Buford Jubilee

City of Buford, Georgia
DRI No. 1836

GRTA / ARC
DRI Review Package

Site Plan Elements
Traffic Impact Analysis
Area of Influence Analysis
DRI Review Criteria
Air Quality Benchmark Statement

Prepared for:

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REVISED August 2008

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EXECUTIVE SUMMARY

SITE INFORMATION: This report presents a variety of analyses and documentation for submittal as the major portion of the Georgia Regional Transportation Authority (GRTA) Development of Regional Impact (DRI) Review Package. There are several additional sections either required by, or specially requested by the Atlanta Regional Commission (ARC). This bulk of this report, however, presents an analysis of the traffic impact expected to result from the mixed-use development located in northern Gwinnett County, between Maddox Road to the north, SR 20 to the south, and I-985 to the east. The site has been annexed into the City of Buford, and is called Buford Jubilee. The Site will be developed in a number of Phases for marketing purposes, but only Build-Out was analyzed, and this report addresses the analyses and findings at Site Build-Out. The Build-Out Year for the Site is anticipated to be 2015. The proposed development consists of approximately 290,000 square feet of retail space, 400,000 square feet of office space, two hotels totaling 300 rooms, 69,000 square feet of indoor-outdoor water park (plus associated amenities), 275 residential lofts, and a 9-hole golf course (with a 5,000 square foot club house). The site will have seven access points to the external road network. The Site will be built under the existing C-2 (commercial) zone. Further, since the Water Park was added to the Site Concept Plan, the applicant has successfully completed the Special Permit process to allow this new land use. The City of Buford *Future Land Use Plan Map* (2003) shows most of this site as Commercial/Retail, with some as Low Density Residential.

SITE TRIPS: At Site Build-Out (Year 2015), the Site is expected to generate approximately 23,200 new vehicle trips per day (gross), but after internal capture and pass-by trips are considered, it will generate approximately 15,700 new external trips (to/from the site) per day. Approximately 1041 new external trips (754 in and 287 out) will be generated during the AM peak hour, approximately 1634 new external trips (618 in and 1016 out) will be generated during the PM peak hour, and 1779 new external trips (896 in and 883 out) will be generated during the Saturday peak hour.

Due to the mixed use nature of the site, and the need to distribute traffic differently for retail, office, and residential, the distribution of site trips is more complicated than usual. Please see Figure 3-1 for the site's trip distribution.

AREA OF INFLUENCE: The Site is located within an Area of Influence with housing opportunities such that approximately 100% of the persons who are reasonably anticipated to work at the Site will have an opportunity to find housing within the Area of Influence.

FINDINGS AND CONCLUSIONS: The Site is NOT located in an area where the anticipated level of development and availability of infrastructure within the study network is such that the Site is reasonably anticipated to result in unplanned and poorly served development. As shown in the traffic impact analysis, the roadways and intersections serving the Site can be reasonably expected to operate at adequate Levels of Service (LOS), and/or may be mitigated and improved readily so that they will operate at adequate LOS. The required improvements are shown in the following table.

REQUIRED IMPROVEMENTS

Intersection	Existing Conditions	Future Background Conditions	Future Year Total Conditions
No. 1 - SR 20 at Gravel Springs Road	add 2nd SB left turn lane, change phasing for SB left turn to protected only, add separate WB left turn lane, change WB left+through lane to through-only lane, & optimize traffic signal timing	add 2nd SB left turn lane, change phasing for SB left turn to protected only, add separate WB left turn lane, change WB left+through lane to through-only lane, & optimize traffic signal timing	add 3rd NB through lane, add 2nd SB left turn lane, change phasing for SB left turn to protected only, & optimize traffic signal timing
No. 4 - SR 20 at Satellite Boulevard	N.A.	N.A.	convert 1 of 2 existing NB left turn lanes to through lane, add 2 SB left turn lanes, add 1 SB through lane, add 1 SB right turn lane, convert existing EB U-turn lane to U-turn+left turn lane, add 2nd EB left turn lane, convert existing EB right turn lane to EB through+right turn lane, add 2nd WB left turn lane, add 3rd WB through lane, add free-flow WB right turn lane, change phasing for EB & WB left turns to protected only, & optimize traffic signal timing
No. 5 - SR 20 at South Lee Street	N.A.	change existing 3 lanes on SB approach to 2 exclusive left turn lanes & 1 combined through-right lane, remove split phasing for NB & SB approaches, change phasing for NB & SB left turns to protected only, change phasing for NB right turn to permitted+overlap, & optimize traffic signal timing	change existing 3 lanes on SB approach to 2 exclusive left turn lanes & 1 combined through-right lane, remove split phasing for NB & SB approaches, change phasing for NB & SB left turns to protected only, change phasing for NB right turn to permitted+overlap, add 2nd EB left turn lane, change control on WB right turn lane from free-flow to yield, add 3rd WB through lane, & optimize traffic signal timing
No. 6 - SR 20 at Buford Hwy	N.A.	add 3rd through lane to EB approach & optimize traffic signal timing	add 3rd through lane to EB & WB approaches & optimize traffic signal timing
No. 8 - South Lee Street at Maddox Road	N.A.	N.A.	provide for 1 exclusive left turn lane & 1 combined through-right turn lane on WB approach

PROJECT SUMMARY

Name and Number of DRI	Buford Jubilee (DRI No. 1836)
Jurisdiction	City of Buford
Local Development Approval Sought	Re-Zoning
Location	Southeastern Buford, at intersection of SR 20 and Satellite Boulevard
Uses and Intensities of Uses Proposed	290,000 square feet of Retail
	400,000 square feet of Office
	300 Hotel rooms
	69,000 square feet of indoor-outdoor Water Park, plus associated amenities
	275 Residential lofts
	9-hole Golf Course with 5,000 square foot Club House
Project Phasing and Build-Out	2015
Trip Generation (ADT, AM, PM, SAT Peak) Net New External Trips	15,700/1041/1634/1779

1. INTRODUCTION

This report presents a variety of analyses and documentation for submittal as the major portion of the Georgia Regional Transportation Authority (GRTA) Development of Regional Impact (DRI) Review Package for the proposed Buford Jubilee development. It also contains several items either required by, or specially requested by the Atlanta Regional Commission (ARC). These analyses have been initiated in response to the recent re-zoning/special permit process (since the Water Park was added to the Site Concept Plan, the applicant has successfully completed the Special Permit process to allow this new land use). Due to the size and characteristics of the Site, it qualifies for a DRI level of review and analysis per rules and guidelines established by GRTA, ARC, and the Georgia Department of Community Affairs (DCA). The Applicant has elicited to undertake the GRTA review via the Non-Expedited Review Process.

Buford Jubilee is a mixed-use development located in northern Gwinnett County, between Maddox Road to the north, SR 20 to the south, and I-985 to the east. The site has been annexed into the City of Buford, and will be built under the existing C-2 (commercial) zone. The proposed development consists of approximately 290,000 square feet of retail space, 400,000 square feet of office space, two hotels totaling 300 rooms, 69,000 square feet of indoor-outdoor water park (plus associated amenities), 275 residential lofts, and a 9-hole golf course (with a 5,000 square foot club house). The site will have seven access points to the external road network. The Site will be developed in a number of Phases for marketing purposes, but only Build-Out was analyzed, and this report addresses the analyses and findings at Site Build-Out. The Build-Out Year for the Site is 2015.

2.1 Project Description

The Site is located in northern Gwinnett County, between Maddox Road to the north, SR 20 to the south, and I-985 to the east, within the City of Buford. Figure 2-1 shows the Site Orientation with respect to the surrounding communities and interstates and provides a more detailed Site Location Map showing the roadways in the immediate vicinity of the Site. Figure 2-2 shows an aerial photograph of the near vicinity of the Site.

2.2 Site Plan – Types and Amounts of Development

The Site is proposed to be a mixed-use development containing retail, office, and residential, all tied together with recreational amenities in a form of live–work–play environment. The Build-Out Year for the Site is 2015, and it will consist of approximately 290,000 square feet of retail space, 400,000 square feet of office space, two hotels totaling 300 rooms, 69,000 square feet of indoor-outdoor water park (plus associated amenities), 275 residential lofts, and a 9-hole golf course (with a 5,000 square foot club house). The Site Plan is shown in Figure 2-3.

The adjacent land uses on South Lee Street between US 23/SR 13 and SR 20 include office/professional, commercial/retail, estate residential parcels, single-family residential and religious uses. Maddox Road land uses include estate residential, single-family residential and undeveloped land. Land uses on SR 20 between US 23/SR 13 and I-985 consist of commercial/retail developments. Satellite Boulevard land uses in the vicinity of the site include commercial, residential and undeveloped land.

2.3 Consistency with Adopted Comprehensive Plans

Although shown on the *City of Buford Existing Land Use Map (June 2007)*, as large lot residential, the site has since been re-zoned as C-2 (commercial). Further, since the Water Park was added to the Site Concept Plan, the applicant has successfully completed the Special Permit process to allow this new land use. The City of Buford *Future Land Use Plan Map* (2003) shows most of this site as Commercial/Retail, with some as Low Density Residential.

2.4 Project Phasing Schedule

The Site will be developed in a number of Phases for marketing purposes, however the analyses and report focus only upon the conditions at Site Build-Out. The Build-Out Year for the Site is 2015.

Figure 2-1. Site Orientation and Site Location Maps

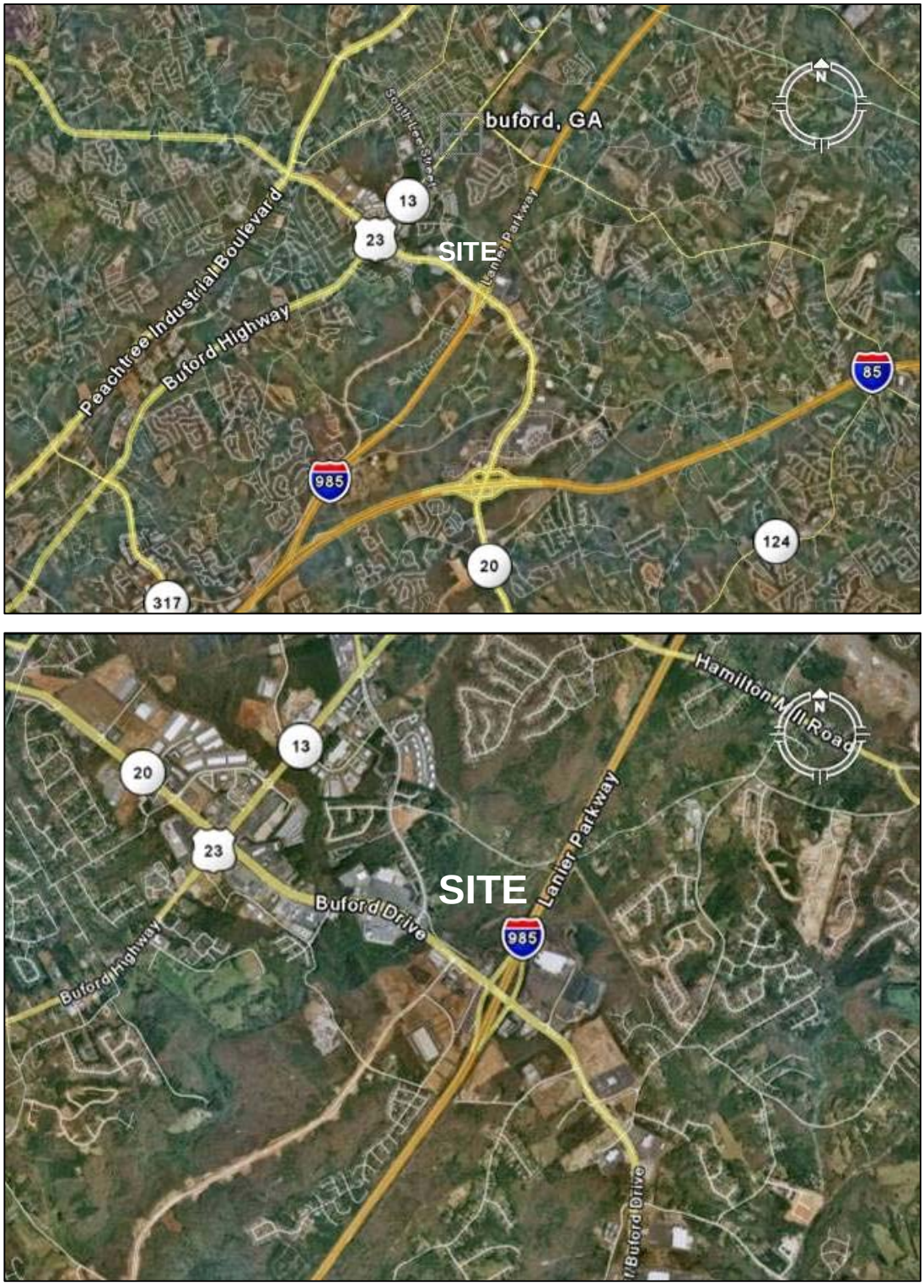


Figure 2-2. Site Aerial

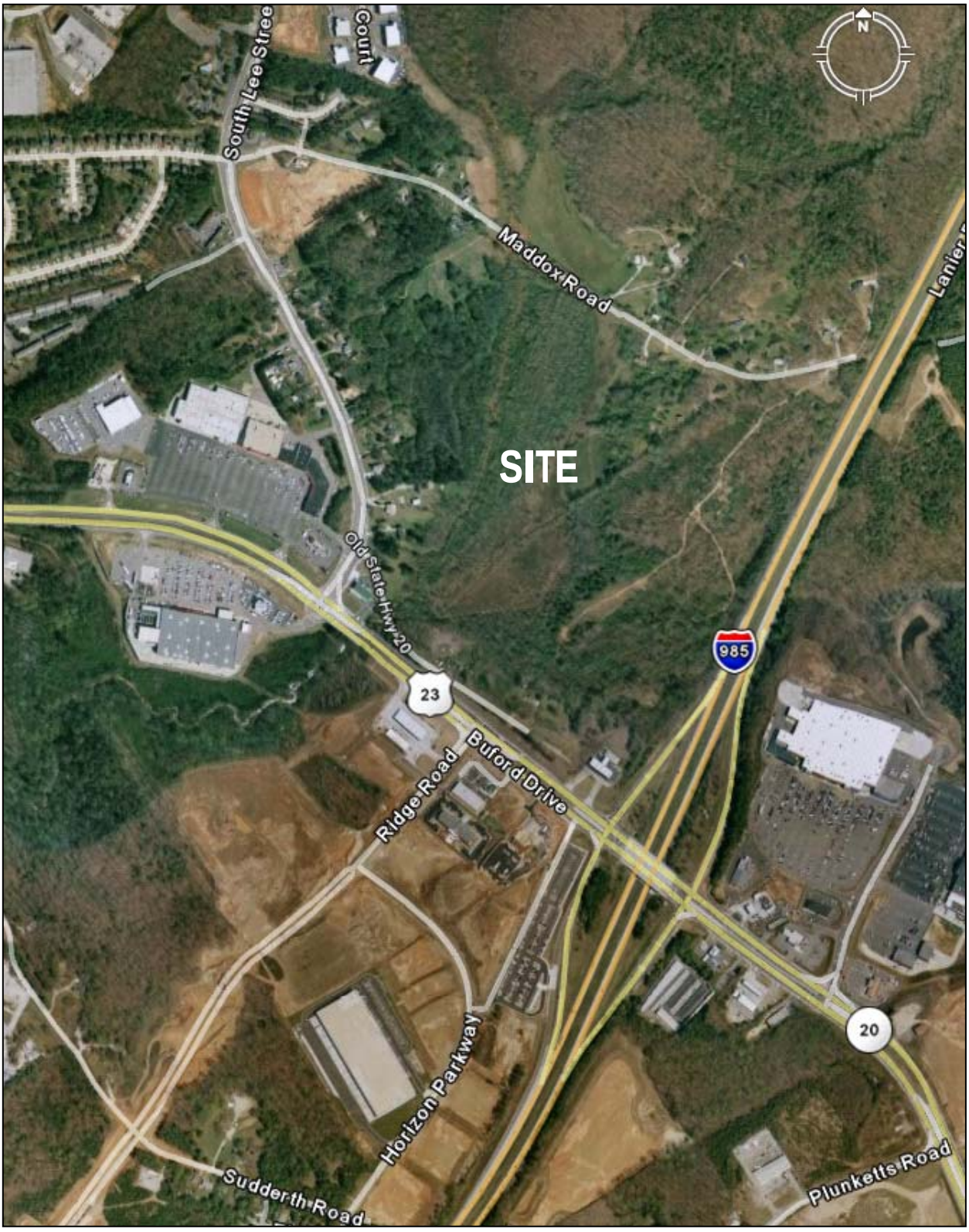
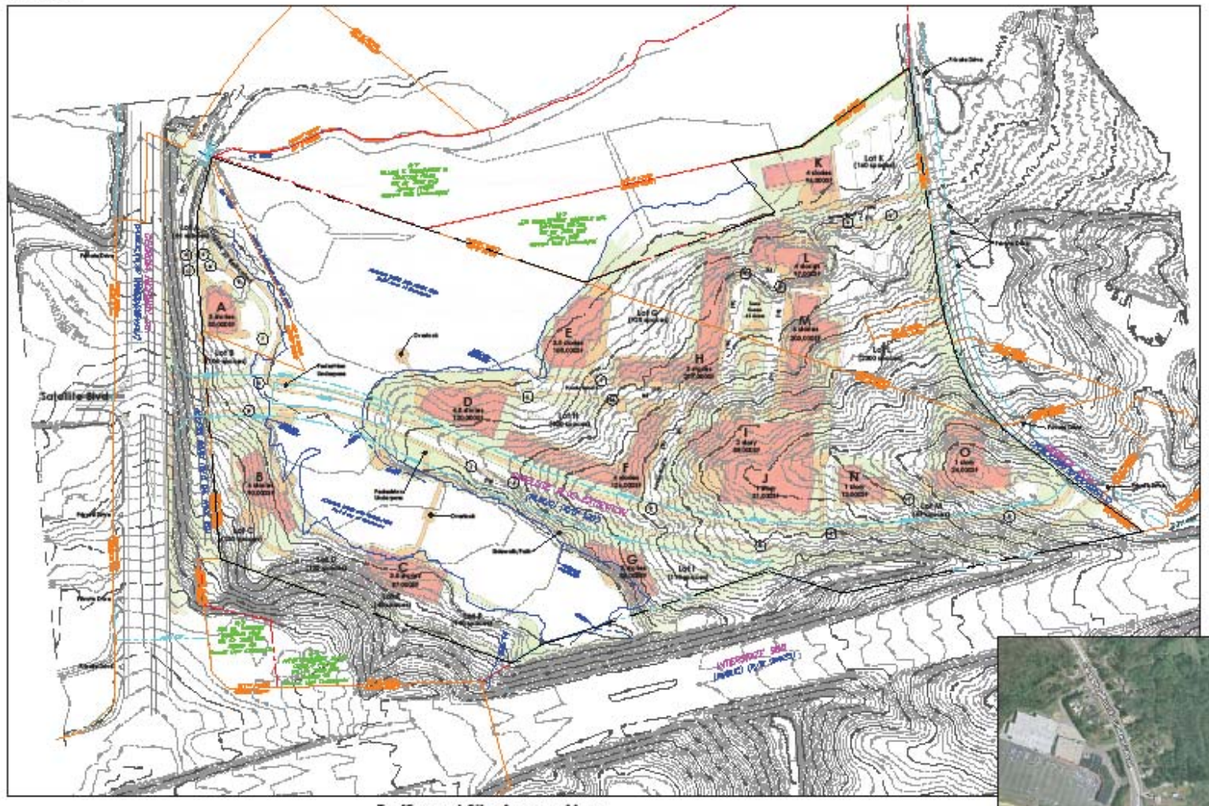
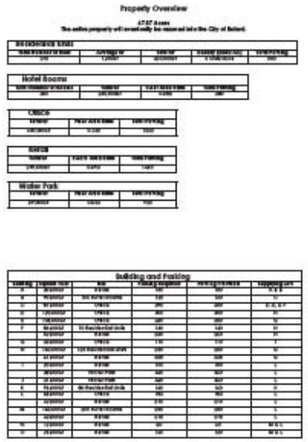


Figure 2-3. Site Plan

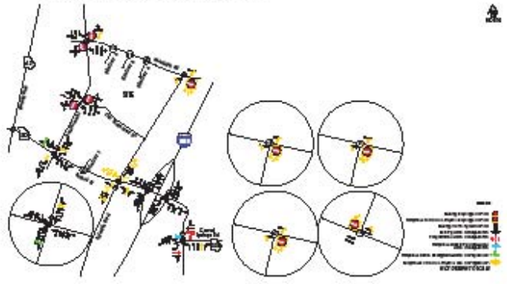
Site Plan







Traffic and Site Access Map



Location Map



2.5 Site Parking Requirements

The parking quantities for the proposed site will meet the local jurisdiction's requirements. As currently shown, parking is summarized for on-street parking, surface lot parking, and structured parking. The number of parking spaces will be: 132 spaces for on-street parking, 649 spaces for surface lots, and 2,996 spaces for structured parking.

According to the City of Buford Parking Ordinance, the following parking spaces are required:

- Retail: five spaces for each 1000 SF of gross floor area (at 290,000 SF equals) – 1375 spaces required, 1375 spaces provided;
- Office: one space for each 300 SF of gross office space (at 400,000 SF equals) – 1334 spaces required, 1334 spaces provided;
- Hotels: one and a quarter spaces per unit (at 300 rooms equals) – 375 spaces required, 380 spaces provided;
- Water Park: a minimum of 20 spaces for a public recreation center (69,000 SF) – 20 spaces minimum required, 920 spaces provided; and,
- Residential units: two spaces per unit (at 275 residential lofts equals) – 550 spaces required, 550 spaces provided.

2.6 Site Access Points and Driveways

The site will have seven external access points: two onto SR 20, four onto Maddox Road, and an access drive directly onto South Lee Street (via Old State Highway 20). The following list describes the proposed access points in more detail:

- **Site Driveway 1 (Study Intersection No. 4)** will be on the north side of SR 20, at the south end of the site, and will align with Satellite Boulevard. It is a full movement drive, and will serve the entire development.

- **Site Driveway 2 (Study Intersection No. 7)** will be the existing full movement intersection of South Lee Street with Old State Highway 20

- **Site Driveway 3 (Study Intersection No. 9)** will be on the south side of Maddox Road, at the northeast corner of the site, and will serve the entire development. It is the extension of Satellite Boulevard through the site, and will be a full movement drive.

- **Site Driveway 4 (Study Intersection No. 10)** will be on the south side of Maddox Road, west of Access Driveway 3, and will serve some retail development. It is a full movement drive.

- **Site Driveway 5 (Study Intersection No. 11)** will be on the south side of Maddox Road, west of Access Driveway 4, and will serve the parking facility. It is a full movement drive.

- **Site Driveway 6 (Study Intersection No. 12)** will be on the south side of Maddox Road, at the northwest end of the site, and will serve some of the retail and residential development. It is a full movement drive.

- **Site Driveway 7 (Study Intersection No. 13)** will be on the north side of SR 20, west of Access Driveway 1, and will serve a commercial parcel. This access will be limited to right-in/right-out.

The Georgia DOT will be the permitting agency for driveway access on SR 20. The local jurisdiction (City of Buford) is the permitting agency for driveway access on Maddox Road and South Lee Street. The City of Buford is also encouraging the use of South Lee Street at Old State Highway 20 as a site access drive.

2.7 Pedestrian and Transit Facilities

External to the Site, there is an existing sidewalk on the south side of SR 20. There are no existing sidewalks along the north side of SR 20 in the immediate vicinity of the site. Further to the west, there are sidewalks on both sides of SR 20. On South Lee Street, there are sidewalks on both sides of the street, throughout the immediate study area. On Maddox Road, there are some sidewalk facilities near South Lee Street. However, for most of Maddox Road, there are no sidewalks on either side of the street.

The developer is proposing to install sidewalks on the north side of SR 20 along the entire frontage of the site, and on both sides of all internal streets. There will also be sidewalks leading from all parking facilities to all adjacent buildings. The internal sidewalk system will connect to the external sidewalk system wherever practical.

There are currently no existing or planned bicycle facilities off-site within ¾ miles of the Site. However, both US 23/SR 13 (Buford Highway) and SR 20 have been identified by ARC as potential future bicycle corridors as part of a future region-wide bicycle network.

There are existing transit facilities within ½ mile of the Site. Gwinnett County Transit operates two routes that go past the site on SR 20, with a bus-stop / transfer point just across the street from the site. Route 50 is a local route, originating north of the site on Buford Highway (US 23/SR 13), then traveling down SR 20 past the subject site and the Mall of Georgia, then on to I-85, then back on local roads, and finally ending at the Transfer Station at Gwinnett Place Mall. Route 101 is an express route, originating at the bus-stop / transfer point just across the street from the site, then traveling down I-985 and I-85, stopping at the Indian Trail Road Transfer Station, before continuing into downtown Atlanta. The transit route schedules are included in Appendix A.

3.1 Trip Generation

As noted above, the Site will consist of approximately 290,000 square feet of retail space, 400,000 square feet of office space, two hotels totaling 300 rooms, 69,000 square feet of indoor-outdoor water park (plus associated amenities), 275 residential lofts, and a 9-hole golf course (with a 5,000 square foot club house). The Site Plan is shown in Figure 2-3.

The number of vehicle trips expected from the Site was estimated. The trip generation was based on the Site Plan and information provided by the developer/owner, and his landscape architect / land planner.

The typical procedure for determining the traffic generated by a new development is to apply the rates or equations developed by the Institute of Transportation Engineers (ITE) as published in *Trip Generation, 7th Edition*, 2003, an ITE Informational Report, and related information in the *Trip Generation Handbook*, an ITE Recommended Practice, June 2004. The rates and equations in these documents are calculated from nationally collected data. The rates and equations were used to estimate the number of trips expected for the Site, for all but one land use – the water park. The ITE Land Use Codes used in the analyses are shown in Table 3-1.

The trips for the water park (and related amenities) were based upon information provided by the company that will be managing the water park at this site. This company presently operates a number of other water parks in a variety of states.

Internal capture rates, published in ITE's *Trip Generation Handbook*, June 2004, between retail and other Site land uses were used to reduce trips based on the mixed-use nature of the Site.

Pass-by trips were used in the Methodology Meeting Checklist, and were discussed at the Methodology Meeting, and initially appeared acceptable to all. Subsequently, however, upon further reflection, we have decided not to use the pass-by trip reduction. Trips that were legitimately pass-by for the original DRI (and related Site Plan), with the evolution to the current Site Plan, no longer appear to be pass-by trips. Instead, they have now become diverted linked trips – to the retail internal to the site. Although pass-by trips are well documented in the ITE manuals, and the use of pass-by reduction methodology is clear and undisputed, the handling of diverted trips is not. Diverted linked trips are very site-specific, and the reductions used must clearly be accepted by all. It is also clear that the diverted trip reduction for the subject site would be less than the pass-by reduction, but the amount of that difference is subjective and open to interpretation. To avoid the use of a potentially controversial diverted trip reduction, we have elicited to use none at all.

Trip Generation has been determined for the Site Build-Out (Year 2015). The results of the trip generation are shown in Table 3-1. The Trip Generation and Internal Capture Worksheets are included in Appendix B.

Table 3-1. Site Build-Out Trip Generation

Land Use (ITE Code)	Intensity		Daily		AM Peak Hour		PM Peak Hour		Saturday Peak Hour	
			In	Out	In	Out	In	Out	In	Out
Lofts (230)	275	units	759	759	20	96	92	46	66	56
Hotel (310)	300	rooms	1156	1156	98	62	94	83	118	93
Lofts plus Hotel			1915	1915	118	158	186	129	184	149
Lofts plus Hotel Internal			671	625	8	10	62	56	58	79
Lofts plus Hotel New External			1244	1290	110	148	124	73	126	70
9 Hole Golf Course	9	holes	161	161	16	4	11	14	20	21
Shopping Center (820)	290	k.s.f.	6784	6784	181	115	607	657	899	830
Shopping Center plus Golf Course			6945	6945	197	119	618	671	919	851
Total Internal			903	840	18	12	68	78	91	76
Total New External			6042	6105	179	107	550	593	828	775
Office (710)	400	k.s.f.	1940	1939	501	68	90	437	62	52
Internal			208	317	4	8	20	16	19	13
New External			1732	1622	497	60	70	421	43	39
Water Park	69	k.s.f.	800	800	20	5	50	120	160	240
Internal			0	0	0	0	0	0	0	0
New External			800	800	20	5	50	120	160	240
TOTAL			11600	11599	836	350	944	1357	1325	1292
TOTAL INTERNAL			1782	1782	30	30	150	150	168	168
TOTAL NEW EXTERNAL			9818	9817	806	320	794	1207	1157	1124

3.2 Trip Distribution and Traffic Assignment

For the purposes of developing trip distribution, a radius of fifteen miles was used for both the employment and residential types of land uses on site (with the assumption that the vast majority of home to work trips will be satisfied within that fifteen mile radius). A five mile radius was used for retail related trips, as well as for the entertainment trips. Trip distribution was developed separately for employment, residential, and retail.

The trip distribution for the Site was calculated using Census data with the GIS software *Maptitude*. The trip distributions developed for the Site are shown in Figure 3-1 for Site Build-Out (Year 2015). The appropriate distribution percentages were applied to the trips generated by the Site as shown in Table 3-1 for Site Build-Out (Year 2015), and the traffic volumes were assigned to the road network. The weekday AM, weekday PM, and Saturday peak hour turning volumes expected at the study intersections from the Site are shown in Figure 3-2 for Site Build-Out (Year 2015).

Figure 3-1. Site Build-Out Trip Distribution

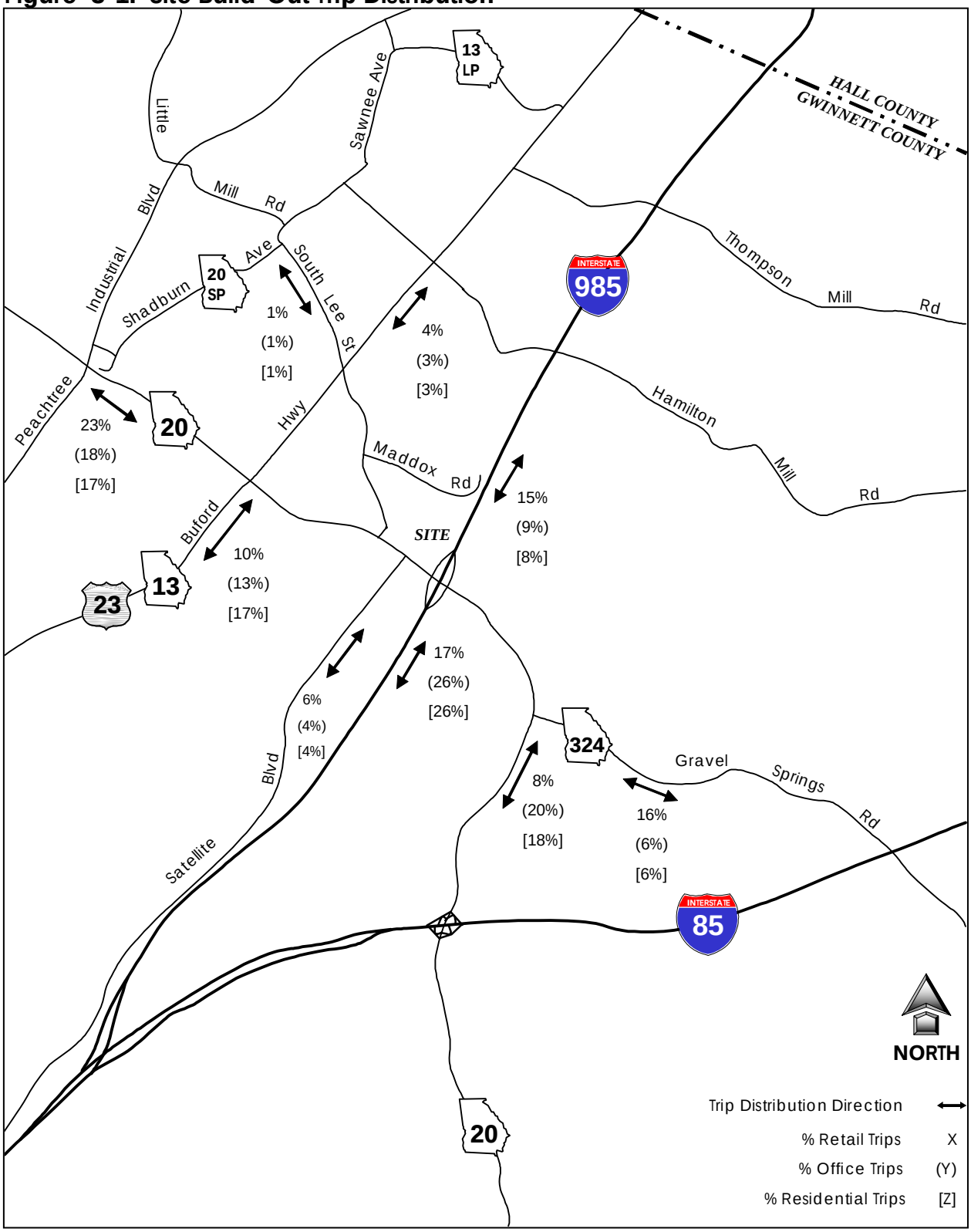
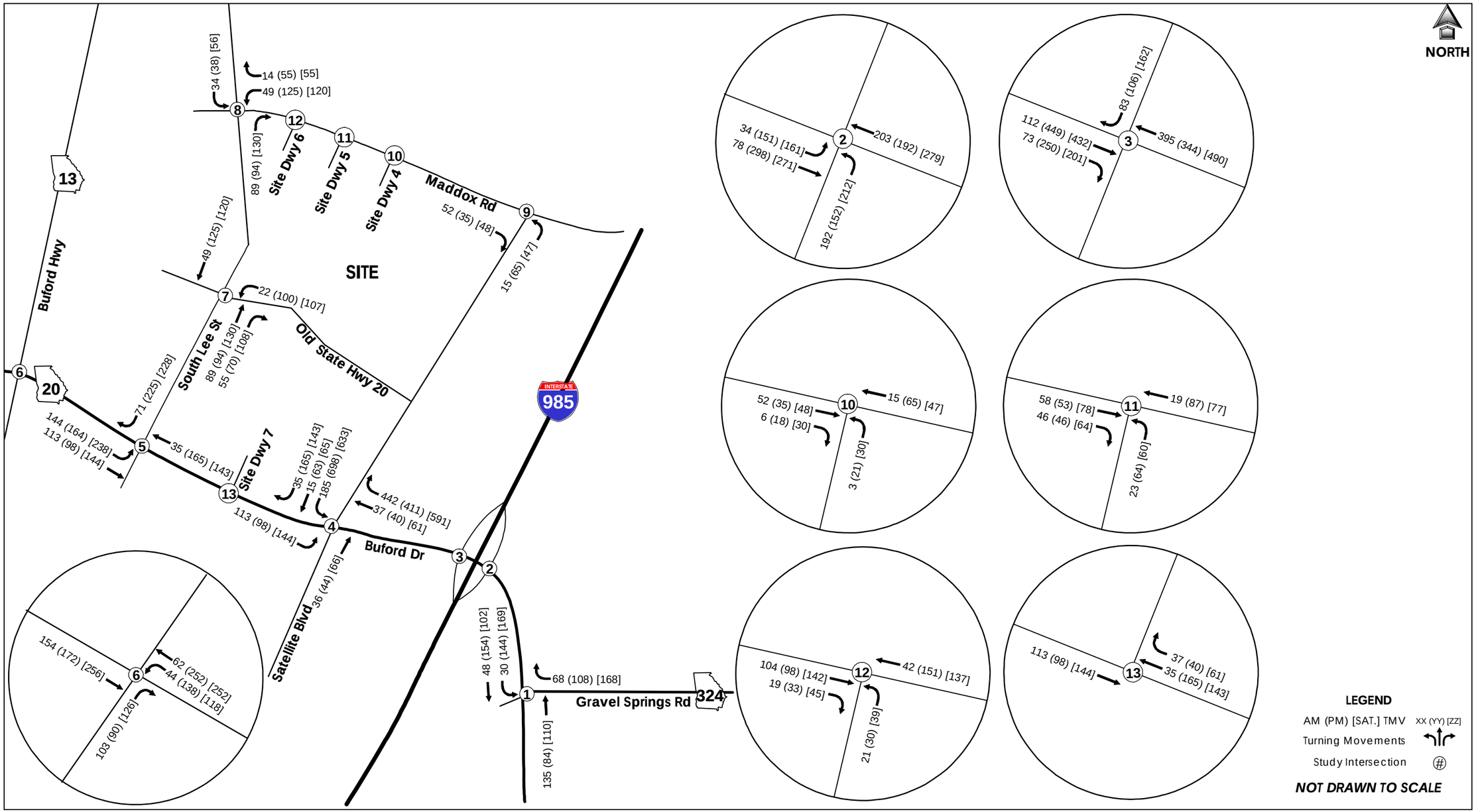


Figure 3-2. Site Build-Out Traffic Volumes



4. IDENTIFICATION OF THE STUDY NETWORK

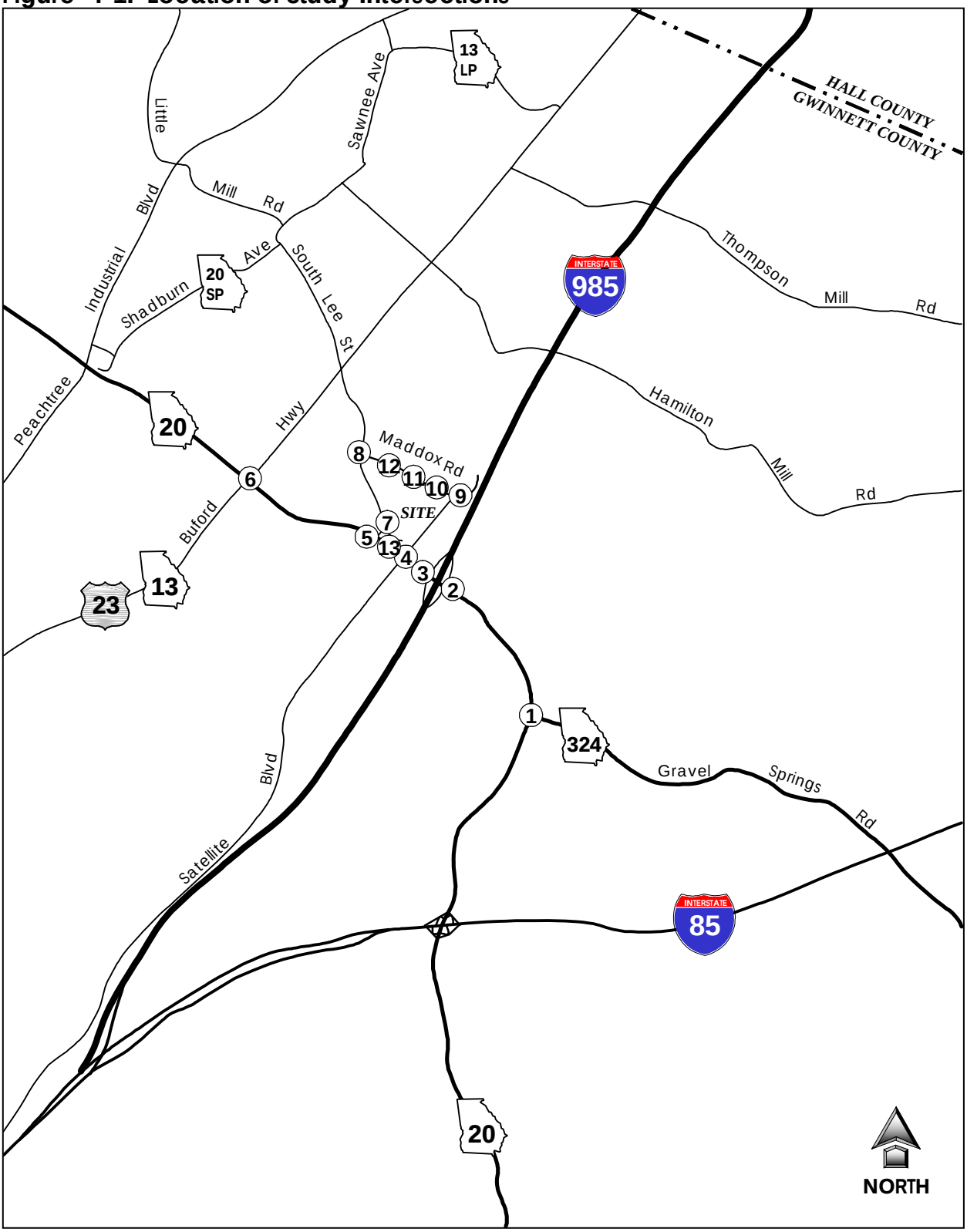
An early step in the GRTA DRI Non-Expedited Review Process is the determination of the Study Network utilizing the 7% Rule. The 7% Rule requires study of each roadway segment that is impacted to determine if traffic from the Site consumes 7% or more of the Service Volume (traffic volume at a specific Level of Service (LOS)) of that roadway segment. LOS D is generally used as a default value for urban areas (and LOS C may be used as a default in more rural areas). The LOS standard for the City of Buford is assumed to be LOS D.

After consultation with GRTA, the following intersections were agreed upon for investigation as part of the Traffic Impact Analysis.

- SR 20 and US 23/SR 13
- SR 20 and South Lee Street
- SR 20 and Satellite Boulevard
- SR 20 and I-985 southbound ramps
- SR 20 and I-985 northbound ramps
- SR 20 and SR 324
- Satellite Boulevard Extended and Maddox Road
- South Lee Street and Maddox Road
- South Lee Street and Old State Highway 20
- All external site driveway access points

Figure 4-1 shows the location of the study intersections.

Figure 4-1. Location of Study Intersections



5. CAPACITY ANALYSIS METHODOLOGY

5.1 Level of Service Standards

Operating conditions at intersections and roadway segments are evaluated in terms of Levels of Service (LOS). For the GRTA DRI process, the City of Buford's LOS Standards for the roadways in the Study Area are assumed to be LOS D. Therefore, LOS A through D are considered to be adequate peak hour operations, and LOS E and F are considered inadequate peak hour conditions. It is desirable, after new development has been put in place, that no less than an LOS D be maintained. However, if a specific location operates at LOS E or F under existing traffic conditions, then GRTA finds as acceptable, after background traffic, and also after the Site's traffic, has been added to the specific location, a return to LOS E.

5.2 Intersection Capacity Analysis Methodology

Capacity analyses of the study intersections were completed using procedures in the *Highway Capacity Manual (HCM), 2000*. This is the usual methodology for the analysis of traffic conditions. The software program *Synchro 6* (a nationally recognized computer software package for analyzing capacities and Levels of Service) was used to perform the capacity analyses for the study intersections.

Levels of Service for signalized intersections are reported in composite fashion, i.e., one LOS for the entire intersection, and are presented in terms of average control delay. Individual turning movements at signalized intersections may experience inadequate LOS, even when those volumes are relatively low, while the intersection as a whole has an adequate LOS. This is because the major movements on the major roadway are given priority in assigning signal green time.

Traffic conditions at unsignalized intersections, with stop sign control on the minor street only, are evaluated for the minor street approach(es) and for the left turns from the major street. This is because the major street traffic is assumed to have no delay since there is no control (no stop sign). Inadequate Levels of Service for minor street approaches to unsignalized intersections are not uncommon, as the continuous flow traffic will always get the priority. For two-way stop controlled intersections, the *Highway Capacity Manual* does not calculate a composite Level of Service for the entire intersection.

Levels of Service for all-way STOP controlled intersections are reported both for study intersection movements, and in composite fashion, i.e., one LOS for the entire intersection, and are based on average control delay.

The *Highway Capacity Manual* Level of Service criteria for signalized and unsignalized intersections are shown in Table 5-1.

Table 5-1. Highway Capacity Manual Intersection LOS Criteria

Level of Service	Control Delay (seconds per vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10	≤ 10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	> 80	> 50

Source: Highway Capacity Manual, 2000.

6.1 Existing Roadway Facilities

To determine existing traffic conditions of the identified study roadway segments and study intersections in the area, an inventory was made of the major roads surrounding the Site. The physical and traffic control elements of each of the roadways, as well as the functional classification and other important elements for the study roadways, follows:

- **SR 20 (Buford Drive)** is a four-lane divided roadway that serves as a State Principal Arterial. The land uses along SR 20 are commercial/retail developments. The SR 20 intersections at US 23/SR 13 (Buford Highway), South Lee Street, Satellite Boulevard, the I-985 northbound and southbound ramps, and SR 324 are signalized.

- **South Lee Street** between US 23/SR 13 and SR 20 is a 4 four-lane divided roadway that serves as a Minor Arterial. The adjacent land uses on South Lee Street between US 23/SR 13 and SR 20 include office/professional, commercial/retail, estate residential parcels, single-family residential, and religious uses. South Lee Street between US 23/SR 13 and Watson Road is a two-lane roadway with a center two-way left-turn lane that serves as a Minor Arterial. The adjacent land uses on South Lee Street between US 23/SR 13 and Watson Road include commercial/retail, single-family, and estate residential parcels.

- **Satellite Boulevard** is a four-lane divided roadway that serves as a Major Arterial. The land uses along Satellite Boulevard are commercial, residential and undeveloped land. Satellite Boulevard will be extended through the site to Maddox Road. The developer will construct one through lane in each direction with turning lanes at key internal intersections, a ten-foot wide multi-purpose lane on one side, and a five-foot sidewalk on the other side. Satellite Boulevard will ultimately be widened to a four-lane divided highway, per City and County plans.

- **Maddox Road** is a two-lane undivided roadway that serves as a Local Road. The land uses along Maddox Road are estate residential, single-family residential and undeveloped land.

- **US 23/SR 13 (Buford Highway)** is a four-lane divided roadway that serves as a State Major Arterial in the vicinity of SR 20. The adjacent land use in the vicinity of SR 20 is commercial.

- **I-985** is a four-lane median divided freeway that serves as an Interstate Freeway in the vicinity of the site. I-985 has full control of access, and the only access that adjacent land uses have is via grade-separated interchanges.

- **SR 324 (Gravel Springs Road)** is a two-lane undivided roadway that serves as a State Major Arterial. The adjacent land uses are residential and commercial developments.

Figure 6-1 shows the existing traffic controls and lane configurations at the study intersections.

6.2 Existing Traffic Volumes

After consultation with GRTA, it was determined that capacity analyses would be performed at the study intersections for the weekday AM peak hour, the weekday PM peak hour, and the Saturday peak hour. For these three peak periods, turning movement counts were collected on Tuesday, May 6, 2008, and Saturday, May 10, 2008 at the following intersections:

- SR 20 and US 23/SR 13
- SR 20 and South Lee Street
- SR 20 and Satellite Boulevard
- SR 20 and I-985 southbound ramps
- SR 20 and I-985 northbound ramps
- SR 20 and SR 324
- South Lee Street and Maddox Road
- South Lee Street and Old State Highway 20

Figure 6-2 shows the existing volumes at the study intersections for the weekday AM peak hour, the weekday PM peak hour, and the Saturday peak hour.

Average Daily Traffic (ADT) volumes were acquired from GDOT permanent counting stations located in the study area for the six year period 2001 to 2006.

The count data is included in Appendix C.

6.3 Intersection Capacity Analysis – Existing Conditions

Using the methodologies previously described, intersection Levels of Service were determined for the study intersections for Existing conditions. Table 6-1 presents the results of the intersection capacity analysis for Existing conditions. Printouts of these analyses are included in Appendix D.

Figure 6-1. Existing Traffic Controls and Lane Configurations

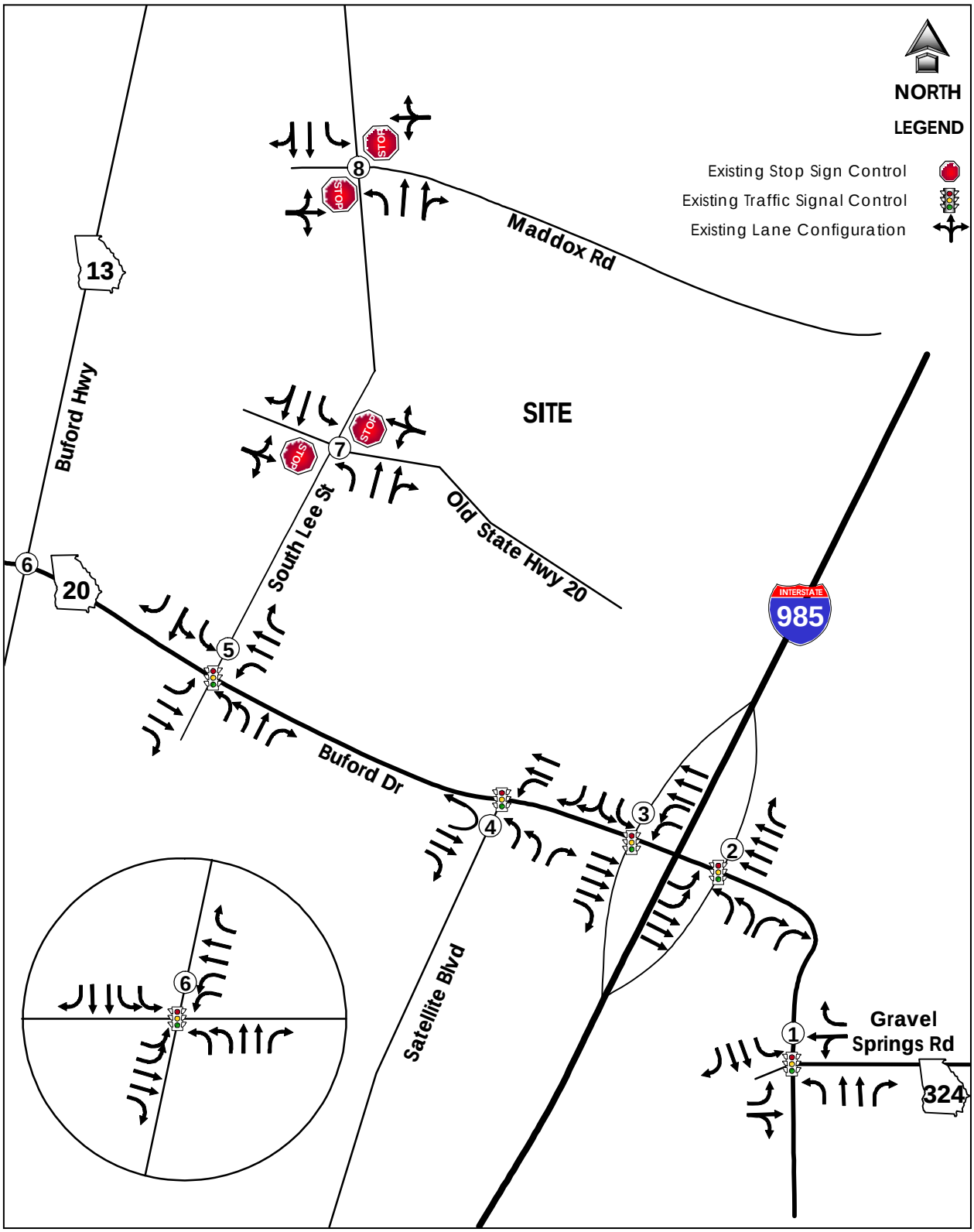


Figure 6-2. Existing Traffic Volumes

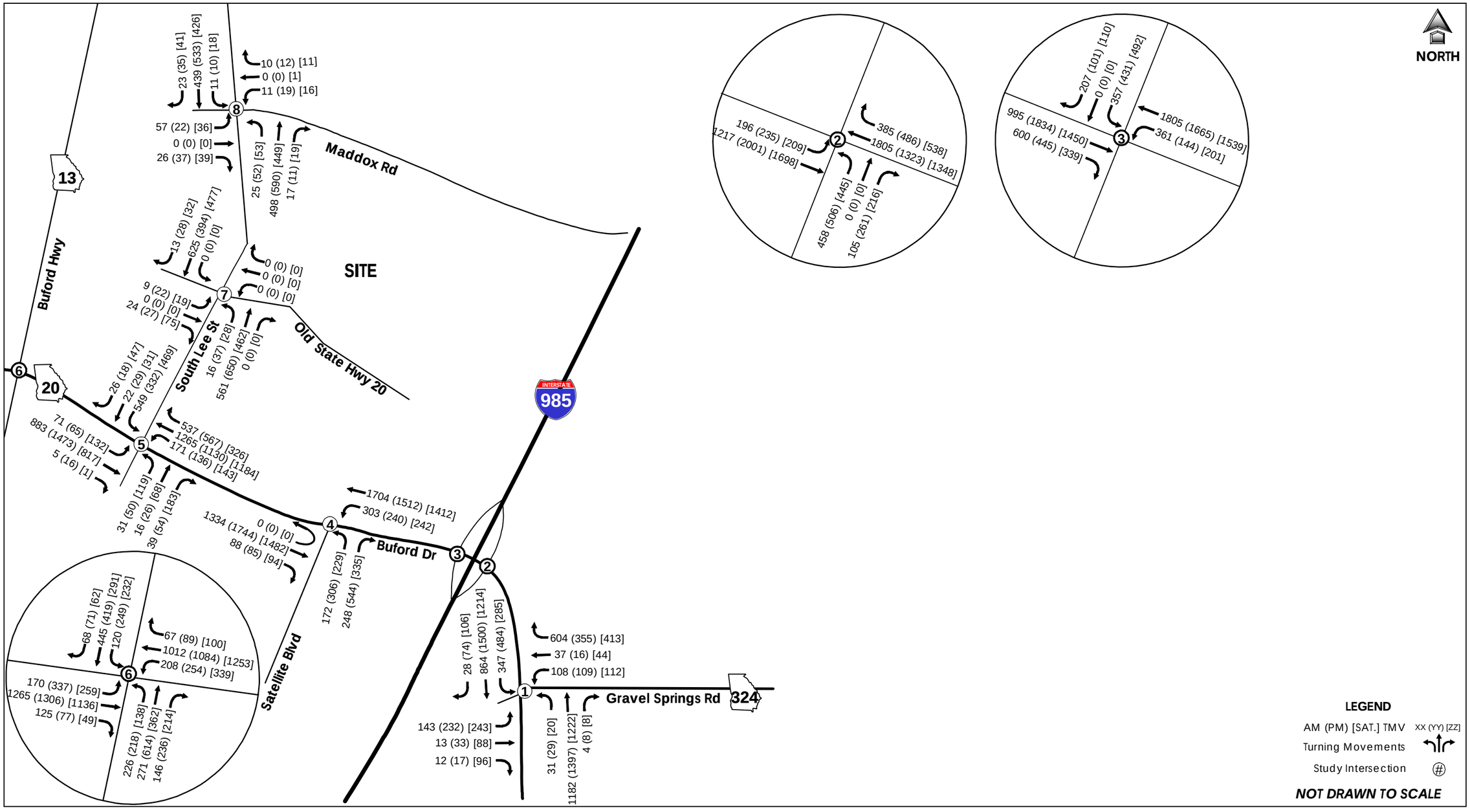


Table 6-1. Intersection LOS – Existing

Intersection No.	Intersection Name	Control	Mvmt	A.M. Peak Hour Mvmt	A.M. Peak Hour Overall	P.M. Peak Hour Mvmt	P.M. Peak Hour Overall	SAT Peak Hour Mvmt	SAT Peak Hour Overall
1	SR 20 at Gravel Springs Road	Traffic Signal	Overall	*	D	*	E	*	D
2	SR 20 at I-985 NB Ramps	Traffic Signal	Overall	*	B	*	C		C
3	SR 20 at I-985 SB Ramps	Traffic Signal	Overall	*	C	*	B	*	C
4	SR 20 at Satellite Blvd	Traffic Signal	Overall	*	B	*	B	*	B
5	SR 20 at South Lee Street	Traffic Signal	Overall	*	C	*	D	*	D
6	SR 20 at Buford Hwy	Traffic Signal	Overall	*	D	*	D	*	D
7	South Lee Street at Old State Hwy 20	STOP Sign on Side Street	EBL+T+R	C	*	C	*	B	*
			WBL+T+R	A		A		A	
			NBL	A		A		A	
			SBL	A		A		A	
8	South Lee Street at Maddox Road	STOP Sign on Side Street	EBL+T+R	C	*	C	*	C	*
			WBL+T+R	C		C		C	
			NBL	A		A		A	
			SBL	A		A		A	

As can be seen from Table 6-1, all of the movements, and all of the overall intersection operations, function at adequate Levels of Service for Existing conditions, except at the following locations:

- Intersection No. 1, SR 20 at SR 324 (Gravel Springs Road), which operates inadequately for the PM peak hour.

6.3.1 Required Improvements

Table 6-1 identifies deficiencies that already exist at the study intersections. Improvements have been identified, that if implemented immediately, could correct the Existing deficiencies. Their impacts on the Existing deficiencies are shown in Table 6-2. Printouts of these analyses are included in Appendix E.

Table 6-2. Intersection LOS – Existing with Required Improvements

Intersection		Improvement	Mvmt	A.M. Peak Hour		P.M. Peak Hour		SAT Peak Hour	
No.	Name			Mvmt	Overall	Mvmt	Overall	Mvmt	Overall
1	SR 20 at Gravel Springs Road	SBL, WBL	Overall	*	D	*	D	*	D

As can be seen from Table 6-2, the following required improvements are expected to bring the intersections back into adequacy for Existing conditions:

- Intersection No. 1, SR 20 at SR 324 (Gravel Springs Road), add a second southbound left turn lane, change the phasing for the southbound left turn to protected only, add a separate westbound left turn lane, change the existing westbound left+through lane to a through-only lane, and optimize the traffic signal timing.

Figure 6-3 shows the lane configurations and traffic control that would be required to mitigate the Existing intersection deficiencies.

Figure 6-3. Existing – Required Intersection Improvements



6.4 Calculated Level of Service Standards

Based upon the results of the analysis of the Existing conditions, Table 6-3 presents the calculated Level of Service Standards for intersections that must be met when considering Future Background and Future Year Total conditions.

Table 6-3. Calculated Intersection LOS Standards

Intersection		Control	Mvmt	A.M. Peak Hour		P.M. Peak Hour		SAT Peak Hour	
No.	Name			Mvmt	Overall	Mvmt	Overall	Mvmt	Overall
1	SR 20 at Gravel Springs Road	Traffic Signal	Overall	*	D	*	E	*	D
2	SR 20 at I-985 NB Ramps	Traffic Signal	Overall	*	D	*	D		D
3	SR 20 at I-985 SB Ramps	Traffic Signal	Overall	*	D	*	D	*	D
4	SR 20 at Satellite Blvd	Traffic Signal	Overall	*	D	*	D	*	D
5	SR 20 at South Lee Street	Traffic Signal	Overall	*	D	*	D	*	D
6	SR 20 at Buford Hwy	Traffic Signal	Overall	*	D	*	D	*	D
7	South Lee Street at Old State Hwy 20	STOP Sign on Side Street	EBL+T+R	D	*	D	*	D	*
			WBL+T+R	D		D		D	
			NBL	D		D		D	
			SBL	D		D		D	
8	South Lee Street at Maddox Road	STOP Sign on Side Street	EBL+T+R	D	*	D	*	D	*
			WBL+T+R	D		D		D	
			NBL	D		D		D	
			SBL	D		D		D	

7. PLANNED AND PROGRAMMED IMPROVEMENTS

The local Transportation Improvement Program (TIP), the State Transportation Improvement Program (STIP), the Regional Transportation Plan (RTP), and the GDOT Construction Work Program have been researched to determine if there are any proposed transportation improvements, either programmed or planned, that would impact the Site. For identified projects, the opening-to-traffic dates, sponsors, costs of projects, funding sources, and logical termini are usually also identified. Detailed information about the programmed improvements is included in Appendix F.

There are a number of transportation improvements that are programmed near and within the study area. These include road widenings, new roadway, and ITS improvements. For more details, please see ARC's Envision 6 RTP, and the Year 2008 – 2013 TIP. The following improvements are scheduled to be completed by the Site Build-Out (Year 2015).

- AR-941 – Metro Arterial Connector (MAC) corridor development study along SR 20; est. $1,000,000; completion date 2010; sponsored by ARC; GDOT Project No. TBD
- GDOT S008335 (PR000-S008-00(335) C1 – Widening and resurfacing of SR 324 for 2.219 miles, from SR 20 to I-85; est. $2,499,994; completion Spring 2012; sponsored by GDOT (non-Federal), undertaken by Gwinnett County
- GW-020A1 – Widening SR 20 from the Chattahoochee River to Peachtree Industrial Boulevard from 2 to 4 lanes; est. $35,257,000; completion date 2013; sponsored by GRTA; GDOT Project No. 0004430
- GW-301 – Expansion of ITS/ATMS infrastructure on SR 20 from Satellite Boulevard to Peachtree; est. $1,123,750; completion date 2012; sponsored by Gwinnett County; GDOT Project No. 0006826

There are other relevant transportation improvements that are programmed just beyond the Site Build-Out (Year 2015), or are identified as long range. These have been identified as:

- GW-020B – Widening SR 20 from I-985 to SR 324 from 4 to 6 lanes; est. $7,428,200; completion date 2020; sponsored by GDOT; GDOT Project No. 0007848
- GW-020C – Widening SR 20 from SR 324 to I-85 from 6 to 8 lanes; est. $13,659,000; completion date 2030; sponsored by GDOT; GDOT Project No. 0007849

8. FUTURE BACKGROUND CONDITIONS

8.1 Future Background Traffic Volumes

Between the time this study is performed and the Site is built out in Year 2015, the traffic volumes on the adjacent roadways are expected to increase. This is due to other development which will take place both in the study area by the Year 2015, as well as growth outside of it, whether or not the Site being studied is built. This growth is called background traffic growth. There are generally two components to background traffic growth:

(a) growth close to the Site due to specific, identified developments already in the "pipeline" (that is, actual nearby developments already approved, or further along in the approval process, that can reasonably be expected to be built by Site Build-Out (Year 2015)), sometimes called "background development"; and

(b) general traffic growth along major roadways due to the expanding nature of the region, and to other non-specific development further from the Site, often simply referred to as "background growth". Growth of this nature can generally be determined by examining historic trends in the vicinity of the Site, and by applying those trends to the appropriate roadways.

Historical traffic volume trends on the study network were taken into account. Where available, the last six years (2001 – 2006) of historical Annual Average Daily Traffic (AADT) collected by GDOT were used to help develop traffic volume trends on the study area roadways.

Based on the historical traffic volumes collected in the vicinity of the Site and after discussion with GRTA staff, an 2% annual traffic growth percentage was used.

The Future Background traffic volumes were developed by adding the background growth out to the Year 2015, to existing traffic. The Future Background traffic volumes are shown in Figure 8-1.

8.2 Intersection Capacity Analysis – Future Background Conditions

Using the methodologies previously described, intersection Levels of Service were determined for the study intersections for Future Background conditions. Table 8-1 presents the results of the intersection capacity analyses for Future Background traffic conditions, assuming existing lane configurations and traffic control. Printouts of these analyses are included in Appendix G.

Figure 8-1. Future Background Traffic Volumes

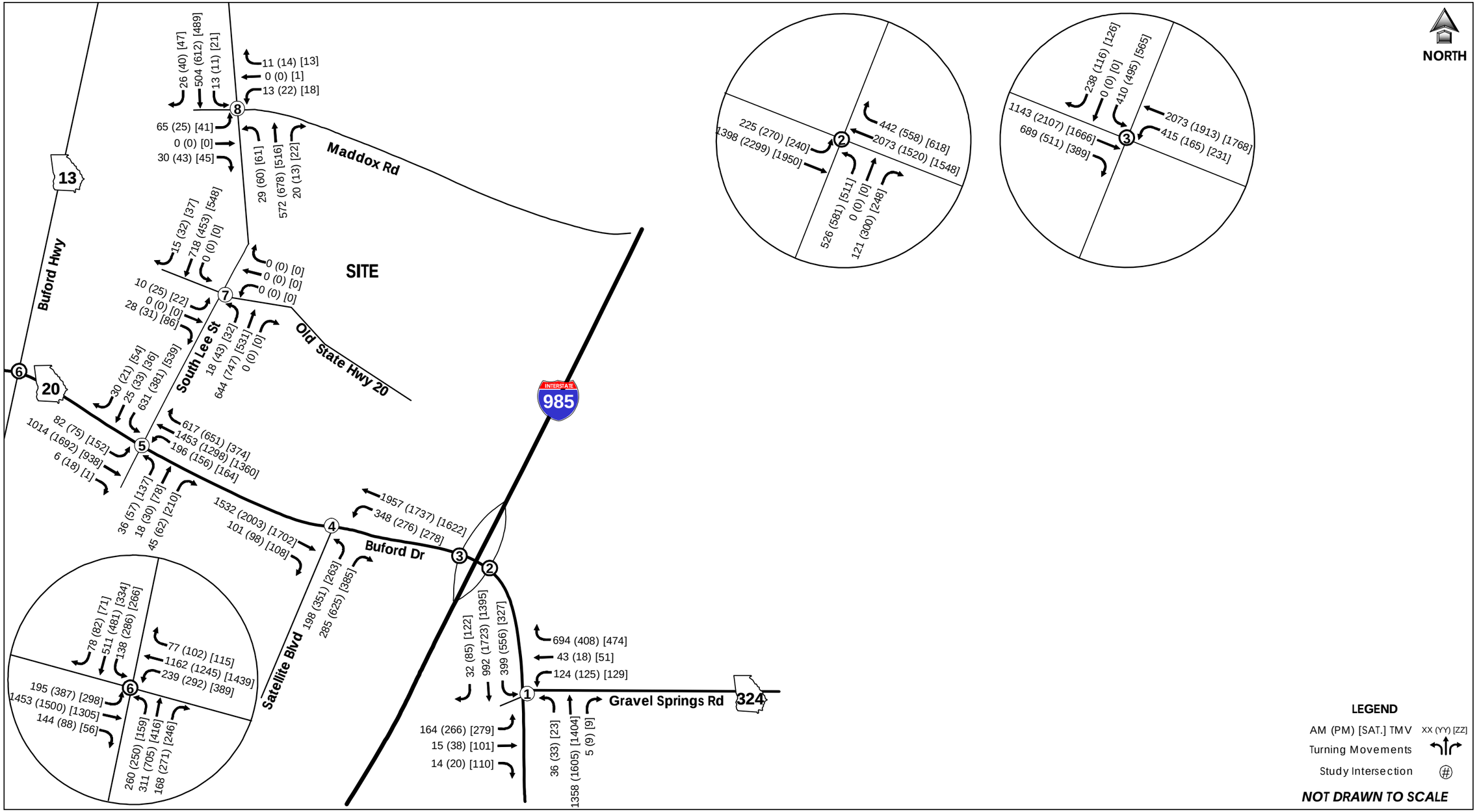


Table 8-1. Intersection LOS – Future Background

Intersection No.	Intersection Name	Control	Mvmt	A.M. Peak Hour Mvmt	A.M. Peak Hour Overall	P.M. Peak Hour Mvmt	P.M. Peak Hour Overall	SAT Peak Hour Mvmt	SAT Peak Hour Overall
1	SR 20 at Gravel Springs Road	Traffic Signal	Overall	*	F	*	F	*	E
2	SR 20 at I-985 NB Ramps	Traffic Signal	Overall	*	B	*	C		C
3	SR 20 at I-985 SB Ramps	Traffic Signal	Overall	*	C	*	B	*	C
4	SR 20 at Satellite Blvd	Traffic Signal	Overall	*	B	*	C	*	C
5	SR 20 at South Lee Street	Traffic Signal	Overall	*	D	*	D	*	E
6	SR 20 at Buford Hwy	Traffic Signal	Overall	*	E	*	E	*	E
7	South Lee Street at Old State Hwy 20	STOP Sign on Side Street	EBL+T+R	C	*	C	*	C	*
			WBL+T+R	A		A		A	
			NBL	A		A		A	
			SBL	A		A		A	
8	South Lee Street at Maddox Road	STOP Sign on Side Street	EBL+T+R	D	*	C	*	D	*
			WBL+T+R	C		C		D	
			NBL	A		A		A	
			SBL	A		A		A	

As can be seen from Table 8-1, all of the movements, and all of the overall intersection operations, are expected to function at adequate Levels of Service for Future Background conditions, except at the following locations:

- Intersection No. 1, SR 20 at SR 324 (Gravel Springs Road), which operates at an inadequate LOS for all three peak hours studied;
- Intersection No. 5, SR 20 at South Lee Street, which operates at LOS "E" for the Saturday peak hour; and,
- Intersection No. 6, SR 20 at US 23/SR 13 (Buford Highway), which operates at an inadequate LOS for all three peak hours studied.

8.2.1 Required Improvements

Table 8-1 identifies deficiencies that are expected to exist at the study intersections for Future Background conditions. Improvements have been identified that would be expected to correct the Future Background deficiencies. Their impacts on the Future Background deficiencies are shown in Table 8-2. Printouts of these analyses are included in Appendix H.

Table 8-2. Intersection LOS – Future Background with Required Improvements

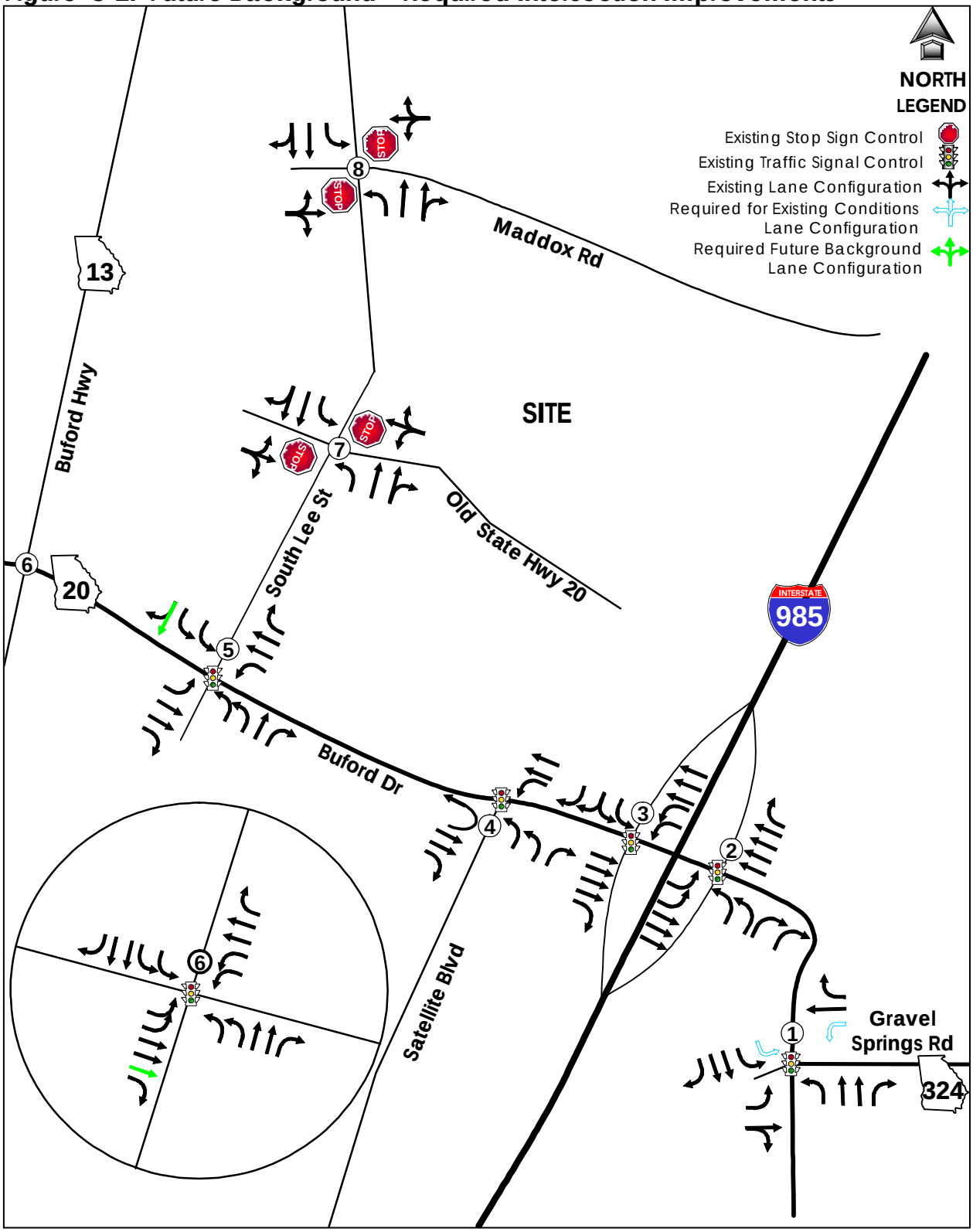
Intersection		Improvement	Mvmt	A.M. Peak Hour		P.M. Peak Hour		SAT Peak Hour	
No.	Name			Mvmt	Overall	Mvmt	Overall	Mvmt	Overall
1	SR 20 at Gravel Springs Road	SBL, WBL	Overall	*	D	*	E	*	D
5	SR 20 at South Lee Street	Change SB L/L+T/R to SB L/L/T+R, change NB & SB phasing	Overall	*	D	*	D	*	D
6	SR 20 at Buford Hwy	EBT	Overall	*	D	*	D	*	D

As can be seen from Table 8-2, the following required improvements would be expected to bring the intersections back into adequacy for Future Background conditions:

- Intersection No. 1, SR 20 at SR 324 (Gravel Springs Road), add a second southbound left turn lane, change the phasing for the southbound left turn to protected only, add a separate westbound left turn lane, change the existing westbound left+through lane to a through-only lane, and optimize the traffic signal timing;
- Intersection No. 5, SR 20 at South Lee Street, change the existing three lanes on the southbound approach to two (2) exclusive left turn lanes and a combined through-right lane, remove the split phasing for the northbound and southbound approaches, change the phasing for the northbound and southbound left turns to protected only, change the phasing for the northbound right turn to permitted+overlap, and optimize the traffic signal timing; and,
- Intersection No. 6, SR 20 at US 23/SR 13 (Buford Highway), add a third through lane to the eastbound approach and optimize the traffic signal timing.

Figure 8-2 shows the intersection lane configurations and traffic control that would be required to mitigate the Future Background deficiencies.

Figure 8-2. Future Background – Required Intersection Improvements



8.2.2 Programmed Improvements

Table 8-1 identifies deficiencies that are expected to exist at the study intersections for Future Background conditions. Table 8-3 identifies the impact of the improvements that have been programmed by GDOT on the Future Background deficiencies – programmed improvements impact only Intersection No. 1. Printouts of these analyses are included in Appendix H.

Programmed improvements at Intersection No. 1, which are currently under construction and scheduled to be completed by 2012, altered the eastbound lane configuration to a left-turn lane, a through lane, and a through-right lane (by adding a second through lane), and the westbound lane configuration to a left-turn lane, two through lanes, and a right-turn lane (by adding/converting the shared left-through lane to two through lanes and an exclusive left-turn lane). As can be seen in Table 8-3, the programmed improvements alone are not adequate to remedy the projected deficiencies.

Table 8-3. Intersection LOS – Future Background with Programmed Improvements

Intersection		Improve-ment	Mvmt	A.M. Peak Hour		P.M. Peak Hour		SAT Peak Hour	
No.	Name			Mvmt	Overall	Mvmt	Overall	Mvmt	Overall
1	SR 20 at Gravel Springs Road	EBT, WBL, WBT	Overall	*	E	*	F	*	E

Table 8-4 shows the improvements required, over and above Programmed Improvements, that will be necessary to bring Intersection No. 1 to adequacy.

Table 8-4. Intersection LOS – Future Background with Programmed Improvements Plus Additional Required Improvements

Intersection		Improvement	Mvmt	A.M. Peak Hour		P.M. Peak Hour		SAT Peak Hour	
No.	Name			Mvmt	Overall	Mvmt	Overall	Mvmt	Overall
1	SR 20 at Gravel Springs Road	SBL	Overall	*	D	*	E	*	D

As can be seen from Table 8-4, the following required improvements would be expected to bring the intersection back into adequacy for Future Background conditions, assuming Programmed Improvements:

- Intersection No. 1, SR 20 at SR 324 (Gravel Springs Road), add a second southbound left turn lane, change the phasing for the southbound left turn to protected only, and optimize the traffic signal timing.

The projected volumes for Site Build-Out were added to the Future Background traffic volumes to represent the total traffic expected in the area when the Site is complete. The Future Year Total traffic volumes are shown in Figure 9-1.

9.1 Intersection Capacity Analysis – Future Year Total Conditions

Using the methodologies previously described, intersection Levels of Service were determined for the study intersections for Future Year Total traffic conditions. Table 9-1 presents the results of the intersection capacity analysis for Future Year Total traffic conditions, but still assuming the existing lane configurations and traffic control. Printouts of these analyses are included in Appendix I.

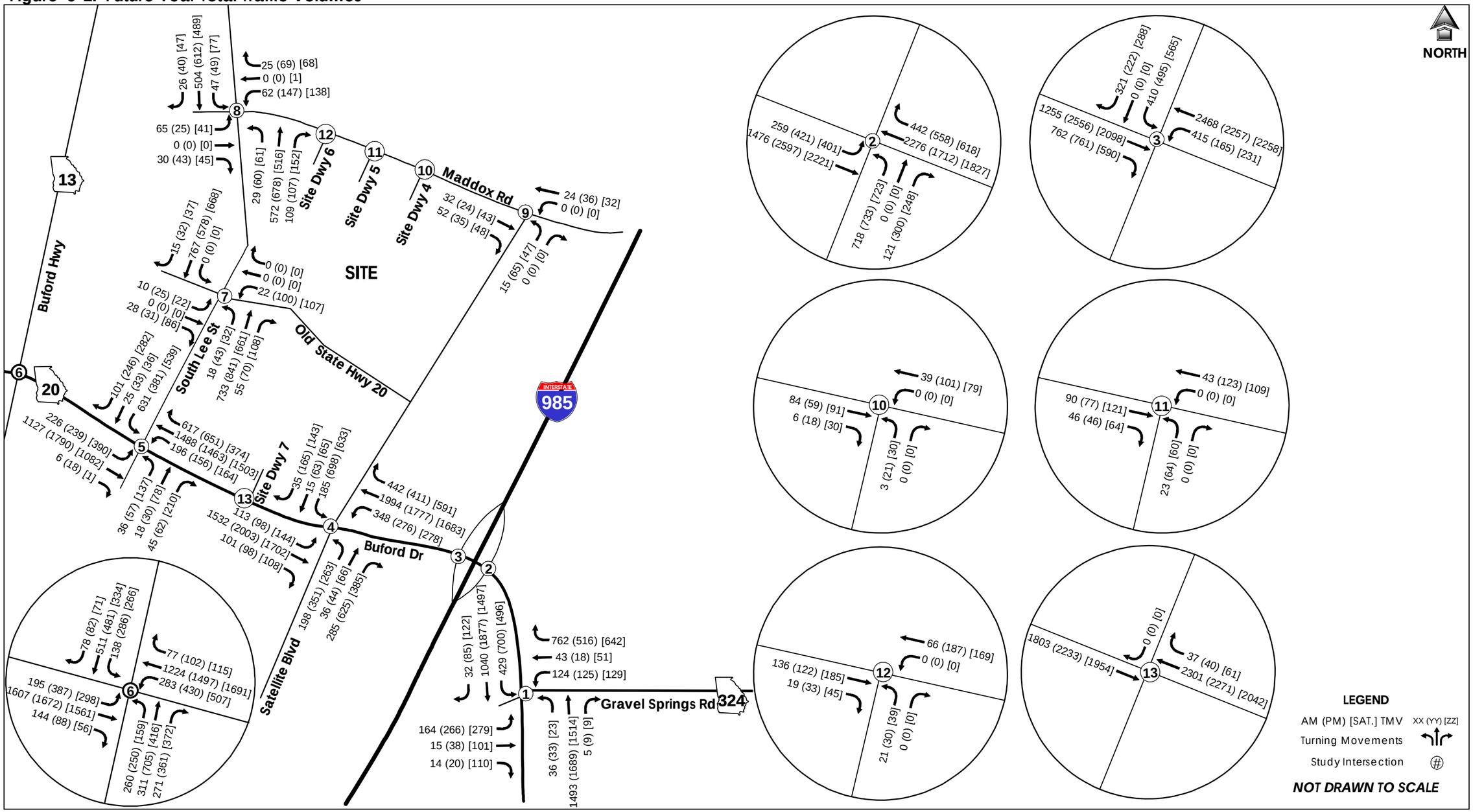
As can be seen from Table 9-1, all of the movements, and all of the overall intersection operations, are expected to function at adequate Levels of Service for Future Year Total traffic conditions, except at the following locations:

- Intersection No. 1, SR 20 at SR 324 (Gravel Springs Road), which operates at LOS "F" for all three peak hours studied;
- Intersection No. 4, SR 20 at Satellite Boulevard (Site Driveway No. 1), which operates at LOS "F" for all three peak hours studied;
- Intersection No. 5, SR 20 at South Lee Street, which operates at LOS "F" for all three peak hours studied;
- Intersection No. 6, SR 20 at US 23/SR 13 (Buford Highway), which operates at LOS "F" for all three peak hours studied;
- Intersection No. 7, South Lee Street at Old State Highway 20 (Site Driveway No. 2), which for the westbound approach, operates at LOS "F" for all three peak hours studied (however, all other approaches have acceptable LOS, queue lengths, and delays); and,
- Intersection No. 8, South Lee Street at Maddox Road, which, for the eastbound movements, operates at LOS "E" for all three peak hours studied, and for the westbound movements, operates at LOS "F" for all three peak hours studied (mainline movements are acceptable).

Table 9-1. Intersection LOS – Future Year Total

No.	Intersection Name	Control	Mvmt	A.M. Peak Hour Mvmt	A.M. Peak Hour Overall	P.M. Peak Hour Mvmt	P.M. Peak Hour Overall	SAT Peak Hour Mvmt	SAT Peak Hour Overall
1	SR 20 at Gravel Springs Road	Traffic Signal	Overall	*	F	*	F	*	F
2	SR 20 at I-985 NB Ramps	Traffic Signal	Overall	*	C	*	D		C
3	SR 20 at I-985 SB Ramps	Traffic Signal	Overall	*	C	*	C	*	C
4	SR 20 at Satellite Blvd	Traffic Signal	Overall	*	F	*	F	*	F
5	SR 20 at South Lee Street	Traffic Signal	Overall	*	F	*	F	*	F
6	SR 20 at Buford Hwy	Traffic Signal	Overall	*	F	*	F	*	F
7	South Lee Street at Old State Hwy 20	STOP Sign on Side Street	EBL+T+R	C	*	C	*	C	*
			WBL+T+R	F		F		F	
			NBL	B		A		A	
			SBL	A		A		A	
8	South Lee Street at Maddox Road	STOP Sign on Side Street	EBL+T+R	E	*	E	*	E	*
			WBL+T+R	F		F		F	
			NBL	A		A		A	
			SBL	A		A		A	
9	Maddox Road at Satellite Blvd Extended (Site Driveway 3)	STOP Sign on Side Street	WBL+T	A	*	A	*	A	*
			NBL+R	A		A		A	
10	Maddox Road at Site Driveway 4	STOP Sign on Side Street	WBL+T	A	*	A	*	A	*
			NBL+R	A		A		A	
11	Maddox Road at Site Driveway 5	STOP Sign on Side Street	WBL+T	A	*	A	*	A	*
			NBL+R	A		B		B	
12	Maddox Road at Site Driveway 6	STOP Sign on Side Street	WBL+T	A	*	A	*	A	*
			NBL+R	A		B		B	
13	SR 20 at Site Driveway 7	STOP Sign on Side Street	SBR	A	*	A	*	A	*

Figure 9-1. Future Year Total Traffic Volumes



9.1.1 Required Improvements

Table 9-1 identifies deficiencies that are expected to exist at the study intersections for Future Year Total traffic conditions. Improvements have been identified that would be expected to correct the Future Year Total deficiencies. Their impacts on the Future Year Total deficiencies are shown in Table 9-2. Printouts of these analyses are included in Appendix J.

Table 9-2. Intersection LOS – Future Year Total with Required Improvements

Intersection No.	Intersection Name	Improvement	Mvmt	A.M. Peak Hour Mvmt	A.M. Peak Hour Overall	P.M. Peak Hour Mvmt	P.M. Peak Hour Overall	SAT Peak Hour Mvmt	SAT Peak Hour Overall
1	SR 20 at Gravel Springs Road	NBT, SBL	Overall	*	D	*	E	*	D
4	SR 20 at Satellite Boulevard	Change NB L/L/R to NB L/T/R, 2 SBL, SBT, SBR, change EBU to U+L, add 2nd EBL, change EBR to EBT+R, WBL, WBT, WBR	Overall	*	C	*	D	*	D
5	SR 20 at South Lee Street	Change SB L/L+T/R to SB L/L/T+R, change NB & SB phasing, EBL, WBT	Overall	*	D	*	D	*	D
6	SR 20 at Buford Hwy	EBT, WBT	Overall	*	D	*	D	*	D
8	South Lee Street at Maddox Road	WBL	EBL+T+R	E	*	E	*	E	*
			WBL	F		F		F	
			WBT+R	B		B		B	
			NBL	A		A		A	
			SBL	A		A		A	

As can be seen from Table 9-2, the following required improvements are expected to bring the intersections back into adequacy for Future Year Total conditions:

- Intersection No. 1, SR 20 at SR 324 (Gravel Springs Road), add a third northbound through lane, add a second southbound left turn lane, change the phasing for the southbound left turn to protected only, and optimize the traffic signal timing;
- Intersection No. 4, SR 20 at Satellite Boulevard, convert one of the two existing northbound left turn lanes to a northbound through lane, add two southbound left

turn lanes, add a southbound through lane, add a southbound right turn lane, convert the existing eastbound U-turn lane to a U-turn+left turn lane, add a second eastbound left turn lane, convert the existing eastbound right turn lane to a through+right turn lane (this will require adding a receiving lane on SR 20), add a second westbound left turn lane, add a third westbound through lane (this will require adding a receiving lane on SR 20), add a free-flow westbound right turn lane, change the phasing for the eastbound and westbound left turns to protected only, and optimize the traffic signal timing;

- Intersection No. 5, SR 20 at South Lee Street, change the existing three lanes on the southbound approach to two (2) exclusive left turn lanes and a combined through-right lane, remove the split phasing for the northbound and southbound approaches, change the phasing for the northbound and southbound left turns to protected only, change the phasing for the northbound right turn to permitted+overlap, add a second eastbound left turn lane, change the control on the westbound right turn lane from free-flow to yield, add a third westbound through lane, and optimize the traffic signal timing;
- Intersection No. 6, SR 20 at US 23/SR 13 (Buford Highway), add a third through lane to both the eastbound and the westbound approaches, and optimize the traffic signal timing;
- Intersection No. 7, South Lee Street at Old State Highway 20, the volumes affected at this intersection are too small to warrant any improvement (either traffic signal installation, or the provision of more lanes or other geometric improvements); and,
- Intersection No. 8, South Lee Street at Maddox Road, provide for both an exclusive left turn lane and a combined through-right turn lane on the westbound approach. This improvement won't improve the approach LOS, but will improve the lane LOS in the westbound directions (as well as reduced delay in the AM and PM peak periods).

9.1.2 Programmed Improvements

Table 9-1 identifies deficiencies that are expected to exist at the study intersections for Future Year Total traffic conditions. Table 9-3 identifies the impact of the improvements that have been programmed by GDOT on the Future Year Total deficiencies – programmed improvements impact only Intersection No. 1. Printouts of these analyses are included in Appendix J.

As has already been noted above, programmed improvements at Intersection No. 1, which are currently under construction and scheduled to be completed by 2012, altered the eastbound lane configuration to a left-turn lane, a through lane, and a through-right lane (by adding a second through lane), and the westbound lane configuration to a left-turn lane, two through lanes, and a right-turn lane (by adding/converting the shared left-through lane to two through lanes and an exclusive left-turn lane). As can be seen in Table 9-3, the programmed improvements alone are not adequate to remedy the projected deficiencies.

Table 9-3. Intersection LOS – Future Year Total with Programmed Improvements

Intersection No.	Intersection Name	Improve-ment	Mvmt	A.M. Peak Hour Mvmt	A.M. Peak Hour Overall	P.M. Peak Hour Mvmt	P.M. Peak Hour Overall	SAT Peak Hour Mvmt	SAT Peak Hour Overall
1	SR 20 at Gravel Springs Road	EBT, WBL, WBT	Overall	*	F	*	F	*	F

Table 9-4 shows the improvements required, over and above Programmed Improvements, that will be necessary to bring Intersection No. 1 to adequacy.

Table 9-4. Intersection LOS – Future Year Total with Programmed Improvements Plus Additional Required Improvements

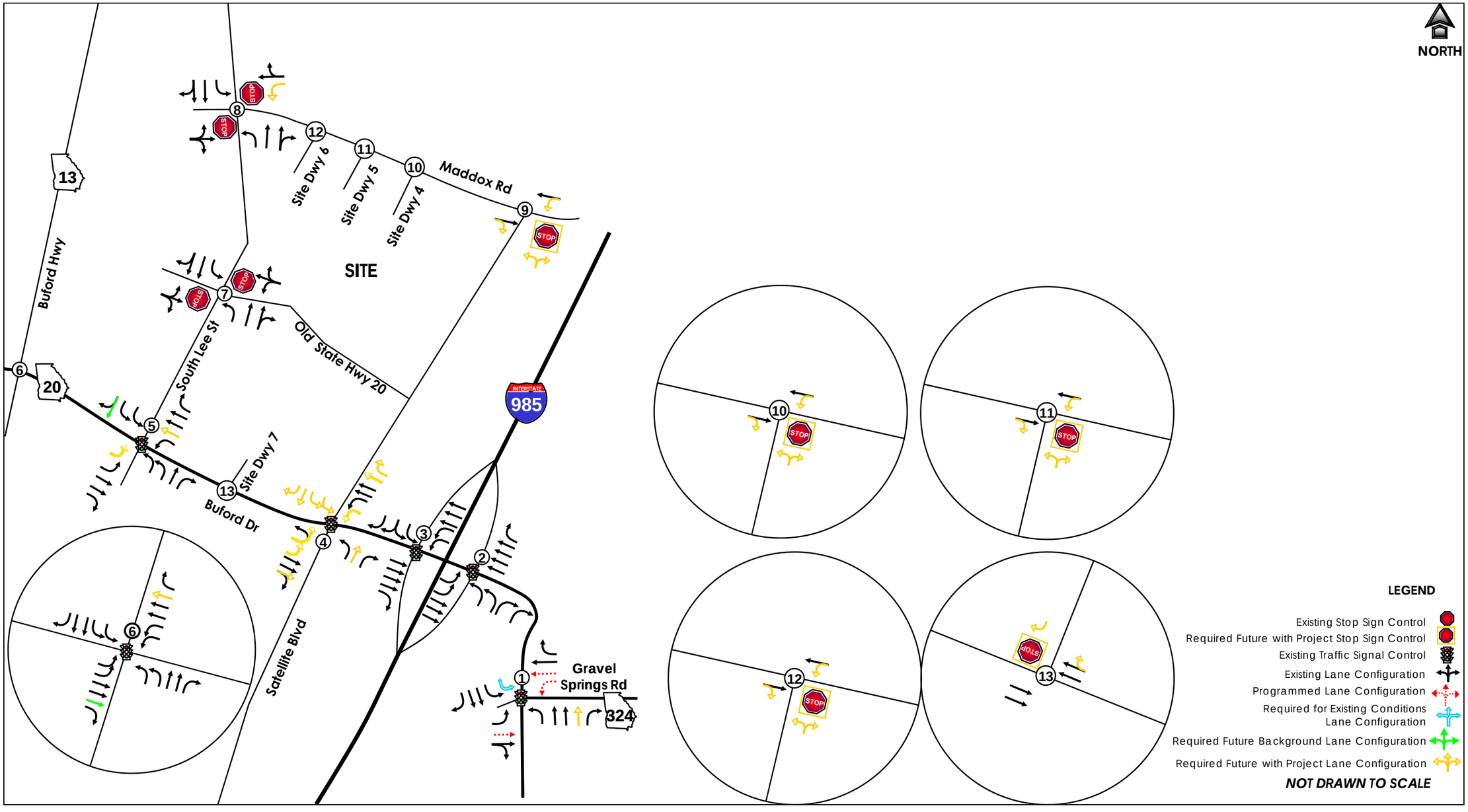
Intersection No.	Intersection Name	Improvement	Mvmt	A.M. Peak Hour Mvmt	A.M. Peak Hour Overall	P.M. Peak Hour Mvmt	P.M. Peak Hour Overall	SAT Peak Hour Mvmt	SAT Peak Hour Overall
1	SR 20 at Gravel Springs Road	NBT, SBL	Overall	*	D	*	E	*	D

As can be seen from Table 9-4, the following required improvements would be expected to bring the intersection back into adequacy for Future Year Total conditions, assuming Programmed Improvements:

- Intersection No. 1, SR 20 at SR 324 (Gravel Springs Road), add a third northbound through lane, add a second southbound left turn lane, change the phasing for the southbound left turn to protected only, and optimize the traffic signal timing.

Figure 9-2 shows the programmed and required intersection lane configurations and traffic control that would mitigate the Future Year Total traffic deficiencies.

Figure 9-2. Future Year Total – Programmed and Required Intersection Improvements



9.2 Site Access Analysis

As can be seen in Tables 9-1 and 9-2, the site access driveways operate at acceptable Levels of Service, if they are provided with the appropriate lane configurations and traffic control. See Figure 9-2 for the desired site access lane configurations and traffic control. There is one exception, discussed here.

Intersection No. 7, South Lee Street at Old State Highway 20 (Site Access No. 2), the volumes affected at this intersection are too small to warrant any improvement (either traffic signal installation, or the provision of more lanes or other geometric improvements). Thus the minor movements from the side streets will continue to suffer inadequate Levels of Service. However, two more things must also be considered: (1) if these movements end up as negatively impacted as predicted here, many of the impacted vehicles will find alternate routes to take rather than sit in unacceptable congestion; and (2) this intersection is not truly a site access drive, but actually is the next intersection up from the true site access point, which is on Old State Highway 20, interior to the site (and the actual site access drive on Old State Highway 20 operates at a very good Level of Service).

10. AREA OF INFLUENCE ANALYSIS

10.1 Introduction

The Area of Influence (AOI) is the area within six road miles of the Site. This section of the study presents an analysis of the opportunities for the workers at the Site to live within the AOI. The Site is classified as exclusively employment for the purpose of the AOI analysis. This analysis will focus on comparing the 2,241 workers at the Site to the 22,156 owner-occupied housing units in the AOI. This section will describe the study parameters and methodologies, the sources of data used for the analysis, and information concerning the demographics and economic conditions in the Site and the AOI.

The following sections of the report will address Criterion 7b of Section 3-103 of GRTA's DRI requirements. Criterion 7b states:

7. The proposed DRI:

   (b) Is located in an Area of Influence where the proposed DRI is reasonably anticipated to contribute to a balancing of land uses within the Area of Influence such that twenty-five percent (25%) of the persons who are reasonably anticipated to be employed in the proposed DRI have the opportunity to live within the Area of Influence.

A map of the AOI is provided in Figure 10-1.

10.2 Study Parameters and Methodology

In order to identify the housing and other data for the AOI, the boundaries were created in a geographic information system (GIS) format and were placed over a GIS layer of the census tracts containing the applicable data from the 2000 U.S. Census. Where 2000 U.S. Census data were not available, the analysis incorporated data from other sources, including GRTA, U.S. Bureau of Labor Statistics, and ESRI. The sources and methodologies for obtaining data for various elements of the AOI analysis have been referenced throughout the document.

Figure 10-1. Area of Influence

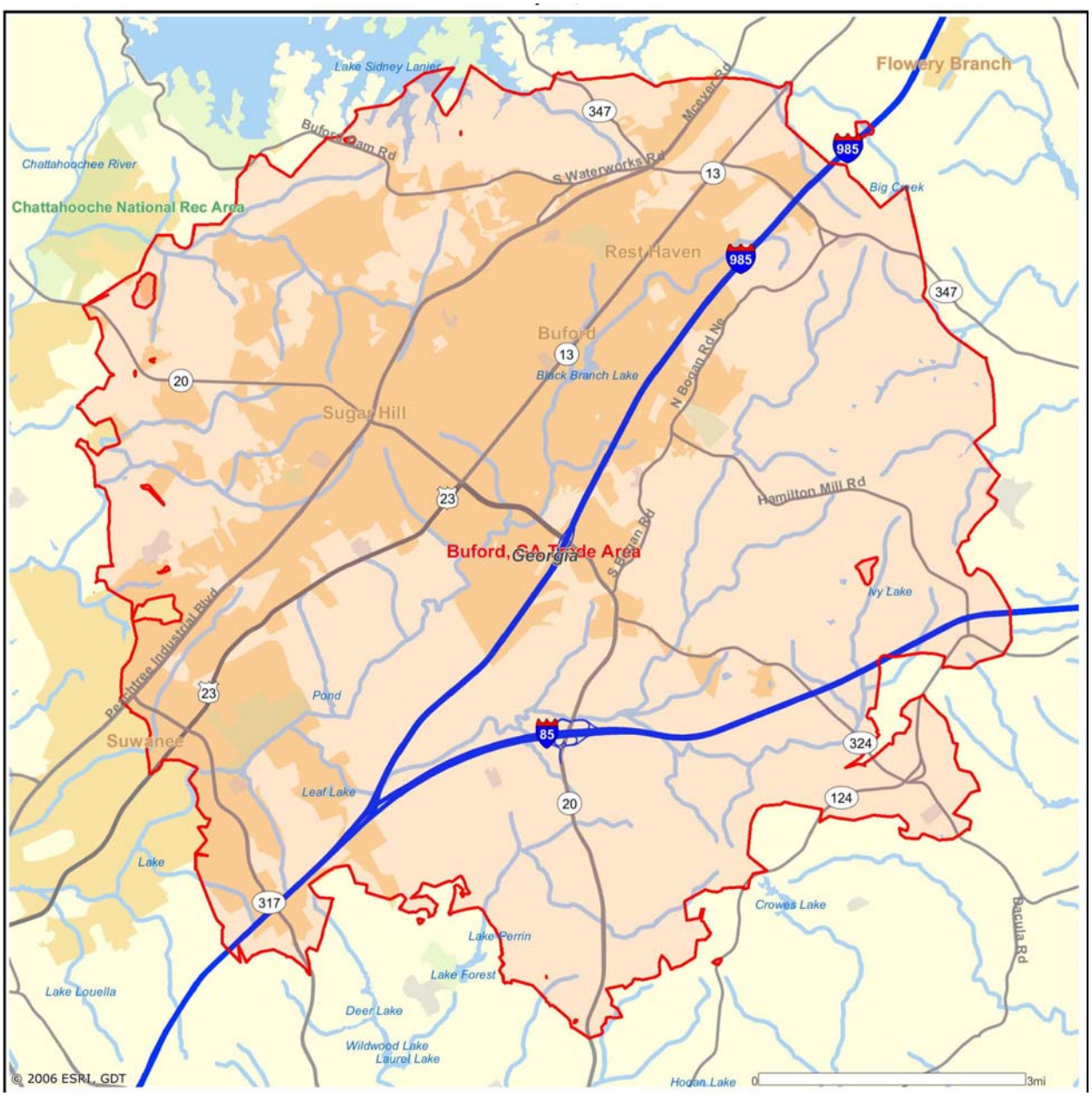


Table 10-1 presents characteristics of the AOI.

Table 10-1. Summary of AOI Characteristics

Characteristic	Year 2010
Size (acres)	50,000 acres (approximate)
Jurisdiction(s)	City of Buford/Gwinnett County/Hall County/City of Rest Haven/City of Sugar Hill/City of Suwanee
Population	90,017
Number of Housing Units	32,566
Rental / Owner / Vacant	12.5% / 81.9% / 5.6%
Price of Housing / Rent*	Range of Owner Occupied Housing Units by Value: less than $50,000 to greater than $1,000,000 Average Home Value: $162,826 Average Rent: $582

*Source: ESRI and TransCAD *Year 2000*

10.3 Criterion 7b Evaluation

The Site is proposed to contain 275 residential units, 300 hotel rooms, a 9-hole golf course with club house, 400,000 square feet of office space, 290,000 square feet of retail space, and a 69,000 square foot water park. The number of workers for each of the land uses was based on employment per square foot data contained in GRTA's *Area of Influence Guidebook for Non-Expedited Reviews, April 10, 2003,* information in the Institute of Transportation Engineers' (ITE) *Trip Generation, 7th Edition, 2003*, and information provided by the developer. The number of workers at the Site was calculated to be 2,241.

The wages paid for each job type in were identified from the U.S. Department of Labor, Bureau of Labor Statistics (BLS) website for Gwinnett County for the Year 2006. Table 10-2 shows the estimated number of site employees and the associated average annual incomes.

Table 10-2. Anticipated DRI Employees Salaries

NAICS Industry	Industry	Number of Jobs in DRI	2006 Average Annual Salary
72111	Hotels	270	$24,340
71391	Golf courses	18	$18,377
52, 53, Professional and Business Services	Finance and insurance, Real estate and rental and leasing, Professional and Business Services	1,333	$50,212
44-45	Retail trade	580	$30,061
7131	Amusement parks and arcades	40	$16,950*

Source: US Dept of Labor, Bureau of Labor Statistics, Quarterly Estimate of Employment and Wages * 2004 Salary

A conservative approach was used for the calculation of household incomes for the DRI workers by applying a factor of 1.5 to the monthly wage to approximate the contributions made by other workers in the households.

To determine an individual's or family's ability to afford the monthly housing costs of the AOI's owner-occupied housing, the recommended ratio of monthly housing costs to monthly household income (30%) was applied to determine the maximum affordable owner-occupied housing unit cost for each category of workers. Table 10-3 shows the affordable monthly housing costs for DRI workers' households.

Table 10-3. Affordability of Housing Costs for Workers in DRI

NAICS Industry	Industry	Number of Jobs in DRI	Monthly Worker Salary	Monthly Household Salary	Affordable Housing Payment
72111	Hotels	270	$2,028	$3,042	$913
71391	Golf courses	18	$1,531	$2,297	$689
52, 53, Professional and Business Services	Finance and insurance, Real estate and rental and leasing, Professional and Business Services	1,333	$4,184	$6,276	$1,883
44-45	Retail trade	580	$2,505	$3,758	$1,127
7131	Amusement parks and arcades	40	$1,413*	$2,120	$636

Source: GRTA's Area of Influence Guidebook, April 10, 2003 * 2004 Salary

The median home value in the AOI of $145,021 in 2000 was compared to the projected median home value of $195,628 in 2005 and $254,639 in 2010 to provide an assumed annual increase in home values of 7.0% between 2000 and 2005 and 6.0% between 2005 and 2010. The 7.0% annual increase in home values was applied for five (5) years to the 2000 home value ranges and then the 6.0% annual increase was applied for one (1) year to determine the number of available homes in each applicable purchase price range in 2006.

The affordable maximum monthly housing costs for owner-occupied housing units in the AOI were determined using the Government National Mortgage Association (Ginnie Mae) Affordability Calculator. Ginnie Mae uses this tool to assess an individual's or family's ability to afford an owner-occupied unit depending on the cost of the home, its geographic location, and the market rates for mortgage loans.

The numbers of DRI workers' households for each range of monthly housing costs were compared to the monthly housing costs for the AOI owner-occupied housing, using monthly housing costs calculated as described above. Table 10-4 shows the number of DRI workers whose household incomes would be expected to allow them the opportunity to live within the AOI.

Table 10-4. Affordability of DRI Housing for AOI Workers' Households

2006 No. of Units in AOI	2006 Range of Housing Unit Values	2006 Range of Monthly Mortgage Payments	Number of DRI Worker Households per Housing Cost Range	Number of Worker HHs Who Can Be Housed in AOI
1,684	less than $71,517	less than $518	0	0
2,902	$71,517 to $143,033	$518 to $1,035	328	328
7,334	$143,035 to $214,550	$1,035 to $1,553	580	580
4,941	$214,552 to $286,068	$1,553 to $2,070	1,333	1,333
4,055	$286,069 to $429,102	$2,070 to $3,106	0	0
953	$429,104 to $715,172	$3,106 to $5,176	0	0
222	$715,173 to $1,430,345	$5,176 to $10,352	0	0
66	greater than $1,430,345	greater than $10,352	0	0
TOTAL 22,156	**N/A**	**N/A**	**2,241**	**2,241**

Source: Government National Mortgage Association Loan Estimator Calculator

As can be seen in Table 10-4, 2,241 of the 2,241 Site workers have the opportunity to find housing within the AOI. Therefore, the Site is located within an AOI with housing opportunities such that approximately 100% of the persons who are anticipated to work at the Site will have an opportunity to find housing within the AOI. The Site meets GRTA's evaluation Criterion 7b.

11.1 Introduction

This section of the report presents a summary of the data and information that address the GRTA DRI Review Criteria that are contained in Section 3-103(A) of the *Procedures and Principles for GRTA Development of Regional Impact Review*, January 14, 2002.

11.2 Section 3-103(A) Review Criteria

1. *Indicate whether or not the proposed DRI is likely to promote improved regional mobility in terms of the quality, character, convenience and flexibility of transportation options.* The Site is likely to promote improved regional mobility in terms of the quality, character, convenience, and flexibility of transportation options that exist at this time. The Site is located in an area where at this time there are some practical transportation options other than the personal vehicle. There are two Gwinnett Transit Company routes that pass right in front of the site, a local route and an express route. There is a Park and Ride lot just across SR 20 from the site. The developer will be improving sidewalks on SR 20 along the frontage of the site, connecting into the existing system of sidewalks. Finally, ARC has identified SR 20 as a potential future bicycle corridor.

2. *Indicate whether or not the proposed DRI is likely to promote improved regional mobility by reducing Vehicle Miles of Travel.* The Site is likely to promote improved regional mobility by reducing Vehicle Miles of Travel (VMT) because approximately 100% of the persons who are reasonably anticipated to work at the Site have an opportunity to find housing within the Area of Influence, thus potentially reducing the VMT for work. In addition, due to the mixed-use nature of the Site, some of the Site's trips (15.4% of daily trips) will be internally captured and will not add traffic to the external roadway system.

3. *Indicate whether or not the proposed DRI is likely to promote improved regional mobility because it is located in an urban core, town center, an activity center previously designated by an RDC, a rail/transit station development or is part of a publicly sponsored redevelopment or infill initiative.* The Site is not located in an urban core, a town center, an activity center previously designated by an RDC, or a rail/transit station development, and it is not part of a publicly sponsored redevelopment or infill initiative.

4. *Indicate whether or not the proposed DRI is located sufficiently close to existing or planned transit facilities to indicate a likelihood of significant use of transit by*

residents, employees and visitors of the proposed DRI. There are currently two existing Gwinnett Transit Company bus routes within 1/2 mile of the Site, actually located on SR 20 in front of the site. Some residents and employees are likely to use those transit facilities.

5. *Indicate whether or not the proposed DRI is located within an established Transportation Management Area which creates a likelihood that the proposed DRI is reasonably anticipated to result in improved regional mobility as a result of the Transportation Management Area.* The Site is not located within an established Transportation Management Area.

6. *Indicate whether or not off-site trip generation from the proposed DRI is reduced by at least fifteen percent (15%), or, in the event that a proposed DRI is unable to satisfy the trip reduction standard established in this subsection because of other conditions which are beyond the control of the developer or the affected local government, the proposed DRI implements all available trip reduction techniques which are reasonably practical.* Off-site trip reduction from the Site is reduced by at least 15%, due to the mixed-use nature of the site. Further, there are currently existing transit facilities within 1/2 mile of the Site, and there are currently existing pedestrian facilities off-site within 3/4 miles of the Site (other than those that the developer is already committed to building) that would accommodate a reduction for alternative modes of transportation.

7. *Indicate whether or not the proposed DRI:*
   (a) Contains a mix of uses which are reasonably anticipated to contribute to a balancing of land uses such that it would be affordable for at least ten percent (10%) of the persons who are reasonably anticipated to be employed in the proposed DRI are reasonably anticipated to have an opportunity reside within the DRI; or,
   (b) Is located in an Area of Influence where the proposed DRI is reasonably anticipated to contribute to a balancing of land uses within the Area of Influence such that twenty-five percent (25%) of the persons who are reasonably anticipated to be employed in the proposed DRI have the opportunity to live within the Area of Influence; or,
   (c) Is located in an Area of Influence with employment opportunities which are such that at least twenty-five percent (25%) of the persons who are reasonably anticipated to live in the proposed DRI and are reasonably expected to be employed will have an opportunity to find employment appropriate to such persons' qualifications and experience within the Area of Influence.

   The Site is located within an Area of Influence with housing opportunities such that approximately 100% of the persons who are reasonably anticipated to work at the Site will have an opportunity to find housing within the Area of Influence.

8. *Indicate whether or not the proposed DRI is located in an area where the existing level of development and availability of infrastructure within the Area of Influence of the proposed DRI is such that the proposed DRI is reasonably anticipated to result in unplanned and poorly served development which would not otherwise occur until well-planned growth and development and adequate public facilities are available.* The Site is not located in an area where the anticipated level of development and availability of infrastructure within the study network is such that the Site is reasonably anticipated to result in unplanned and poorly served development. As shown in the traffic impact analysis, the roadways and intersections serving the Site can be reasonably expected to operate at adequate Levels of Service, and/or may be mitigated and improved readily so that they will operate at adequate LOS. Further, when Satellite Boulevard is extended further north to make the connection to Hamilton Mill Road, access and circulation opportunities within and adjacent to the site will improve dramatically. The extension of Satellite Boulevard further north has been facilitated by this site's developer, who is assuring that sufficient right-of-way is available to construct Satellite Boulevard to a four-lane, divided cross-section.

12. AIR QUALITY BENCHMARK STATEMENT

12.1 Introduction

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

Each development must incorporate transportation-related measures that contribute to a 15% reduction in vehicle miles traveled (VMT), which are directly linked to improvements in air quality.

12.2 Evaluation

Employment uses comprise approximately 70% of the square footage of the Site (37% office, 26% retail, and 7% other), and residential uses comprise approximately 30% (assuming an average of 1200 SF per loft unit). Therefore, the Site qualifies for a 9% reduction for a mix of uses.

Two Gwinnett Transit bus routes directly serve the Site via SR 20, plus there is a park and Ride lot just across SR 20 from the site. Therefore, the Site qualifies for a 3% reduction for being located within 1/4 mile of a bus stop.

The developer is proposing the following on-site sidewalk system. There will be a sidewalk along the Site's frontage on SR 20 that will indirectly connect to the existing sidewalk on the south side of SR 20, across the street from the south. There will be sidewalks along both sides of most internal roadways. There will also be sidewalks connecting the buildings with the parking facilities. Therefore, the Site qualifies for a 5% reduction for bike/ped networks in developments that meet a mixed use target and connect to adjoining uses.

12.3 Conclusion

Based on the data and information presented in this study, it is concluded that the layout of the Site coincides with the air quality guidelines set out by the ARC. The mixed use nature of the Site, the proximity to public transportation, and the internal and external sidewalks proposed as part of the Site are expected to contribute to a 17% reduction in the overall VMT for the Site and accelerate air quality improvements.

Appendix A – Transit Information

ROUTE 50







RIDERINFORMATION

- For travel planning, comments, lost and found and where to buy tickets/passes call 770-822-5010 (TTY: 770-814-4911), or go to our web site at www.gctransit.com.
- Bus stops are identified with a Gwinnett County Transit sign.
- All local buses have a bike rack on the front for two bikes.
- Buses do not operate on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.
- Customer service representatives are available to answer your phone calls from 6am to 8pm, Monday through Friday, and Saturday from 7am to 8pm.

INFORMACIÓN AL USUARIO

- Para planear su viaje, si desea hacer algún comentario, objetos perdidos y para comprar boletos/pases llame al 770-822-5010 (TTY: 770-814-4911), o visite nuestra página web www.gctransit.com.
- Las paradas de los autobuses locales se identifican con el símbolo del Transito del Condado de Gwinnett que indica las rutas de cada parada. Los autobuses paran únicamente en las paradas designadas.
- Al frente de todos los autobuses hay espacio para montar dos bicicletas.
- El Transito del Condado de Gwinnett no opera los siguientes días feriados: Año Nuevo, Día Conmemorativo, Día de la Independencia, Día del Trabajo, Día de Acción de Gracias (Thanksgiving) y Navidad.
- Nuestros representantes están disponibles para atender sus llamadas de Lunes a Viernes de 6am a 8pm y los Sábados de 7am a 8pm.

FARES

Have your fare ready before boarding the bus. Exact change or a valid pass/ticket is required. Drivers do not make change.

	Adult	*Senior/ Youth/ Disabled
Cash, one way	$1.75	$.85
10-Ride Ticket Book	$14.00	$8.50
Monthly Pass	$55.00	N/A

Transfers to other Gwinnett County buses traveling in the same direction are free. Transfers are valid for up to 1 1/2 hours. Request a transfer from the driver when you board.

TARIFAS

Tenga el boleto de transbordo listo antes de subir el autobús. Cambio exacto o un pase valido/boleto es requerido. El conductor no tiene cambio.

	Adultos	*Personas mayores/ Jóvenes/ Discapacitados
En efectivo, solo una vía	$1.75	$.85
Talonario de 10 boletos	$14.00	$8.50
Pase mensual	$55.00	N/A

Transferirse a otras rutas del sistema de transporte de Gwinnett es gratis, válido hasta por 1 hora 1/2. Solicite al conductor el boleto de transbordo en el momento de abordar el autobús.

© Gwinnett County Transit

ROUTE 50

Weekday to Buford

Leave Gwinnett Transit Ctr.	Discover Mills	Buford Dr./ Mall Grand Ln.	Buford Dr./ Buford Hwy.	S. Hill St./ Buford Hwy
1	2	3	4	5
6:00 AM	6:19	6:42	6:52	6:58
7:00	7:19	7:42	7:52	7:58
8:00	8:19	8:42	8:52	8:58
10:00	10:19	10:42	10:52	10:58
12:00 PM	**12:19**	**12:42**	**12:52**	**12:58**
2:00	**2:19**	**2:42**	**2:52**	**2:58**
4:00	**4:19**	**4:42**	**4:52**	**4:58**
5:00	**5:19**	**5:42**	**5:52**	**5:58**
6:00	**6:19**	**6:42**	**6:52**	**6:58**

Weekday to Gwinnett Place Mall

S. Hill St./ Buford Hwy	Buford Hwy./ Buford Dr.	Buford Dr./ Mall Grand Ln.	Discover Mills	Arrive Gwinnett Transit Ctr.
5	4	3	2	1
6:58 AM	7:04	7:14	7:37	7:56
7:58	8:04	8:14	8:37	8:56
8:58	9:04	9:14	9:37	9:56
10:58	11:04	11:14	11:37	11:56
12:58	**1:04**	**1:14**	**1:37**	**1:56**
2:58	**3:04**	**3:14**	**3:37**	**3:56**
4:58	**5:04**	**5:14**	**5:37**	**5:56**
5:58	**6:04**	**6:14**	**6:37**	**6:56**
6:58	**7:04**	**7:14**	**7:37**	**7:56**

Saturday to Buford

Leave Gwinnett Transit Ctr.	Discover Mills	Buford Dr./ Mall Grand Ln.	Buford Dr./ Buford Hwy.	S. Hill St./ Buford Hwy
1	2	3	4	5
8:00 AM	8:19	8:42	8:52	8:58
10:00	10:19	10:42	10:52	10:58
12:00 PM	**12:19**	**12:42**	**12:52**	**12:58**
2:00	**2:19**	**2:42**	**2:52**	**2:58**
4:00	**4:19**	**4:42**	**4:52**	**4:58**
6:00	**6:19**	**6:42**	**6:52**	**6:58**

Saturday to Gwinnett Place Mall

S. Hill St./ Buford Hwy	Buford Hwy./ Buford Dr.	Buford Dr./ Mall Grand Ln.	Discover Mills	Arrive Gwinnett Transit Ctr.
5	4	3	2	1
8:58 AM	9:04	9:14	9:37	9:56
10:58	11:04	11:14	11:37	11:56
12:58	**1:04**	**1:14**	**1:37**	**1:56**
2:58	**3:04**	**3:14**	**3:37**	**3:56**
4:58	**5:04**	**5:14**	**5:37**	**5:56**
6:58	**7:04**	**7:14**	**7:37**	**7:56**

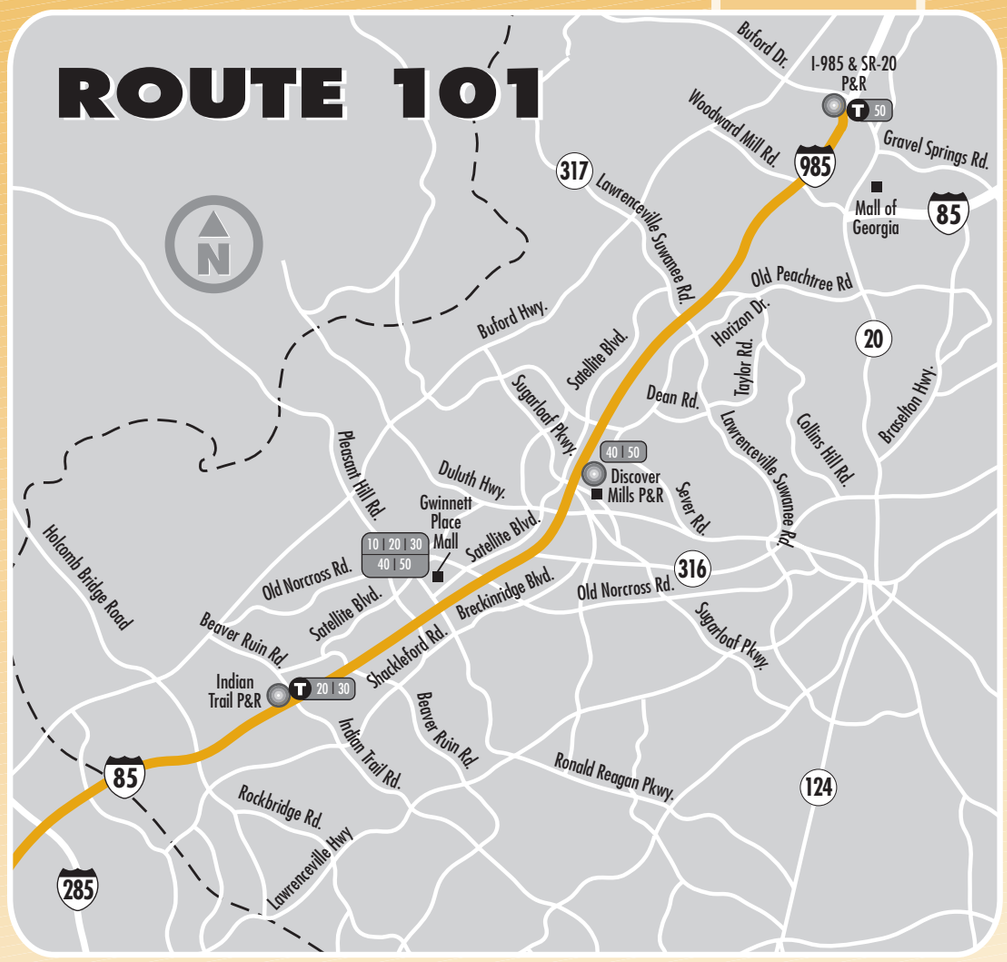
Route 50B
Gwinnett County Transit's Route 50B provides public bus service before, during and after select Gwinnett Civic Center events. Route 50B operates on a segment of Route 50 between the park and ride lot on Satellite Boulevard 1/4 mile north of Sugarloaf Parkway (at the former Boeing facility) and Gwinnett Civic Center. This service is open to the general public who may board at any designated bus stop location along the route.

Note: During special events authorities may not allow buses to enter the Gwinnett Civic Center and the Gwinnett Arena. The buses may be required to detour from the normal route.

Ruta 50B
La Ruta 50B de Gwinnett County Transit presta un servicio de autobús público antes, duranta y después de eventos seleccionados del Centro Civic de Gwinnett. Esta ruta opera en un tramo de la Ruta 50 entre el estacionamiento de la parada de autobuses en Satellite Boulevard a 1/4 de milla al norte de Sugarloaf Parkway (en la ex planta Boeing) y el Centro Civic de Gwinnett. Este servicio está disponible para el público en general que puede tomar los autobuses en cualquier parada designada a lo largo de la ruta.

Note: Durante eventos especiales las autoridades pueden no permitir que los autobuses entren en el Centro Civic de Gwinnett y el Gwinnett Arena. Los autobuses se pueden requerir desvíar de la ruta normal.

WELCOME TO Gwinnett County Transit



© Gwinnett County Transit



A.M. route to Downtown Atlanta

Leave I-985 @SR 20	W. Peachtree Place @ Peachtree St.	Peachtree Center	MARTA 5 Points	Arrive Capitol Square
5:45	6:32	6:35	6:40	6:45
6:00	6:47	6:50	6:55	7:00
6:15	7:02	7:05	7:10	7:15
6:30	7:17	7:20	7:25	7:30
6:45	7:32	7:35	7:40	7:45
7:00	7:47	7:50	7:55	8:00
7:15	8:07	8:10	8:15	8:20
7:30	8:22	8:25	8:30	8:35
7:45	8:42	8:45	8:50	8:55
8:00	8:57	9:00	9:05	9:10

P.M. route to I-985 Park & Ride

Leave Capitol Square	MARTA 5 Points	Peachtree Center	Ralph McGill @ West Peachtree St.	Arrive I-985 & SR20
3:02	3:09	3:15	3:18	4:10
3:17	3:24	3:30	3:33	4:25
3:32	3:39	3:45	3:48	4:40
3:47	3:54	4:00	4:03	4:55
4:02	4:09	4:15	4:18	5:10
4:17	4:24	4:30	4:33	5:25
4:32	4:39	4:45	4:48	5:40
4:47	4:54	5:00	5:03	5:55
5:02	5:09	5:15	5:18	6:10
5:17	5:24	5:30	5:33	6:25
5:32	5:39	5:45	5:48	6:40
5:47	5:54	6:00	6:03	6:55
6:02	6:09	6:15	6:18	7:10
6:17	6:24	6:30	6:33	7:25
6:45	6:52	6:58	7:01	8:09

Note: Last bus boards all 101 and 103 passengers and stops at both park and ride lots.

LEGEND

- Route 101
- Park & Ride lot
- MARTA Station
- Transfer Point
- Gwinnett County line
- Points of Interest

Appendix B – Trip Generation Worksheets

Trip Generation

ITE Trip Generation, 7th Edition (2003)

Project	Buford Jubilee	**Project Number**	1826-5000
Client	Buford Jubilee, LLC		
Site	Gwinnett County, GA	**Number of Units***	**275**
Land Use	**Residential Condominium/Townhouse**	**ITE Code**	**230**

Weekdays

Ln(Trips) = 0.85Ln(# units) + 2.55

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
1517	50%	50%	759	759

AM Peak Hour: Weekdays

(peak hour of adjacent street)

Ln(Trips) = 0.80Ln(# units) + 0.26

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
116	17%	83%	20	96

PM Peak Hour: Weekdays

(peak hour of adjacent street)

Ln(Trips) = 0.82Ln(# units) + 0.32

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
138	67%	33%	92	46

Peak Hour: Saturday

(peak hour of generator)

Trips = 0.29(# units) + 42.63

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
122	54%	46%	66	56

*units are dwelling units

Trip Generation

ITE Trip Generation, 7th Edition (2003)

Project	Buford Jubilee	***Project Number***	1826-5000
Client	Buford Jubilee, LLC		
Site	Gwinnett County, GA	***Number of Units****	***300***
Land Use	***Hotel***	***ITE Code***	***310***

Weekdays

Trips = 8.95 (# units) - 373.16

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
2,312	50%	50%	1156	1156

AM Peak Hour: Weekdays

(peak hour of adjacent street)

Ln(Trips) = 1.24Ln(# units) - 2.00

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
160	61%	39%	98	62

PM Peak Hour: Weekdays

(peak hour of adjacent street)

Trips = 0.59(# units)

(Average Rate)

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
177	53%	47%	94	83

Peak Hour: Saturday

(peak hour of generator)

Trips = 0.69(# units) + 4.32

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
211	56%	44%	118	93

**units are rooms*

Trip Generation

ITE Trip Generation, 7th Edition (2003)

Project	Buford Jubilee	***Project Number***	*1826-5000*
Client	Buford Jubilee, LLC		
Site	Gwinnett County, GA	***Number of Units****	***9***
Land Use	***Golf Course***	***ITE Code***	***430***

Weekdays

Trips = 35.74(# units)

(Average Rate)

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
322	50%	50%	161	161

AM Peak Hour: Weekdays

(peak hour of adjacent street)

Trips = 2.22(# units)

(Average Rate)

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
20	79%	21%	16	4

PM Peak Hour: Weekdays

(peak hour of adjacent street)

Trips = 2.74(# units)

(Average Rate)

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
25	44%	56%	11	14

Peak Hour: Saturday

(peak hour of generator)

Trips = 4.59(# units)

(Average Rate)

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
41	49%	51%	20	21

Trip Generation

ITE Trip Generation, 7th Edition (2003)

Project	Buford Jubilee	***Project Number***	1826-5000
Client	Buford Jubilee, LLC.		
Site	Gwinnett County, GA	***Number of Units****	***400***
Land Use	***General Office Building***	***ITE Code***	***710***

Weekdays

Ln(Trips) = 0.77Ln(# units) + 3.65

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
3879	50%	50%	1940	1939

AM Peak Hour: Weekday

Ln(Trips) = 0.80Ln(# units) + 1.55

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
569	88%	12%	501	68

PM Peak Hour: Weekday

Trips = 1.12(# units) + 78.81

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
527	17%	83%	90	437

Peak Hour: Saturday

(peak hour of generator)

Ln(Trips) = 0.81Ln(# units) - 0.12

Trips				
Total Number	Percent		Number	
	In	Out	In	Out
114	54%	46%	62	52

*units are 1000 Sq. Feet Gross Floor Area

Trip Generation

ITE Trip Generation, 7th Edition (2003)

Project	Buford Jubilee	***Project Number***	1826-5000
Client	Buford Jubilee, LLC		
Site	Gwinnett County, GA	***Number of Units****	***290***
Land Use	***Shopping Center***	***ITE Code***	***820***

Weekdays

	Trips				
	Total	Percent		Number	
	Number	In	Out	In	Out
Ln(Trips) = 0.65Ln(# units) + 5.83	13567	50%	50%	6784	6784

AM Peak Hour: Weekdays

	Trips				
	Total	Percent		Number	
	Number	In	Out	In	Out
Ln(Trips) = 0.60Ln(# units) + 2.29	296	61%	39%	181	115

PM Peak Hour: Weekdays

	Trips				
	Total	Percent		Number	
	Number	In	Out	In	Out
Ln(Trips) = 0.66Ln(# units) + 3.40	1264	48%	52%	607	657

Peak Hour: Saturday

(peak hour of generator)

	Trips				
	Total	Percent		Number	
	Number	In	Out	In	Out
Ln(Trips) = 0.65Ln(# units) + 3.77	1729	52%	48%	899	830

***Trips are per thousand square feet gross leasable area**

Trip Generation

Project	Buford Jubilee	***Project Number***	1826-5000
Client	Buford Jubilee, LLC		
Site	Gwinnett County, GA		
Land Use	***Water Park***		

Weekdays

Trips				
Total Number	Percent In	Percent Out	Number In	Number Out
1,600	50%	50%	800	800

AM Peak Hour: Weekdays

Trips				
Total Number	Percent In	Percent Out	Number In	Number Out
			20	5

PM Peak Hour: Weekdays

Trips				
Total Number	Percent In	Percent Out	Number In	Number Out
			50	120

Peak Hour: Saturday
(peak hour of generator)

Trips				
Total Number	Percent In	Percent Out	Number In	Number Out
			160	240

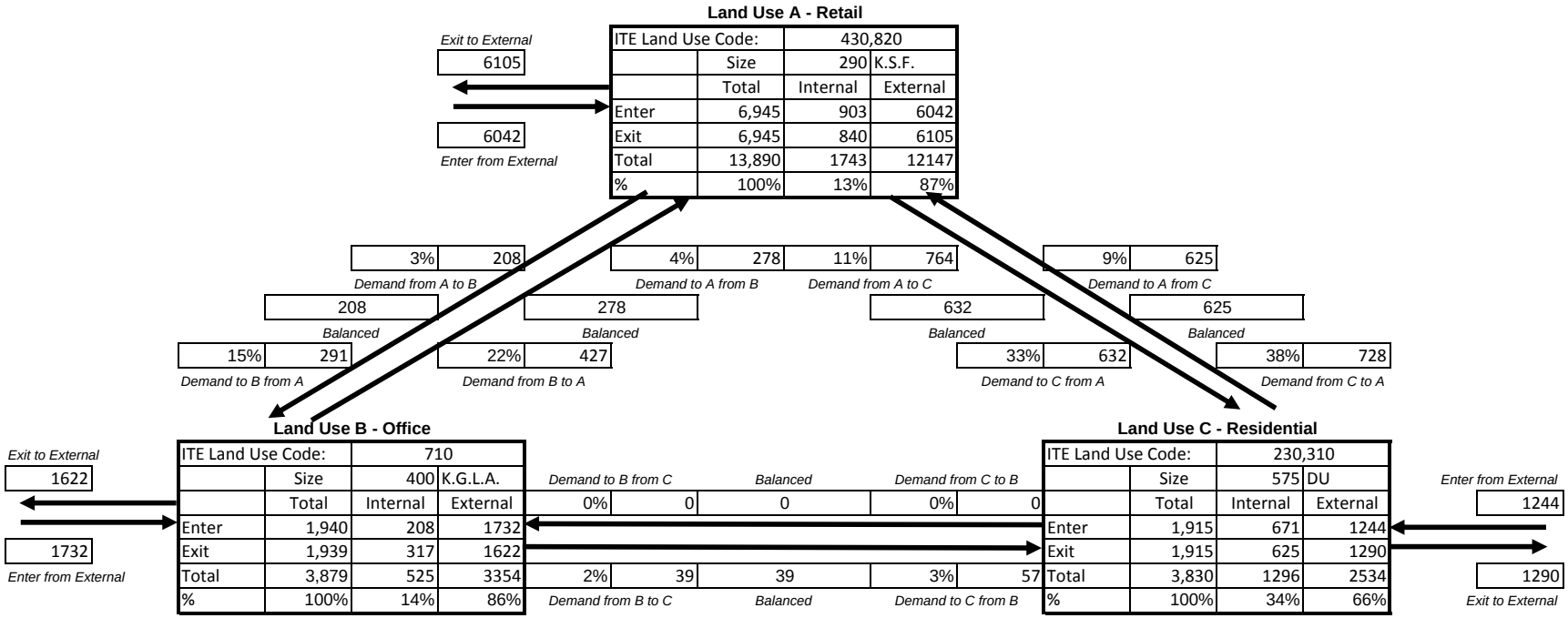
Peak Hour: Sunday
(peak hour of generator)

Trips				
Total Number	Percent In	Percent Out	Number In	Number Out
			0	0

Analyst: Carl LaFerney
Date: 4/20/2008

Multi-Use Development
Trip Generation

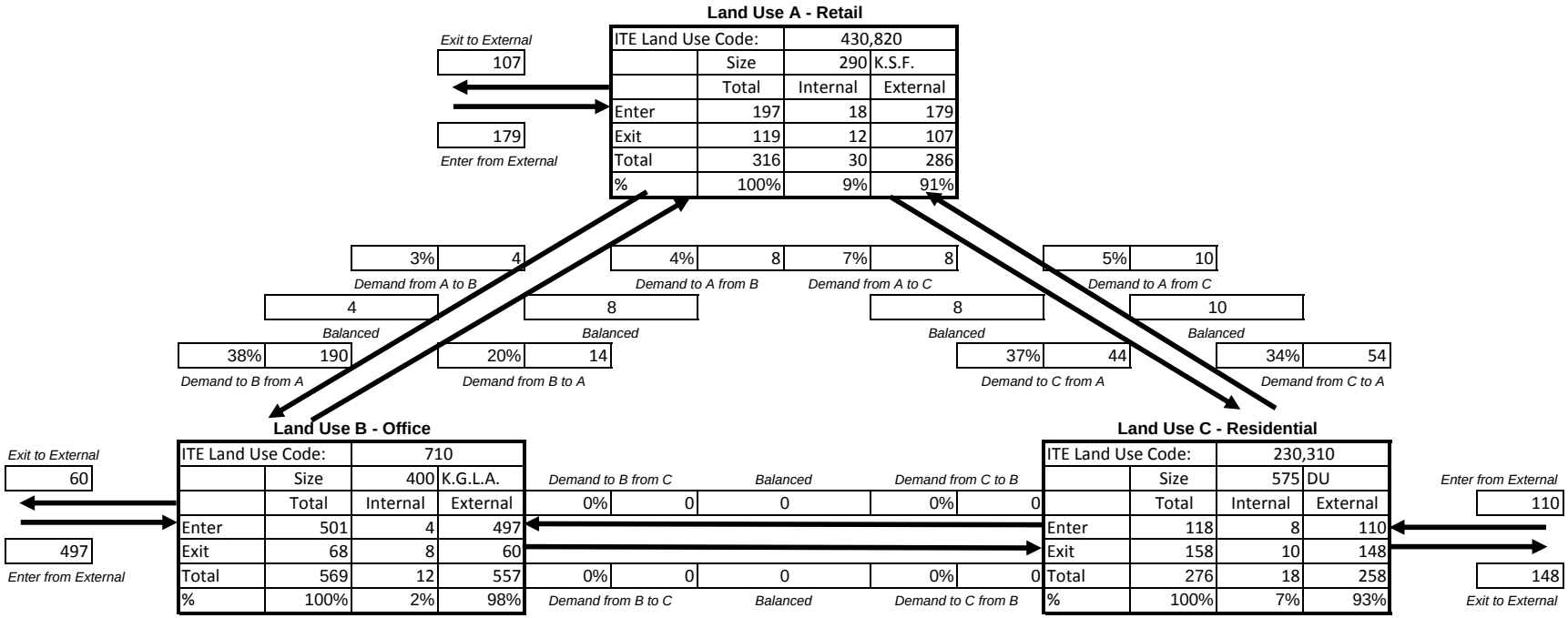
Name of Development: Buford Jubilee
Time Period: Daily Traffic



Analyst: Carl LaFerney
Date: 4/20/2008

Multi-Use Development
Trip Generation

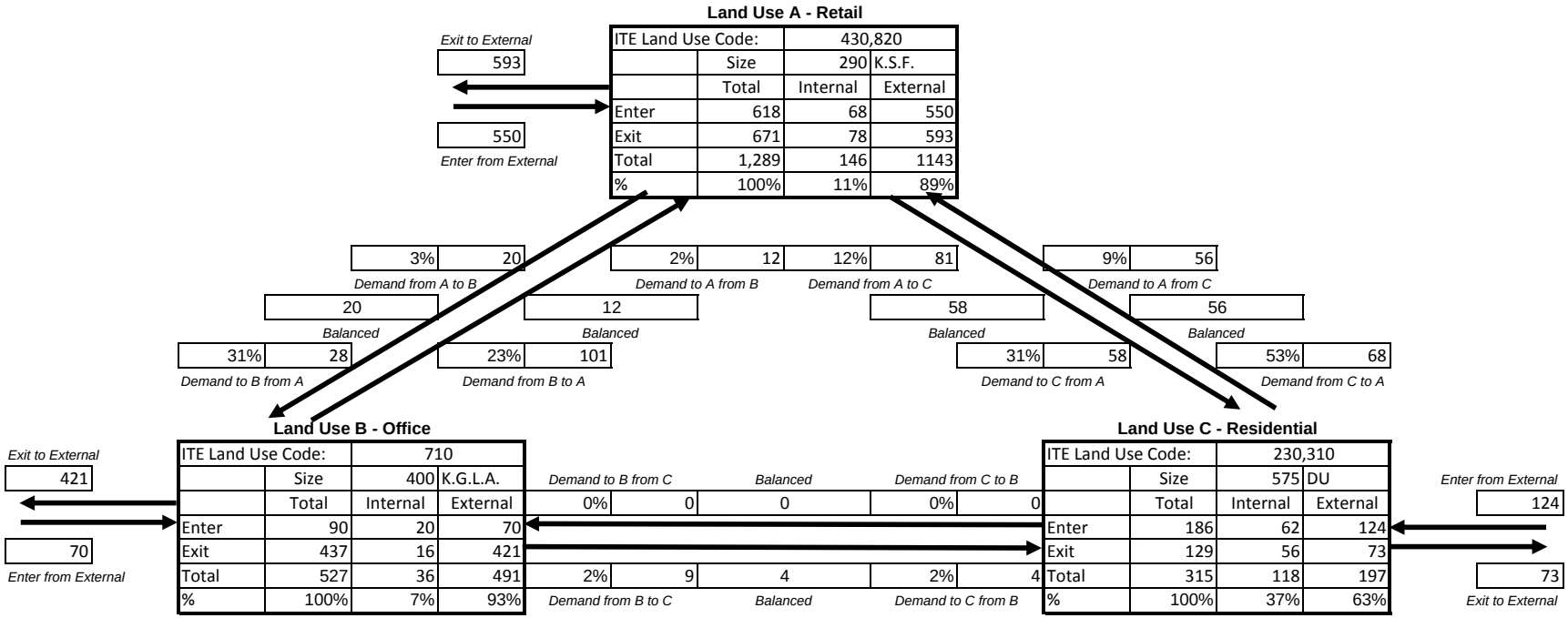
Name of Development: Buford Jubilee
Time Period: AM Peak Hour of Adj Street Traffic



Analyst: Carl LaFerney
Date: 4/20/2008

Multi-Use Development
Trip Generation

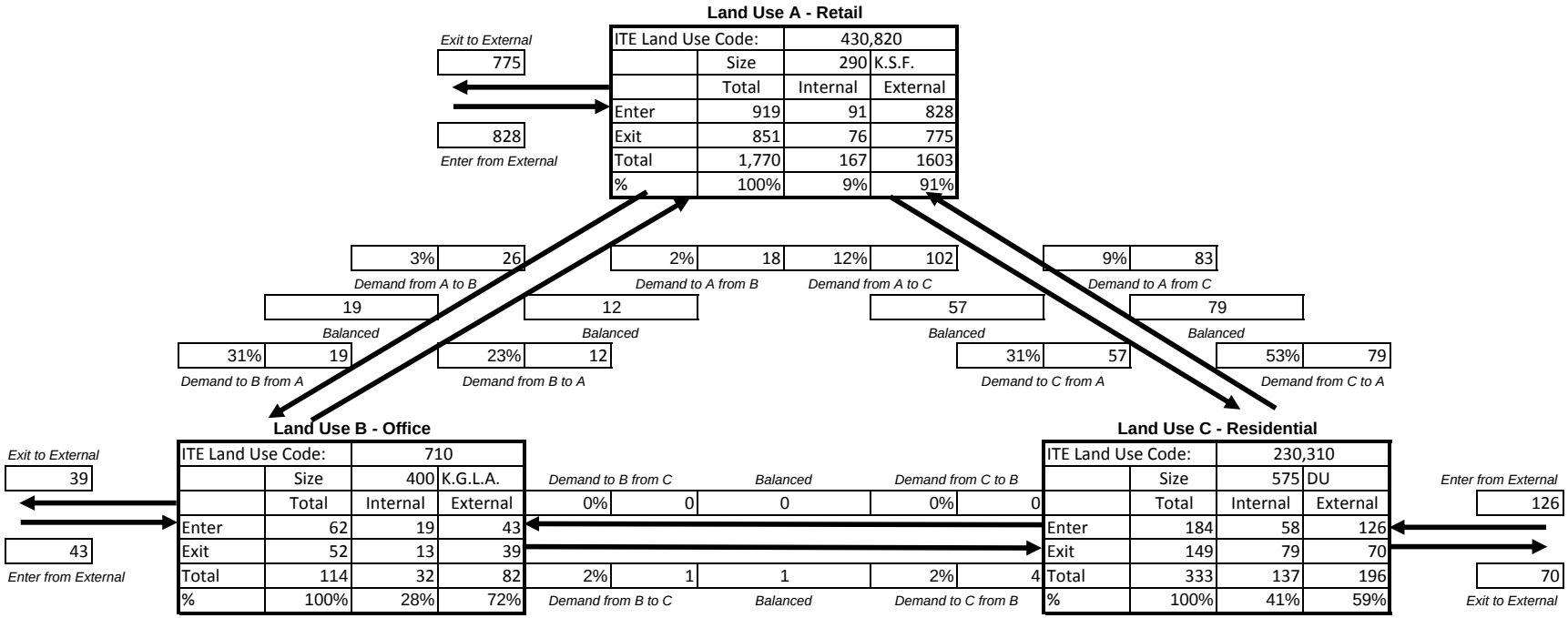
Name of Development: Buford Jubilee
Time Period: PM Peak Hour of Adj Street Traffic



Analyst: Carl LaFerney
Date: 4/20/2008

Multi-Use Development
Trip Generation

Name of Development: Buford Jubilee
Time Period: Saturday Peak Hour of Adj Street Traffic



Appendix C – Peak Hour Turning Movement Counts

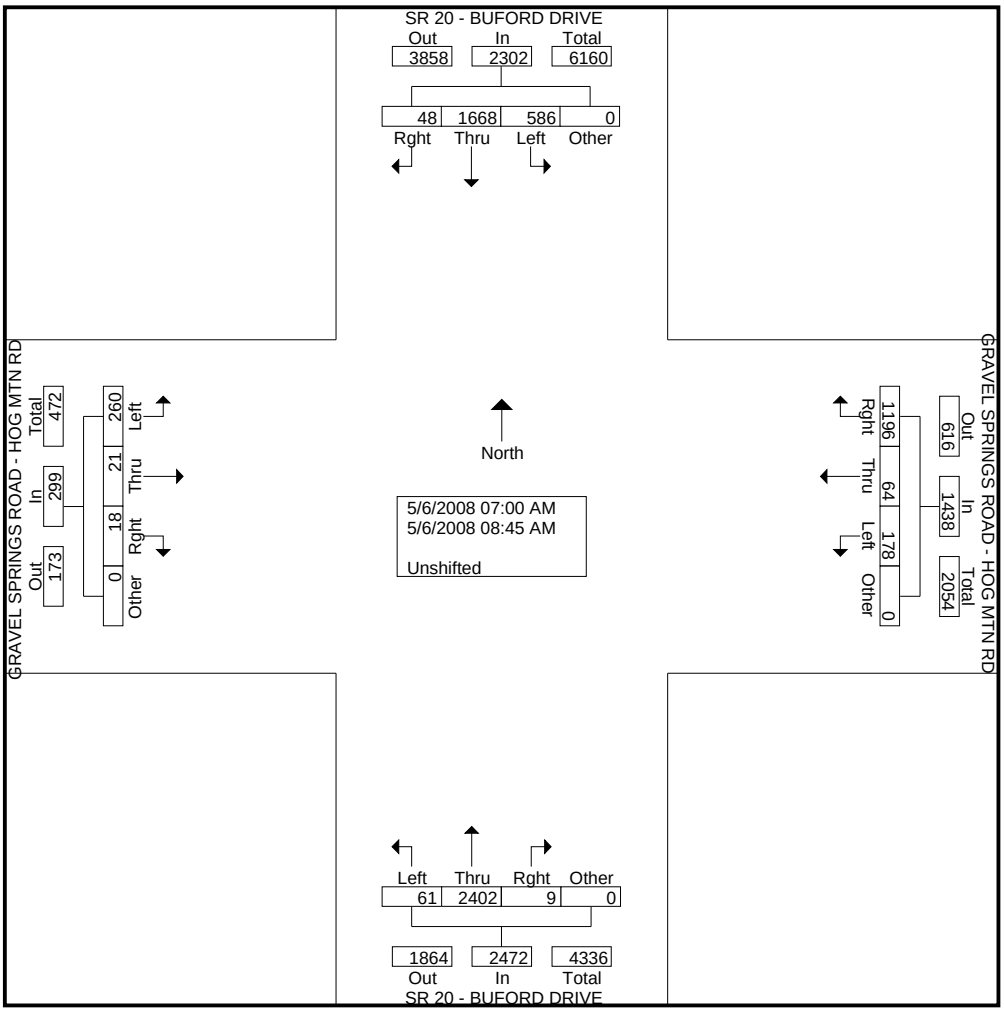
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : GravelSpgsRd@SR20AM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

	SR 20 - BUFORD DRIVE Southbound					GRAVEL SPRINGS ROAD - HOG MTN RD Westbound					SR 20 - BUFORD DRIVE Northbound					GRAVEL SPRINGS ROAD - HOG MTN RD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
07:00 AM	36	210	5	0	251	13	7	150	0	170	9	293	0	0	302	25	3	3	0	31	754
07:15 AM	73	160	7	0	240	23	13	138	0	174	1	335	0	0	336	31	1	2	0	34	784
07:30 AM	59	219	4	0	282	16	4	183	0	203	11	269	2	0	282	35	2	1	0	38	805
07:45 AM	71	215	4	0	290	18	3	121	0	142	9	323	3	0	335	26	2	0	0	28	795
Total	239	804	20	0	1063	70	27	592	0	689	30	1220	5	0	1255	117	8	6	0	131	3138
08:00 AM	68	235	4	0	307	24	6	163	0	193	8	277	0	0	285	34	1	1	0	36	821
08:15 AM	88	209	4	0	301	25	16	154	0	195	12	292	0	0	304	41	4	3	0	48	848
08:30 AM	99	183	11	0	293	29	7	152	0	188	5	311	1	0	317	28	1	1	0	30	828
08:45 AM	92	237	9	0	338	30	8	135	0	173	6	302	3	0	311	40	7	7	0	54	876
Total	347	864	28	0	1239	108	37	604	0	749	31	1182	4	0	1217	143	13	12	0	168	3373
Grand Total	586	1668	48	0	2302	178	64	1196	0	1438	61	2402	9	0	2472	260	21	18	0	299	6511
Apprch %	25.5	72.5	2.1	0		12.4	4.5	83.2	0		2.5	97.2	0.4	0		87	7	6	0		
Total %	9	25.6	0.7	0	35.4	2.7	1	18.4	0	22.1	0.9	36.9	0.1	0	38	4	0.3	0.3	0	4.6	

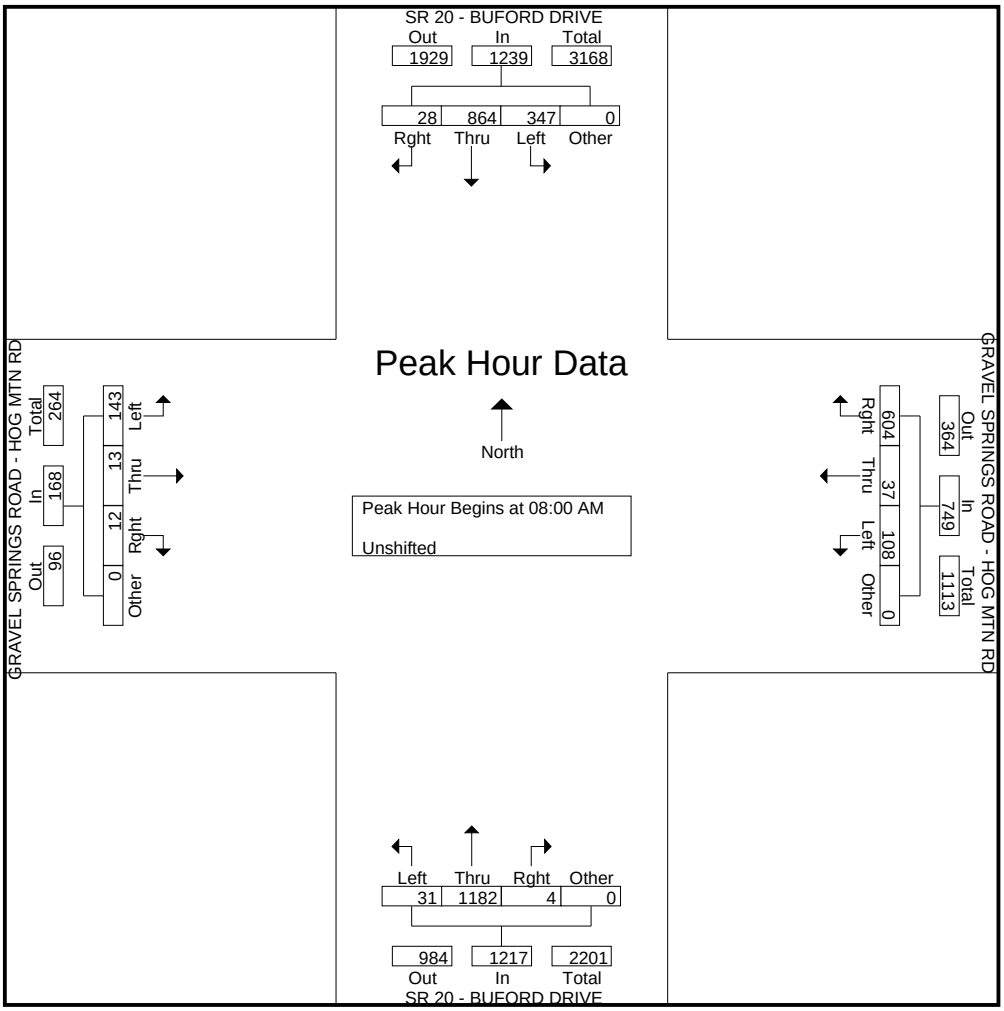


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1336 Farmer Road
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404-374-1283

File Name : GravelSpgsRd@SR20AM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 2

	SR 20 - BUFORD DRIVE Southbound					GRAVEL SPRINGS ROAD - HOG MTN RD Westbound					SR 20 - BUFORD DRIVE Northbound					GRAVEL SPRINGS ROAD - HOG MTN RD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	68	235	4	0	307	24	6	**163**	0	193	8	277	0	0	285	34	1	1	0	36	821
08:15 AM	88	209	4	0	301	25	**16**	154	0	**195**	**12**	292	0	0	304	**41**	4	3	0	48	848
08:30 AM	**99**	183	**11**	0	293	29	7	152	0	188	5	**311**	1	0	**317**	28	1	1	0	30	828
08:45 AM	92	**237**	9	0	**338**	**30**	8	135	0	173	6	302	**3**	0	311	40	**7**	**7**	0	**54**	**876**
Total Volume	347	864	28	0	1239	108	37	604	0	749	31	1182	4	0	1217	143	13	12	0	168	3373
% App. Total	28	69.7	2.3	0		14.4	4.9	80.6	0		2.5	97.1	0.3	0		85.1	7.7	7.1	0		
PHF	.876	.911	.636	.000	.916	.900	.578	.926	.000	.960	.646	.950	.333	.000	.960	.872	.464	.429	.000	.778	.963



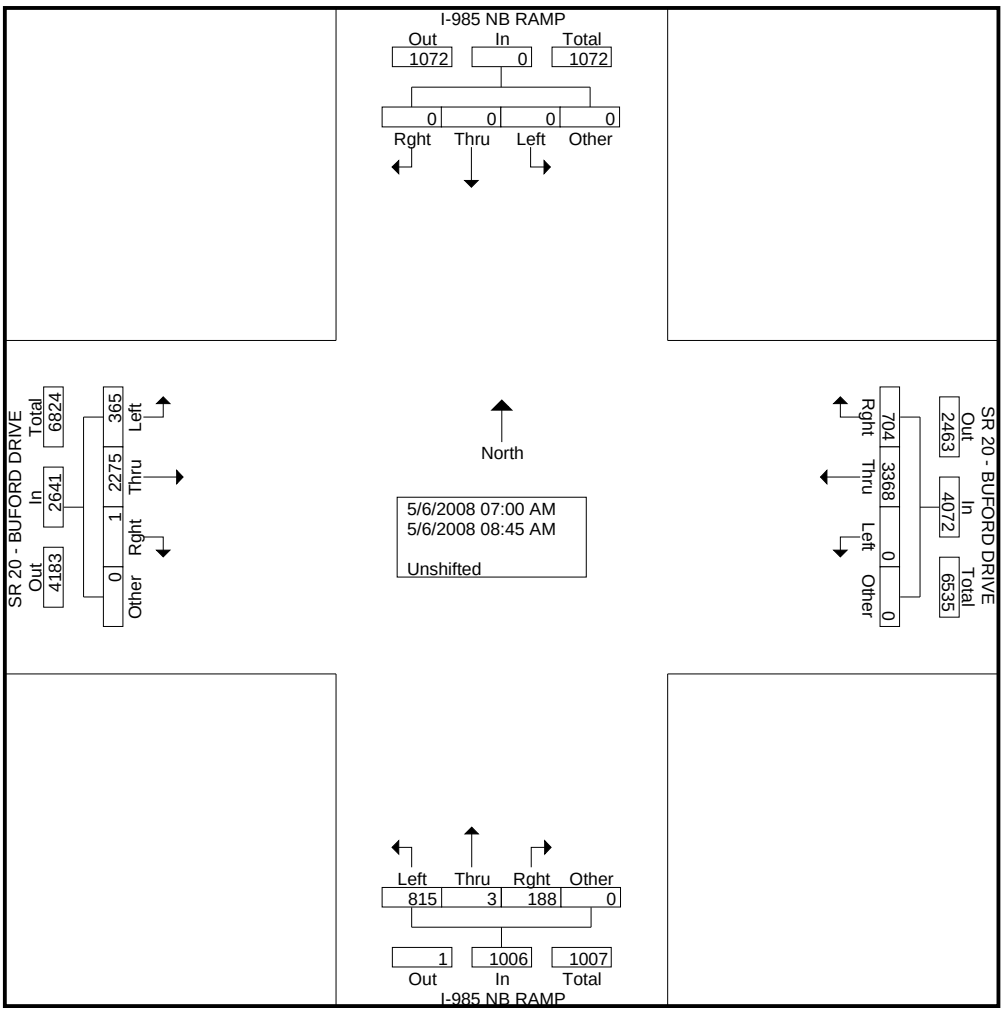
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1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985NBRamp@SR20AM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

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Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	358	100	0	458	102	0	27	0	129	42	244	0	0	286	873
07:15 AM	0	0	0	0	0	0	440	109	0	549	109	0	25	0	134	46	275	0	0	321	1004
07:30 AM	0	0	0	0	0	0	425	116	0	541	127	2	25	0	154	46	293	0	0	339	1034
07:45 AM	0	0	0	0	0	0	464	85	0	549	128	0	29	0	157	56	338	0	0	394	1100
Total	0	0	0	0	0	0	1687	410	0	2097	466	2	106	0	574	190	1150	0	0	1340	4011
08:00 AM	0	0	0	0	0	0	476	75	0	551	92	0	26	0	118	48	311	0	0	359	1028
08:15 AM	0	0	0	0	0	0	436	96	0	532	87	0	21	0	108	42	302	1	0	345	985
08:30 AM	0	0	0	0	0	0	429	63	0	492	81	1	17	0	99	58	303	0	0	361	952
08:45 AM	0	0	0	0	0	0	340	60	0	400	89	0	18	0	107	27	209	0	0	236	743
Total	0	0	0	0	0	0	1681	294	0	1975	349	1	82	0	432	175	1125	1	0	1301	3708
Grand Total	0	0	0	0	0	0	3368	704	0	4072	815	3	188	0	1006	365	2275	1	0	2641	7719
Apprch %	0	0	0	0		0	82.7	17.3	0		81	0.3	18.7	0		13.8	86.1	0	0		
Total %	0	0	0	0	0	0	43.6	9.1	0	52.8	10.6	0	2.4	0	13	4.7	29.5	0	0	34.2	

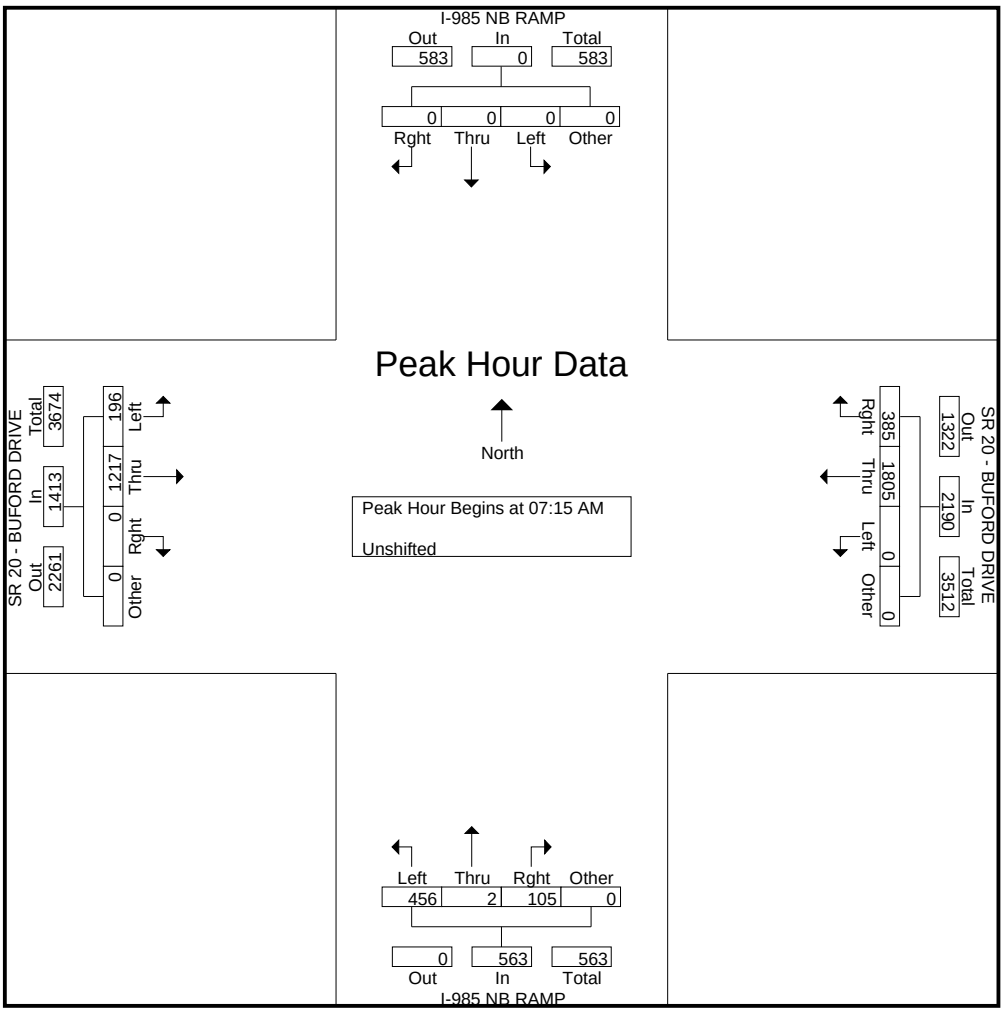


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1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985NBRamp@SR20AM
Site Code : 00000000
Start Date : 5/6/2008

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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	440	109	0	549	109	0	25	0	134	46	275	0	0	321	1004
07:30 AM	0	0	0	0	0	0	425	**116**	0	541	127	**2**	25	0	154	46	293	0	0	339	1034
07:45 AM	0	0	0	0	0	0	464	85	0	549	**128**	0	**29**	0	**157**	**56**	**338**	0	0	**394**	**1100**
08:00 AM	0	0	0	0	0	0	**476**	75	0	**551**	92	0	26	0	118	48	311	0	0	359	1028
Total Volume	0	0	0	0	0	0	1805	385	0	2190	456	2	105	0	563	196	1217	0	0	1413	4166
% App. Total	0	0	0	0		0	82.4	17.6	0		81	0.4	18.7	0		13.9	86.1	0	0		
PHF	.000	.000	.000	.000	.000	.000	.948	.830	.000	.994	.891	.250	.905	.000	.896	.875	.900	.000	.000	.897	.947



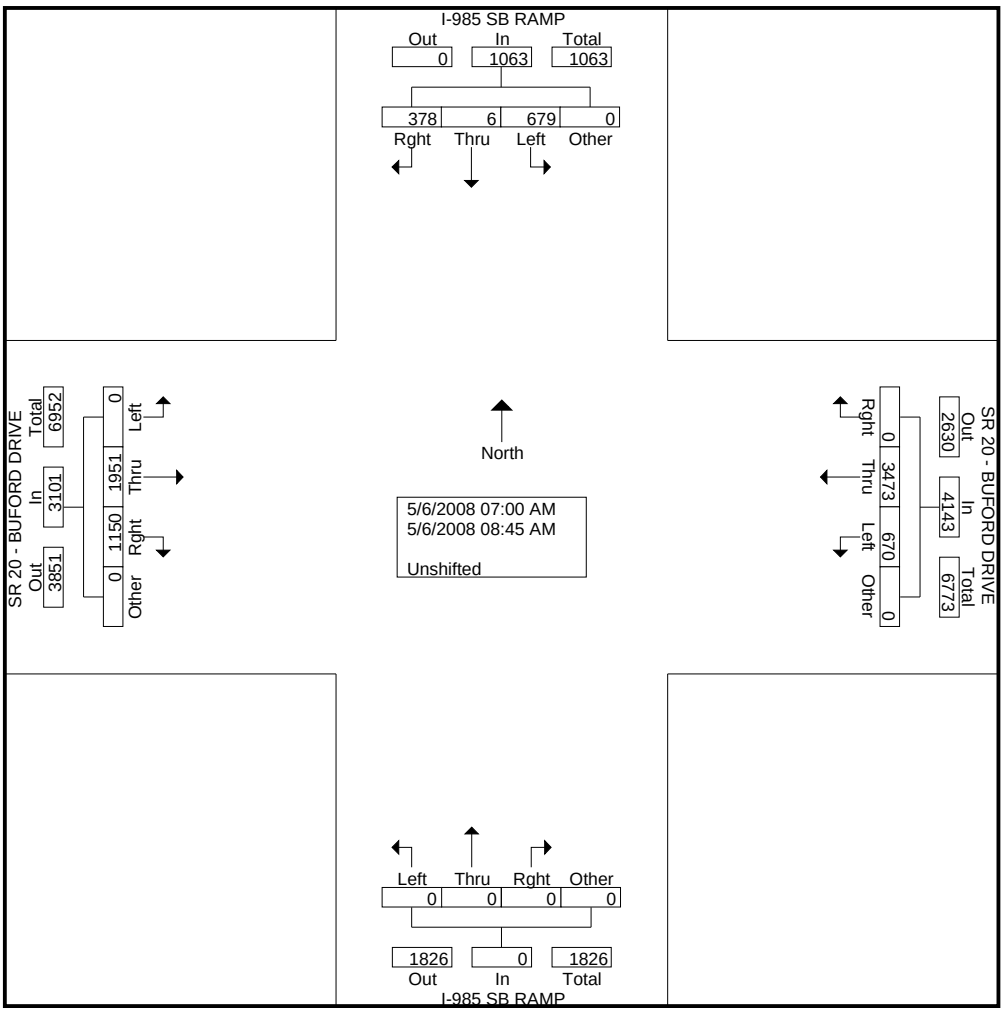
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1336 Farmer Road
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File Name : I-985SBRamp@SR20AM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

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Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
07:00 AM	63	3	44	0	110	73	426	0	0	499	0	0	0	0	0	0	195	148	0	343	952
07:15 AM	86	0	32	0	118	107	421	0	0	528	0	0	0	0	0	0	209	137	0	346	992
07:30 AM	85	0	44	0	129	98	464	0	0	562	0	0	0	0	0	0	235	169	0	404	1095
07:45 AM	99	0	61	0	160	104	479	0	0	583	0	0	0	0	0	0	259	157	0	416	1159
Total	333	3	181	0	517	382	1790	0	0	2172	0	0	0	0	0	0	898	611	0	1509	4198
08:00 AM	94	0	56	0	150	90	429	0	0	519	0	0	0	0	0	0	253	148	0	401	1070
08:15 AM	78	2	45	0	125	69	433	0	0	502	0	0	0	0	0	0	248	126	0	374	1001
08:30 AM	95	1	44	0	140	65	403	0	0	468	0	0	0	0	0	0	286	130	0	416	1024
08:45 AM	79	0	52	0	131	64	418	0	0	482	0	0	0	0	0	0	266	135	0	401	1014
Total	346	3	197	0	546	288	1683	0	0	1971	0	0	0	0	0	0	1053	539	0	1592	4109
Grand Total	679	6	378	0	1063	670	3473	0	0	4143	0	0	0	0	0	0	1951	1150	0	3101	8307
Apprch %	63.9	0.6	35.6	0		16.2	83.8	0	0		0	0	0	0		0	62.9	37.1	0		
Total %	8.2	0.1	4.6	0	12.8	8.1	41.8	0	0	49.9	0	0	0	0	0	0	23.5	13.8	0	37.3	

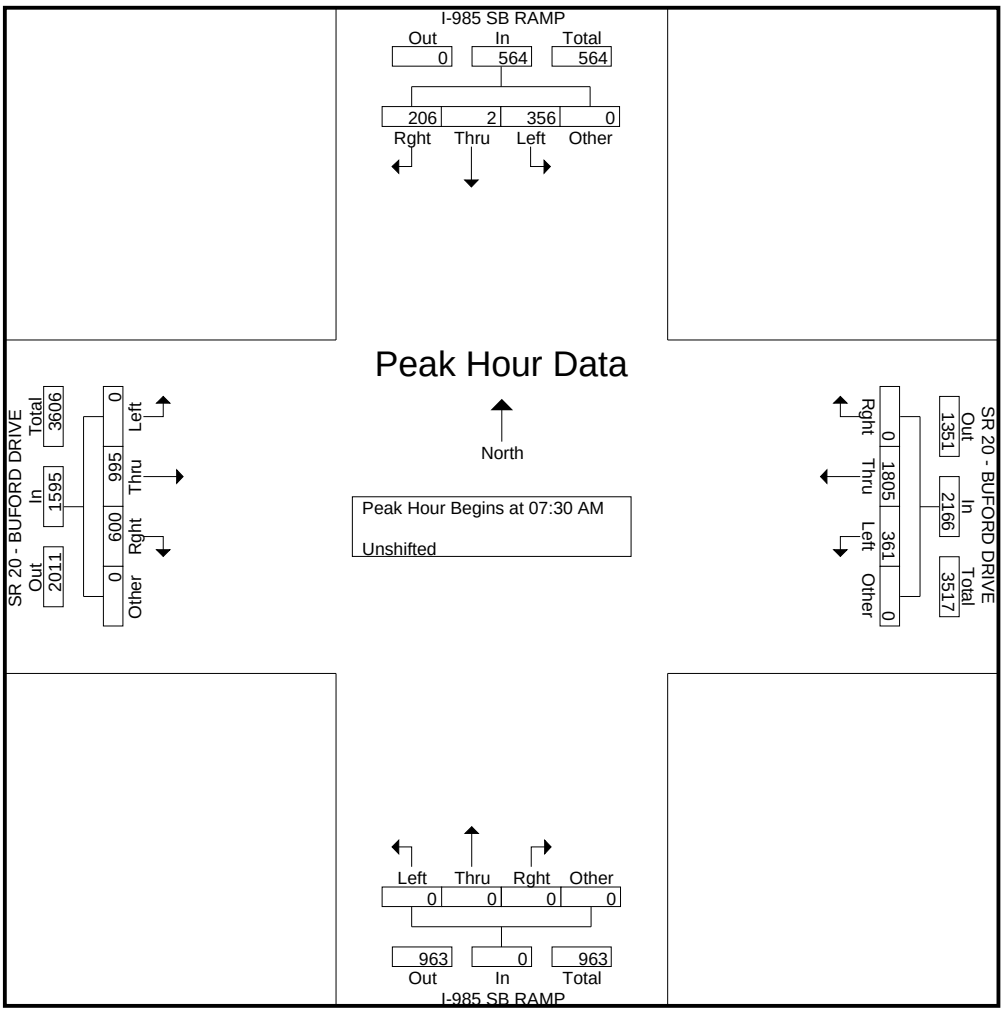


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985SBRamp@SR20AM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 2

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Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	85	0	44	0	129	98	464	0	0	562	0	0	0	0	0	0	235	**169**	0	404	1095
07:45 AM	**99**	0	**61**	0	**160**	**104**	**479**	0	0	**583**	0	0	0	0	0	0	**259**	157	0	**416**	**1159**
08:00 AM	94	0	56	0	150	90	429	0	0	519	0	0	0	0	0	0	253	148	0	401	1070
08:15 AM	78	**2**	45	0	125	69	433	0	0	502	0	0	0	0	0	0	248	126	0	374	1001
Total Volume	356	2	206	0	564	361	1805	0	0	2166	0	0	0	0	0	0	995	600	0	1595	4325
% App. Total	63.1	0.4	36.5	0		16.7	83.3	0	0		0	0	0	0		0	62.4	37.6	0		
PHF	.899	.250	.844	.000	.881	.868	.942	.000	.000	.929	.000	.000	.000	.000	.000	.000	.960	.888	.000	.959	.933



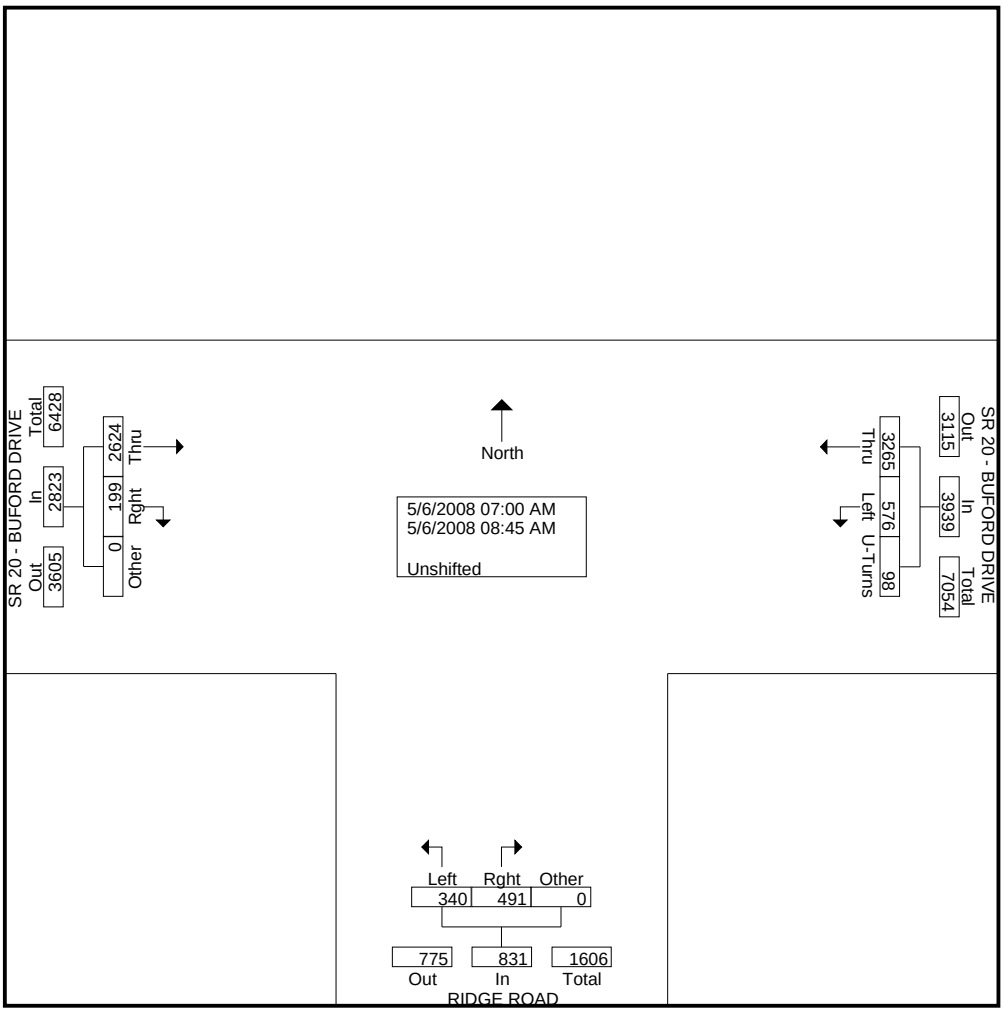
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : RidgeRd@SR20AM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

	SR 20 - BUFORD DRIVE Westbound				RIDGE ROAD Northbound				SR 20 - BUFORD DRIVE Eastbound				
Start Time	Left	Thru	U-Turns	App. Total	Left	Rght	Other	App. Total	Thru	Rght	Other	App. Total	Int. Total
07:00 AM	72	400	15	487	37	66	0	103	300	30	0	330	920
07:15 AM	75	374	18	467	45	56	0	101	284	36	0	320	888
07:30 AM	72	432	8	512	49	68	0	117	329	22	0	351	980
07:45 AM	74	453	19	546	53	65	0	118	341	21	0	362	1026
Total	293	1659	60	2012	184	255	0	439	1254	109	0	1363	3814
08:00 AM	82	409	9	500	30	57	0	87	341	23	0	364	951
08:15 AM	75	410	12	497	40	58	0	98	323	22	0	345	940
08:30 AM	62	387	9	458	43	60	0	103	356	31	0	387	948
08:45 AM	64	400	8	472	43	61	0	104	350	14	0	364	940
Total	283	1606	38	1927	156	236	0	392	1370	90	0	1460	3779
Grand Total	576	3265	98	3939	340	491	0	831	2624	199	0	2823	7593
Apprch %	14.6	82.9	2.5		40.9	59.1	0		93	7	0		
Total %	7.6	43	1.3	51.9	4.5	6.5	0	10.9	34.6	2.6	0	37.2	

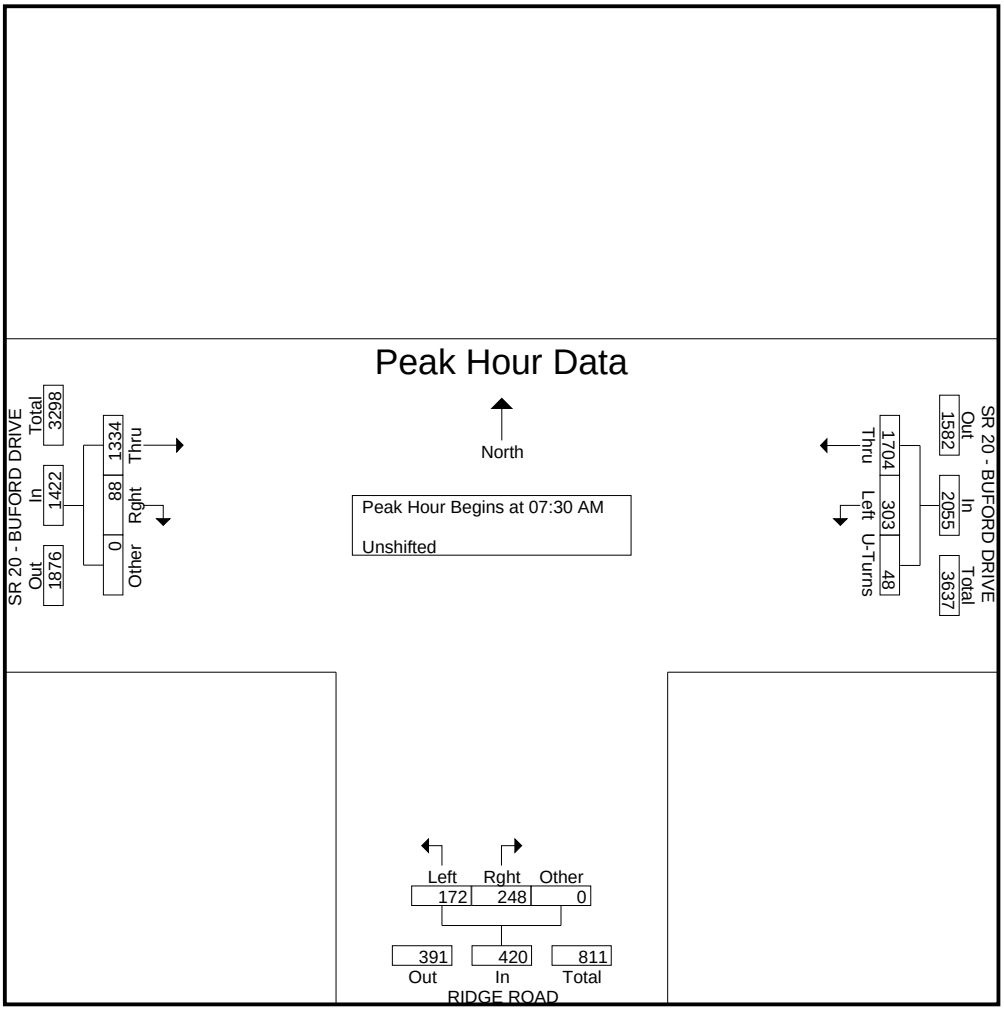


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : RidgeRd@SR20AM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 2

	SR 20 - BUFORD DRIVE Westbound				RIDGE ROAD Northbound				SR 20 - BUFORD DRIVE Eastbound				
Start Time	Left	Thru	U-Turns	App. Total	Left	Rght	Other	App. Total	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	72	432	8	512	49	**68**	0	117	329	22	0	351	980
07:45 AM	74	**453**	**19**	**546**	**53**	65	0	**118**	**341**	21	0	362	**1026**
08:00 AM	**82**	409	9	500	30	57	0	87	341	**23**	0	**364**	951
08:15 AM	75	410	12	497	40	58	0	98	323	22	0	345	940
Total Volume	303	1704	48	2055	172	248	0	420	1334	88	0	1422	3897
% App. Total	14.7	82.9	2.3		41	59	0		93.8	6.2	0		
PHF	.924	.940	.632	.941	.811	.912	.000	.890	.978	.957	.000	.977	.950



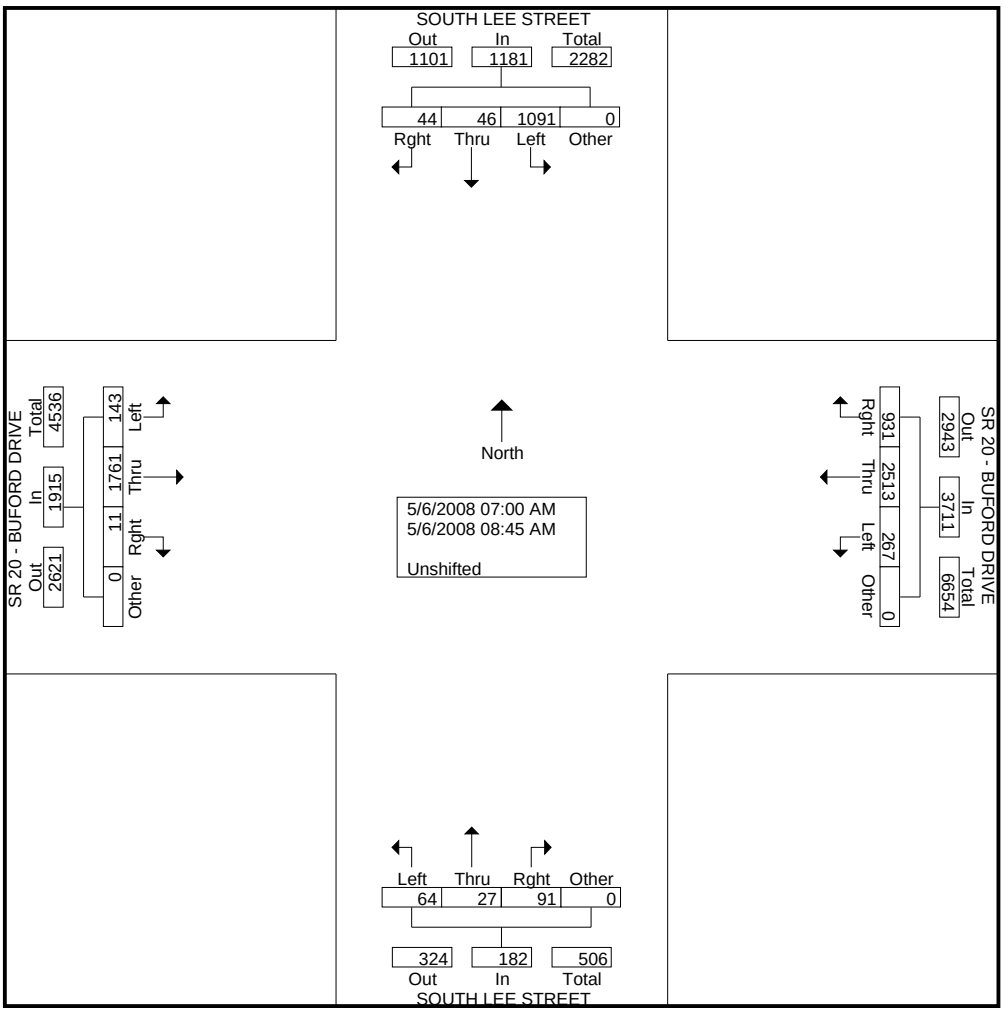
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@SR20AM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

	SOUTH LEE STREET Southbound					SR 20 - BUFORD DRIVE Westbound					SOUTH LEE STREET Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
07:00 AM	105	0	4	0	109	10	337	88	0	435	2	1	13	0	16	10	215	2	0	227	787
07:15 AM	137	1	6	0	144	15	300	93	0	408	6	2	5	0	13	8	200	0	0	208	773
07:30 AM	141	1	5	0	147	57	305	134	0	496	5	1	11	0	17	10	221	1	0	232	892
07:45 AM	124	2	7	0	133	34	374	144	0	552	4	3	7	0	14	22	236	0	0	258	957
Total	507	4	22	0	533	116	1316	459	0	1891	17	7	36	0	60	50	872	3	0	925	3409
08:00 AM	153	17	3	0	173	44	279	132	0	455	10	6	10	0	26	13	208	1	0	222	876
08:15 AM	131	2	11	0	144	36	307	127	0	470	12	6	11	0	29	26	218	3	0	247	890
08:30 AM	182	6	1	0	189	50	287	109	0	446	9	4	14	0	27	13	209	0	0	222	884
08:45 AM	118	17	7	0	142	21	324	104	0	449	16	4	20	0	40	41	254	4	0	299	930
Total	584	42	22	0	648	151	1197	472	0	1820	47	20	55	0	122	93	889	8	0	990	3580
Grand Total	1091	46	44	0	1181	267	2513	931	0	3711	64	27	91	0	182	143	1761	11	0	1915	6989
Apprch %	92.4	3.9	3.7	0		7.2	67.7	25.1	0		35.2	14.8	50	0		7.5	92	0.6	0		
Total %	15.6	0.7	0.6	0	16.9	3.8	36	13.3	0	53.1	0.9	0.4	1.3	0	2.6	2	25.2	0.2	0	27.4	

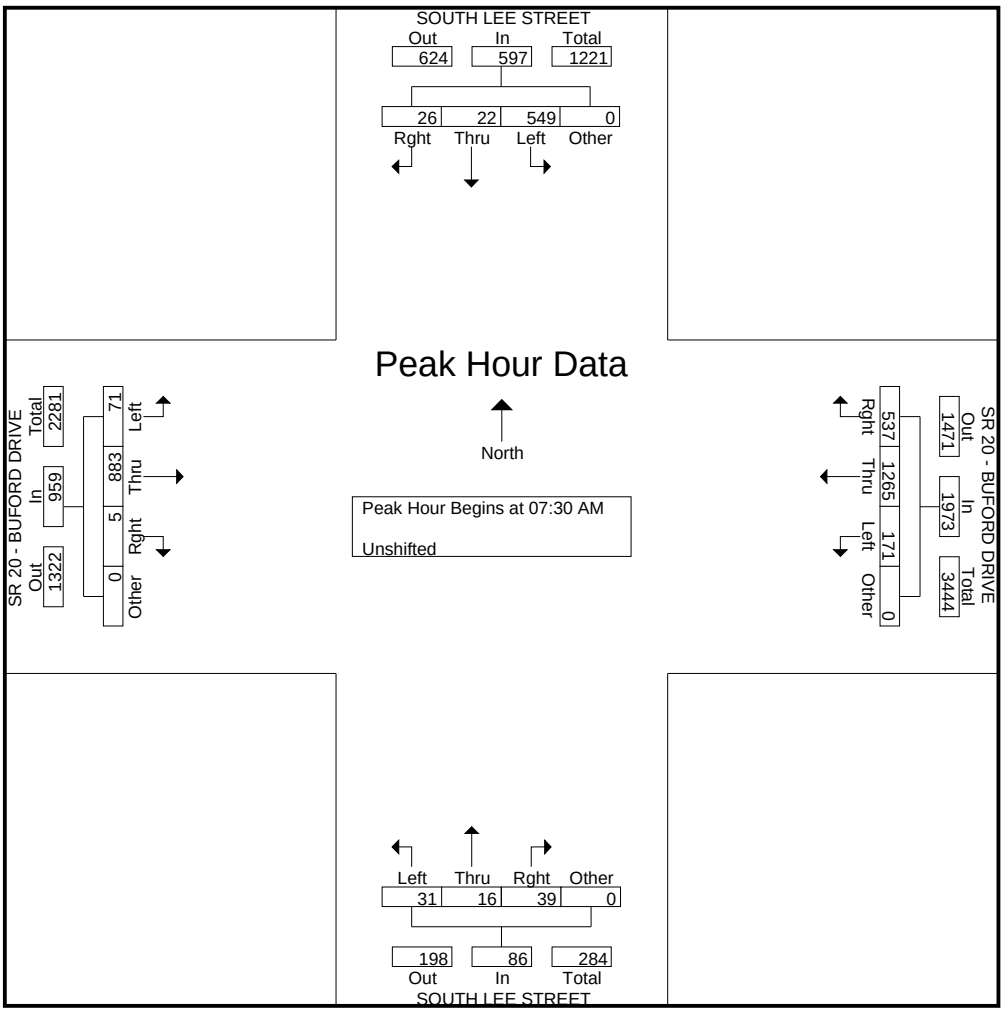


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@SR20AM
Site Code : 00000000
Start Date : 5/6/2008

	SOUTH LEE STREET Southbound					SR 20 - BUFORD DRIVE Westbound					SOUTH LEE STREET Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	141	1	5	0	147	**57**	305	134	0	496	5	1	**11**	0	17	10	221	1	0	232	892
07:45 AM	124	2	7	0	133	34	**374**	**144**	0	**552**	4	3	7	0	14	22	**236**	0	0	**258**	**957**
08:00 AM	**153**	**17**	3	0	**173**	44	279	132	0	455	10	**6**	10	0	26	13	208	1	0	222	876
08:15 AM	131	2	**11**	0	144	36	307	127	0	470	**12**	6	11	0	**29**	**26**	218	**3**	0	247	890
Total Volume	549	22	26	0	597	171	1265	537	0	1973	31	16	39	0	86	71	883	5	0	959	3615
% App. Total	92	3.7	4.4	0		8.7	64.1	27.2	0		36	18.6	45.3	0		7.4	92.1	0.5	0		
PHF	.897	.324	.591	.000	.863	.750	.846	.932	.000	.894	.646	.667	.886	.000	.741	.683	.935	.417	.000	.929	.944



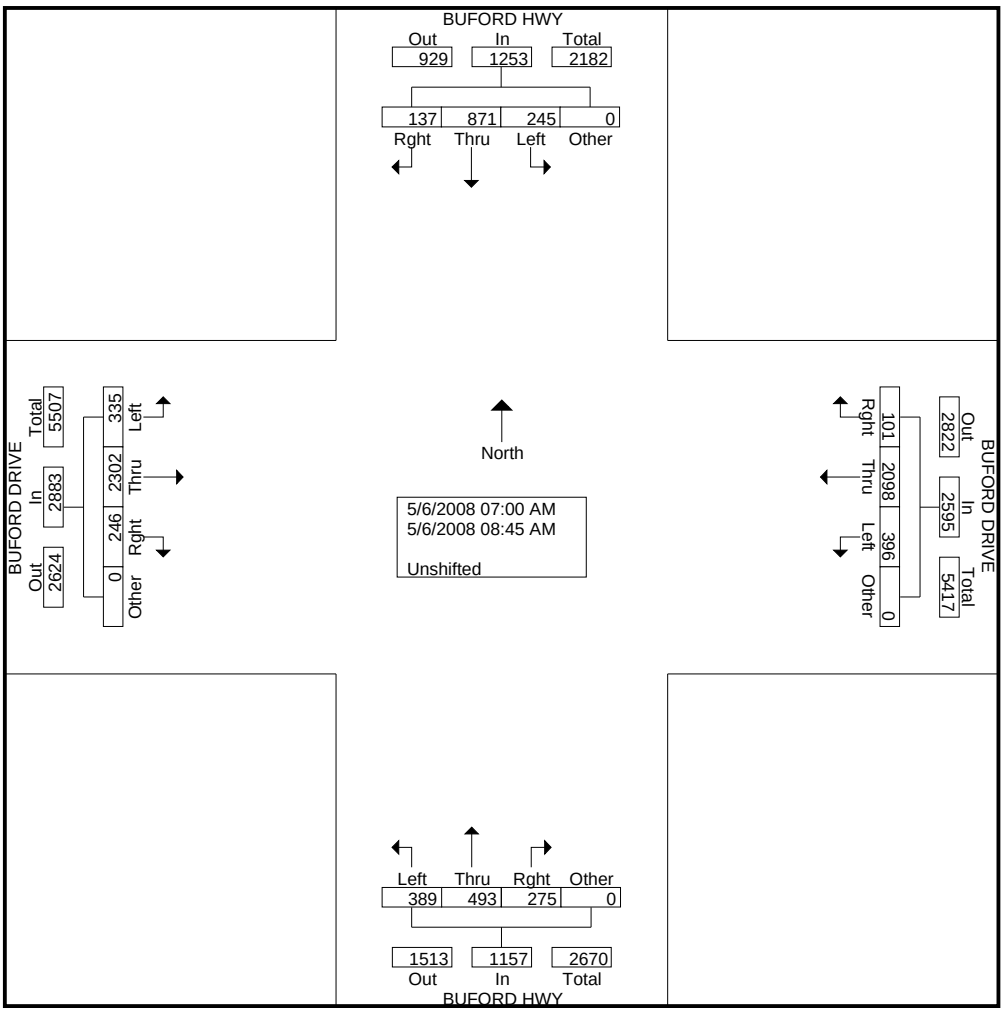
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : BufordDr@BufordHwyAM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

	BUFORD HWY Southbound					BUFORD DRIVE Westbound					BUFORD HWY Northbound					BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
07:00 AM	28	101	17	0	146	34	293	9	0	336	24	41	36	0	101	37	253	16	0	306	889
07:15 AM	27	100	20	0	147	35	294	8	0	337	43	59	22	0	124	32	255	24	0	311	919
07:30 AM	25	112	13	0	150	50	245	25	0	320	59	58	25	0	142	36	381	24	0	441	1053
07:45 AM	29	111	19	0	159	74	240	13	0	327	54	63	44	0	161	39	310	28	0	377	1024
Total	109	424	69	0	602	193	1072	55	0	1320	180	221	127	0	528	144	1199	92	0	1435	3885
08:00 AM	33	102	15	0	150	29	243	16	0	288	43	68	36	0	147	59	298	44	0	401	986
08:15 AM	33	120	21	0	174	55	284	13	0	352	70	82	41	0	193	36	276	29	0	341	1060
08:30 AM	39	110	15	0	164	58	251	8	0	317	47	53	29	0	129	41	235	32	0	308	918
08:45 AM	31	115	17	0	163	61	248	9	0	318	49	69	42	0	160	55	294	49	0	398	1039
Total	136	447	68	0	651	203	1026	46	0	1275	209	272	148	0	629	191	1103	154	0	1448	4003
Grand Total	245	871	137	0	1253	396	2098	101	0	2595	389	493	275	0	1157	335	2302	246	0	2883	7888
Apprch %	19.6	69.5	10.9	0		15.3	80.8	3.9	0		33.6	42.6	23.8	0		11.6	79.8	8.5	0		
Total %	3.1	11	1.7	0	15.9	5	26.6	1.3	0	32.9	4.9	6.2	3.5	0	14.7	4.2	29.2	3.1	0	36.5	

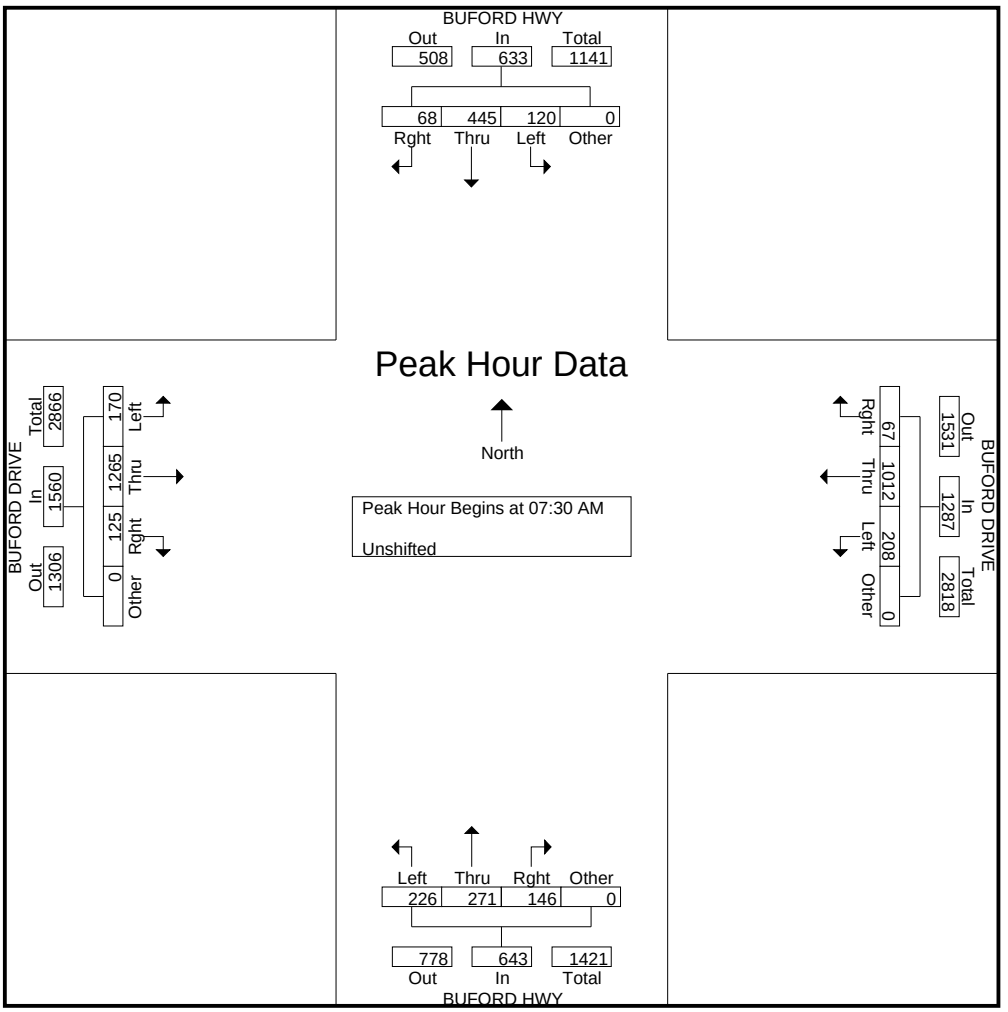


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : BufordDr@BufordHwyAM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 2

	BUFORD HWY Southbound					BUFORD DRIVE Westbound					BUFORD HWY Northbound					BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	25	112	13	0	150	50	245	**25**	0	320	59	58	25	0	142	36	**381**	24	0	**441**	1053
07:45 AM	29	111	19	0	159	**74**	240	13	0	327	54	63	**44**	0	161	39	310	28	0	377	1024
08:00 AM	**33**	102	15	0	150	29	243	16	0	288	43	68	36	0	147	**59**	298	**44**	0	401	986
08:15 AM	33	**120**	**21**	0	**174**	55	**284**	13	0	**352**	**70**	**82**	41	0	**193**	36	276	29	0	341	**1060**
Total Volume	120	445	68	0	633	208	1012	67	0	1287	226	271	146	0	643	170	1265	125	0	1560	4123
% App. Total	19	70.3	10.7	0		16.2	78.6	5.2	0		35.1	42.1	22.7	0		10.9	81.1	8	0		
PHF	.909	.927	.810	.000	.909	.703	.891	.670	.000	.914	.807	.826	.830	.000	.833	.720	.830	.710	.000	.884	.972



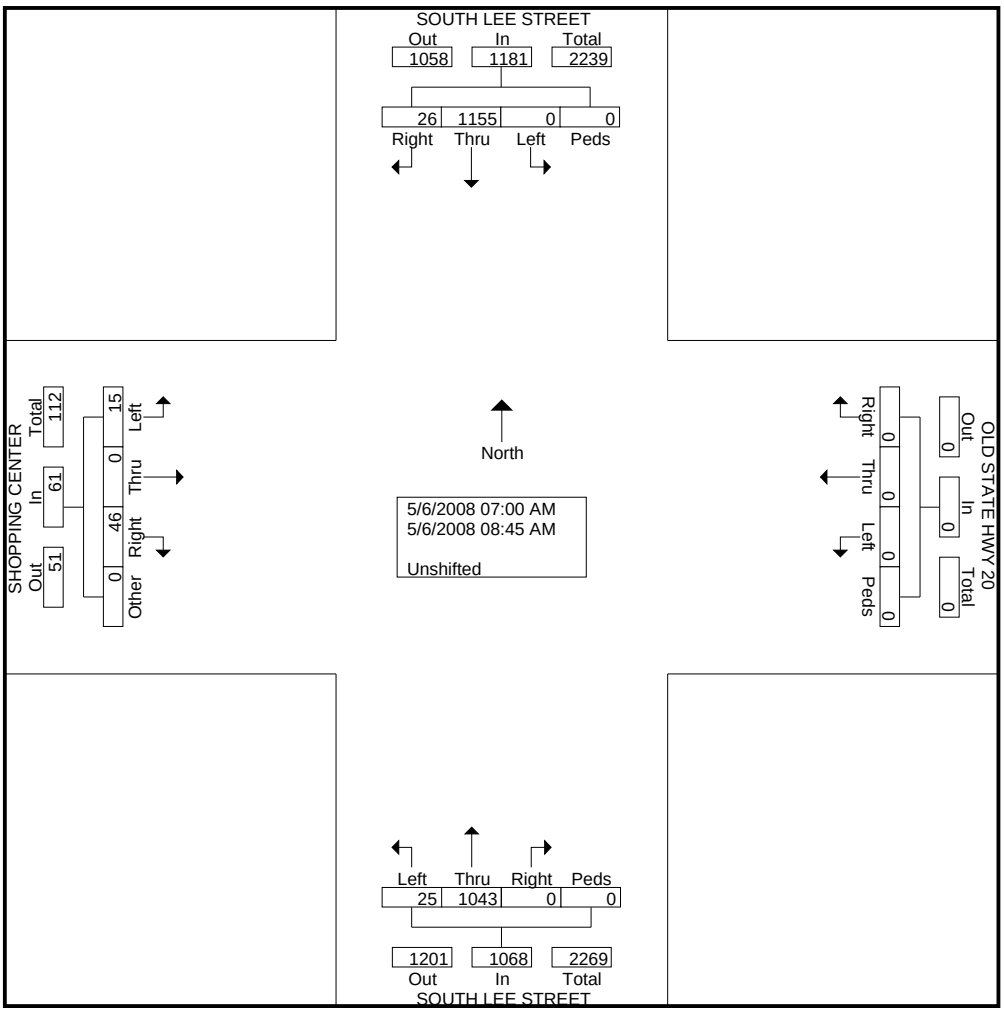
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@OldState20AM
Site Code : 00000000
Start Date : 5/6/2008

Groups Printed- Unshifted

	SOUTH LEE STREET Southbound					OLD STATE HWY 20 Westbound					SOUTH LEE STREET Northbound					SHOPPING CENTER Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Other	App. Total	Int. Total
07:00 AM	0	104	4	0	108	0	0	0	0	0	1	100	0	0	101	0	0	7	0	7	216
07:15 AM	0	140	3	0	143	0	0	0	0	0	1	108	0	0	109	2	0	5	0	7	259
07:30 AM	0	142	4	0	146	0	0	0	0	0	5	140	0	0	145	3	0	5	0	8	299
07:45 AM	0	130	3	0	133	0	0	0	0	0	6	160	0	0	166	5	0	4	0	9	308
Total	0	516	14	0	530	0	0	0	0	0	13	508	0	0	521	10	0	21	0	31	1082
08:00 AM	0	171	3	0	174	0	0	0	0	0	4	140	0	0	144	1	0	11	0	12	330
08:15 AM	0	140	4	0	144	0	0	0	0	0	5	145	0	0	150	1	0	5	0	6	300
08:30 AM	0	184	3	0	187	0	0	0	0	0	1	116	0	0	117	2	0	4	0	6	310
08:45 AM	0	144	2	0	146	0	0	0	0	0	2	134	0	0	136	1	0	5	0	6	288
Total	0	639	12	0	651	0	0	0	0	0	12	535	0	0	547	5	0	25	0	30	1228
Grand Total	0	1155	26	0	1181	0	0	0	0	0	25	1043	0	0	1068	15	0	46	0	61	2310
Apprch %	0	97.8	2.2	0		0	0	0	0		2.3	97.7	0	0		24.6	0	75.4	0		
Total %	0	50	1.1	0	51.1	0	0	0	0	0	1.1	45.2	0	0	46.2	0.6	0	2	0	2.6	

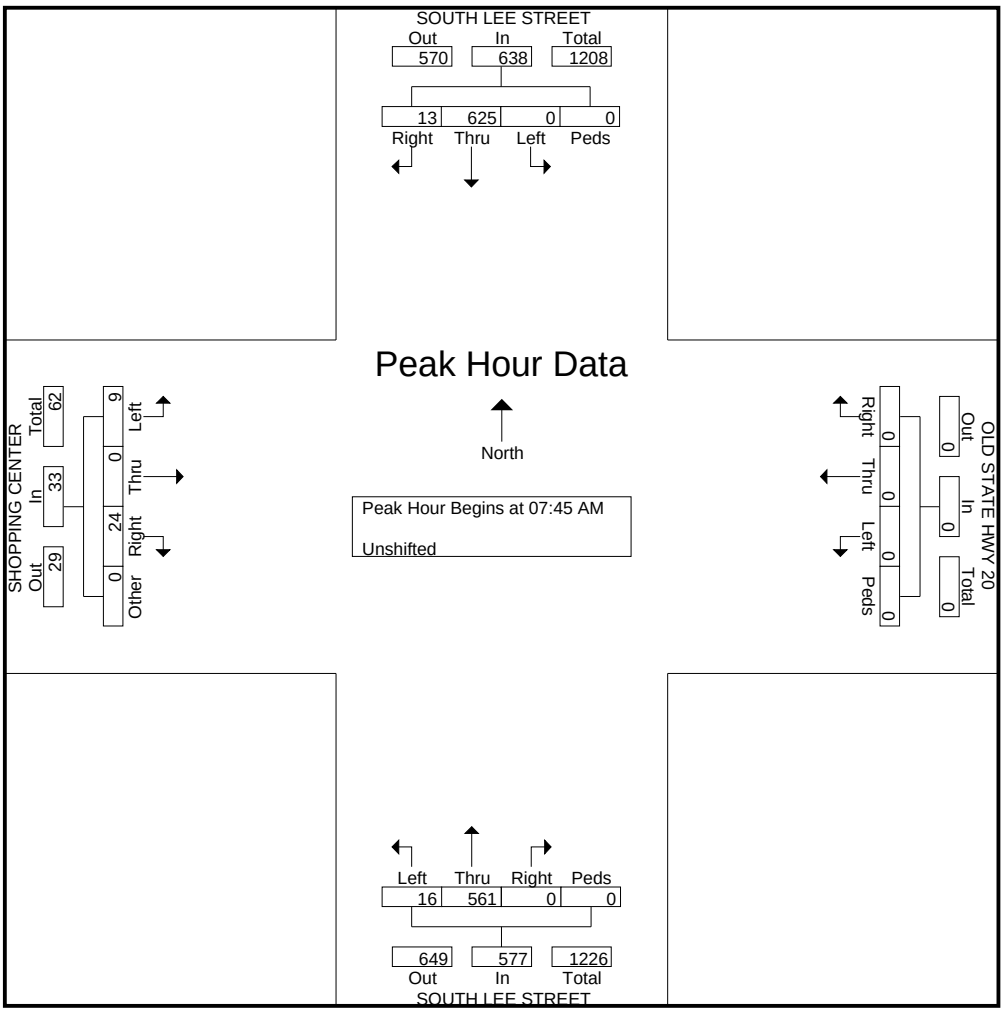


All Traffic Data Services, Inc

1336 Farmer Road
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File Name : SLeeSt@OldState20AM
Site Code : 00000000
Start Date : 5/6/2008
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	SOUTH LEE STREET Southbound					OLD STATE HWY 20 Westbound					SOUTH LEE STREET Northbound					SHOPPING CENTER Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	130	3	0	133	0	0	0	0	0	**6**	**160**	0	0	**166**	**5**	0	4	0	9	308
08:00 AM	0	171	3	0	174	0	0	0	0	0	4	140	0	0	144	1	0	**11**	0	**12**	**330**
08:15 AM	0	140	**4**	0	144	0	0	0	0	0	5	145	0	0	150	1	0	5	0	6	300
08:30 AM	0	**184**	3	0	**187**	0	0	0	0	0	1	116	0	0	117	2	0	4	0	6	310
Total Volume	0	625	13	0	638	0	0	0	0	0	16	561	0	0	577	9	0	24	0	33	1248
% App. Total	0	98	2	0		0	0	0	0		2.8	97.2	0	0		27.3	0	72.7	0		
PHF	.000	.849	.813	.000	.853	.000	.000	.000	.000	.000	.667	.877	.000	.000	.869	.450	.000	.545	.000	.688	.945



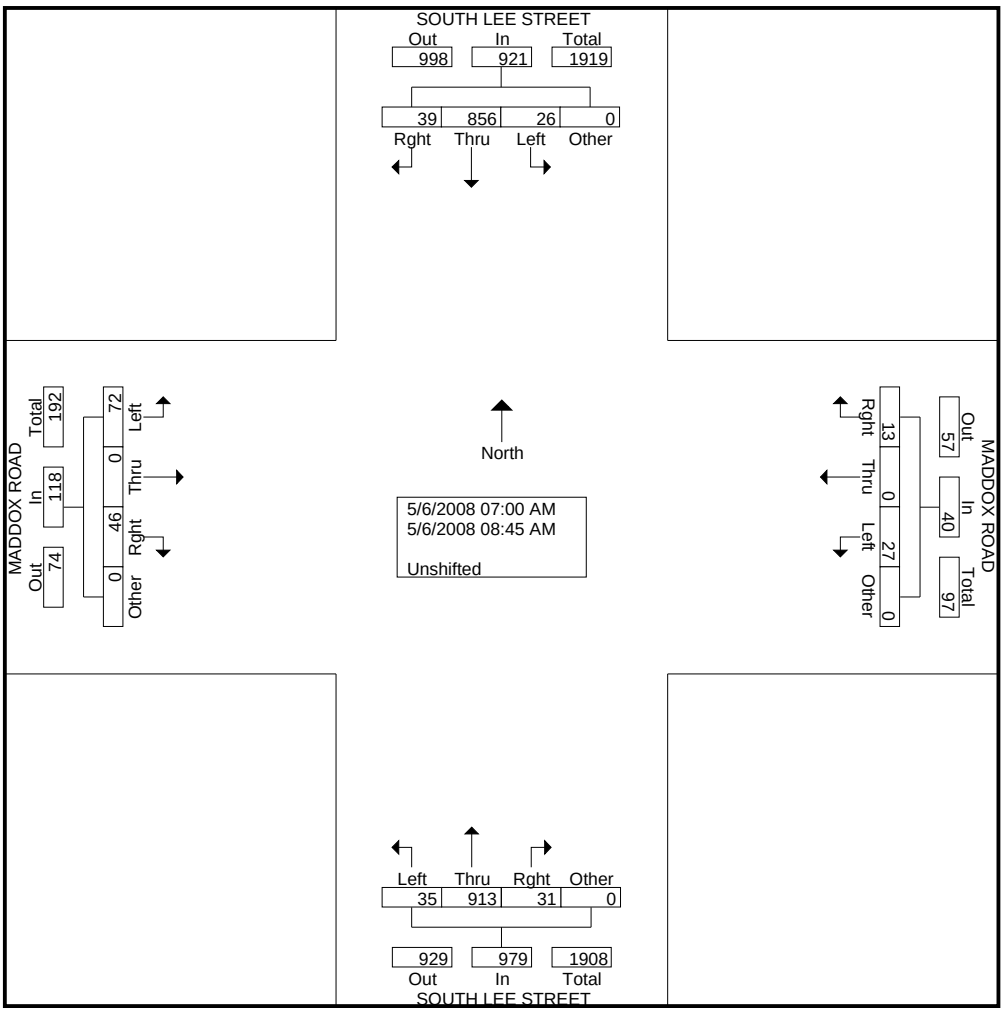
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@MaddoxRdAM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

	SOUTH LEE STREET Southbound					MADDOX ROAD Westbound					SOUTH LEE STREET Northbound					MADDOX ROAD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
07:00 AM	2	95	3	0	100	5	0	1	0	6	1	87	5	0	93	4	0	5	0	9	208
07:15 AM	3	109	6	0	118	2	0	2	0	4	7	91	4	0	102	12	0	6	0	18	242
07:30 AM	3	101	4	0	108	3	0	0	0	3	5	136	5	0	146	13	0	10	0	23	280
07:45 AM	2	118	7	0	127	3	0	2	0	5	6	141	4	0	151	20	0	8	0	28	311
Total	10	423	20	0	453	13	0	5	0	18	19	455	18	0	492	49	0	29	0	78	1041
08:00 AM	3	111	6	0	120	3	0	6	0	9	7	130	4	0	141	12	0	2	0	14	284
08:15 AM	5	112	3	0	120	3	0	0	0	3	2	107	3	0	112	2	0	5	0	7	242
08:30 AM	4	107	7	0	118	2	0	0	0	2	1	100	3	0	104	4	0	5	0	9	233
08:45 AM	4	103	3	0	110	6	0	2	0	8	6	121	3	0	130	5	0	5	0	10	258
Total	16	433	19	0	468	14	0	8	0	22	16	458	13	0	487	23	0	17	0	40	1017
Grand Total	26	856	39	0	921	27	0	13	0	40	35	913	31	0	979	72	0	46	0	118	2058
Apprch %	2.8	92.9	4.2	0		67.5	0	32.5	0		3.6	93.3	3.2	0		61	0	39	0		
Total %	1.3	41.6	1.9	0	44.8	1.3	0	0.6	0	1.9	1.7	44.4	1.5	0	47.6	3.5	0	2.2	0	5.7	

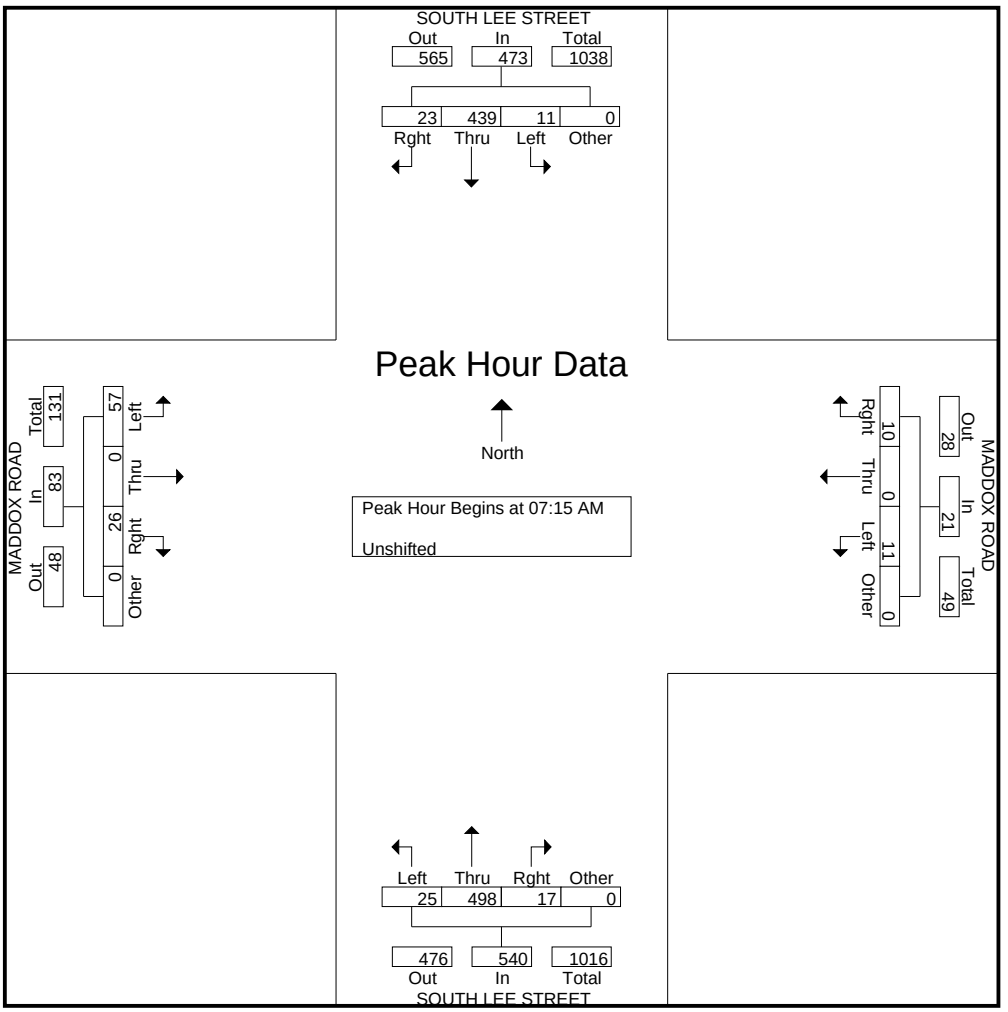


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@MaddoxRdAM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 2

	SOUTH LEE STREET Southbound					MADDOX ROAD Westbound					SOUTH LEE STREET Northbound					MADDOX ROAD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**3**	109	6	0	118	2	0	2	0	4	**7**	91	4	0	102	12	0	6	0	18	242
07:30 AM	3	101	4	0	108	**3**	0	0	0	3	5	136	**5**	0	146	13	0	**10**	0	23	280
07:45 AM	2	**118**	**7**	0	**127**	3	0	2	0	5	6	**141**	4	0	**151**	**20**	0	8	0	**28**	**311**
08:00 AM	3	111	6	0	120	3	0	**6**	0	**9**	7	130	4	0	141	12	0	2	0	14	284
Total Volume	11	439	23	0	473	11	0	10	0	21	25	498	17	0	540	57	0	26	0	83	1117
% App. Total	2.3	92.8	4.9	0		52.4	0	47.6	0		4.6	92.2	3.1	0		68.7	0	31.3	0		
PHF	.917	.930	.821	.000	.931	.917	.000	.417	.000	.583	.893	.883	.850	.000	.894	.713	.000	.650	.000	.741	.898



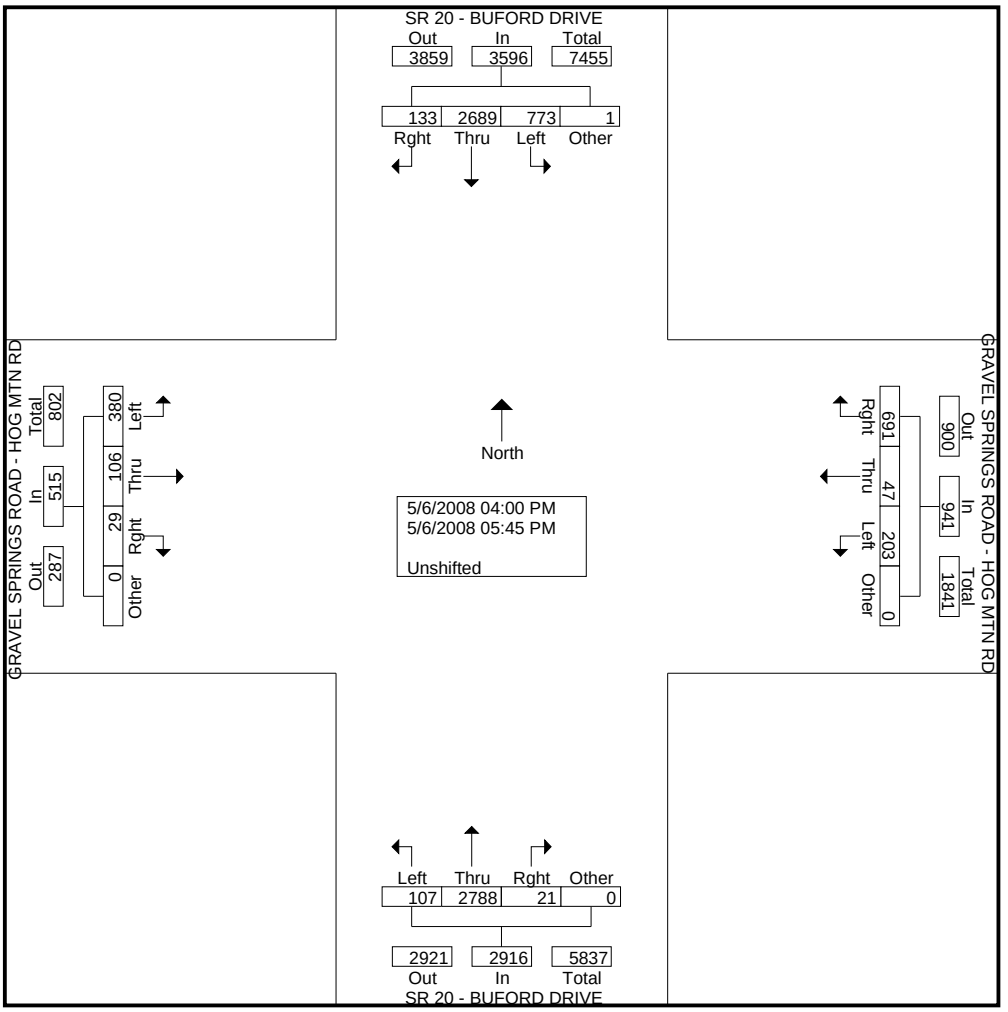
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : GravelSpgsRd@SR20PM
Site Code : 00000000
Start Date : 5/6/2008
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Groups Printed- Unshifted

	SR 20 - BUFORD DRIVE Southbound					GRAVEL SPRINGS ROAD - HOG MTN RD Westbound					SR 20 - BUFORD DRIVE Northbound					GRAVEL SPRINGS ROAD - HOG MTN RD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
04:00 PM	100	297	12	0	409	21	12	85	0	118	40	320	4	0	364	45	13	5	0	63	954
04:15 PM	66	312	12	0	390	15	9	81	0	105	20	382	4	0	406	34	21	2	0	57	958
04:30 PM	20	315	20	1	356	31	6	88	0	125	9	330	1	0	340	26	27	1	0	54	875
04:45 PM	103	265	15	0	383	27	4	82	0	113	9	359	4	0	372	43	12	4	0	59	927
Total	289	1189	59	1	1538	94	31	336	0	461	78	1391	13	0	1482	148	73	12	0	233	3714
05:00 PM	111	306	13	0	430	26	8	87	0	121	5	422	1	0	428	34	2	2	0	38	1017
05:15 PM	142	423	17	0	582	23	7	83	0	113	8	311	2	0	321	74	10	4	0	88	1104
05:30 PM	112	377	25	0	514	29	1	97	0	127	7	323	2	0	332	56	10	5	0	71	1044
05:45 PM	119	394	19	0	532	31	0	88	0	119	9	341	3	0	353	68	11	6	0	85	1089
Total	484	1500	74	0	2058	109	16	355	0	480	29	1397	8	0	1434	232	33	17	0	282	4254
Grand Total	773	2689	133	1	3596	203	47	691	0	941	107	2788	21	0	2916	380	106	29	0	515	7968
Apprch %	21.5	74.8	3.7	0		21.6	5	73.4	0		3.7	95.6	0.7	0		73.8	20.6	5.6	0		
Total %	9.7	33.7	1.7	0	45.1	2.5	0.6	8.7	0	11.8	1.3	35	0.3	0	36.6	4.8	1.3	0.4	0	6.5	

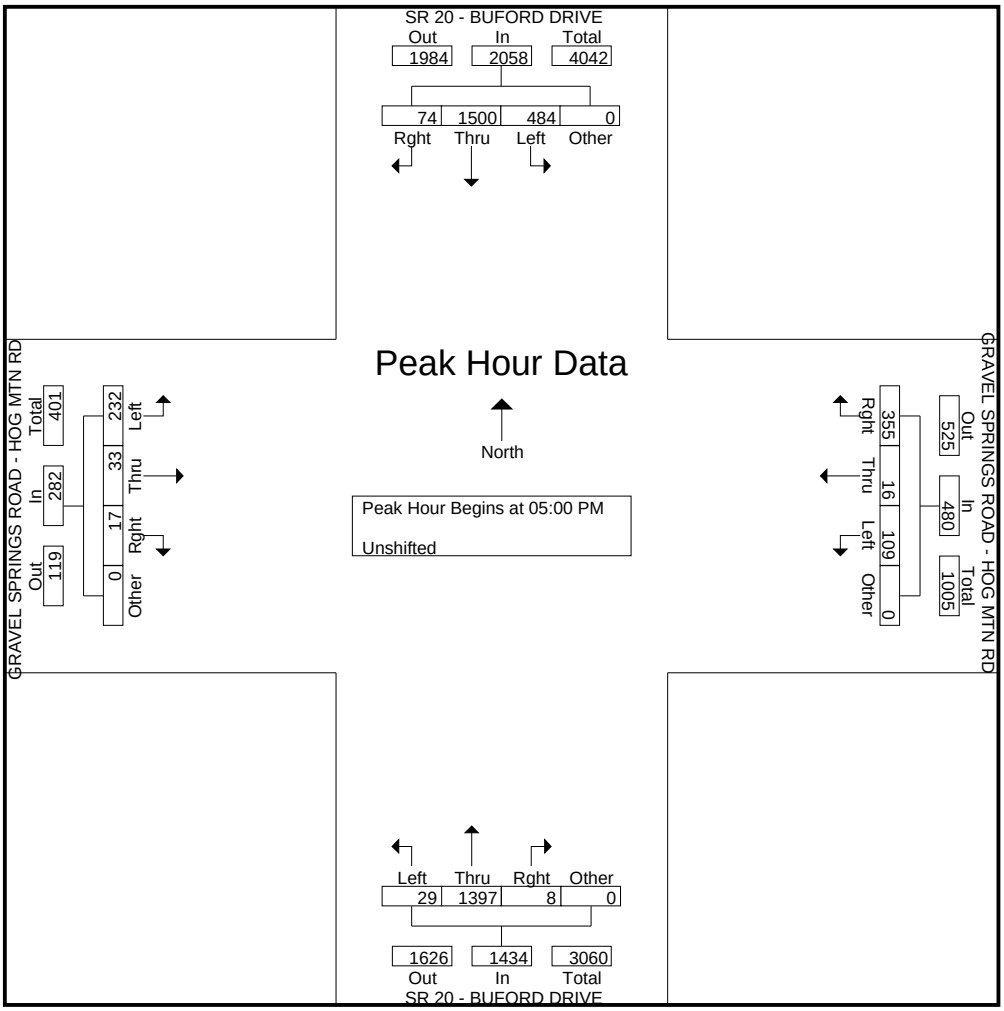


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : GravelSpgsRd@SR20PM
Site Code : 00000000
Start Date : 5/6/2008
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	SR 20 - BUFORD DRIVE Southbound					GRAVEL SPRINGS ROAD - HOG MTN RD Westbound					SR 20 - BUFORD DRIVE Northbound					GRAVEL SPRINGS ROAD - HOG MTN RD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	111	306	13	0	430	26	**8**	87	0	121	5	**422**	1	0	**428**	34	2	2	0	38	1017
05:15 PM	**142**	**423**	17	0	**582**	23	7	83	0	113	8	311	2	0	321	**74**	10	4	0	**88**	**1104**
05:30 PM	112	377	**25**	0	514	29	1	**97**	0	**127**	7	323	2	0	332	56	10	5	0	71	1044
05:45 PM	119	394	19	0	532	**31**	0	88	0	119	**9**	341	**3**	0	353	68	**11**	**6**	0	85	1089
Total Volume	484	1500	74	0	2058	109	16	355	0	480	29	1397	8	0	1434	232	33	17	0	282	4254
% App. Total	23.5	72.9	3.6	0		22.7	3.3	74	0		2	97.4	0.6	0		82.3	11.7	6	0		
PHF	.852	.887	.740	.000	.884	.879	.500	.915	.000	.945	.806	.828	.667	.000	.838	.784	.750	.708	.000	.801	.963



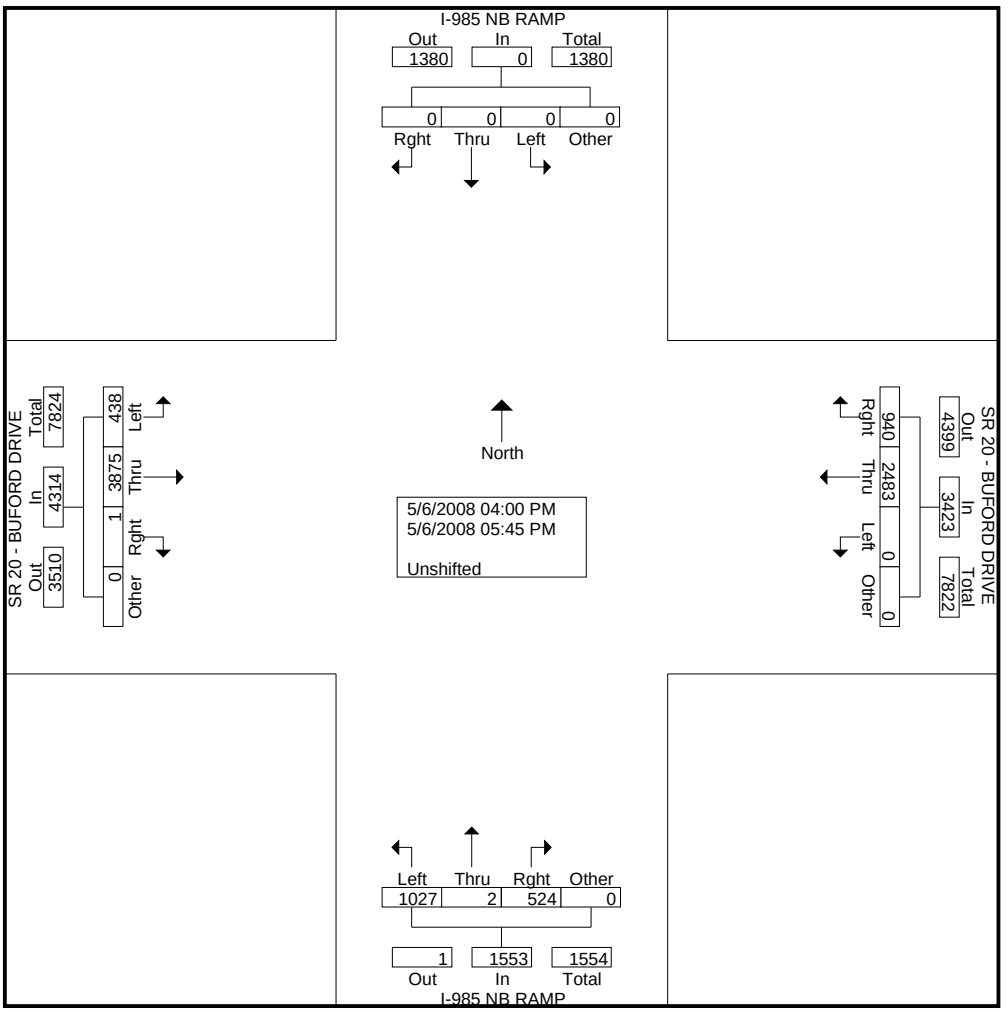
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985NBRamp@SR20PM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

	I-985 NB RAMP Southbound					SR 20 - BUFORD DRIVE Westbound					I-985 NB RAMP Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	315	119	0	434	134	0	75	0	209	52	475	0	0	527	1170
04:15 PM	0	0	0	0	0	0	326	134	0	460	124	0	70	0	194	66	494	0	0	560	1214
04:30 PM	0	0	0	0	0	0	323	116	0	439	142	0	72	0	214	60	480	0	0	540	1193
04:45 PM	0	0	0	0	0	0	342	103	0	445	114	0	65	0	179	70	486	0	0	556	1180
Total	0	0	0	0	0	0	1306	472	0	1778	514	0	282	0	796	248	1935	0	0	2183	4757
05:00 PM	0	0	0	0	0	0	332	133	0	465	125	1	54	0	180	39	541	0	0	580	1225
05:15 PM	0	0	0	0	0	0	336	103	0	439	125	0	60	0	185	56	451	0	0	507	1131
05:30 PM	0	0	0	0	0	0	278	121	0	399	126	1	67	0	194	59	457	1	0	517	1110
05:45 PM	0	0	0	0	0	0	231	111	0	342	137	0	61	0	198	36	491	0	0	527	1067
Total	0	0	0	0	0	0	1177	468	0	1645	513	2	242	0	757	190	1940	1	0	2131	4533
Grand Total	0	0	0	0	0	0	2483	940	0	3423	1027	2	524	0	1553	438	3875	1	0	4314	9290
Apprch %	0	0	0	0		0	72.5	27.5	0		66.1	0.1	33.7	0		10.2	89.8	0	0		
Total %	0	0	0	0	0	0	26.7	10.1	0	36.8	11.1	0	5.6	0	16.7	4.7	41.7	0	0	46.4	

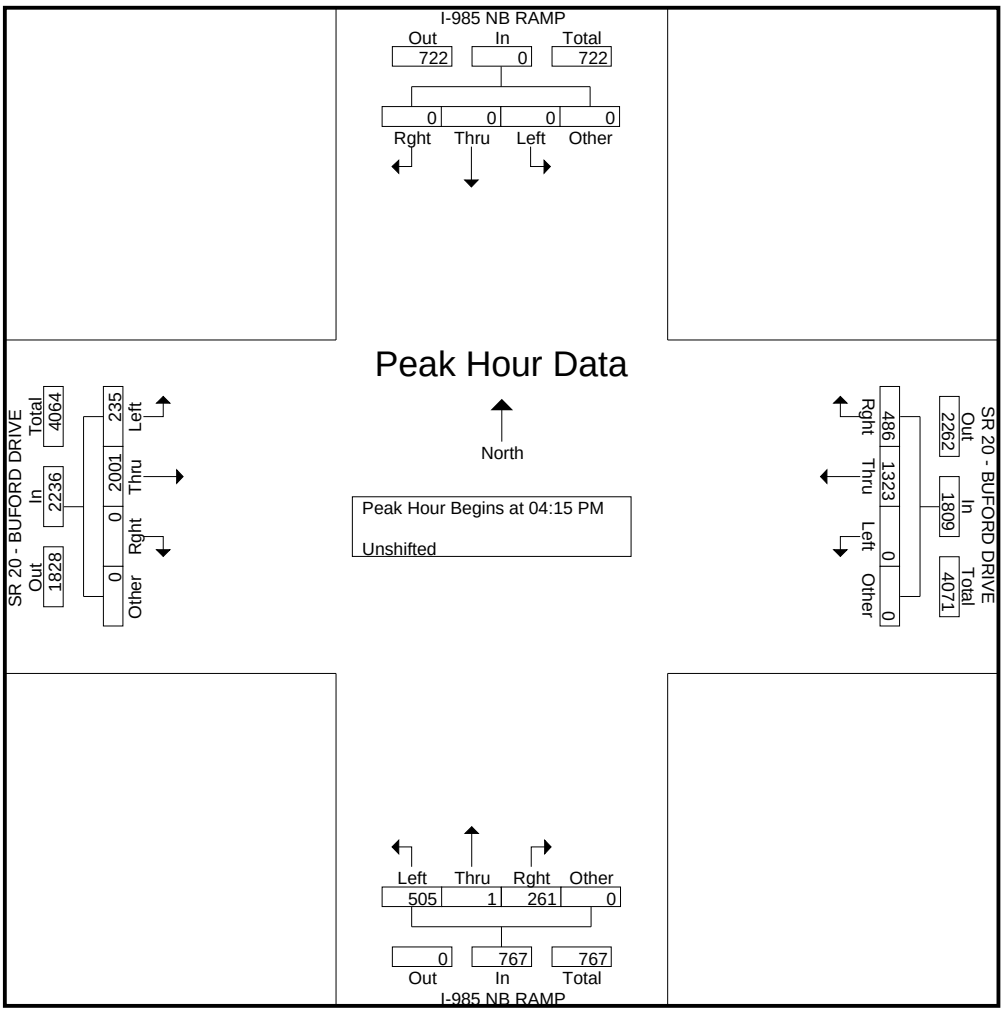


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985NBRamp@SR20PM
Site Code : 00000000
Start Date : 5/6/2008
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	I-985 NB RAMP Southbound					SR 20 - BUFORD DRIVE Westbound					I-985 NB RAMP Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	326	**134**	0	460	124	0	70	0	194	66	494	0	0	560	1214
04:30 PM	0	0	0	0	0	0	323	116	0	439	**142**	0	**72**	0	**214**	60	480	0	0	540	1193
04:45 PM	0	0	0	0	0	0	**342**	103	0	445	114	0	65	0	179	**70**	486	0	0	556	1180
05:00 PM	0	0	0	0	0	0	332	133	0	**465**	125	**1**	54	0	180	39	**541**	0	0	**580**	**1225**
Total Volume	0	0	0	0	0	0	1323	486	0	1809	505	1	261	0	767	235	2001	0	0	2236	4812
% App. Total	0	0	0	0		0	73.1	26.9	0		65.8	0.1	34	0		10.5	89.5	0	0		
PHF	.000	.000	.000	.000	.000	.000	.967	.907	.000	.973	.889	.250	.906	.000	.896	.839	.925	.000	.000	.964	.982



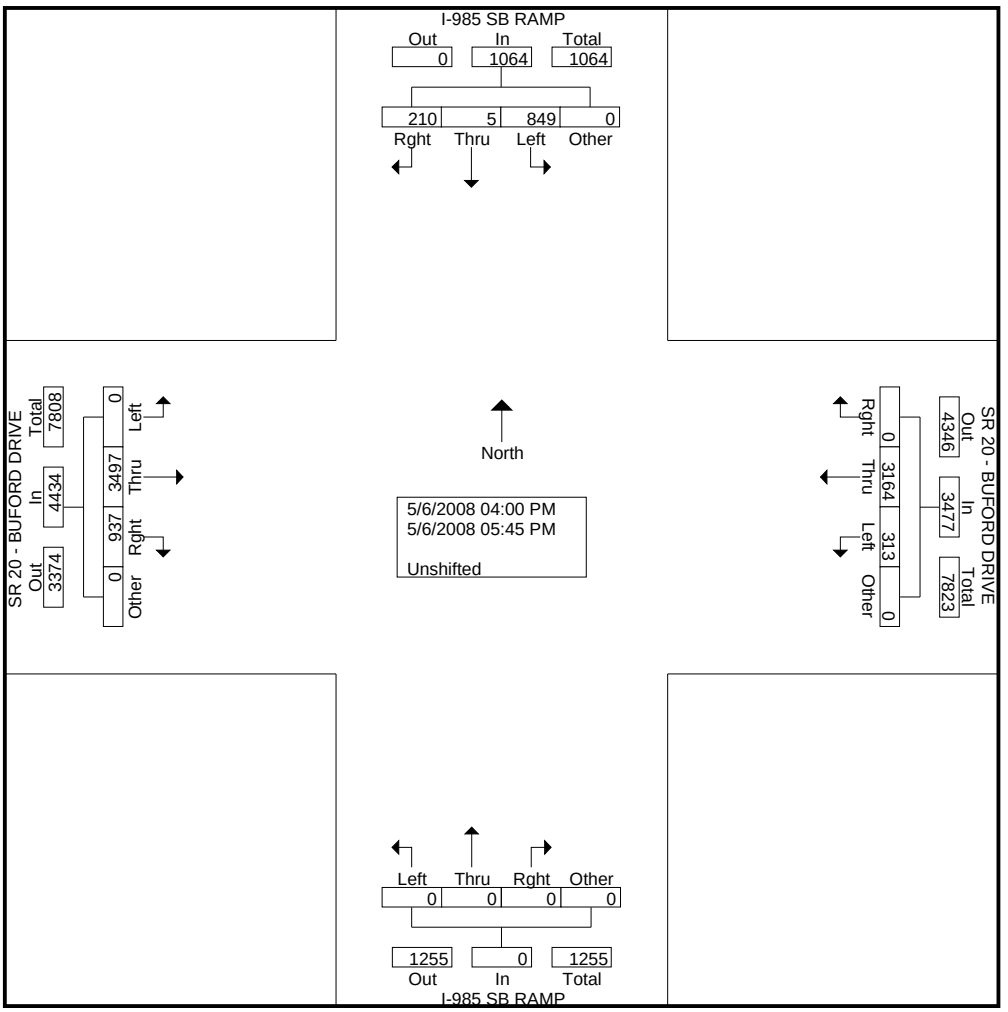
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985SBRamp@SR20PM
Site Code : 00000000
Start Date : 5/6/2008
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Groups Printed- Unshifted

	I-985 SB RAMP Southbound					SR 20 - BUFORD DRIVE Westbound					I-985 SB RAMP Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
04:00 PM	103	1	19	0	123	47	397	0	0	444	0	0	0	0	0	0	425	108	0	533	1100
04:15 PM	115	0	30	0	145	29	407	0	0	436	0	0	0	0	0	0	448	121	0	569	1150
04:30 PM	105	0	16	0	121	35	423	0	0	458	0	0	0	0	0	0	435	112	0	547	1126
04:45 PM	107	0	31	0	138	38	424	0	0	462	0	0	0	0	0	0	452	103	0	555	1155
Total	430	1	96	0	527	149	1651	0	0	1800	0	0	0	0	0	0	1760	444	0	2204	4531
05:00 PM	104	0	24	0	128	42	411	0	0	453	0	0	0	0	0	0	499	109	0	608	1189
05:15 PM	101	2	21	0	124	50	410	0	0	460	0	0	0	0	0	0	407	118	0	525	1109
05:30 PM	106	0	37	0	143	37	367	0	0	404	0	0	0	0	0	0	411	147	0	558	1105
05:45 PM	108	2	32	0	142	35	325	0	0	360	0	0	0	0	0	0	420	119	0	539	1041
Total	419	4	114	0	537	164	1513	0	0	1677	0	0	0	0	0	0	1737	493	0	2230	4444
Grand Total	849	5	210	0	1064	313	3164	0	0	3477	0	0	0	0	0	0	3497	937	0	4434	8975
Apprch %	79.8	0.5	19.7	0		9	91	0	0		0	0	0	0		0	78.9	21.1	0		
Total %	9.5	0.1	2.3	0	11.9	3.5	35.3	0	0	38.7	0	0	0	0	0	0	39	10.4	0	49.4	

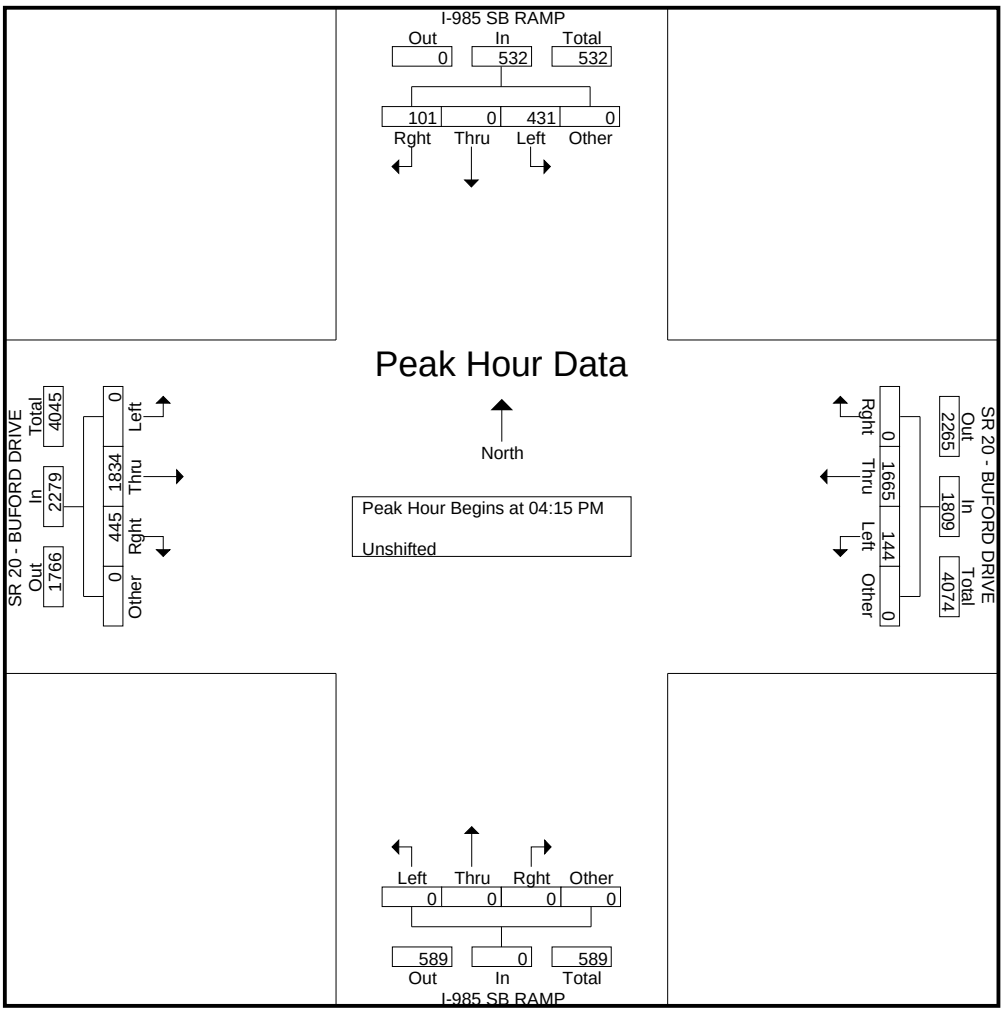


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985SBRamp@SR20PM
Site Code : 00000000
Start Date : 5/6/2008
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	I-985 SB RAMP Southbound					SR 20 - BUFORD DRIVE Westbound					I-985 SB RAMP Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	**115**	0	30	0	**145**	29	407	0	0	436	0	0	0	0	0	0	448	**121**	0	569	1150
04:30 PM	105	0	16	0	121	35	423	0	0	458	0	0	0	0	0	0	435	112	0	547	1126
04:45 PM	107	0	**31**	0	138	38	**424**	0	0	**462**	0	0	0	0	0	0	452	103	0	555	1155
05:00 PM	104	0	24	0	128	**42**	411	0	0	453	0	0	0	0	0	0	**499**	109	0	**608**	**1189**
Total Volume	431	0	101	0	532	144	1665	0	0	1809	0	0	0	0	0	0	1834	445	0	2279	4620
% App. Total	81	0	19	0		8	92	0	0		0	0	0	0		0	80.5	19.5	0		
PHF	.937	.000	.815	.000	.917	.857	.982	.000	.000	.979	.000	.000	.000	.000	.000	.000	.919	.919	.000	.937	.971



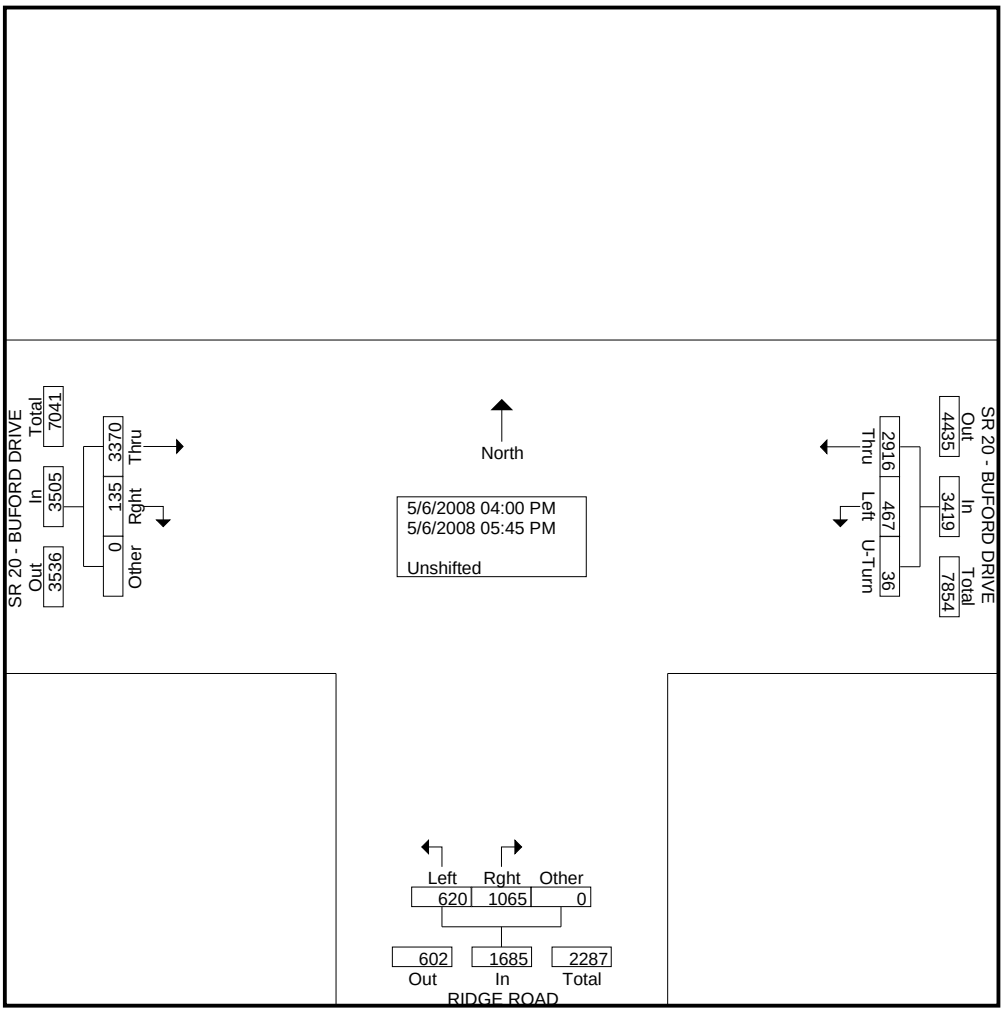
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : RidgeRd@SR20PM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

	SR 20 - BUFORD DRIVE Westbound				RIDGE ROAD Northbound				SR 20 - BUFORD DRIVE Eastbound				
Start Time	Left	Thru	U-Turn	App. Total	Left	Rght	Other	App. Total	Thru	Rght	Other	App. Total	Int. Total
04:00 PM	57	378	9	444	70	113	0	183	421	16	0	437	1064
04:15 PM	68	348	5	421	83	131	0	214	441	23	0	464	1099
04:30 PM	61	380	5	446	55	118	0	173	431	19	0	450	1069
04:45 PM	60	390	3	453	90	138	0	228	421	26	0	447	1128
Total	246	1496	22	1764	298	500	0	798	1714	84	0	1798	4360
05:00 PM	51	394	4	449	78	157	0	235	451	17	0	468	1152
05:15 PM	53	378	2	433	86	152	0	238	378	12	0	390	1061
05:30 PM	55	348	1	404	85	142	0	227	409	9	0	418	1049
05:45 PM	62	300	7	369	73	114	0	187	418	13	0	431	987
Total	221	1420	14	1655	322	565	0	887	1656	51	0	1707	4249
Grand Total	467	2916	36	3419	620	1065	0	1685	3370	135	0	3505	8609
Apprch %	13.7	85.3	1.1		36.8	63.2	0		96.1	3.9	0		
Total %	5.4	33.9	0.4	39.7	7.2	12.4	0	19.6	39.1	1.6	0	40.7	

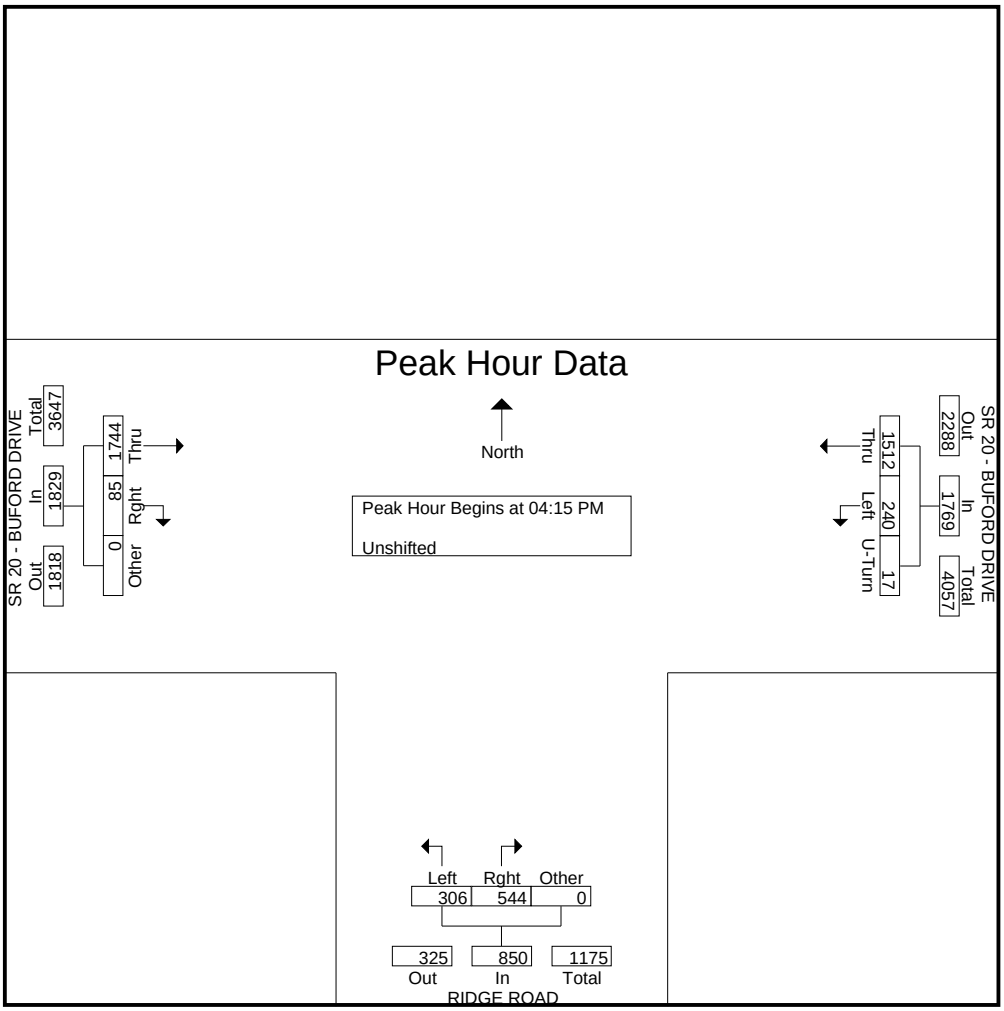


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : RidgeRd@SR20PM
Site Code : 00000000
Start Date : 5/6/2008
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	SR 20 - BUFORD DRIVE Westbound				RIDGE ROAD Northbound				SR 20 - BUFORD DRIVE Eastbound				
Start Time	Left	Thru	U-Turn	App. Total	Left	Rght	Other	App. Total	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:15 PM													
04:15 PM	**68**	348	**5**	421	83	131	0	214	441	23	0	464	1099
04:30 PM	61	380	5	446	55	118	0	173	431	19	0	450	1069
04:45 PM	60	390	3	**453**	**90**	138	0	228	421	**26**	0	447	1128
05:00 PM	51	**394**	4	449	78	**157**	0	**235**	**451**	17	0	**468**	**1152**
Total Volume	240	1512	17	1769	306	544	0	850	1744	85	0	1829	4448
% App. Total	13.6	85.5	1		36	64	0		95.4	4.6	0		
PHF	.882	.959	.850	.976	.850	.866	.000	.904	.967	.817	.000	.977	.965



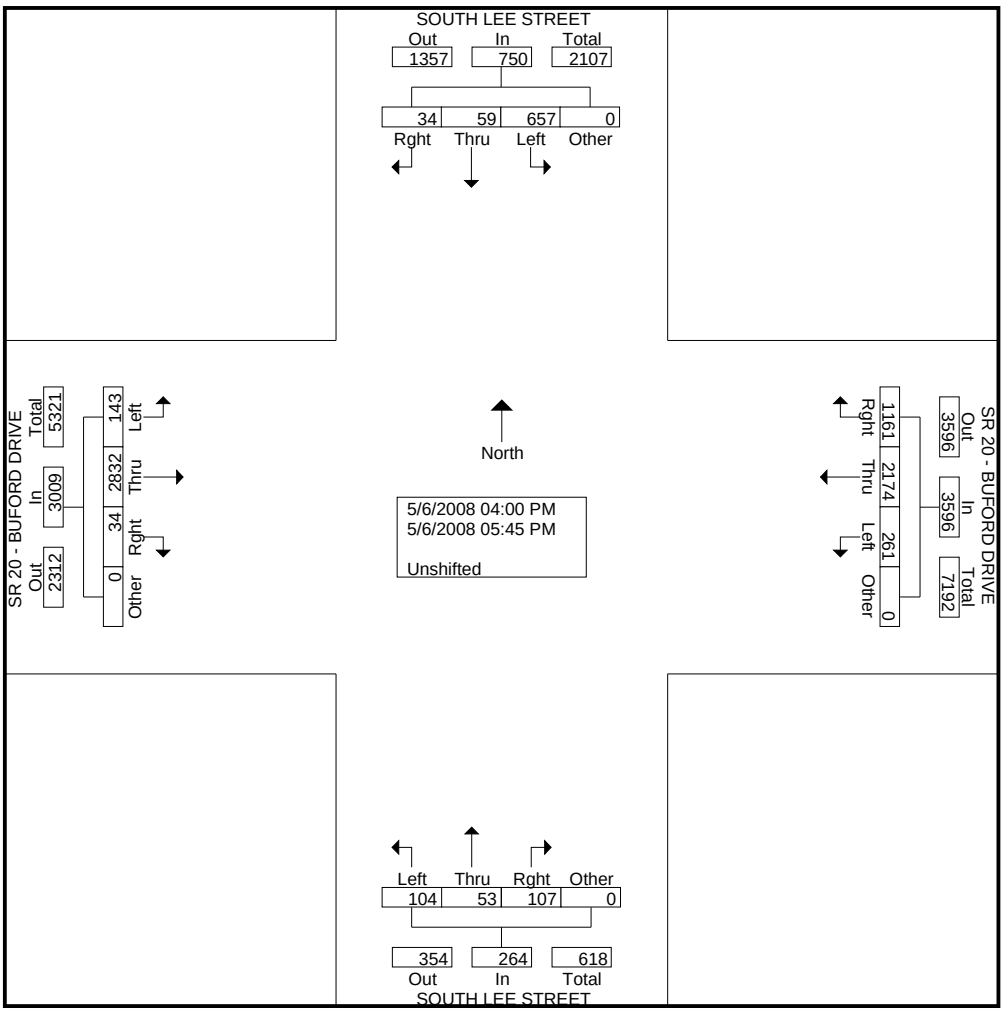
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@SR20PM
Site Code : 00000000
Start Date : 5/6/2008

Groups Printed- Unshifted

	SOUTH LEE STREET Southbound					SR 20 - BUFORD DRIVE Westbound					SOUTH LEE STREET Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
04:00 PM	57	8	7	0	72	24	300	125	0	449	12	8	11	0	31	13	374	2	0	389	941
04:15 PM	69	9	5	0	83	29	257	145	0	431	15	5	15	0	35	15	391	5	0	411	960
04:30 PM	78	5	4	0	87	48	260	129	0	437	10	7	14	0	31	11	358	4	0	373	928
04:45 PM	89	7	6	0	102	35	311	135	0	481	11	9	12	0	32	18	355	2	0	375	990
Total	293	29	22	0	344	136	1128	534	0	1798	48	29	52	0	129	57	1478	13	0	1548	3819
05:00 PM	96	8	3	0	107	24	302	158	0	484	14	5	13	0	32	21	369	5	0	395	1018
05:15 PM	97	8	2	0	107	25	278	169	0	472	16	6	10	0	32	14	300	7	0	321	932
05:30 PM	80	5	5	0	90	44	258	145	0	447	14	8	18	0	40	22	337	5	0	364	941
05:45 PM	91	9	2	0	102	32	208	155	0	395	12	5	14	0	31	29	348	4	0	381	909
Total	364	30	12	0	406	125	1046	627	0	1798	56	24	55	0	135	86	1354	21	0	1461	3800
Grand Total	657	59	34	0	750	261	2174	1161	0	3596	104	53	107	0	264	143	2832	34	0	3009	7619
Apprch %	87.6	7.9	4.5	0		7.3	60.5	32.3	0		39.4	20.1	40.5	0		4.8	94.1	1.1	0		
Total %	8.6	0.8	0.4	0	9.8	3.4	28.5	15.2	0	47.2	1.4	0.7	1.4	0	3.5	1.9	37.2	0.4	0	39.5	

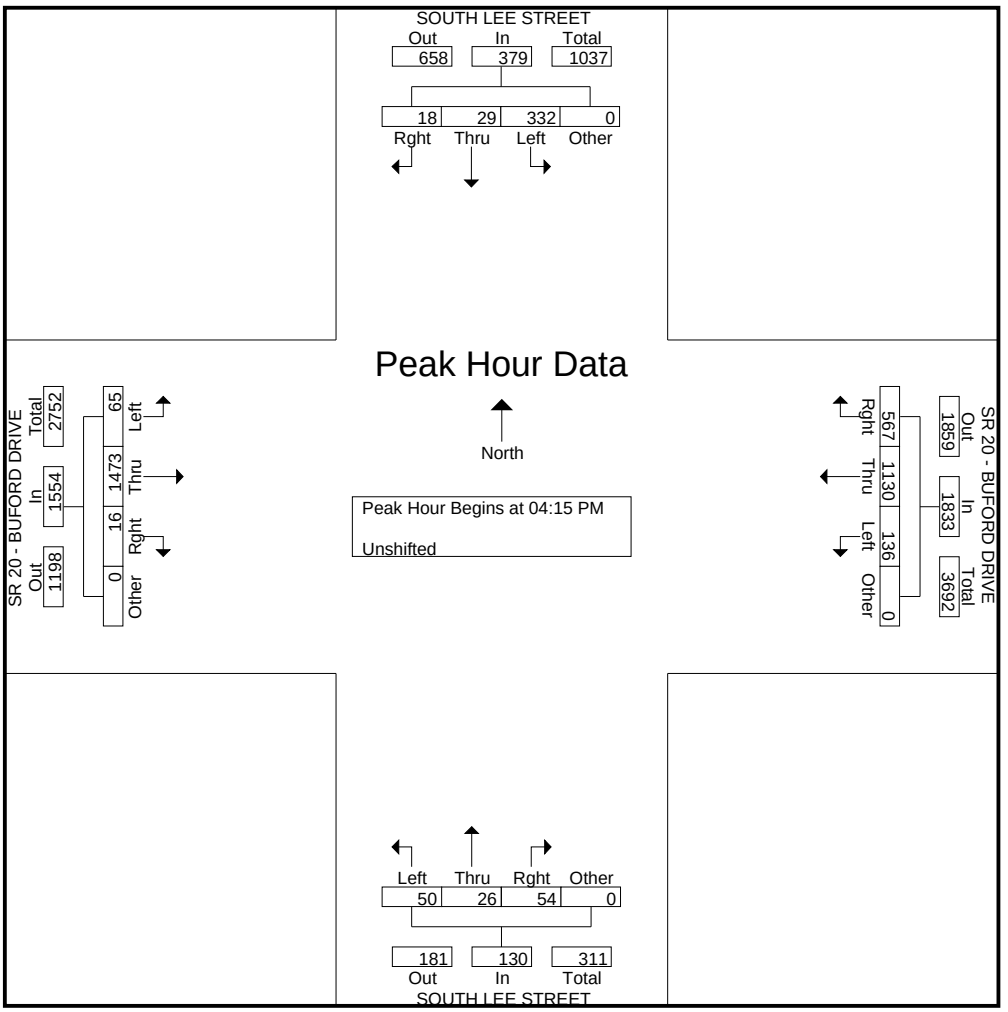


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File Name : SLeeSt@SR20PM
Site Code : 00000000
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	SOUTH LEE STREET Southbound					SR 20 - BUFORD DRIVE Westbound					SOUTH LEE STREET Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	69	**9**	5	0	83	29	257	145	0	431	**15**	5	**15**	0	**35**	15	**391**	**5**	0	**411**	960
04:30 PM	78	5	4	0	87	**48**	260	129	0	437	10	7	14	0	31	11	358	4	0	373	928
04:45 PM	89	7	**6**	0	102	35	**311**	135	0	481	11	**9**	12	0	32	18	355	2	0	375	990
05:00 PM	**96**	8	3	0	**107**	24	302	**158**	0	**484**	14	5	13	0	32	**21**	369	5	0	395	**1018**
Total Volume	332	29	18	0	379	136	1130	567	0	1833	50	26	54	0	130	65	1473	16	0	1554	3896
% App. Total	87.6	7.7	4.7	0		7.4	61.6	30.9	0		38.5	20	41.5	0		4.2	94.8	1	0		
PHF	.865	.806	.750	.000	.886	.708	.908	.897	.000	.947	.833	.722	.900	.000	.929	.774	.942	.800	.000	.945	.957



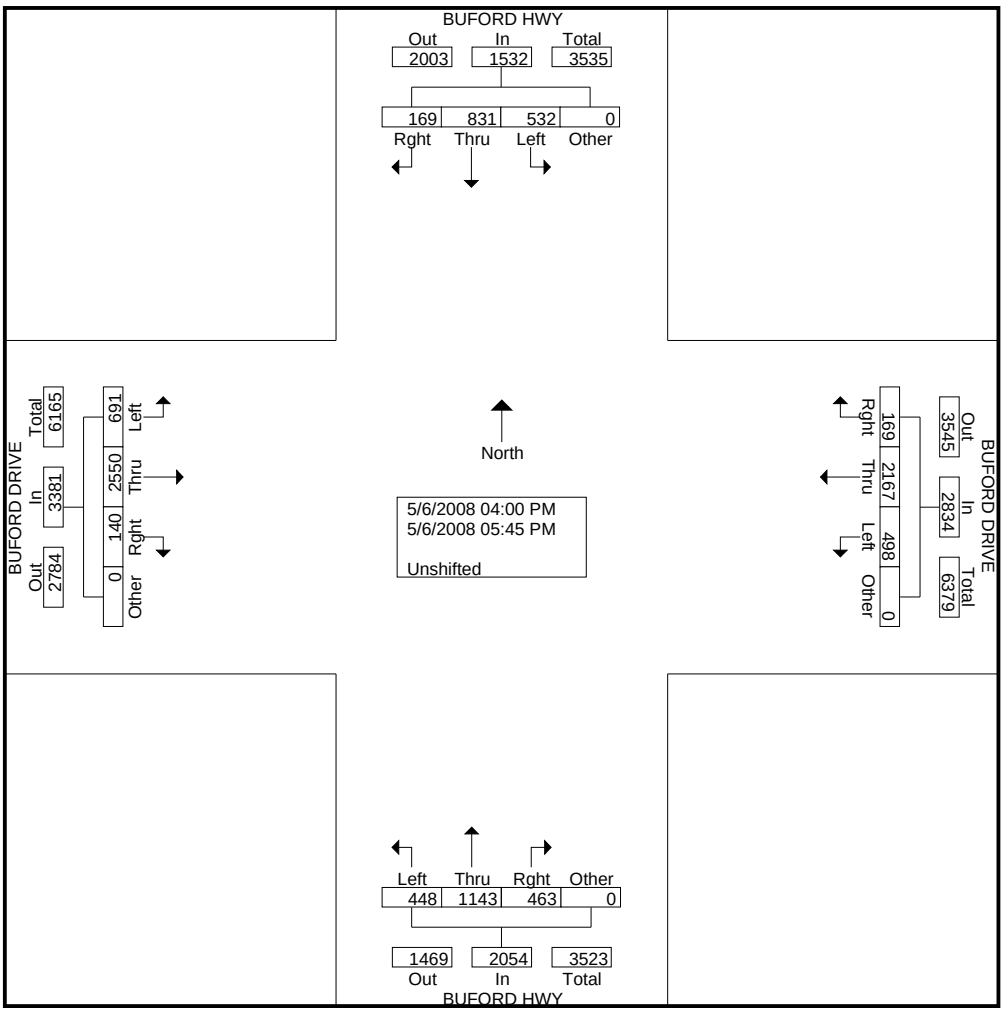
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : BufordDr@BufordHwyPM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

	BUFORD HWY Southbound					BUFORD DRIVE Westbound					BUFORD HWY Northbound					BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
04:00 PM	91	100	28	0	219	60	246	28	0	334	52	122	46	0	220	93	308	26	0	427	1200
04:15 PM	66	112	23	0	201	49	276	17	0	342	63	136	67	0	266	81	310	10	0	401	1210
04:30 PM	66	114	23	0	203	52	264	15	0	331	74	139	68	0	281	86	319	4	0	409	1224
04:45 PM	49	107	21	0	177	50	262	16	0	328	67	146	62	0	275	94	338	14	0	446	1226
Total	272	433	95	0	800	211	1048	76	0	1335	256	543	243	0	1042	354	1275	54	0	1683	4860
05:00 PM	73	108	10	0	191	64	254	19	0	337	52	140	72	0	264	81	381	6	0	468	1260
05:15 PM	67	108	30	0	205	60	299	29	0	388	50	158	44	0	252	88	280	20	0	388	1233
05:30 PM	60	96	10	0	166	80	269	25	0	374	49	170	58	0	277	74	307	37	0	418	1235
05:45 PM	60	86	24	0	170	83	297	20	0	400	41	132	46	0	219	94	307	23	0	424	1213
Total	260	398	74	0	732	287	1119	93	0	1499	192	600	220	0	1012	337	1275	86	0	1698	4941
Grand Total	532	831	169	0	1532	498	2167	169	0	2834	448	1143	463	0	2054	691	2550	140	0	3381	9801
Apprch %	34.7	54.2	11	0		17.6	76.5	6	0		21.8	55.6	22.5	0		20.4	75.4	4.1	0		
Total %	5.4	8.5	1.7	0	15.6	5.1	22.1	1.7	0	28.9	4.6	11.7	4.7	0	21	7.1	26	1.4	0	34.5	

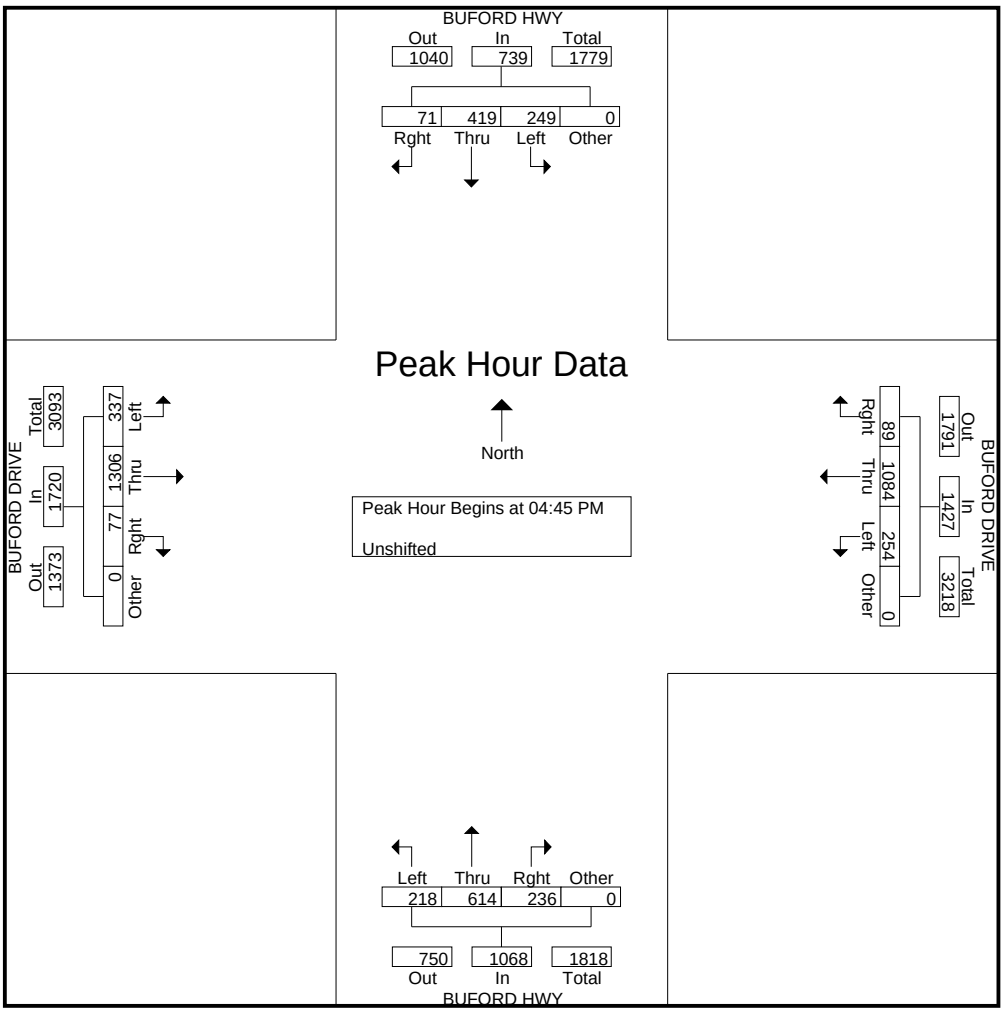


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : BufordDr@BufordHwyPM
Site Code : 00000000
Start Date : 5/6/2008
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	BUFORD HWY Southbound					BUFORD DRIVE Westbound					BUFORD HWY Northbound					BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	49	107	21	0	177	50	262	16	0	328	**67**	146	62	0	275	**94**	338	14	0	446	1226
05:00 PM	**73**	**108**	10	0	191	64	254	19	0	337	52	140	**72**	0	264	81	**381**	6	0	**468**	**1260**
05:15 PM	67	108	**30**	0	**205**	60	**299**	**29**	0	**388**	50	158	44	0	252	88	280	20	0	388	1233
05:30 PM	60	96	10	0	166	**80**	269	25	0	374	49	**170**	58	0	**277**	74	307	**37**	0	418	1235
Total Volume	249	419	71	0	739	254	1084	89	0	1427	218	614	236	0	1068	337	1306	77	0	1720	4954
% App. Total	33.7	56.7	9.6	0		17.8	76	6.2	0		20.4	57.5	22.1	0		19.6	75.9	4.5	0		
PHF	.853	.970	.592	.000	.901	.794	.906	.767	.000	.919	.813	.903	.819	.000	.964	.896	.857	.520	.000	.919	.983



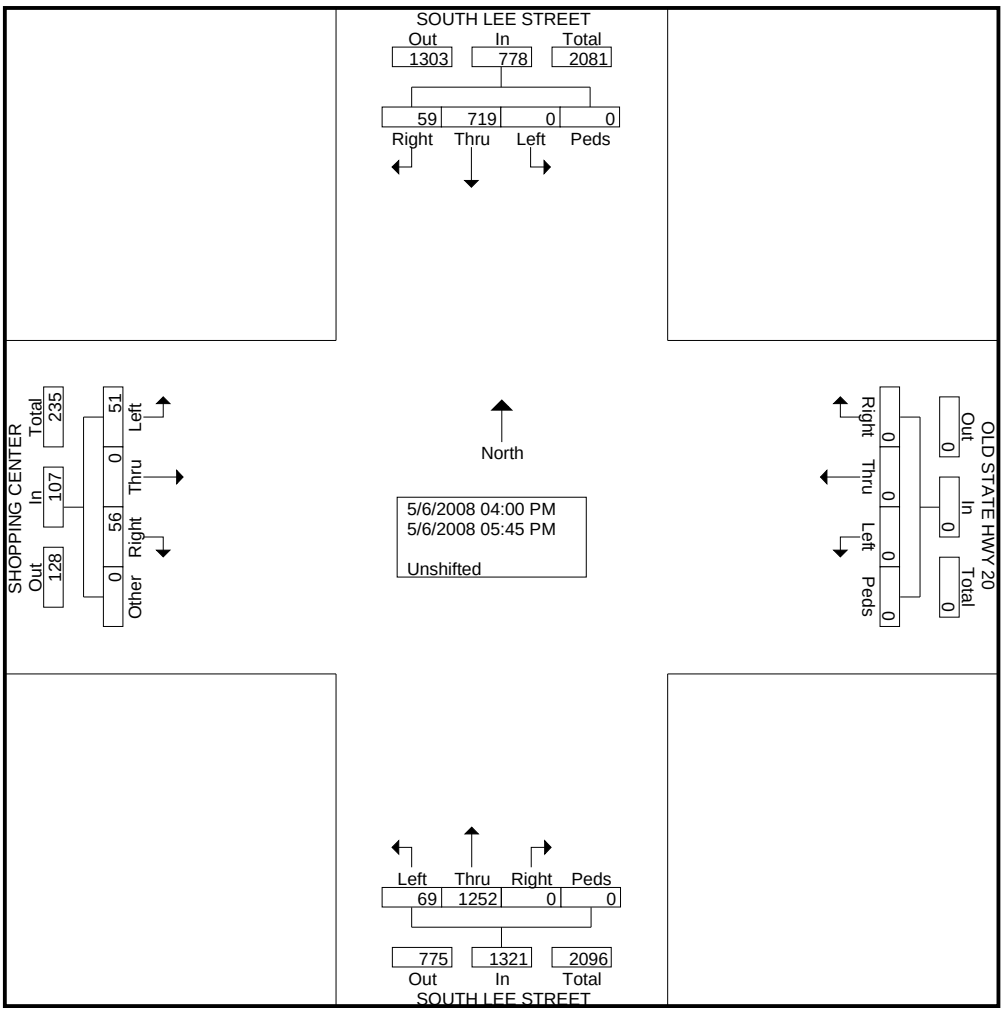
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@OldState20PM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

	SOUTH LEE STREET Southbound					OLD STATE HWY 20 Westbound					SOUTH LEE STREET Northbound					SHOPPING CENTER Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Other	App. Total	Int. Total
04:00 PM	0	67	8	0	75	0	0	0	0	0	9	137	0	0	146	9	0	8	0	17	238
04:15 PM	0	80	5	0	85	0	0	0	0	0	8	150	0	0	158	8	0	7	0	15	258
04:30 PM	0	80	9	0	89	0	0	0	0	0	6	151	0	0	157	7	0	9	0	16	262
04:45 PM	0	98	9	0	107	0	0	0	0	0	9	164	0	0	173	5	0	5	0	10	290
Total	0	325	31	0	356	0	0	0	0	0	32	602	0	0	634	29	0	29	0	58	1048
05:00 PM	0	105	6	0	111	0	0	0	0	0	8	168	0	0	176	6	0	6	0	12	299
05:15 PM	0	102	8	0	110	0	0	0	0	0	9	161	0	0	170	2	0	9	0	11	291
05:30 PM	0	84	9	0	93	0	0	0	0	0	11	158	0	0	169	6	0	4	0	10	272
05:45 PM	0	103	5	0	108	0	0	0	0	0	9	163	0	0	172	8	0	8	0	16	296
Total	0	394	28	0	422	0	0	0	0	0	37	650	0	0	687	22	0	27	0	49	1158
Grand Total	0	719	59	0	778	0	0	0	0	0	69	1252	0	0	1321	51	0	56	0	107	2206
Apprch %	0	92.4	7.6	0		0	0	0	0		5.2	94.8	0	0		47.7	0	52.3	0		
Total %	0	32.6	2.7	0	35.3	0	0	0	0	0	3.1	56.8	0	0	59.9	2.3	0	2.5	0	4.9	

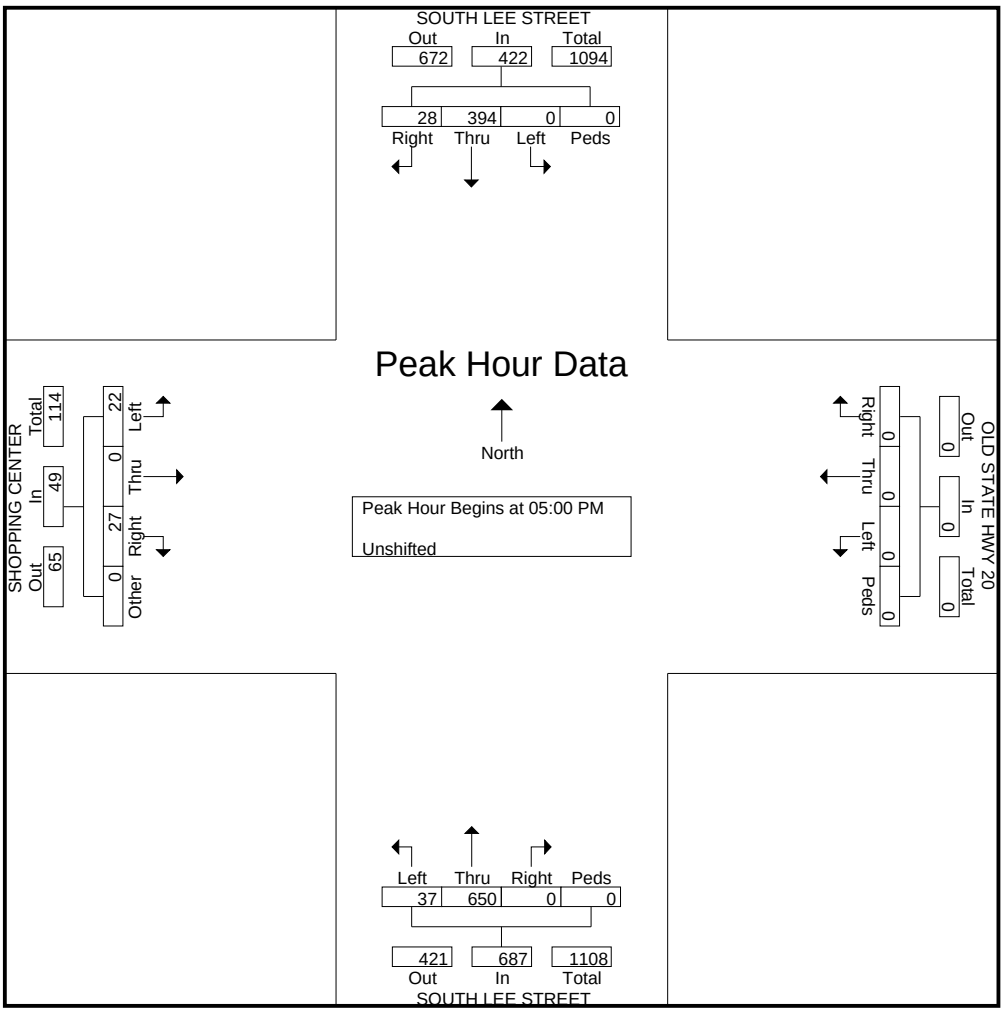


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@OldState20PM
Site Code : 00000000
Start Date : 5/6/2008
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	SOUTH LEE STREET Southbound					OLD STATE HWY 20 Westbound					SOUTH LEE STREET Northbound					SHOPPING CENTER Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	**105**	6	0	**111**	0	0	0	0	0	8	**168**	0	0	**176**	6	0	6	0	12	**299**
05:15 PM	0	102	8	0	110	0	0	0	0	0	9	161	0	0	170	2	0	**9**	0	11	291
05:30 PM	0	84	**9**	0	93	0	0	0	0	0	**11**	158	0	0	169	6	0	4	0	10	272
05:45 PM	0	103	5	0	108	0	0	0	0	0	9	163	0	0	172	**8**	0	8	0	**16**	296
Total Volume	0	394	28	0	422	0	0	0	0	0	37	650	0	0	687	22	0	27	0	49	1158
% App. Total	0	93.4	6.6	0		0	0	0	0		5.4	94.6	0	0		44.9	0	55.1	0		
PHF	.000	.938	.778	.000	.950	.000	.000	.000	.000	.000	.841	.967	.000	.000	.976	.688	.000	.750	.000	.766	.968



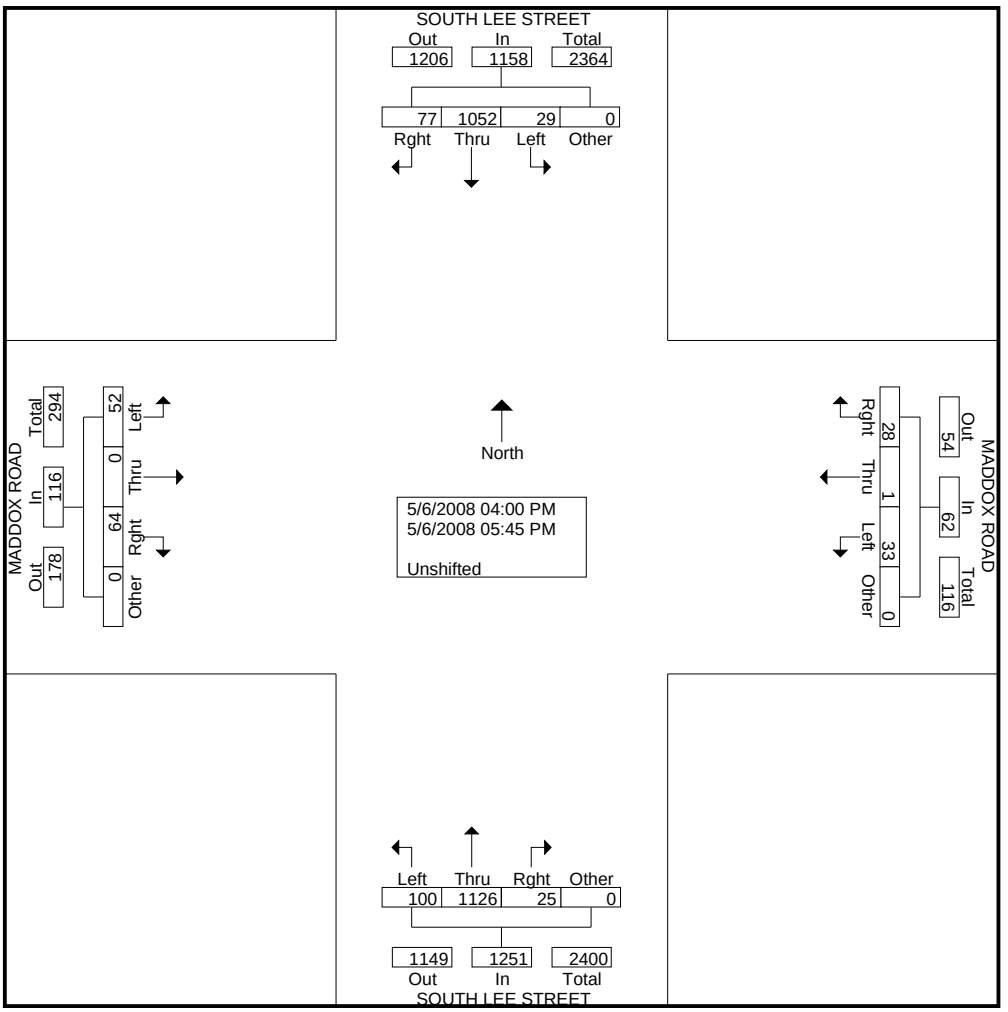
All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@MaddoxRdPM
Site Code : 00000000
Start Date : 5/6/2008
Page No : 1

Groups Printed- Unshifted

	SOUTH LEE STREET Southbound					MADDOX ROAD Westbound					SOUTH LEE STREET Northbound					MADDOX ROAD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
04:00 PM	3	150	7	0	160	5	0	4	0	9	14	141	5	0	160	6	0	4	0	10	339
04:15 PM	3	141	9	0	153	6	0	4	0	10	9	151	3	0	163	10	0	8	0	18	344
04:30 PM	2	119	11	0	132	2	0	2	0	4	14	142	2	0	158	5	0	12	0	17	311
04:45 PM	3	120	3	0	126	2	0	2	0	4	11	152	2	0	165	4	0	11	0	15	310
Total	11	530	30	0	571	15	0	12	0	27	48	586	12	0	646	25	0	35	0	60	1304
05:00 PM	2	153	12	0	167	9	0	4	0	13	18	145	4	0	167	3	0	6	0	9	356
05:15 PM	6	108	8	0	122	2	0	3	0	5	11	143	1	0	155	11	0	5	0	16	298
05:30 PM	4	145	15	0	164	6	1	4	0	11	11	144	4	0	159	4	0	7	0	11	345
05:45 PM	6	116	12	0	134	1	0	5	0	6	12	108	4	0	124	9	0	11	0	20	284
Total	18	522	47	0	587	18	1	16	0	35	52	540	13	0	605	27	0	29	0	56	1283
Grand Total	29	1052	77	0	1158	33	1	28	0	62	100	1126	25	0	1251	52	0	64	0	116	2587
Apprch %	2.5	90.8	6.6	0		53.2	1.6	45.2	0		8	90	2	0		44.8	0	55.2	0		
Total %	1.1	40.7	3	0	44.8	1.3	0	1.1	0	2.4	3.9	43.5	1	0	48.4	2	0	2.5	0	4.5	

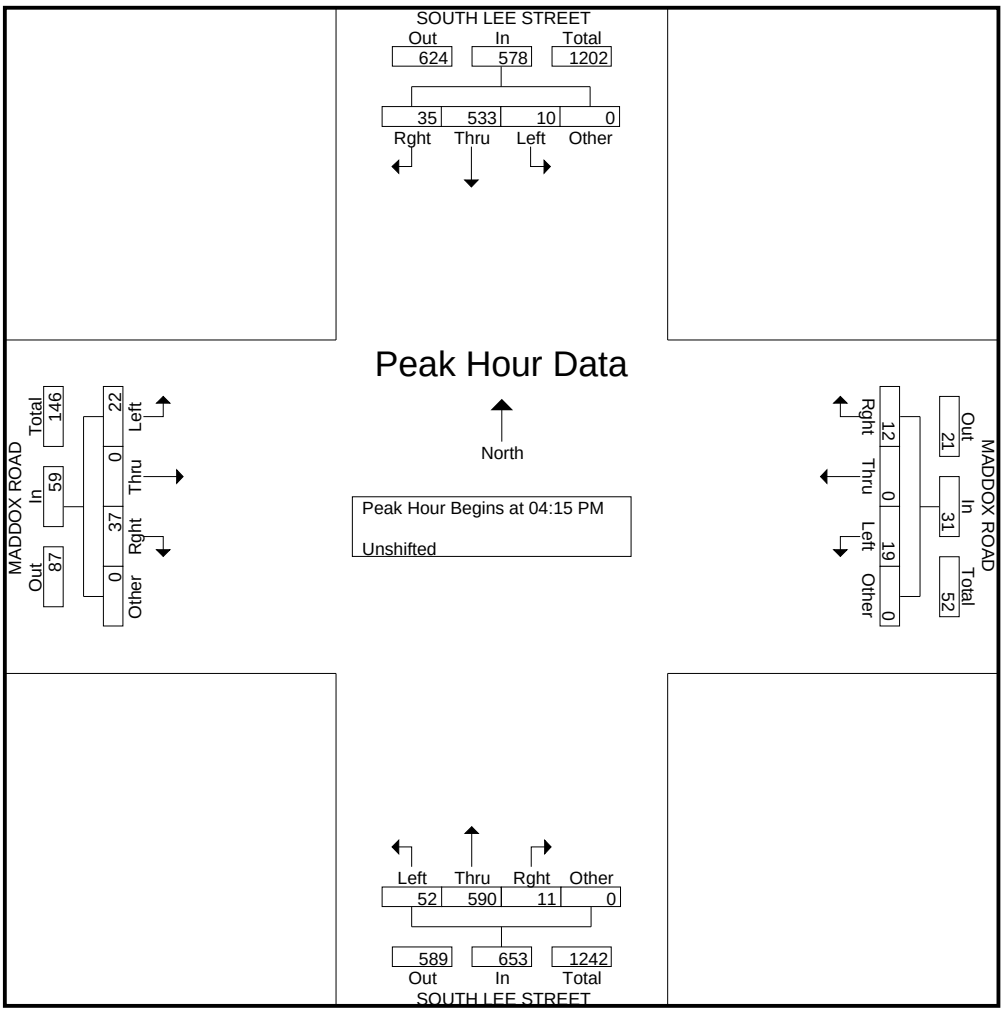


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@MaddoxRdPM
Site Code : 00000000
Start Date : 5/6/2008
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	SOUTH LEE STREET Southbound					MADDOX ROAD Westbound					SOUTH LEE STREET Northbound					MADDOX ROAD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	**3**	141	9	0	153	6	0	**4**	0	10	9	151	3	0	163	**10**	0	8	0	**18**	344
04:30 PM	2	119	11	0	132	2	0	2	0	4	14	142	2	0	158	5	0	**12**	0	17	311
04:45 PM	3	120	3	0	126	2	0	2	0	4	11	**152**	2	0	165	4	0	11	0	15	310
05:00 PM	2	**153**	**12**	0	**167**	**9**	0	4	0	**13**	**18**	145	**4**	0	**167**	3	0	6	0	9	**356**
Total Volume	10	533	35	0	578	19	0	12	0	31	52	590	11	0	653	22	0	37	0	59	1321
% App. Total	1.7	92.2	6.1	0		61.3	0	38.7	0		8	90.4	1.7	0		37.3	0	62.7	0		
PHF	.833	.871	.729	.000	.865	.528	.000	.750	.000	.596	.722	.970	.688	.000	.978	.550	.000	.771	.000	.819	.928



All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
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File Name : GravelSpgsRd@SR20SAT
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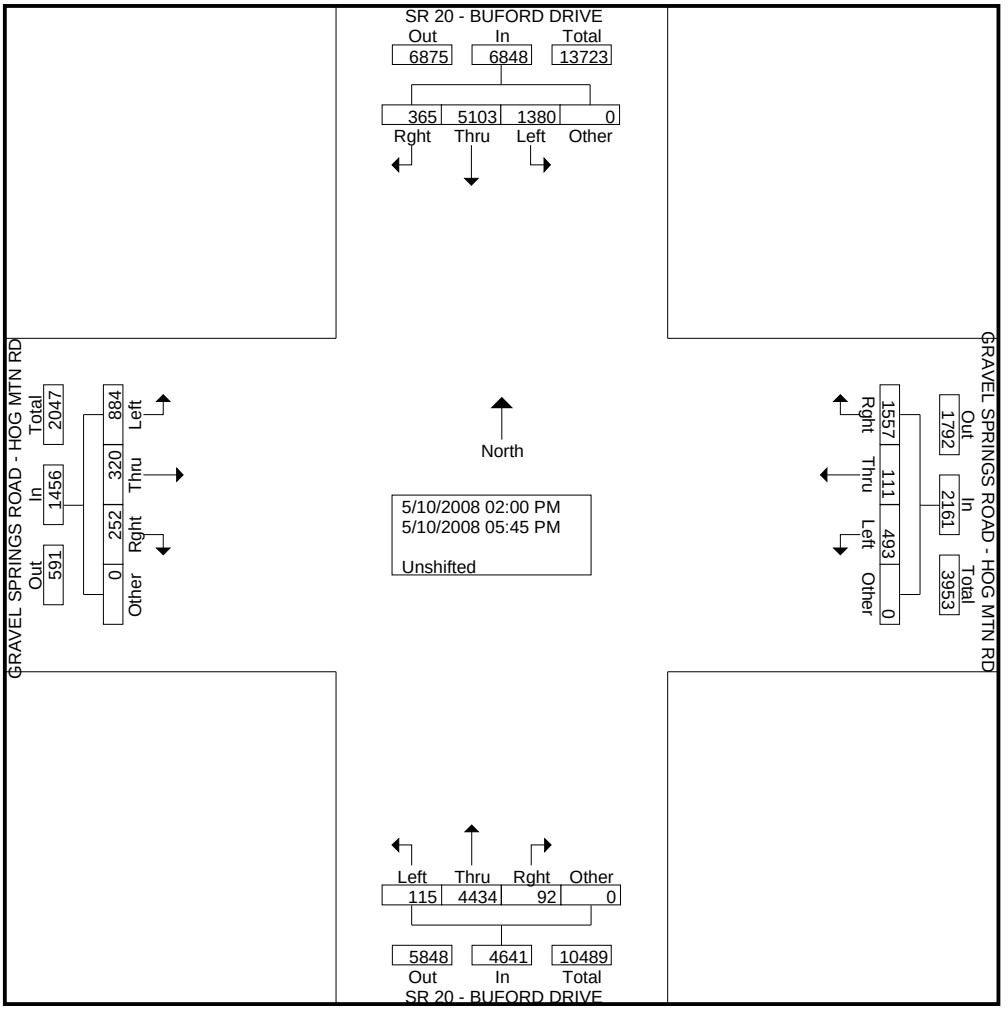
Groups Printed- Unshifted

	SR 20 - BUFORD DRIVE Southbound					GRAVEL SPRINGS ROAD - HOG MTN RD Westbound					SR 20 - BUFORD DRIVE Northbound					GRAVEL SPRINGS ROAD - HOG MTN RD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
02:00 PM	74	271	21	0	366	34	19	112	0	165	11	320	0	0	331	74	22	29	0	125	987
02:15 PM	50	328	31	0	409	24	15	129	0	168	3	288	0	0	291	47	26	32	0	105	973
02:30 PM	91	356	31	0	478	25	5	102	0	132	4	357	6	0	367	78	21	21	0	120	1097
02:45 PM	70	259	23	0	352	29	5	70	0	104	2	257	2	0	261	44	19	14	0	77	794
Total	285	1214	106	0	1605	112	44	413	0	569	20	1222	8	0	1250	243	88	96	0	427	3851
03:00 PM	84	293	34	0	411	21	6	87	0	114	1	301	0	0	302	52	28	16	0	96	923
03:15 PM	102	311	24	0	437	22	1	76	0	99	0	314	0	0	314	39	23	15	0	77	927
03:30 PM	74	216	15	0	305	39	6	102	0	147	7	270	0	0	277	65	16	16	0	97	826
03:45 PM	83	226	21	0	330	25	6	96	0	127	2	219	1	0	222	46	16	10	0	72	751
Total	343	1046	94	0	1483	107	19	361	0	487	10	1104	1	0	1115	202	83	57	0	342	3427
04:00 PM	92	312	13	0	417	34	6	116	0	156	7	325	4	0	336	59	28	9	0	96	1005
04:15 PM	80	278	20	0	378	32	19	116	0	167	3	230	0	0	233	51	21	11	0	83	861
04:30 PM	75	366	25	0	466	27	7	83	0	117	9	252	1	0	262	43	15	16	0	74	919
04:45 PM	116	398	30	0	544	32	5	92	0	129	5	274	0	0	279	57	13	11	0	81	1033
Total	363	1354	88	0	1805	125	37	407	0	569	24	1081	5	0	1110	210	77	47	0	334	3818
05:00 PM	129	434	24	0	587	33	4	135	0	172	18	347	3	0	368	54	18	15	0	87	1214
05:15 PM	82	375	20	0	477	45	1	82	0	128	7	248	54	0	309	41	14	11	0	66	980
05:30 PM	86	302	13	0	401	33	2	80	0	115	25	235	17	0	277	61	23	17	0	101	894
05:45 PM	92	378	20	0	490	38	4	79	0	121	11	197	4	0	212	73	17	9	0	99	922
Total	389	1489	77	0	1955	149	11	376	0	536	61	1027	78	0	1166	229	72	52	0	353	4010
Grand Total	1380	5103	365	0	6848	493	111	1557	0	2161	115	4434	92	0	4641	884	320	252	0	1456	15106
Apprch %	20.2	74.5	5.3	0		22.8	5.1	72	0		2.5	95.5	2	0		60.7	22	17.3	0		
Total %	9.1	33.8	2.4	0	45.3	3.3	0.7	10.3	0	14.3	0.8	29.4	0.6	0	30.7	5.9	2.1	1.7	0	9.6	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : GravelSpgsRd@SR20SAT
Site Code : 00000000
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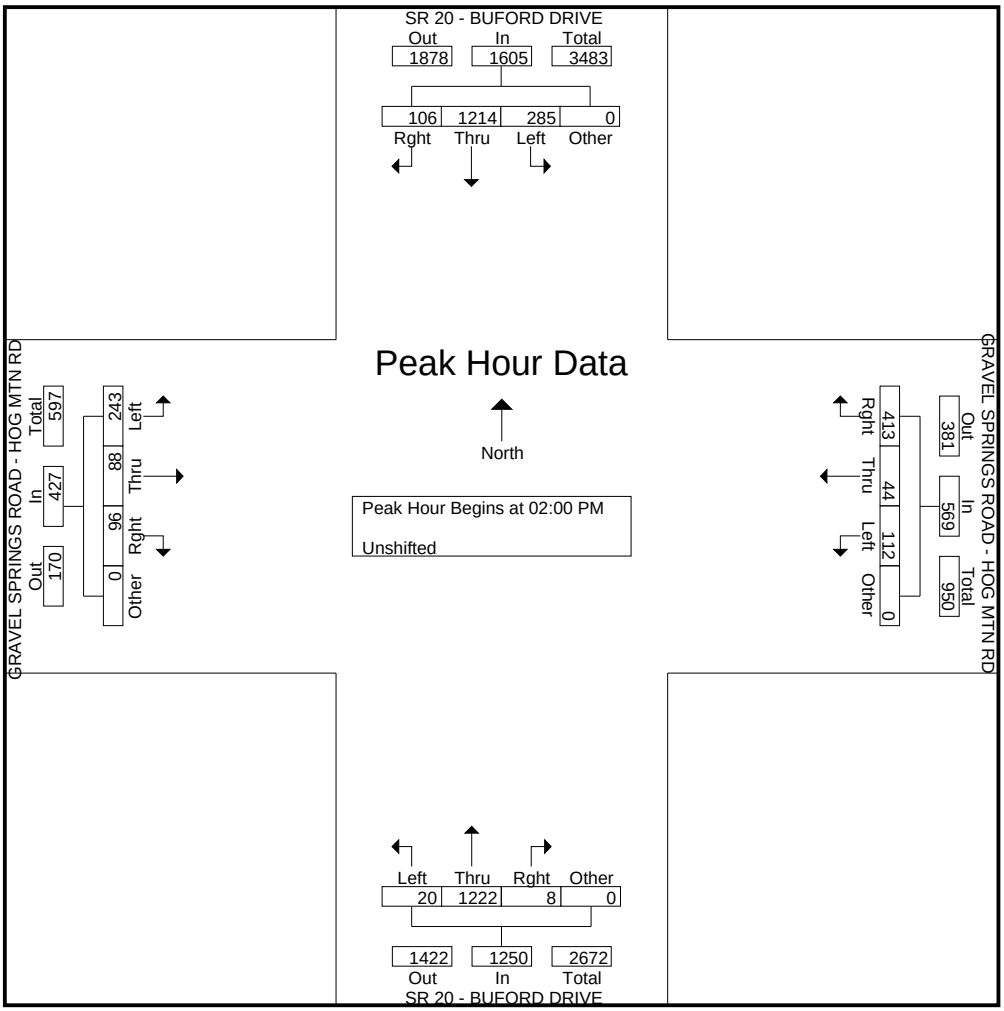


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : GravelSpgsRd@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008
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	SR 20 - BUFORD DRIVE Southbound					GRAVEL SPRINGS ROAD - HOG MTN RD Westbound					SR 20 - BUFORD DRIVE Northbound					GRAVEL SPRINGS ROAD - HOG MTN RD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:00 PM																					
02:00 PM	74	271	21	0	366	**34**	**19**	112	0	165	**11**	320	0	0	331	74	22	29	0	**125**	987
02:15 PM	50	328	**31**	0	409	24	15	**129**	0	**168**	3	288	0	0	291	47	**26**	**32**	0	105	973
02:30 PM	**91**	**356**	31	0	**478**	25	5	102	0	132	4	**357**	**6**	0	**367**	**78**	21	21	0	120	**1097**
02:45 PM	70	259	23	0	352	29	5	70	0	104	2	257	2	0	261	44	19	14	0	77	794
Total Volume	285	1214	106	0	1605	112	44	413	0	569	20	1222	8	0	1250	243	88	96	0	427	3851
% App. Total	17.8	75.6	6.6	0		19.7	7.7	72.6	0		1.6	97.8	0.6	0		56.9	20.6	22.5	0		
PHF	.783	.853	.855	.000	.839	.824	.579	.800	.000	.847	.455	.856	.333	.000	.851	.779	.846	.750	.000	.854	.878



All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
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File Name : I-985NBRamp@SR20SAT
Site Code : 00000000
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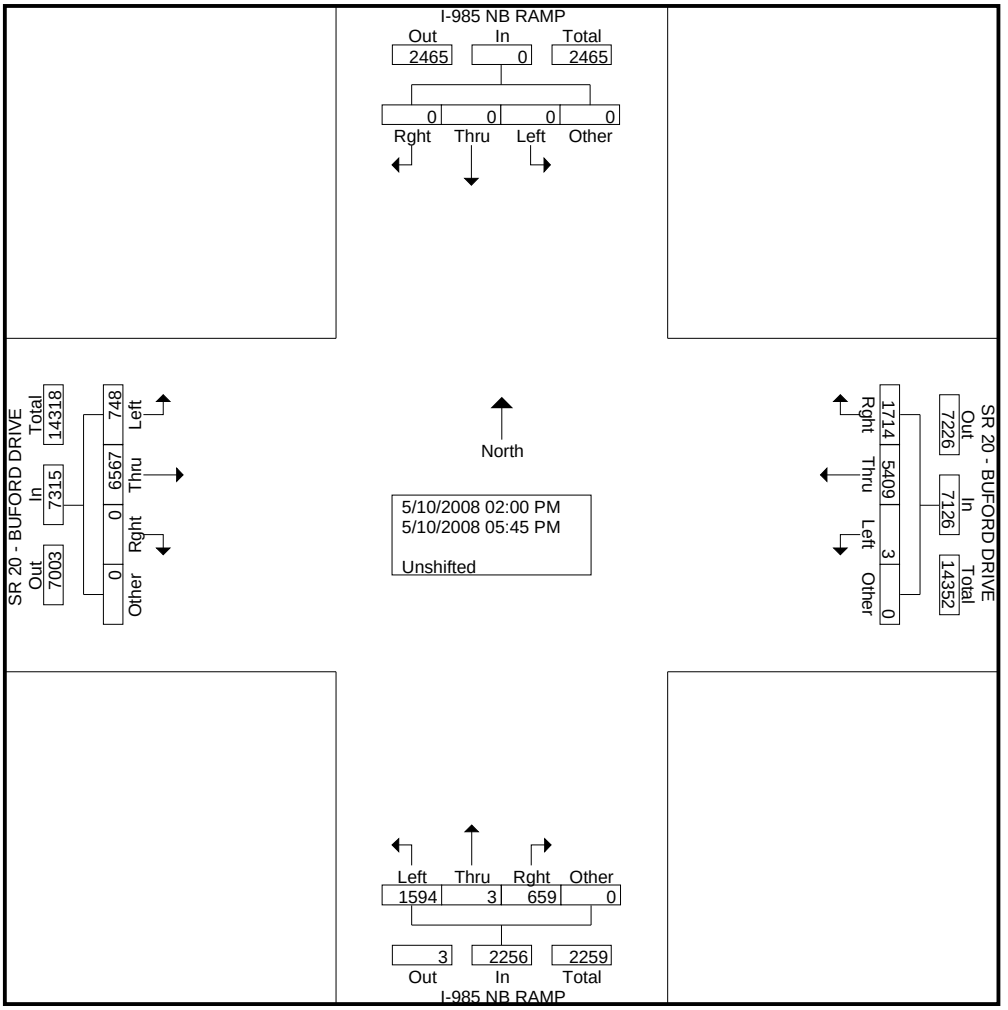
Groups Printed- Unshifted

	I-985 NB RAMP Southbound					SR 20 - BUFORD DRIVE Westbound					I-985 NB RAMP Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	404	128	0	532	95	0	58	0	153	49	430	0	0	479	1164
02:15 PM	0	0	0	0	0	0	323	163	0	486	90	0	67	0	157	64	427	0	0	491	1134
02:30 PM	0	0	0	0	0	0	321	135	0	456	145	0	65	0	210	60	441	0	0	501	1167
02:45 PM	0	0	0	0	0	0	300	112	0	412	115	0	26	0	141	36	400	0	0	436	989
Total	0	0	0	0	0	0	1348	538	0	1886	445	0	216	0	661	209	1698	0	0	1907	4454
03:00 PM	0	0	0	0	0	0	361	105	0	466	105	0	47	0	152	37	441	0	0	478	1096
03:15 PM	0	0	0	0	0	0	300	114	0	414	111	0	26	0	137	32	500	0	0	532	1083
03:30 PM	0	0	0	0	0	0	318	106	0	424	94	0	37	0	131	34	409	0	0	443	998
03:45 PM	0	0	0	0	0	0	313	110	0	423	88	0	48	0	136	51	300	0	0	351	910
Total	0	0	0	0	0	0	1292	435	0	1727	398	0	158	0	556	154	1650	0	0	1804	4087
04:00 PM	0	0	0	0	0	3	369	117	0	489	94	0	28	0	122	39	367	0	0	406	1017
04:15 PM	0	0	0	0	0	0	351	98	0	449	90	1	38	0	129	67	431	0	0	498	1076
04:30 PM	0	0	0	0	0	0	339	95	0	434	83	1	33	0	117	41	390	0	0	431	982
04:45 PM	0	0	0	0	0	0	341	103	0	444	107	1	43	0	151	52	409	0	0	461	1056
Total	0	0	0	0	0	3	1400	413	0	1816	374	3	142	0	519	199	1597	0	0	1796	4131
05:00 PM	0	0	0	0	0	0	331	94	0	425	112	0	33	0	145	70	402	0	0	472	1042
05:15 PM	0	0	0	0	0	0	400	75	0	475	76	0	31	0	107	37	400	0	0	437	1019
05:30 PM	0	0	0	0	0	0	338	91	0	429	96	0	43	0	139	46	411	0	0	457	1025
05:45 PM	0	0	0	0	0	0	300	68	0	368	93	0	36	0	129	33	409	0	0	442	939
Total	0	0	0	0	0	0	1369	328	0	1697	377	0	143	0	520	186	1622	0	0	1808	4025
Grand Total	0	0	0	0	0	3	5409	1714	0	7126	1594	3	659	0	2256	748	6567	0	0	7315	16697
Apprch %	0	0	0	0		0	75.9	24.1	0		70.7	0.1	29.2	0		10.2	89.8	0	0		
Total %	0	0	0	0	0	0	32.4	10.3	0	42.7	9.5	0	3.9	0	13.5	4.5	39.3	0	0	43.8	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985NBRamp@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008

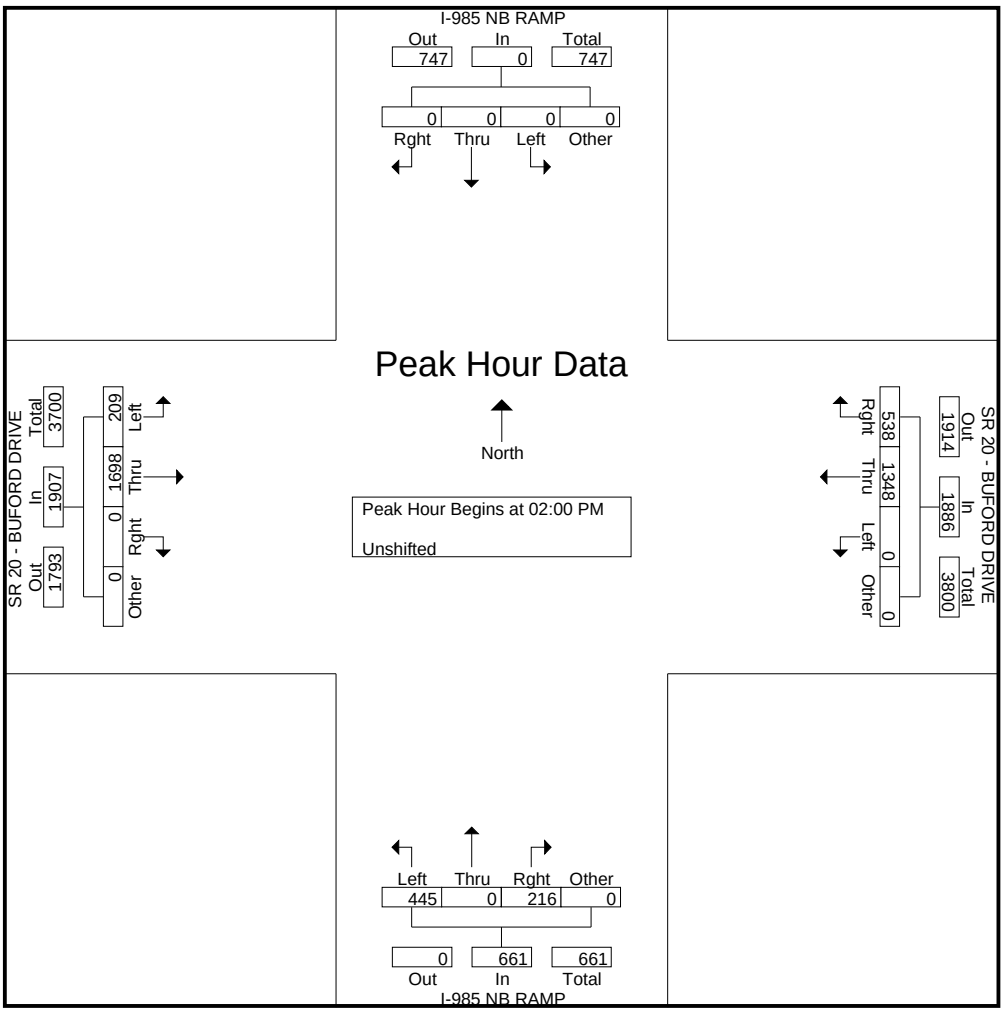


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985NBRamp@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008
Page No : 3

	I-985 NB RAMP Southbound					SR 20 - BUFORD DRIVE Westbound					I-985 NB RAMP Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:00 PM																					
02:00 PM	0	0	0	0	0	0	**404**	128	0	**532**	95	0	58	0	153	49	430	0	0	479	1164
02:15 PM	0	0	0	0	0	0	323	**163**	0	486	90	0	**67**	0	157	**64**	427	0	0	491	1134
02:30 PM	0	0	0	0	0	0	321	135	0	456	**145**	0	65	0	**210**	60	**441**	0	0	**501**	**1167**
02:45 PM	0	0	0	0	0	0	300	112	0	412	115	0	26	0	141	36	400	0	0	436	989
Total Volume	0	0	0	0	0	0	1348	538	0	1886	445	0	216	0	661	209	1698	0	0	1907	4454
% App. Total	0	0	0	0		0	71.5	28.5	0		67.3	0	32.7	0		11	89	0	0		
PHF	.000	.000	.000	.000	.000	.000	.834	.825	.000	.886	.767	.000	.806	.000	.787	.816	.963	.000	.000	.952	.954



All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985SBRamp@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008
Page No : 1

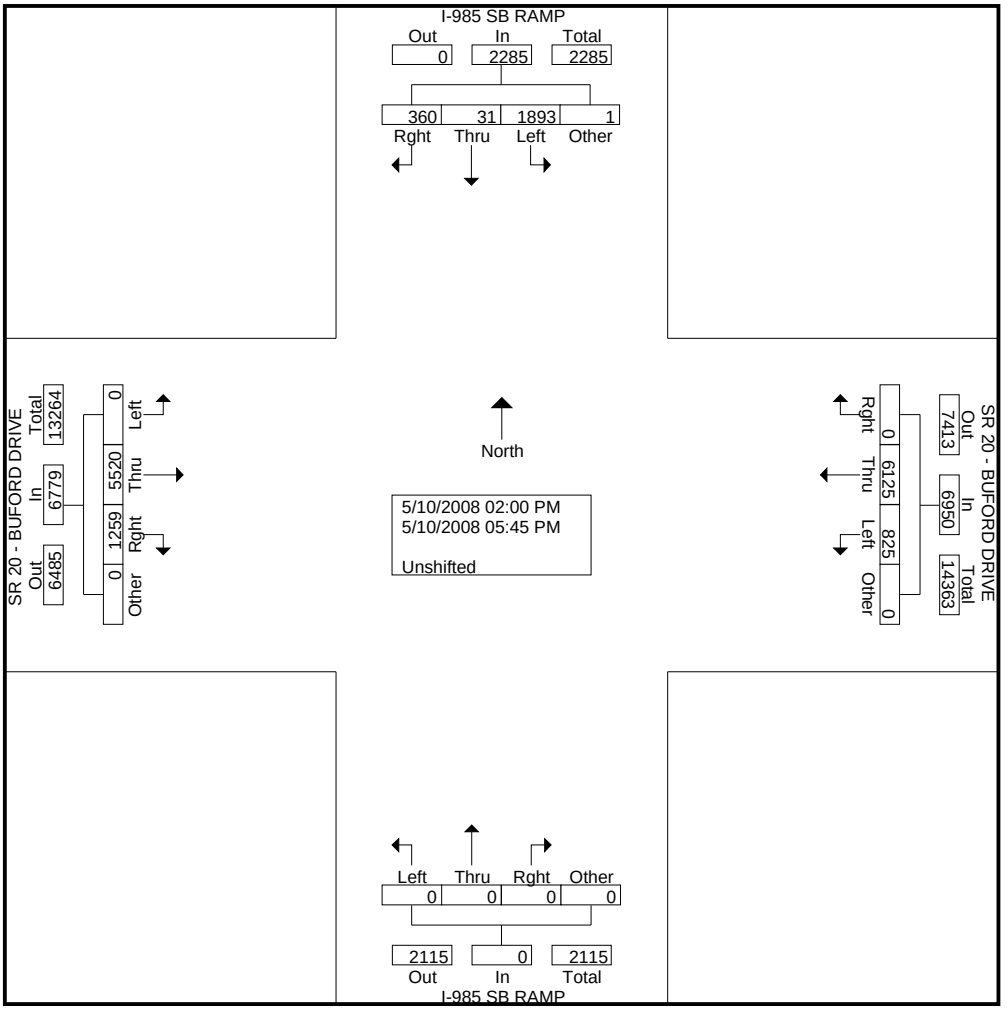
Groups Printed- Unshifted

	I-985 SB RAMP Southbound					SR 20 - BUFORD DRIVE Westbound					I-985 SB RAMP Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
02:00 PM	141	1	32	0	174	65	417	0	0	482	0	0	0	0	0	0	348	82	0	430	1086
02:15 PM	124	1	24	0	149	48	384	0	0	432	0	0	0	0	0	0	336	93	0	429	1010
02:30 PM	117	1	13	0	131	47	418	0	0	465	0	0	0	0	0	0	365	87	0	452	1048
02:45 PM	101	1	8	0	110	66	353	0	0	419	0	0	0	0	0	0	333	85	0	418	947
Total	483	4	77	0	564	226	1572	0	0	1798	0	0	0	0	0	0	1382	347	0	1729	4091
03:00 PM	119	5	47	0	171	51	408	0	0	459	0	0	0	0	0	0	355	79	0	434	1064
03:15 PM	149	2	39	0	190	37	360	0	0	397	0	0	0	0	0	0	397	88	0	485	1072
03:30 PM	115	0	27	0	142	48	358	0	0	406	0	0	0	0	0	0	328	79	0	407	955
03:45 PM	116	7	24	0	147	38	342	0	0	380	0	0	0	0	0	0	249	62	0	311	838
Total	499	14	137	0	650	174	1468	0	0	1642	0	0	0	0	0	0	1329	308	0	1637	3929
04:00 PM	111	0	21	0	132	68	398	0	0	466	0	0	0	0	0	0	293	55	0	348	946
04:15 PM	111	3	24	0	138	54	387	0	0	441	0	0	0	0	0	0	371	89	0	460	1039
04:30 PM	116	3	23	0	142	53	361	0	0	414	0	0	0	0	0	0	342	91	0	433	989
04:45 PM	119	3	18	0	140	49	396	0	0	445	0	0	0	0	0	0	387	65	0	452	1037
Total	457	9	86	0	552	224	1542	0	0	1766	0	0	0	0	0	0	1393	300	0	1693	4011
05:00 PM	134	3	11	0	148	77	367	0	0	444	0	0	0	0	0	0	338	74	0	412	1004
05:15 PM	107	0	9	0	116	66	412	0	0	478	0	0	0	0	0	0	391	82	0	473	1067
05:30 PM	105	1	19	0	125	58	374	0	0	432	0	0	0	0	0	0	354	53	0	407	964
05:45 PM	108	0	21	1	130	0	390	0	0	390	0	0	0	0	0	0	333	95	0	428	948
Total	454	4	60	1	519	201	1543	0	0	1744	0	0	0	0	0	0	1416	304	0	1720	3983
Grand Total	1893	31	360	1	2285	825	6125	0	0	6950	0	0	0	0	0	0	5520	1259	0	6779	16014
Apprch %	82.8	1.4	15.8	0		11.9	88.1	0	0		0	0	0	0		0	81.4	18.6	0		
Total %	11.8	0.2	2.2	0	14.3	5.2	38.2	0	0	43.4	0	0	0	0	0	0	34.5	7.9	0	42.3	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985SBRamp@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008

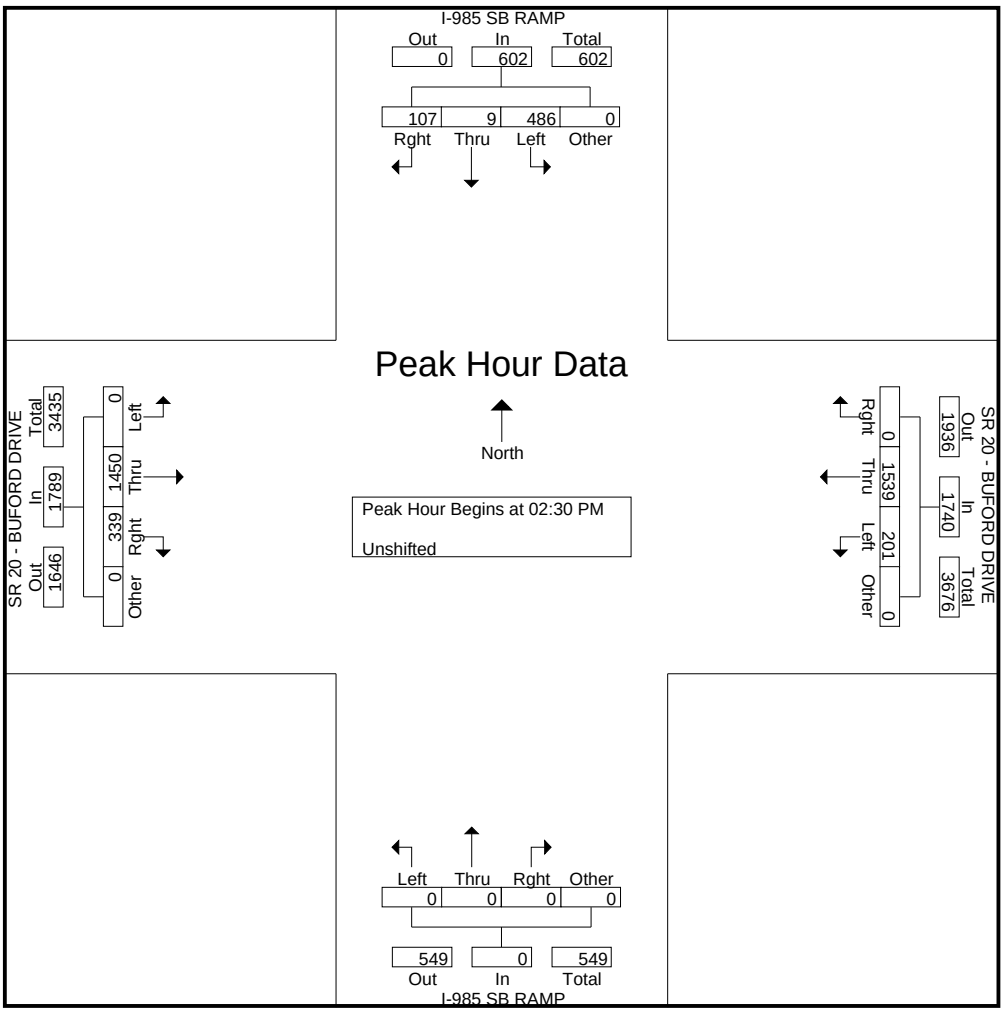


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : I-985SBRamp@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008
Page No : 3

	I-985 SB RAMP Southbound					SR 20 - BUFORD DRIVE Westbound					I-985 SB RAMP Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:30 PM																					
02:30 PM	117	1	13	0	131	47	**418**	0	0	**465**	0	0	0	0	0	0	365	87	0	452	1048
02:45 PM	101	1	8	0	110	**66**	353	0	0	419	0	0	0	0	0	0	333	85	0	418	947
03:00 PM	119	**5**	**47**	0	171	51	408	0	0	459	0	0	0	0	0	0	355	79	0	434	1064
03:15 PM	**149**	2	39	0	**190**	37	360	0	0	397	0	0	0	0	0	0	**397**	**88**	0	**485**	**1072**
Total Volume	486	9	107	0	602	201	1539	0	0	1740	0	0	0	0	0	0	1450	339	0	1789	4131
% App. Total	80.7	1.5	17.8	0		11.6	88.4	0	0		0	0	0	0		0	81.1	18.9	0		
PHF	.815	.450	.569	.000	.792	.761	.920	.000	.000	.935	.000	.000	.000	.000	.000	.000	.913	.963	.000	.922	.963



All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : RidgeRd@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008
Page No : 1

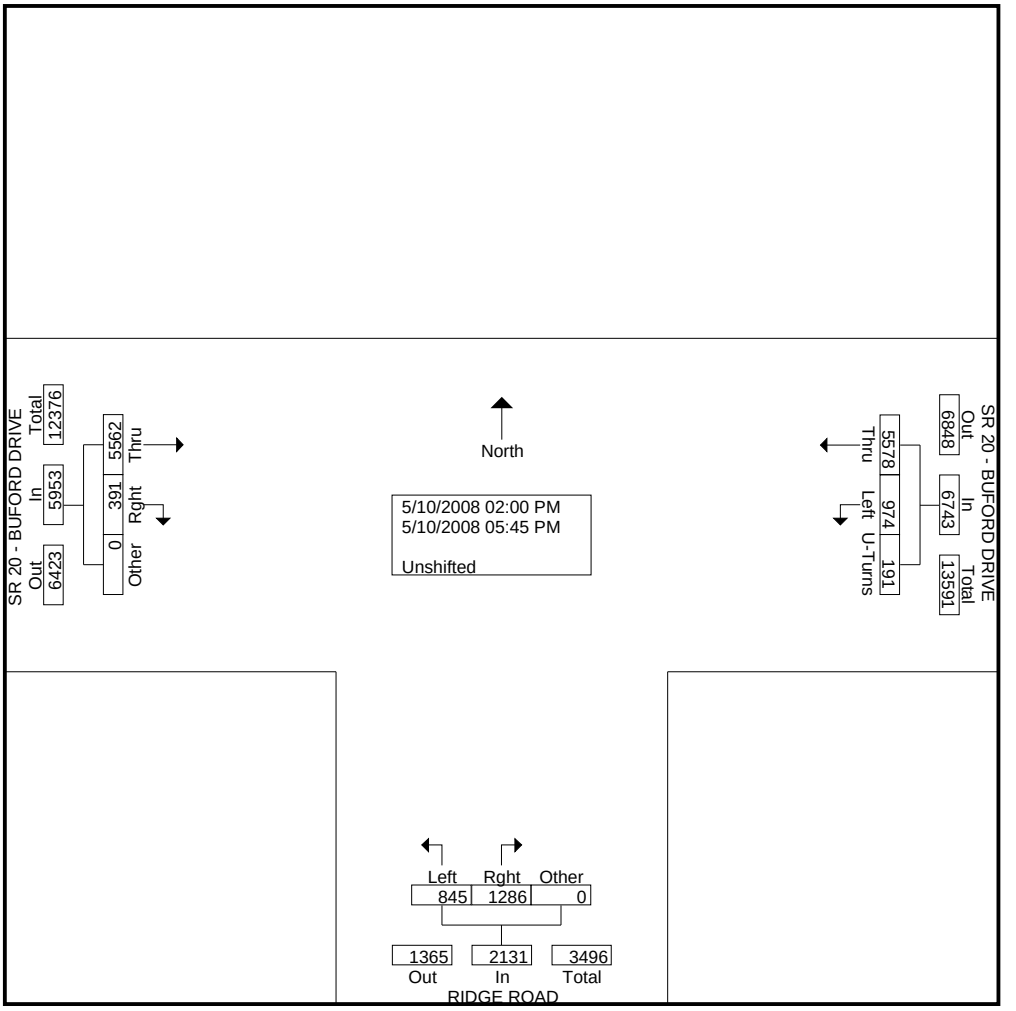
Groups Printed- Unshifted

	SR 20 - BUFORD DRIVE Westbound				RIDGE ROAD Northbound				SR 20 - BUFORD DRIVE Eastbound				
Start Time	Left	Thru	U-Turns	App. Total	Left	Rght	Other	App. Total	Thru	Rght	Other	App. Total	Int. Total
02:00 PM	54	400	18	472	39	61	0	100	374	22	0	396	968
02:15 PM	53	360	10	423	50	96	0	146	322	32	0	354	923
02:30 PM	45	387	15	447	61	73	0	134	387	18	0	405	986
02:45 PM	63	300	15	378	48	83	0	131	356	24	0	380	889
Total	215	1447	58	1720	198	313	0	511	1439	96	0	1535	3766
03:00 PM	64	394	21	479	70	90	0	160	345	17	0	362	1001
03:15 PM	70	331	9	410	50	89	0	139	394	35	0	429	978
03:30 PM	55	329	8	392	70	83	0	153	326	20	0	346	891
03:45 PM	62	300	6	368	53	96	0	149	224	22	0	246	763
Total	251	1354	44	1649	243	358	0	601	1289	94	0	1383	3633
04:00 PM	63	362	8	433	45	77	0	122	278	36	0	314	869
04:15 PM	79	330	10	419	69	99	0	168	361	29	0	390	977
04:30 PM	53	337	16	406	51	92	0	143	338	17	0	355	904
04:45 PM	65	364	8	437	62	74	0	136	389	24	0	413	986
Total	260	1393	42	1695	227	342	0	569	1366	106	0	1472	3736
05:00 PM	66	321	8	395	44	60	0	104	359	33	0	392	891
05:15 PM	60	364	13	437	31	68	0	99	401	28	0	429	965
05:30 PM	70	338	15	423	57	73	0	130	339	15	0	354	907
05:45 PM	52	361	11	424	45	72	0	117	369	19	0	388	929
Total	248	1384	47	1679	177	273	0	450	1468	95	0	1563	3692
Grand Total	974	5578	191	6743	845	1286	0	2131	5562	391	0	5953	14827
Apprch %	14.4	82.7	2.8		39.7	60.3	0		93.4	6.6	0		
Total %	6.6	37.6	1.3	45.5	5.7	8.7	0	14.4	37.5	2.6	0	40.1	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : RidgeRd@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008

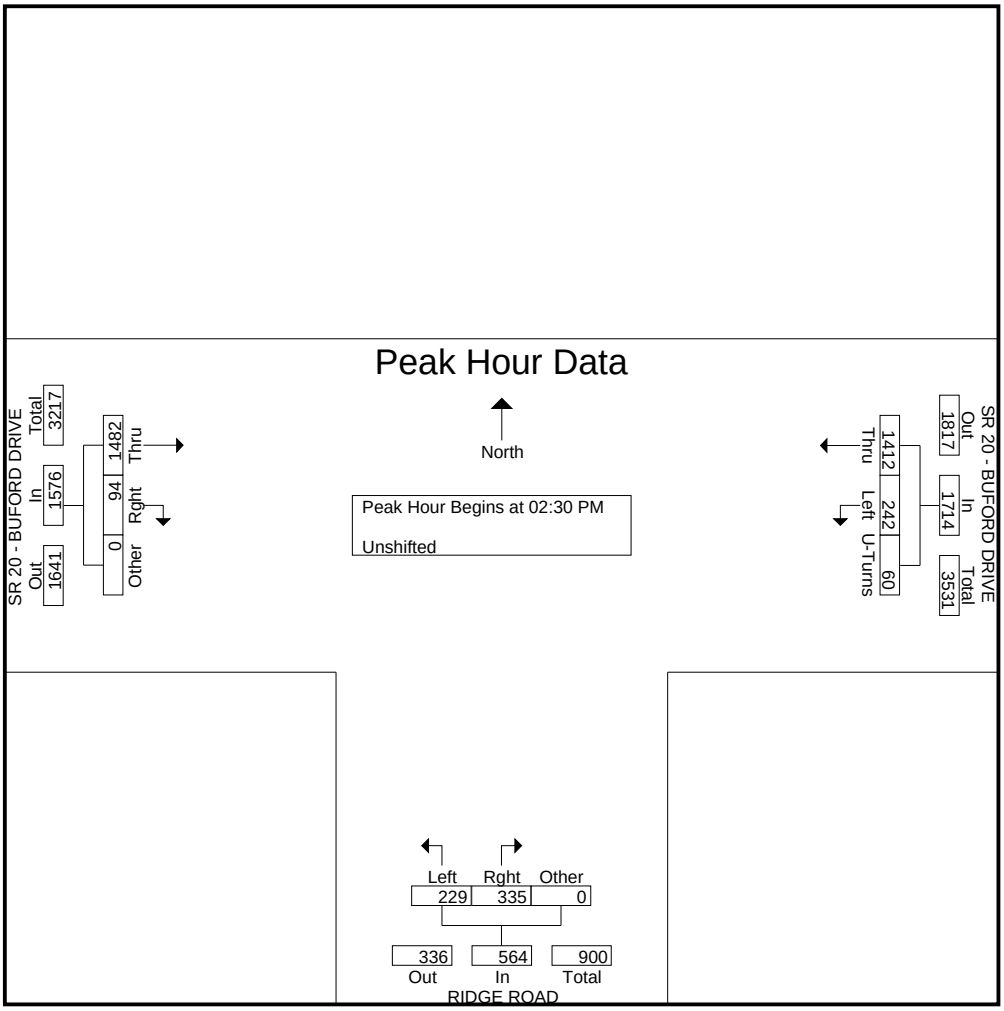


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : RidgeRd@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008
Page No : 3

	SR 20 - BUFORD DRIVE Westbound				RIDGE ROAD Northbound				SR 20 - BUFORD DRIVE Eastbound				
Start Time	Left	Thru	U-Turns	App. Total	Left	Rght	Other	App. Total	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 02:30 PM													
02:30 PM	45	387	15	447	61	73	0	134	387	18	0	405	986
02:45 PM	63	300	15	378	48	83	0	131	356	24	0	380	889
03:00 PM	64	**394**	**21**	**479**	**70**	**90**	0	**160**	345	17	0	362	**1001**
03:15 PM	**70**	331	9	410	50	89	0	139	**394**	**35**	0	**429**	978
Total Volume	242	1412	60	1714	229	335	0	564	1482	94	0	1576	3854
% App. Total	14.1	82.4	3.5		40.6	59.4	0		94	6	0		
PHF	.864	.896	.714	.895	.818	.931	.000	.881	.940	.671	.000	.918	.963



All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008
Page No : 1

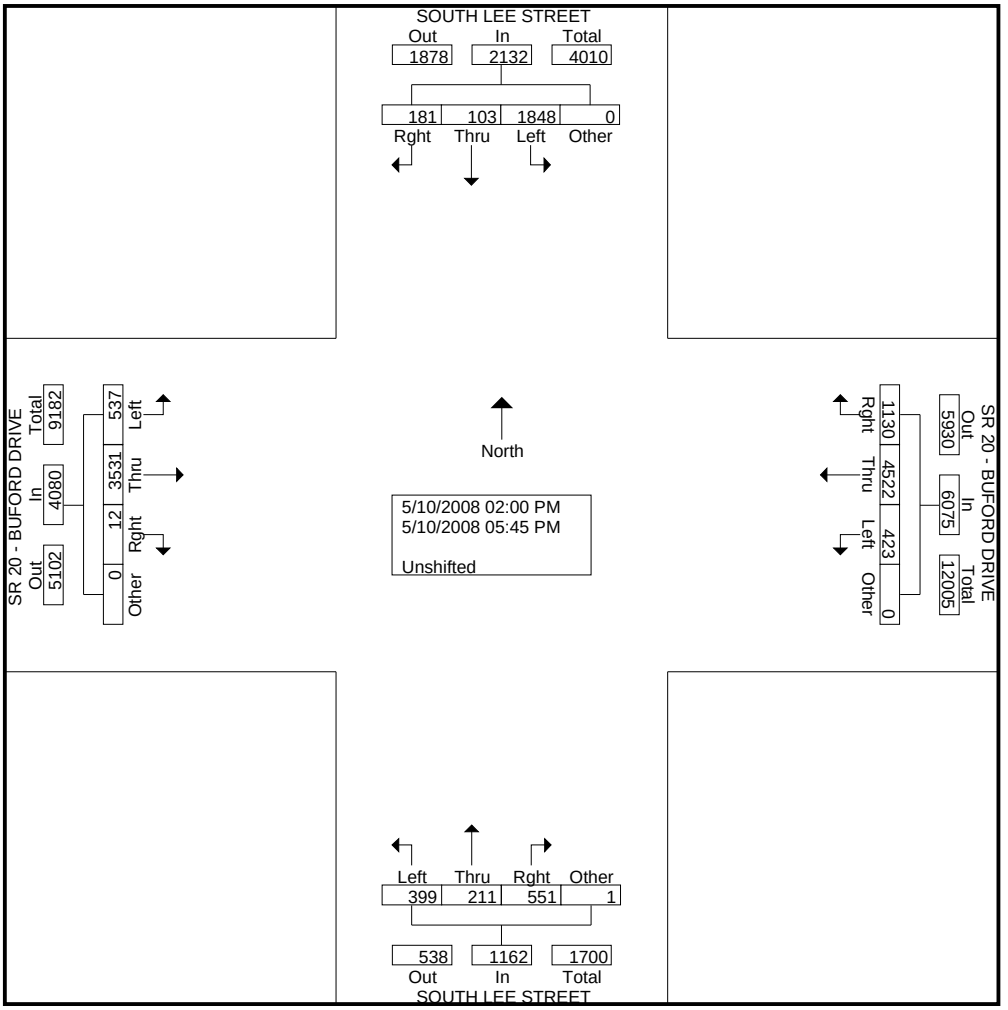
Groups Printed- Unshifted

	SOUTH LEE STREET Southbound					SR 20 - BUFORD DRIVE Westbound					SOUTH LEE STREET Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
02:00 PM	125	8	16	0	149	12	258	82	0	352	36	15	49	0	100	33	192	3	0	228	829
02:15 PM	114	5	7	0	126	32	300	82	0	414	37	15	59	0	111	37	193	1	0	231	882
02:30 PM	121	14	11	0	146	24	288	77	0	389	34	20	69	0	123	22	193	0	0	215	873
02:45 PM	110	7	18	0	135	49	280	69	0	398	20	18	32	0	70	38	238	0	0	276	879
Total	470	34	52	0	556	117	1126	310	0	1553	127	68	209	0	404	130	816	4	0	950	3463
03:00 PM	124	5	11	0	140	38	316	98	0	452	28	15	23	0	66	35	193	0	0	228	886
03:15 PM	106	7	16	0	129	21	243	67	0	331	24	18	50	0	92	45	245	0	0	290	842
03:30 PM	135	3	5	0	143	28	252	73	0	353	30	10	40	0	80	28	220	1	0	249	825
03:45 PM	124	6	7	0	137	22	301	62	0	385	31	13	54	0	98	58	231	1	0	290	910
Total	489	21	39	0	549	109	1112	300	0	1521	113	56	167	0	336	166	889	2	0	1057	3463
04:00 PM	115	4	7	0	126	16	280	66	0	362	17	15	32	0	64	33	221	2	0	256	808
04:15 PM	102	10	14	0	126	62	329	83	0	474	18	10	51	0	79	30	237	0	0	267	946
04:30 PM	119	3	17	0	139	14	245	67	0	326	16	9	14	0	39	32	224	1	0	257	761
04:45 PM	108	9	6	0	123	29	326	67	0	422	28	9	14	0	51	41	209	3	0	253	849
Total	444	26	44	0	514	121	1180	283	0	1584	79	43	111	0	233	136	891	6	0	1033	3364
05:00 PM	106	4	12	0	122	25	264	57	0	346	28	18	15	0	61	32	214	0	0	246	775
05:15 PM	111	9	13	0	133	16	308	57	0	381	26	13	17	1	57	24	239	0	0	263	834
05:30 PM	121	3	12	0	136	15	281	61	0	357	17	9	17	0	43	34	253	0	0	287	823
05:45 PM	107	6	9	0	122	20	251	62	0	333	9	4	15	0	28	15	229	0	0	244	727
Total	445	22	46	0	513	76	1104	237	0	1417	80	44	64	1	189	105	935	0	0	1040	3159
Grand Total	1848	103	181	0	2132	423	4522	1130	0	6075	399	211	551	1	1162	537	3531	12	0	4080	13449
Apprch %	86.7	4.8	8.5	0		7	74.4	18.6	0		34.3	18.2	47.4	0.1		13.2	86.5	0.3	0		
Total %	13.7	0.8	1.3	0	15.9	3.1	33.6	8.4	0	45.2	3	1.6	4.1	0	8.6	4	26.3	0.1	0	30.3	

All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008
Page No : 2

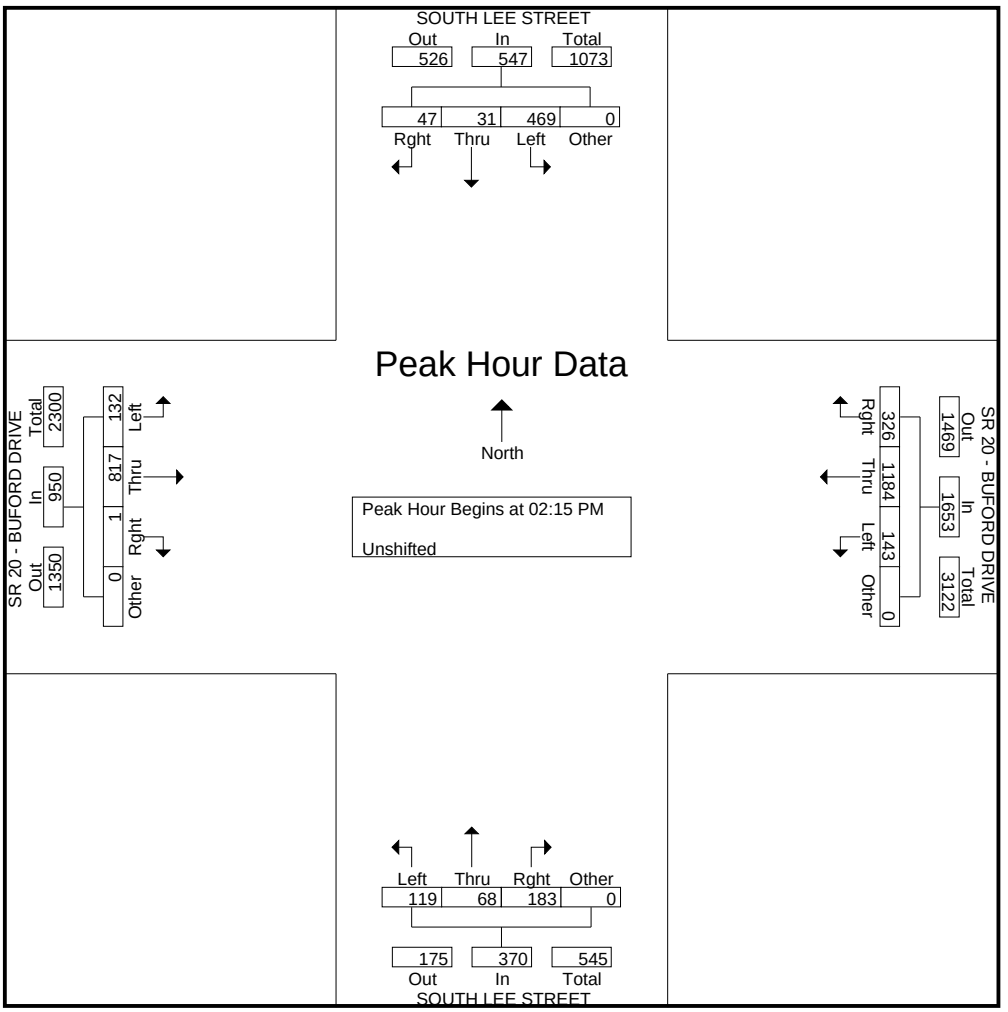


All Traffic Data Services, Inc

1336 Farmer Road
Conyers, GA 30012
404-374-1283

File Name : SLeeSt@SR20SAT
Site Code : 00000000
Start Date : 5/10/2008
Page No : 3

	SOUTH LEE STREET Southbound					SR 20 - BUFORD DRIVE Westbound					SOUTH LEE STREET Northbound					SR 20 - BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	114	5	7	0	126	32	300	82	0	414	**37**	15	59	0	111	37	193	**1**	0	231	882
02:30 PM	121	**14**	11	0	**146**	24	288	77	0	389	34	**20**	**69**	0	**123**	22	193	0	0	215	873
02:45 PM	110	7	**18**	0	135	**49**	280	69	0	398	20	18	32	0	70	**38**	**238**	0	0	**276**	879
03:00 PM	**124**	5	11	0	140	38	**316**	**98**	0	**452**	28	15	23	0	66	35	193	0	0	228	**886**
Total Volume	469	31	47	0	547	143	1184	326	0	1653	119	68	183	0	370	132	817	1	0	950	3520
% App. Total	85.7	5.7	8.6	0		8.7	71.6	19.7	0		32.2	18.4	49.5	0		13.9	86	0.1	0		
PHF	.946	.554	.653	.000	.937	.730	.937	.832	.000	.914	.804	.850	.663	.000	.752	.868	.858	.250	.000	.861	.993



All Traffic Data Services, Inc

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Conyers, GA 30012
404-374-1283

File Name : BufordDr@BufordHwySAT
Site Code : 00000000
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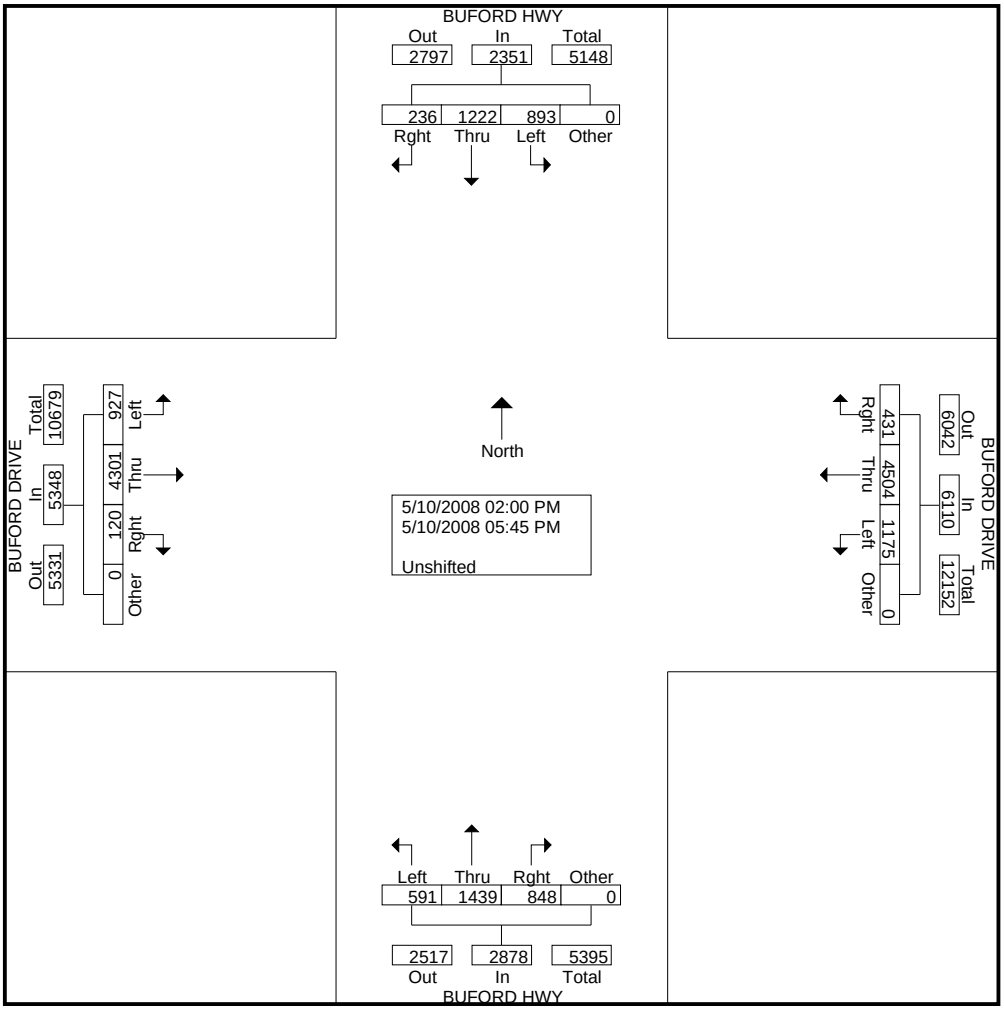
Groups Printed- Unshifted

	BUFORD HWY Southbound					BUFORD DRIVE Westbound					BUFORD HWY Northbound					BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
02:00 PM	66	88	15	0	169	78	266	52	0	396	33	88	61	0	182	37	283	4	0	324	1071
02:15 PM	73	83	20	0	176	93	297	24	0	414	38	117	63	0	218	76	274	5	0	355	1163
02:30 PM	53	88	12	0	153	87	262	29	0	378	42	108	57	0	207	68	322	0	0	390	1128
02:45 PM	41	86	11	0	138	77	267	19	0	363	43	91	53	0	187	41	270	1	0	312	1000
Total	233	345	58	0	636	335	1092	124	0	1551	156	404	234	0	794	222	1149	10	0	1381	4362
03:00 PM	50	72	15	0	137	84	282	25	0	391	47	107	52	0	206	60	297	14	0	371	1105
03:15 PM	69	75	17	0	161	97	340	28	0	465	35	84	52	0	171	56	285	16	0	357	1154
03:30 PM	58	66	19	0	143	80	306	18	0	404	39	94	54	0	187	61	325	9	0	395	1129
03:45 PM	55	78	11	0	144	78	325	29	0	432	17	77	56	0	150	82	229	10	0	321	1047
Total	232	291	62	0	585	339	1253	100	0	1692	138	362	214	0	714	259	1136	49	0	1444	4435
04:00 PM	55	93	13	0	161	67	264	28	0	359	38	122	75	0	235	79	269	15	0	363	1118
04:15 PM	78	82	13	0	173	67	310	29	0	406	50	83	45	0	178	55	257	5	0	317	1074
04:30 PM	60	81	15	0	156	68	271	32	0	371	29	81	46	0	156	38	227	5	0	270	953
04:45 PM	37	100	20	0	157	62	286	33	0	381	43	78	48	0	169	47	238	7	0	292	999
Total	230	356	61	0	647	264	1131	122	0	1517	160	364	214	0	738	219	991	32	0	1242	4144
05:00 PM	56	71	7	0	134	76	269	18	0	363	33	77	58	0	168	54	228	5	0	287	952
05:15 PM	61	52	20	0	133	49	260	24	0	333	36	70	51	0	157	22	268	8	0	298	921
05:30 PM	46	48	10	0	104	68	252	25	0	345	41	88	39	0	168	86	279	5	0	370	987
05:45 PM	35	59	18	0	112	44	247	18	0	309	27	74	38	0	139	65	250	11	0	326	886
Total	198	230	55	0	483	237	1028	85	0	1350	137	309	186	0	632	227	1025	29	0	1281	3746
Grand Total	893	1222	236	0	2351	1175	4504	431	0	6110	591	1439	848	0	2878	927	4301	120	0	5348	16687
Apprch %	38	52	10	0		19.2	73.7	7.1	0		20.5	50	29.5	0		17.3	80.4	2.2	0		
Total %	5.4	7.3	1.4	0	14.1	7	27	2.6	0	36.6	3.5	8.6	5.1	0	17.2	5.6	25.8	0.7	0	32	

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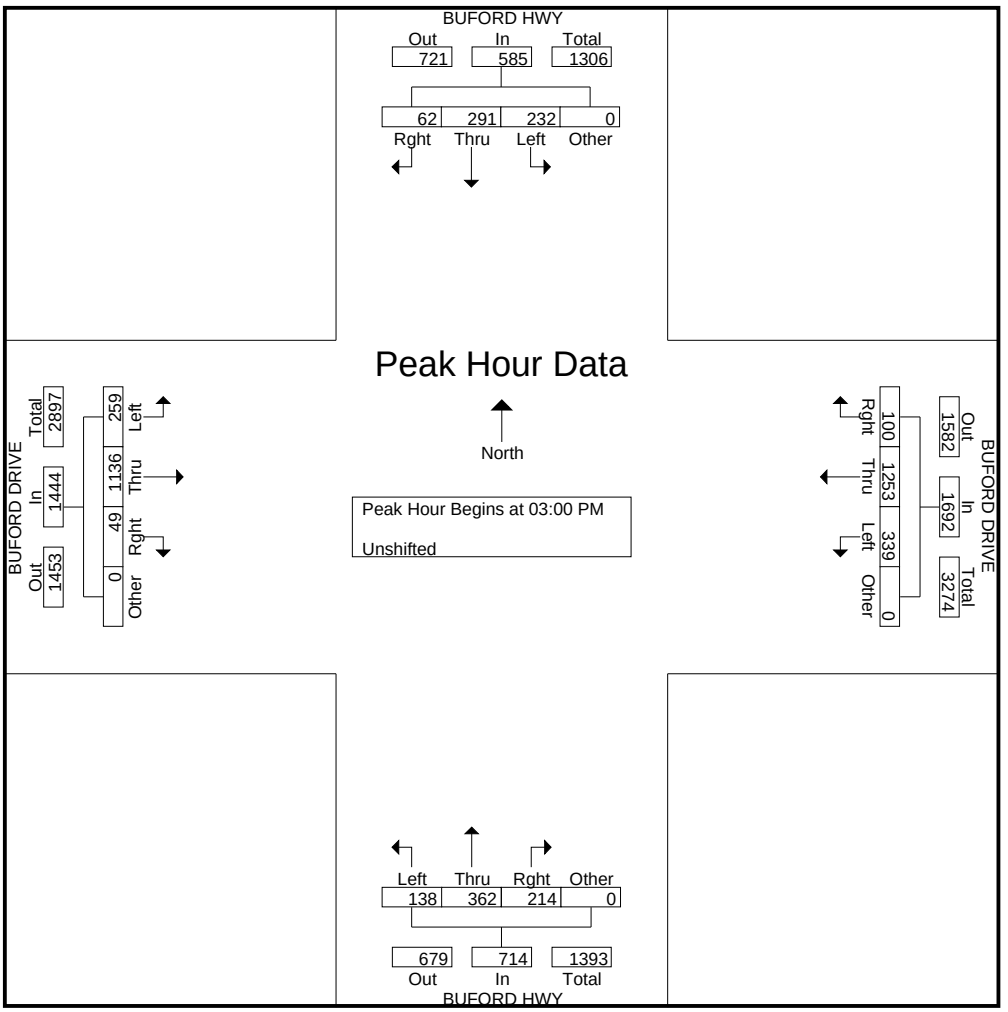


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1336 Farmer Road
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File Name : BufordDr@BufordHwySAT
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	BUFORD HWY Southbound					BUFORD DRIVE Westbound					BUFORD HWY Northbound					BUFORD DRIVE Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	50	72	15	0	137	84	282	25	0	391	**47**	**107**	52	0	**206**	60	297	14	0	371	1105
03:15 PM	**69**	75	17	0	**161**	**97**	**340**	28	0	**465**	35	84	52	0	171	56	285	**16**	0	357	**1154**
03:30 PM	58	66	**19**	0	143	80	306	18	0	404	39	94	54	0	187	61	**325**	9	0	**395**	1129
03:45 PM	55	**78**	11	0	144	78	325	**29**	0	432	17	77	**56**	0	150	**82**	229	10	0	321	1047
Total Volume	232	291	62	0	585	339	1253	100	0	1692	138	362	214	0	714	259	1136	49	0	1444	4435
% App. Total	39.7	49.7	10.6	0		20	74.1	5.9	0		19.3	50.7	30	0		17.9	78.7	3.4	0		
PHF	.841	.933	.816	.000	.908	.874	.921	.862	.000	.910	.734	.846	.955	.000	.867	.790	.874	.766	.000	.914	.961



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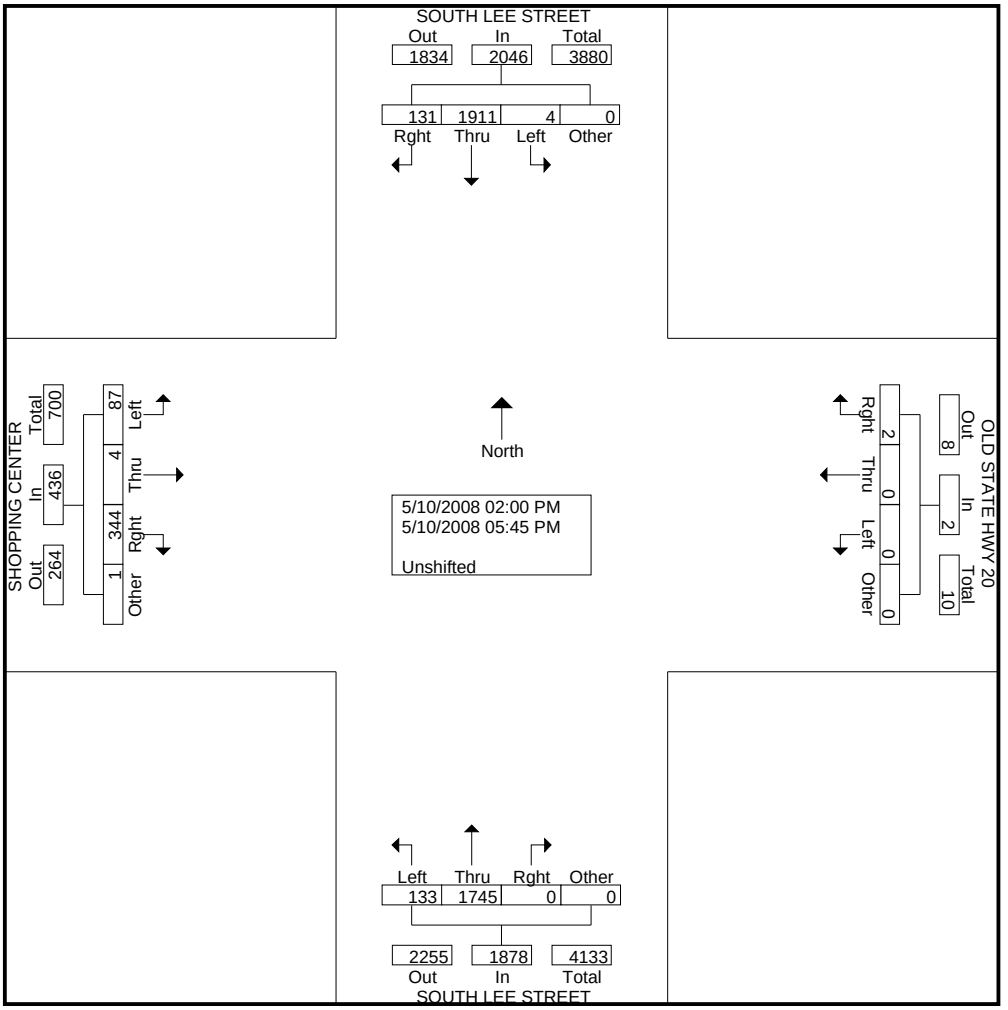
Groups Printed- Unshifted

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Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
02:00 PM	0	120	7	0	127	0	0	1	0	1	14	106	0	0	120	5	0	30	0	35	283
02:15 PM	2	106	8	0	116	0	0	1	0	1	17	111	0	0	128	4	0	20	0	24	269
02:30 PM	0	121	6	0	127	0	0	0	0	0	8	112	0	0	120	1	0	21	0	22	269
02:45 PM	1	115	8	0	124	0	0	0	0	0	10	104	0	0	114	7	0	18	0	25	263
Total	3	462	29	0	494	0	0	2	0	2	49	433	0	0	482	17	0	89	0	106	1084
03:00 PM	0	116	3	0	119	0	0	0	0	0	7	113	0	0	120	2	0	16	0	18	257
03:15 PM	0	117	12	0	129	0	0	0	0	0	8	115	0	0	123	2	0	17	0	19	271
03:30 PM	1	124	8	0	133	0	0	0	0	0	3	119	0	0	122	6	0	22	0	28	283
03:45 PM	0	119	9	0	128	0	0	0	0	0	10	115	0	0	125	9	0	20	0	29	282
Total	1	476	32	0	509	0	0	0	0	0	28	462	0	0	490	19	0	75	0	94	1093
04:00 PM	0	117	8	0	125	0	0	0	0	0	3	124	0	0	127	4	0	16	0	20	272
04:15 PM	0	118	13	0	131	0	0	0	0	0	14	117	0	0	131	14	3	21	0	38	300
04:30 PM	0	126	10	0	136	0	0	0	0	0	9	118	0	0	127	4	0	27	0	31	294
04:45 PM	0	121	11	0	132	0	0	0	0	0	9	113	0	0	122	6	0	23	0	29	283
Total	0	482	42	0	524	0	0	0	0	0	35	472	0	0	507	28	3	87	0	118	1149
05:00 PM	0	122	8	0	130	0	0	0	0	0	7	101	0	0	108	6	1	27	1	35	273
05:15 PM	0	124	9	0	133	0	0	0	0	0	3	94	0	0	97	6	0	24	0	30	260
05:30 PM	0	130	5	0	135	0	0	0	0	0	5	97	0	0	102	5	0	20	0	25	262
05:45 PM	0	115	6	0	121	0	0	0	0	0	6	86	0	0	92	6	0	22	0	28	241
Total	0	491	28	0	519	0	0	0	0	0	21	378	0	0	399	23	1	93	1	118	1036
Grand Total	4	1911	131	0	2046	0	0	2	0	2	133	1745	0	0	1878	87	4	344	1	436	4362
Apprch %	0.2	93.4	6.4	0		0	0	100	0		7.1	92.9	0	0		20	0.9	78.9	0.2		
Total %	0.1	43.8	3	0	46.9	0	0	0	0	0	3	40	0	0	43.1	2	0.1	7.9	0	10	

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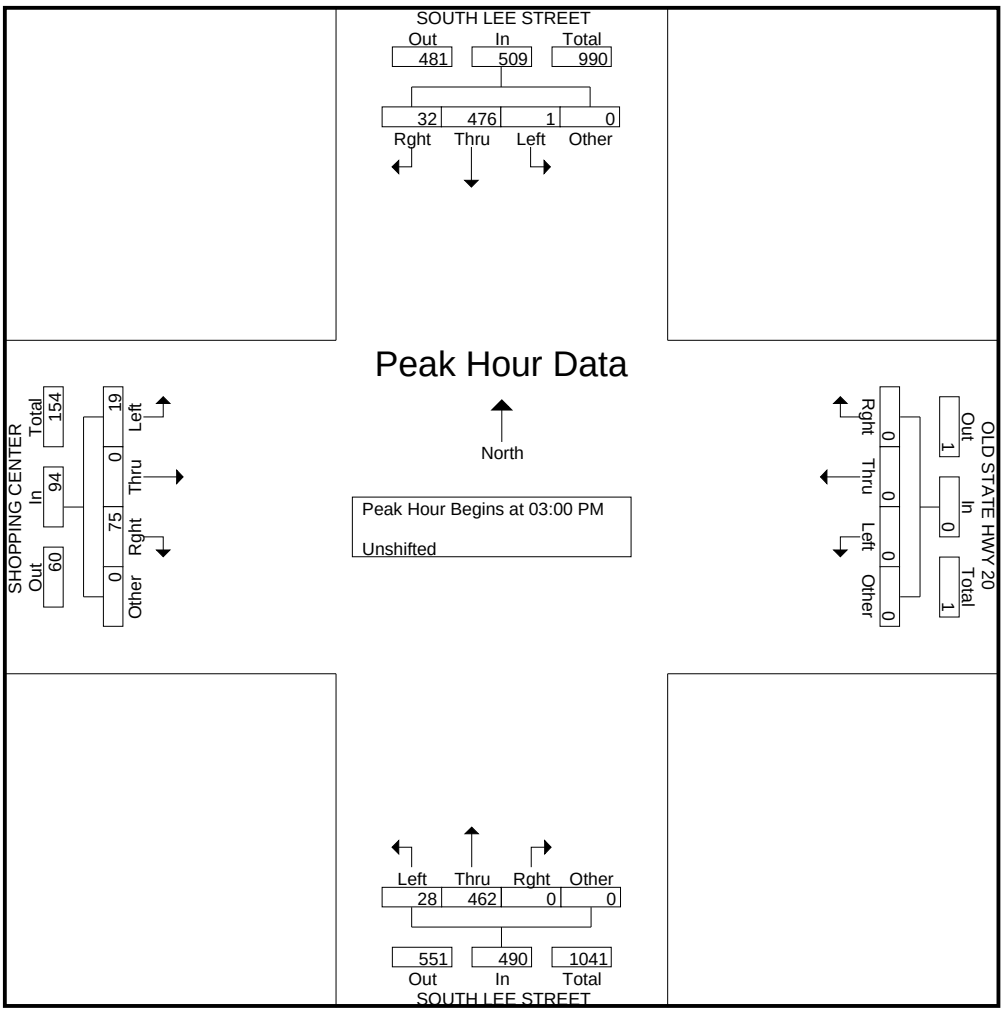


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File Name : SLeeSt@OldState20Sat
Site Code : 00000000
Start Date : 5/10/2008
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	SOUTH LEE STREET Southbound					OLD STATE HWY 20 Westbound					SOUTH LEE STREET Northbound					SHOPPING CENTER Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	116	3	0	119	0	0	0	0	0	7	113	0	0	120	2	0	16	0	18	257
03:15 PM	0	117	**12**	0	129	0	0	0	0	0	8	115	0	0	123	2	0	17	0	19	271
03:30 PM	**1**	**124**	8	0	**133**	0	0	0	0	0	3	**119**	0	0	122	6	0	**22**	0	28	**283**
03:45 PM	0	119	9	0	128	0	0	0	0	0	**10**	115	0	0	**125**	**9**	0	20	0	**29**	282
Total Volume	1	476	32	0	509	0	0	0	0	0	28	462	0	0	490	19	0	75	0	94	1093
% App. Total	0.2	93.5	6.3	0		0	0	0	0		5.7	94.3	0	0		20.2	0	79.8	0		
PHF	.250	.960	.667	.000	.957	.000	.000	.000	.000	.000	.700	.971	.000	.000	.980	.528	.000	.852	.000	.810	.966



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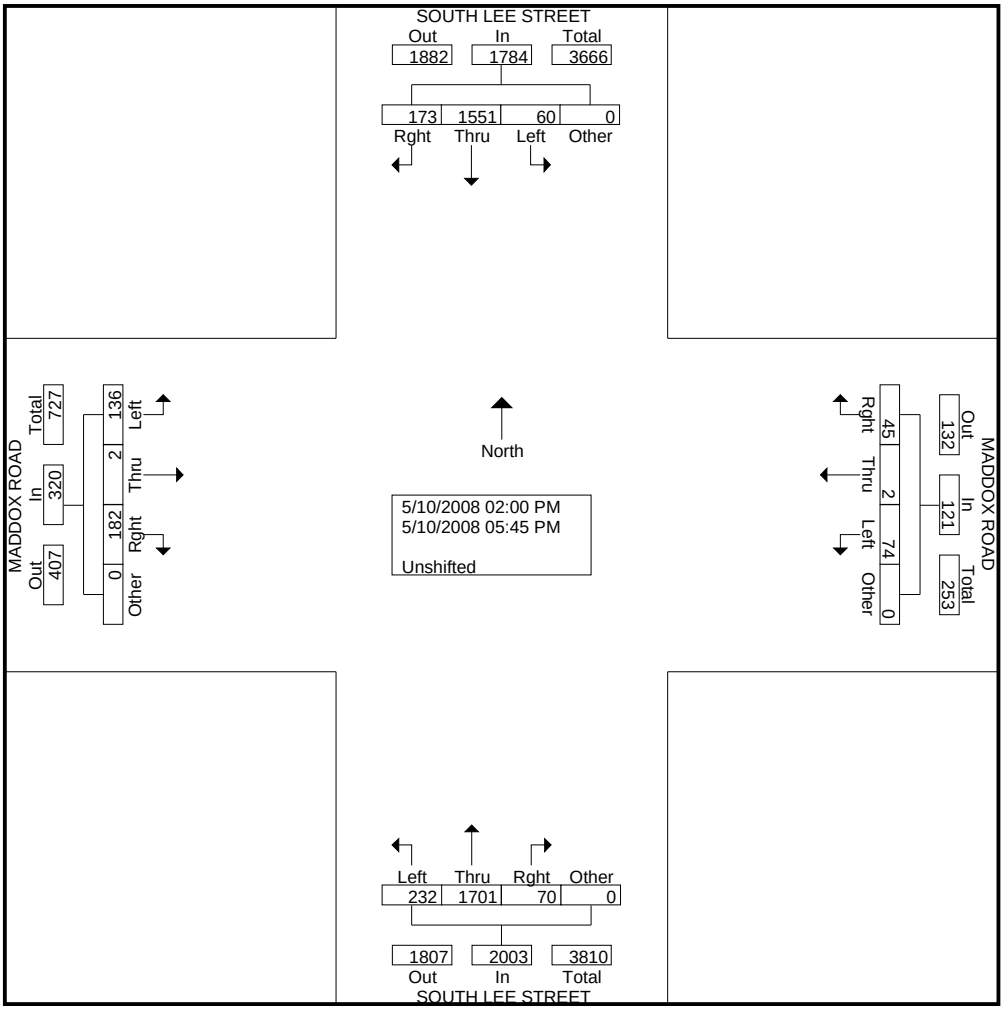
Groups Printed- Unshifted

	SOUTH LEE STREET Southbound					MADDOX ROAD Westbound					SOUTH LEE STREET Northbound					MADDOX ROAD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
02:00 PM	2	92	9	0	103	1	0	2	0	3	16	104	3	0	123	4	0	10	0	14	243
02:15 PM	6	81	5	0	92	8	0	3	0	11	17	104	4	0	125	3	0	15	0	18	246
02:30 PM	4	80	13	0	97	9	0	0	0	9	11	106	3	0	120	7	0	16	0	23	249
02:45 PM	9	114	17	0	140	6	1	5	0	12	11	114	4	0	129	7	0	10	0	17	298
Total	21	367	44	0	432	24	1	10	0	35	55	428	14	0	497	21	0	51	0	72	1036
03:00 PM	6	103	9	0	118	2	0	2	0	4	13	112	3	0	128	8	0	12	0	20	270
03:15 PM	3	96	6	0	105	5	0	3	0	8	13	111	4	0	128	9	0	9	0	18	259
03:30 PM	0	113	9	0	122	3	0	1	0	4	16	112	8	0	136	12	0	8	0	20	282
03:45 PM	4	97	9	0	110	1	0	1	0	2	13	111	4	0	128	7	0	10	0	17	257
Total	13	409	33	0	455	11	0	7	0	18	55	446	19	0	520	36	0	39	0	75	1068
04:00 PM	2	107	12	0	121	7	0	4	0	11	15	117	5	0	137	6	0	7	0	13	282
04:15 PM	3	110	8	0	121	2	0	6	0	8	23	112	7	0	142	13	0	9	0	22	293
04:30 PM	3	92	10	0	105	7	0	2	0	9	13	116	1	0	130	5	0	12	0	17	261
04:45 PM	3	76	5	0	84	4	0	5	0	9	17	110	5	0	132	10	1	12	0	23	248
Total	11	385	35	0	431	20	0	17	0	37	68	455	18	0	541	34	1	40	0	75	1084
05:00 PM	5	102	15	0	122	8	0	2	0	10	13	111	4	0	128	3	0	14	0	17	277
05:15 PM	3	98	9	0	110	7	0	3	0	10	11	81	3	0	95	13	1	14	0	28	243
05:30 PM	4	80	23	0	107	3	0	5	0	8	17	88	9	0	114	19	0	12	0	31	260
05:45 PM	3	110	14	0	127	1	1	1	0	3	13	92	3	0	108	10	0	12	0	22	260
Total	15	390	61	0	466	19	1	11	0	31	54	372	19	0	445	45	1	52	0	98	1040
Grand Total	60	1551	173	0	1784	74	2	45	0	121	232	1701	70	0	2003	136	2	182	0	320	4228
Apprch %	3.4	86.9	9.7	0		61.2	1.7	37.2	0		11.6	84.9	3.5	0		42.5	0.6	56.9	0		
Total %	1.4	36.7	4.1	0	42.2	1.8	0	1.1	0	2.9	5.5	40.2	1.7	0	47.4	3.2	0	4.3	0	7.6	

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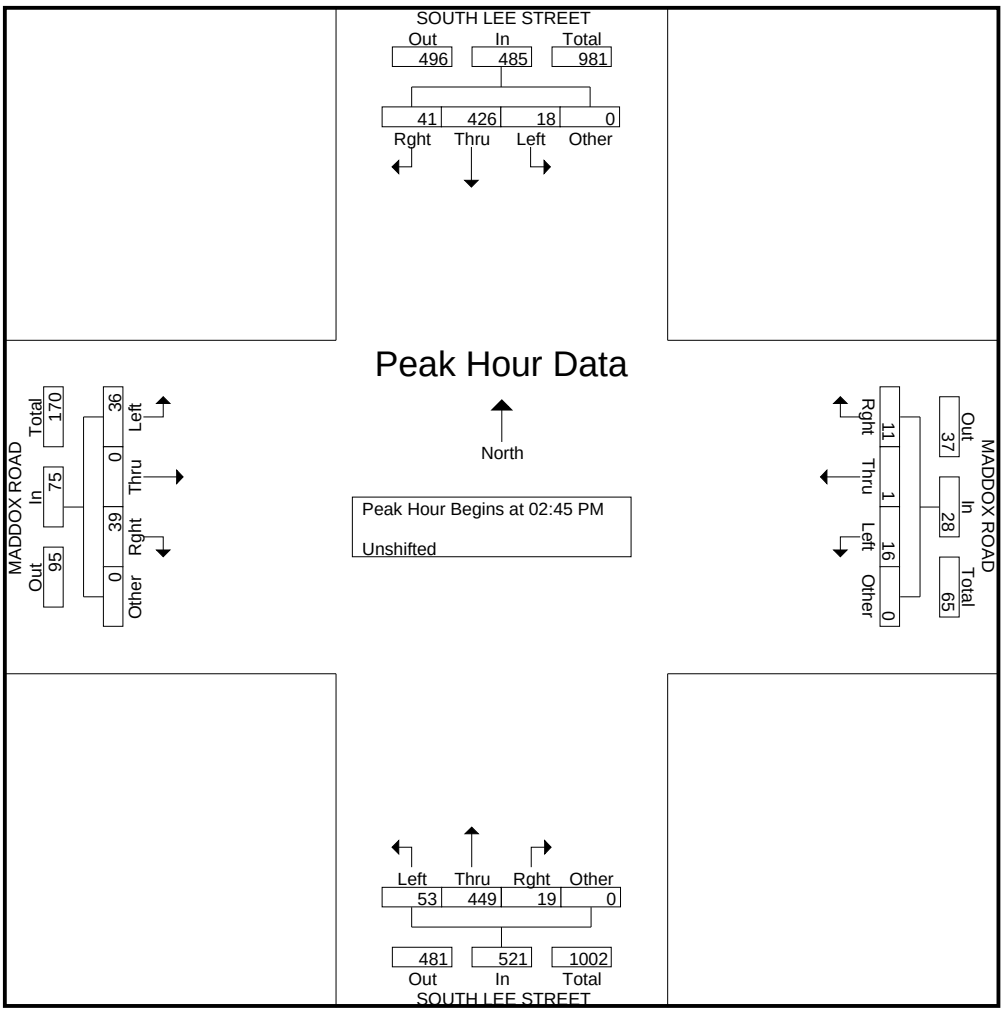


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	SOUTH LEE STREET Southbound					MADDOX ROAD Westbound					SOUTH LEE STREET Northbound					MADDOX ROAD Eastbound					
Start Time	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:45 PM																					
02:45 PM	**9**	**114**	**17**	0	**140**	**6**	**1**	**5**	0	**12**	11	**114**	4	0	129	7	0	10	0	17	**298**
03:00 PM	6	103	9	0	118	2	0	2	0	4	13	112	3	0	128	8	0	**12**	0	**20**	270
03:15 PM	3	96	6	0	105	5	0	3	0	8	13	111	4	0	128	9	0	9	0	18	259
03:30 PM	0	113	9	0	122	3	0	1	0	4	**16**	112	**8**	0	**136**	**12**	0	8	0	20	282
Total Volume	18	426	41	0	485	16	1	11	0	28	53	449	19	0	521	36	0	39	0	75	1109
% App. Total	3.7	87.8	8.5	0		57.1	3.6	39.3	0		10.2	86.2	3.6	0		48	0	52	0		
PHF	.500	.934	.603	.000	.866	.667	.250	.550	.000	.583	.828	.985	.594	.000	.958	.750	.000	.813	.000	.938	.930



Appendix D – Capacity Analyses: Existing Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.93			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1732			1796	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.37	1.00			0.76	1.00	0.28	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	692	1732			1418	1583	525	3539	1583	148	3539	1583
Volume (vph)	143	13	12	108	37	604	31	1182	4	347	864	28
Peak-hour factor, PHF	0.78	0.78	0.78	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Adj. Flow (vph)	183	17	15	112	39	629	32	1231	4	377	939	30
RTOR Reduction (vph)	0	10	0	0	0	48	0	0	2	0	0	14
Lane Group Flow (vph)	183	22	0	0	151	581	32	1231	2	377	939	16
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	31.4	31.4			13.1	28.8	47.9	44.3	44.3	66.0	56.4	56.4
Effective Green, g (s)	34.0	34.0			15.7	33.4	51.9	46.3	46.3	68.0	58.4	58.4
Actuated g/C Ratio	0.31	0.31			0.14	0.30	0.47	0.42	0.42	0.62	0.53	0.53
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	354	535			202	538	311	1490	666	352	1879	840
v/s Ratio Prot	c0.07	0.01				c0.17	0.01	0.35		c0.17	0.27	
v/s Ratio Perm	0.09				0.11	0.19	0.04		0.00	c0.49		0.01
v/c Ratio	0.52	0.04			0.75	1.08	0.10	0.83	0.00	1.07	0.50	0.02
Uniform Delay, d1	29.7	26.6			45.2	38.3	15.7	28.3	18.5	35.0	16.5	12.2
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.13	0.86	0.87
Incremental Delay, d2	1.3	0.0			14.0	62.1	0.1	5.4	0.0	67.0	0.9	0.0
Delay (s)	31.0	26.6			59.2	100.4	15.8	33.7	18.5	106.5	15.1	10.7
Level of Service	C	C			E	F	B	C	B	F	B	B
Approach Delay (s)		30.3			92.4			33.2			40.6	
Approach LOS		C			F			C			D	

Intersection Summary

HCM Average Control Delay	48.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

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	0.97	0.91			0.86	1.00	0.97		0.88			
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)	3433	5085			6408	1583	3433		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	5085			6408	1583	3433		2787			
Volume (vph)	196	1217	0	0	1805	385	458	0	105	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.99	0.99	0.99	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	218	1352	0	0	1823	389	509	0	117	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	166	0	0	61	0	0	0
Lane Group Flow (vph)	218	1352	0	0	1823	223	509	0	56	0	0	0
Turn Type	Prot					Perm	custom		custom			
Protected Phases	5	2			6							
Permitted Phases						6	4		4			
Actuated Green, G (s)	12.0	79.2			61.7	61.7	20.3		20.3			
Effective Green, g (s)	13.5	80.7			63.2	63.2	21.3		21.3			
Actuated g/C Ratio	0.12	0.73			0.57	0.57	0.19		0.19			
Clearance Time (s)	5.5	5.5			5.5	5.5	5.0		5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	421	3731			3682	910	665		540			
v/s Ratio Prot	c0.06	0.27			c0.28							
v/s Ratio Perm						0.14	c0.15		0.02			
v/c Ratio	0.52	0.36			0.50	0.25	0.77		0.10			
Uniform Delay, d1	45.2	5.3			13.9	11.6	42.0		36.5			
Progression Factor	0.87	0.90			0.71	0.49	1.00		1.00			
Incremental Delay, d2	1.0	0.3			0.3	0.4	5.2		0.1			
Delay (s)	40.4	5.0			10.1	6.0	47.2		36.6			
Level of Service	D	A			B	A	D		D			
Approach Delay (s)		9.9			9.4			45.2			0.0	
Approach LOS		A			A			D			A	

Intersection Summary

HCM Average Control Delay	14.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

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		0.86	1.00	0.97	0.91					0.95	0.91	0.95
Frt		1.00	0.85	1.00	1.00					1.00	0.98	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		6408	1583	3433	5085					1681	1588	1504
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		6408	1583	3433	5085					1681	1588	1504
Volume (vph)	0	995	600	361	1805	0	0	0	0	357	0	207
Peak-hour factor, PHF	0.96	0.96	0.96	0.93	0.93	0.93	0.92	0.92	0.92	0.88	0.88	0.88
Adj. Flow (vph)	0	1036	625	388	1941	0	0	0	0	406	0	235
RTOR Reduction (vph)	0	0	299	0	0	0	0	0	0	0	7	8
Lane Group Flow (vph)	0	1036	326	388	1941	0	0	0	0	216	218	192
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						8	
Permitted Phases			2							8		8
Actuated Green, G (s)		55.8	55.8	18.6	79.4					20.1	20.1	20.1
Effective Green, g (s)		57.3	57.3	19.6	80.9					21.1	21.1	21.1
Actuated g/C Ratio		0.52	0.52	0.18	0.74					0.19	0.19	0.19
Clearance Time (s)		5.5	5.5	5.0	5.5					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3338	825	612	3740					322	305	288
v/s Ratio Prot		0.16		c0.11	c0.38							
v/s Ratio Perm			0.21							0.13	0.14	0.13
v/c Ratio		0.31	0.39	0.63	0.52					0.67	0.71	0.67
Uniform Delay, d1		15.1	15.9	41.9	6.2					41.2	41.6	41.2
Progression Factor		0.99	1.86	1.30	0.73					1.00	1.00	1.00
Incremental Delay, d2		0.2	1.2	1.8	0.4					5.4	7.7	5.7
Delay (s)		15.1	30.8	56.3	5.0					46.6	49.3	46.9
Level of Service		B	C	E	A					D	D	D
Approach Delay (s)		21.0			13.5			0.0			47.7	
Approach LOS		C			B			A			D	

Intersection Summary

HCM Average Control Delay	20.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Ideal Flow (vphpl)	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		0.95	1.00	1.00	0.95	0.97	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	3433	1583
Flt Permitted		1.00	1.00	0.13	1.00	0.95	1.00
Satd. Flow (perm)		3539	1583	238	3539	3433	1583
Volume (vph)	0	1334	88	303	1704	172	248
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.89	0.89
Adj. Flow (vph)	0	1361	90	322	1813	193	279
RTOR Reduction (vph)	0	0	33	0	0	0	0
Lane Group Flow (vph)	0	1361	57	322	1813	193	279
Turn Type	pm+pt		Perm	pm+pt			Free
Protected Phases	5	2		1	6	4	
Permitted Phases	2		2	6			Free
Actuated Green, G (s)		67.9	67.9	87.5	87.5	10.9	110.0
Effective Green, g (s)		69.9	69.9	89.5	89.5	12.5	110.0
Actuated g/C Ratio		0.64	0.64	0.81	0.81	0.11	1.00
Clearance Time (s)		6.0	6.0	5.0	6.0	5.6	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2249	1006	411	2879	390	1583
v/s Ratio Prot		0.38		c0.11	0.51	c0.06	
v/s Ratio Perm			0.04	c0.53			0.18
v/c Ratio		0.61	0.06	0.78	0.63	0.49	0.18
Uniform Delay, d1		11.9	7.6	20.1	3.9	45.8	0.0
Progression Factor		0.71	1.25	1.91	0.51	1.00	1.00
Incremental Delay, d2		0.9	0.1	8.1	0.9	1.0	0.2
Delay (s)		9.4	9.5	46.5	2.9	46.8	0.2
Level of Service		A	A	D	A	D	A
Approach Delay (s)		9.4			9.5	19.3	
Approach LOS		A			A	B	

Intersection Summary

HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1692	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1692	1583
Volume (vph)	71	883	5	171	1265	537	31	16	39	549	22	26
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	76	949	5	192	1421	603	42	22	53	638	26	30
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	49	0	0	23
Lane Group Flow (vph)	76	949	2	192	1421	603	42	22	4	324	340	7
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			Free			3			4
Actuated Green, G (s)	5.8	44.1	44.1	11.0	49.3	110.0	5.6	5.6	5.6	22.6	22.6	22.6
Effective Green, g (s)	8.5	47.1	47.1	13.7	52.3	110.0	7.8	7.8	7.8	25.4	25.4	25.4
Actuated g/C Ratio	0.08	0.43	0.43	0.12	0.48	1.00	0.07	0.07	0.07	0.23	0.23	0.23
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.2	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	137	1515	678	220	1683	1583	243	132	112	388	391	366
v/s Ratio Prot	0.04	0.27		c0.11	c0.40		0.01	0.01		0.19	c0.20	
v/s Ratio Perm			0.00			c0.38			0.00			0.00
v/c Ratio	0.55	0.63	0.00	0.87	0.84	0.38	0.17	0.17	0.03	0.84	0.87	0.02
Uniform Delay, d1	48.9	24.6	18.0	47.3	25.3	0.0	48.1	48.0	47.6	40.3	40.7	32.7
Progression Factor	1.00	1.00	1.00	0.85	1.17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.8	0.8	0.0	25.7	4.6	0.6	0.3	0.6	0.1	14.3	18.2	0.0
Delay (s)	53.7	25.4	18.0	65.8	34.1	0.6	48.4	48.6	47.7	54.6	58.9	32.7
Level of Service	D	C	B	E	C	A	D	D	D	D	E	C
Approach Delay (s)		27.4			27.7			48.1			55.8	
Approach LOS		C			C			D			E	

Intersection Summary

HCM Average Control Delay	33.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	170	1265	125	208	1012	67	226	271	146	120	445	68
Peak-hour factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91	0.83	0.83	0.83	0.91	0.91	0.91
Adj. Flow (vph)	193	1438	142	229	1112	74	272	327	176	132	489	75
RTOR Reduction (vph)	0	0	46	0	0	35	0	0	134	0	0	59
Lane Group Flow (vph)	193	1438	96	229	1112	39	272	327	42	132	489	16
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	10.8	46.2	46.2	12.6	48.0	48.0	13.1	25.3	25.3	9.9	22.1	22.1
Effective Green, g (s)	12.8	49.2	49.2	14.6	51.0	51.0	15.1	28.3	28.3	11.9	25.1	25.1
Actuated g/C Ratio	0.11	0.41	0.41	0.12	0.42	0.42	0.13	0.24	0.24	0.10	0.21	0.21
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	366	1451	649	418	1504	673	432	835	373	340	740	331
v/s Ratio Prot	0.06	c0.41		c0.07	0.31		c0.08	c0.09		0.04	c0.14	
v/s Ratio Perm			0.06			0.02			0.03			0.01
v/c Ratio	0.53	0.99	0.15	0.55	0.74	0.06	0.63	0.39	0.11	0.39	0.66	0.05
Uniform Delay, d1	50.7	35.2	22.2	49.6	28.9	20.3	49.8	38.6	36.0	50.6	43.5	37.9
Progression 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
Incremental Delay, d2	1.4	21.4	0.1	1.5	1.9	0.0	2.9	1.4	0.6	0.7	4.6	0.3
Delay (s)	52.1	56.6	22.3	51.1	30.9	20.4	52.7	40.0	36.6	51.4	48.1	38.2
Level of Service	D	E	C	D	C	C	D	D	D	D	D	D
Approach Delay (s)		53.4			33.6			43.7			47.7	
Approach LOS		D			C			D			D	

Intersection Summary

HCM Average Control Delay	44.9	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	9	0	24	0	0	0	16	561	0	0	625	13
Peak Hour Factor	0.69	0.69	0.69	0.92	0.92	0.92	0.87	0.87	0.87	0.85	0.85	0.85
Hourly flow rate (vph)	13	0	35	0	0	0	18	645	0	0	735	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								367				
pX, platoon unblocked												
vC, conflicting volume	1102	1425	375	1084	1432	322	751			645		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1102	1425	375	1084	1432	322	751			645		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	94	100	100	100	98			100		
cM capacity (veh/h)	163	132	622	159	130	673	855			936		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	48	0	18	430	215	0	490	260
Volume Left	13	0	18	0	0	0	0	0
Volume Right	35	0	0	0	0	0	0	15
cSH	352	1700	855	1700	1700	1700	1700	1700
Volume to Capacity	0.14	0.00	0.02	0.25	0.13	0.00	0.29	0.15
Queue Length 95th (ft)	12	0	2	0	0	0	0	0
Control Delay (s)	16.8	0.0	9.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A	A					
Approach Delay (s)	16.8	0.0	0.3			0.0		
Approach LOS	C	A						

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	27.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	57	0	26	11	0	10	25	498	17	11	439	23
Peak Hour Factor	0.74	0.74	0.74	0.58	0.58	0.58	0.89	0.89	0.89	0.93	0.93	0.93
Hourly flow rate (vph)	77	0	35	19	0	17	28	560	19	12	472	25
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	861	1143	248	920	1146	289	497			579		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	861	1143	248	920	1146	289	497			579		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	67	100	95	91	100	98	97			99		
cM capacity (veh/h)	236	191	752	209	190	707	1063			991		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	112	36	28	373	206	12	315	182
Volume Left	77	19	28	0	0	12	0	0
Volume Right	35	17	0	0	19	0	0	25
cSH	301	314	1063	1700	1700	991	1700	1700
Volume to Capacity	0.37	0.12	0.03	0.22	0.12	0.01	0.19	0.11
Queue Length 95th (ft)	42	10	2	0	0	1	0	0
Control Delay (s)	23.9	17.9	8.5	0.0	0.0	8.7	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	23.9	17.9	0.4			0.2		
Approach LOS	C	C						

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	34.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.95			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1768			1785	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.30	1.00			0.71	1.00	0.12	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	553	1768			1322	1583	220	3539	1583	120	3539	1583
Volume (vph)	232	33	17	109	16	355	29	1397	8	484	1500	74
Peak-hour factor, PHF	0.80	0.80	0.80	0.94	0.94	0.94	0.84	0.84	0.84	0.88	0.88	0.88
Adj. Flow (vph)	290	41	21	116	17	378	35	1663	10	550	1705	84
RTOR Reduction (vph)	0	13	0	0	0	5	0	0	4	0	0	27
Lane Group Flow (vph)	290	49	0	0	133	373	35	1663	6	550	1705	57
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	26.4	26.4			11.4	50.3	60.9	56.1	56.1	101.0	90.2	90.2
Effective Green, g (s)	29.0	29.0			14.0	54.9	64.9	58.1	58.1	103.0	92.2	92.2
Actuated g/C Ratio	0.21	0.21			0.10	0.39	0.46	0.42	0.42	0.74	0.66	0.66
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	210	366			132	666	177	1469	657	570	2331	1043
v/s Ratio Prot	c0.11	0.03				0.16	0.01	c0.47		c0.28	0.48	
v/s Ratio Perm	c0.18				0.10	0.07	0.08		0.00	0.43		0.04
v/c Ratio	1.38	0.13			1.01	0.56	0.20	1.13	0.01	0.96	0.73	0.06
Uniform Delay, d1	53.1	45.2			63.0	33.1	29.4	40.9	24.1	50.9	15.7	8.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.03	1.42	3.14
Incremental Delay, d2	198.3	0.2			80.4	1.0	0.6	68.5	0.0	26.0	1.8	0.1
Delay (s)	251.4	45.4			143.4	34.2	30.0	109.5	24.1	78.4	24.2	26.6
Level of Service	F	D			F	C	C	F	C	E	C	C
Approach Delay (s)		215.1			62.6			107.4			37.0	
Approach LOS		F			E			F			D	

Intersection Summary

HCM Average Control Delay	76.9	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

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	0.97	0.91			0.86	1.00	0.97		0.88			
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)	3433	5085			6408	1583	3433		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	5085			6408	1583	3433		2787			
Volume (vph)	235	2001	0	0	1323	486	506	0	261	0	0	0
Peak-hour factor, PHF	0.96	0.96	0.96	0.97	0.97	0.97	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	245	2084	0	0	1364	501	562	0	290	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	203	0	0	25	0	0	0
Lane Group Flow (vph)	245	2084	0	0	1364	298	562	0	265	0	0	0
Turn Type	Prot					Perm	custom		custom			
Protected Phases	5	2			6							
Permitted Phases						6	4		4			
Actuated Green, G (s)	14.4	101.8			81.9	81.9	27.7		27.7			
Effective Green, g (s)	15.9	103.3			83.4	83.4	28.7		28.7			
Actuated g/C Ratio	0.11	0.74			0.60	0.60	0.20		0.20			
Clearance Time (s)	5.5	5.5			5.5	5.5	5.0		5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	390	3752			3817	943	704		571			
v/s Ratio Prot	c0.07	c0.41			0.21							
v/s Ratio Perm						0.19	c0.16		0.09			
v/c Ratio	0.63	0.56			0.36	0.32	0.80		0.46			
Uniform Delay, d1	59.2	8.2			14.5	14.1	52.9		48.9			
Progression Factor	1.20	0.72			0.60	3.18	1.00		1.00			
Incremental Delay, d2	2.7	0.5			0.0	0.1	6.3		0.6			
Delay (s)	74.0	6.4			8.7	45.0	59.2		49.5			
Level of Service	E	A			A	D	E		D			
Approach Delay (s)		13.5			18.4			55.9			0.0	
Approach LOS		B			B			E			A	

Intersection Summary

HCM Average Control Delay	22.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

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		0.86	1.00	0.97	0.91					0.95	0.91	0.95
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6408	1583	3433	5085					1681	1610	1504
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6408	1583	3433	5085					1681	1610	1504
Volume (vph)	0	1834	445	144	1665	0	0	0	0	431	0	101
Peak-hour factor, PHF	0.94	0.94	0.94	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1951	473	147	1699	0	0	0	0	468	0	110
RTOR Reduction (vph)	0	0	169	0	0	0	0	0	0	0	0	37
Lane Group Flow (vph)	0	1951	304	147	1699	0	0	0	0	234	234	73
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						8	
Permitted Phases			2							8		8
Actuated Green, G (s)		88.4	88.4	11.3	104.7					24.8	24.8	24.8
Effective Green, g (s)		89.9	89.9	12.3	106.2					25.8	25.8	25.8
Actuated g/C Ratio		0.64	0.64	0.09	0.76					0.18	0.18	0.18
Clearance Time (s)		5.5	5.5	5.0	5.5					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		4115	1017	302	3857					310	297	277
v/s Ratio Prot		c0.30		0.04	c0.33							
v/s Ratio Perm			0.19							0.14	0.15	0.05
v/c Ratio		0.47	0.30	0.49	0.44					0.75	0.79	0.26
Uniform Delay, d1		12.9	11.1	60.8	6.1					54.1	54.5	49.0
Progression Factor		0.46	0.12	1.10	0.95					1.00	1.00	1.00
Incremental Delay, d2		0.3	0.6	1.1	0.3					10.0	12.9	0.5
Delay (s)		6.2	2.0	68.2	6.2					64.1	67.4	49.5
Level of Service		A	A	E	A					E	E	D
Approach Delay (s)		5.4			11.1			0.0			62.7	
Approach LOS		A			B			A			E	

Intersection Summary

HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Ideal Flow (vphpl)	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		0.95	1.00	1.00	0.95	0.97	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	3433	1583
Flt Permitted		1.00	1.00	0.07	1.00	0.95	1.00
Satd. Flow (perm)		3539	1583	126	3539	3433	1583
Volume (vph)	0	1744	85	240	1512	306	544
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.90	0.90
Adj. Flow (vph)	0	1780	87	245	1543	340	604
RTOR Reduction (vph)	0	0	22	0	0	0	0
Lane Group Flow (vph)	0	1780	65	245	1543	340	604
Turn Type	pm+pt		Perm	pm+pt			Free
Protected Phases	5	2		1	6	4	
Permitted Phases	2		2	6			Free
Actuated Green, G (s)		93.8	93.8	113.8	113.8	14.6	140.0
Effective Green, g (s)		95.8	95.8	115.8	115.8	16.2	140.0
Actuated g/C Ratio		0.68	0.68	0.83	0.83	0.12	1.00
Clearance Time (s)		6.0	6.0	5.0	6.0	5.6	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2422	1083	292	2927	397	1583
v/s Ratio Prot		0.50		c0.10	0.44	c0.10	
v/s Ratio Perm			0.04	c0.60			0.38
v/c Ratio		0.73	0.06	0.84	0.53	0.86	0.38
Uniform Delay, d1		14.0	7.3	39.6	3.7	60.8	0.0
Progression Factor		1.00	1.00	1.46	1.01	1.00	1.00
Incremental Delay, d2		2.0	0.1	17.3	0.6	16.4	0.7
Delay (s)		16.1	7.4	74.9	4.4	77.2	0.7
Level of Service		B	A	E	A	E	A
Approach Delay (s)		15.7			14.0	28.2	
Approach LOS		B			B	C	

Intersection Summary

HCM Average Control Delay	17.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1698	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1698	1583
Volume (vph)	65	1473	16	136	1130	567	50	26	54	332	29	18
Peak-hour factor, PHF	0.94	0.94	0.94	0.95	0.95	0.95	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	69	1567	17	143	1189	597	54	28	58	373	33	20
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	55	0	0	17
Lane Group Flow (vph)	69	1567	13	143	1189	597	54	28	3	198	208	3
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			Free			3			4
Actuated Green, G (s)	12.1	89.0	89.0	23.7	100.6	174.0	8.1	8.1	8.1	26.5	26.5	26.5
Effective Green, g (s)	14.8	92.0	92.0	26.4	103.6	174.0	10.3	10.3	10.3	29.3	29.3	29.3
Actuated g/C Ratio	0.09	0.53	0.53	0.15	0.60	1.00	0.06	0.06	0.06	0.17	0.17	0.17
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.2	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	151	1871	837	269	2107	1583	203	110	94	283	286	267
v/s Ratio Prot	0.04	c0.44		c0.08	0.34		0.02	0.02		0.12	c0.12	
v/s Ratio Perm			0.01			c0.38			0.00			0.00
v/c Ratio	0.46	0.84	0.02	0.53	0.56	0.38	0.27	0.25	0.04	0.70	0.73	0.01
Uniform Delay, d1	75.8	34.7	19.5	68.1	21.4	0.0	78.2	78.2	77.2	68.2	68.6	60.3
Progression 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
Incremental Delay, d2	2.2	3.4	0.0	2.0	1.1	0.7	0.7	1.2	0.2	7.4	8.9	0.0
Delay (s)	78.0	38.1	19.5	70.1	22.5	0.7	78.9	79.4	77.3	75.6	77.5	60.3
Level of Service	E	D	B	E	C	A	E	E	E	E	E	E
Approach Delay (s)		39.6			19.3			78.4			75.8	
Approach LOS		D			B			E			E	

Intersection Summary

HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	174.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	337	1306	77	254	1084	89	218	614	236	249	419	71
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96	0.90	0.90	0.90
Adj. Flow (vph)	366	1420	84	276	1178	97	227	640	246	277	466	79
RTOR Reduction (vph)	0	0	27	0	0	42	0	0	163	0	0	61
Lane Group Flow (vph)	366	1420	57	276	1178	55	227	640	83	277	466	18
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	14.2	51.3	51.3	13.5	50.6	50.6	12.3	26.5	26.5	12.7	26.9	26.9
Effective Green, g (s)	16.2	54.3	54.3	15.5	53.6	53.6	14.3	29.5	29.5	14.7	29.9	29.9
Actuated g/C Ratio	0.12	0.42	0.42	0.12	0.41	0.41	0.11	0.23	0.23	0.11	0.23	0.23
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	428	1478	661	409	1459	653	378	803	359	388	814	364
v/s Ratio Prot	c0.11	c0.40		0.08	0.33		0.07	c0.18		c0.08	0.13	
v/s Ratio Perm			0.04			0.03			0.05			0.01
v/c Ratio	0.86	0.96	0.09	0.67	0.81	0.08	0.60	0.80	0.23	0.71	0.57	0.05
Uniform Delay, d1	55.8	36.8	22.9	54.8	33.7	23.3	55.1	47.4	41.0	55.6	44.4	39.0
Progression 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
Incremental Delay, d2	15.3	15.1	0.1	4.4	3.4	0.1	2.7	8.1	1.5	6.1	2.9	0.3
Delay (s)	71.0	51.9	22.9	59.2	37.0	23.3	57.8	55.5	42.5	61.7	47.3	39.2
Level of Service	E	D	C	E	D	C	E	E	D	E	D	D
Approach Delay (s)		54.3			40.1			53.1			51.4	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	49.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	0	27	0	0	0	37	650	0	0	394	28
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.98	0.98	0.98	0.95	0.95	0.95
Hourly flow rate (vph)	29	0	35	0	0	0	38	663	0	0	415	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								367				
pX, platoon unblocked												
vC, conflicting volume	837	1168	222	981	1183	332	444			663		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	837	1168	222	981	1183	332	444			663		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	96	100	100	100	97			100		
cM capacity (veh/h)	253	185	782	190	182	664	1112			921		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	64	0	38	442	221	0	276	168
Volume Left	29	0	38	0	0	0	0	0
Volume Right	35	0	0	0	0	0	0	29
cSH	403	1700	1112	1700	1700	1700	1700	1700
Volume to Capacity	0.16	0.00	0.03	0.26	0.13	0.00	0.16	0.10
Queue Length 95th (ft)	14	0	3	0	0	0	0	0
Control Delay (s)	15.6	0.0	8.4	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A	A					
Approach Delay (s)	15.6	0.0	0.4			0.0		
Approach LOS	C	A						

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	34.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	0	37	19	0	12	52	590	11	10	533	35
Peak Hour Factor	0.82	0.82	0.82	0.60	0.60	0.60	0.98	0.98	0.98	0.86	0.86	0.86
Hourly flow rate (vph)	15	0	35	17	0	15	38	584	8	10	539	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	957	1241	284	988	1252	296	569			592		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	957	1241	284	988	1252	296	569			592		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	95	91	100	98	96			99		
cM capacity (veh/h)	200	165	712	185	163	700	999			980		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	50	32	38	389	202	10	359	209
Volume Left	15	17	38	0	0	10	0	0
Volume Right	35	15	0	0	8	0	0	30
cSH	404	283	999	1700	1700	980	1700	1700
Volume to Capacity	0.12	0.11	0.04	0.23	0.12	0.01	0.21	0.12
Queue Length 95th (ft)	10	9	3	0	0	1	0	0
Control Delay (s)	15.1	19.3	8.7	0.0	0.0	8.7	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	15.1	19.3	0.5			0.1		
Approach LOS	C	C						

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.92			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1717			1798	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.37	1.00			0.66	1.00	0.13	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	694	1717			1223	1583	240	3539	1583	112	3539	1583
Volume (vph)	243	88	96	112	44	413	20	1222	8	285	1214	106
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.84	0.84	0.84
Adj. Flow (vph)	286	104	113	132	52	486	24	1438	9	339	1445	126
RTOR Reduction (vph)	0	28	0	0	0	21	0	0	3	0	0	40
Lane Group Flow (vph)	286	189	0	0	184	465	24	1438	6	339	1445	86
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	43.3	43.3			26.3	53.8	64.2	60.6	60.6	94.1	84.5	84.5
Effective Green, g (s)	45.9	45.9			28.9	58.4	68.2	62.6	62.6	96.1	86.5	86.5
Actuated g/C Ratio	0.31	0.31			0.19	0.39	0.45	0.42	0.42	0.64	0.58	0.58
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	525			236	659	166	1477	661	398	2041	913
v/s Ratio Prot	c0.08	0.11				c0.14	0.01	c0.41		c0.17	0.41	
v/s Ratio Perm	c0.21				0.15	0.15	0.06		0.00	0.38		0.05
v/c Ratio	0.93	0.36			0.78	0.71	0.14	0.97	0.01	0.85	0.71	0.09
Uniform Delay, d1	48.9	40.6			57.5	38.6	23.8	42.9	25.6	47.9	22.7	14.2
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.06	0.90	0.88
Incremental Delay, d2	34.4	0.4			15.0	3.5	0.4	17.9	0.0	14.6	1.9	0.2
Delay (s)	83.3	41.0			72.5	42.0	24.2	60.8	25.6	65.1	22.3	12.7
Level of Service	F	D			E	D	C	E	C	E	C	B
Approach Delay (s)		65.1			50.4			60.0			29.2	
Approach LOS		E			D			E			C	

Intersection Summary

HCM Average Control Delay	46.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

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	0.97	0.91			0.86	1.00	0.97		0.88			
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)	3433	5085			6408	1583	3433		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	5085			6408	1583	3433		2787			
Volume (vph)	209	1698	0	0	1348	538	445	0	216	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Adj. Flow (vph)	220	1787	0	0	1515	604	563	0	273	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	235	0	0	29	0	0	0
Lane Group Flow (vph)	220	1787	0	0	1515	369	563	0	244	0	0	0
Turn Type	Prot					Perm	custom		custom			
Protected Phases	5	2			6							
Permitted Phases						6	4		4			
Actuated Green, G (s)	15.0	110.7			90.2	90.2	28.8		28.8			
Effective Green, g (s)	16.5	112.2			91.7	91.7	29.8		29.8			
Actuated g/C Ratio	0.11	0.75			0.61	0.61	0.20		0.20			
Clearance Time (s)	5.5	5.5			5.5	5.5	5.0		5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	378	3804			3917	968	682		554			
v/s Ratio Prot	c0.06	c0.35			0.24							
v/s Ratio Perm						0.23	c0.16		0.09			
v/c Ratio	0.58	0.47			0.39	0.38	0.83		0.44			
Uniform Delay, d1	63.5	7.3			14.8	14.8	57.6		52.8			
Progression Factor	1.00	1.02			0.90	0.82	1.00		1.00			
Incremental Delay, d2	2.0	0.4			0.1	0.5	8.1		0.6			
Delay (s)	65.1	7.9			13.5	12.5	65.7		53.3			
Level of Service	E	A			B	B	E		D			
Approach Delay (s)		14.1			13.3			61.6			0.0	
Approach LOS		B			B			E			A	

Intersection Summary

HCM Average Control Delay	21.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

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		0.86	1.00	0.97	0.91					0.95	0.91	0.95
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6408	1583	3433	5085					1681	1610	1504
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6408	1583	3433	5085					1681	1610	1504
Volume (vph)	0	1450	339	201	1539	0	0	0	0	492	0	110
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.79	0.79	0.79
Adj. Flow (vph)	0	1576	368	214	1637	0	0	0	0	623	0	139
RTOR Reduction (vph)	0	0	151	0	0	0	0	0	0	0	0	22
Lane Group Flow (vph)	0	1576	217	214	1637	0	0	0	0	312	311	117
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						8	
Permitted Phases			2							8		8
Actuated Green, G (s)		86.9	86.9	13.7	105.6					33.9	33.9	33.9
Effective Green, g (s)		88.4	88.4	14.7	107.1					34.9	34.9	34.9
Actuated g/C Ratio		0.59	0.59	0.10	0.71					0.23	0.23	0.23
Clearance Time (s)		5.5	5.5	5.0	5.5					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3776	933	336	3631					391	375	350
v/s Ratio Prot		0.25		c0.06	c0.32							
v/s Ratio Perm			0.14							0.19	0.19	0.08
v/c Ratio		0.42	0.23	0.64	0.45					0.80	0.83	0.33
Uniform Delay, d1		16.8	14.7	65.1	9.0					54.2	54.7	47.9
Progression Factor		0.58	0.19	1.09	1.02					1.00	1.00	1.00
Incremental Delay, d2		0.3	0.5	3.4	0.4					10.8	14.0	0.6
Delay (s)		10.1	3.2	74.5	9.6					65.0	68.8	48.4
Level of Service		B	A	E	A					E	E	D
Approach Delay (s)		8.8			17.1			0.0			63.5	
Approach LOS		A			B			A			E	

Intersection Summary

HCM Average Control Delay	21.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Ideal Flow (vphpl)	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		0.95	1.00	1.00	0.95	0.97	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	3433	1583
Flt Permitted		1.00	1.00	0.09	1.00	0.95	1.00
Satd. Flow (perm)		3539	1583	165	3539	3433	1583
Volume (vph)	0	1482	94	242	1412	229	335
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.88	0.88
Adj. Flow (vph)	0	1611	102	269	1569	260	381
RTOR Reduction (vph)	0	0	26	0	0	0	0
Lane Group Flow (vph)	0	1611	76	269	1569	260	381
Turn Type	pm+pt		Perm	pm+pt			Free
Protected Phases	5	2		1	6	4	
Permitted Phases	2		2	6			Free
Actuated Green, G (s)		98.1	98.1	122.2	122.2	16.2	150.0
Effective Green, g (s)		100.1	100.1	124.2	124.2	17.8	150.0
Actuated g/C Ratio		0.67	0.67	0.83	0.83	0.12	1.00
Clearance Time (s)		6.0	6.0	5.0	6.0	5.6	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2362	1056	352	2930	407	1583
v/s Ratio Prot		0.46		c0.10	0.44	c0.08	
v/s Ratio Perm			0.05	c0.53			0.24
v/c Ratio		0.68	0.07	0.76	0.54	0.64	0.24
Uniform Delay, d1		15.2	8.7	35.1	4.0	63.0	0.0
Progression Factor		1.00	1.00	1.87	0.93	1.00	1.00
Incremental Delay, d2		1.6	0.1	8.8	0.6	3.3	0.4
Delay (s)		16.9	8.9	74.5	4.4	66.3	0.4
Level of Service		B	A	E	A	E	A
Approach Delay (s)		16.4			14.6	27.1	
Approach LOS		B			B	C	

Intersection Summary

HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1695	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1695	1583
Volume (vph)	132	817	1	143	1184	326	119	68	183	469	31	47
Peak-hour factor, PHF	0.86	0.86	0.86	0.91	0.91	0.91	0.75	0.75	0.75	0.94	0.94	0.94
Adj. Flow (vph)	153	950	1	157	1301	358	159	91	244	499	33	50
RTOR Reduction (vph)	0	0	1	0	0	0	0	0	157	0	0	40
Lane Group Flow (vph)	153	950	0	157	1301	358	159	91	87	259	273	10
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			Free			3			4
Actuated Green, G (s)	18.5	81.6	81.6	19.0	82.1	177.0	15.7	15.7	15.7	34.0	34.0	34.0
Effective Green, g (s)	21.2	84.6	84.6	21.7	85.1	177.0	17.9	17.9	17.9	36.8	36.8	36.8
Actuated g/C Ratio	0.12	0.48	0.48	0.12	0.48	1.00	0.10	0.10	0.10	0.21	0.21	0.21
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.2	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	212	1692	757	217	1702	1583	347	188	160	349	352	329
v/s Ratio Prot	0.09	0.27		c0.09	c0.37		0.05	0.05		0.15	c0.16	
v/s Ratio Perm			0.00			c0.23			c0.05			0.01
v/c Ratio	0.72	0.56	0.00	0.72	0.76	0.23	0.46	0.48	0.54	0.74	0.78	0.03
Uniform Delay, d1	75.1	33.0	24.1	74.8	37.7	0.0	75.0	75.2	75.7	65.7	66.2	55.9
Progression 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
Incremental Delay, d2	11.5	0.4	0.0	11.3	3.3	0.3	1.0	2.0	3.7	8.3	10.2	0.0
Delay (s)	86.5	33.4	24.1	86.1	41.0	0.3	75.9	77.1	79.4	73.9	76.4	55.9
Level of Service	F	C	C	F	D	A	E	E	E	E	E	E
Approach Delay (s)		40.7			36.9			77.9			73.6	
Approach LOS		D			D			E			E	

Intersection Summary

HCM Average Control Delay	48.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	177.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	259	1136	49	339	1253	100	138	362	214	232	291	62
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.87	0.87	0.87	0.91	0.91	0.91
Adj. Flow (vph)	285	1248	54	373	1377	110	159	416	246	255	320	68
RTOR Reduction (vph)	0	0	19	0	0	41	0	0	171	0	0	53
Lane Group Flow (vph)	285	1248	35	373	1377	69	159	416	75	255	320	15
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	13.8	48.8	48.8	18.1	53.1	53.1	11.2	23.9	23.9	13.2	25.9	25.9
Effective Green, g (s)	15.8	51.8	51.8	20.1	56.1	56.1	13.2	26.9	26.9	15.2	28.9	28.9
Actuated g/C Ratio	0.12	0.40	0.40	0.15	0.43	0.43	0.10	0.21	0.21	0.12	0.22	0.22
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	417	1410	631	531	1527	683	349	732	328	401	787	352
v/s Ratio Prot	0.08	0.35		c0.11	c0.39		0.05	c0.12		c0.07	0.09	
v/s Ratio Perm			0.02			0.04			0.05			0.01
v/c Ratio	0.68	0.89	0.06	0.70	0.90	0.10	0.46	0.57	0.23	0.64	0.41	0.04
Uniform Delay, d1	54.7	36.3	24.0	52.1	34.4	22.0	55.0	46.3	42.9	54.8	43.2	39.7
Progression 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
Incremental Delay, d2	4.6	7.0	0.0	4.2	7.7	0.1	0.9	3.2	1.6	3.3	1.6	0.2
Delay (s)	59.3	43.3	24.1	56.3	42.1	22.0	56.0	49.5	44.6	58.0	44.8	39.9
Level of Service	E	D	C	E	D	C	E	D	D	E	D	D
Approach Delay (s)		45.5			43.8			49.3			49.5	
Approach LOS		D			D			D			D	

Intersection Summary

HCM Average Control Delay	46.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	19	0	75	0	0	0	28	462	0	0	477	32
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.98	0.98	0.98	0.96	0.96	0.96
Hourly flow rate (vph)	23	0	93	0	0	0	29	471	0	0	497	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								367				
pX, platoon unblocked												
vC, conflicting volume	806	1042	265	870	1059	236	530			471		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	806	1042	265	870	1059	236	530			471		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	87	100	100	100	97			100		
cM capacity (veh/h)	267	222	733	210	217	766	1033			1087		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	116	0	29	314	157	0	331	199
Volume Left	23	0	29	0	0	0	0	0
Volume Right	93	0	0	0	0	0	0	33
cSH	542	1700	1033	1700	1700	1700	1700	1700
Volume to Capacity	0.21	0.00	0.03	0.18	0.09	0.00	0.19	0.12
Queue Length 95th (ft)	20	0	2	0	0	0	0	0
Control Delay (s)	13.4	0.0	8.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A	A					
Approach Delay (s)	13.4	0.0	0.5			0.0		
Approach LOS	B	A						

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	33.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	36	0	39	16	1	11	53	449	19	18	426	41
Peak Hour Factor	0.94	0.94	0.94	0.58	0.58	0.58	0.96	0.96	0.96	0.87	0.87	0.87
Hourly flow rate (vph)	38	0	41	28	2	19	55	468	20	21	490	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	919	1153	268	916	1166	244	537			488		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	919	1153	268	916	1166	244	537			488		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	81	100	94	86	99	97	95			98		
cM capacity (veh/h)	207	182	730	203	179	757	1027			1072		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	80	48	55	312	176	21	326	210
Volume Left	38	28	55	0	0	21	0	0
Volume Right	41	19	0	0	20	0	0	47
cSH	330	283	1027	1700	1700	1072	1700	1700
Volume to Capacity	0.24	0.17	0.05	0.18	0.10	0.02	0.19	0.12
Queue Length 95th (ft)	23	15	4	0	0	1	0	0
Control Delay (s)	19.4	20.3	8.7	0.0	0.0	8.4	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	19.4	20.3	0.9			0.3		
Approach LOS	C	C						

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	31.5%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix E – Capacity Analyses: Existing Conditions with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1732		1770	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.57	1.00		0.74	1.00	1.00	0.30	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1062	1732		1372	1863	1583	567	3539	1583	3433	3539	1583
Volume (vph)	143	13	12	108	37	604	31	1182	4	347	864	28
Peak-hour factor, PHF	0.78	0.78	0.78	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Adj. Flow (vph)	183	17	15	112	39	629	32	1231	4	377	939	30
RTOR Reduction (vph)	0	11	0	0	0	47	0	0	2	0	0	13
Lane Group Flow (vph)	183	21	0	112	39	582	32	1231	2	377	939	17
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	23.6	23.6		11.5	11.5	41.2	37.1	33.1	33.1	29.7	58.8	58.8
Effective Green, g (s)	26.2	26.2		14.1	14.1	45.8	41.1	35.1	35.1	31.7	60.8	60.8
Actuated g/C Ratio	0.25	0.25		0.13	0.13	0.44	0.39	0.33	0.33	0.30	0.58	0.58
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	320	432		184	250	751	291	1183	529	1036	2049	917
v/s Ratio Prot	c0.04	0.01			0.02	c0.23	0.01	c0.35		0.11	0.27	
v/s Ratio Perm	0.10			0.08		0.13	0.04		0.00			0.01
v/c Ratio	0.57	0.05		0.61	0.16	0.77	0.11	1.04	0.00	0.36	0.46	0.02
Uniform Delay, d1	33.5	29.9		42.8	40.2	25.2	19.8	35.0	23.3	28.7	12.7	9.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.0		5.6	0.3	5.0	0.2	37.3	0.0	0.2	0.7	0.0
Delay (s)	35.9	30.0		48.5	40.5	30.2	20.0	72.3	23.3	29.0	13.4	9.4
Level of Service	D	C		D	D	C	B	E	C	C	B	A
Approach Delay (s)		35.0			33.3			70.8			17.7	
Approach LOS		D			C			E			B	

Intersection Summary

HCM Average Control Delay	40.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1768		1770	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.62	1.00		0.72	1.00	1.00	0.10	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1157	1768		1335	1863	1583	190	3539	1583	3433	3539	1583
Volume (vph)	232	33	17	109	16	355	29	1397	8	484	1500	74
Peak-hour factor, PHF	0.80	0.80	0.80	0.94	0.94	0.94	0.84	0.84	0.84	0.88	0.88	0.88
Adj. Flow (vph)	290	41	21	116	17	378	35	1663	10	550	1705	84
RTOR Reduction (vph)	0	15	0	0	0	15	0	0	3	0	0	20
Lane Group Flow (vph)	290	47	0	116	17	363	35	1663	7	550	1705	64
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	29.2	29.2		17.2	17.2	51.6	68.1	62.8	62.8	34.4	91.9	91.9
Effective Green, g (s)	31.8	31.8		19.8	19.8	56.2	72.1	64.8	64.8	36.4	93.9	93.9
Actuated g/C Ratio	0.22	0.22		0.14	0.14	0.39	0.50	0.45	0.45	0.25	0.65	0.65
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	288	388		182	254	657	174	1582	707	862	2292	1025
v/s Ratio Prot	c0.06	0.03			0.01	c0.14	0.01	c0.47		0.16	c0.48	
v/s Ratio Perm	c0.17			0.09		0.09	0.09		0.00			0.04
v/c Ratio	1.01	0.12		0.64	0.07	0.55	0.20	1.05	0.01	0.64	0.74	0.06
Uniform Delay, d1	56.5	45.4		59.2	54.6	34.6	19.9	40.1	22.3	48.4	17.4	9.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	54.8	0.1		7.1	0.1	1.0	0.6	37.4	0.0	1.6	2.2	0.1
Delay (s)	111.4	45.5		66.3	54.7	35.6	20.5	77.5	22.3	50.0	19.6	9.5
Level of Service	F	D		E	D	D	C	E	C	D	B	A
Approach Delay (s)		99.8			43.2			76.0			26.4	
Approach LOS		F			D			E			C	

Intersection Summary

HCM Average Control Delay	50.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1717		1770	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.60	1.00		0.62	1.00	1.00	0.12	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1123	1717		1160	1863	1583	225	3539	1583	3433	3539	1583
Volume (vph)	243	88	96	112	44	413	20	1222	8	285	1214	106
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.84	0.84	0.84
Adj. Flow (vph)	286	104	113	132	52	486	24	1438	9	339	1445	126
RTOR Reduction (vph)	0	42	0	0	0	27	0	0	4	0	0	44
Lane Group Flow (vph)	286	175	0	132	52	459	24	1438	5	339	1445	82
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	29.5	29.5		17.5	17.5	37.3	51.0	47.1	47.1	19.8	63.0	63.0
Effective Green, g (s)	32.1	32.1		20.1	20.1	41.9	55.0	49.1	49.1	21.8	65.0	65.0
Actuated g/C Ratio	0.28	0.28		0.17	0.17	0.36	0.48	0.43	0.43	0.19	0.57	0.57
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	358	479		203	326	632	187	1511	676	651	2000	895
v/s Ratio Prot	c0.06	0.10			0.03	c0.14	0.01	c0.41		0.10	0.41	
v/s Ratio Perm	c0.17			0.11		0.15	0.05		0.00			0.05
v/c Ratio	0.80	0.37		0.65	0.16	0.73	0.13	0.95	0.01	0.52	0.72	0.09
Uniform Delay, d1	38.1	33.3		44.2	40.3	31.6	17.2	31.8	18.9	41.9	18.4	11.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.8	0.5		7.2	0.2	4.1	0.3	14.2	0.0	0.8	2.3	0.2
Delay (s)	49.9	33.8		51.4	40.5	35.7	17.5	46.0	19.0	42.7	20.7	11.7
Level of Service	D	C		D	D	D	B	D	B	D	C	B
Approach Delay (s)		42.9			39.2			45.4			24.0	
Approach LOS		D			D			D			C	

Intersection Summary

HCM Average Control Delay	35.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

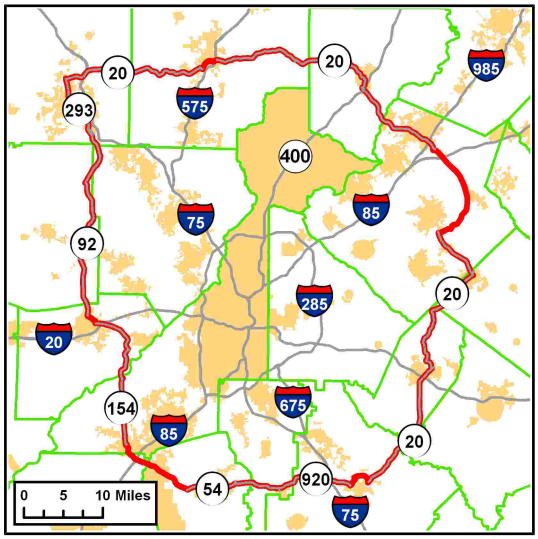
Appendix F – Programmed Improvements

AR-941

Atlanta Region - Envision6 Transportation Plan

PROJECT FACT SHEET

Short Title	METRO ARTERIAL CONNECTOR (MAC) CORRIDOR DEVELOPMENT STUDY
GDOT Project No.	TBD
Federal ID No.	
Status	Programmed
Detailed Description and Justification	The Metro Arterial Connector (MAC) is a network of state highways approximately 180 miles in length encircling the Atlanta region. Roadways comprising the MAC (primarily SR 20 and SR 92) are proposed to have a minimum of four travel lanes along its entire length. At least 30 capacity projects are already planned along the MAC over the timeframe of the RTP. This study is to determine how these individual projects can be engineered and constructed in a holistic and logical manner to maximum the mobility, safety, accessibility and growth management benefits to be provided by those projects. Issues to be addressed in the study include defining how the corridor can best serve multimodal needs (auto, truck, transit, bicycling, walking) and what land use policies, access management regulations, ITS components and other elements should be integrated into the engineering of each individual project to ensure network uniformity. Where "gaps" or "bottlenecks" in the MAC are identified, new projects will also be proposed.
Service Type	Studies
Sponsor	ARC
Jurisdiction	Regional
Existing Thru Lane	N/A (applicable for road projects only)
Planned Thru Lane	N/A (applicable for road projects only)
Corridor Length	180 miles (not applicable for all project types)
Network Year	2010 (required if modeled for conformity)
Completion Date	2010
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	STP - Urban (>200K) (ARC)	2009	$1,000,000	$800,000	$0,000	$0,000	$200,000
				$800,000	$0,000	$0,000	$200,000

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.

ARC

Report Generated: 1/23/2008

GDOT
Keeping Georgia on the Move

Construction Project Info

Project ID:	S008335
Federal/State Number:	PR000-S008-00(335) C1
County:	GWINNETT

Overview

Description:	SR 324 - 2.219 MI - WIDENING
Detailed Description:	2.219 MILES OF WIDENING ON SR 324 BEGINNING AT SR 20 AND ENDING AT 1-85.
Primary Work Type:	WIDENING & RESURFACING
Project Type:	NON-FEDERAL PROJECT

Time Frame

Estimated Start Date:	
Estimated Completion:	43.60 %
Estimated End Date:	Spring 2012

Cost

Total Cost:	$2,499,993.82
Contractor:	GWINNETT COUNTY

Comments

Click here to send your comments to the Georgia DOT regarding this construction project.

Back

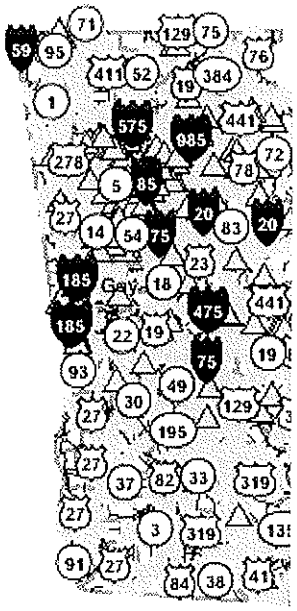
Helpful Links:

Road Construction Main

Impact On Travel

No traffic interruption report ava
For more detailed Traffic Inform

Project Map



Click on the map to zoom



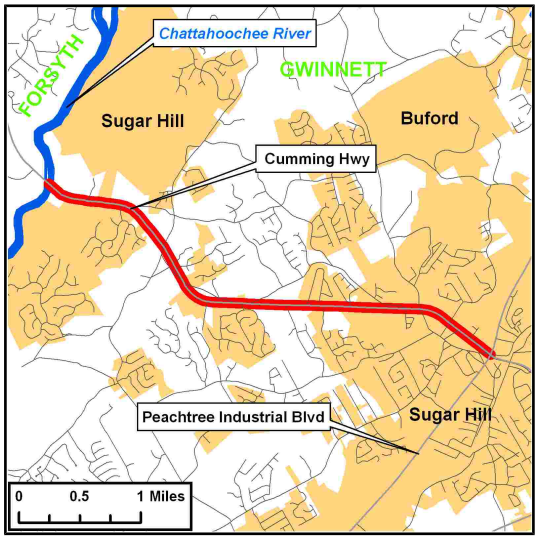
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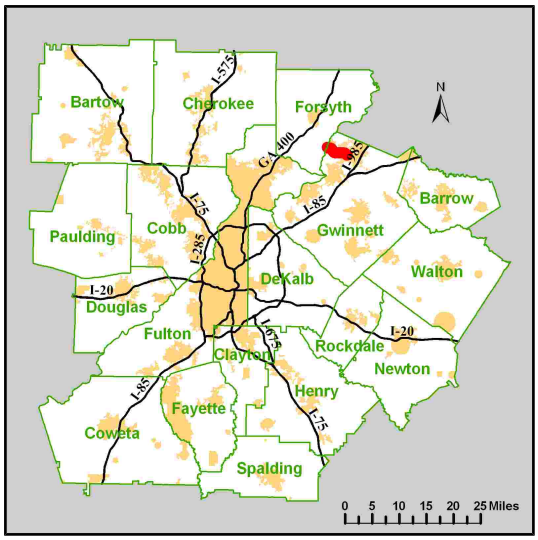
GW-020A1

Atlanta Region - Envision6 Transportation Plan

PROJECT FACT SHEET

Short Title	METRO ARTERIAL CONNECTOR - SR 20 (CUMMING HIGHWAY / NELSON BROGDON BOULEVARD) FROM CHATTAHOOCHEE RIVER TO PEACHTREE INDUSTRIAL BOULEVARD IN GWINNETT COUNTY - EXCLUDES CHATTAHOOCHEE RIVER BRIDGE
GDOT Project No.	0004430
Federal ID No.	MSL-0004-00(430)
Status	Programmed
Detailed Description and Justification	This project is the widening and reconstruction of SR 20 from 500' east of Burnette Trail to Peachtree Industrial Boulevard in Gwinnett County. The purpose of the project is to improve east-west mobility along SR 20. With SR 20 currently experiencing high traffic volumes, the widening of this section of the roadway and the adjacent section in Forsyth County will enhance traffic movement and improve vehicle and pedestrian safety on this important east-west arterial. The existing typical section consists of two, 12' lanes, 2' paved shoulders, 2' to 6' grassed shoulders and 100' of existing right-of-way. The proposed construction will provide four, 12' through lanes, a 44' grassed median, 16' shoulders, curb and gutter on the outside pavement edges, and 5' sidewalk on both sides of the roadway. The design will accommodate for the future widening of two additional lanes. See also other GW-020 line items and refer to AR-941 for more information on the MAC concept.
Service Type	General Purpose Roadway Capacity
Sponsor	GRTA
Jurisdiction	Gwinnett County
Existing Thru Lane	2 (applicable for road projects only)
Planned Thru Lane	4 (applicable for road projects only)
Corridor Length	4.2 miles (not applicable for all project types)
Network Year	2020 (required if modeled for conformity)
Completion Date	2013
Analysis Level	In the Region's Air Quality Conformity Analysis





Phase Status & Funding Information for 06-11 TIP		FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
				FEDERAL	STATE	BONDS	LOCAL/OTHER
PE	State Bonds	AUTH	$0,000	$0,000	$0,000	$0,000	$0,000
ROW	State Bonds	2008	$15,200,000	$0,000	$0,000	$15,200,000	$0,000
CST	State Bonds	2011	$20,057,000	$0,000	$0,000	$20,057,000	$0,000
				$0,000	$0,000	$35,257,000	$0,000

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

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

ARC

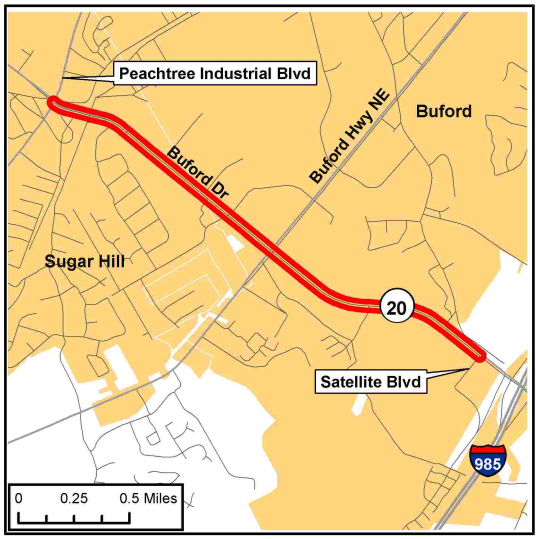
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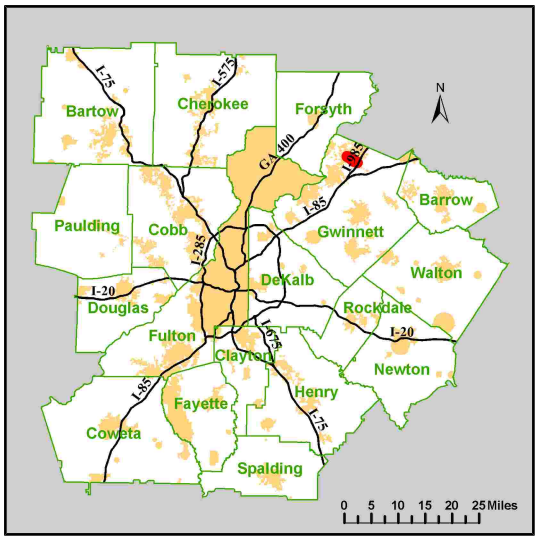
GW-301

Atlanta Region - Envision6 Transportation Plan

PROJECT FACT SHEET

Short Title	SR 20 (NELSON BROGDON BOULEVARD/BUFORD DRIVE) ATMS FROM SR 13A (PEACHTREE INDUSTRIAL BOULEVARD) TO SATELLITE BOULEVARD
GDOT Project No.	0006826
Federal ID No.	CSSTP-0006-00(826)
Status	Programmed
Detailed Description and Justification	The proposed project is the expansion of Gwinnett County's ITS/ATMS infrastructure on Nelson Brogdon Boulevard/Buford Drive/SR 20. The project will consist of installing new fiber optic cable along the corridor from Satellite Boulevard to Peachtree.
Service Type	ITS-Smart Corridor
Sponsor	Gwinnett County
Jurisdiction	Gwinnett County
Existing Thru Lane	N/A (applicable for road projects only)
Planned Thru Lane	N/A (applicable for road projects only)
Corridor Length	2 miles (not applicable for all project types)
Network Year	2020 (required if modeled for conformity)
Completion Date	2012
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	2009	$63,750	$0,000	$0,000	$0,000	$63,750
CST	STP - Urban (>200K) (ARC)	2010	$1,060,000	$848,000	$0,000	$0,000	$212,000
				$848,000	$0,000	$0,000	$275,750

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.

ARC

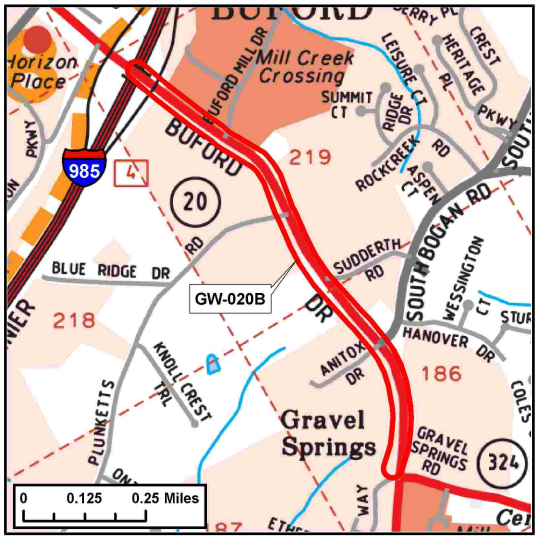
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GW-020B

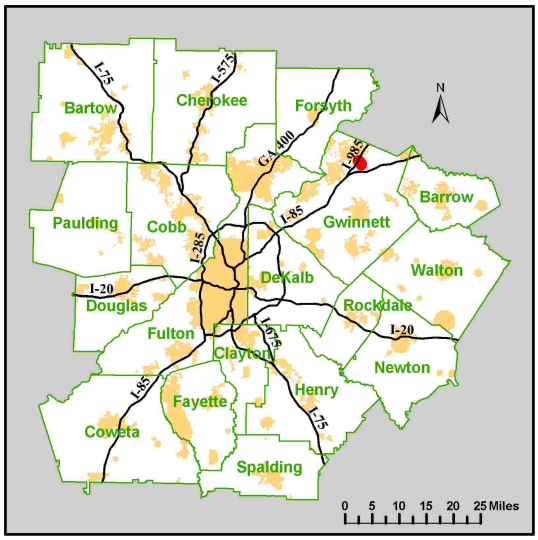
Atlanta Region - Envision6 Transportation Plan

PROJECT FACT SHEET

Short Title	METRO ARTERIAL CONNECTOR - SR 20 (BUFORD DRIVE / MALL OF GEORGIA PARKWAY) FROM I-985 TO SR 324 (GRAVEL SPRINGS ROAD)
GDOT Project No.	0007848
Federal ID No.	CSSTP-0007-00(848)
Status	Long Range
Detailed Description and Justification	This project involves adding one general purpose lane in each direction along SR 20 (Buford Drive / Mall of Georgia Parkway) between I-985 and SR 324 (Gravel Springs Road). See also other GW-020 line items and refer to AR-941 for more information on the MAC concept.
Service Type	General Purpose Roadway Capacity
Sponsor	GDOT
Jurisdiction	Gwinnett County
Existing Thru Lane	4 (applicable for road projects only)
Planned Thru Lane	6 (applicable for road projects only)
Corridor Length	1.1 miles (not applicable for all project types)
Network Year	2020 (required if modeled for conformity)
Completion Date	2020
Analysis Level	In the Region's Air Quality Conformity Analysis



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Phase Status & Funding Information for 06-11 TIP		FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
				FEDERAL	STATE	BONDS	LOCAL/OTHER
PE	General Federal Aid - 2014-2030	LR 2014-2020	$378,000	$302,400	$75,600	$0,000	$0,000
ROW	General Federal Aid - 2014-2030	LR 2014-2020	$1,400,000	$1,120,000	$280,000	$0,000	$0,000
CST	General Federal Aid - 2014-2030	LR 2014-2020	$5,649,600	$4,519,680	$1,129,920	$0,000	$0,000
				$5,942,080	$1,485,520	$0,000	$0,000

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

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

ARC

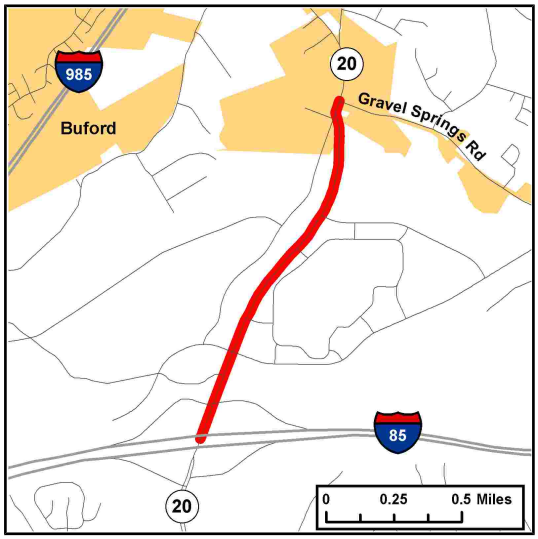
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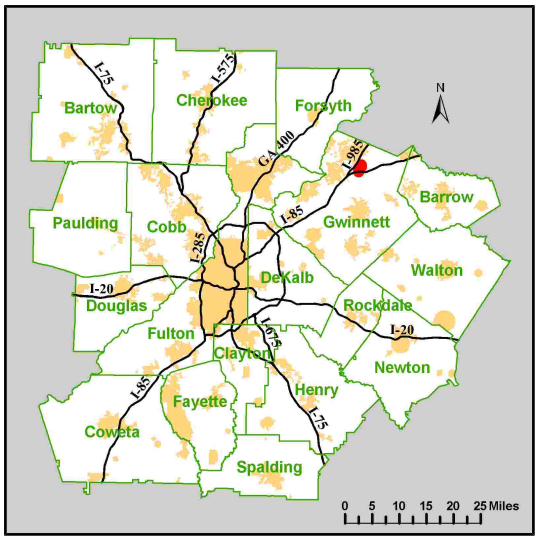
GW-020C

Atlanta Region - Envision6 Transportation Plan

PROJECT FACT SHEET

Short Title	METRO ARTERIAL CONNECTOR [ALIGNMENT THROUGH CITY OF LAWRENCEVILLE] - SR 20 (BUFORD DRIVE / MALL OF GEORGIA PARKWAY) FROM SR 324 (GRAVEL SPRINGS ROAD) TO I-85 NORTH
GDOT Project No.	0007849
Federal ID No.	CSSTP-0007-00(849)
Status	Long Range
Detailed Description and Justification	This project involves adding one general purpose lane in each direction along SR 20 (Buford Drive / Mall of Georgia Parkway) between SR 324 (Gravel Springs Road) and I-85 North. See also other GW-020 line items and refer to AR-941 for more information on the MAC concept.
Service Type	General Purpose Roadway Capacity
Sponsor	GDOT
Jurisdiction	Gwinnett County
Existing Thru Lane	6 (applicable for road projects only)
Planned Thru Lane	8 (applicable for road projects only)
Corridor Length	1.4 miles (not applicable for all project types)
Network Year	2030 (required if modeled for conformity)
Completion Date	2030
Analysis Level	In the Region's Air Quality Conformity Analysis





Phase Status & Funding Information for 06-11 TIP		FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
				FEDERAL	STATE	BONDS	LOCAL/OTHER
PE	General Federal Aid - 2014-2030	LR 2014-2020	$1,013,000	$810,400	$202,600	$0,000	$0,000
ROW	General Federal Aid - 2014-2030	LR 2021-2030	$2,500,000	$2,000,000	$500,000	$0,000	$0,000
CST	General Federal Aid - 2014-2030	LR 2021-2030	$10,146,000	$8,116,800	$2,029,200	$0,000	$0,000
				$10,927,200	$2,731,800	$0,000	$0,000

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

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

ARC

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Appendix G – Capacity Analyses: Future Background Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.93			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1727			1796	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.32	1.00			0.76	1.00	0.21	1.00	1.00	0.07	1.00	1.00
Satd. Flow (perm)	599	1727			1412	1583	400	3539	1583	137	3539	1583
Volume (vph)	164	15	14	124	43	694	36	1358	5	399	992	32
Peak-hour factor, PHF	0.78	0.78	0.78	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Adj. Flow (vph)	210	19	18	129	45	723	38	1415	5	434	1078	35
RTOR Reduction (vph)	0	13	0	0	0	32	0	0	3	0	0	16
Lane Group Flow (vph)	210	24	0	0	174	691	38	1415	2	434	1078	19
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	30.0	30.0			13.4	26.5	51.9	48.3	48.3	67.4	57.8	57.8
Effective Green, g (s)	32.6	32.6			16.0	31.1	55.9	50.3	50.3	69.4	59.8	59.8
Actuated g/C Ratio	0.30	0.30			0.15	0.28	0.51	0.46	0.46	0.63	0.54	0.54
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	312	512			205	505	273	1618	724	311	1924	861
v/s Ratio Prot	c0.08	0.01				c0.19	0.01	0.40		c0.19	0.30	
v/s Ratio Perm	0.12				0.12	0.25	0.06		0.00	c0.69		0.01
v/c Ratio	0.67	0.05			0.85	1.37	0.14	0.87	0.00	1.40	0.56	0.02
Uniform Delay, d1	31.5	27.6			45.8	39.4	14.1	27.0	16.2	35.6	16.5	11.6
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	0.93	0.80	0.91
Incremental Delay, d2	5.6	0.0			26.4	177.8	0.2	6.9	0.0	195.2	1.1	0.0
Delay (s)	37.1	27.7			72.2	217.3	14.3	33.9	16.2	228.3	14.4	10.6
Level of Service	D	C			E	F	B	C	B	F	B	B
Approach Delay (s)		35.7			189.1			33.3			74.3	
Approach LOS		D			F			C			E	

Intersection Summary

HCM Average Control Delay	82.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	110.0	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

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	0.97	0.91			0.86	1.00	0.97		0.88			
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)	3433	5085			6408	1583	3433		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	5085			6408	1583	3433		2787			
Volume (vph)	225	1398	0	0	2073	442	526	0	121	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.99	0.99	0.99	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	250	1553	0	0	2094	446	584	0	134	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	189	0	0	36	0	0	0
Lane Group Flow (vph)	250	1553	0	0	2094	257	584	0	98	0	0	0
Turn Type	Prot					Perm	custom		custom			
Protected Phases	5	2			6							
Permitted Phases						6	4		4			
Actuated Green, G (s)	12.8	76.7			58.4	58.4	22.8		22.8			
Effective Green, g (s)	14.3	78.2			59.9	59.9	23.8		23.8			
Actuated g/C Ratio	0.13	0.71			0.54	0.54	0.22		0.22			
Clearance Time (s)	5.5	5.5			5.5	5.5	5.0		5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	446	3615			3489	862	743		603			
v/s Ratio Prot	c0.07	0.31			c0.33							
v/s Ratio Perm						0.16	c0.17		0.04			
v/c Ratio	0.56	0.43			0.60	0.30	0.79		0.16			
Uniform Delay, d1	44.9	6.6			16.9	13.6	40.7		35.0			
Progression Factor	0.84	1.20			0.77	0.57	1.00		1.00			
Incremental Delay, d2	1.5	0.3			0.3	0.3	5.5		0.1			
Delay (s)	39.0	8.3			13.3	8.1	46.2		35.1			
Level of Service	D	A			B	A	D		D			
Approach Delay (s)		12.5			12.4			44.1			0.0	
Approach LOS		B			B			D			A	

Intersection Summary

HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	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

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		0.86	1.00	0.97	0.91					0.95	0.91	0.95
Frt		1.00	0.85	1.00	1.00					1.00	0.98	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		6408	1583	3433	5085					1681	1588	1504
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		6408	1583	3433	5085					1681	1588	1504
Volume (vph)	0	1143	689	415	2073	0	0	0	0	410	0	238
Peak-hour factor, PHF	0.96	0.96	0.96	0.93	0.93	0.93	0.92	0.92	0.92	0.88	0.88	0.88
Adj. Flow (vph)	0	1191	718	446	2229	0	0	0	0	466	0	270
RTOR Reduction (vph)	0	0	373	0	0	0	0	0	0	0	3	3
Lane Group Flow (vph)	0	1191	345	446	2229	0	0	0	0	248	256	226
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						8	
Permitted Phases			2							8		8
Actuated Green, G (s)		51.3	51.3	20.2	76.5					23.0	23.0	23.0
Effective Green, g (s)		52.8	52.8	21.2	78.0					24.0	24.0	24.0
Actuated g/C Ratio		0.48	0.48	0.19	0.71					0.22	0.22	0.22
Clearance Time (s)		5.5	5.5	5.0	5.5					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3076	760	662	3606					367	346	328
v/s Ratio Prot		0.19		c0.13	c0.44							
v/s Ratio Perm			0.22							0.15	0.16	0.15
v/c Ratio		0.39	0.45	0.67	0.62					0.68	0.74	0.69
Uniform Delay, d1		18.3	19.0	41.2	8.3					39.4	40.1	39.6
Progression Factor		0.98	1.77	1.32	0.64					1.00	1.00	1.00
Incremental Delay, d2		0.3	1.5	2.1	0.6					4.9	8.0	5.9
Delay (s)		18.2	35.1	56.4	5.9					44.3	48.1	45.5
Level of Service		B	D	E	A					D	D	D
Approach Delay (s)		24.5			14.3			0.0			46.0	
Approach LOS		C			B			A			D	

Intersection Summary

HCM Average Control Delay	22.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Ideal Flow (vphpl)	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		0.95	1.00	1.00	0.95	0.97	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	3433	1583
Flt Permitted		1.00	1.00	0.08	1.00	0.95	1.00
Satd. Flow (perm)		3539	1583	145	3539	3433	1583
Volume (vph)	0	1532	101	348	1957	198	285
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.89	0.89
Adj. Flow (vph)	0	1563	103	370	2082	222	320
RTOR Reduction (vph)	0	0	39	0	0	0	0
Lane Group Flow (vph)	0	1563	64	370	2082	222	320
Turn Type	pm+pt		Perm	pm+pt			Free
Protected Phases	5	2		1	6	4	
Permitted Phases	2		2	6			Free
Actuated Green, G (s)		64.4	64.4	87.0	87.0	11.4	110.0
Effective Green, g (s)		66.4	66.4	89.0	89.0	13.0	110.0
Actuated g/C Ratio		0.60	0.60	0.81	0.81	0.12	1.00
Clearance Time (s)		6.0	6.0	5.0	6.0	5.6	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2136	956	392	2863	406	1583
v/s Ratio Prot		0.44		c0.16	0.59	c0.06	
v/s Ratio Perm			0.04	c0.60			0.20
v/c Ratio		0.73	0.07	0.94	0.73	0.55	0.20
Uniform Delay, d1		15.5	9.0	33.4	4.9	45.7	0.0
Progression Factor		0.78	1.14	1.47	0.76	1.00	1.00
Incremental Delay, d2		1.4	0.1	26.5	1.3	1.5	0.3
Delay (s)		13.4	10.3	75.6	5.0	47.2	0.3
Level of Service		B	B	E	A	D	A
Approach Delay (s)		13.3			15.7	19.5	
Approach LOS		B			B	B	

Intersection Summary

HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1691	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1691	1583
Volume (vph)	82	1014	6	196	1453	617	36	18	45	631	25	30
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	88	1090	6	220	1633	693	49	24	61	734	29	35
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	57	0	0	26
Lane Group Flow (vph)	88	1090	3	220	1633	693	49	24	4	372	391	9
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			Free			3			4
Actuated Green, G (s)	5.8	44.7	44.7	8.3	47.2	110.0	5.8	5.8	5.8	24.5	24.5	24.5
Effective Green, g (s)	8.5	47.7	47.7	11.0	50.2	110.0	8.0	8.0	8.0	27.3	27.3	27.3
Actuated g/C Ratio	0.08	0.43	0.43	0.10	0.46	1.00	0.07	0.07	0.07	0.25	0.25	0.25
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.2	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	137	1535	686	177	1615	1583	250	135	115	417	420	393
v/s Ratio Prot	0.05	0.31		c0.12	c0.46		0.01	0.01		0.22	c0.23	
v/s Ratio Perm			0.00			c0.44			0.00			0.01
v/c Ratio	0.64	0.71	0.00	1.24	1.01	0.44	0.20	0.18	0.04	0.89	0.93	0.02
Uniform Delay, d1	49.3	25.5	17.7	49.5	29.9	0.0	48.0	47.9	47.4	39.9	40.4	31.3
Progression Factor	1.00	1.00	1.00	0.86	1.14	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.9	1.6	0.0	140.3	22.3	0.7	0.4	0.6	0.1	20.6	27.3	0.0
Delay (s)	59.1	27.1	17.7	183.0	56.5	0.7	48.4	48.5	47.6	60.6	67.7	31.3
Level of Service	E	C	B	F	E	A	D	D	D	E	E	C
Approach Delay (s)		29.4			52.2			48.0			62.8	
Approach LOS		C			D			D			E	

Intersection Summary

HCM Average Control Delay	48.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	195	1453	144	239	1162	77	260	311	168	138	511	78
Peak-hour factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91	0.83	0.83	0.83	0.91	0.91	0.91
Adj. Flow (vph)	222	1651	164	263	1277	85	313	375	202	152	562	86
RTOR Reduction (vph)	0	0	48	0	0	36	0	0	153	0	0	67
Lane Group Flow (vph)	222	1651	116	263	1277	49	313	375	49	152	562	19
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	10.8	44.1	44.1	13.0	46.3	46.3	13.6	26.3	26.3	10.6	23.3	23.3
Effective Green, g (s)	12.8	47.1	47.1	15.0	49.3	49.3	15.6	29.3	29.3	12.6	26.3	26.3
Actuated g/C Ratio	0.11	0.39	0.39	0.12	0.41	0.41	0.13	0.24	0.24	0.10	0.22	0.22
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	366	1389	621	429	1454	650	446	864	387	360	776	347
v/s Ratio Prot	0.06	c0.47		c0.08	0.36		c0.09	c0.11		0.04	c0.16	
v/s Ratio Perm			0.07			0.03			0.03			0.01
v/c Ratio	0.61	1.19	0.19	0.61	0.88	0.08	0.70	0.43	0.13	0.42	0.72	0.05
Uniform Delay, d1	51.2	36.4	23.9	49.7	32.6	21.5	50.0	38.3	35.4	50.3	43.5	37.0
Progression 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
Incremental Delay, d2	2.8	92.4	0.1	2.6	6.3	0.0	4.9	1.6	0.7	0.8	5.8	0.3
Delay (s)	54.0	128.8	24.0	52.3	38.9	21.5	54.9	39.9	36.1	51.1	49.3	37.3
Level of Service	D	F	C	D	D	C	D	D	D	D	D	D
Approach Delay (s)		112.2			40.2			44.3			48.4	
Approach LOS		F			D			D			D	

Intersection Summary

HCM Average Control Delay	69.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	0	28	0	0	0	18	644	0	0	718	15
Peak Hour Factor	0.69	0.69	0.69	0.92	0.92	0.92	0.87	0.87	0.87	0.85	0.85	0.85
Hourly flow rate (vph)	14	0	41	0	0	0	21	740	0	0	845	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								367				
pX, platoon unblocked												
vC, conflicting volume	1265	1635	431	1245	1644	370	862			740		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1265	1635	431	1245	1644	370	862			740		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	100	93	100	100	100	97			100		
cM capacity (veh/h)	123	97	572	119	96	627	776			862		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	55	0	21	493	247	0	563	299
Volume Left	14	0	21	0	0	0	0	0
Volume Right	41	0	0	0	0	0	0	18
cSH	292	1700	776	1700	1700	1700	1700	1700
Volume to Capacity	0.19	0.00	0.03	0.29	0.15	0.00	0.33	0.18
Queue Length 95th (ft)	17	0	2	0	0	0	0	0
Control Delay (s)	20.1	0.0	9.8	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A	A					
Approach Delay (s)	20.1	0.0	0.3			0.0		
Approach LOS	C	A						

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	30.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	65	0	30	13	0	11	29	572	20	13	504	26
Peak Hour Factor	0.74	0.74	0.74	0.58	0.58	0.58	0.89	0.89	0.89	0.93	0.93	0.93
Hourly flow rate (vph)	88	0	41	22	0	19	33	643	22	14	542	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	989	1314	285	1059	1317	333	570			665		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	989	1314	285	1059	1317	333	570			665		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	53	100	94	86	100	97	97			98		
cM capacity (veh/h)	188	149	712	163	149	663	999			920		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	128	41	33	428	237	14	361	209
Volume Left	88	22	33	0	0	14	0	0
Volume Right	41	19	0	0	22	0	0	28
cSH	245	249	999	1700	1700	920	1700	1700
Volume to Capacity	0.52	0.17	0.03	0.25	0.14	0.02	0.21	0.12
Queue Length 95th (ft)	69	15	3	0	0	1	0	0
Control Delay (s)	34.8	22.4	8.7	0.0	0.0	9.0	0.0	0.0
Lane LOS	D	C	A			A		
Approach Delay (s)	34.8	22.4	0.4			0.2		
Approach LOS	D	C						

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.95			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1767			1785	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.23	1.00			0.70	1.00	0.07	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	436	1767			1306	1583	128	3539	1583	120	3539	1583
Volume (vph)	266	38	20	125	18	408	33	1605	9	556	1723	85
Peak-hour factor, PHF	0.80	0.80	0.80	0.94	0.94	0.94	0.84	0.84	0.84	0.88	0.88	0.88
Adj. Flow (vph)	332	48	25	133	19	434	39	1911	11	632	1958	97
RTOR Reduction (vph)	0	13	0	0	0	2	0	0	3	0	0	27
Lane Group Flow (vph)	332	60	0	0	152	432	39	1911	8	632	1958	70
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	26.4	26.4			11.4	50.4	60.8	56.0	56.0	101.0	90.2	90.2
Effective Green, g (s)	29.0	29.0			14.0	55.0	64.8	58.0	58.0	103.0	92.2	92.2
Actuated g/C Ratio	0.21	0.21			0.10	0.39	0.46	0.41	0.41	0.74	0.66	0.66
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	195	366			131	667	139	1466	656	572	2331	1043
v/s Ratio Prot	c0.13	0.03				0.19	0.01	c0.54		c0.32	0.55	
v/s Ratio Perm	c0.22				0.12	0.08	0.12		0.01	0.49		0.04
v/c Ratio	1.70	0.16			1.16	0.65	0.28	1.30	0.01	1.10	0.84	0.07
Uniform Delay, d1	52.3	45.5			63.0	34.6	43.8	41.0	24.1	51.7	18.3	8.5
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	0.89	1.48	2.54
Incremental Delay, d2	337.1	0.2			128.1	2.2	1.1	141.7	0.0	65.5	3.0	0.1
Delay (s)	389.5	45.7			191.1	36.8	44.9	182.7	24.2	111.7	30.1	21.8
Level of Service	F	D			F	D	D	F	C	F	C	C
Approach Delay (s)		327.5			76.8			179.1			49.0	
Approach LOS		F			E			F			D	

Intersection Summary

HCM Average Control Delay	117.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

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	0.97	0.91			0.86	1.00	0.97		0.88			
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)	3433	5085			6408	1583	3433		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	5085			6408	1583	3433		2787			
Volume (vph)	270	2299	0	0	1520	558	581	0	300	0	0	0
Peak-hour factor, PHF	0.96	0.96	0.96	0.97	0.97	0.97	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	281	2395	0	0	1567	575	646	0	333	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	245	0	0	12	0	0	0
Lane Group Flow (vph)	281	2395	0	0	1567	330	646	0	321	0	0	0
Turn Type	Prot					Perm	custom		custom			
Protected Phases	5	2			6							
Permitted Phases						6	4		4			
Actuated Green, G (s)	14.7	99.0			78.8	78.8	30.5		30.5			
Effective Green, g (s)	16.2	100.5			80.3	80.3	31.5		31.5			
Actuated g/C Ratio	0.12	0.72			0.57	0.57	0.22		0.22			
Clearance Time (s)	5.5	5.5			5.5	5.5	5.0		5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	397	3650			3675	908	772		627			
v/s Ratio Prot	0.08	c0.47			0.24							
v/s Ratio Perm						0.21	c0.19		0.12			
v/c Ratio	0.71	0.66			0.43	0.36	0.84		0.51			
Uniform Delay, d1	59.6	10.5			16.8	16.1	51.8		47.5			
Progression Factor	1.26	0.61			0.85	5.51	1.00		1.00			
Incremental Delay, d2	4.5	0.7			0.0	0.1	7.9		0.7			
Delay (s)	79.8	7.1			14.3	88.6	59.7		48.2			
Level of Service	E	A			B	F	E		D			
Approach Delay (s)		14.8			34.3			55.8			0.0	
Approach LOS		B			C			E			A	

Intersection Summary

HCM Average Control Delay	28.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

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		0.86	1.00	0.97	0.91					0.95	0.91	0.95
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6408	1583	3433	5085					1681	1610	1504
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6408	1583	3433	5085					1681	1610	1504
Volume (vph)	0	2107	511	165	1913	0	0	0	0	495	0	116
Peak-hour factor, PHF	0.94	0.94	0.94	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2241	544	168	1952	0	0	0	0	538	0	126
RTOR Reduction (vph)	0	0	205	0	0	0	0	0	0	0	0	22
Lane Group Flow (vph)	0	2241	339	168	1952	0	0	0	0	269	269	104
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						8	
Permitted Phases			2							8		8
Actuated Green, G (s)		85.7	85.7	12.0	102.7					26.8	26.8	26.8
Effective Green, g (s)		87.2	87.2	13.0	104.2					27.8	27.8	27.8
Actuated g/C Ratio		0.62	0.62	0.09	0.74					0.20	0.20	0.20
Clearance Time (s)		5.5	5.5	5.0	5.5					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3991	986	319	3785					334	320	299
v/s Ratio Prot		c0.35		0.05	c0.38							
v/s Ratio Perm			0.21							0.16	0.17	0.07
v/c Ratio		0.56	0.34	0.53	0.52					0.81	0.84	0.35
Uniform Delay, d1		15.3	12.7	60.6	7.4					53.5	54.0	48.3
Progression Factor		0.37	0.13	1.08	0.87					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.6	1.3	0.4					13.2	17.7	0.7
Delay (s)		6.0	2.3	66.6	6.9					66.7	71.7	49.0
Level of Service		A	A	E	A					E	E	D
Approach Delay (s)		5.3			11.6			0.0			65.4	
Approach LOS		A			B			A			E	

Intersection Summary

HCM Average Control Delay	14.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Ideal Flow (vphpl)	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		0.95	1.00	1.00	0.95	0.97	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	3433	1583
Flt Permitted		1.00	1.00	0.04	1.00	0.95	1.00
Satd. Flow (perm)		3539	1583	75	3539	3433	1583
Volume (vph)	0	2003	98	276	1737	351	625
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.90	0.90
Adj. Flow (vph)	0	2044	100	282	1772	390	694
RTOR Reduction (vph)	0	0	23	0	0	0	0
Lane Group Flow (vph)	0	2044	78	282	1772	390	694
Turn Type	pm+pt		Perm	pm+pt			Free
Protected Phases	5	2		1	6	4	
Permitted Phases	2		2	6			Free
Actuated Green, G (s)		93.0	93.0	114.0	114.0	14.4	140.0
Effective Green, g (s)		95.0	95.0	116.0	116.0	16.0	140.0
Actuated g/C Ratio		0.68	0.68	0.83	0.83	0.11	1.00
Clearance Time (s)		6.0	6.0	5.0	6.0	5.6	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2401	1074	268	2932	392	1583
v/s Ratio Prot		0.58		c0.13	0.50	c0.11	
v/s Ratio Perm			0.05	c0.74			0.44
v/c Ratio		0.85	0.07	1.05	0.60	0.99	0.44
Uniform Delay, d1		17.1	7.6	51.8	4.1	62.0	0.0
Progression Factor		1.00	1.00	1.15	1.42	1.00	1.00
Incremental Delay, d2		4.0	0.1	65.7	0.8	43.8	0.9
Delay (s)		21.2	7.7	125.2	6.6	105.8	0.9
Level of Service		C	A	F	A	F	A
Approach Delay (s)		20.5			22.9	38.6	
Approach LOS		C			C	D	

Intersection Summary

HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	140.0	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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1698	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1698	1583
Volume (vph)	75	1692	18	156	1298	651	57	30	62	381	33	21
Peak-hour factor, PHF	0.94	0.94	0.94	0.95	0.95	0.95	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	80	1800	19	164	1366	685	61	32	67	428	37	24
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	63	0	0	19
Lane Group Flow (vph)	80	1800	15	164	1366	685	61	32	4	226	239	5
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			Free			3			4
Actuated Green, G (s)	13.3	81.2	81.2	27.4	95.3	174.0	8.5	8.5	8.5	30.2	30.2	30.2
Effective Green, g (s)	16.0	84.2	84.2	30.1	98.3	174.0	10.7	10.7	10.7	33.0	33.0	33.0
Actuated g/C Ratio	0.09	0.48	0.48	0.17	0.56	1.00	0.06	0.06	0.06	0.19	0.19	0.19
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.2	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	163	1713	766	306	1999	1583	211	115	97	319	322	300
v/s Ratio Prot	0.05	c0.51		c0.09	c0.39		0.02	0.02		0.13	c0.14	
v/s Ratio Perm			0.01			c0.43			0.00			0.00
v/c Ratio	0.49	1.05	0.02	0.54	0.68	0.43	0.29	0.28	0.04	0.71	0.74	0.02
Uniform Delay, d1	75.1	44.9	23.4	65.6	26.8	0.0	78.0	78.0	76.8	66.0	66.5	57.3
Progression 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
Incremental Delay, d2	2.3	36.5	0.0	1.8	1.9	0.9	0.8	1.3	0.2	7.0	8.9	0.0
Delay (s)	77.4	81.4	23.4	67.4	28.7	0.9	78.8	79.3	77.0	73.0	75.4	57.3
Level of Service	E	F	C	E	C	A	E	E	E	E	E	E
Approach Delay (s)		80.6			23.0			78.1			73.4	
Approach LOS		F			C			E			E	

Intersection Summary

HCM Average Control Delay	53.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	174.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	387	1500	88	292	1245	102	250	705	271	286	481	82
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96	0.90	0.90	0.90
Adj. Flow (vph)	421	1630	96	317	1353	111	260	734	282	318	534	91
RTOR Reduction (vph)	0	0	27	0	0	42	0	0	158	0	0	70
Lane Group Flow (vph)	421	1630	69	317	1353	69	260	734	124	318	534	21
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	14.0	50.2	50.2	13.8	50.0	50.0	12.6	27.0	27.0	13.0	27.4	27.4
Effective Green, g (s)	16.0	53.2	53.2	15.8	53.0	53.0	14.6	30.0	30.0	15.0	30.4	30.4
Actuated g/C Ratio	0.12	0.41	0.41	0.12	0.41	0.41	0.11	0.23	0.23	0.12	0.23	0.23
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	423	1448	648	417	1443	645	386	817	365	396	828	370
v/s Ratio Prot	c0.12	c0.46		0.09	0.38		0.08	c0.21		c0.09	0.15	
v/s Ratio Perm			0.04			0.04			0.08			0.01
v/c Ratio	1.00	1.13	0.11	0.76	0.94	0.11	0.67	0.90	0.34	0.80	0.64	0.06
Uniform Delay, d1	57.0	38.4	23.7	55.3	36.9	23.8	55.4	48.5	41.7	56.1	44.9	38.7
Progression 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
Incremental Delay, d2	42.3	66.1	0.1	8.0	11.7	0.1	4.6	14.7	2.5	11.2	3.9	0.3
Delay (s)	99.2	104.5	23.8	63.2	48.7	23.9	60.0	63.3	44.3	67.2	48.8	39.0
Level of Service	F	F	C	E	D	C	E	E	D	E	D	D
Approach Delay (s)		99.8			49.7			58.4			54.1	
Approach LOS		F			D			E			D	

Intersection Summary

HCM Average Control Delay	69.7	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	0	31	0	0	0	43	747	0	0	453	32
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.98	0.98	0.98	0.95	0.95	0.95
Hourly flow rate (vph)	32	0	40	0	0	0	44	762	0	0	477	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								367				
pX, platoon unblocked												
vC, conflicting volume	963	1344	255	1129	1361	381	511			762		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	963	1344	255	1129	1361	381	511			762		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	100	95	100	100	100	96			100		
cM capacity (veh/h)	204	144	744	145	141	617	1051			846		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	73	0	44	508	254	0	318	193
Volume Left	32	0	44	0	0	0	0	0
Volume Right	40	0	0	0	0	0	0	34
cSH	340	1700	1051	1700	1700	1700	1700	1700
Volume to Capacity	0.21	0.00	0.04	0.30	0.15	0.00	0.19	0.11
Queue Length 95th (ft)	20	0	3	0	0	0	0	0
Control Delay (s)	18.4	0.0	8.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A	A					
Approach Delay (s)	18.4	0.0	0.5			0.0		
Approach LOS	C	A						

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	37.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	0	43	22	0	14	60	678	13	11	612	40
Peak Hour Factor	0.82	0.82	0.82	0.60	0.60	0.60	0.98	0.98	0.98	0.86	0.86	0.86
Hourly flow rate (vph)	17	0	40	19	0	18	44	671	9	11	619	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1099	1426	327	1135	1438	340	653			680		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1099	1426	327	1135	1438	340	653			680		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	94	86	100	97	95			99		
cM capacity (veh/h)	155	126	669	141	124	656	930			908		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	57	37	44	447	233	11	413	240
Volume Left	17	19	44	0	0	11	0	0
Volume Right	40	18	0	0	9	0	0	34
cSH	340	225	930	1700	1700	908	1700	1700
Volume to Capacity	0.17	0.16	0.05	0.26	0.14	0.01	0.24	0.14
Queue Length 95th (ft)	15	14	4	0	0	1	0	0
Control Delay (s)	17.7	24.2	9.1	0.0	0.0	9.0	0.0	0.0
Lane LOS	C	C	A			A		
Approach Delay (s)	17.7	24.2	0.6			0.1		
Approach LOS	C	C						

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.92			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1717			1798	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.35	1.00			0.64	1.00	0.07	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	651	1717			1192	1583	124	3539	1583	116	3539	1583
Volume (vph)	279	101	110	129	51	474	23	1404	9	327	1395	122
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.84	0.84	0.84
Adj. Flow (vph)	328	119	129	152	60	558	27	1652	11	389	1661	145
RTOR Reduction (vph)	0	27	0	0	0	12	0	0	4	0	0	42
Lane Group Flow (vph)	328	221	0	0	212	546	27	1652	7	389	1661	103
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	46.2	46.2			29.2	56.4	61.3	58.0	58.0	91.2	81.9	81.9
Effective Green, g (s)	48.8	48.8			31.8	61.0	65.3	60.0	60.0	93.2	83.9	83.9
Actuated g/C Ratio	0.33	0.33			0.21	0.41	0.44	0.40	0.40	0.62	0.56	0.56
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	309	559			253	686	112	1416	633	394	1979	885
v/s Ratio Prot	c0.09	0.13				c0.15	0.01	c0.47		c0.19	0.47	
v/s Ratio Perm	c0.25				0.18	0.19	0.10		0.00	0.42		0.07
v/c Ratio	1.06	0.40			0.84	0.80	0.24	1.17	0.01	0.99	0.84	0.12
Uniform Delay, d1	49.0	39.2			56.6	39.0	28.7	45.0	27.1	62.3	27.5	15.6
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.05	0.85	0.66
Incremental Delay, d2	68.4	0.5			20.8	6.3	1.1	83.0	0.0	37.9	3.8	0.2
Delay (s)	117.3	39.6			77.5	45.4	29.8	128.0	27.2	103.6	27.2	10.5
Level of Service	F	D			E	D	C	F	C	F	C	B
Approach Delay (s)		83.9			54.2			125.8			39.6	
Approach LOS		F			D			F			D	

Intersection Summary

HCM Average Control Delay	74.5	HCM Level of Service	E
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	95.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

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	0.97	0.91			0.86	1.00	0.97		0.88			
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)	3433	5085			6408	1583	3433		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	5085			6408	1583	3433		2787			
Volume (vph)	240	1950	0	0	1548	618	511	0	248	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Adj. Flow (vph)	253	2053	0	0	1739	694	647	0	314	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	278	0	0	15	0	0	0
Lane Group Flow (vph)	253	2053	0	0	1739	416	647	0	299	0	0	0
Turn Type	Prot					Perm	custom		custom			
Protected Phases	5	2			6							
Permitted Phases						6	4		4			
Actuated Green, G (s)	16.4	106.6			84.7	84.7	32.9		32.9			
Effective Green, g (s)	17.9	108.1			86.2	86.2	33.9		33.9			
Actuated g/C Ratio	0.12	0.72			0.57	0.57	0.23		0.23			
Clearance Time (s)	5.5	5.5			5.5	5.5	5.0		5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	410	3665			3682	910	776		630			
v/s Ratio Prot	c0.07	c0.40			0.27							
v/s Ratio Perm						0.26	c0.19		0.11			
v/c Ratio	0.62	0.56			0.47	0.46	0.83		0.48			
Uniform Delay, d1	62.8	9.8			18.6	18.4	55.4		50.3			
Progression Factor	0.88	1.04			0.89	0.58	1.00		1.00			
Incremental Delay, d2	2.2	0.5			0.0	0.1	7.7		0.6			
Delay (s)	57.7	10.7			16.6	10.7	63.0		50.9			
Level of Service	E	B			B	B	E		D			
Approach Delay (s)		15.9			14.9			59.1			0.0	
Approach LOS		B			B			E			A	

Intersection Summary

HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

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		0.86	1.00	0.97	0.91					0.95	0.91	0.95
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6408	1583	3433	5085					1681	1610	1504
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6408	1583	3433	5085					1681	1610	1504
Volume (vph)	0	1666	389	231	1768	0	0	0	0	565	0	126
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.79	0.79	0.79
Adj. Flow (vph)	0	1811	423	246	1881	0	0	0	0	715	0	159
RTOR Reduction (vph)	0	0	189	0	0	0	0	0	0	0	0	13
Lane Group Flow (vph)	0	1811	234	246	1881	0	0	0	0	358	357	146
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						8	
Permitted Phases			2							8		8
Actuated Green, G (s)		81.4	81.4	14.8	101.2					38.3	38.3	38.3
Effective Green, g (s)		82.9	82.9	15.8	102.7					39.3	39.3	39.3
Actuated g/C Ratio		0.55	0.55	0.11	0.68					0.26	0.26	0.26
Clearance Time (s)		5.5	5.5	5.0	5.5					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3541	875	362	3482					440	422	394
v/s Ratio Prot		0.28		c0.07	c0.37							
v/s Ratio Perm			0.15							0.21	0.22	0.10
v/c Ratio		0.51	0.27	0.68	0.54					0.81	0.85	0.37
Uniform Delay, d1		20.9	17.6	64.7	11.8					51.9	52.5	45.3
Progression Factor		0.61	0.44	1.23	0.87					1.00	1.00	1.00
Incremental Delay, d2		0.4	0.5	4.2	0.5					11.0	14.4	0.6
Delay (s)		13.2	8.3	83.9	10.8					62.9	66.9	45.8
Level of Service		B	A	F	B					E	E	D
Approach Delay (s)		12.3			19.3			0.0			61.4	
Approach LOS		B			B			A			E	

Intersection Summary

HCM Average Control Delay	23.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Ideal Flow (vphpl)	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		0.95	1.00	1.00	0.95	0.97	1.00
Frt		1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)		3539	1583	1770	3539	3433	1583
Flt Permitted		1.00	1.00	0.04	1.00	0.95	1.00
Satd. Flow (perm)		3539	1583	77	3539	3433	1583
Volume (vph)	0	1702	108	278	1622	263	385
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.88	0.88
Adj. Flow (vph)	0	1850	117	309	1802	299	438
RTOR Reduction (vph)	0	0	29	0	0	0	0
Lane Group Flow (vph)	0	1850	88	309	1802	299	438
Turn Type	pm+pt		Perm	pm+pt			Free
Protected Phases	5	2		1	6	4	
Permitted Phases	2		2	6			Free
Actuated Green, G (s)		91.0	91.0	121.1	121.1	17.3	150.0
Effective Green, g (s)		93.0	93.0	123.1	123.1	18.9	150.0
Actuated g/C Ratio		0.62	0.62	0.82	0.82	0.13	1.00
Clearance Time (s)		6.0	6.0	5.0	6.0	5.6	
Vehicle Extension (s)		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		2194	981	358	2904	433	1583
v/s Ratio Prot		0.52		c0.15	0.51	c0.09	
v/s Ratio Perm			0.06	c0.56			0.28
v/c Ratio		0.84	0.09	0.86	0.62	0.69	0.28
Uniform Delay, d1		22.7	11.5	51.5	4.9	62.8	0.0
Progression Factor		1.00	1.00	1.55	0.84	1.00	1.00
Incremental Delay, d2		4.2	0.2	16.8	0.9	4.7	0.4
Delay (s)		26.9	11.6	96.4	5.0	67.5	0.4
Level of Service		C	B	F	A	E	A
Approach Delay (s)		26.0			18.4	27.6	
Approach LOS		C			B	C	

Intersection Summary

HCM Average Control Delay	22.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1695	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1695	1583
Volume (vph)	152	938	1	164	1360	374	137	78	210	539	36	54
Peak-hour factor, PHF	0.86	0.86	0.86	0.91	0.91	0.91	0.75	0.75	0.75	0.94	0.94	0.94
Adj. Flow (vph)	177	1091	1	180	1495	411	183	104	280	573	38	57
RTOR Reduction (vph)	0	0	1	0	0	0	0	0	138	0	0	39
Lane Group Flow (vph)	177	1091	0	180	1495	411	183	104	142	298	313	18
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			Free			3			4
Actuated Green, G (s)	18.1	74.2	74.2	18.4	74.5	177.0	20.6	20.6	20.6	37.1	37.1	37.1
Effective Green, g (s)	20.8	77.2	77.2	21.1	77.5	177.0	22.8	22.8	22.8	39.9	39.9	39.9
Actuated g/C Ratio	0.12	0.44	0.44	0.12	0.44	1.00	0.13	0.13	0.13	0.23	0.23	0.23
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.2	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	208	1544	690	211	1550	1583	442	240	204	379	382	357
v/s Ratio Prot	0.10	0.31		c0.10	c0.42		0.05	0.06		0.18	c0.18	
v/s Ratio Perm			0.00			c0.26			c0.09			0.01
v/c Ratio	0.85	0.71	0.00	0.85	0.96	0.26	0.41	0.43	0.70	0.79	0.82	0.05
Uniform Delay, d1	76.6	40.7	28.1	76.4	48.4	0.0	71.0	71.1	73.8	64.5	65.1	53.7
Progression 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
Incremental Delay, d2	26.8	1.5	0.0	26.8	15.8	0.4	0.6	1.3	9.9	10.3	12.8	0.1
Delay (s)	103.4	42.2	28.1	103.2	64.3	0.4	71.6	72.4	83.8	74.8	78.0	53.8
Level of Service	F	D	C	F	E	A	E	E	F	E	E	D
Approach Delay (s)		50.7			55.0			77.7			74.5	
Approach LOS		D			E			E			E	

Intersection Summary

HCM Average Control Delay	59.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	177.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	298	1305	56	389	1439	115	159	416	246	266	334	71
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.87	0.87	0.87	0.91	0.91	0.91
Adj. Flow (vph)	327	1434	62	427	1581	126	183	478	283	292	367	78
RTOR Reduction (vph)	0	0	19	0	0	40	0	0	165	0	0	62
Lane Group Flow (vph)	327	1434	43	427	1581	86	183	478	118	292	367	17
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	13.6	48.9	48.9	18.8	54.1	54.1	11.8	22.7	22.7	13.6	24.5	24.5
Effective Green, g (s)	15.6	51.9	51.9	20.8	57.1	57.1	13.8	25.7	25.7	15.6	27.5	27.5
Actuated g/C Ratio	0.12	0.40	0.40	0.16	0.44	0.44	0.11	0.20	0.20	0.12	0.21	0.21
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	412	1413	632	549	1554	695	364	700	313	412	749	335
v/s Ratio Prot	0.10	0.41		c0.12	c0.45		0.05	c0.14		c0.09	0.10	
v/s Ratio Perm			0.03			0.05			0.07			0.01
v/c Ratio	0.79	1.01	0.07	0.78	1.02	0.12	0.50	0.68	0.38	0.71	0.49	0.05
Uniform Delay, d1	55.6	39.0	24.1	52.4	36.4	21.6	54.9	48.4	45.2	55.0	45.1	40.8
Progression 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
Incremental Delay, d2	10.1	27.7	0.0	6.9	27.3	0.1	1.1	5.3	3.4	5.5	2.3	0.3
Delay (s)	65.7	66.7	24.2	59.2	63.7	21.7	56.0	53.7	48.6	60.5	47.4	41.1
Level of Service	E	E	C	E	E	C	E	D	D	E	D	D
Approach Delay (s)		65.1			60.3			52.6			51.9	
Approach LOS		E			E			D			D	

Intersection Summary

HCM Average Control Delay	59.5	HCM Level of Service	E
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	0	86	0	0	0	32	531	0	0	548	37
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.98	0.98	0.98	0.96	0.96	0.96
Hourly flow rate (vph)	27	0	106	0	0	0	33	542	0	0	571	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								367				
pX, platoon unblocked												
vC, conflicting volume	926	1197	305	999	1217	271	609			542		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	926	1197	305	999	1217	271	609			542		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	88	100	85	100	100	100	97			100		
cM capacity (veh/h)	218	178	691	163	174	727	965			1023		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	133	0	33	361	181	0	381	229
Volume Left	27	0	33	0	0	0	0	0
Volume Right	106	0	0	0	0	0	0	39
cSH	479	1700	965	1700	1700	1700	1700	1700
Volume to Capacity	0.28	0.00	0.03	0.21	0.11	0.00	0.22	0.13
Queue Length 95th (ft)	28	0	3	0	0	0	0	0
Control Delay (s)	15.4	0.0	8.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A	A					
Approach Delay (s)	15.4	0.0	0.5			0.0		
Approach LOS	C	A						

Intersection Summary

Average Delay	1.8		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	41	0	45	18	1	13	61	516	22	21	489	47
Peak Hour Factor	0.94	0.94	0.94	0.58	0.58	0.58	0.96	0.96	0.96	0.87	0.87	0.87
Hourly flow rate (vph)	44	0	48	31	2	22	64	538	23	24	562	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1056	1325	308	1053	1340	280	616			560		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1056	1325	308	1053	1340	280	616			560		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	100	93	80	99	97	93			98		
cM capacity (veh/h)	161	141	688	157	138	717	960			1007		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	91	55	64	358	202	24	375	241
Volume Left	44	31	64	0	0	24	0	0
Volume Right	48	22	0	0	23	0	0	54
cSH	268	228	960	1700	1700	1007	1700	1700
Volume to Capacity	0.34	0.24	0.07	0.21	0.12	0.02	0.22	0.14
Queue Length 95th (ft)	36	23	5	0	0	2	0	0
Control Delay (s)	25.2	25.8	9.0	0.0	0.0	8.7	0.0	0.0
Lane LOS	D	D	A			A		
Approach Delay (s)	25.2	25.8	0.9			0.3		
Approach LOS	D	D						

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix H – Capacity Analyses: Future Background Conditions with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1727		1770	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.60	1.00		0.73	1.00	1.00	0.27	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1119	1727		1365	1863	1583	494	3539	1583	3433	3539	1583
Volume (vph)	164	15	14	124	43	694	36	1358	5	399	992	32
Peak-hour factor, PHF	0.78	0.78	0.78	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Adj. Flow (vph)	210	19	18	129	45	723	38	1415	5	434	1078	35
RTOR Reduction (vph)	0	14	0	0	0	29	0	0	2	0	0	14
Lane Group Flow (vph)	210	23	0	129	45	694	38	1415	3	434	1078	21
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	28.3	28.3		16.3	16.3	47.4	52.3	47.0	47.0	31.1	72.8	72.8
Effective Green, g (s)	30.9	30.9		18.9	18.9	52.0	56.3	49.0	49.0	33.1	74.8	74.8
Actuated g/C Ratio	0.25	0.25		0.15	0.15	0.42	0.45	0.39	0.39	0.26	0.60	0.60
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	318	427		206	282	709	297	1387	621	909	2118	947
v/s Ratio Prot	c0.04	0.01			0.02	c0.26	0.01	c0.40		0.13	0.30	
v/s Ratio Perm	0.12			0.09		0.18	0.05		0.00			0.01
v/c Ratio	0.66	0.05		0.63	0.16	0.98	0.13	1.02	0.01	0.48	0.51	0.02
Uniform Delay, d1	41.8	35.9		49.7	46.1	36.0	19.3	38.0	23.2	38.7	14.5	10.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.1		5.8	0.3	28.2	0.2	29.4	0.0	0.4	0.9	0.0
Delay (s)	46.9	36.0		55.6	46.4	64.1	19.5	67.4	23.2	39.1	15.4	10.3
Level of Service	D	D		E	D	E	B	E	C	D	B	B
Approach Delay (s)		45.2			62.0			66.0			21.9	
Approach LOS		D			E			E			C	

Intersection Summary

HCM Average Control Delay	47.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	3433	1710	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	3433	1710	
Volume (vph)	82	1014	6	196	1453	617	36	18	45	631	25	30
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	88	1090	6	220	1633	693	49	24	61	734	29	35
RTOR Reduction (vph)	0	0	2	0	0	0	0	0	7	0	27	0
Lane Group Flow (vph)	88	1090	4	220	1633	693	49	24	54	734	37	0
Turn Type	Prot		Perm	Prot		Free	Prot		pm+ov	Prot		
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases			6			Free			8			
Actuated Green, G (s)	14.5	53.8	53.8	28.7	68.0	145.0	4.6	4.9	33.6	30.9	31.2	
Effective Green, g (s)	17.2	56.8	56.8	31.4	71.0	145.0	6.8	7.1	38.5	33.7	34.0	
Actuated g/C Ratio	0.12	0.39	0.39	0.22	0.49	1.00	0.05	0.05	0.27	0.23	0.23	
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.7	6.8	6.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	210	1386	620	383	1733	1583	161	91	464	798	401	
v/s Ratio Prot	0.05	0.31		c0.12	c0.46		0.01	0.01	0.03	c0.21	0.02	
v/s Ratio Perm			0.00			c0.44			0.01			
v/c Ratio	0.42	0.79	0.01	0.57	0.94	0.44	0.30	0.26	0.12	0.92	0.09	
Uniform Delay, d1	59.3	38.8	26.9	50.8	35.1	0.0	66.8	66.4	40.4	54.3	43.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	3.0	0.0	2.1	11.7	0.9	1.1	1.6	0.1	15.5	0.1	
Delay (s)	60.6	41.8	26.9	52.9	46.8	0.9	67.9	68.0	40.5	69.8	43.5	
Level of Service	E	D	C	D	D	A	E	E	D	E	D	
Approach Delay (s)		43.1			34.8			55.4			67.7	
Approach LOS		D			C			E			E	

Intersection Summary

HCM Average Control Delay	43.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	195	1453	144	239	1162	77	260	311	168	138	511	78
Peak-hour factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91	0.83	0.83	0.83	0.91	0.91	0.91
Adj. Flow (vph)	222	1651	164	263	1277	85	313	375	202	152	562	86
RTOR Reduction (vph)	0	0	94	0	0	47	0	0	121	0	0	64
Lane Group Flow (vph)	222	1651	70	263	1277	38	313	375	81	152	562	22
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	9.0	28.1	28.1	10.2	29.3	29.3	6.0	19.7	19.7	6.0	19.7	19.7
Effective Green, g (s)	11.0	31.1	31.1	12.2	32.3	32.3	8.0	22.7	22.7	8.0	22.7	22.7
Actuated g/C Ratio	0.12	0.35	0.35	0.14	0.36	0.36	0.09	0.25	0.25	0.09	0.25	0.25
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	420	1757	547	465	1270	568	305	893	399	305	893	399
v/s Ratio Prot	0.06	0.32		c0.08	c0.36		c0.09	0.11		0.04	c0.16	
v/s Ratio Perm			0.04			0.02			0.05			0.01
v/c Ratio	0.53	0.94	0.13	0.57	1.01	0.07	1.03	0.42	0.20	0.50	0.63	0.05
Uniform Delay, d1	37.1	28.5	20.2	36.4	28.9	18.9	41.0	28.1	26.5	39.1	29.9	25.5
Progression 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
Incremental Delay, d2	1.2	10.3	0.1	1.6	26.6	0.0	58.4	1.5	1.1	1.3	3.4	0.3
Delay (s)	38.3	38.8	20.3	38.0	55.4	19.0	99.4	29.6	27.7	40.4	33.3	25.8
Level of Service	D	D	C	D	E	B	F	C	C	D	C	C
Approach Delay (s)		37.3			50.7			53.7			33.8	
Approach LOS		D			D			D			C	

Intersection Summary

HCM Average Control Delay	43.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1767		1770	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.63	1.00		0.71	1.00	1.00	0.06	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1173	1767		1322	1863	1583	116	3539	1583	3433	3539	1583
Volume (vph)	266	38	20	125	18	408	33	1605	9	556	1723	85
Peak-hour factor, PHF	0.80	0.80	0.80	0.94	0.94	0.94	0.84	0.84	0.84	0.88	0.88	0.88
Adj. Flow (vph)	332	48	25	133	19	434	39	1911	11	632	1958	97
RTOR Reduction (vph)	0	15	0	0	0	11	0	0	3	0	0	21
Lane Group Flow (vph)	332	58	0	133	19	423	39	1911	8	632	1958	76
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	31.2	31.2		19.2	19.2	52.4	67.4	62.0	62.0	33.2	89.8	89.8
Effective Green, g (s)	33.8	33.8		21.8	21.8	57.0	71.4	64.0	64.0	35.2	91.8	91.8
Actuated g/C Ratio	0.23	0.23		0.15	0.15	0.39	0.49	0.44	0.44	0.24	0.63	0.63
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	412		199	280	666	142	1562	699	833	2241	1002
v/s Ratio Prot	c0.06	0.03			0.01	c0.15	0.01	c0.54		0.18	c0.55	
v/s Ratio Perm	c0.19			0.10		0.11	0.12		0.01			0.05
v/c Ratio	1.08	0.14		0.67	0.07	0.64	0.27	1.22	0.01	0.76	0.87	0.08
Uniform Delay, d1	55.6	44.1		58.2	52.9	35.6	25.3	40.5	22.7	51.0	21.8	10.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	76.0	0.2		8.2	0.1	2.0	1.1	106.5	0.0	4.0	5.1	0.1
Delay (s)	131.6	44.3		66.4	53.0	37.6	26.3	147.0	22.8	55.0	26.9	10.4
Level of Service	F	D		E	D	D	C	F	C	D	C	B
Approach Delay (s)		115.8			44.6			143.9			32.9	
Approach LOS		F			D			F			C	

Intersection Summary

HCM Average Control Delay	78.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	3433	1753	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	3433	1753	
Volume (vph)	75	1692	18	156	1298	651	57	30	62	381	33	21
Peak-hour factor, PHF	0.94	0.94	0.94	0.95	0.95	0.95	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	80	1800	19	164	1366	685	61	32	67	428	37	24
RTOR Reduction (vph)	0	0	5	0	0	0	0	0	4	0	19	0
Lane Group Flow (vph)	80	1800	14	164	1366	685	61	32	63	428	42	0
Turn Type	Prot		Perm	Prot		Free	Prot		pm+ov	Prot		
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases			6			Free			8			
Actuated Green, G (s)	13.1	77.8	77.8	25.0	89.7	150.0	4.6	5.4	30.4	15.1	15.9	
Effective Green, g (s)	15.8	80.8	80.8	27.7	92.7	150.0	6.8	7.6	35.3	17.9	18.7	
Actuated g/C Ratio	0.11	0.54	0.54	0.18	0.62	1.00	0.05	0.05	0.24	0.12	0.12	
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.7	6.8	6.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	186	1906	853	327	2187	1583	156	94	415	410	219	
v/s Ratio Prot	0.05	c0.51		c0.09	c0.39		0.02	0.02	0.03	c0.12	0.02	
v/s Ratio Perm			0.01			c0.43			0.01			
v/c Ratio	0.43	0.94	0.02	0.50	0.62	0.43	0.39	0.34	0.15	1.04	0.19	
Uniform Delay, d1	62.9	32.5	16.1	54.9	17.8	0.0	69.6	68.8	45.5	66.0	58.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.6	10.3	0.0	1.2	1.4	0.9	1.6	2.2	0.2	56.4	0.4	
Delay (s)	64.5	42.8	16.1	56.2	19.2	0.9	71.2	70.9	45.7	122.4	59.3	
Level of Service	E	D	B	E	B	A	E	E	D	F	E	
Approach Delay (s)		43.4			16.3			60.5			114.5	
Approach LOS		D			B			E			F	

Intersection Summary

HCM Average Control Delay	38.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	387	1500	88	292	1245	102	250	705	271	286	481	82
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96	0.90	0.90	0.90
Adj. Flow (vph)	421	1630	96	317	1353	111	260	734	282	318	534	91
RTOR Reduction (vph)	0	0	46	0	0	50	0	0	160	0	0	66
Lane Group Flow (vph)	421	1630	50	317	1353	61	260	734	122	318	534	25
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.0	38.9	38.9	11.1	38.0	38.0	7.0	26.0	26.0	8.0	27.0	27.0
Effective Green, g (s)	14.0	41.9	41.9	13.1	41.0	41.0	9.0	29.0	29.0	10.0	30.0	30.0
Actuated g/C Ratio	0.13	0.38	0.38	0.12	0.37	0.37	0.08	0.26	0.26	0.09	0.27	0.27
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	437	1937	603	409	1319	590	281	933	417	312	965	432
v/s Ratio Prot	c0.12	0.32		0.09	c0.38		0.08	c0.21		c0.09	0.15	
v/s Ratio Perm			0.03			0.04			0.08			0.02
v/c Ratio	0.96	0.84	0.08	0.78	1.03	0.10	0.93	0.79	0.29	1.02	0.55	0.06
Uniform Delay, d1	47.7	31.0	21.8	47.0	34.5	22.5	50.2	37.6	32.3	50.0	34.3	29.6
Progression 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
Incremental Delay, d2	33.5	3.5	0.1	8.9	31.6	0.1	34.3	6.7	1.8	55.9	2.3	0.3
Delay (s)	81.2	34.5	21.8	55.9	66.1	22.6	84.4	44.3	34.1	105.9	36.5	29.8
Level of Service	F	C	C	E	E	C	F	D	C	F	D	C
Approach Delay (s)		43.1			61.5			50.2			59.3	
Approach LOS		D			E			D			E	

Intersection Summary

HCM Average Control Delay	52.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1717		1770	1863	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.62	1.00		0.61	1.00	1.00	0.08	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1155	1717		1127	1863	1583	143	3539	1583	3433	3539	1583
Volume (vph)	279	101	110	129	51	474	23	1404	9	327	1395	122
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.84	0.84	0.84
Adj. Flow (vph)	328	119	129	152	60	558	27	1652	11	389	1661	145
RTOR Reduction (vph)	0	33	0	0	0	15	0	0	4	0	0	42
Lane Group Flow (vph)	328	215	0	152	60	543	27	1652	7	389	1661	103
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	34.7	34.7		22.7	22.7	45.0	63.1	59.4	59.4	22.3	78.0	78.0
Effective Green, g (s)	37.3	37.3		25.3	25.3	49.6	67.1	61.4	61.4	24.3	80.0	80.0
Actuated g/C Ratio	0.28	0.28		0.19	0.19	0.37	0.50	0.45	0.45	0.18	0.59	0.59
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	356	474		211	349	629	140	1610	720	618	2097	938
v/s Ratio Prot	c0.05	0.13			0.03	c0.16	0.01	c0.47		0.11	0.47	
v/s Ratio Perm	c0.20			0.13		0.19	0.09		0.00			0.07
v/c Ratio	0.92	0.45		0.72	0.17	0.86	0.19	1.03	0.01	0.63	0.79	0.11
Uniform Delay, d1	47.3	40.4		51.5	46.1	39.6	20.9	36.8	20.2	51.2	21.1	12.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.6	0.7		11.4	0.2	11.7	0.7	29.3	0.0	2.0	3.2	0.2
Delay (s)	75.9	41.1		63.0	46.3	51.3	21.6	66.1	20.2	53.2	24.3	12.2
Level of Service	E	D		E	D	D	C	E	C	D	C	B
Approach Delay (s)		60.9			53.2			65.1			28.6	
Approach LOS		E			D			E			C	

Intersection Summary

HCM Average Control Delay	47.6	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	3433	1695	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	3433	1695	
Volume (vph)	152	938	1	164	1360	374	137	78	210	539	36	54
Peak-hour factor, PHF	0.86	0.86	0.86	0.91	0.91	0.91	0.75	0.75	0.75	0.94	0.94	0.94
Adj. Flow (vph)	177	1091	1	180	1495	411	183	104	280	573	38	57
RTOR Reduction (vph)	0	0	1	0	0	0	0	0	14	0	42	0
Lane Group Flow (vph)	177	1091	0	180	1495	411	183	104	266	573	53	0
Turn Type	Prot		Perm	Prot		Free	Prot		pm+ov	Prot		
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases			6			Free			8			
Actuated Green, G (s)	24.2	66.9	66.9	21.9	64.6	150.0	10.6	13.3	35.2	21.3	23.9	
Effective Green, g (s)	26.9	69.9	69.9	24.6	67.6	150.0	12.8	15.5	40.1	24.0	26.7	
Actuated g/C Ratio	0.18	0.47	0.47	0.16	0.45	1.00	0.09	0.10	0.27	0.16	0.18	
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.7	6.7	6.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	317	1649	738	290	1595	1583	293	193	465	549	302	
v/s Ratio Prot	0.10	0.31		0.10	c0.42		0.05	0.06	c0.09	c0.17	0.03	
v/s Ratio Perm			0.00			c0.26			0.07			
v/c Ratio	0.56	0.66	0.00	0.62	0.94	0.26	0.62	0.54	0.57	1.04	0.18	
Uniform Delay, d1	56.1	30.9	21.4	58.4	39.2	0.0	66.3	63.9	47.5	63.0	52.3	
Progression Factor	1.00	1.00	1.00	0.81	1.21	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.1	1.0	0.0	3.2	9.7	0.3	4.1	2.9	1.7	50.3	0.3	
Delay (s)	58.3	31.9	21.4	50.5	57.2	0.3	70.4	66.7	49.2	113.3	52.6	
Level of Service	E	C	C	D	E	A	E	E	D	F	D	
Approach Delay (s)		35.6			45.4			59.3			104.7	
Approach LOS		D			D			E			F	

Intersection Summary

HCM Average Control Delay	53.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	298	1305	56	389	1439	115	159	416	246	266	334	71
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.87	0.87	0.87	0.91	0.91	0.91
Adj. Flow (vph)	327	1434	62	427	1581	126	183	478	283	292	367	78
RTOR Reduction (vph)	0	0	30	0	0	44	0	0	153	0	0	61
Lane Group Flow (vph)	327	1434	32	427	1581	82	183	478	130	292	367	17
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	14.6	45.9	45.9	18.2	49.5	49.5	6.0	21.9	21.9	8.0	23.9	23.9
Effective Green, g (s)	16.6	48.9	48.9	20.2	52.5	52.5	8.0	24.9	24.9	10.0	26.9	26.9
Actuated g/C Ratio	0.14	0.41	0.41	0.17	0.44	0.44	0.07	0.21	0.21	0.08	0.22	0.22
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	475	2072	645	578	1548	693	229	734	328	286	793	355
v/s Ratio Prot	0.10	0.28		c0.12	c0.45		0.05	c0.14		c0.09	0.10	
v/s Ratio Perm			0.02			0.05			0.08			0.01
v/c Ratio	0.69	0.69	0.05	0.74	1.02	0.12	0.80	0.65	0.40	1.02	0.46	0.05
Uniform Delay, d1	49.2	29.3	21.5	47.4	33.8	20.0	55.2	43.6	41.1	55.0	40.3	36.5
Progression 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
Incremental Delay, d2	4.1	1.0	0.0	4.9	28.4	0.1	17.5	4.5	3.6	58.7	1.9	0.3
Delay (s)	53.4	30.4	21.5	52.3	62.2	20.1	72.7	48.0	44.6	113.7	42.2	36.8
Level of Service	D	C	C	D	E	C	E	D	D	F	D	D
Approach Delay (s)		34.2			57.7			51.8			70.0	
Approach LOS		C			E			D			E	

Intersection Summary

HCM Average Control Delay	50.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3281		1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.57	1.00		0.73	1.00	1.00	0.22	1.00	1.00	0.07	1.00	1.00
Satd. Flow (perm)	1069	3281		1363	3539	1583	413	3539	1583	137	3539	1583
Volume (vph)	164	15	14	124	43	694	36	1358	5	399	992	32
Peak-hour factor, PHF	0.78	0.78	0.78	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Adj. Flow (vph)	210	19	18	129	45	723	38	1415	5	434	1078	35
RTOR Reduction (vph)	0	13	0	0	0	43	0	0	3	0	0	16
Lane Group Flow (vph)	210	24	0	129	45	680	38	1415	2	434	1078	19
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	29.0	29.0		12.5	12.5	26.5	52.0	48.4	48.4	68.4	58.8	58.8
Effective Green, g (s)	31.6	31.6		15.1	15.1	31.1	56.0	50.4	50.4	70.4	60.8	60.8
Actuated g/C Ratio	0.29	0.29		0.14	0.14	0.28	0.51	0.46	0.46	0.64	0.55	0.55
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	387	943		187	486	505	279	1622	725	325	1956	875
v/s Ratio Prot	c0.06	0.01			0.01	c0.20	0.01	0.40		c0.19	0.30	
v/s Ratio Perm	0.09			0.09		0.23	0.06		0.00	c0.66		0.01
v/c Ratio	0.54	0.03		0.69	0.09	1.35	0.14	0.87	0.00	1.34	0.55	0.02
Uniform Delay, d1	31.8	28.1		45.2	41.5	39.4	13.9	26.9	16.2	35.8	15.8	11.1
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.80	0.91
Incremental Delay, d2	1.6	0.0		10.1	0.1	168.7	0.2	6.8	0.0	169.2	1.0	0.0
Delay (s)	33.3	28.2		55.4	41.5	208.2	14.1	33.7	16.2	202.1	13.7	10.2
Level of Service	C	C		E	D	F	B	C	B	F	B	B
Approach Delay (s)		32.6			177.8			33.1			66.5	
Approach LOS		C			F			C			E	

Intersection Summary

HCM Average Control Delay	76.8	HCM Level of Service	E
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	110.0	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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3357		1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.58	1.00		0.71	1.00	1.00	0.07	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	1078	3357		1317	3539	1583	128	3539	1583	120	3539	1583
Volume (vph)	266	38	20	125	18	408	33	1605	9	556	1723	85
Peak-hour factor, PHF	0.80	0.80	0.80	0.94	0.94	0.94	0.84	0.84	0.84	0.88	0.88	0.88
Adj. Flow (vph)	332	48	25	133	19	434	39	1911	11	632	1958	97
RTOR Reduction (vph)	0	20	0	0	0	6	0	0	3	0	0	27
Lane Group Flow (vph)	332	53	0	133	19	428	39	1911	8	632	1958	70
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	26.4	26.4		11.4	11.4	50.4	60.8	56.0	56.0	101.0	90.2	90.2
Effective Green, g (s)	29.0	29.0		14.0	14.0	55.0	64.8	58.0	58.0	103.0	92.2	92.2
Actuated g/C Ratio	0.21	0.21		0.10	0.10	0.39	0.46	0.41	0.41	0.74	0.66	0.66
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	278	695		132	354	667	139	1466	656	572	2331	1043
v/s Ratio Prot	c0.09	0.02			0.01	0.19	0.01	c0.54		c0.32	0.55	
v/s Ratio Perm	c0.15			0.10		0.08	0.12		0.01	0.49		0.04
v/c Ratio	1.19	0.08		1.01	0.05	0.64	0.28	1.30	0.01	1.10	0.84	0.07
Uniform Delay, d1	54.8	44.7		63.0	57.0	34.5	43.8	41.0	24.1	51.7	18.3	8.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.89	1.49	2.56
Incremental Delay, d2	117.1	0.0		80.4	0.1	2.1	1.1	141.7	0.0	65.5	3.0	0.1
Delay (s)	171.9	44.8		143.4	57.1	36.6	44.9	182.7	24.2	111.6	30.2	21.9
Level of Service	F	D		F	E	D	D	F	C	F	C	C
Approach Delay (s)		149.0			61.5			179.1			49.0	
Approach LOS		F			E			F			D	

Intersection Summary

HCM Average Control Delay	102.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3263		1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.62	1.00		0.60	1.00	1.00	0.08	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	1162	3263		1114	3539	1583	155	3539	1583	116	3539	1583
Volume (vph)	279	101	110	129	51	474	23	1404	9	327	1395	122
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.84	0.84	0.84
Adj. Flow (vph)	328	119	129	152	60	558	27	1652	11	389	1661	145
RTOR Reduction (vph)	0	61	0	0	0	21	0	0	4	0	0	39
Lane Group Flow (vph)	328	187	0	152	60	537	27	1652	7	389	1661	106
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	41.6	41.6		24.6	24.6	56.4	61.6	58.0	58.0	95.8	86.2	86.2
Effective Green, g (s)	44.2	44.2		27.2	27.2	61.0	65.6	60.0	60.0	97.8	88.2	88.2
Actuated g/C Ratio	0.29	0.29		0.18	0.18	0.41	0.44	0.40	0.40	0.65	0.59	0.59
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	395	961		202	642	686	128	1416	633	448	2081	931
v/s Ratio Prot	c0.07	0.06			0.02	c0.18	0.01	c0.47		c0.20	0.47	
v/s Ratio Perm	c0.17			0.14		0.16	0.08		0.00	0.37		0.07
v/c Ratio	0.83	0.19		0.75	0.09	0.78	0.21	1.17	0.01	0.87	0.80	0.11
Uniform Delay, d1	48.4	39.6		58.2	51.1	38.7	26.6	45.0	27.1	57.7	24.0	13.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.05	0.83	0.59
Incremental Delay, d2	13.8	0.1		14.6	0.1	5.8	0.8	83.0	0.0	14.0	2.8	0.2
Delay (s)	62.1	39.7		72.8	51.2	44.5	27.5	128.0	27.2	74.9	22.7	8.3
Level of Service	E	D		E	D	D	C	F	C	E	C	A
Approach Delay (s)		52.5			50.6			125.8			31.0	
Approach LOS		D			D			F			C	

Intersection Summary

HCM Average Control Delay	66.9	HCM Level of Service	E
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3281		1770	3539	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.60	1.00		0.73	1.00	1.00	0.27	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1116	3281		1363	3539	1583	494	3539	1583	3433	3539	1583
Volume (vph)	164	15	14	124	43	694	36	1358	5	399	992	32
Peak-hour factor, PHF	0.78	0.78	0.78	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Adj. Flow (vph)	210	19	18	129	45	723	38	1415	5	434	1078	35
RTOR Reduction (vph)	0	14	0	0	0	29	0	0	2	0	0	14
Lane Group Flow (vph)	210	23	0	129	45	694	38	1415	3	434	1078	21
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	28.3	28.3		16.3	16.3	47.4	52.3	47.0	47.0	31.1	72.8	72.8
Effective Green, g (s)	30.9	30.9		18.9	18.9	52.0	56.3	49.0	49.0	33.1	74.8	74.8
Actuated g/C Ratio	0.25	0.25		0.15	0.15	0.42	0.45	0.39	0.39	0.26	0.60	0.60
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	318	811		206	535	709	297	1387	621	909	2118	947
v/s Ratio Prot	c0.04	0.01			0.01	c0.26	0.01	c0.40		0.13	0.30	
v/s Ratio Perm	0.12			0.09		0.18	0.05		0.00			0.01
v/c Ratio	0.66	0.03		0.63	0.08	0.98	0.13	1.02	0.01	0.48	0.51	0.02
Uniform Delay, d1	41.8	35.7		49.7	45.6	36.0	19.3	38.0	23.2	38.7	14.5	10.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.1	0.0		5.8	0.1	28.2	0.2	29.4	0.0	0.4	0.9	0.0
Delay (s)	46.9	35.7		55.6	45.7	64.1	19.5	67.4	23.2	39.1	15.4	10.3
Level of Service	D	D		E	D	E	B	E	C	D	B	B
Approach Delay (s)		45.2			62.0			66.0			21.9	
Approach LOS		D			E			E			C	

Intersection Summary

HCM Average Control Delay	47.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3357		1770	3539	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.63	1.00		0.71	1.00	1.00	0.06	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1172	3357		1317	3539	1583	116	3539	1583	3433	3539	1583
Volume (vph)	266	38	20	125	18	408	33	1605	9	556	1723	85
Peak-hour factor, PHF	0.80	0.80	0.80	0.94	0.94	0.94	0.84	0.84	0.84	0.88	0.88	0.88
Adj. Flow (vph)	332	48	25	133	19	434	39	1911	11	632	1958	97
RTOR Reduction (vph)	0	19	0	0	0	11	0	0	3	0	0	21
Lane Group Flow (vph)	332	54	0	133	19	423	39	1911	8	632	1958	76
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	31.2	31.2		19.2	19.2	52.4	67.4	62.0	62.0	33.2	89.8	89.8
Effective Green, g (s)	33.8	33.8		21.8	21.8	57.0	71.4	64.0	64.0	35.2	91.8	91.8
Actuated g/C Ratio	0.23	0.23		0.15	0.15	0.39	0.49	0.44	0.44	0.24	0.63	0.63
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	783		198	532	666	142	1562	699	833	2241	1002
v/s Ratio Prot	c0.06	0.02			0.01	c0.15	0.01	c0.54		0.18	c0.55	
v/s Ratio Perm	c0.19			0.10		0.11	0.12		0.01			0.05
v/c Ratio	1.08	0.07		0.67	0.04	0.64	0.27	1.22	0.01	0.76	0.87	0.08
Uniform Delay, d1	55.6	43.3		58.2	52.6	35.6	25.3	40.5	22.7	51.0	21.8	10.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	76.0	0.0		8.6	0.0	2.0	1.1	106.5	0.0	4.0	5.1	0.1
Delay (s)	131.6	43.4		66.9	52.6	37.6	26.3	147.0	22.8	55.0	26.9	10.4
Level of Service	F	D		E	D	D	C	F	C	D	C	B
Approach Delay (s)		115.7			44.7			143.9			32.9	
Approach LOS		F			D			F			C	

Intersection Summary

HCM Average Control Delay	78.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3263		1770	3539	1583	1770	3539	1583	3433	3539	1583
Flt Permitted	0.62	1.00		0.60	1.00	1.00	0.08	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1153	3263		1114	3539	1583	142	3539	1583	3433	3539	1583
Volume (vph)	279	101	110	129	51	474	23	1404	9	327	1395	122
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.84	0.84	0.84
Adj. Flow (vph)	328	119	129	152	60	558	27	1652	11	389	1661	145
RTOR Reduction (vph)	0	69	0	0	0	15	0	0	4	0	0	42
Lane Group Flow (vph)	328	179	0	152	60	543	27	1652	7	389	1661	103
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	34.9	34.9		22.9	22.9	44.9	63.1	59.5	59.5	22.0	77.9	77.9
Effective Green, g (s)	37.5	37.5		25.5	25.5	49.5	67.1	61.5	61.5	24.0	79.9	79.9
Actuated g/C Ratio	0.28	0.28		0.19	0.19	0.37	0.50	0.46	0.46	0.18	0.59	0.59
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	357	906		210	668	627	138	1612	721	610	2095	937
v/s Ratio Prot	c0.05	0.05			0.02	c0.15	0.01	c0.47		0.11	0.47	
v/s Ratio Perm	c0.20			0.14		0.19	0.09		0.00			0.07
v/c Ratio	0.92	0.20		0.72	0.09	0.87	0.20	1.02	0.01	0.64	0.79	0.11
Uniform Delay, d1	47.2	37.3		51.4	45.2	39.7	20.9	36.8	20.1	51.5	21.2	12.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.7	0.1		11.7	0.1	12.0	0.7	29.0	0.0	2.2	3.2	0.2
Delay (s)	74.9	37.4		63.1	45.2	51.7	21.6	65.7	20.1	53.7	24.4	12.3
Level of Service	E	D		E	D	D	C	E	C	D	C	B
Approach Delay (s)		58.7			53.4			64.7			28.8	
Approach LOS		E			D			E			C	

Intersection Summary

HCM Average Control Delay	47.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Appendix I – Capacity Analyses: Future Year Total Conditions

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.93			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1727			1796	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.32	1.00			0.76	1.00	0.19	1.00	1.00	0.07	1.00	1.00
Satd. Flow (perm)	599	1727			1412	1583	362	3539	1583	132	3539	1583
Volume (vph)	164	15	14	124	43	762	36	1493	5	429	1040	32
Peak-hour factor, PHF	0.78	0.78	0.78	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Adj. Flow (vph)	210	19	18	129	45	794	38	1555	5	466	1130	35
RTOR Reduction (vph)	0	13	0	0	0	28	0	0	2	0	0	16
Lane Group Flow (vph)	210	24	0	0	174	766	38	1555	3	466	1130	19
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	29.1	29.1			13.4	25.4	53.9	50.3	50.3	68.3	58.7	58.7
Effective Green, g (s)	31.7	31.7			16.0	30.0	57.9	52.3	52.3	70.3	60.7	60.7
Actuated g/C Ratio	0.29	0.29			0.15	0.27	0.53	0.48	0.48	0.64	0.55	0.55
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	297	498			205	489	262	1683	753	293	1953	874
v/s Ratio Prot	c0.08	0.01				c0.20	0.01	0.44		c0.20	0.32	
v/s Ratio Perm	0.13				0.12	0.28	0.07		0.00	c0.81		0.01
v/c Ratio	0.71	0.05			0.85	1.57	0.15	0.92	0.00	1.59	0.58	0.02
Uniform Delay, d1	32.2	28.3			45.8	40.0	13.3	27.0	15.2	36.3	16.2	11.2
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	0.99	1.08	2.02
Incremental Delay, d2	7.5	0.0			26.4	264.4	0.3	10.0	0.0	279.7	1.1	0.0
Delay (s)	39.7	28.3			72.2	304.4	13.6	37.0	15.2	315.7	18.7	22.7
Level of Service	D	C			E	F	B	D	B	F	B	C
Approach Delay (s)		38.0			262.7			36.4			103.6	
Approach LOS		D			F			D			F	

Intersection Summary

HCM Average Control Delay	110.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

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	0.97	0.91			0.86	1.00	0.97		0.88			
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)	3433	5085			6408	1583	3433		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	5085			6408	1583	3433		2787			
Volume (vph)	259	1476	0	0	2276	442	718	0	121	0	0	0
Peak-hour factor, PHF	0.90	0.90	0.90	0.99	0.99	0.99	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	288	1640	0	0	2299	446	798	0	134	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	204	0	0	26	0	0	0
Lane Group Flow (vph)	288	1640	0	0	2299	242	798	0	108	0	0	0
Turn Type	Prot					Perm	custom		custom			
Protected Phases	5	2			6							
Permitted Phases						6	4		4			
Actuated Green, G (s)	14.3	69.0			49.2	49.2	30.5		30.5			
Effective Green, g (s)	15.8	70.5			50.7	50.7	31.5		31.5			
Actuated g/C Ratio	0.14	0.64			0.46	0.46	0.29		0.29			
Clearance Time (s)	5.5	5.5			5.5	5.5	5.0		5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	493	3259			2954	730	983		798			
v/s Ratio Prot	c0.08	0.32			c0.36							
v/s Ratio Perm						0.15	c0.23		0.04			
v/c Ratio	0.58	0.50			0.78	0.33	0.81		0.13			
Uniform Delay, d1	44.0	10.5			24.9	18.9	36.5		29.1			
Progression Factor	0.87	1.36			0.83	0.64	1.00		1.00			
Incremental Delay, d2	1.6	0.5			0.2	0.1	5.2		0.1			
Delay (s)	39.8	14.8			21.0	12.2	41.7		29.2			
Level of Service	D	B			C	B	D		C			
Approach Delay (s)		18.5			19.5			39.9			0.0	
Approach LOS		B			B			D			A	

Intersection Summary

HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

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		0.86	1.00	0.97	0.91					0.95	0.91	0.95
Frt		1.00	0.85	1.00	1.00					1.00	0.95	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (prot)		6408	1583	3433	5085					1681	1554	1504
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.97	1.00
Satd. Flow (perm)		6408	1583	3433	5085					1681	1554	1504
Volume (vph)	0	1255	762	415	2468	0	0	0	0	410	0	321
Peak-hour factor, PHF	0.96	0.96	0.96	0.93	0.93	0.93	0.92	0.92	0.92	0.88	0.88	0.88
Adj. Flow (vph)	0	1307	794	446	2654	0	0	0	0	466	0	365
RTOR Reduction (vph)	0	0	410	0	0	0	0	0	0	0	1	1
Lane Group Flow (vph)	0	1307	384	446	2654	0	0	0	0	283	285	261
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						8	
Permitted Phases			2							8		8
Actuated Green, G (s)		49.8	49.8	18.9	73.7					25.8	25.8	25.8
Effective Green, g (s)		51.3	51.3	19.9	75.2					26.8	26.8	26.8
Actuated g/C Ratio		0.47	0.47	0.18	0.68					0.24	0.24	0.24
Clearance Time (s)		5.5	5.5	5.0	5.5					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		2988	738	621	3476					410	379	366
v/s Ratio Prot		0.20		0.13	c0.52							
v/s Ratio Perm			0.24							0.17	0.18	0.17
v/c Ratio		0.44	0.52	0.72	0.76					0.69	0.75	0.71
Uniform Delay, d1		19.7	20.7	42.4	11.5					37.8	38.5	38.1
Progression Factor		0.50	1.28	1.48	0.67					1.00	1.00	1.00
Incremental Delay, d2		0.2	1.2	2.4	1.0					5.0	8.2	6.5
Delay (s)		10.1	27.6	64.9	8.7					42.8	46.7	44.6
Level of Service		B	C	E	A					D	D	D
Approach Delay (s)		16.7			16.8			0.0			44.7	
Approach LOS		B			B			A			D	

Intersection Summary

HCM Average Control Delay	20.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3443		1681	1710	1583	1770	1666	
Flt Permitted	0.08	1.00	1.00	0.08	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	154	3539	1583	142	3443		1681	1710	1583	1770	1666	
Volume (vph)	113	1532	101	348	1994	442	198	36	285	185	15	35
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.94	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	115	1563	103	370	2121	470	222	40	320	201	16	38
RTOR Reduction (vph)	0	0	39	0	16	0	0	0	0	0	34	0
Lane Group Flow (vph)	115	1563	64	370	2575	0	128	134	320	201	20	0
Turn Type	pm+pt		Perm	pm+pt			Split		Free	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	2		2	6					Free			
Actuated Green, G (s)	52.7	46.4	46.4	70.3	59.0		13.1	13.1	110.0	9.4	9.4	
Effective Green, g (s)	55.7	48.4	48.4	72.3	61.0		14.7	14.7	110.0	11.0	11.0	
Actuated g/C Ratio	0.51	0.44	0.44	0.66	0.55		0.13	0.13	1.00	0.10	0.10	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0		5.6	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	185	1557	697	388	1909		225	229	1583	177	167	
v/s Ratio Prot	0.04	0.44		c0.17	c0.75		0.08	c0.08		c0.11	0.01	
v/s Ratio Perm	0.27		0.04	0.45					0.20			
v/c Ratio	0.62	1.00	0.09	0.95	1.35		0.57	0.59	0.20	1.14	0.12	
Uniform Delay, d1	25.0	30.8	18.0	35.8	24.5		44.7	44.8	0.0	49.5	45.1	
Progression Factor	1.00	1.00	1.00	1.31	0.75		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.3	23.7	0.3	25.1	159.1		3.3	3.8	0.3	108.8	0.3	
Delay (s)	31.3	54.5	18.2	71.8	177.6		48.0	48.6	0.3	158.3	45.4	
Level of Service	C	D	B	E	F		D	D	A	F	D	
Approach Delay (s)		50.9			164.4			21.9			134.4	
Approach LOS		D			F			C			F	

Intersection Summary

HCM Average Control Delay	111.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1691	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1691	1583
Volume (vph)	226	1127	6	196	1488	617	36	18	45	631	25	101
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	243	1212	6	220	1672	693	49	24	61	734	29	117
RTOR Reduction (vph)	0	0	3	0	0	0	0	0	57	0	0	70
Lane Group Flow (vph)	243	1212	3	220	1672	693	49	24	4	372	391	47
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			Free			3			4
Actuated Green, G (s)	20.1	44.8	44.8	21.1	45.8	146.0	6.3	6.3	6.3	47.1	47.1	47.1
Effective Green, g (s)	22.8	47.8	47.8	23.8	48.8	146.0	8.5	8.5	8.5	49.9	49.9	49.9
Actuated g/C Ratio	0.16	0.33	0.33	0.16	0.33	1.00	0.06	0.06	0.06	0.34	0.34	0.34
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.2	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	276	1159	518	289	1183	1583	200	108	92	575	578	541
v/s Ratio Prot	c0.14	0.34		0.12	c0.47		0.01	0.01		0.22	c0.23	
v/s Ratio Perm			0.00			c0.44			0.00			0.03
v/c Ratio	0.88	1.05	0.01	0.76	1.41	0.44	0.24	0.22	0.04	0.65	0.68	0.09
Uniform Delay, d1	60.3	49.1	33.1	58.4	48.6	0.0	65.7	65.6	64.9	40.6	41.1	32.6
Progression 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
Incremental Delay, d2	26.1	39.2	0.0	11.2	191.1	0.9	0.6	1.0	0.2	2.5	3.1	0.1
Delay (s)	86.4	88.3	33.1	69.6	239.7	0.9	66.3	66.6	65.1	43.1	44.3	32.7
Level of Service	F	F	C	E	F	A	E	E	E	D	D	C
Approach Delay (s)		87.8			161.2			65.8			42.2	
Approach LOS		F			F			E			D	

Intersection Summary

HCM Average Control Delay	116.8	HCM Level of Service	F
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	146.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	195	1607	144	283	1224	77	260	311	271	138	511	78
Peak-hour factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91	0.83	0.83	0.83	0.91	0.91	0.91
Adj. Flow (vph)	222	1826	164	311	1345	85	313	375	327	152	562	86
RTOR Reduction (vph)	0	0	43	0	0	34	0	0	178	0	0	67
Lane Group Flow (vph)	222	1826	121	311	1345	51	313	375	149	152	562	19
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	10.8	43.5	43.5	13.6	46.3	46.3	13.6	26.3	26.3	10.6	23.3	23.3
Effective Green, g (s)	12.8	46.5	46.5	15.6	49.3	49.3	15.6	29.3	29.3	12.6	26.3	26.3
Actuated g/C Ratio	0.11	0.39	0.39	0.13	0.41	0.41	0.13	0.24	0.24	0.10	0.22	0.22
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	366	1371	613	446	1454	650	446	864	387	360	776	347
v/s Ratio Prot	0.06	c0.52		c0.09	c0.38		c0.09	c0.11		0.04	c0.16	
v/s Ratio Perm			0.08			0.03			0.09			0.01
v/c Ratio	0.61	1.33	0.20	0.70	0.93	0.08	0.70	0.43	0.39	0.42	0.72	0.05
Uniform Delay, d1	51.2	36.8	24.4	49.9	33.6	21.5	50.0	38.3	37.8	50.3	43.5	37.0
Progression 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
Incremental Delay, d2	2.8	154.4	0.2	4.7	10.2	0.1	4.9	1.6	2.9	0.8	5.8	0.3
Delay (s)	54.0	191.2	24.5	54.7	43.8	21.6	54.9	39.9	40.7	51.1	49.3	37.3
Level of Service	D	F	C	D	D	C	D	D	D	D	D	D
Approach Delay (s)		165.1			44.7			44.8			48.4	
Approach LOS		F			D			D			D	

Intersection Summary

HCM Average Control Delay	91.4	HCM Level of Service	F
HCM Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	87.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	10	0	28	22	0	0	18	733	55	0	767	15
Peak Hour Factor	0.69	0.69	0.69	0.92	0.92	0.92	0.87	0.87	0.87	0.85	0.85	0.85
Hourly flow rate (vph)	14	0	41	24	0	0	21	843	63	0	902	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								367				
pX, platoon unblocked												
vC, conflicting volume	1374	1858	460	1407	1836	453	920			906		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1374	1858	460	1407	1836	453	920			906		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	93	73	100	100	97			100		
cM capacity (veh/h)	102	71	548	90	73	554	738			747		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	55	24	21	562	344	0	602	318
Volume Left	14	24	21	0	0	0	0	0
Volume Right	41	0	0	0	63	0	0	18
cSH	255	90	738	1700	1700	1700	1700	1700
Volume to Capacity	0.22	0.27	0.03	0.33	0.20	0.00	0.35	0.19
Queue Length 95th (ft)	20	24	2	0	0	0	0	0
Control Delay (s)	22.9	59.3	10.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	F	B					
Approach Delay (s)	22.9	59.3	0.2			0.0		
Approach LOS	C	F						

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	65	0	30	62	0	25	29	572	109	47	504	26
Peak Hour Factor	0.74	0.74	0.74	0.92	0.92	0.92	0.89	0.89	0.89	0.93	0.93	0.93
Hourly flow rate (vph)	88	0	41	67	0	27	33	643	122	51	542	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1071	1487	285	1182	1440	383	570			765		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1071	1487	285	1182	1440	383	570			765		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	44	100	94	47	100	96	97			94		
cM capacity (veh/h)	156	112	712	127	120	615	999			844		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	128	95	33	428	337	51	361	209
Volume Left	88	67	33	0	0	51	0	0
Volume Right	41	27	0	0	122	0	0	28
cSH	207	165	999	1700	1700	844	1700	1700
Volume to Capacity	0.62	0.57	0.03	0.25	0.20	0.06	0.21	0.12
Queue Length 95th (ft)	90	75	3	0	0	5	0	0
Control Delay (s)	47.2	52.6	8.7	0.0	0.0	9.5	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s)	47.2	52.6	0.4			0.8		
Approach LOS	E	F						

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	32	52	0	24	15	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	57	0	26	16	0
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			91		89	63
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			91		89	63
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		98	100
cM capacity (veh/h)			1504		911	1002

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	91	26	16
Volume Left	0	0	16
Volume Right	57	0	0
cSH	1700	1504	911
Volume to Capacity	0.05	0.00	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.0
Approach LOS			A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	84	6	0	39	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	91	7	0	42	3	0
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			98		137	95
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			98		137	95
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	100
cM capacity (veh/h)			1495		856	962

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	98	42	3
Volume Left	0	0	3
Volume Right	7	0	0
cSH	1700	1495	856
Volume to Capacity	0.06	0.00	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.2
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	14.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	90	46	0	43	23	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	98	50	0	47	25	0
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			148		170	123
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			148		170	123
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		97	100
cM capacity (veh/h)			1434		821	928

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	148	47	25
Volume Left	0	0	25
Volume Right	50	0	0
cSH	1700	1434	821
Volume to Capacity	0.09	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	9.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.5
Approach LOS			A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	17.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	136	19	0	66	21	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	148	21	0	72	23	0
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			168		230	158
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			168		230	158
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		97	100
cM capacity (veh/h)			1409		758	887

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	168	72	23
Volume Left	0	0	23
Volume Right	21	0	0
cSH	1700	1409	758
Volume to Capacity	0.10	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	9.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.9
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	1803	2301	37	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1960	2501	40	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		350	701			
pX, platoon unblocked	0.46				0.62	0.46
vC, conflicting volume	2501				3501	1271
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3098				2859	402
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	47				8	273

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	980	980	1667	874	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	40	0
cSH	1700	1700	1700	1700	1700
Volume to Capacity	0.58	0.58	0.98	0.51	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.95			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1767			1785	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.23	1.00			0.70	1.00	0.07	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	436	1767			1306	1583	128	3539	1583	120	3539	1583
Volume (vph)	266	38	20	125	18	516	33	1689	9	700	1877	85
Peak-hour factor, PHF	0.80	0.80	0.80	0.94	0.94	0.94	0.84	0.84	0.84	0.88	0.88	0.88
Adj. Flow (vph)	332	48	25	133	19	549	39	2011	11	795	2133	97
RTOR Reduction (vph)	0	13	0	0	0	2	0	0	3	0	0	25
Lane Group Flow (vph)	332	60	0	0	152	547	39	2011	8	795	2133	72
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	26.4	26.4			11.4	50.4	60.8	56.0	56.0	101.0	90.2	90.2
Effective Green, g (s)	29.0	29.0			14.0	55.0	64.8	58.0	58.0	103.0	92.2	92.2
Actuated g/C Ratio	0.21	0.21			0.10	0.39	0.46	0.41	0.41	0.74	0.66	0.66
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	195	366			131	667	139	1466	656	572	2331	1043
v/s Ratio Prot	c0.13	0.03				0.24	0.01	0.57		c0.41	0.60	
v/s Ratio Perm	c0.22				0.12	0.11	0.12		0.01	c0.62		0.05
v/c Ratio	1.70	0.16			1.16	0.82	0.28	1.37	0.01	1.39	0.92	0.07
Uniform Delay, d1	52.3	45.5			63.0	38.1	52.9	41.0	24.1	51.7	20.5	8.6
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	0.84	1.51	2.55
Incremental Delay, d2	337.1	0.2			128.1	8.0	1.1	171.7	0.0	182.1	4.6	0.1
Delay (s)	389.5	45.7			191.1	46.1	54.1	212.7	24.2	225.8	35.6	21.9
Level of Service	F	D			F	D	D	F	C	F	D	C
Approach Delay (s)		327.5			77.5			208.7			85.2	
Approach LOS		F			E			F			F	

Intersection Summary

HCM Average Control Delay	141.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	116.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

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	0.97	0.91			0.86	1.00	0.97		0.88			
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)	3433	5085			6408	1583	3433		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	5085			6408	1583	3433		2787			
Volume (vph)	421	2597	0	0	1712	558	733	0	300	0	0	0
Peak-hour factor, PHF	0.96	0.96	0.96	0.97	0.97	0.97	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	439	2705	0	0	1765	575	814	0	333	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	313	0	0	6	0	0	0
Lane Group Flow (vph)	439	2705	0	0	1765	262	814	0	327	0	0	0
Turn Type	Prot					Perm	custom		custom			
Protected Phases	5	2			6							
Permitted Phases						6	4		4			
Actuated Green, G (s)	22.3	90.2			62.4	62.4	39.3		39.3			
Effective Green, g (s)	23.8	91.7			63.9	63.9	40.3		40.3			
Actuated g/C Ratio	0.17	0.66			0.46	0.46	0.29		0.29			
Clearance Time (s)	5.5	5.5			5.5	5.5	5.0		5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	584	3331			2925	723	988		802			
v/s Ratio Prot	0.13	c0.53			0.28							
v/s Ratio Perm						0.17	c0.24		0.12			
v/c Ratio	0.75	0.81			0.60	0.36	0.82		0.41			
Uniform Delay, d1	55.3	17.8			28.5	24.8	46.5		40.2			
Progression Factor	1.37	0.52			0.93	4.90	1.00		1.00			
Incremental Delay, d2	3.8	1.6			0.1	0.1	5.7		0.3			
Delay (s)	79.5	10.9			26.6	121.5	52.2		40.6			
Level of Service	E	B			C	F	D		D			
Approach Delay (s)		20.5			49.9			48.8			0.0	
Approach LOS		C			D			D			A	

Intersection Summary

HCM Average Control Delay	35.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

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		0.86	1.00	0.97	0.91					0.95	0.91	0.95
Frt		1.00	0.85	1.00	1.00					1.00	1.00	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (prot)		6408	1583	3433	5085					1681	1610	1504
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.95	1.00
Satd. Flow (perm)		6408	1583	3433	5085					1681	1610	1504
Volume (vph)	0	2556	761	165	2257	0	0	0	0	495	0	222
Peak-hour factor, PHF	0.94	0.94	0.94	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	2719	810	168	2303	0	0	0	0	538	0	241
RTOR Reduction (vph)	0	0	301	0	0	0	0	0	0	0	0	10
Lane Group Flow (vph)	0	2719	509	168	2303	0	0	0	0	269	269	231
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						8	
Permitted Phases			2							8		8
Actuated Green, G (s)		85.5	85.5	11.8	102.3					27.2	27.2	27.2
Effective Green, g (s)		87.0	87.0	12.8	103.8					28.2	28.2	28.2
Actuated g/C Ratio		0.62	0.62	0.09	0.74					0.20	0.20	0.20
Clearance Time (s)		5.5	5.5	5.0	5.5					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3982	984	314	3770					339	324	303
v/s Ratio Prot		c0.42		0.05	c0.45							
v/s Ratio Perm			0.32							0.16	0.17	0.15
v/c Ratio		0.68	0.52	0.54	0.61					0.79	0.83	0.76
Uniform Delay, d1		17.4	14.8	60.8	8.6					53.1	53.6	52.7
Progression Factor		0.47	1.15	1.00	0.97					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.2	1.3	0.5					12.0	16.3	10.7
Delay (s)		8.2	17.2	61.9	8.8					65.2	69.9	63.5
Level of Service		A	B	E	A					E	E	E
Approach Delay (s)		10.3			12.4			0.0			66.3	
Approach LOS		B			B			A			E	

Intersection Summary

HCM Average Control Delay	17.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3440		1681	1703	1583	1770	1660	
Flt Permitted	0.07	1.00	1.00	0.07	1.00		0.95	0.96	1.00	0.95	1.00	
Satd. Flow (perm)	134	3539	1583	125	3440		1681	1703	1583	1770	1660	
Volume (vph)	98	2003	98	276	1777	411	351	44	625	698	63	165
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	100	2044	100	282	1813	419	390	49	694	759	68	179
RTOR Reduction (vph)	0	0	22	0	14	0	0	0	0	0	56	0
Lane Group Flow (vph)	100	2044	78	282	2218	0	213	226	694	759	191	0
Turn Type	pm+pt		Perm	pm+pt			Split		Free	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	2		2	6					Free			
Actuated Green, G (s)	58.4	53.4	53.4	69.4	59.4		16.0	16.0	140.0	37.4	37.4	
Effective Green, g (s)	61.4	55.4	55.4	71.4	61.4		17.6	17.6	140.0	39.0	39.0	
Actuated g/C Ratio	0.44	0.40	0.40	0.51	0.44		0.13	0.13	1.00	0.28	0.28	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0		5.6	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	129	1400	626	205	1509		211	214	1583	493	462	
v/s Ratio Prot	0.03	0.58		c0.12	c0.64		0.13	c0.13		c0.43	0.11	
v/s Ratio Perm	0.31		0.05	0.58					0.44			
v/c Ratio	0.78	1.46	0.12	1.38	1.47		1.01	1.06	0.44	1.54	0.41	
Uniform Delay, d1	68.0	42.3	26.9	44.6	39.3		61.2	61.2	0.0	50.5	41.2	
Progression Factor	1.00	1.00	1.00	1.17	1.22		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	24.7	211.0	0.4	191.2	214.3		64.4	77.1	0.9	252.8	0.6	
Delay (s)	92.6	253.3	27.3	243.4	262.2		125.6	138.3	0.9	303.3	41.8	
Level of Service	F	F	C	F	F		F	F	A	F	D	
Approach Delay (s)		236.1			260.1			51.7			239.1	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	215.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	133.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1698	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1698	1583
Volume (vph)	239	1790	18	156	1463	651	57	30	62	381	33	246
Peak-hour factor, PHF	0.94	0.94	0.94	0.95	0.95	0.95	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	254	1904	19	164	1540	685	61	32	67	428	37	276
RTOR Reduction (vph)	0	0	4	0	0	0	0	0	63	0	0	222
Lane Group Flow (vph)	254	1904	15	164	1540	685	61	32	4	226	239	54
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			Free			3			4
Actuated Green, G (s)	40.7	79.0	79.0	28.7	67.0	174.0	8.4	8.4	8.4	31.2	31.2	31.2
Effective Green, g (s)	43.4	82.0	82.0	31.4	70.0	174.0	10.6	10.6	10.6	34.0	34.0	34.0
Actuated g/C Ratio	0.25	0.47	0.47	0.18	0.40	1.00	0.06	0.06	0.06	0.20	0.20	0.20
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.2	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	441	1668	746	319	1424	1583	209	113	96	328	332	309
v/s Ratio Prot	c0.14	c0.54		0.09	0.44		0.02	0.02		0.13	c0.14	
v/s Ratio Perm			0.01			c0.43			0.00			0.03
v/c Ratio	0.58	1.14	0.02	0.51	1.08	0.43	0.29	0.28	0.04	0.69	0.72	0.17
Uniform Delay, d1	57.2	46.0	24.6	64.4	52.0	0.0	78.1	78.1	76.9	65.1	65.5	58.3
Progression 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
Incremental Delay, d2	1.8	71.4	0.0	1.4	49.2	0.9	0.8	1.4	0.2	5.9	7.3	0.3
Delay (s)	59.1	117.4	24.6	65.8	101.2	0.9	78.9	79.4	77.1	71.0	72.8	58.6
Level of Service	E	F	C	E	F	A	E	E	E	E	E	E
Approach Delay (s)		109.8			70.0			78.3			67.0	
Approach LOS		F			E			E			E	

Intersection Summary

HCM Average Control Delay	85.7	HCM Level of Service	F
HCM Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	174.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	387	1672	88	430	1497	102	250	705	361	286	481	82
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96	0.90	0.90	0.90
Adj. Flow (vph)	421	1817	96	467	1627	111	260	734	376	318	534	91
RTOR Reduction (vph)	0	0	24	0	0	35	0	0	157	0	0	70
Lane Group Flow (vph)	421	1817	72	467	1627	76	260	734	219	318	534	21
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	14.0	50.0	50.0	14.0	50.0	50.0	12.6	27.0	27.0	13.0	27.4	27.4
Effective Green, g (s)	16.0	53.0	53.0	16.0	53.0	53.0	14.6	30.0	30.0	15.0	30.4	30.4
Actuated g/C Ratio	0.12	0.41	0.41	0.12	0.41	0.41	0.11	0.23	0.23	0.12	0.23	0.23
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	423	1443	645	423	1443	645	386	817	365	396	828	370
v/s Ratio Prot	0.12	c0.51		c0.14	0.46		0.08	c0.21		c0.09	0.15	
v/s Ratio Perm			0.05			0.05			0.14			0.01
v/c Ratio	1.00	1.26	0.11	1.10	1.13	0.12	0.67	0.90	0.60	0.80	0.64	0.06
Uniform Delay, d1	57.0	38.5	23.9	57.0	38.5	24.0	55.4	48.5	44.6	56.1	44.9	38.7
Progression 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
Incremental Delay, d2	42.3	122.4	0.1	75.0	66.8	0.1	4.6	14.7	7.1	11.2	3.9	0.3
Delay (s)	99.2	160.9	24.0	132.0	105.3	24.0	60.0	63.3	51.8	67.2	48.8	39.0
Level of Service	F	F	C	F	F	C	E	E	D	E	D	D
Approach Delay (s)		144.1			106.9			59.5			54.1	
Approach LOS		F			F			E			D	

Intersection Summary

HCM Average Control Delay	102.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	0	31	100	0	0	43	841	70	0	578	32
Peak Hour Factor	0.77	0.77	0.77	0.92	0.92	0.92	0.98	0.98	0.98	0.95	0.95	0.95
Hourly flow rate (vph)	32	0	40	109	0	0	44	858	71	0	608	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								367				
pX, platoon unblocked												
vC, conflicting volume	1142	1643	321	1326	1624	465	642			930		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1142	1643	321	1326	1624	465	642			930		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	78	100	94	0	100	100	95			100		
cM capacity (veh/h)	150	94	675	103	97	544	938			732		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	73	109	44	572	357	0	406	236
Volume Left	32	109	44	0	0	0	0	0
Volume Right	40	0	0	0	71	0	0	34
cSH	263	103	938	1700	1700	1700	1700	1700
Volume to Capacity	0.28	1.06	0.05	0.34	0.21	0.00	0.24	0.14
Queue Length 95th (ft)	27	169	4	0	0	0	0	0
Control Delay (s)	23.8	182.1	9.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	F	A					
Approach Delay (s)	23.8	182.1	0.4			0.0		
Approach LOS	C	F						

Intersection Summary			
Average Delay	12.2		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	0	43	147	0	69	60	678	107	49	612	40
Peak Hour Factor	0.82	0.82	0.82	0.92	0.92	0.92	0.98	0.98	0.98	0.86	0.86	0.86
Hourly flow rate (vph)	30	0	52	160	0	75	61	692	109	57	712	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1392	1772	379	1391	1741	401	758			801		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1392	1772	379	1391	1741	401	758			801		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	62	100	92	0	100	87	93			93		
cM capacity (veh/h)	79	71	619	83	74	599	849			818		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	83	235	61	461	340	57	474	284
Volume Left	30	160	61	0	0	57	0	0
Volume Right	52	75	0	0	109	0	0	47
cSH	177	115	849	1700	1700	818	1700	1700
Volume to Capacity	0.47	2.05	0.07	0.27	0.20	0.07	0.28	0.17
Queue Length 95th (ft)	56	488	6	0	0	6	0	0
Control Delay (s)	42.1	561.6	9.6	0.0	0.0	9.7	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s)	42.1	561.6	0.7			0.7		
Approach LOS	E	F						

Intersection Summary			
Average Delay	68.4		
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	24	35	0	36	65	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	26	38	0	39	71	0
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			64		84	45
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			64		84	45
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		92	100
cM capacity (veh/h)			1538		917	1025

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	64	39	71
Volume Left	0	0	71
Volume Right	38	0	0
cSH	1700	1538	917
Volume to Capacity	0.04	0.00	0.08
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	13.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	59	18	0	101	21	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	64	20	0	110	23	0
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			84		184	74
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			84		184	74
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		97	100
cM capacity (veh/h)			1513		806	988

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	84	110	23
Volume Left	0	0	23
Volume Right	20	0	0
cSH	1700	1513	806
Volume to Capacity	0.05	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	15.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	77	46	0	123	64	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	84	50	0	134	70	0
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			134		242	109
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			134		242	109
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		91	100
cM capacity (veh/h)			1451		746	945

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	134	134	70
Volume Left	0	0	70
Volume Right	50	0	0
cSH	1700	1451	746
Volume to Capacity	0.08	0.00	0.09
Queue Length 95th (ft)	0	0	8
Control Delay (s)	0.0	0.0	10.3
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.3
Approach LOS			B

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	17.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	122	33	0	187	30	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	133	36	0	203	33	0
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			168		354	151
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			168		354	151
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		95	100
cM capacity (veh/h)			1409		644	896

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	168	203	33
Volume Left	0	0	33
Volume Right	36	0	0
cSH	1700	1409	644
Volume to Capacity	0.10	0.00	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.0	0.0	10.9
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.9
Approach LOS			B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	2233	2271	40	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2427	2468	43	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		350	701			
pX, platoon unblocked	0.57				0.75	0.57
vC, conflicting volume	2468				3704	1256
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2822				2554	695
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	76				16	219

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1214	1214	1646	866	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	43	0
cSH	1700	1700	1700	1700	1700
Volume to Capacity	0.71	0.71	0.97	0.51	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.92			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1717			1798	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.20	1.00			0.64	1.00	0.10	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	373	1717			1191	1583	190	3539	1583	105	3539	1583
Volume (vph)	279	101	110	129	51	642	23	1514	9	496	1497	122
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.84	0.84	0.84
Adj. Flow (vph)	328	119	129	152	60	755	27	1781	11	590	1782	145
RTOR Reduction (vph)	0	26	0	0	0	3	0	0	3	0	0	40
Lane Group Flow (vph)	328	222	0	0	212	752	27	1781	8	590	1782	105
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	28.4	28.4			13.4	51.4	68.6	65.0	65.0	109.0	99.4	99.4
Effective Green, g (s)	31.0	31.0			16.0	56.0	72.6	67.0	67.0	111.0	101.4	101.4
Actuated g/C Ratio	0.21	0.21			0.11	0.37	0.48	0.45	0.45	0.74	0.68	0.68
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	180	355			127	633	151	1581	707	522	2392	1070
v/s Ratio Prot	c0.13	0.13				c0.32	0.01	0.50		0.30	0.50	
v/s Ratio Perm	c0.24				0.18	0.16	0.08		0.00	c0.54		0.07
v/c Ratio	1.82	0.62			1.67	1.19	0.18	1.13	0.01	1.13	0.74	0.10
Uniform Delay, d1	56.3	54.2			67.0	47.0	21.1	41.5	23.1	57.2	15.9	8.4
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.05	0.34	0.09
Incremental Delay, d2	391.0	3.4			333.1	99.7	0.6	65.7	0.0	75.6	1.6	0.1
Delay (s)	447.3	57.6			400.1	146.7	21.6	107.2	23.1	135.6	6.9	0.9
Level of Service	F	E			F	F	C	F	C	F	A	A
Approach Delay (s)		279.5			202.3			105.4			36.7	
Approach LOS		F			F			F			D	

Intersection Summary

HCM Average Control Delay	109.0	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	107.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

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	0.97	0.91			0.86	1.00	0.97		0.88			
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)	3433	5085			6408	1583	3433		2787			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	5085			6408	1583	3433		2787			
Volume (vph)	401	2221	0	0	1827	618	723	0	248	0	0	0
Peak-hour factor, PHF	0.95	0.95	0.95	0.89	0.89	0.89	0.79	0.79	0.79	0.92	0.92	0.92
Adj. Flow (vph)	422	2338	0	0	2053	694	915	0	314	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	295	0	0	7	0	0	0
Lane Group Flow (vph)	422	2338	0	0	2053	399	915	0	307	0	0	0
Turn Type	Prot					Perm	custom		custom			
Protected Phases	5	2			6							
Permitted Phases						6	4		4			
Actuated Green, G (s)	20.8	95.2			68.9	68.9	44.3		44.3			
Effective Green, g (s)	22.3	96.7			70.4	70.4	45.3		45.3			
Actuated g/C Ratio	0.15	0.64			0.47	0.47	0.30		0.30			
Clearance Time (s)	5.5	5.5			5.5	5.5	5.0		5.0			
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0		3.0			
Lane Grp Cap (vph)	510	3278			3007	743	1037		842			
v/s Ratio Prot	c0.12	c0.46			0.32							
v/s Ratio Perm						0.25	c0.27		0.11			
v/c Ratio	0.83	0.71			0.68	0.54	0.88		0.36			
Uniform Delay, d1	62.0	17.5			31.1	28.2	49.8		41.1			
Progression Factor	1.12	0.87			0.79	0.44	1.00		1.00			
Incremental Delay, d2	7.6	0.9			0.1	0.3	9.0		0.3			
Delay (s)	77.0	16.2			24.5	12.6	58.8		41.3			
Level of Service	E	B			C	B	E		D			
Approach Delay (s)		25.5			21.5			54.3			0.0	
Approach LOS		C			C			D			A	

Intersection Summary

HCM Average Control Delay	29.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

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		0.86	1.00	0.97	0.91					0.95	0.91	0.95
Frt		1.00	0.85	1.00	1.00					1.00	0.99	0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (prot)		6408	1583	3433	5085					1681	1603	1504
Flt Permitted		1.00	1.00	0.95	1.00					0.95	0.96	1.00
Satd. Flow (perm)		6408	1583	3433	5085					1681	1603	1504
Volume (vph)	0	2098	590	231	2258	0	0	0	0	565	0	288
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.79	0.79	0.79
Adj. Flow (vph)	0	2280	641	246	2402	0	0	0	0	715	0	365
RTOR Reduction (vph)	0	0	301	0	0	0	0	0	0	0	2	4
Lane Group Flow (vph)	0	2280	340	246	2402	0	0	0	0	368	370	336
Turn Type			Perm	Prot						Perm		Perm
Protected Phases		2		1	6						8	
Permitted Phases			2							8		8
Actuated Green, G (s)		78.0	78.0	16.2	99.2					40.3	40.3	40.3
Effective Green, g (s)		79.5	79.5	17.2	100.7					41.3	41.3	41.3
Actuated g/C Ratio		0.53	0.53	0.11	0.67					0.28	0.28	0.28
Clearance Time (s)		5.5	5.5	5.0	5.5					5.0	5.0	5.0
Vehicle Extension (s)		3.0	3.0	3.0	3.0					3.0	3.0	3.0
Lane Grp Cap (vph)		3396	839	394	3414					463	441	414
v/s Ratio Prot		0.36		0.07	c0.47							
v/s Ratio Perm			0.21							0.22	0.23	0.22
v/c Ratio		0.67	0.40	0.62	0.70					0.79	0.84	0.81
Uniform Delay, d1		25.7	21.1	63.3	15.4					50.4	51.2	50.7
Progression Factor		0.66	0.41	1.28	0.75					1.00	1.00	1.00
Incremental Delay, d2		0.1	0.1	2.0	0.8					9.1	13.1	11.5
Delay (s)		17.2	8.9	83.0	12.4					59.5	64.3	62.3
Level of Service		B	A	F	B					E	E	E
Approach Delay (s)		15.3			18.9			0.0			62.0	
Approach LOS		B			B			A			E	

Intersection Summary

HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		0.95	0.95	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.90	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	3401		1681	1717	1583	1770	1671	
Flt Permitted	0.06	1.00	1.00	0.06	1.00		0.95	0.97	1.00	0.95	1.00	
Satd. Flow (perm)	112	3539	1583	106	3401		1681	1717	1583	1770	1671	
Volume (vph)	144	1702	108	278	1683	591	263	66	385	633	65	143
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.88	0.88	0.88	0.92	0.92	0.92
Adj. Flow (vph)	157	1850	117	309	1870	657	299	75	438	688	71	155
RTOR Reduction (vph)	0	0	27	0	23	0	0	0	0	0	53	0
Lane Group Flow (vph)	157	1850	90	309	2504	0	182	192	438	688	173	0
Turn Type	pm+pt		Perm	pm+pt			Split		Free	Split		
Protected Phases	5	2		1	6		8	8		4	4	
Permitted Phases	2		2	6					Free			
Actuated Green, G (s)	70.4	64.4	64.4	81.4	70.4		16.0	16.0	150.0	35.4	35.4	
Effective Green, g (s)	73.4	66.4	66.4	83.4	72.4		17.6	17.6	150.0	37.0	37.0	
Actuated g/C Ratio	0.49	0.44	0.44	0.56	0.48		0.12	0.12	1.00	0.25	0.25	
Clearance Time (s)	5.0	6.0	6.0	5.0	6.0		5.6	5.6		5.6	5.6	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	132	1567	701	203	1642		197	201	1583	437	412	
v/s Ratio Prot	0.06	0.52		c0.13	c0.74		0.11	c0.11		c0.39	0.10	
v/s Ratio Perm	0.52		0.06	0.71					0.28			
v/c Ratio	1.19	1.18	0.13	1.52	1.52		0.92	0.96	0.28	1.57	0.42	
Uniform Delay, d1	73.7	41.8	24.7	70.7	38.8		65.5	65.8	0.0	56.5	47.5	
Progression Factor	1.00	1.00	1.00	1.40	0.67		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	138.1	88.2	0.4	251.9	238.4		42.9	50.3	0.4	269.3	0.7	
Delay (s)	211.7	130.0	25.1	350.6	264.2		108.5	116.1	0.4	325.8	48.2	
Level of Service	F	F	C	F	F		F	F	A	F	D	
Approach Delay (s)		130.3			273.7			52.0			257.2	
Approach LOS		F			F			D			F	

Intersection Summary

HCM Average Control Delay	198.9	HCM Level of Service	F
HCM Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	130.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	1.00	0.95	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1695	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	1583	1681	1695	1583
Volume (vph)	390	1082	1	164	1503	374	137	78	210	539	36	282
Peak-hour factor, PHF	0.86	0.86	0.86	0.91	0.91	0.91	0.75	0.75	0.75	0.94	0.94	0.94
Adj. Flow (vph)	453	1258	1	180	1652	411	183	104	280	573	38	300
RTOR Reduction (vph)	0	0	1	0	0	0	0	0	128	0	0	171
Lane Group Flow (vph)	453	1258	0	180	1652	411	183	104	152	298	313	129
Turn Type	Prot		Perm	Prot		Free	Split		Perm	Split		Perm
Protected Phases	1	6		5	2		3	3		4	4	
Permitted Phases			6			Free			3			4
Actuated Green, G (s)	20.0	74.4	74.4	18.7	73.1	179.0	21.5	21.5	21.5	37.7	37.7	37.7
Effective Green, g (s)	22.7	77.4	77.4	21.4	76.1	179.0	23.7	23.7	23.7	40.5	40.5	40.5
Actuated g/C Ratio	0.13	0.43	0.43	0.12	0.43	1.00	0.13	0.13	0.13	0.23	0.23	0.23
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0		6.2	6.2	6.2	6.8	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	224	1530	684	212	1505	1583	455	247	210	380	384	358
v/s Ratio Prot	c0.26	0.36		0.10	c0.47		0.05	0.06		0.18	c0.18	
v/s Ratio Perm			0.00			c0.26			c0.10			0.08
v/c Ratio	2.02	0.82	0.00	0.85	1.10	0.26	0.40	0.42	0.72	0.78	0.82	0.36
Uniform Delay, d1	78.1	44.7	28.8	77.2	51.5	0.0	71.2	71.3	74.5	65.1	65.7	58.3
Progression 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
Incremental Delay, d2	475.4	3.7	0.0	25.8	54.7	0.4	0.6	1.2	11.6	10.2	12.5	0.6
Delay (s)	553.6	48.4	28.8	103.0	106.2	0.4	71.7	72.5	86.1	75.3	78.2	59.0
Level of Service	F	D	C	F	F	A	E	E	F	E	E	E
Approach Delay (s)		182.1			86.6			79.0			70.9	
Approach LOS		F			F			E			E	

Intersection Summary

HCM Average Control Delay	113.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	179.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	298	1561	56	507	1691	115	159	416	372	266	334	71
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.87	0.87	0.87	0.91	0.91	0.91
Adj. Flow (vph)	327	1715	62	557	1858	126	183	478	428	292	367	78
RTOR Reduction (vph)	0	0	16	0	0	34	0	0	160	0	0	61
Lane Group Flow (vph)	327	1715	46	557	1858	92	183	478	268	292	367	17
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	13.2	46.1	46.1	21.4	54.3	54.3	11.9	24.9	24.9	13.6	26.6	26.6
Effective Green, g (s)	15.2	49.1	49.1	23.4	57.3	57.3	13.9	27.9	27.9	15.6	29.6	29.6
Actuated g/C Ratio	0.12	0.37	0.37	0.18	0.43	0.43	0.11	0.21	0.21	0.12	0.22	0.22
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	395	1316	589	609	1536	687	362	748	335	406	794	355
v/s Ratio Prot	0.10	c0.48		c0.16	c0.52		0.05	0.14		c0.09	0.10	
v/s Ratio Perm			0.03			0.06			c0.17			0.01
v/c Ratio	0.83	1.30	0.08	0.91	1.21	0.13	0.51	0.64	0.80	0.72	0.46	0.05
Uniform Delay, d1	57.1	41.4	26.8	53.3	37.4	22.4	55.8	47.5	49.4	56.1	44.3	40.2
Progression 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
Incremental Delay, d2	13.3	142.1	0.1	18.3	100.7	0.1	1.1	4.2	17.9	6.0	1.9	0.3
Delay (s)	70.4	183.5	26.9	71.7	138.0	22.5	56.9	51.6	67.3	62.1	46.2	40.4
Level of Service	E	F	C	E	F	C	E	D	E	E	D	D
Approach Delay (s)		161.3			117.7			58.7			51.9	
Approach LOS		F			F			E			D	

Intersection Summary

HCM Average Control Delay	114.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	132.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	22	0	86	107	0	0	32	661	108	0	668	37
Peak Hour Factor	0.81	0.81	0.81	0.92	0.92	0.92	0.98	0.98	0.98	0.96	0.96	0.96
Hourly flow rate (vph)	27	0	106	116	0	0	33	674	110	0	696	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)								367				
pX, platoon unblocked												
vC, conflicting volume	1118	1565	367	1249	1529	392	734			785		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1118	1565	367	1249	1529	392	734			785		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	83	100	83	0	100	100	96			100		
cM capacity (veh/h)	157	106	630	105	112	607	867			830		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	133	116	33	450	335	0	464	270
Volume Left	27	116	33	0	0	0	0	0
Volume Right	106	0	0	0	110	0	0	39
cSH	391	105	867	1700	1700	1700	1700	1700
Volume to Capacity	0.34	1.11	0.04	0.26	0.20	0.00	0.27	0.16
Queue Length 95th (ft)	37	184	3	0	0	0	0	0
Control Delay (s)	18.9	198.4	9.3	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	F	A					
Approach Delay (s)	18.9	198.4	0.4			0.0		
Approach LOS	C	F						

Intersection Summary			
Average Delay	14.4		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	41	0	45	138	1	68	61	516	152	77	489	47
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.96	0.96	0.96	0.87	0.87	0.87
Hourly flow rate (vph)	44	0	48	150	1	74	64	538	158	89	562	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1236	1589	308	1250	1537	348	616			696		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1236	1589	308	1250	1537	348	616			696		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	57	100	93	0	99	89	93			90		
cM capacity (veh/h)	102	90	688	106	97	648	960			896		

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	91	225	64	358	338	89	375	241
Volume Left	44	150	64	0	0	89	0	0
Volume Right	48	74	0	0	158	0	0	54
cSH	184	146	960	1700	1700	896	1700	1700
Volume to Capacity	0.50	1.54	0.07	0.21	0.20	0.10	0.22	0.14
Queue Length 95th (ft)	61	385	5	0	0	8	0	0
Control Delay (s)	42.4	331.6	9.0	0.0	0.0	9.5	0.0	0.0
Lane LOS	E	F	A			A		
Approach Delay (s)	42.4	331.6	0.8			1.2		
Approach LOS	E	F						

Intersection Summary			
Average Delay	44.9		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	43	48	0	32	47	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	47	52	0	35	51	0
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			99		108	73
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		108	73
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		94	100
cM capacity (veh/h)			1494		890	989

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	99	35	51
Volume Left	0	0	51
Volume Right	52	0	0
cSH	1700	1494	890
Volume to Capacity	0.06	0.00	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	91	30	0	79	30	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	99	33	0	86	33	0
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			132		201	115
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			132		201	115
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		96	100
cM capacity (veh/h)			1454		787	937

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	132	86	33
Volume Left	0	0	33
Volume Right	33	0	0
cSH	1700	1454	787
Volume to Capacity	0.08	0.00	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	121	64	0	109	60	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	132	70	0	118	65	0
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			201		285	166
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			201		285	166
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		91	100
cM capacity (veh/h)			1371		705	878

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	201	118	65
Volume Left	0	0	65
Volume Right	70	0	0
cSH	1700	1371	705
Volume to Capacity	0.12	0.00	0.09
Queue Length 95th (ft)	0	0	8
Control Delay (s)	0.0	0.0	10.6
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.6
Approach LOS			B

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	185	45	0	169	39	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	201	49	0	184	42	0
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			250		409	226
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			250		409	226
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		93	100
cM capacity (veh/h)			1316		598	814

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	250	184	42
Volume Left	0	0	42
Volume Right	49	0	0
cSH	1700	1316	598
Volume to Capacity	0.15	0.00	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	11.5
Lane LOS			B
Approach Delay (s)	0.0	0.0	11.5
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	22.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	1954	2042	61	0	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	2124	2220	66	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		350	701			
pX, platoon unblocked	0.53				0.68	0.53
vC, conflicting volume	2220				3315	1143
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2417				2533	371
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	102				15	330

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	1062	1062	1480	806	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	66	0
cSH	1700	1700	1700	1700	1700
Volume to Capacity	0.62	0.62	0.87	0.47	0.00
Queue Length 95th (ft)	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

Appendix J – Capacity Analyses: Future Year Total Conditions with Improvements

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91	1.00	0.97	0.95	1.00
Frt	1.00	0.93			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1727			1796	1583	1770	5085	1583	3433	3539	1583
Flt Permitted	0.40	1.00			0.76	1.00	0.25	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	741	1727			1412	1583	469	5085	1583	3433	3539	1583
Volume (vph)	164	15	14	124	43	762	36	1493	5	429	1040	32
Peak-hour factor, PHF	0.78	0.78	0.78	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Adj. Flow (vph)	210	19	18	129	45	794	38	1555	5	466	1130	35
RTOR Reduction (vph)	0	13	0	0	0	35	0	0	4	0	0	17
Lane Group Flow (vph)	210	24	0	0	174	759	38	1555	1	466	1130	18
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	29.1	29.1			17.1	45.4	33.2	29.0	29.0	28.3	53.1	53.1
Effective Green, g (s)	31.7	31.7			19.7	50.0	37.2	31.0	31.0	30.3	55.1	55.1
Actuated g/C Ratio	0.30	0.30			0.19	0.48	0.35	0.30	0.30	0.29	0.52	0.52
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	302	521			265	814	243	1501	467	991	1857	831
v/s Ratio Prot	c0.05	0.01				c0.27	0.01	c0.31		0.14	0.32	
v/s Ratio Perm	0.16				0.12	0.21	0.05		0.00			0.01
v/c Ratio	0.70	0.05			0.66	0.93	0.16	1.04	0.00	0.47	0.61	0.02
Uniform Delay, d1	31.0	26.0			39.5	25.9	22.4	37.0	26.1	30.7	17.4	12.0
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	0.0			5.8	17.3	0.3	33.1	0.0	0.4	1.5	0.0
Delay (s)	37.8	26.0			45.3	43.2	22.7	70.1	26.1	31.1	18.9	12.0
Level of Service	D	C			D	D	C	E	C	C	B	B
Approach Delay (s)		36.1			43.5			68.8			22.2	
Approach LOS		D			D			E			C	

Intersection Summary

HCM Average Control Delay	44.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5038		3433	5085	1583	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5038		3433	5085	1583	1770	1863	1583	3433	1863	1583
Volume (vph)	113	1532	101	348	1994	442	198	36	285	185	15	35
Peak-hour factor, PHF	0.98	0.98	0.98	0.94	0.94	0.94	0.89	0.89	0.89	0.92	0.92	0.92
Adj. Flow (vph)	115	1563	103	370	2121	470	222	40	320	201	16	38
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	0	35
Lane Group Flow (vph)	115	1660	0	370	2121	470	222	40	320	201	16	3
Turn Type	Prot			Prot		Free	Prot		Free	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						Free			Free			4
Actuated Green, G (s)	7.8	55.7		16.7	64.6	120.0	18.9	10.6	120.0	14.8	6.5	6.5
Effective Green, g (s)	8.8	57.7		17.7	66.6	120.0	20.5	12.2	120.0	16.4	8.1	8.1
Actuated g/C Ratio	0.07	0.48		0.15	0.55	1.00	0.17	0.10	1.00	0.14	0.07	0.07
Clearance Time (s)	5.0	6.0		5.0	6.0		5.6	5.6		5.6	5.6	5.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	252	2422		506	2822	1583	302	189	1583	469	126	107
v/s Ratio Prot	0.03	0.33		c0.11	c0.42		c0.13	0.02		0.06	0.01	
v/s Ratio Perm						0.30			0.20			0.02
v/c Ratio	0.46	0.69		0.73	0.75	0.30	0.74	0.21	0.20	0.43	0.13	0.02
Uniform Delay, d1	53.3	24.1		48.9	20.4	0.0	47.2	49.5	0.0	47.5	52.6	52.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.3	1.6		5.4	1.9	0.5	9.0	0.6	0.3	0.6	0.5	0.1
Delay (s)	54.6	25.7		54.3	22.3	0.5	56.1	50.0	0.3	48.1	53.1	52.3
Level of Service	D	C		D	C	A	E	D	A	D	D	D
Approach Delay (s)		27.6			22.8			25.0			49.1	
Approach LOS		C			C			C			D	

Intersection Summary

HCM Average Control Delay	25.8	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	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	1863	1583	3433	1639	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	1863	1583	3433	1639	
Volume (vph)	226	1127	6	196	1488	617	36	18	45	631	25	101
Peak-hour factor, PHF	0.93	0.93	0.93	0.89	0.89	0.89	0.74	0.74	0.74	0.86	0.86	0.86
Adj. Flow (vph)	243	1212	6	220	1672	693	49	24	61	734	29	117
RTOR Reduction (vph)	0	0	2	0	0	154	0	0	5	0	93	0
Lane Group Flow (vph)	243	1212	4	220	1672	539	49	24	56	734	53	0
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases			6			2			8			
Actuated Green, G (s)	18.2	59.7	59.7	30.4	71.9	71.9	4.2	5.0	35.4	28.3	28.5	
Effective Green, g (s)	20.9	62.7	62.7	33.1	74.9	74.9	6.9	7.2	40.3	31.0	31.3	
Actuated g/C Ratio	0.14	0.42	0.42	0.22	0.50	0.50	0.05	0.05	0.27	0.21	0.21	
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0	7.0	6.7	6.2	6.7	6.7	6.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	478	1479	662	391	2539	790	158	89	468	709	342	
v/s Ratio Prot	0.07	c0.34		c0.12	0.33		0.01	c0.01	0.03	c0.21	0.03	
v/s Ratio Perm			0.00			c0.34			0.01			
v/c Ratio	0.51	0.82	0.01	0.56	0.66	0.68	0.31	0.27	0.12	1.04	0.16	
Uniform Delay, d1	59.8	38.6	25.5	52.0	28.0	28.5	69.2	68.9	41.4	59.5	48.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	3.7	0.0	1.9	1.4	4.7	1.1	1.6	0.1	43.2	0.2	
Delay (s)	60.6	42.3	25.5	53.9	29.4	33.3	70.4	70.5	41.6	102.7	48.8	
Level of Service	E	D	C	D	C	C	E	E	D	F	D	
Approach Delay (s)		45.3			32.5			57.3			93.8	
Approach LOS		D			C			E			F	

Intersection Summary

HCM Average Control Delay	47.5	HCM Level of Service	D
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	195	1607	144	283	1224	77	260	311	271	138	511	78
Peak-hour factor, PHF	0.88	0.88	0.88	0.91	0.91	0.91	0.83	0.83	0.83	0.91	0.91	0.91
Adj. Flow (vph)	222	1826	164	311	1345	85	313	375	327	152	562	86
RTOR Reduction (vph)	0	0	76	0	0	52	0	0	136	0	0	65
Lane Group Flow (vph)	222	1826	88	311	1345	33	313	375	191	152	562	21
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	10.1	33.1	33.1	12.7	35.7	35.7	7.0	22.2	22.2	6.0	21.2	21.2
Effective Green, g (s)	12.1	36.1	36.1	14.7	38.7	38.7	9.0	25.2	25.2	8.0	24.2	24.2
Actuated g/C Ratio	0.12	0.36	0.36	0.15	0.39	0.39	0.09	0.25	0.25	0.08	0.24	0.24
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	415	1836	571	505	1968	613	309	892	399	275	856	383
v/s Ratio Prot	0.06	c0.36		c0.09	c0.26		c0.09	0.11		0.04	c0.16	
v/s Ratio Perm			0.06			0.02			0.12			0.01
v/c Ratio	0.53	0.99	0.15	0.62	0.68	0.05	1.01	0.42	0.48	0.55	0.66	0.05
Uniform Delay, d1	41.3	31.9	21.6	40.0	25.5	19.2	45.5	31.3	31.8	44.3	34.2	29.1
Progression 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
Incremental Delay, d2	1.3	19.6	0.1	2.2	1.0	0.0	54.5	1.5	4.1	2.4	3.9	0.3
Delay (s)	42.6	51.4	21.7	42.2	26.5	19.2	100.0	32.7	35.9	46.7	38.1	29.4
Level of Service	D	D	C	D	C	B	F	C	D	D	D	C
Approach Delay (s)		48.4			29.0			54.5			38.8	
Approach LOS		D			C			D			D	

Intersection Summary

HCM Average Control Delay	42.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	65	0	30	62	0	25	29	572	109	47	504	26
Peak Hour Factor	0.74	0.74	0.74	0.92	0.92	0.92	0.89	0.89	0.89	0.93	0.93	0.93
Hourly flow rate (vph)	88	0	41	67	0	27	33	643	122	51	542	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1071	1487	285	1182	1440	383	570			765		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1071	1487	285	1182	1440	383	570			765		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	44	100	94	47	100	96	97			94		
cM capacity (veh/h)	156	112	712	127	120	615	999			844		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	128	67	27	33	428	337	51	361	209
Volume Left	88	67	0	33	0	0	51	0	0
Volume Right	41	0	27	0	0	122	0	0	28
cSH	207	127	615	999	1700	1700	844	1700	1700
Volume to Capacity	0.62	0.53	0.04	0.03	0.25	0.20	0.06	0.21	0.12
Queue Length 95th (ft)	90	63	3	3	0	0	5	0	0
Control Delay (s)	47.2	61.3	11.1	8.7	0.0	0.0	9.5	0.0	0.0
Lane LOS	E	F	B	A			A		
Approach Delay (s)	47.2	46.9		0.4			0.8		
Approach LOS	E	E							

Intersection Summary

Average Delay	6.9		
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91	1.00	0.97	0.95	1.00
Frt	1.00	0.95			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1767			1785	1583	1770	5085	1583	3433	3539	1583
Flt Permitted	0.40	1.00			0.70	1.00	0.07	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	740	1767			1306	1583	138	5085	1583	3433	3539	1583
Volume (vph)	266	38	20	125	18	516	33	1689	9	700	1877	85
Peak-hour factor, PHF	0.80	0.80	0.80	0.94	0.94	0.94	0.84	0.84	0.84	0.88	0.88	0.88
Adj. Flow (vph)	332	48	25	133	19	549	39	2011	11	795	2133	97
RTOR Reduction (vph)	0	14	0	0	0	6	0	0	4	0	0	20
Lane Group Flow (vph)	332	59	0	0	152	543	39	2011	7	795	2133	77
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	33.4	33.4			21.4	62.4	57.5	52.0	52.0	41.0	87.5	87.5
Effective Green, g (s)	36.0	36.0			24.0	67.0	61.5	54.0	54.0	43.0	89.5	89.5
Actuated g/C Ratio	0.25	0.25			0.17	0.46	0.42	0.37	0.37	0.30	0.62	0.62
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	241	439			216	775	143	1894	590	1018	2184	977
v/s Ratio Prot	c0.08	0.03				c0.21	0.01	c0.40		0.23	c0.60	
v/s Ratio Perm	c0.27				0.12	0.14	0.10		0.00			0.05
v/c Ratio	1.38	0.13			0.70	0.70	0.27	1.06	0.01	0.78	0.98	0.08
Uniform Delay, d1	54.5	42.4			57.1	31.0	34.2	45.5	28.7	46.7	26.7	11.2
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	193.8	0.1			9.9	2.9	1.0	39.3	0.0	4.0	14.5	0.2
Delay (s)	248.4	42.5			67.1	33.9	35.2	84.8	28.7	50.6	41.2	11.3
Level of Service	F	D			E	C	D	F	C	D	D	B
Approach Delay (s)		211.3			41.1			83.6			42.7	
Approach LOS		F			D			F			D	

Intersection Summary

HCM Average Control Delay	67.2	HCM Level of Service	E
HCM Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5050		3433	5085	1583	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5050		3433	5085	1583	1770	1863	1583	3433	1863	1583
Volume (vph)	98	2003	98	276	1777	411	351	44	625	698	63	165
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.90	0.90	0.90	0.92	0.92	0.92
Adj. Flow (vph)	100	2044	100	282	1813	419	390	49	694	759	68	179
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	0	0	0	113
Lane Group Flow (vph)	100	2141	0	282	1813	419	390	49	694	759	68	66
Turn Type	Prot			Prot		Free	Prot		Free	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						Free			Free			4
Actuated Green, G (s)	7.8	66.9		14.4	73.5	150.0	34.9	10.9	150.0	35.6	11.6	11.6
Effective Green, g (s)	8.8	68.9		15.4	75.5	150.0	36.5	12.5	150.0	37.2	13.2	13.2
Actuated g/C Ratio	0.06	0.46		0.10	0.50	1.00	0.24	0.08	1.00	0.25	0.09	0.09
Clearance Time (s)	5.0	6.0		5.0	6.0		5.6	5.6		5.6	5.6	5.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	201	2320		352	2559	1583	431	155	1583	851	164	139
v/s Ratio Prot	0.03	c0.42		c0.08	0.36		0.22	0.03		c0.22	0.04	
v/s Ratio Perm						0.26			0.44			0.11
v/c Ratio	0.50	0.92		0.80	0.71	0.26	0.90	0.32	0.44	0.89	0.41	0.47
Uniform Delay, d1	68.5	38.1		65.8	28.8	0.0	55.1	64.7	0.0	54.5	64.7	65.1
Progression Factor	1.08	0.81		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	2.1		12.3	1.7	0.4	22.0	1.2	0.9	11.6	1.7	2.5
Delay (s)	74.7	32.9		78.1	30.4	0.4	77.1	65.9	0.9	66.1	66.4	67.6
Level of Service	E	C		E	C	A	E	E	A	E	E	E
Approach Delay (s)		34.7			30.8			29.9			66.4	
Approach LOS		C			C			C			E	

Intersection Summary

HCM Average Control Delay	37.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	1863	1583	3433	1616	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	1863	1583	3433	1616	
Volume (vph)	239	1790	18	156	1463	651	57	30	62	381	33	246
Peak-hour factor, PHF	0.94	0.94	0.94	0.95	0.95	0.95	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	254	1904	19	164	1540	685	61	32	67	428	37	276
RTOR Reduction (vph)	0	0	4	0	0	171	0	0	3	0	126	0
Lane Group Flow (vph)	254	1904	15	164	1540	514	61	32	64	428	187	0
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases			6			2			8			
Actuated Green, G (s)	16.7	72.5	72.5	23.4	79.2	79.2	4.6	11.2	34.6	16.2	22.8	
Effective Green, g (s)	19.4	75.5	75.5	26.1	82.2	82.2	6.8	13.4	39.5	19.0	25.6	
Actuated g/C Ratio	0.13	0.50	0.50	0.17	0.55	0.55	0.05	0.09	0.26	0.13	0.17	
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0	7.0	6.2	6.2	6.7	6.8	6.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	444	1781	797	308	2787	867	156	166	459	435	276	
v/s Ratio Prot	0.07	c0.54		c0.09	0.30		0.02	0.02	0.02	c0.12	c0.12	
v/s Ratio Perm			0.01			0.32			0.02			
v/c Ratio	0.57	1.07	0.02	0.53	0.55	0.59	0.39	0.19	0.14	0.98	0.68	
Uniform Delay, d1	61.4	37.2	18.7	56.4	22.0	22.7	69.6	63.3	42.3	65.3	58.3	
Progression Factor	1.00	1.00	1.00	1.13	0.84	0.75	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.8	42.5	0.0	0.8	0.4	1.4	1.6	0.6	0.1	38.6	6.4	
Delay (s)	63.2	79.8	18.7	64.8	18.7	18.4	71.2	63.9	42.4	104.0	64.8	
Level of Service	E	E	B	E	B	B	E	E	D	F	E	
Approach Delay (s)		77.3			21.8			57.7			87.4	
Approach LOS		E			C			E			F	

Intersection Summary

HCM Average Control Delay	53.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	387	1672	88	430	1497	102	250	705	361	286	481	82
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96	0.90	0.90	0.90
Adj. Flow (vph)	421	1817	96	467	1627	111	260	734	376	318	534	91
RTOR Reduction (vph)	0	0	41	0	0	60	0	0	177	0	0	66
Lane Group Flow (vph)	421	1817	55	467	1627	51	260	734	199	318	534	25
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	13.0	36.0	36.0	14.0	37.0	37.0	7.0	26.0	26.0	8.0	27.0	27.0
Effective Green, g (s)	15.0	39.0	39.0	16.0	40.0	40.0	9.0	29.0	29.0	10.0	30.0	30.0
Actuated g/C Ratio	0.14	0.35	0.35	0.15	0.36	0.36	0.08	0.26	0.26	0.09	0.27	0.27
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	468	1803	561	499	1849	576	281	933	417	312	965	432
v/s Ratio Prot	0.12	c0.36		c0.14	0.32		0.08	c0.21		c0.09	0.15	
v/s Ratio Perm			0.03			0.03			0.13			0.02
v/c Ratio	0.90	1.01	0.10	0.94	0.88	0.09	0.93	0.79	0.48	1.02	0.55	0.06
Uniform Delay, d1	46.8	35.5	23.7	46.5	32.8	23.0	50.2	37.6	34.1	50.0	34.3	29.6
Progression 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
Incremental Delay, d2	19.8	23.1	0.1	25.0	5.2	0.1	34.3	6.7	3.9	55.9	2.3	0.3
Delay (s)	66.5	58.6	23.8	71.5	37.9	23.1	84.4	44.3	38.0	105.9	36.5	29.8
Level of Service	E	E	C	E	D	C	F	D	D	F	D	C
Approach Delay (s)		58.6			44.3			50.2			59.3	
Approach LOS		E			D			D			E	

Intersection Summary

HCM Average Control Delay	52.4	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	25	0	43	147	0	69	60	678	107	49	612	40
Peak Hour Factor	0.82	0.82	0.82	0.92	0.92	0.92	0.98	0.98	0.98	0.86	0.86	0.86
Hourly flow rate (vph)	30	0	52	160	0	75	61	692	109	57	712	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1392	1772	379	1391	1741	401	758			801		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1392	1772	379	1391	1741	401	758			801		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	62	100	92	0	100	87	93			93		
cM capacity (veh/h)	79	71	619	83	74	599	849			818		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	83	160	75	61	461	340	57	474	284
Volume Left	30	160	0	61	0	0	57	0	0
Volume Right	52	0	75	0	0	109	0	0	47
cSH	177	83	599	849	1700	1700	818	1700	1700
Volume to Capacity	0.47	1.92	0.13	0.07	0.27	0.20	0.07	0.28	0.17
Queue Length 95th (ft)	56	347	11	6	0	0	6	0	0
Control Delay (s)	42.1	538.5	11.9	9.6	0.0	0.0	9.7	0.0	0.0
Lane LOS	E	F	B	A			A		
Approach Delay (s)	42.1	370.3		0.7			0.7		
Approach LOS	E	F							

Intersection Summary

Average Delay	45.9		
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91	1.00	0.97	0.95	1.00
Frt	1.00	0.92			1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00			0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1717			1798	1583	1770	5085	1583	3433	3539	1583
Flt Permitted	0.37	1.00			0.64	1.00	0.08	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	686	1717			1192	1583	152	5085	1583	3433	3539	1583
Volume (vph)	279	101	110	129	51	642	23	1514	9	496	1497	122
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.84	0.84	0.84
Adj. Flow (vph)	328	119	129	152	60	755	27	1781	11	590	1782	145
RTOR Reduction (vph)	0	31	0	0	0	7	0	0	5	0	0	41
Lane Group Flow (vph)	328	217	0	0	212	748	27	1781	6	590	1782	104
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	39.5	39.5			27.5	57.4	50.5	47.0	47.0	29.9	73.4	73.4
Effective Green, g (s)	42.1	42.1			30.1	62.0	54.5	49.0	49.0	31.9	75.4	75.4
Actuated g/C Ratio	0.31	0.31			0.22	0.46	0.40	0.36	0.36	0.24	0.56	0.56
Clearance Time (s)	6.6	6.6			6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	278	535			266	774	127	1846	575	811	1977	884
v/s Ratio Prot	c0.07	0.13				c0.23	0.01	c0.35		0.17	0.50	
v/s Ratio Perm	c0.30				0.18	0.24	0.08		0.00			0.07
v/c Ratio	1.18	0.41			0.80	0.97	0.21	0.96	0.01	0.73	0.90	0.12
Uniform Delay, d1	46.9	36.6			49.6	35.5	29.0	42.2	27.5	47.5	26.5	14.1
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	111.7	0.5			15.2	24.1	0.8	14.1	0.0	3.3	7.2	0.3
Delay (s)	158.6	37.1			64.7	59.6	29.9	56.3	27.5	50.8	33.7	14.4
Level of Service	F	D			E	E	C	E	C	D	C	B
Approach Delay (s)		106.3			60.7			55.7			36.6	
Approach LOS		F			E			E			D	

Intersection Summary

HCM Average Control Delay	53.3	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5040		3433	5085	1583	1770	1863	1583	3433	1863	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5040		3433	5085	1583	1770	1863	1583	3433	1863	1583
Volume (vph)	144	1702	108	278	1683	591	263	66	385	633	65	143
Peak-hour factor, PHF	0.92	0.92	0.92	0.90	0.90	0.90	0.88	0.88	0.88	0.92	0.92	0.92
Adj. Flow (vph)	157	1850	117	309	1870	657	299	75	438	688	71	155
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	137
Lane Group Flow (vph)	157	1963	0	309	1870	657	299	75	438	688	71	18
Turn Type	Prot			Prot		Free	Prot		Free	Prot		Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases						Free			Free			4
Actuated Green, G (s)	11.4	67.4		17.0	73.0	150.0	27.4	11.3	150.0	32.1	16.0	16.0
Effective Green, g (s)	12.4	69.4		18.0	75.0	150.0	29.0	12.9	150.0	33.7	17.6	17.6
Actuated g/C Ratio	0.08	0.46		0.12	0.50	1.00	0.19	0.09	1.00	0.22	0.12	0.12
Clearance Time (s)	5.0	6.0		5.0	6.0		5.6	5.6		5.6	5.6	5.6
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	284	2332		412	2543	1583	342	160	1583	771	219	186
v/s Ratio Prot	0.05	c0.39		c0.09	0.37		0.17	0.04		c0.20	0.04	
v/s Ratio Perm						0.41			0.28			0.10
v/c Ratio	0.55	0.84		0.75	0.74	0.42	0.87	0.47	0.28	0.89	0.32	0.10
Uniform Delay, d1	66.1	35.5		63.8	29.7	0.0	58.7	65.3	0.0	56.4	60.7	59.1
Progression Factor	1.00	1.00		0.75	1.47	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	3.9		4.9	1.2	0.5	21.1	2.2	0.4	12.6	0.9	0.2
Delay (s)	68.5	39.4		53.0	44.7	0.5	79.8	67.5	0.4	69.0	61.6	59.3
Level of Service	E	D		D	D	A	E	E	A	E	E	E
Approach Delay (s)		41.5			35.4			35.9			66.8	
Approach LOS		D			D			D			E	

Intersection Summary

HCM Average Control Delay	41.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	0.97	0.95	1.00	1.00	0.91	1.00	0.97	1.00	1.00	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	3539	1583	1770	5085	1583	3433	1863	1583	3433	1615	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	3539	1583	1770	5085	1583	3433	1863	1583	3433	1615	
Volume (vph)	390	1082	1	164	1503	374	137	78	210	539	36	282
Peak-hour factor, PHF	0.86	0.86	0.86	0.91	0.91	0.91	0.75	0.75	0.75	0.94	0.94	0.94
Adj. Flow (vph)	453	1258	1	180	1652	411	183	104	280	573	38	300
RTOR Reduction (vph)	0	0	1	0	0	119	0	0	5	0	169	0
Lane Group Flow (vph)	453	1258	0	180	1652	292	183	104	275	573	169	0
Turn Type	Prot		Perm	Prot		Perm	Prot		pm+ov	Prot		
Protected Phases	1	6		5	2		3	8	5	7	4	
Permitted Phases			6			2			8			
Actuated Green, G (s)	26.3	50.0	50.0	22.6	46.3	46.3	9.6	12.5	35.1	18.2	21.1	
Effective Green, g (s)	29.0	53.0	53.0	25.3	49.3	49.3	11.8	14.7	40.0	21.0	23.9	
Actuated g/C Ratio	0.22	0.41	0.41	0.19	0.38	0.38	0.09	0.11	0.31	0.16	0.18	
Clearance Time (s)	6.7	7.0	7.0	6.7	7.0	7.0	6.2	6.2	6.7	6.8	6.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	766	1443	645	344	1928	600	312	211	536	555	297	
v/s Ratio Prot	c0.13	c0.36		0.10	0.32		0.05	0.06	0.10	c0.17	c0.10	
v/s Ratio Perm			0.00			0.18			0.07			
v/c Ratio	0.59	0.87	0.00	0.52	0.86	0.49	0.59	0.49	0.51	1.03	0.57	
Uniform Delay, d1	45.2	35.4	22.8	46.9	37.1	30.7	56.8	54.1	37.0	54.5	48.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.2	6.1	0.0	1.4	5.2	2.8	2.8	1.8	0.8	46.8	2.5	
Delay (s)	46.4	41.5	22.8	48.4	42.3	33.5	59.6	56.0	37.8	101.3	50.9	
Level of Service	D	D	C	D	D	C	E	E	D	F	D	
Approach Delay (s)		42.8			41.2			48.2			82.6	
Approach LOS		D			D			D			F	

Intersection Summary

HCM Average Control Delay	49.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	3539	1583	3433	3539	1583
Volume (vph)	298	1561	56	507	1691	115	159	416	372	266	334	71
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.87	0.87	0.87	0.91	0.91	0.91
Adj. Flow (vph)	327	1715	62	557	1858	126	183	478	428	292	367	78
RTOR Reduction (vph)	0	0	28	0	0	58	0	0	172	0	0	59
Lane Group Flow (vph)	327	1715	34	557	1858	68	183	478	256	292	367	19
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			2
Actuated Green, G (s)	12.6	34.1	34.1	20.2	41.7	41.7	6.0	22.7	22.7	7.0	23.7	23.7
Effective Green, g (s)	14.6	37.1	37.1	22.2	44.7	44.7	8.0	25.7	25.7	9.0	26.7	26.7
Actuated g/C Ratio	0.13	0.34	0.34	0.20	0.41	0.41	0.07	0.23	0.23	0.08	0.24	0.24
Clearance Time (s)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	456	1715	534	693	2066	643	250	827	370	281	859	384
v/s Ratio Prot	0.10	c0.34		c0.16	0.37		0.05	0.14		c0.09	0.10	
v/s Ratio Perm			0.02			0.04			c0.16			0.01
v/c Ratio	0.72	1.00	0.06	0.80	0.90	0.11	0.73	0.58	0.69	1.04	0.43	0.05
Uniform Delay, d1	45.7	36.4	24.7	41.8	30.5	20.3	50.0	37.3	38.5	50.5	35.2	31.9
Progression 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
Incremental Delay, d2	5.3	21.7	0.1	6.7	5.7	0.1	10.5	2.9	10.2	64.2	1.6	0.2
Delay (s)	51.0	58.2	24.7	48.5	36.2	20.3	60.5	40.3	48.8	114.7	36.7	32.2
Level of Service	D	E	C	D	D	C	E	D	D	F	D	C
Approach Delay (s)		56.1			38.1			47.0			67.2	
Approach LOS		E			D			D			E	

Intersection Summary

HCM Average Control Delay	48.8	HCM Level of Service	D
HCM Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	41	0	45	138	1	68	61	516	152	77	489	47
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.96	0.96	0.96	0.87	0.87	0.87
Hourly flow rate (vph)	44	0	48	150	1	74	64	538	158	89	562	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1236	1589	308	1250	1537	348	616			696		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1236	1589	308	1250	1537	348	616			696		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	57	100	93	0	99	89	93			90		
cM capacity (veh/h)	102	90	688	106	97	648	960			896		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	91	150	75	64	358	338	89	375	241
Volume Left	44	150	0	64	0	0	89	0	0
Volume Right	48	0	74	0	0	158	0	0	54
cSH	184	106	599	960	1700	1700	896	1700	1700
Volume to Capacity	0.50	1.42	0.13	0.07	0.21	0.20	0.10	0.22	0.14
Queue Length 95th (ft)	61	269	11	5	0	0	8	0	0
Control Delay (s)	42.4	308.5	11.9	9.0	0.0	0.0	9.5	0.0	0.0
Lane LOS	E	F	B	A			A		
Approach Delay (s)	42.4	209.6		0.8			1.2		
Approach LOS	E	F							

Intersection Summary			
Average Delay	29.5		
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3281		1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.57	1.00		0.73	1.00	1.00	0.20	1.00	1.00	0.07	1.00	1.00
Satd. Flow (perm)	1069	3281		1363	3539	1583	374	3539	1583	132	3539	1583
Volume (vph)	164	15	14	124	43	762	36	1493	5	429	1040	32
Peak-hour factor, PHF	0.78	0.78	0.78	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Adj. Flow (vph)	210	19	18	129	45	794	38	1555	5	466	1130	35
RTOR Reduction (vph)	0	13	0	0	0	39	0	0	2	0	0	15
Lane Group Flow (vph)	210	24	0	129	45	755	38	1555	3	466	1130	20
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	28.2	28.2		12.5	12.5	25.4	53.9	50.3	50.3	69.2	59.6	59.6
Effective Green, g (s)	30.8	30.8		15.1	15.1	30.0	57.9	52.3	52.3	71.2	61.6	61.6
Actuated g/C Ratio	0.28	0.28		0.14	0.14	0.27	0.53	0.48	0.48	0.65	0.56	0.56
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	374	919		187	486	489	268	1683	753	307	1982	886
v/s Ratio Prot	c0.06	0.01			0.01	c0.21	0.01	0.44		0.21	0.32	
v/s Ratio Perm	0.10			0.09		0.27	0.07		0.00	c0.77		0.01
v/c Ratio	0.56	0.03		0.69	0.09	1.54	0.14	0.92	0.00	1.52	0.57	0.02
Uniform Delay, d1	32.4	28.7		45.2	41.5	40.0	13.2	27.0	15.2	36.4	15.6	10.8
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.15	1.99
Incremental Delay, d2	1.9	0.0		10.1	0.1	254.6	0.2	10.0	0.0	247.5	1.1	0.0
Delay (s)	34.4	28.7		55.4	41.5	294.6	13.4	37.0	15.2	280.7	19.1	21.4
Level of Service	C	C		E	D	F	B	D	B	F	B	C
Approach Delay (s)		33.5			250.9			36.4			93.9	
Approach LOS		C			F			D			F	

Intersection Summary

HCM Average Control Delay	104.1	HCM Level of Service	F
HCM Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3357		1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.58	1.00		0.71	1.00	1.00	0.07	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	1078	3357		1317	3539	1583	128	3539	1583	120	3539	1583
Volume (vph)	266	38	20	125	18	516	33	1689	9	700	1877	85
Peak-hour factor, PHF	0.80	0.80	0.80	0.94	0.94	0.94	0.84	0.84	0.84	0.88	0.88	0.88
Adj. Flow (vph)	332	48	25	133	19	549	39	2011	11	795	2133	97
RTOR Reduction (vph)	0	20	0	0	0	5	0	0	3	0	0	25
Lane Group Flow (vph)	332	53	0	133	19	544	39	2011	8	795	2133	72
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	26.4	26.4		11.4	11.4	50.4	60.8	56.0	56.0	101.0	90.2	90.2
Effective Green, g (s)	29.0	29.0		14.0	14.0	55.0	64.8	58.0	58.0	103.0	92.2	92.2
Actuated g/C Ratio	0.21	0.21		0.10	0.10	0.39	0.46	0.41	0.41	0.74	0.66	0.66
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	278	695		132	354	667	139	1466	656	572	2331	1043
v/s Ratio Prot	c0.09	0.02			0.01	0.24	0.01	0.57		c0.41	0.60	
v/s Ratio Perm	c0.15			0.10		0.10	0.12		0.01	c0.62		0.05
v/c Ratio	1.19	0.08		1.01	0.05	0.81	0.28	1.37	0.01	1.39	0.92	0.07
Uniform Delay, d1	54.8	44.7		63.0	57.0	38.0	52.9	41.0	24.1	51.7	20.5	8.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	0.86	1.54	2.58
Incremental Delay, d2	117.1	0.0		80.4	0.1	7.6	1.1	171.7	0.0	182.2	4.7	0.1
Delay (s)	171.9	44.8		143.4	57.1	45.5	54.1	212.7	24.2	226.8	36.3	22.2
Level of Service	F	D		F	E	D	D	F	C	F	D	C
Approach Delay (s)		149.0			64.4			208.7			85.9	
Approach LOS		F			E			F			F	

Intersection Summary

HCM Average Control Delay	128.5	HCM Level of Service	F
HCM Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	116.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3263		1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.57	1.00		0.60	1.00	1.00	0.10	1.00	1.00	0.06	1.00	1.00
Satd. Flow (perm)	1067	3263		1114	3539	1583	190	3539	1583	105	3539	1583
Volume (vph)	279	101	110	129	51	642	23	1514	9	496	1497	122
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.84	0.84	0.84
Adj. Flow (vph)	328	119	129	152	60	755	27	1781	11	590	1782	145
RTOR Reduction (vph)	0	75	0	0	0	7	0	0	3	0	0	40
Lane Group Flow (vph)	328	173	0	152	60	748	27	1781	8	590	1782	105
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6	2		2
Actuated Green, G (s)	28.4	28.4		13.4	13.4	51.4	68.6	65.0	65.0	109.0	99.4	99.4
Effective Green, g (s)	31.0	31.0		16.0	16.0	56.0	72.6	67.0	67.0	111.0	101.4	101.4
Actuated g/C Ratio	0.21	0.21		0.11	0.11	0.37	0.48	0.45	0.45	0.74	0.68	0.68
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	272	674		119	377	633	151	1581	707	522	2392	1070
v/s Ratio Prot	c0.09	0.05			0.02	c0.31	0.01	0.50		0.30	0.50	
v/s Ratio Perm	c0.16			0.14		0.16	0.08		0.00	c0.54		0.07
v/c Ratio	1.21	0.26		1.28	0.16	1.18	0.18	1.13	0.01	1.13	0.74	0.10
Uniform Delay, d1	58.7	49.9		67.0	60.9	47.0	21.1	41.5	23.1	57.2	15.9	8.4
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.12	0.32	0.09
Incremental Delay, d2	122.1	0.2		174.6	0.2	97.4	0.6	65.7	0.0	75.6	1.6	0.1
Delay (s)	180.7	50.1		241.6	61.1	144.4	21.6	107.2	23.1	139.4	6.7	0.9
Level of Service	F	D		F	E	F	C	F	C	F	A	A
Approach Delay (s)		124.5			154.5			105.4			37.5	
Approach LOS		F			F			F			D	

Intersection Summary

HCM Average Control Delay	86.3	HCM Level of Service	F
HCM Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	4.0
Intersection Capacity Utilization	107.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.95	1.00
Frt	1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3281		1770	3539	1583	1770	5085	1583	3433	3539	1583
Flt Permitted	0.59	1.00		0.73	1.00	1.00	0.25	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1094	3281		1363	3539	1583	469	5085	1583	3433	3539	1583
Volume (vph)	164	15	14	124	43	762	36	1493	5	429	1040	32
Peak-hour factor, PHF	0.78	0.78	0.78	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92
Adj. Flow (vph)	210	19	18	129	45	794	38	1555	5	466	1130	35
RTOR Reduction (vph)	0	13	0	0	0	41	0	0	4	0	0	16
Lane Group Flow (vph)	210	24	0	129	45	753	38	1555	1	466	1130	19
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	26.3	26.3		14.3	14.3	45.4	33.1	29.0	29.0	31.1	56.0	56.0
Effective Green, g (s)	28.9	28.9		16.9	16.9	50.0	37.1	31.0	31.0	33.1	58.0	58.0
Actuated g/C Ratio	0.28	0.28		0.16	0.16	0.48	0.35	0.30	0.30	0.32	0.55	0.55
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	903		219	570	814	241	1501	467	1082	1955	874
v/s Ratio Prot	c0.05	0.01			0.01	c0.29	0.01	c0.31		0.14	0.32	
v/s Ratio Perm	0.12			0.09		0.18	0.05		0.00			0.01
v/c Ratio	0.59	0.03		0.59	0.08	0.93	0.16	1.04	0.00	0.43	0.58	0.02
Uniform Delay, d1	32.2	27.8		40.8	37.4	25.7	22.4	37.0	26.1	28.5	15.5	10.6
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	0.0		4.0	0.1	16.1	0.3	33.1	0.0	0.3	1.3	0.0
Delay (s)	34.9	27.8		44.8	37.5	41.9	22.7	70.1	26.1	28.8	16.7	10.7
Level of Service	C	C		D	D	D	C	E	C	C	B	B
Approach Delay (s)		33.8			42.1			68.8			20.0	
Approach LOS		C			D			E			C	

Intersection Summary

HCM Average Control Delay	43.1	HCM Level of Service	D
HCM Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.95	1.00
Frt	1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3357		1770	3539	1583	1770	5085	1583	3433	3539	1583
Flt Permitted	0.63	1.00		0.71	1.00	1.00	0.07	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1172	3357		1317	3539	1583	138	5085	1583	3433	3539	1583
Volume (vph)	266	38	20	125	18	516	33	1689	9	700	1877	85
Peak-hour factor, PHF	0.80	0.80	0.80	0.94	0.94	0.94	0.84	0.84	0.84	0.88	0.88	0.88
Adj. Flow (vph)	332	48	25	133	19	549	39	2011	11	795	2133	97
RTOR Reduction (vph)	0	19	0	0	0	10	0	0	4	0	0	19
Lane Group Flow (vph)	332	54	0	133	19	539	39	2011	7	795	2133	78
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	31.2	31.2		19.2	19.2	62.4	57.4	52.0	52.0	43.2	89.8	89.8
Effective Green, g (s)	33.8	33.8		21.8	21.8	67.0	61.4	54.0	54.0	45.2	91.8	91.8
Actuated g/C Ratio	0.23	0.23		0.15	0.15	0.46	0.42	0.37	0.37	0.31	0.63	0.63
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	783		198	532	775	142	1894	590	1070	2241	1002
v/s Ratio Prot	c0.06	0.02			0.01	c0.22	0.01	c0.40		0.23	c0.60	
v/s Ratio Perm	c0.19			0.10		0.12	0.10		0.00			0.05
v/c Ratio	1.08	0.07		0.67	0.04	0.70	0.27	1.06	0.01	0.74	0.95	0.08
Uniform Delay, d1	55.6	43.3		58.2	52.6	30.9	32.4	45.5	28.7	44.7	24.6	10.3
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	76.0	0.0		8.6	0.0	2.7	1.1	39.3	0.0	2.8	10.6	0.2
Delay (s)	131.6	43.4		66.9	52.6	33.7	33.4	84.8	28.7	47.5	35.2	10.4
Level of Service	F	D		E	D	C	C	F	C	D	D	B
Approach Delay (s)		115.7			40.5			83.6			37.6	
Approach LOS		F			D			F			D	

Intersection Summary

HCM Average Control Delay	58.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.91	1.00	0.97	0.95	1.00
Frt	1.00	0.92		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	3263		1770	3539	1583	1770	5085	1583	3433	3539	1583
Flt Permitted	0.62	1.00		0.60	1.00	1.00	0.08	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1153	3263		1114	3539	1583	152	5085	1583	3433	3539	1583
Volume (vph)	279	101	110	129	51	642	23	1514	9	496	1497	122
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.84	0.84	0.84
Adj. Flow (vph)	328	119	129	152	60	755	27	1781	11	590	1782	145
RTOR Reduction (vph)	0	66	0	0	0	12	0	0	5	0	0	38
Lane Group Flow (vph)	328	182	0	152	60	743	27	1781	6	590	1782	107
Turn Type	pm+pt			Perm		pm+ov	pm+pt		Perm	Prot		Perm
Protected Phases	7	4			8	5	1	6		5	2	
Permitted Phases	4			8		8	6		6			2
Actuated Green, G (s)	34.9	34.9		22.9	22.9	57.4	50.9	47.0	47.0	34.5	77.6	77.6
Effective Green, g (s)	37.5	37.5		25.5	25.5	62.0	54.9	49.0	49.0	36.5	79.6	79.6
Actuated g/C Ratio	0.28	0.28		0.19	0.19	0.46	0.41	0.36	0.36	0.27	0.59	0.59
Clearance Time (s)	6.6	6.6		6.6	6.6	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	357	906		210	668	774	133	1846	575	928	2087	933
v/s Ratio Prot	c0.05	0.06			0.02	c0.26	0.01	c0.35		0.17	0.50	
v/s Ratio Perm	0.20			0.14		0.21	0.07		0.00			0.07
v/c Ratio	0.92	0.20		0.72	0.09	0.96	0.20	0.96	0.01	0.64	0.85	0.11
Uniform Delay, d1	47.2	37.3		51.4	45.2	35.3	26.8	42.2	27.5	43.4	22.9	12.2
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	27.7	0.1		11.7	0.1	22.6	0.8	14.1	0.0	1.4	4.7	0.2
Delay (s)	74.9	37.4		63.1	45.2	57.9	27.6	56.3	27.5	44.8	27.6	12.4
Level of Service	E	D		E	D	E	C	E	C	D	C	B
Approach Delay (s)		58.8			57.9			55.7			30.8	
Approach LOS		E			E			E			C	

Intersection Summary

HCM Average Control Delay	45.7	HCM Level of Service	D
HCM Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group