		720	4601	1766	
Turn Bay Length (ft)	600				150
Base Capacity (vph)	313	2831	2164	236	507
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	0.97	0.38	0.99	0.88	0.76

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:WBT and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 31.1 Intersection LOS: C
Intersection Capacity Utilization 90.7% ICU Level of Service E
Analysis Period (min) 15

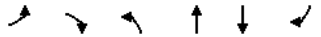
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
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	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3432		1770	1583
Flt Permitted	0.05	1.00	1.00		0.95	1.00
Satd. Flow (perm)	94	3539	3432		1770	1583
Volume (vph)	274	979	1519	386	202	372
Peak-hour factor, PHF	0.90	0.90	0.89	0.89	0.97	0.97
Adj. Flow (vph)	304	1088	1707	434	208	384
RTOR Reduction (vph)	0	0	19	0	0	20
Lane Group Flow (vph)	304	1088	2122	0	208	364
Turn Type	pm+pt					pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Actuated Green, G (s)	96.0	96.0	75.0		16.0	33.0
Effective Green, g (s)	96.0	96.0	75.0		16.0	33.0
Actuated g/C Ratio	0.80	0.80	0.62		0.13	0.28
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)	313	2831	2145		236	488
v/s Ratio Prot	c0.14	0.31	0.62		c0.12	0.11
v/s Ratio Perm	c0.64					0.12
v/c Ratio	0.97	0.38	0.99		0.88	0.75
Uniform Delay, d1	46.3	3.5	22.1		51.1	39.7
Progression Factor	1.00	1.00	0.59		0.98	0.97
Incremental Delay, d2	42.9	0.4	15.9		32.9	5.8
Delay (s)	89.1	3.9	29.0		82.7	44.3
Level of Service	F	A	C		F	D
Approach Delay (s)		22.5	29.0		57.8	
Approach LOS		C	C		E	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



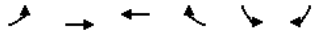
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	610	144	117	981	1542	1274
Act Effct Green (s)	22.0	22.0	90.0	90.0	78.8	78.8
Actuated g/C Ratio	0.18	0.18	0.75	0.75	0.66	0.66
v/c Ratio	0.97	0.35	0.51	0.37	0.66	0.95
Control Delay	64.9	7.9	15.6	4.5	14.4	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.9	7.9	15.6	4.5	14.4	23.1
LOS	E	A	B	A	B	C
Approach Delay	54.0			5.7	18.3	
Approach LOS	D			A	B	
Queue Length 50th (ft)	234	16	17	94	352	336
Queue Length 95th (ft)	m#352	m43	m44	m114	433	#994
Internal Link Dist (ft)	1185			682	1179	
Turn Bay Length (ft)	375	550	90			135
Base Capacity (vph)	629	406	240	2654	2324	1335
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.35	0.49	0.37	0.66	0.95

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 33 (28%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 21.1 Intersection LOS: C
Intersection Capacity Utilization 88.2% ICU Level of Service E
Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.10	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	183	3539	3539	1583
Volume (vph)	573	135	105	883	1480	1223
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.96	0.96
Adj. Flow (vph)	610	144	117	981	1542	1274
RTOR Reduction (vph)	0	116	0	0	0	296
Lane Group Flow (vph)	610	28	117	981	1542	978
Turn Type		Perm	pm+pt			Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Actuated Green, G (s)	22.0	22.0	90.0	90.0	78.8	78.8
Effective Green, g (s)	22.0	22.0	90.0	90.0	78.8	78.8
Actuated g/C Ratio	0.18	0.18	0.75	0.75	0.66	0.66
Clearance Time (s)	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
Lane Grp Cap (vph)	629	290	232	2654	2324	1040
v/s Ratio Prot	c0.18		c0.03	0.28	0.44	
v/s Ratio Perm		0.02	0.35			c0.62
v/c Ratio	0.97	0.10	0.50	0.37	0.66	0.94
Uniform Delay, d1	48.7	40.7	11.7	5.2	12.5	18.5
Progression Factor	0.73	0.76	1.60	0.79	1.00	1.00
Incremental Delay, d2	28.3	0.6	1.6	0.4	1.5	16.8
Delay (s)	63.7	31.7	20.2	4.5	14.0	35.3
Level of Service	E	C	C	A	B	D
Approach Delay (s)	57.6			6.1	23.7	
Approach LOS	E			A	C	

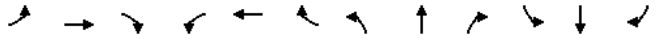
Intersection Summary			
HCM Average Control Delay	25.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	9	644	1300	22	26	39
Peak Hour Factor	0.96	0.96	0.97	0.97	0.78	0.78
Hourly flow rate (vph)	9	671	1340	23	33	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			1265			
pX, platoon unblocked						
vC, conflicting volume	1363				2041	1352
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1363				2041	1352
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				45	73
cM capacity (veh/h)	504				61	184

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	680	1363	83
Volume Left	9	0	33
Volume Right	0	23	50
cSH	504	1700	102
Volume to Capacity	0.02	0.80	0.82
Queue Length 95th (ft)	1	0	114
Control Delay (s)	0.5	0.0	121.2
Lane LOS	A		F
Approach Delay (s)	0.5	0.0	121.2
Approach LOS			F

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	2	1	12	2	5	1	117	15	5	225	3
Peak Hour Factor	0.42	0.42	0.42	0.67	0.67	0.67	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	5	5	2	18	3	7	1	141	18	6	271	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	12	28	160	281
Volume Left (vph)	5	18	1	6
Volume Right (vph)	2	7	18	4
Hadj (s)	-0.01	0.00	-0.03	0.03
Departure Headway (s)	4.9	4.9	4.2	4.2
Degree Utilization, x	0.02	0.04	0.19	0.33
Capacity (veh/h)	662	668	823	835
Control Delay (s)	8.0	8.1	8.2	9.2
Approach Delay (s)	8.0	8.1	8.2	9.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay			8.8	
HCM Level of Service			A	
Intersection Capacity Utilization		25.3%	ICU Level of Service	A
Analysis Period (min)			15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	7	2	112	8	2	212
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	2	122	9	2	230
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			385			
pX, platoon unblocked						
vC, conflicting volume	361	126			130	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	361	126			130	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	637	924			1455	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	10	130	233
Volume Left	8	0	2
Volume Right	2	9	0
cSH	684	1700	1455
Volume to Capacity	0.01	0.08	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.3	0.0	0.1
Lane LOS	B		A
Approach Delay (s)	10.3	0.0	0.1
Approach LOS	B		

Intersection Summary				
Average Delay		0.3		
Intersection Capacity Utilization		22.8%	ICU Level of Service	A
Analysis Period (min)		15		

Future 2011 AM Improved

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBR
Lane Group Flow (vph)	545	504	246	1119	356	358	72
Act Effct Green (s)	70.0	104.0	82.0	82.0	30.0	30.0	120.0
Actuated g/C Ratio	0.58	0.87	0.68	0.68	0.25	0.25	1.00
v/c Ratio	0.50	0.37	0.52	0.88	0.85	0.85	0.04
Control Delay	6.1	1.1	3.2	9.4	52.4	51.8	0.0
Queue Delay	0.0	0.0	0.0	1.3	0.3	0.3	0.0
Total Delay	6.1	1.1	3.2	10.6	52.7	52.1	0.0
LOS	A	A	A	B	D	D	A
Approach Delay	3.7			9.3		52.4	
Approach LOS	A			A		D	
Queue Length 50th (ft)	80	17	7	166	273	272	0
Queue Length 95th (ft)	m93	m20	m13	m129	m#430	m#429	0
Internal Link Dist (ft)	639			393		1125	
Turn Bay Length (ft)					110		
Base Capacity (vph)	1087	1372	510	1271	420	423	1611
Starvation Cap Reductn	0	0	0	47	0	0	0
Spillback Cap Reductn	0	0	0	0	3	3	3
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.37	0.48	0.91	0.85	0.85	0.04

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 16.9 Intersection LOS: B
Intersection Capacity Utilization 83.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

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
Lane Util. Factor		1.00	1.00	1.00	1.00		0.95	0.95				1.00
Frt		1.00	0.85	1.00	1.00		1.00	0.99				0.86
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.96				1.00
Satd. Flow (prot)		1863	1583	1770	1858		1681	1685				1611
Flt Permitted		1.00	1.00	0.33	1.00		0.95	0.96				1.00
Satd. Flow (perm)		1863	1583	606	1858		1681	1685				1611
Volume (vph)	0	534	494	241	1079	18	603	56	27	0	0	63
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.96	0.96	0.96	0.87	0.87	0.87
Adj. Flow (vph)	0	545	504	246	1101	18	628	58	28	0	0	72
RTOR Reduction (vph)	0	0	0	0	1	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	545	504	246	1118	0	356	356	0	0	0	72
Turn Type			custom	pm+pt			Perm					Free
Protected Phases		6	6 4	5	2			4				
Permitted Phases				2			4					Free
Actuated Green, G (s)		70.0	104.0	82.0	82.0		30.0	30.0				120.0
Effective Green, g (s)		70.0	104.0	82.0	82.0		30.0	30.0				120.0
Actuated g/C Ratio		0.58	0.87	0.68	0.68		0.25	0.25				1.00
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)		1087	1372	492	1270		420	421				1611
v/s Ratio Prot		0.29	0.32	0.03	c0.60							
v/s Ratio Perm				0.31			c0.21	0.21				0.04
v/c Ratio		0.50	0.37	0.50	0.88		0.85	0.85				0.04
Uniform Delay, d1		14.7	1.6	9.7	15.1		42.8	42.8				0.0
Progression Factor		0.33	0.34	0.20	0.29		0.91	0.91				1.00
Incremental Delay, d2		1.1	0.5	0.3	4.1		12.6	12.4				0.1
Delay (s)		6.0	1.0	2.3	8.4		51.5	51.2				0.1
Level of Service		A	A	A	A		D	D				A
Approach Delay (s)		3.6			7.3			51.3			0.1	
Approach LOS		A			A			D			A	

Intersection Summary

HCM Average Control Delay	15.8	HCM Level of Service		B		
HCM Volume to Capacity ratio	0.87					
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0		
Intersection Capacity Utilization	83.5%	ICU Level of Service		E		
Analysis Period (min)	15					

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	140	447	982	775	799
Act Effct Green (s)	15.6	83.0	96.4	96.4	29.0
Actuated g/C Ratio	0.13	0.69	0.80	0.80	0.24
v/c Ratio	0.61	0.41	0.98	0.52	0.94
Control Delay	61.2	9.3	37.7	4.7	56.3
Queue Delay	0.0	0.0	4.5	0.6	0.0
Total Delay	61.2	9.3	42.2	5.4	56.3
LOS	E	A	D	A	E
Approach Delay	21.7			25.9	56.3
Approach LOS	C			C	E
Queue Length 50th (ft)	104	134	483	165	325
Queue Length 95th (ft)	173	193	m#953	m190	#426
Internal Link Dist (ft)	1388			639	3492
Turn Bay Length (ft)	60				
Base Capacity (vph)	236	1089	997	1496	848
Starvation Cap Reductn	0	0	20	356	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.59	0.41	1.01	0.68	0.94

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 97 (81%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 32.9 Intersection LOS: C
Intersection Capacity Utilization 89.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	1863	3446	
Flt Permitted	0.95	1.00	0.12	1.00	1.00	
Satd. Flow (perm)	1770	1583	226	1863	3446	
Volume (vph)	130	416	943	744	580	123
Peak-hour factor, PHF	0.93	0.93	0.96	0.96	0.88	0.88
Adj. Flow (vph)	140	447	982	775	659	140
RTOR Reduction (vph)	0	0	0	0	15	0
Lane Group Flow (vph)	140	447	982	775	784	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	4 5	5	2	6	
Permitted Phases			2	2		
Actuated Green, G (s)	15.6	83.0	96.4	96.4	29.0	
Effective Green, g (s)	15.6	83.0	96.4	96.4	29.0	
Actuated g/C Ratio	0.13	0.69	0.80	0.80	0.24	
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)	230	1095	997	1497	833	
v/s Ratio Prot	c0.08	0.28	c0.52	0.42	0.23	
v/s Ratio Perm			c0.27			
v/c Ratio	0.61	0.41	0.98	0.52	0.94	
Uniform Delay, d1	49.3	7.9	24.2	4.0	44.7	
Progression Factor	1.00	1.00	0.81	0.98	0.89	
Incremental Delay, d2	4.5	0.2	17.0	0.7	16.8	
Delay (s)	53.8	8.2	36.5	4.5	56.8	
Level of Service	D	A	D	A	E	
Approach Delay (s)	19.1			22.4	56.8	
Approach LOS	B			C	E	

Intersection Summary

HCM Average Control Delay	30.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	300	772	669
Act Effct Green (s)	21.5	90.5	90.5
Actuated g/C Ratio	0.18	0.75	0.75
v/c Ratio	0.85	0.74	0.48
Control Delay	59.5	12.1	3.2
Queue Delay	0.0	0.0	0.0
Total Delay	59.5	12.1	3.2
LOS	E	B	A
Approach Delay	59.5	12.1	3.2
Approach LOS	E	B	A
Queue Length 50th (ft)	181	295	48
Queue Length 95th (ft)	231	m242	45
Internal Link Dist (ft)	1135	1766	3191
Turn Bay Length (ft)			
Base Capacity (vph)	425	1038	1380
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.71	0.74	0.48

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 53 (44%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 16.8 Intersection LOS: B
Intersection Capacity Utilization 96.8% ICU Level of Service F
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	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.98	
Flt Protected	0.98			0.99	1.00	
Satd. Flow (prot)	1676			1849	1826	
Flt Permitted	0.98			0.78	1.00	
Satd. Flow (perm)	1676			1453	1826	
Volume (vph)	92	148	104	621	543	92
Peak-hour factor, PHF	0.80	0.80	0.94	0.94	0.95	0.95
Adj. Flow (vph)	115	185	111	661	572	97
RTOR Reduction (vph)	51	0	0	0	4	0
Lane Group Flow (vph)	249	0	0	772	665	0
Turn Type			Perm			
Protected Phases	8			6	2	
Permitted Phases			6			
Actuated Green, G (s)	21.5			90.5	90.5	
Effective Green, g (s)	21.5			90.5	90.5	
Actuated g/C Ratio	0.18			0.75	0.75	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	300			1096	1377	
v/s Ratio Prot	c0.15				0.36	
v/s Ratio Perm				c0.53		
v/c Ratio	0.83			0.70	0.48	
Uniform Delay, d1	47.5			7.7	5.7	
Progression Factor	1.00			1.00	0.32	
Incremental Delay, d2	17.4			1.3	1.1	
Delay (s)	64.9			9.1	2.9	
Level of Service	E			A	A	
Approach Delay (s)	64.9			9.1	2.9	
Approach LOS	E			A	A	

Intersection Summary

HCM Average Control Delay	16.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Future PM Intersection Analysis

Future 2011 PM

Lane Group	EBT	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	424	129	125	982	34	1144
Act Effct Green (s)	27.0	27.0	78.5	78.5	73.0	73.0
Actuated g/C Ratio	0.22	0.22	0.65	0.65	0.61	0.61
v/c Ratio	1.03	0.76	0.67	0.82	0.22	1.01
Control Delay	93.2	69.8	30.9	7.3	12.6	54.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.2	69.8	30.9	7.3	12.6	54.1
LOS	F	E	C	A	B	D
Approach Delay	93.2	69.8		10.0		52.9
Approach LOS	F	E		A		D
Queue Length 50th (ft)	~320	90	44	123	10	~877
Queue Length 95th (ft)	#525	#195	m61	m168	23	#1195
Internal Link Dist (ft)	989	884		1033		1098
Turn Bay Length (ft)			60		150	
Base Capacity (vph)	411	170	186	1197	180	1130
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.76	0.67	0.82	0.19	1.01

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 61 (51%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 43.0 Intersection LOS: D
Intersection Capacity Utilization 97.7% ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.92			0.98		1.00	0.98		1.00	1.00	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1711			1787		1770	1825		1770	1857	
Flt Permitted		0.96			0.40		0.06	1.00		0.07	1.00	
Satd. Flow (perm)		1650			734		111	1825		132	1857	
Volume (vph)	41	133	229	55	49	17	119	807	126	32	1063	24
Peak-hour factor, PHF	0.95	0.95	0.95	0.94	0.94	0.94	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	43	140	241	59	52	18	125	849	133	34	1119	25
RTOR Reduction (vph)	0	40	0	0	5	0	0	4	0	0	1	0
Lane Group Flow (vph)	0	384	0	0	124	0	125	978	0	34	1143	0
Turn Type	Perm			Perm			pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)		27.0			27.0		76.9	76.9		71.4	71.4	
Effective Green, g (s)		27.0			27.0		76.9	76.9		71.4	71.4	
Actuated g/C Ratio		0.22			0.22		0.64	0.64		0.60	0.60	
Clearance Time (s)		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	
Lane Grp Cap (vph)		371			165		204	1170		135	1105	
v/s Ratio Prot							0.05	c0.54		0.01	c0.62	
v/s Ratio Perm		c0.23			0.17		0.34			0.14		
v/c Ratio		1.04			0.75		0.61	0.84		0.25	1.03	
Uniform Delay, d1		46.5			43.4		49.8	16.7		21.9	24.3	
Progression Factor		1.00			1.00		0.53	0.16		1.00	1.00	
Incremental Delay, d2		56.4			17.6		3.1	4.2		1.0	36.4	
Delay (s)		102.9			61.0		29.5	6.9		22.9	60.7	
Level of Service		F			E		C	A		C	E	
Approach Delay (s)		102.9			61.0			9.4			59.6	
Approach LOS		F			E			A			E	

Intersection Summary

HCM Average Control Delay	46.6	HCM Level of Service	D	
HCM Volume to Capacity ratio	1.00			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	97.7%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	96	143	96	143	46	917	447	1041
Act Effct Green (s)	14.8	14.8	14.8	14.8	65.2	65.2	88.5	88.5
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.54	0.54	0.74	0.74
v/c Ratio	0.68	0.61	0.83	0.45	0.28	0.92	0.91	0.76
Control Delay	73.9	53.1	99.0	12.3	14.7	30.7	37.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	73.9	53.1	99.0	12.3	14.7	30.7	37.6	4.5
LOS	E	D	F	B	B	C	D	A
Approach Delay		61.5	47.1			29.9		14.4
Approach LOS		E	D			C		B
Queue Length 50th (ft)	71	89	73	0	11	569	263	172
Queue Length 95th (ft)	#141	156	#160	56	m27	#935	m268	m177
Internal Link Dist (ft)		528	850			3492		1033
Turn Bay Length (ft)					60		90	
Base Capacity (vph)	153	253	125	335	181	1000	489	1374
Starvation Cap Reductn	0	0	0	0	0	0	0	28
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.57	0.77	0.43	0.25	0.92	0.91	0.77

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 60 (50%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 26.0 Intersection LOS: C
Intersection Capacity Utilization 92.9% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.94			1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1755			1804	1583	1770	1835		1770	1863	
Flt Permitted	0.60	1.00			0.47	1.00	0.07	1.00		0.08	1.00	
Satd. Flow (perm)	1126	1755			882	1583	134	1835		151	1863	
Volume (vph)	85	78	49	55	30	126	43	777	85	393	916	0
Peak-hour factor, PHF	0.89	0.89	0.89	0.88	0.88	0.88	0.94	0.94	0.94	0.88	0.88	0.88
Adj. Flow (vph)	96	88	55	62	34	143	46	827	90	447	1041	0
RTOR Reduction (vph)	0	19	0	0	0	125	0	3	0	0	0	0
Lane Group Flow (vph)	96	124	0	0	96	18	46	914	0	447	1041	0
Turn Type	Perm			Perm		Perm	pm+pt			pm+pt		
Protected Phases		8			4		1	6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	14.8	14.8			14.8	14.8	64.4	64.4		87.7	87.7	
Effective Green, g (s)	14.8	14.8			14.8	14.8	64.4	64.4		87.7	87.7	
Actuated g/C Ratio	0.12	0.12			0.12	0.12	0.54	0.54		0.73	0.73	
Clearance Time (s)	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	
Lane Grp Cap (vph)	139	216			109	195	147	985		499	1362	
v/s Ratio Prot		0.07					0.01	c0.50		c0.22	0.56	
v/s Ratio Perm	0.09				c0.11	0.01	0.15			0.44		
v/c Ratio	0.69	0.57			0.88	0.09	0.31	0.93		0.90	0.76	
Uniform Delay, d1	50.4	49.6			51.7	46.6	22.2	25.7		36.3	9.8	
Progression Factor	1.00	1.00			1.00	1.00	0.78	0.63		0.71	0.27	
Incremental Delay, d2	13.8	3.6			50.7	0.2	1.1	14.9		6.8	1.3	
Delay (s)	64.2	53.3			102.4	46.8	18.5	31.0		32.5	4.0	
Level of Service	E	D			F	D	B	C		C	A	
Approach Delay (s)		57.6			69.2			30.4			12.5	
Approach LOS		E			E			C			B	

Intersection Summary

HCM Average Control Delay	26.7	HCM Level of Service	C	
HCM Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	92.9%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	85	957	501	743	899	168
Act Effct Green (s)	16.0	61.0	96.0	96.0	51.0	51.0
Actuated g/C Ratio	0.13	0.51	0.80	0.80	0.42	0.42
v/c Ratio	0.36	1.19	0.75	0.50	1.14	0.23
Control Delay	52.2	126.2	27.0	8.6	98.4	4.4
Queue Delay	0.0	0.0	0.0	0.8	0.0	0.0
Total Delay	52.2	126.2	27.0	9.4	98.4	4.4
LOS	D	F	C	A	F	A
Approach Delay	120.2			16.5	83.6	
Approach LOS	F			B	F	
Queue Length 50th (ft)	61	~894	232	199	~810	24
Queue Length 95th (ft)	112	#1144	m319	m218	#1023	m34
Internal Link Dist (ft)	1388			639	3492	
Turn Bay Length (ft)	60					300
Base Capacity (vph)	236	805	667	1490	792	746
Starvation Cap Reductn	0	0	0	433	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.36	1.19	0.75	0.70	1.14	0.23

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 42 (35%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.19			
Intersection Signal Delay: 70.1		Intersection LOS: E	
Intersection Capacity Utilization 103.4%		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.
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	4.0	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	1863	1863	1583
Flt Permitted	0.95	1.00	0.07	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	135	1863	1863	1583
Volume (vph)	79	890	481	713	791	148
Peak-hour factor, PHF	0.93	0.93	0.96	0.96	0.88	0.88
Adj. Flow (vph)	85	957	501	743	899	168
RTOR Reduction (vph)	0	0	0	0	0	73
Lane Group Flow (vph)	85	957	501	743	899	95
Turn Type		pt+ov	pm+pt			Perm
Protected Phases	4	5 4	5	2	6	
Permitted Phases			2	2		6
Actuated Green, G (s)	16.0	61.0	96.0	96.0	51.0	51.0
Effective Green, g (s)	16.0	61.0	96.0	96.0	51.0	51.0
Actuated g/C Ratio	0.13	0.51	0.80	0.80	0.42	0.42
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)	236	805	667	1490	792	673
v/s Ratio Prot	0.05	c0.60	0.26	0.40	c0.48	
v/s Ratio Perm			0.34			0.06
v/c Ratio	0.36	1.19	0.75	0.50	1.14	0.14
Uniform Delay, d1	47.3	29.5	36.3	4.0	34.5	21.1
Progression Factor	1.00	1.00	0.87	1.95	0.77	0.61
Incremental Delay, d2	0.9	97.3	2.0	0.5	71.2	0.3
Delay (s)	48.3	126.8	33.6	8.3	97.7	13.1
Level of Service	D	F	C	A	F	B
Approach Delay (s)	120.4			18.5	84.4	
Approach LOS	F			B	F	

Intersection Summary				
HCM Average Control Delay	71.1	HCM Level of Service	E	
HCM Volume to Capacity ratio	1.16			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	103.4%	ICU Level of Service	G	
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	46	1152	465	109	685	336	340	61	150
Act Effct Green (s)	59.3	59.3	84.3	61.4	61.4	21.0	21.0	16.0	16.0
Actuated g/C Ratio	0.49	0.49	0.70	0.51	0.51	0.18	0.18	0.13	0.13
v/c Ratio	0.15	1.25	0.42	0.61	0.72	1.14	1.14	0.26	0.57
Control Delay	20.0	144.3	7.4	29.4	18.9	125.3	123.7	49.9	46.4
Queue Delay	0.0	40.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	185.2	7.4	29.4	18.9	125.3	123.7	49.9	46.4
LOS	B	F	A	C	B	F	F	D	D
Approach Delay		130.9			20.4		124.5		47.4
Approach LOS		F			C		F		D
Queue Length 50th (ft)	19	~1120	130	30	398	~309	~307	43	83
Queue Length 95th (ft)	m16	m#859	m106	m50	m484	m#346	m#349	83	147
Internal Link Dist (ft)		639			393		1125		305
Turn Bay Length (ft)	60					110		135	
Base Capacity (vph)	304	921	1112	183	947	294	298	236	261
Starvation Cap Reductn	0	63	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	1.34	0.42	0.60	0.72	1.14	1.14	0.26	0.57

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: 1.25
Intersection Signal Delay: 98.1 Intersection LOS: F
Intersection Capacity Utilization 104.1% 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.
m Volume for 95th percentile queue is metered by upstream signal.

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	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.95	0.95		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.98		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1845		1681	1681		1770	1721	
Flt Permitted	0.25	1.00	1.00	0.08	1.00		0.95	0.97		0.95	1.00	
Satd. Flow (perm)	457	1863	1583	141	1845		1681	1681		1770	1721	
Volume (vph)	45	1129	456	107	629	42	538	70	41	53	64	66
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.96	0.96	0.96	0.87	0.87	0.87
Adj. Flow (vph)	46	1152	465	109	642	43	560	73	43	61	74	76
RTOR Reduction (vph)	0	0	0	0	2	0	0	4	0	0	31	0
Lane Group Flow (vph)	46	1152	465	109	683	0	336	336	0	61	119	0
Turn Type	pm+pt		pt+ov	pm+pt			Split			Split		
Protected Phases	1	6	6 4	5	2		4	4		8	8	
Permitted Phases	6			2								
Actuated Green, G (s)	59.3	59.3	84.3	60.6	60.6		21.0	21.0		16.0	16.0	
Effective Green, g (s)	59.3	59.3	84.3	60.6	60.6		21.0	21.0		16.0	16.0	
Actuated g/C Ratio	0.49	0.49	0.70	0.50	0.50		0.18	0.18		0.13	0.13	
Clearance Time (s)	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	
Lane Grp Cap (vph)	296	921	1112	176	932		294	294		236	229	
v/s Ratio Prot	0.01	c0.62	0.29	0.04	c0.37		c0.20	0.20		0.03	c0.07	
v/s Ratio Perm	0.07			0.27								
v/c Ratio	0.16	1.25	0.42	0.62	0.73		1.14	1.14		0.26	0.52	
Uniform Delay, d1	29.5	30.4	7.5	56.0	23.3		49.5	49.5		46.7	48.4	
Progression Factor	1.08	1.07	0.93	1.00	0.65		0.78	0.78		1.00	1.00	
Incremental Delay, d2	0.0	113.7	0.1	4.4	3.5		88.2	88.1		2.6	8.2	
Delay (s)	31.8	146.3	7.1	60.6	18.6		127.0	126.6		49.3	56.6	
Level of Service	C	F	A	E	B		F	F		D	E	
Approach Delay (s)		104.2			24.4			126.8			54.5	
Approach LOS		F			C			F			D	

Intersection Summary

HCM Average Control Delay	86.7	HCM Level of Service		F	
HCM Volume to Capacity ratio	1.09				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		16.0	
Intersection Capacity Utilization	104.1%	ICU Level of Service		G	
Analysis Period (min)	15				

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	162	210	141	491	560	156
Peak Hour Factor	0.80	0.80	0.94	0.94	0.95	0.95
Hourly flow rate (vph)	202	262	150	522	589	164
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1494	672	754			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1494	672	754			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	42	82			
cM capacity (veh/h)	112	456	856			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	465	672	754
Volume Left	202	150	0
Volume Right	262	0	164
cSH	195	856	1700
Volume to Capacity	2.39	0.18	0.44
Queue Length 95th (ft)	958	16	0
Control Delay (s)	677.9	4.2	0.0
Lane LOS	F	A	
Approach Delay (s)	677.9	4.2	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	168.2		
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	460	1883	1651	443	275
Act Effct Green (s)	84.0	84.0	55.0	28.0	57.0
Actuated g/C Ratio	0.70	0.70	0.46	0.23	0.48
v/c Ratio	1.07	0.76	1.03	1.07	0.36
Control Delay	98.0	14.1	40.7	106.9	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	98.0	14.1	40.7	106.9	20.0
LOS	F	B	D	F	C
Approach Delay		30.6	40.7	73.6	
Approach LOS		C	D	E	
Queue Length 50th (ft)	~343	441	~718	~385	136
Queue Length 95th (ft)	#553	533	#814	#595	211
Internal Link Dist (ft)		720	4601	1766	
Turn Bay Length (ft)	600				150
Base Capacity (vph)	431	2477	1605	413	759
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	1.07	0.76	1.03	1.07	0.36

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 94 (78%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay: 40.7		Intersection LOS: D	
Intersection Capacity Utilization 98.0%		ICU Level of Service F	
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	WBT	WBR	SBL	SBR
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	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.98		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1770	3539	3481		1770	1583
Flt Permitted	0.07	1.00	1.00		0.95	1.00
Satd. Flow (perm)	126	3539	3481		1770	1583
Volume (vph)	414	1695	1308	161	430	267
Peak-hour factor, PHF	0.90	0.90	0.89	0.89	0.97	0.97
Adj. Flow (vph)	460	1883	1470	181	443	275
RTOR Reduction (vph)	0	0	8	0	0	8
Lane Group Flow (vph)	460	1883	1643	0	443	267
Turn Type	pm+pt					pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Actuated Green, G (s)	84.0	84.0	55.0		28.0	53.0
Effective Green, g (s)	84.0	84.0	55.0		28.0	53.0
Actuated g/C Ratio	0.70	0.70	0.46		0.23	0.44
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)	431	2477	1595		413	752
v/s Ratio Prot	c0.22	0.53	0.47		c0.25	0.07
v/s Ratio Perm	c0.52					0.09
v/c Ratio	1.07	0.76	1.03		1.07	0.36
Uniform Delay, d1	49.7	11.5	32.5		46.0	22.2
Progression Factor	1.00	1.00	0.32		0.96	0.97
Incremental Delay, d2	62.4	2.3	28.2		64.5	0.3
Delay (s)	112.1	13.8	38.6		108.4	21.8
Level of Service	F	B	D		F	C
Approach Delay (s)		33.1	38.6		75.3	
Approach LOS		C	D		E	

Intersection Summary			
HCM Average Control Delay	41.5	HCM Level of Service	D
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	1183	145	192	1313	1192	767
Act Effct Green (s)	46.0	46.0	66.0	66.0	49.0	49.0
Actuated g/C Ratio	0.38	0.38	0.55	0.55	0.41	0.41
v/c Ratio	0.90	0.21	0.73	0.67	0.82	0.87
Control Delay	24.6	0.8	44.7	14.8	37.6	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	0.8	44.7	14.8	37.6	27.4
LOS	C	A	D	B	D	C
Approach Delay	22.0			18.6	33.6	
Approach LOS	C			B	C	
Queue Length 50th (ft)	329	1	89	285	427	292
Queue Length 95th (ft)	m253	m1	m125	m308	520	#570
Internal Link Dist (ft)	1185			682	1179	
Turn Bay Length (ft)	375	550	90			135
Base Capacity (vph)	1316	696	262	1946	1445	881
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.21	0.73	0.67	0.82	0.87

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 24 (20%), Referenced to phase 2:SBT and 6:NBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 25.7 Intersection LOS: C
Intersection Capacity Utilization 82.9% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

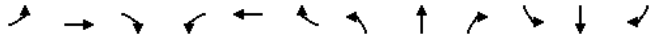
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	3433	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.08	1.00	1.00	1.00
Satd. Flow (perm)	3433	1583	158	3539	3539	1583
Volume (vph)	1112	136	173	1182	1144	736
Peak-hour factor, PHF	0.94	0.94	0.90	0.90	0.96	0.96
Adj. Flow (vph)	1183	145	192	1313	1192	767
RTOR Reduction (vph)	0	89	0	0	0	235
Lane Group Flow (vph)	1183	56	192	1313	1192	532
Turn Type		Perm	pm+pt			Perm
Protected Phases	8		1	6	2	
Permitted Phases		8	6			2
Actuated Green, G (s)	46.0	46.0	66.0	66.0	49.0	49.0
Effective Green, g (s)	46.0	46.0	66.0	66.0	49.0	49.0
Actuated g/C Ratio	0.38	0.38	0.55	0.55	0.41	0.41
Clearance Time (s)	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
Lane Grp Cap (vph)	1316	607	262	1946	1445	646
v/s Ratio Prot	c0.34		0.08	c0.37	c0.34	
v/s Ratio Perm		0.04	0.32			0.34
v/c Ratio	0.90	0.09	0.73	0.67	0.82	0.82
Uniform Delay, d1	34.8	23.6	41.3	19.3	31.7	31.6
Progression Factor	0.57	0.15	0.85	0.70	1.00	1.00
Incremental Delay, d2	3.9	0.1	5.7	1.0	5.5	11.4
Delay (s)	23.8	3.7	41.0	14.5	37.2	43.0
Level of Service	C	A	D	B	D	D
Approach Delay (s)	21.6			17.9	39.5	
Approach LOS	C			B	D	

Intersection Summary				
HCM Average Control Delay	27.8	HCM Level of Service		C
HCM Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		8.0
Intersection Capacity Utilization	82.9%	ICU Level of Service		E
Analysis Period (min)	15			
c Critical Lane Group				

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	44	1190	804	60	23	26
Peak Hour Factor	0.96	0.96	0.97	0.97	0.78	0.78
Hourly flow rate (vph)	46	1240	829	62	29	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)			1265			
pX, platoon unblocked						
vC, conflicting volume	891				2191	860
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	891				2191	860
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				37	91
cM capacity (veh/h)	761				47	356

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	1285	891	63
Volume Left	46	0	29
Volume Right	0	62	33
cSH	761	1700	87
Volume to Capacity	0.06	0.52	0.72
Queue Length 95th (ft)	5	0	89
Control Delay (s)	2.5	0.0	115.8
Lane LOS	A		F
Approach Delay (s)	2.5	0.0	115.8
Approach LOS			F

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	108.2%	ICU Level of Service		G
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	5	2	29	2	12	6	131	24	12	156	3
Peak Hour Factor	0.42	0.42	0.42	0.67	0.67	0.67	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	12	5	43	3	18	7	158	29	14	188	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	17	64	194	206
Volume Left (vph)	0	43	7	14
Volume Right (vph)	5	18	29	4
Hadj (s)	-0.14	0.00	-0.05	0.04
Departure Headway (s)	4.7	4.8	4.3	4.3
Degree Utilization, x	0.02	0.09	0.23	0.25
Capacity (veh/h)	683	683	815	798
Control Delay (s)	7.8	8.3	8.5	8.8
Approach Delay (s)	7.8	8.3	8.5	8.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay			8.6	
HCM Level of Service			A	
Intersection Capacity Utilization			29.0%	ICU Level of Service
Analysis Period (min)			15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	12	5	144	14	6	171
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	5	157	15	7	186
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			385			
pX, platoon unblocked						
vC, conflicting volume	363	164			172	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	363	164			172	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	633	880			1405	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	18	172	192
Volume Left	13	0	7
Volume Right	5	15	0
cSH	690	1700	1405
Volume to Capacity	0.03	0.10	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.4	0.0	0.3
Lane LOS	B		A
Approach Delay (s)	10.4	0.0	0.3
Approach LOS	B		

Intersection Summary				
Average Delay		0.6		
Intersection Capacity Utilization		23.9%	ICU Level of Service	A
Analysis Period (min)		15		

Future 2011 PM Improved

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBR
Lane Group Flow (vph)	1198	465	174	685	337	339	76
Act Effct Green (s)	76.0	104.0	88.0	88.0	24.0	24.0	120.0
Actuated g/C Ratio	0.63	0.87	0.73	0.73	0.20	0.20	1.00
v/c Ratio	1.02	0.34	0.97	0.51	1.00	1.00	0.05
Control Delay	33.5	1.5	90.7	3.3	72.7	70.6	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	1.5	90.7	3.3	72.7	70.6	0.1
LOS	C	A	F	A	E	E	A
Approach Delay	24.5			21.0		71.6	
Approach LOS	C			C		E	
Queue Length 50th (ft)	~535	38	72	17	~275	272	0
Queue Length 95th (ft)	m#1018	m38	m#196	50	m#278	m#276	0
Internal Link Dist (ft)	639			393		1125	
Turn Bay Length (ft)					110		
Base Capacity (vph)	1180	1372	180	1356	336	340	1611
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	11	0	0	10
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.34	0.97	0.51	1.00	1.00	0.05

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:WBTL and 6:EBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 32.8 Intersection LOS: C
Intersection Capacity Utilization 99.3% ICU Level of Service F
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.
m Volume for 95th percentile queue is metered by upstream signal.

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
Lane Util. Factor		1.00	1.00	1.00	1.00		0.95	0.95				1.00
Frt		1.00	0.85	1.00	0.99		1.00	0.98				0.86
Flt Protected		1.00	1.00	0.95	1.00		0.95	0.97				1.00
Satd. Flow (prot)		1863	1583	1770	1845		1681	1681				1611
Flt Permitted		1.00	1.00	0.05	1.00		0.95	0.97				1.00
Satd. Flow (perm)		1863	1583	93	1845		1681	1681				1611
Volume (vph)	0	1174	456	171	629	42	538	70	41	0	0	66
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.96	0.96	0.96	0.87	0.87	0.87
Adj. Flow (vph)	0	1198	465	174	642	43	560	73	43	0	0	76
RTOR Reduction (vph)	0	0	0	0	2	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	1198	465	174	683	0	337	335	0	0	0	76
Turn Type			custom	pm+pt			Perm					Free
Protected Phases		6	6 4	5	2			4				
Permitted Phases				2			4					Free
Actuated Green, G (s)		76.0	104.0	88.0	88.0		24.0	24.0				120.0
Effective Green, g (s)		76.0	104.0	88.0	88.0		24.0	24.0				120.0
Actuated g/C Ratio		0.63	0.87	0.73	0.73		0.20	0.20				1.00
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)		1180	1372	180	1353		336	336				1611
v/s Ratio Prot		c0.64	0.29	c0.06	0.37							
v/s Ratio Perm				0.64			c0.20	0.20				0.05
v/c Ratio		1.02	0.34	0.97	0.50		1.00	1.00				0.05
Uniform Delay, d1		22.0	1.5	58.0	6.8		48.0	48.0				0.0
Progression Factor		0.62	0.85	1.52	0.34		0.99	0.99				1.00
Incremental Delay, d2		17.8	0.2	47.7	1.0		24.7	23.2				0.1
Delay (s)		31.5	1.5	135.7	3.3		72.4	70.9				0.1
Level of Service		C	A	F	A		E	E				A
Approach Delay (s)		23.1			30.1			71.6			0.1	
Approach LOS		C			C			E			A	

Intersection Summary

HCM Average Control Delay	34.4	HCM Level of Service		C
HCM Volume to Capacity ratio	1.01			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)		12.0
Intersection Capacity Utilization	99.3%	ICU Level of Service		F
Analysis Period (min)	15			

c Critical Lane Group

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	85	957	501	743	1067
Act Effct Green (s)	40.0	74.0	72.0	72.0	38.0
Actuated g/C Ratio	0.33	0.62	0.60	0.60	0.32
v/c Ratio	0.14	0.98	0.99	0.66	0.96
Control Delay	28.9	47.8	58.2	14.5	49.5
Queue Delay	0.0	4.6	0.0	0.9	1.2
Total Delay	28.9	52.4	58.2	15.4	50.7
LOS	C	D	E	B	D
Approach Delay	50.5			32.6	50.7
Approach LOS	D			C	D
Queue Length 50th (ft)	46	673	316	410	408
Queue Length 95th (ft)	85	#1006	m#469	m478	#537
Internal Link Dist (ft)	1388			639	3492
Turn Bay Length (ft)	60				
Base Capacity (vph)	590	976	504	1118	1107
Starvation Cap Reductn	0	0	0	154	0
Spillback Cap Reductn	0	21	0	0	10
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	1.00	0.99	0.77	0.97

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:NBTL and 6:SBT, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 43.9 Intersection LOS: D
Intersection Capacity Utilization 88.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	1863	3456	
Flt Permitted	0.95	1.00	0.10	1.00	1.00	
Satd. Flow (perm)	1770	1583	177	1863	3456	
Volume (vph)	79	890	481	713	791	148
Peak-hour factor, PHF	0.93	0.93	0.96	0.96	0.88	0.88
Adj. Flow (vph)	85	957	501	743	899	168
RTOR Reduction (vph)	0	0	0	0	13	0
Lane Group Flow (vph)	85	957	501	743	1054	0
Turn Type		pt+ov	pm+pt			
Protected Phases	4	4 5	5	2	6	
Permitted Phases			2	2		
Actuated Green, G (s)	40.0	74.0	72.0	72.0	38.0	
Effective Green, g (s)	40.0	74.0	72.0	72.0	38.0	
Actuated g/C Ratio	0.33	0.62	0.60	0.60	0.32	
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)	590	976	504	1118	1094	
v/s Ratio Prot	0.05	c0.60	0.25	0.40	0.31	
v/s Ratio Perm			c0.35			
v/c Ratio	0.14	0.98	0.99	0.66	0.96	
Uniform Delay, d1	28.0	22.3	36.8	16.0	40.3	
Progression Factor	1.00	1.00	0.69	0.75	0.87	
Incremental Delay, d2	0.1	24.0	32.0	2.2	14.6	
Delay (s)	28.1	46.3	57.6	14.1	49.5	
Level of Service	C	D	E	B	D	
Approach Delay (s)	44.8			31.6	49.5	
Approach LOS	D			C	D	

Intersection Summary

HCM Average Control Delay	41.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	464	672	753
Act Effct Green (s)	31.0	81.0	81.0
Actuated g/C Ratio	0.26	0.68	0.68
v/c Ratio	0.98	1.00	0.61
Control Delay	76.2	25.0	14.4
Queue Delay	0.0	0.0	0.0
Total Delay	76.2	25.0	14.4
LOS	E	C	B
Approach Delay	76.2	25.0	14.4
Approach LOS	E	C	B
Queue Length 50th (ft)	325	507	315
Queue Length 95th (ft)	#435	m462	m378
Internal Link Dist (ft)	1135	1766	3191
Turn Bay Length (ft)			
Base Capacity (vph)	474	673	1230
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.98	1.00	0.61

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 85 (71%), Referenced to phase 2:SBT and 6:NBTL, Start of Green		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 1.00		
Intersection Signal Delay: 33.4	Intersection LOS: C	
Intersection Capacity Utilization 104.5%	ICU Level of Service G	
Analysis Period (min) 15		

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
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	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.92			1.00	0.97	
Flt Protected	0.98			0.99	1.00	
Satd. Flow (prot)	1684			1842	1808	
Flt Permitted	0.98			0.53	1.00	
Satd. Flow (perm)	1684			996	1808	
Volume (vph)	162	210	141	491	560	156
Peak-hour factor, PHF	0.80	0.80	0.94	0.94	0.95	0.95
Adj. Flow (vph)	202	262	150	522	589	164
RTOR Reduction (vph)	39	0	0	0	8	0
Lane Group Flow (vph)	425	0	0	672	745	0
Turn Type			Perm			
Protected Phases	8			6	2	
Permitted Phases			6			
Actuated Green, G (s)	31.0			81.0	81.0	
Effective Green, g (s)	31.0			81.0	81.0	
Actuated g/C Ratio	0.26			0.68	0.68	
Clearance Time (s)	4.0			4.0	4.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	435			672	1220	
v/s Ratio Prot	c0.25				0.41	
v/s Ratio Perm				c0.67		
v/c Ratio	0.98			1.00	0.61	
Uniform Delay, d1	44.2			19.5	10.8	
Progression Factor	1.00			0.64	1.15	
Incremental Delay, d2	37.0			10.4	2.1	
Delay (s)	81.1			22.8	14.4	
Level of Service	F			C	B	
Approach Delay (s)	81.1			22.8	14.4	
Approach LOS	F			C	B	

Intersection Summary			
HCM Average Control Delay	33.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
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						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		150	0	
Storage Lanes	1	0		1	0	
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.973			0.850		
Flt Protected	0.962					0.998
Satd. Flow (prot)	1744	0	1863	1583	0	1859
Flt Permitted	0.962					0.998
Satd. Flow (perm)	1744	0	1863	1583	0	1859
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	15		25			25
Link Distance (ft)	292		385			188
Travel Time (s)	13.3		10.5			5.1

Intersection Summary	
Area Type:	Other

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	7	2	68	8	2	57
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	2	74	9	2	62
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			385			
pX, platoon unblocked						
vC, conflicting volume	140	74			83	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	140	74			83	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	852	988			1515	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	10	74	9	64
Volume Left	8	0	0	2
Volume Right	2	0	9	0
cSH	878	1700	1700	1515
Volume to Capacity	0.01	0.04	0.01	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	9.1	0.0	0.0	0.3
Lane LOS	A			A
Approach Delay (s)	9.1	0.0		0.3
Approach LOS	A			

Intersection Summary				
Average Delay		0.7		
Intersection Capacity Utilization		14.6%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932				0.998	
Flt Protected	0.976			0.999		
Satd. Flow (prot)	1694	0	0	1861	1859	0
Flt Permitted	0.976			0.999		
Satd. Flow (perm)	1694	0	0	1861	1859	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			25	25	
Link Distance (ft)	348			188	201	
Travel Time (s)	7.9			5.1	5.5	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	1	1	69	82	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	1	75	89	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				573		
pX, platoon unblocked						
vC, conflicting volume	167	90	90			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	167	90	90			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	823	968	1505			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	76	90
Volume Left	1	1	0
Volume Right	1	0	1
cSH	890	1505	1700
Volume to Capacity	0.00	0.00	0.05
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.1	0.1	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	0.1	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	14.4%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932				0.998	
Flt Protected	0.976			0.999		
Satd. Flow (prot)	1694	0	0	1861	1859	0
Flt Permitted	0.976			0.999		
Satd. Flow (perm)	1694	0	0	1861	1859	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			25	25	
Link Distance (ft)	364			201	175	
Travel Time (s)	8.3			5.5	4.8	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	1	1	69	82	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	1	75	89	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				774		
pX, platoon unblocked						
vC, conflicting volume	167	90	90			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	167	90	90			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	823	968	1505			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	76	90
Volume Left	1	1	0
Volume Right	1	0	1
cSH	890	1505	1700
Volume to Capacity	0.00	0.00	0.05
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.1	0.1	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	0.1	0.0
Approach LOS	A		

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		14.4%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	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
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.978			0.975			0.984			0.998	
Flt Protected		0.980			0.967						0.967	
Satd. Flow (prot)	0	1785	0	0	1756	0	0	1833	0	0	1798	0
Flt Permitted		0.980			0.967						0.967	
Satd. Flow (perm)	0	1785	0	0	1756	0	0	1833	0	0	1798	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		372			1552			175			684	
Travel Time (s)		10.1			42.3			4.8			18.7	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	2	2	1	10	2	3	1	75	10	158	72	3
Peak Hour Factor	0.42	0.42	0.42	0.67	0.67	0.67	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	5	5	2	15	3	4	1	90	12	190	87	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	12	22	104	281
Volume Left (vph)	5	15	1	190
Volume Right (vph)	2	4	12	4
Hadj (s)	-0.01	0.05	-0.03	0.16
Departure Headway (s)	4.8	4.8	4.2	4.3
Degree Utilization, x	0.02	0.03	0.12	0.33
Capacity (veh/h)	687	682	825	836
Control Delay (s)	7.9	8.0	7.8	9.3
Approach Delay (s)	7.9	8.0	7.8	9.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay		8.9		
HCM Level of Service		A		
Intersection Capacity Utilization		29.4%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↱		↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			150	0	0
Storage Lanes	0			1	0	1
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	1863	1863	1583	0	1611
Flt Permitted						
Satd. Flow (perm)	0	1863	1863	1583	0	1611
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		35	35		15	
Link Distance (ft)		473	447		328	
Travel Time (s)		9.2	8.7		14.9	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↱		↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	593	1338	3	0	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	645	1454	3	0	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		473	447			
pX, platoon unblocked	0.28				0.37	0.28
vC, conflicting volume	1458				2099	1454
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2658				3255	2646
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	74
cM capacity (veh/h)	43				4	8

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	645	1454	3	2
Volume Left	0	0	0	0
Volume Right	0	0	3	2
cSH	1700	1700	1700	8
Volume to Capacity	0.38	0.86	0.00	0.26
Queue Length 95th (ft)	0	0	0	15
Control Delay (s)	0.0	0.0	0.0	555.1
Lane LOS				F
Approach Delay (s)	0.0	0.0		555.1
Approach LOS				F

Intersection Summary				
Average Delay		0.6		
Intersection Capacity Utilization		80.4%	ICU Level of Service	D
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	150			150	0	0
Storage Lanes	1			1	1	1
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1863	1583	1770	1583
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		35	35		15	
Link Distance (ft)		857	1053		680	
Travel Time (s)		16.7	20.5		30.9	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	11	535	1205	12	12	15
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	12	582	1310	13	13	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		857				
pX, platoon unblocked					0.96	
vC, conflicting volume	1323				1915	1310
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1323				1951	1310
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				80	92
cM capacity (veh/h)	522				66	194

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	12	582	1310	13	13	16
Volume Left	12	0	0	0	13	0
Volume Right	0	0	0	13	0	16
cSH	522	1700	1700	1700	66	194
Volume to Capacity	0.02	0.34	0.77	0.01	0.20	0.08
Queue Length 95th (ft)	2	0	0	0	17	7
Control Delay (s)	12.1	0.0	0.0	0.0	71.9	25.2
Lane LOS	B				F	D
Approach Delay (s)	0.2		0.0		46.0	
Approach LOS					E	

Intersection Summary				
Average Delay		0.8		
Intersection Capacity Utilization		73.4%	ICU Level of Service	D
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	98	547	1295	33	80	162
Act Effct Green (s)	101.4	101.4	88.7	88.7	10.6	10.6
Actuated g/C Ratio	0.84	0.84	0.74	0.74	0.09	0.09
v/c Ratio	0.51	0.35	0.94	0.03	0.51	0.56
Control Delay	26.4	3.4	18.8	1.8	63.0	15.5
Queue Delay	0.0	0.0	0.8	0.0	0.0	0.0
Total Delay	26.4	3.4	19.6	1.8	63.0	15.5
LOS	C	A	B	A	E	B
Approach Delay		6.9	19.2		31.2	
Approach LOS		A	B		C	
Queue Length 50th (ft)	43	86	618	1	60	0
Queue Length 95th (ft)	m95	m154	m#1151	m2	109	63
Internal Link Dist (ft)		367	777		1472	
Turn Bay Length (ft)	150			150		150
Base Capacity (vph)	201	1574	1376	1174	236	351
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	15	0	0	1
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.35	0.95	0.03	0.34	0.46

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 68 (57%), Referenced to phase 2:WBT and 6:EBTL, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 16.9 Intersection LOS: B
Intersection Capacity Utilization 81.8% 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.
m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.04	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	80	1863	1863	1583	1770	1583
Volume (vph)	90	503	1191	30	74	149
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	547	1295	33	80	162
RTOR Reduction (vph)	0	0	0	5	0	148
Lane Group Flow (vph)	98	547	1295	28	80	14
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		8	
Permitted Phases	6			2		8
Actuated Green, G (s)	101.4	101.4	88.7	88.7	10.6	10.6
Effective Green, g (s)	101.4	101.4	88.7	88.7	10.6	10.6
Actuated g/C Ratio	0.85	0.85	0.74	0.74	0.09	0.09
Clearance Time (s)	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
Lane Grp Cap (vph)	190	1574	1377	1170	156	140
v/s Ratio Prot	c0.04	0.29	c0.70		c0.05	
v/s Ratio Perm	0.40			0.02		0.01
v/c Ratio	0.52	0.35	0.94	0.02	0.51	0.10
Uniform Delay, d1	36.2	2.0	13.4	4.2	52.2	50.3
Progression Factor	1.10	1.25	0.65	0.57	1.00	1.00
Incremental Delay, d2	2.1	0.5	7.5	0.0	2.8	0.3
Delay (s)	41.9	3.1	16.1	2.4	55.1	50.6
Level of Service	D	A	B	A	E	D
Approach Delay (s)		9.0	15.8		52.1	
Approach LOS		A	B		D	

Intersection Summary

HCM Average Control Delay	17.8	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	81.8%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Future 2011 PM Site Access Analysis

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		150	0	
Storage Lanes	1	0		1	0	
Turning Speed (mph)	15	9		9	15	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.962			0.850		
Flt Protected	0.965					0.995
Satd. Flow (prot)	1729	0	1863	1583	0	1853
Flt Permitted	0.965					0.995
Satd. Flow (perm)	1729	0	1863	1583	0	1853
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	15		25			25
Link Distance (ft)	292		385			193
Travel Time (s)	13.3		10.5			5.3

Intersection Summary	
Area Type:	Other

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	12	5	99	14	6	54
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	5	108	15	7	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			385			
pX, platoon unblocked						
vC, conflicting volume	179	108			123	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	179	108			123	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	99			100	
cM capacity (veh/h)	807	946			1464	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	18	108	15	65
Volume Left	13	0	0	7
Volume Right	5	0	15	0
cSH	843	1700	1700	1464
Volume to Capacity	0.02	0.06	0.01	0.00
Queue Length 95th (ft)	2	0	0	0
Control Delay (s)	9.4	0.0	0.0	0.8
Lane LOS	A			A
Approach Delay (s)	9.4	0.0		0.8
Approach LOS	A			

Intersection Summary				
Average Delay		1.1		
Intersection Capacity Utilization		17.9%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932				0.998	
Flt Protected	0.976					
Satd. Flow (prot)	1694	0	0	1863	1859	0
Flt Permitted	0.976					
Satd. Flow (perm)	1694	0	0	1863	1859	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			25	25	
Link Distance (ft)	421			193	181	
Travel Time (s)	9.6			5.3	4.9	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	1	1	103	70	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	1	112	76	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				578		
pX, platoon unblocked						
vC, conflicting volume	191	77	77			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	191	77	77			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	798	984	1521			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	113	77
Volume Left	1	1	0
Volume Right	1	0	1
cSH	881	1521	1700
Volume to Capacity	0.00	0.00	0.05
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.1	0.1	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	0.1	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Turning Speed (mph)	15	9	15			9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.932				0.998	
Flt Protected	0.976					
Satd. Flow (prot)	1694	0	0	1863	1859	0
Flt Permitted	0.976					
Satd. Flow (perm)	1694	0	0	1863	1859	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)	30			25	25	
Link Distance (ft)	399			181	190	
Travel Time (s)	9.1			4.9	5.2	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	1	1	1	103	70	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	1	1	112	76	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)				759		
pX, platoon unblocked						
vC, conflicting volume	191	77	77			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	191	77	77			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	798	984	1521			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	113	77
Volume Left	1	1	0
Volume Right	1	0	1
cSH	881	1521	1700
Volume to Capacity	0.00	0.00	0.05
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.1	0.1	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	0.1	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	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
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Turning Speed (mph)	15		9	15		9	15		9	15		9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.960			0.911			0.980			0.997	
Flt Protected					0.984			0.997			0.964	
Satd. Flow (prot)	0	1788	0	0	1670	0	0	1820	0	0	1790	0
Flt Permitted					0.984			0.997			0.964	
Satd. Flow (perm)	0	1788	0	0	1670	0	0	1820	0	0	1790	0
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		372			1552			190			684	
Travel Time (s)		10.1			42.3			5.2			18.7	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	0	5	2	27	2	55	6	88	17	127	41	3
Peak Hour Factor	0.42	0.42	0.42	0.67	0.67	0.67	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	12	5	40	3	82	7	106	20	153	49	4

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	17	125	134	206
Volume Left (vph)	0	40	7	153
Volume Right (vph)	5	82	20	4
Hadj (s)	-0.14	-0.29	-0.05	0.17
Departure Headway (s)	4.7	4.4	4.4	4.6
Degree Utilization, x	0.02	0.15	0.16	0.26
Capacity (veh/h)	692	752	776	756
Control Delay (s)	7.8	8.2	8.3	9.2
Approach Delay (s)	7.8	8.2	8.3	9.2
Approach LOS	A	A	A	A

Intersection Summary				
Delay		8.6		
HCM Level of Service		A		
Intersection Capacity Utilization		34.4%	ICU Level of Service	A
Analysis Period (min)		15		

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↱		↱
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			150	0	0
Storage Lanes	0			1	0	1
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.865
Flt Protected						
Satd. Flow (prot)	0	1863	1863	1583	0	1611
Flt Permitted						
Satd. Flow (perm)	0	1863	1863	1583	0	1611
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		35	35		15	
Link Distance (ft)		473	447		328	
Travel Time (s)		9.2	8.7		14.9	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑	↱		↱
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	1265	836	8	0	6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1375	909	9	0	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		473	447			
pX, platoon unblocked	0.67				0.53	0.67
vC, conflicting volume	917				2284	909
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	877				2482	864
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	97
cM capacity (veh/h)	518				17	238

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	1375	909	9	7
Volume Left	0	0	0	0
Volume Right	0	0	9	7
cSH	1700	1700	1700	238
Volume to Capacity	0.81	0.53	0.01	0.03
Queue Length 95th (ft)	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	20.6
Lane LOS				C
Approach Delay (s)	0.0	0.0		20.6
Approach LOS				C

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		69.9%	ICU Level of Service C
Analysis Period (min)		15	

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	150			150	0	0
Storage Lanes	1			1	1	1
Turning Speed (mph)	15			9	15	9
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1863	1583	1770	1583
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Link Speed (mph)		35	35		15	
Link Distance (ft)		857	1053		680	
Travel Time (s)		16.7	20.5		30.9	

Intersection Summary	
Area Type:	Other

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	26	1192	745	36	28	42
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	1296	810	39	30	46
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		857				
pX, platoon unblocked					0.23	
vC, conflicting volume	849				2162	810
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	849				5974	810
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				0	88
cM capacity (veh/h)	789				0	380

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	28	1296	810	39	30	46
Volume Left	28	0	0	0	30	0
Volume Right	0	0	0	39	0	46
cSH	789	1700	1700	1700	0	380
Volume to Capacity	0.04	0.76	0.48	0.02	955.61	0.12
Queue Length 95th (ft)	3	0	0	0	Err	10
Control Delay (s)	9.7	0.0	0.0	0.0	Err	15.8
Lane LOS	A				F	C
Approach Delay (s)	0.2		0.0		4009.1	
Approach LOS					F	

Intersection Summary				
Average Delay	135.8			
Intersection Capacity Utilization	72.7%	ICU Level of Service		C
Analysis Period (min)	15			

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	166	1211	792	62	171	123
Act Effct Green (s)	96.6	96.6	70.8	70.8	15.4	15.4
Actuated g/C Ratio	0.80	0.80	0.59	0.59	0.13	0.13
v/c Ratio	0.27	0.81	0.72	0.06	0.75	0.40
Control Delay	7.5	13.4	11.6	0.1	70.3	11.8
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	7.5	13.5	11.6	0.1	70.3	11.8
LOS	A	B	B	A	E	B
Approach Delay		12.8	10.7		45.8	
Approach LOS		B	B		D	
Queue Length 50th (ft)	37	421	312	1	128	0
Queue Length 95th (ft)	m41	m425	m264	m0	203	55
Internal Link Dist (ft)		367	777		1472	
Turn Bay Length (ft)	150			150		150
Base Capacity (vph)	618	1499	1273	1098	266	342
Starvation Cap Reductn	0	25	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.82	0.62	0.06	0.64	0.36

Intersection Summary			
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 73 (61%), Referenced to phase 2:WBT and 6:EBTL, Start of Green			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 16.0		Intersection LOS: B	
Intersection Capacity Utilization 74.0%		ICU Level of Service D	
Analysis Period (min) 15			

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

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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	4.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.20	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	366	1863	1863	1583	1770	1583
Volume (vph)	153	1114	729	57	157	113
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	166	1211	792	62	171	123
RTOR Reduction (vph)	0	0	0	21	0	107
Lane Group Flow (vph)	166	1211	792	41	171	16
Turn Type	pm+pt			Perm		Perm
Protected Phases	1	6	2		8	
Permitted Phases	6			2		8
Actuated Green, G (s)	96.6	96.6	70.8	70.8	15.4	15.4
Effective Green, g (s)	96.6	96.6	70.8	70.8	15.4	15.4
Actuated g/C Ratio	0.80	0.80	0.59	0.59	0.13	0.13
Clearance Time (s)	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
Lane Grp Cap (vph)	550	1500	1099	934	227	203
v/s Ratio Prot	0.05	c0.65	0.43		c0.10	
v/s Ratio Perm	0.19			0.03		0.01
v/c Ratio	0.30	0.81	0.72	0.04	0.75	0.08
Uniform Delay, d1	18.6	6.5	17.5	10.4	50.5	46.0
Progression Factor	1.60	1.43	0.53	0.01	1.00	1.00
Incremental Delay, d2	0.1	1.9	2.6	0.1	13.2	0.2
Delay (s)	29.8	11.3	11.8	0.2	63.7	46.2
Level of Service	C	B	B	A	E	D
Approach Delay (s)		13.5	11.0		56.4	
Approach LOS		B	B		E	

Intersection Summary				
HCM Average Control Delay	17.6	HCM Level of Service	B	
HCM Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	8.0	
Intersection Capacity Utilization	74.0%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Detailed Segment Analysis

Arterial Level of Service: NB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	123.2	96.5	219.7	1.20	19.6	C
Total	III		123.2	96.5	219.7	1.20	19.6	C

Arterial Level of Service: SB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Peachtree Road	III	35	123.2	57.1	180.3	1.20	23.9	C
Total	III		123.2	57.1	180.3	1.20	23.9	C

Arterial Level of Service: EB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	33.4	12.9	46.3	0.28	21.6	C
Ashford Dunwoody Road	III	35	17.4	9.2	26.6	0.14	18.4	C
Peachtree Industrial	III	35	79.6	41.9	121.5	0.77	22.9	C
Total	III		130.4	64.0	194.4	1.19	22.0	C

Arterial Level of Service: WB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Donaldson Drive	III	35	79.6	39.8	119.4	0.77	23.3	C
Johnson Ferry Road	III	35	17.4	24.3	41.7	0.14	11.8	E
Total	III		97.0	64.1	161.1	0.91	20.3	C

Arterial Level of Service: NB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	123.2	92.6	215.8	1.20	20.0	C
Total	III		123.2	92.6	215.8	1.20	20.0	C

Arterial Level of Service: SB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Peachtree Road	III	35	123.2	65.1	188.3	1.20	22.9	C
Total	III		123.2	65.1	188.3	1.20	22.9	C

Arterial Level of Service: EB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	33.4	45.5	78.9	0.28	12.7	E
Ashford Dunwoody Road	III	35	17.4	39.1	56.5	0.14	8.7	F
Peachtree Industrial	III	35	79.6	16.2	95.8	0.77	29.1	B
Total	III		130.4	100.8	231.2	1.19	18.5	C

Arterial Level of Service: WB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Donaldson Drive	III	35	79.6	14.6	94.2	0.77	29.6	B
Johnson Ferry Road	III	35	17.4	20.2	37.6	0.14	13.0	E
Total	III		97.0	34.8	131.8	0.91	24.9	B

Arterial Level of Service: NB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	123.2	90.4	213.6	1.20	20.2	C
Total	III		123.2	90.4	213.6	1.20	20.2	C

Arterial Level of Service: SB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Peachtree Road	III	35	123.2	77.3	200.5	1.20	21.5	C
Total	III		123.2	77.3	200.5	1.20	21.5	C

Arterial Level of Service: EB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	33.4	13.2	46.6	0.28	21.5	C
Ashford Dunwoody Road	III	35	17.4	12.3	29.7	0.14	16.5	D
Peachtree Industrial	III	35	79.6	55.4	135.0	0.77	20.6	C
Total	III		130.4	80.9	211.3	1.19	20.2	C

Arterial Level of Service: WB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Donaldson Drive	III	35	79.6	109.2	188.8	0.77	14.8	D
Johnson Ferry Road	III	35	17.4	65.1	82.5	0.14	5.9	F
Total	III		97.0	174.3	271.3	0.91	12.1	E

Arterial Level of Service: NB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Windsor Parkway	III	35	42.0	11.7	53.7	0.35	23.4	C
Johnson Ferry Road	III	35	87.2	43.7	130.9	0.85	23.3	C
Total	III		129.2	55.4	184.6	1.20	23.4	C

Arterial Level of Service: SB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Windsor Parkway	III	35	87.2	2.7	89.9	0.85	33.9	A
Peachtree Road	III	35	42.0	74.2	116.2	0.35	10.8	E
Total	III		129.2	76.9	206.1	1.20	20.9	C

Arterial Level of Service: EB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	33.4	13.2	46.6	0.28	21.5	C
Ashford Dunwoody Road	III	35	17.4	17.1	34.5	0.14	14.2	D
Peachtree Industrial	III	35	79.6	50.5	130.1	0.77	21.4	C
Total	III		130.4	80.8	211.2	1.19	20.3	C

Arterial Level of Service: WB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Donaldson Drive	III	35	79.6	29.2	108.8	0.77	25.6	B
Johnson Ferry Road	III	35	17.4	74.8	92.2	0.14	5.3	F
Total	III		97.0	104.0	201.0	0.91	16.3	D

Arterial Level of Service: NB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	123.2	106.0	229.2	1.20	18.8	C
Total	III		123.2	106.0	229.2	1.20	18.8	C

Arterial Level of Service: SB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Peachtree Road	III	35	123.2	100.1	223.3	1.20	19.3	C
Total	III		123.2	100.1	223.3	1.20	19.3	C

Arterial Level of Service: EB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	33.4	86.6	120.0	0.28	8.3	F
Ashford Dunwoody Road	III	35	17.4	114.0	131.4	0.14	3.7	F
Peachtree Industrial	III	35	79.6	24.9	104.5	0.77	26.7	B
Total	III		130.4	225.5	355.9	1.19	12.0	E

Arterial Level of Service: WB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Donaldson Drive	III	35	79.6	17.4	97.0	0.77	28.7	B
Johnson Ferry Road	III	35	17.4	19.8	37.2	0.14	13.2	E
Total	III		97.0	37.2	134.2	0.91	24.4	B

Arterial Level of Service: NB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Windsor Parkway	III	35	42.0	15.9	57.9	0.35	21.7	C
Johnson Ferry Road	III	35	87.2	45.9	133.1	0.85	22.9	C
Total	III		129.2	61.8	191.0	1.20	22.6	C

Arterial Level of Service: SB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Windsor Parkway	III	35	87.2	12.0	99.2	0.85	30.8	A
Peachtree Road	III	35	42.0	86.3	128.3	0.35	9.8	F
Total	III		129.2	98.3	227.5	1.20	18.9	C

Arterial Level of Service: EB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	33.4	86.6	120.0	0.28	8.3	F
Ashford Dunwoody Road	III	35	17.4	30.6	48.0	0.14	10.2	E
Peachtree Industrial	III	35	79.6	14.5	94.1	0.77	29.6	B
Total	III		130.4	131.7	262.1	1.19	16.3	D

Arterial Level of Service: WB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Donaldson Drive	III	35	79.6	20.1	99.7	0.77	28.0	B
Johnson Ferry Road	III	35	17.4	22.1	39.5	0.14	12.4	E
Total	III		97.0	42.2	139.2	0.91	23.5	C

Arterial Level of Service: NB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	123.2	144.5	267.7	1.20	16.1	D
Total	III		123.2	144.5	267.7	1.20	16.1	D

Arterial Level of Service: SB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Peachtree Road	III	35	123.2	83.4	206.6	1.20	20.9	C
Total	III		123.2	83.4	206.6	1.20	20.9	C

Arterial Level of Service: EB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	33.4	14.2	47.6	0.28	21.0	C
Ashford Dunwoody Road	III	35	17.4	19.3	36.7	0.14	13.4	E
Peachtree Industrial	III	35	79.7	64.9	144.6	0.78	19.3	C
Total	III		130.5	98.4	228.9	1.19	18.7	C

Arterial Level of Service: WB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Donaldson Drive	III	35	79.7	111.8	191.5	0.78	14.6	D
Johnson Ferry Road	III	35	17.4	99.4	116.8	0.14	4.2	F
Total	III		97.1	211.2	308.3	0.91	10.6	E

Arterial Level of Service: NB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Windsor Parkway	III	35	42.0	12.1	54.1	0.35	23.3	C
Johnson Ferry Road	III	35	87.2	51.8	139.0	0.85	22.0	C
Total	III		129.2	63.9	193.1	1.20	22.3	C

Arterial Level of Service: SB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Windsor Parkway	III	35	87.2	3.2	90.4	0.85	33.8	A
Peachtree Road	III	35	42.0	77.1	119.1	0.35	10.6	E
Total	III		129.2	80.3	209.5	1.20	20.6	C

Arterial Level of Service: EB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	33.4	9.3	42.7	0.28	23.4	C
Ashford Dunwoody Road	III	35	17.4	6.1	23.5	0.14	20.9	C
Blair Circle	III	35	22.3	3.4	25.7	0.17	24.4	B
Peachtree Industrial	III	35	61.8	65.8	127.6	0.60	17.0	D
Total	III		134.9	84.6	219.5	1.19	19.5	C

Arterial Level of Service: WB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Blair Circle	III	35	61.8	18.8	80.6	0.60	26.9	B
Donaldson Drive	III	35	22.3	9.4	31.7	0.17	19.8	C
Johnson Ferry Road	III	35	17.4	37.7	55.1	0.14	8.9	F
Total	III		101.5	65.9	167.4	0.91	19.6	C

Arterial Level of Service: NB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	123.2	123.7	246.9	1.20	17.5	D
Total	III		123.2	123.7	246.9	1.20	17.5	D

Arterial Level of Service: SB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Peachtree Road	III	35	123.2	106.9	230.1	1.20	18.7	C
Total	III		123.2	106.9	230.1	1.20	18.7	C

Arterial Level of Service: EB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	33.4	126.2	159.6	0.28	6.3	F
Ashford Dunwoody Road	III	35	17.4	144.3	161.7	0.14	3.0	F
Peachtree Industrial	III	35	79.7	24.6	104.3	0.78	26.8	B
Total	III		130.5	295.1	425.6	1.19	10.1	E

Arterial Level of Service: WB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Donaldson Drive	III	35	79.7	18.9	98.6	0.78	28.3	B
Johnson Ferry Road	III	35	17.4	27.0	44.4	0.14	11.0	E
Total	III		97.1	45.9	143.0	0.91	23.0	C

Arterial Level of Service: NB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Windsor Parkway	III	35	42.0	25.0	67.0	0.35	18.8	C
Johnson Ferry Road	III	35	87.2	70.6	157.8	0.85	19.3	C
Total	III		129.2	95.6	224.8	1.20	19.2	C

Arterial Level of Service: SB Ashford Dunwoody Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Windsor Parkway	III	35	87.2	14.4	101.6	0.85	30.0	A
Peachtree Road	III	35	42.0	94.8	136.8	0.35	9.2	F
Total	III		129.2	109.2	238.4	1.20	18.1	C

Arterial Level of Service: EB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Johnson Ferry Road	III	35	33.4	47.8	81.2	0.28	12.3	E
Ashford Dunwoody Road	III	35	17.4	33.5	50.9	0.14	9.6	F
Blair Circle	III	35	22.3	13.4	35.7	0.17	17.6	D
Peachtree Industrial	III	35	61.8	40.3	102.1	0.60	21.2	C
Total	III		134.9	135.0	269.9	1.19	15.9	D

Arterial Level of Service: WB Johnson Ferry Road

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Blair Circle	III	35	61.8	11.6	73.4	0.60	29.5	B
Donaldson Drive	III	35	22.3	3.3	25.6	0.17	24.5	B
Johnson Ferry Road	III	35	17.4	58.2	75.6	0.14	6.5	F
Total	III		101.5	73.1	174.6	0.91	18.8	C

Traffic Volume Worksheets

06-090 Johnson Ferry East DRI
Traffic Volumes
Future Conditions

A&R Engineering
November-06

Ashford Dunwoody Road @ West Nancy Creek 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:	122	857	31	1010	17	633	35	685	41	20	98	159	63	45	20	128
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	141	993	36	1171	20	734	41	794	48	23	114	184	73	52	23	148
Total New Trips	2	14	3	19	0	14	0	14	0	0	2	2	4	0	0	4
Future Traffic Volumes:	143	1007	39	1190	20	748	41	808	48	23	116	186	77	52	23	152

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:	100	678	104	882	28	898	21	947	35	115	194	344	43	42	15	100
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	116	786	121	1022	32	1041	24	1098	41	133	225	399	50	49	17	116
Total New Trips	3	21	5	29	0	22	0	22	0	0	4	4	5	0	0	5
Future Traffic Volumes:	119	807	126	1051	32	1063	24	1120	41	133	229	403	55	49	17	121

06-090 Johnson Ferry East DRI

Traffic Volumes
Future Conditions

A&R Engineering
November-06

Ashford Dunwoody Road @ Harts Mill Road / Marist School 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:	95	644	21	760	86	526	0	612	55	58	62	175	69	79	256	404
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	110	747	24	881	100	610	0	709	64	67	72	203	80	92	297	468
Total New Trips	0	19	3	22	0	20	0	20	0	0	0	0	4	0	0	4
Future Traffic Volumes:	110	766	27	903	100	630	0	729	64	67	72	203	84	92	297	472

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:	37	645	69	751	339	763	0	1102	73	67	42	182	43	26	109	178
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	43	748	80	871	393	885	0	1278	85	78	49	211	50	30	126	206
Total New Trips	0	29	5	34	0	31	0	31	0	0	0	0	5	0	0	5
Future Traffic Volumes:	43	777	85	905	393	916	0	1309	85	78	49	211	55	30	126	211

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Traffic Volumes
Future Conditions

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Ashford Dunwoody Road @ 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:	796	623	0	1419	0	480	106	586	112	0	342	454	0	0	0	0
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	923	722	0	1645	0	556	123	679	130	0	396	526	0	0	0	0
Total New Trips	20	22	0	42	0	24	0	24	0	0	20	20	0	0	0	0
Future Traffic Volumes:	943	744	0	1687	0	580	123	703	130	0	416	546	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:	389	586	0	975	0	651	128	779	68	0	741	809	0	0	0	0
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	451	679	0	1130	0	755	148	903	79	0	859	938	0	0	0	0
Total New Trips	30	34	0	64	0	36	0	36	0	0	31	31	0	0	0	0
Future Traffic Volumes:	481	713	0	1194	0	791	148	939	79	0	890	969	0	0	0	0

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Traffic Volumes
Future Conditions

A&R Engineering
November-06

Ashford Dunwoody Road / Donaldson Drive @ Johnson Ferry Road

A.M. Peak Hour

	Northbound				Southbound				Eastbound				Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	520	41	12	573	27	107	43	177	38	385	426	849	91	905	13	1009
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	603	48	14	664	31	124	50	205	44	446	494	984	105	1049	15	1170
Base Rediverted Traffic	603	48	14	665	0	0	50	50	0	490	494	984	229	1049	15	1293
Total New Trips	0	8	13	21	0	0	13	13	0	44	0	44	12	30	3	45
Future Traffic Volumes (With Rediverted Base Traff	603	56	27	686	0	0	63	63	0	534	494	1028	241	1079	18	1338
Future Trrafic Volumes (With No Rediverted Traffic	603	56	27	685	31	124	63	218	44	490	494	1028	117	1079	18	1215

P.M. Peak Hour

	Northbound				Southbound				Eastbound				Westbound			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	464	49	19	532	46	55	40	141	39	916	393	1348	77	503	32	612
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	538	57	22	617	53	64	46	163	45	1062	456	1563	89	583	37	709
Base Rediverted Traffic	538	57	22	617	0	0	46	46	0	1107	456	1563	153	583	37	773
Total New Trips	0	13	19	32	0	0	20	20	0	67	0	67	18	46	5	69
Future Traffic Volumes (With Rediverted Base Traff	538	70	41	649	0	0	66	66	0	1174	456	1630	171	629	42	842
Future Traffic Volumes (With No Rediverted Traffic	538	70	41	649	53	64	66	183	45	1129	456	1630	107	629	42	778

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Traffic Volumes
Future Conditions

A&R Engineering
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Ashford Dunwoody Road @ Windsor Parkway

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:	90	525	0	615	0	466	74	540	74	0	128	202	0	0	0	0
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	104	609	0	713	0	540	86	626	86	0	148	234	0	0	0	0
Total New Trips	0	12	0	12	0	3	6	9	6	0	0	6	0	0	0	0
Future Traffic Volumes:	104	621	0	725	0	543	92	635	92	0	148	240	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:	122	408	0	530	0	480	127	607	132	0	181	313	0	0	0	0
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	141	473	0	614	0	556	147	704	153	0	210	363	0	0	0	0
Total New Trips	0	18	0	18	0	4	9	13	9	0	0	9	0	0	0	0
Future Traffic Volumes:	141	491	0	632	0	560	156	717	162	0	210	372	0	0	0	0

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Traffic Volumes
Future Conditions

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Ashford Dunwoody Road @ Peachtree 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:	0	0	0	0	174	0	318	492	226	829	0	1055	0	1288	333	1621
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	0	0	0	202	0	369	570	262	961	0	1223	0	1493	386	1879
Total New Trips	0	0	0	0	0	0	3	3	12	18	0	30	0	26	0	26
Future Traffic Volumes:	0	0	0	0	202	0	372	573	274	979	0	1253	0	1519	386	1905

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	0	0	0	371	0	227	598	342	1439	0	1781	0	1095	139	1234
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	0	0	0	430	0	263	693	396	1668	0	2065	0	1269	161	1431
Total New Trips	0	0	0	0	0	0	4	4	18	27	0	45	0	39	0	39
Future Traffic Volumes:	0	0	0	0	430	0	267	697	414	1695	0	2110	0	1308	161	1470

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Traffic Volumes
Future Conditions

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Johnson Ferry Road @ Peachtree Industrial Boulevard

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:	75	762	0	837	0	1277	1030	2307	469	0	94	563	0	0	0	0
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	87	883	0	970	0	1480	1194	2674	544	0	109	653	0	0	0	0
Total New Trips	18	0	0	18	0	0	29	29	29	0	26	55	0	0	0	0
Future Traffic Volumes:	105	883	0	988	0	1480	1223	2703	573	0	135	708	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:	126	1020	0	1146	0	987	596	1583	921	0	84	1005	0	0	0	0
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	146	1182	0	1329	0	1144	691	1835	1068	0	97	1165	0	0	0	0
Total New Trips	27	0	0	27	0	0	45	45	44	0	39	83	0	0	0	0
Future Traffic Volumes:	173	1182	0	1356	0	1144	736	1880	1112	0	136	1248	0	0	0	0

06-090 Johnson Ferry East DRI

Traffic Volumes
Future Conditions

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Johnson Ferry Road @ Keswick 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:	0	0	0	0	22	0	34	56	8	508	0	516	0	1081	19	1100
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	0	0	0	26	0	39	65	9	589	0	598	0	1253	22	1275
Total New Trips	0	0	0	0	0	0	0	0	0	55	0	55	0	47	0	47
Future Traffic Volumes:	0	0	0	0	26	0	39	65	9	644	0	653	0	1300	22	1322

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	0	0	0	20	0	22	42	38	955	0	993	0	631	52	683
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	0	0	0	23	0	26	49	44	1107	0	1151	0	732	60	792
Total New Trips	0	0	0	0	0	0	0	0	0	83	0	83	0	72	0	72
Future Traffic Volumes:	0	0	0	0	23	0	26	49	44	1190	0	1234	0	804	60	864

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Traffic Volumes
Future Conditions

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Donaldson Drive @ Blair Circle

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:	1	99	6	106	1	192	3	196	2	2	1	5	4	2	2	8
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	1	115	7	123	1	223	3	227	2	2	1	6	5	2	2	9
Base Rediverted Traffic	1	71	7	79	156	68	3	227	2	2	1	5	5	2	2	9
Pass-by Adjustment:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	2	8	10	4	2	0	6	0	0	0	0	7	0	3	10
Future Traffic Volumes (With RedivertedTraffic):	1	73	15	89	160	70	3	233	2	2	1	5	12	2	5	19
Future Traffic Volumes (With No Rediverted Traffic	1	117	15	133	5	225	3	233	2	2	1	6	12	2	5	19

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:	5	114	7	126	1	136	3	140	0	4	2	6	11	2	3	16
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	6	132	8	146	1	158	3	162	0	5	2	7	13	2	3	19
Base Rediverted Traffic	6	87	8	101	118	41	3	162	0	5	2	7	13	2	48	63
Pass-by Adjustment:	0	-4	4	0	6	-6	0	0	0	0	0	0	6	0	4	10
Total New Trips	0	3	12	15	5	4	0	9	0	0	0	0	10	0	5	15
Future Traffic Volumes (With Rediverted Traffic):	6	86	24	116	129	39	3	171	0	5	2	7	29	2	57	88
Future Traffic Volumes ((With No Rediverted Traffi	6	131	24	161	12	156	3	171	0	5	2	7	29	2	12	44

06-090 Johnson Ferry East DRI

Traffic Volumes
Future Conditions

A&R Engineering
November-06

Donaldson Drive @ West Site 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	92	0	92	0	177	0	177	0	0	0	0	0	0	0	0
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	107	0	107	0	205	0	205	0	0	0	0	0	0	0	0
Base Rediverted Traffic	0	63	0	63	0	50	0	50	0	0	0	0	0	0	0	0
Pass-by Adjustment:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	5	8	13	2	7	0	9	0	0	0	0	7	0	2	9
Future Traffic Volumes (With RedivertedTraffic):	0	68	8	76	2	57	0	59	0	0	0	0	7	0	2	9
Future Traffic Volumes (With No Rediverted Traffic	0	112	8	120	2	212	0	214	0	0	0	0	7	0	2	9

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	120	0	120	0	141	0	141	0	0	0	0	0	0	0	0
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	139	0	139	0	163	0	163	0	0	0	0	0	0	0	0
Base Rediverted Traffic	0	94	0	94	0	46	0	46	0	0	0	0	0	0	0	0
Pass-by Adjustment:	0	-2	2	0	2	-2	0	0	0	0	0	0	2	0	2	4
Total New Trips	0	7	12	19	4	10	0	14	0	0	0	0	10	0	3	13
Future Traffic Volumes (With Rediverted Traffic):	0	99	14	113	6	54	0	60	0	0	0	0	12	0	5	17
Future Traffic Volumes ((With No Rediverted Traffi	0	144	14	158	6	171	0	177	0	0	0	0	12	0	5	17

06-090 Johnson Ferry East DRI

Traffic Volumes
Future Conditions

A&R Engineering
November-06

Johnson Ferry Road @ 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	0	0	0	0	0	0	0	0	424	0	424	0	1009	0	1009
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	0	0	0	0	0	0	0	0	492	0	492	0	1170	0	1170
Base Rediverted Traffic	0	0	0	0	0	0	0	0	0	536	0	536	0	1294	0	1294
Pass-by Adjustment:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	0	0	0	0	2	2	0	57	0	57	0	44	3	47
Future Traffic Volumes (With RedivertedTraffic):	0	0	0	0	0	0	2	2	0	593	0	593	0	1338	3	1341
Future Traffic Volumes (With No Rediverted Traffic	0	0	0	0	0	0	2	2	0	549	0	549	0	1214	3	1217

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	0	0	0	0	0	0	0	0	981	0	981	0	612	0	612
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	0	0	0	0	0	0	0	0	1137	0	1137	0	709	0	709
Base Rediverted Traffic	0	0	0	0	0	0	0	0	0	1182	0	1182	0	773	0	773
Pass-by Adjustment:	0	0	0	0	0	0	3	3	0	-3	0	-3	0	-3	3	0
Total New Trips	0	0	0	0	0	0	3	3	0	86	0	86	0	66	5	71
Future Traffic Volumes (With Rediverted Traffic):	0	0	0	0	0	0	6	6	0	1265	0	1265	0	836	8	844
Future Traffic Volumes ((With No Rediverted Traffi	0	0	0	0	0	0	6	6	0	1220	0	1220	0	772	8	780

06-090 Johnson Ferry East DRI

Traffic Volumes
Future Conditions

A&R Engineering
November-06

Johnson Ferry Road @ Blair Circle

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	0	0	0	0	0	0	0	0	424	0	424	0	1009	0	1009
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	0	0	0	0	0	0	0	0	492	0	492	0	1170	0	1170
Base Rediverted Traffic	0	0	0	0	31	0	124	155	44	492	0	536	0	1170	0	1170
Pass-by Adjustment:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	0	0	43	0	25	68	46	11	0	57	0	21	30	51
Future Traffic Volumes (With RedivertedTraffic):	0	0	0	0	74	0	149	223	90	503	0	593	0	1191	30	1221
Future Traffic Volumes (With No Rediverted Traffic	0	0	0	0	43	0	25	68	46	503	0	549	0	1191	30	1221

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	0	0	0	0	0	0	0	0	981	0	981	0	612	0	612
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	0	0	0	0	0	0	0	0	1137	0	1137	0	709	0	709
Base Rediverted Traffic	0	0	0	0	53	0	64	117	45	1137	0	1182	0	709	0	709
Pass-by Adjustment:	0	0	0	0	39	0	12	51	39	-39	0	0	0	-12	12	0
Total New Trips	0	0	0	0	65	0	37	102	69	16	0	85	0	32	45	77
Future Traffic Volumes (With Rediverted Traffic):	0	0	0	0	157	0	113	270	153	1114	0	1267	0	729	57	786
Future Traffic Volumes ((With No Rediverted Traffi	0	0	0	0	104	0	49	153	108	1114	0	1222	0	729	57	786

06-090 Johnson Ferry East DRI
Traffic Volumes
Future Conditions

A&R Engineering
November-06

Johnson Ferry Road @ Durden 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:	0	0	0	0	0	0	0	0	0	424	0	424	0	1009	0	1009
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	0	0	0	0	0	0	0	0	492	0	492	0	1170	0	1170
Pass-by Adjustment:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total New Trips	0	0	0	0	12	0	15	27	11	43	0	54	0	35	12	47
Future Traffic Volumes:	0	0	0	0	12	0	15	27	11	535	0	546	0	1205	12	1217

P.M. Peak Hour

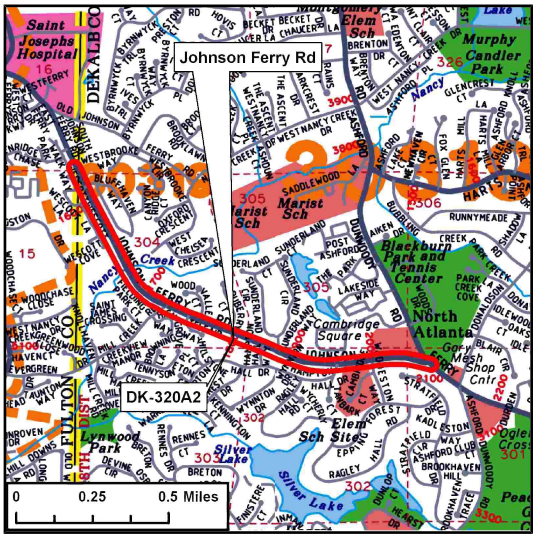
Condition	Northbound				Southbound				Eastbound				Westbound			
	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing:	0	0	0	0	0	0	0	0	0	981	0	981	0	612	0	612
Growth Factor (%):	3	3	3		3	3	3		3	3	3		3	3	3	
Base Condition:	0	0	0	0	0	0	0	0	0	1137	0	1137	0	709	0	709
Pass-by Adjustment:	0	0	0	0	10	0	19	29	10	-10	0	0	0	-18	18	0
Total New Trips	0	0	0	0	18	0	23	41	16	65	0	81	0	54	18	72
Future Traffic Volumes:	0	0	0	0	28	0	42	70	26	1192	0	1218	0	745	36	781

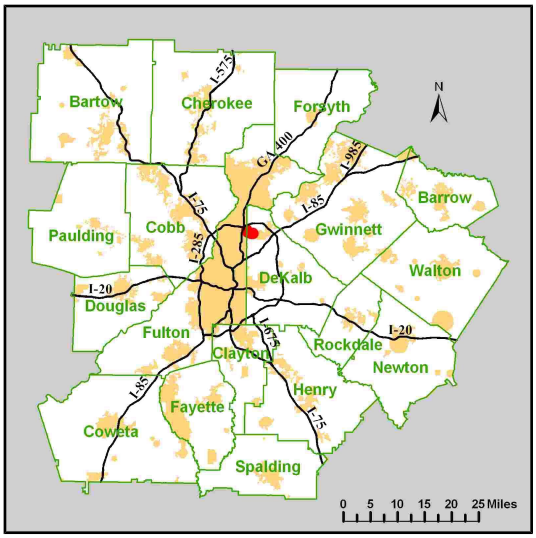
Planned and Programmed Improvements

DK-320A2

Atlanta Region - Mobility2030 Transportation Plan
PROJECT FACT SHEET

Short Title	SIDEWALKS ALONG EIGHTEEN (18) CORRIDORS PROGRAM: PHASE IB - JOHNSON FERRY ROAD FROM ASHFORD-DUNWOODY ROAD TO FULTON COUNTY LINE [SEE ALSO DK-320A1, A3, B, AND C]
GDOT Project No.	0006884
Federal ID No.	CSSTP-0006-00(884)
Status	Programmed
Detailed Description and Justification	
Service Type	Pedestrian Facility
Sponsor	DeKalb County
Jurisdiction	DeKalb County
Existing Thru Lane	N/A *(applicable for road projects only)*
Planned Thru Lane	N/A *(applicable for road projects only)*
Corridor Length	1.42 miles *(not applicable for all project types)*
Network Year	2010 *(required if modeled for conformity)*
Completion Date	2009
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	Local Jurisdiction/Municipality Funds	AUTH	**$0,000**	$0,000	$0,000	$0,000	$0,000
ROW	Local Jurisdiction/Municipality Funds	2006	**$250,000**	$0,000	$0,000	$0,000	$250,000
CST	STP - Urban (>200K) (ARC)	2008	**$660,000**	$528,000	$0,000	$0,000	$132,000
				$528,000	**$0,000**	**$0,000**	**$382,000**

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

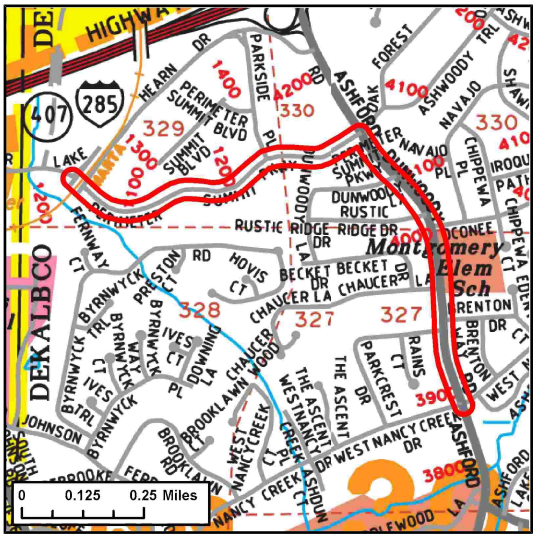
? For additional information about this project, please visit the Atlanta Regional Commission at www.atlantaregional.com or call (404) 463-3100.

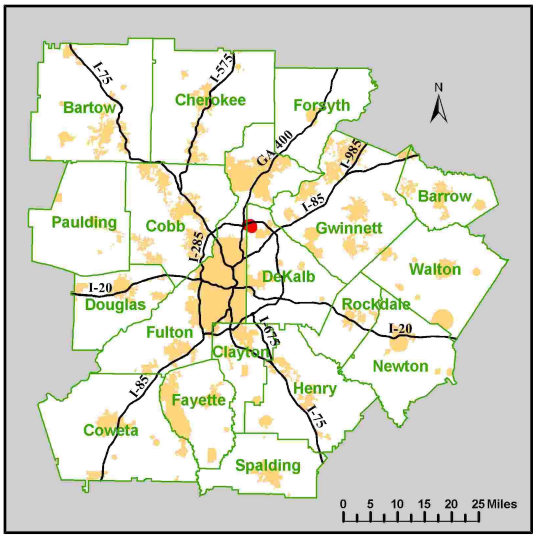
Report Generated: 9/21/2006

DK-AR-BP047

Atlanta Region - Mobility2030 Transportation Plan
PROJECT FACT SHEET

Short Title	ASHFORD DUNWOODY ROAD SIDEWALKS AND BIKE LANES FROM WEST NANCY CREEK ROAD TO PERIMETER SUMMIT PARKWAY AND ALONG PERIMETER SUMMIT PARKWAY TO LAKE HEARN ROAD
GDOT Project No.	0006811
Federal ID No.	CSSTP-0006-00(811)
Status	Programmed
Detailed Description and Justification	The project is a joint effort between DeKalb County and the Perimeter Community Improvement District (PCID) to close an existing gap between two projects. The proposed project would provide 4' on-street bike lanes in both directions and 5' sidewalks on both sides of the road along Ashford-Dunwoody Road from approximately 400' north of West Nancy Creek Drive to Perimeter Summit Parkway (approximately 2800'). The project would then continue along Perimeter Summit Parkway from Ashford-Dunwoody Road to Lake Hearn Drive (approximately 3500').
Service Type	Bicycle/Pedestrian Facility
Sponsor	Perimeter CID - DeKalb
Jurisdiction	DeKalb County
Existing Thru Lane	N/A *(applicable for road projects only)*
Planned Thru Lane	N/A *(applicable for road projects only)*
Corridor Length	1.5 miles *(not applicable for all project types)*
Network Year	2010 *(required if modeled for conformity)*
Completion Date	2009
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
CST	STP - Urban (>200K) (ARC)	2009	**$1,670,000**	$1,336,000	$0,000	$0,000	$334,000
				$1,336,000	**$0,000**	**$0,000**	**$334,000**

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: 9/21/2006

MARTA Information

Metropolitan Atlanta Rapid Transit Authority

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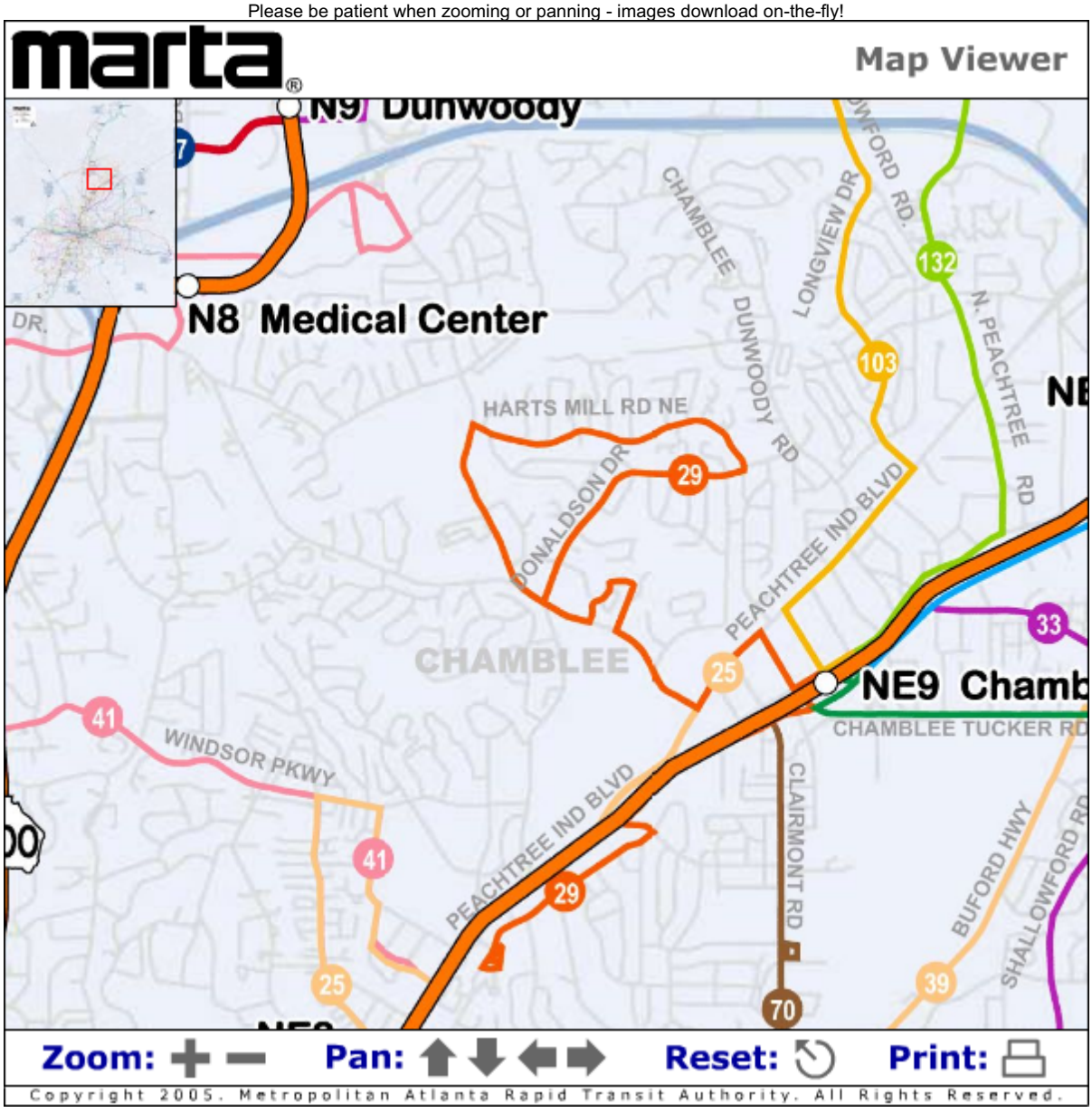
Map Viewer

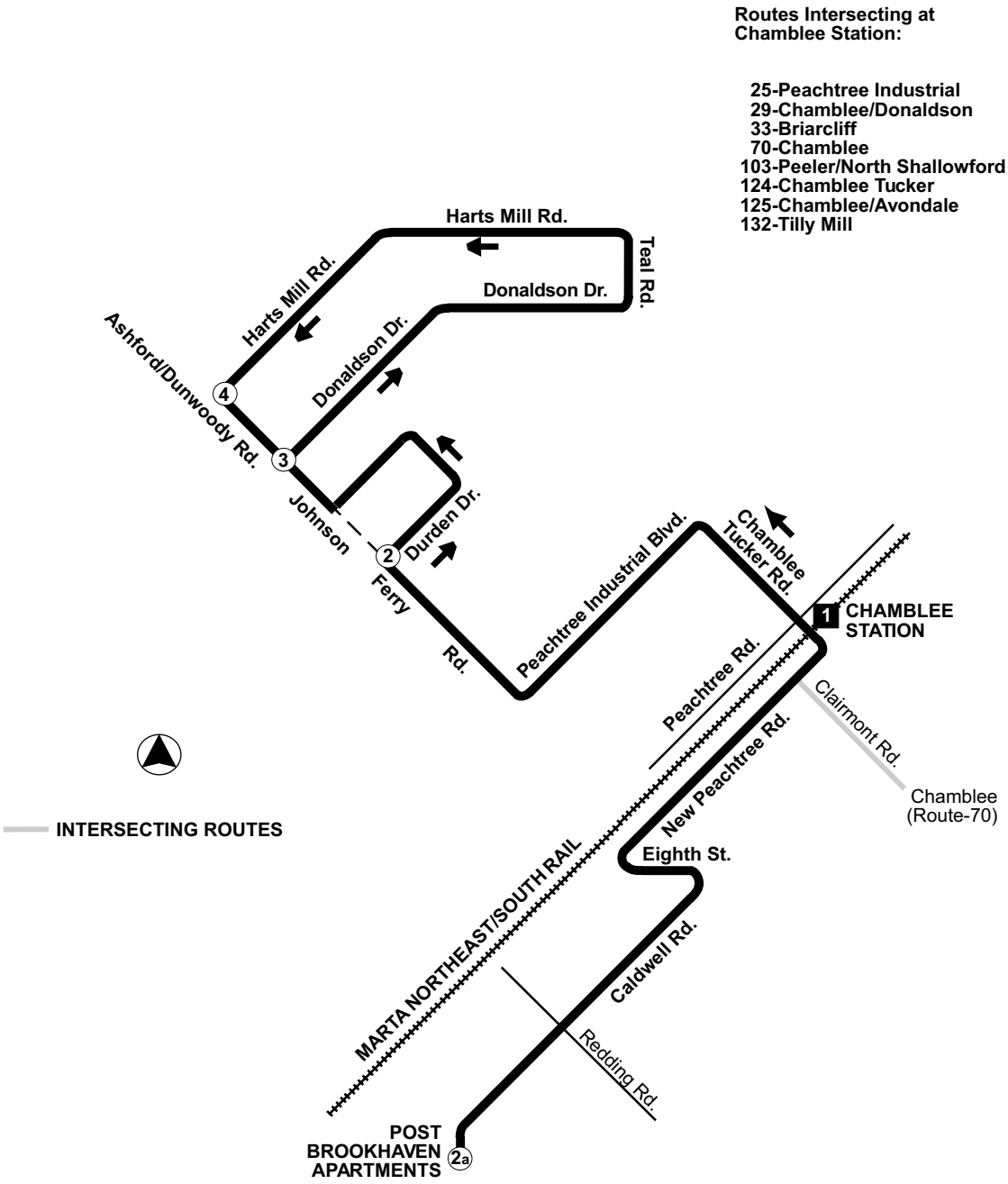
Map Viewer

- How To Use This Map
- Other Helpful Maps

Please be patient when zooming or panning - images download on-the-fly!



The use of this Map Viewer requires **Macromedia Flash Player version 7 or later.**.


Routes Intersecting at Chamblee Station:
25-Peachtree Industrial
29-Chamblee/Donaldson
33-Briarcliff
70-Chamblee
103-Peeler/North Shallowford
124-Chamblee Tucker
125-Chamblee/Avondale
132-Tilly Mill
Harts Mill Rd.
Harts Mill Rd.
Teal Rd.
Donaldson Dr.
Donaldson Dr.
Ashford/Dunwoody Rd.
4
3
Johnson Ferry Rd.
2
Durden Dr.
Peachtree Industrial Blvd.
Chamblee Tucker Rd.
1
CHAMBLEE STATION
Peachtree Rd.
Clairmont Rd.
Chamblee (Route-70)
New Peachtree Rd.
Eighth St.
MARTA NORTHEAST/SOUTH RAIL
Caldwell Rd.
Redding Rd.
POST BROOKHAVEN APARTMENTS
2a
INTERSECTING ROUTES

Route 29 - Chamblee/Donaldson - Description

Effective July 23, 2005

Return to Route 29 home page

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

NORTHBOUND ROUTINGFROM CHAMBLEE STATION

1. Via:
2. Left onto Peachtree Rd.
3. Right onto Chamblee Tucker Rd.
4. Left onto Peachtree Ind. Blvd.
5. Right onto Johnson Ferry Rd.
6. Right onto Durden Dr.
7. Continue onto Durden Dr.
8. Right onto Johnson Ferry Rd.
9. Right onto Donaldson Dr.
10. Left onto Teal Rd.
11. Left onto Harts Mill Rd.
12. Left onto Ashford-Dunwoody Rd.
13. Continue onto Left on Johnson Ferry Rd.
14. Left onto Durden Dr.
15. Continue onto Durden Dr.
16. Left onto Johnson Ferry Rd.
17. Left onto Peachtree Ind. Blvd.
18. Right onto Chamblee Tucker Rd.
19. Left onto Peachtree Rd.
20. Right onto Driveway to Chamblee Station

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SOUTHBOUND ROUTINGFROM CHAMBLEE STATION

1. TO POST BROOKHAVEN APTS. VIA:
2. Left onto Peachtree Rd.
3. Left onto Chamblee Tucker Rd.
4. Right onto New Peachtree Rd.
5. Continue onto Eighth St.
6. Right onto Caldwell Rd.
7. Left onto Redding Rd.
8. Immediate Right back onto Caldwell Rd.
9. Left onto Brookhaven Circle
10. (Main Entrance

11. To Post Brookhaven Apts.)
12. Loop at sign and Return
13. Right onto Caldwell Rd
14. Left onto Redding Rd.
15. Immediate Right back onto Caldwell Rd.
16. Continue onto Left onto Caldwell Rd.
17. Left onto Eighth St.
18. Continue onto New Peachtree Rd.
19. Left onto Chamblee Tucker Rd.
20. Right onto Peachtree Rd
21. Right onto Driveway to Chamblee Station

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Proposed Facility Site Plan