DEVELOPMENT OF REGIONAL IMPACT
(DRI #2778)
TRAFFIC STUDY
FOR
PARKWAY 400 MIXED-USE DEVELOPMENT

ALPHARETTA, GEORGIA

Prepared for:

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A & R Project # 18-009

EXECUTIVE SUMMARY

Traffic impacts were evaluated for the added traffic from the proposed Parkway 400 mixed-use development located west of Northwinds Parkway between SR 120 (Old Milton Parkway) and Kimball Bridge Road in Alpharetta, Georgia. The development will consist of 450,000 square feet of office space, 325 multifamily units, 6,000 square feet of retail/restaurant space, and a 10,000 square foot playhouse/theater.

The development proposes one full-access and two right-in/right-out driveways on Northwinds Parkway, as well as a connection to SR 120 (Old Milton Parkway) and Kimball Bridge Road via Amber Park Drive. Existing and future operations after completion of the project were analyzed at the intersections of:

- SR 120 (Old Milton Parkway) at GA 400 Northbound Ramps
- SR 120 (Old Milton Parkway) at GA 400 Southbound Ramps
- SR 120 (Old Milton Parkway) at Northwinds Parkway
- SR 120 (Old Milton Parkway) at Amber Park Drive
- Northwinds Parkway at Kimball Bridge Road

The analysis included the evaluation of Future operations for "No-Build" and "Build" conditions, both of which account for increases in annual growth of through traffic. The results of the analysis are listed below:

System Recommendations and Improvements

A summary of the system improvements, which address deficiencies that are found within the existing road network for the "No-Build" conditions, is provided below. These are recommended for the local municipality to use in planning future transportation projects. A concept design of these improvements is included in the Appendix.

Summary of Recommended System Improvements

- SR 120 (Old Milton Parkway) @ GA 400 NB Ramps
    - Create a second eastbound left turn lane using the existing second westbound left turn lane at the adjacent intersection for the GA 400 SB Ramps
    - Create a second receiving lane on the GA 400 NB On-Ramp
    - Remove the inside westbound through lane by replacing with a raised median

Site Access Configuration

The following access configuration was utilized when modeling the proposed site driveway intersections:

- Site Driveway #1: Full-access driveway on Northwinds Parkway
    - This driveway is recommended to consist of one entering and two exiting lanes. The eastbound (driveway) approach is recommended to have a dedicated left turn lane and a dedicated right turn lane for exiting traffic.

    - The intersection is proposed to be unsignalized with a STOP sign on the eastbound approach.
    - Entering left turn movements are assumed to be made from the existing northbound left-turn lane.
    - Entering right turn movements are assumed to be made from the southbound through lane. No deceleration lane is planned warranted. (See Appendix)
- Site Driveways #2 & #3: Right-in/right-out driveways on Northwinds Parkway
    - Each of these driveways are proposed to consist of one entering and one exiting lane. The eastbound (driveway) approach is proposed to have only one right turn lane for exiting traffic.
    - Each intersection is proposed to be unsignalized with a STOP sign on the eastbound approach.
    - Entering right turn movements are proposed to be made from the southbound through lane. No deceleration lane is warranted. (See Appendix)
- Site Driveway #4: Right-in/right-out driveway on Amber Park Drive (not included in analysis)
    - This driveway is recommended to consist of one entering and one exiting lane. The northbound (driveway) approach is recommended to have a right turn lane for exiting traffic.
    - The intersection is proposed to be unsignalized with a STOP sign on the northbound approach.
    - Entering right turn movements are assumed to be made from the outside through lane within the existing roundabout.

Site Mitigation Improvements

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development. A summary of the system improvements is provided below. A concept design of these improvements is included in the Appendix.

Summary of Recommended Site Mitigation Improvements

- SR 120 (Old Milton Parkway) @ Northwinds Parkway/2nd Street
    - Install a second westbound left turn lane with protected signal phasing on SR 120 (Old Milton Parkway)

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INTRODUCTION

The purpose of this study is to determine the traffic impact that will result from the proposed Parkway 400 mixed-use development located west of Northwinds Parkway between SR 120 (Old Milton Parkway) and Kimball Bridge Road in Alpharetta, Georgia. The traffic analysis evaluates the current operations compared to the future conditions with the traffic generated by the development. The proposed development will consist of:

- 450,000 square feet of office space
- 325 multifamily units
- 6,000 square feet of retail/restaurant space
- 10,000 square foot playhouse/theater

The development proposes one full-access and two right-in/right-out driveways on Northwinds Parkway, as well as a connection to SR 120 (Old Milton Parkway) and Kimball Bridge Road via Amber Park Drive.

The AM and PM peak hours have been analyzed in this study. In addition to the site access points, this study includes the evaluation of traffic operations at the intersections of:

- SR 120 (Old Milton Parkway) at GA 400 Northbound Ramps
- SR 120 (Old Milton Parkway) at GA 400 Southbound Ramps

- SR 120 (Old Milton Parkway) at Northwinds Parkway
- SR 120 (Old Milton Parkway) at Amber Park Drive
- Northwinds Parkway at Kimball Bridge Road

Recommendations to improve traffic operations have been identified as appropriate and are discussed in detail in the following sections of the report.

STUDY NETWORK DETERMINATION

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

The traffic generated by the proposed project was then assigned to the area roadways using the trip distribution to determine the site-generated traffic on each roadway segment. The boundaries of the study network extend to the most distant intersections where at least 7% of the service volumes on the segment are attributed to project traffic. The following study intersections fell within the 7% rule and/or have been selected as being suitable for evaluation in discussions with GRTA, ARC, GDOT, and the City of Alpharetta:

1. SR 120 (Old Milton Parkway) at GA 400 Northbound Ramps
2. SR 120 (Old Milton Parkway) at GA 400 Southbound Ramps
3. SR 120 (Old Milton Parkway) at Northwinds Parkway
4. SR 120 (Old Milton Parkway) at Amber Park Drive
5. Northwinds Parkway at Kimball Bridge Road

The location of the development and the surrounding study network is shown in Figure 1. Other intersections within this corridor, such as unsignalized side streets, right-in/right-out driveways or private driveways have not been included in the study network.

Existing Roadway Facilities

The following is a brief description of each of the roadway facilities located in proximity to the site:

GA 400/US 19

GA 400/US 19 is a north-south, four-lane, median-divided roadway with a posted speed limit of 65 mph in the vicinity of the site. GDOT traffic counts (Station IDs 1210460 & 1210459) indicate that the daily traffic volume on GA 400 in 2016 was 137,000 vehicles per day north of Webb Bridge Road and 146,000 vehicles per day south of Kimball Bridge Road. GDOT classifies GA 400 as a Principal Arterial - Freeways and Expressways roadway.

SR 120 (Old Milton Parkway)

SR 120 (Old Milton Parkway) is an east-west, six-lane, median-divided roadway with a posted speed limit of 45 mph in the vicinity of the site. GDOT traffic counts (Station IDs 1210308 & 1210310) indicate that the daily traffic volume on SR 120 (Old Milton Parkway) in 2016 was 40,200 vehicles per day east of Haynes Bridge Road and 38,700 vehicles per day east of Amber Park Drive. GDOT classifies SR 120 (Old Milton Parkway) as a Principal Arterial roadway.

Northwinds Parkway

Northwinds Parkway is a north-south, four-lane, median-divided roadway with a posted speed limit of 35 mph in the vicinity of the site.

Kimball Bridge Road

Kimball Bridge Road is an east-west, two-lane, undivided roadway with a posted speed limit of 35 mph in the vicinity of the site.

Amber Park Drive

Amber Park Drive is a north-south, four-lane, median-divided roadway that serves as the entrance to the Parkway 400 area and has no posted speed limit.

Existing Bicycle and Pedestrian Facilities

The following is a brief description of each of the bicycle and pedestrian facilities located in proximity to the site:

Nearby local or regional trails

The proposed Alpha Loop "Inner Loop" proposes a 3.25 mile multi-use path that will connect Avalon (north of SR 120) to Downtown Alpharetta and the Northwinds Area. The trail will include bicycle service areas and pockets of seating areas where people can gather or rest. Sections of the "Inner Loop" will be located along the east side of Northwinds Parkway in the study area.

Bicycle paths or sidewalks

Sidewalks and pedestrian facilities are present along the following roadways in the study network:

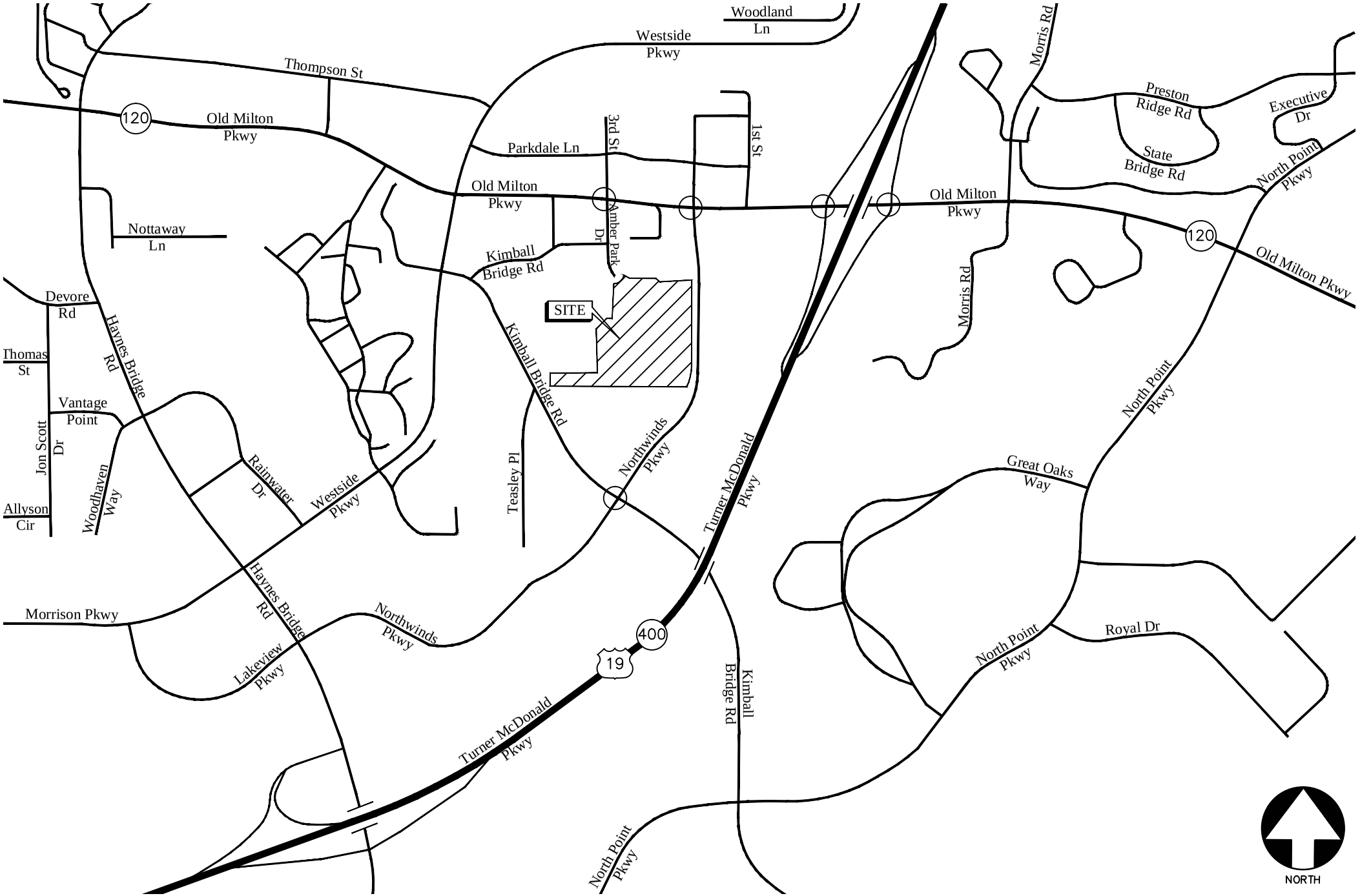
- SR 120 (Old Milton Parkway) along both sides of the road
- Northwinds Parkway along both sides of the road between Kimball Bridge Road and SR 120 (Old Milton Parkway)
- Amber Park Drive along both sides of the road
- Kimball bridge Road along the north side of the road at its intersection with Northwinds Parkway

Bike paths are present along the following roadways in the study network:

- Northwinds Parkway along both sides of the road, between SR 120 (Old Milton Parkway) and Kimball Bridge Road

Existing Transit Facilities

MARTA Bus Route 185 operates from North Springs Station along GA 400, Holcomb Bridge Road, SR 9, and SR 120 (Old Milton Parkway). Points of Interest include: North Fulton Hospital, Downtown Alpharetta, Avalon, Gwinnett Tech – Alpharetta Campus, and GSU-Perimeter College.



LOCATION MAP AND STUDY INTERSECTIONS

FIGURE 1

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STUDY METHODOLOGY

In this study, the methodology used for evaluating traffic operations at each of the subject intersections is based on the criteria set forth in the Transportation Research Board's Highway Capacity Manual, 2010 edition (HCM 2010). Synchro software, which utilizes the HCM methodology, was used for the analysis. At specific intersections in which HCM 2010 is unable to report results, HCM 2000 will be used instead. The following is a description of the methodology employed for the analysis of unsignalized and signalized intersections.

Unsignalized Intersections

For unsignalized intersections at which the side street or minor street is controlled by a stop sign, the criteria for evaluating traffic operations are the level-of-service (LOS) for the turning movements at the intersection and the level-of-service for the overall intersection. Level-of-service is based on the average controlled delay incurred at the intersection. Controlled delay for unsignalized intersections includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Several factors affect the controlled delay for unsignalized intersections, such as the availability and distribution of gaps in the conflicting traffic stream, critical gaps, and follow-up time for a vehicle in the queue.

Level-of-service is assigned a letter designation from "A" through "F". Level-of-service "A" indicates excellent operations with little delay to motorists, while level-of-service "F" exists when there are insufficient gaps of acceptable size to allow vehicles on the side street to cross safely, resulting in extremely long total delays and long queues. The level-of-service criteria for two-way stop-controlled and all-way stop-controlled (unsignalized) intersections are given in Table 1.

TABLE 1 – LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level-of-service	Average Delay (sec)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Source: 2000 and 2010 Highway Capacity Manual

Signalized Intersections

For signalized intersections, it is necessary to evaluate both capacity and level-of-service in order to evaluate the overall operation of the intersection. The capacity analysis of an intersection is performed by comparing the volume of traffic using the various lane groups at the intersection to the capacity of those lane groups. This results in a volume/capacity (v/c) ratio for each lane group. A v/c ratio greater than 1.0 indicates that the volume of traffic has exceeded the capacity available, resulting in a temporary excess of demand. Although the capacity of the entire intersection is not defined, a composite v/c ratio for the sum of the critical lane groups within the intersection is computed. This composite v/c ratio is an indication of the overall intersection sufficiency.

Level-of-service for a signalized intersection is defined in terms of average controlled delay per vehicle, which is composed of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The level-of-service criteria for signalized intersections, based on average controlled delay, are shown in Table 2. Level-of-service "A" indicates operations with very low controlled delay, while level-of-service "F" describes operations with extremely high average controlled delay. Level-of-service "E" is typically considered to be the limit of acceptable delay, and level-of-service "F" is considered unacceptable by most drivers.

TABLE 2 – LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level-of-service	Average Control Delay (sec)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Source: 2000 and 2010 Highway Capacity Manual

EXISTING TRAFFIC ANALYSIS

Existing traffic counts were obtained at the following study intersections:

- SR 120 (Old Milton Parkway) at GA 400 Northbound Ramps
- SR 120 (Old Milton Parkway) at GA 400 Southbound Ramps
- SR 120 (Old Milton Parkway) at Northwinds Parkway
- SR 120 (Old Milton Parkway) at Amber Park Drive
- Northwinds Parkway at Kimball Bridge Road

Turning movement counts were collected on Tuesday, February 6, 2018. All turning movement counts were recorded during the AM and PM peak hours between 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., respectively. The four consecutive 15-minute interval volumes that summed to produce the highest volume at the intersections were then determined. These volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 2.

Existing Traffic Operations

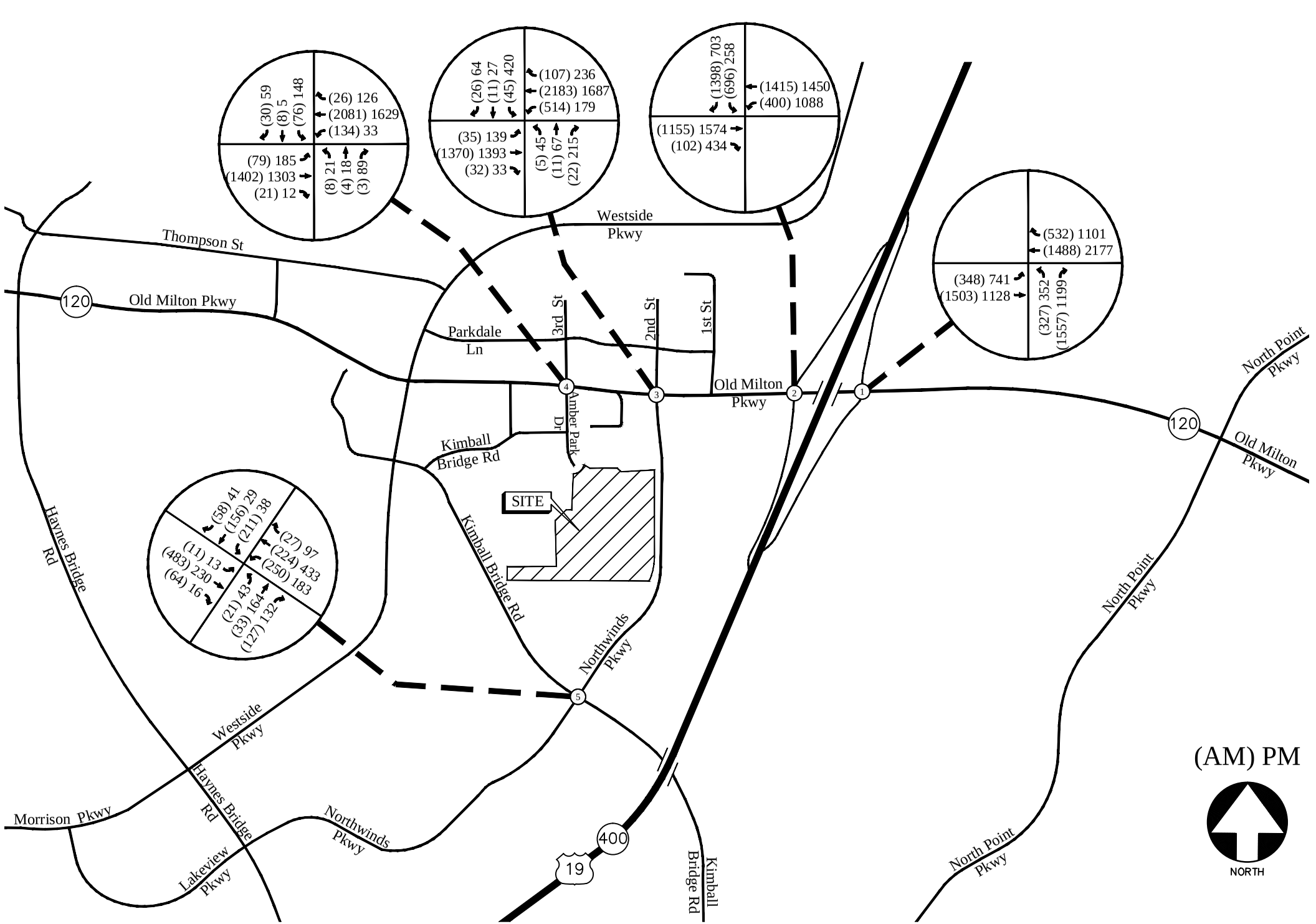
Existing traffic operations were analyzed at the study intersections in accordance with the HCM methodology, and the results are shown below in Table 3. The existing traffic control and lane geometry for the intersections is shown in Figure 3.

TABLE 3 – EXISTING INTERSECTION OPERATIONS

	Intersection	Traffic Control	AM Peak	PM Peak	LOS Standard
1	**SR 120 @ GA 400 NB Ramps***	Signalized	**E (59.0)**	**F (105.1)**	**E / E**
	-Eastbound Approach		B (18.9)	F (102.6)	-
	-Westbound Approach		D (49.2)	F (129.7)	-
	-Northbound Approach		F (111.9)	D (54.6)	-
2	**SR 120 @ GA 400 SB Ramps**	Signalized	**C (23.8)**	**D (42.6)**	**D / D**
	-Eastbound Approach		B (18.8)	E (71.2)	-
	-Westbound Approach		A (8.5)	B (15.4)	-
	-Southbound Approach		E (72.3)	F (87.0)	-
3	**SR 120 @ Northwinds Pkwy**	Signalized	**D (46.9)**	**E (59.1)**	**D / E**
	-Eastbound Approach		A (0.6)	A (3.2)	-
	-Westbound Approach		E (70.1)	B (18.6)	-
	-Northbound Approach		E (73.7)	E (78.4)	-
	-Southbound Approach		E (70.5)	F (350.1)	-
4	**SR 120 @ Amber Park Dr**	Signalized	**B (11.7)**	**B (17.7)**	**D / D**
	-Eastbound Approach		C (20.5)	C (22.8)	-
	-Westbound Approach		A (2.3)	A (0.9)	-
	-Northbound Approach		E (78.0)	E (76.9)	-
	-Southbound Approach		F (82.5)	F (141.2)	-
5	**Northwinds Pkwy @ Kimball Bridge Rd***	Signalized	**C (31.8)**	**C (23.5)**	**D / D**
	-Eastbound Approach		C (29.7)	C (23.1)	-
	-Westbound Approach		B (18.2)	B (18.1)	-
	-Northbound Approach		D (45.1)	C (29.5)	-
	-Southbound Approach		D (44.8)	D (36.9)	-

**Results reported via HCM 2000*

The results of existing traffic operations analysis indicate that the intersections of SR 120 (Old Milton Parkway) at GA 400 northbound ramps and SR 120 (Old Milton Parkway) at Northwinds Parkway are operating below an acceptable level-of-service (“D” or better) during one or both peak hours. These areas are addressed in the Future Traffic Operations section.



EXISTING WEEKDAY PEAK HOUR VOLUMES

FIGURE 2

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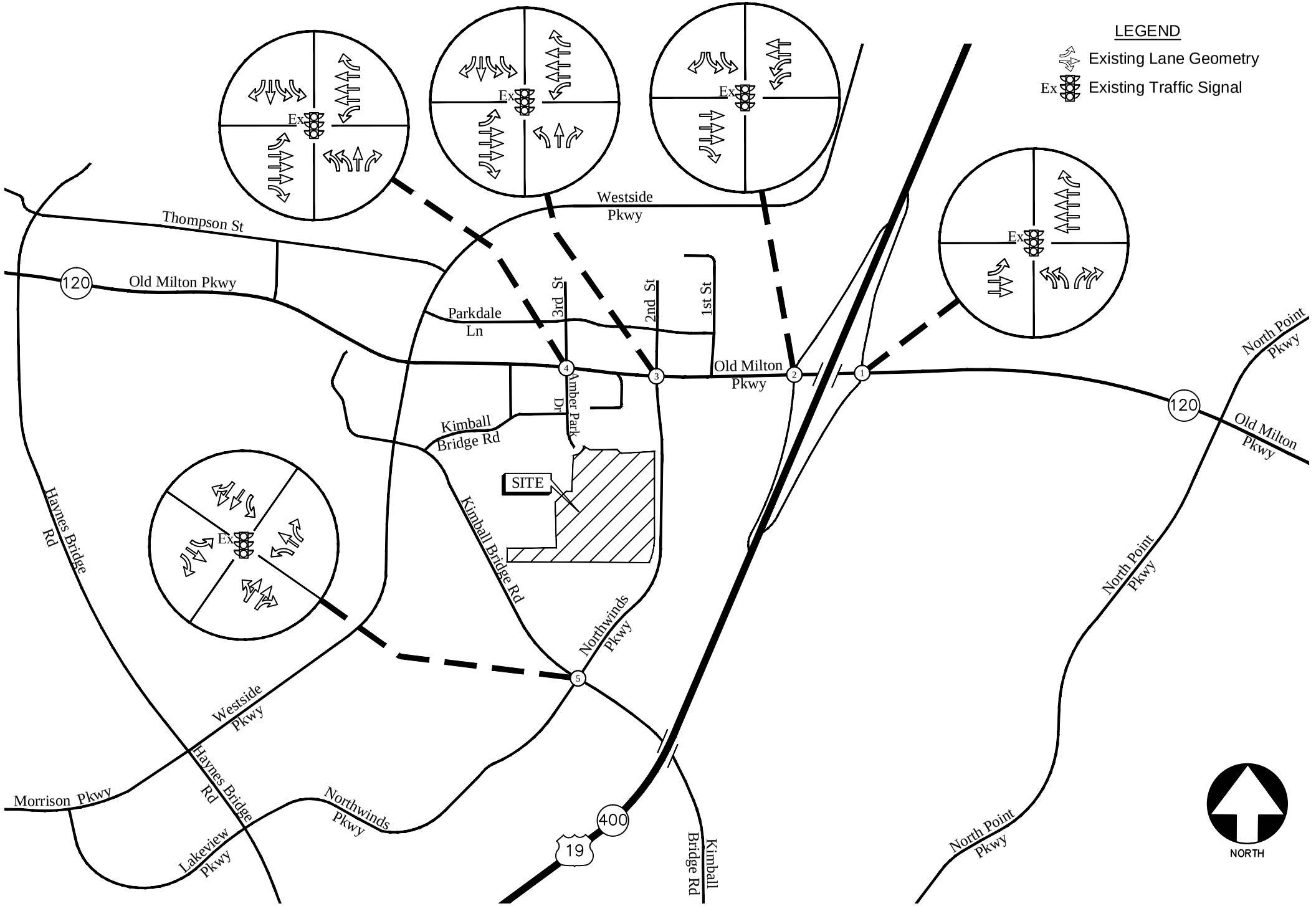


EXISTING TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 3

PROJECT DESCRIPTION

The proposed Parkway 400 mixed-use development will be located west of Northwinds Parkway between SR 120 (Old Milton Parkway) and Kimball Bridge Road in Alpharetta, Georgia. The development will consist of:

- 450,000 square feet of office space
- 325 multifamily units
- 6,000 square feet of retail/restaurant space
- 10,000 square foot playhouse/theater

The development proposes one full-access and two right-in/right-out driveways on Northwinds Parkway, as well as a connection to SR 120 (Old Milton Parkway) and Kimball Bridge Road via Amber Park Drive.

Site Plan

A site plan is shown in Figure 4. A larger size drawing and a digital copy of the site plan are also provided with this report.

Planned Bicycle and Pedestrian Facilities

The on and/or off-site provisions for non-motorized travel included in the planned construction of the proposed development are as follows:

- The proposed development will be comprised of residential, retail, and office uses. Pedestrian connections are proposed between the mixed-uses on the site.
- The development plan includes several design elements that enhance the character and quality the site by incorporating bicycle and pedestrian facilities between the mix of land uses.
- The convenience and flexibility of the site benefit from public access to adjacent streets and internal connectivity between some of the parcels.

Planned Transit Facilities

The site is not directly served by transit. However, the nearest corridor that is served by MARTA is SR 120 (Old Milton Parkway), bus route 185, which is north of the property at the corner of SR 120 (Old Milton Parkway) and Northwinds Parkway.

Consistency with Adopted Comprehensive Plan

The following is an explanation as to how the proposed DRI relates to the local government's Comprehensive Plan, in particular the transportation and capital improvements element, and any transportation improvements listed in the Short-Term Work Program(s) within the vicinity of the DRI. The proposed development is included within the "Kimball Bridge Activity Center" as outlined in the Alpharetta Comprehensive Plan 2035. This type of development follows the intent of the activity center by preserving and enhancing corporate campuses, businesses, parks and shopping areas as well as connectivity to neighborhoods, corridors and other communities with vehicular, pedestrian, bicycle and public transportation improvements.

Project Phasing

A phasing schedule shall be provided for any proposed DRIs involving multiple phases. The phasing schedule shall include the types and amounts of land uses to be developed and should be identified by phase, the site location of each land use by phase, the amenities to be developed with each phase, and all transportation elements. The transportation elements shall focus upon infrastructure in place, access to the development, and internal mobility during each phase analyzed. This project has been evaluated for the complete build-out of the development in 2022.

Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 10th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE Land Uses: *221 – Multifamily Housing (Mid-Rise), 710 – General Office Building, 820 – Shopping Center* and *444 – Movie Theater*. Mixed-use reductions and pass-by reductions have also been applied per ITE standards where applicable.

Due to the development's direct access to The Avalon and MARTA Route 185 bus stop at SR 120 (Old Milton Parkway) and 2nd Street, as well as the proximity to the proposed Alpha Loop pedestrian/bike trail, a multimodal transportation reduction of 5% was applied based on ITE standards. The calculated trip generation for the development is shown in Table 4.

TABLE 4 – TRIP GENERATION

Land Use	Size	AM Peak Hour			PM Peak Hour			24-Hour
		Enter	Exit	Total	Enter	Exit	Total	Two-way
ITE 221 – Multifamily Housing (Mid-Rise)	325 Units	28	81	109	84	53	137	1,770
ITE 444 – Movie Theater	10,000 sf	1	1	2	58	4	62	781
ITE 710 – General Office Building	450,000 sf	387	62	449	76	399	475	4,564
ITE 820 – Shopping Center	6,000 sf	96	59	155	33	35	68	887
Total Site Trips (without reductions)		**512**	**203**	**715**	**251**	**491**	**742**	**8,002**
Internal Capture for Multifamily Housing		*-8*	*-9*	*-17*	*-7*	*-8*	*-15*	*-194*
Internal Capture for Theater		*-5*	*-4*	*-9*	*-5*	*-3*	*-8*	*-105*
Internal Capture for Office		*-2*	*-3*	*-5*	*-1*	*-4*	*-5*	*-85*
Internal Capture for Shopping Center		*-6*	*-5*	*-11*	*-5*	*-3*	*-8*	*-120*
Total Internal (Mixed-Use) Trip Reductions		***-21***	***-21***	***-42***	***-18***	***-18***	***-36***	***-504***
Pass-by for Shopping Center (0%) 34%		*0*	*0*	*0*	*-10*	*-11*	*-21*	*-210*
Residential and Retail Alternative Mode Reduction (5%)		*-6*	*-7*	*-13*	*-9*	*-5*	*-13*	*-172*
Office Alternative Mode Reduction (5%)		*-19*	*-3*	*-22*	*-4*	*-20*	*-24*	*-228*
Total New External Trips (with reductions)		**466**	**172**	**638**	**210**	**437**	**648**	**6,888**

**Daily pass-by reduction estimated to be least of the applied PM peak hour pass-by rate or ten times the PM pass-by volume*

Trip Distribution

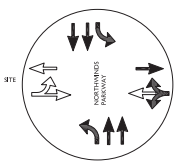
The trip distribution describes how traffic arrives and departs from the site. An overall trip distribution was developed for the site based on a review of GDOT ADT volumes and the locations of major roadways and highways that will serve the development. The site-generated peak hour traffic volumes, shown in Table 4, were assigned to the study area intersections based on this distribution. The outer-leg distribution and AM and PM peak hour new traffic generated by the site are shown in Figure 5.

DRIVEWAYS

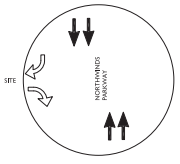
LEGEND

EXISTING MOVEMENT

PROPOSED MOVEMENT



SITE DRIVEWAY # 1



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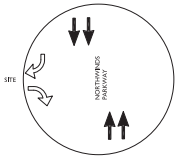

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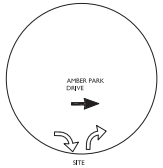

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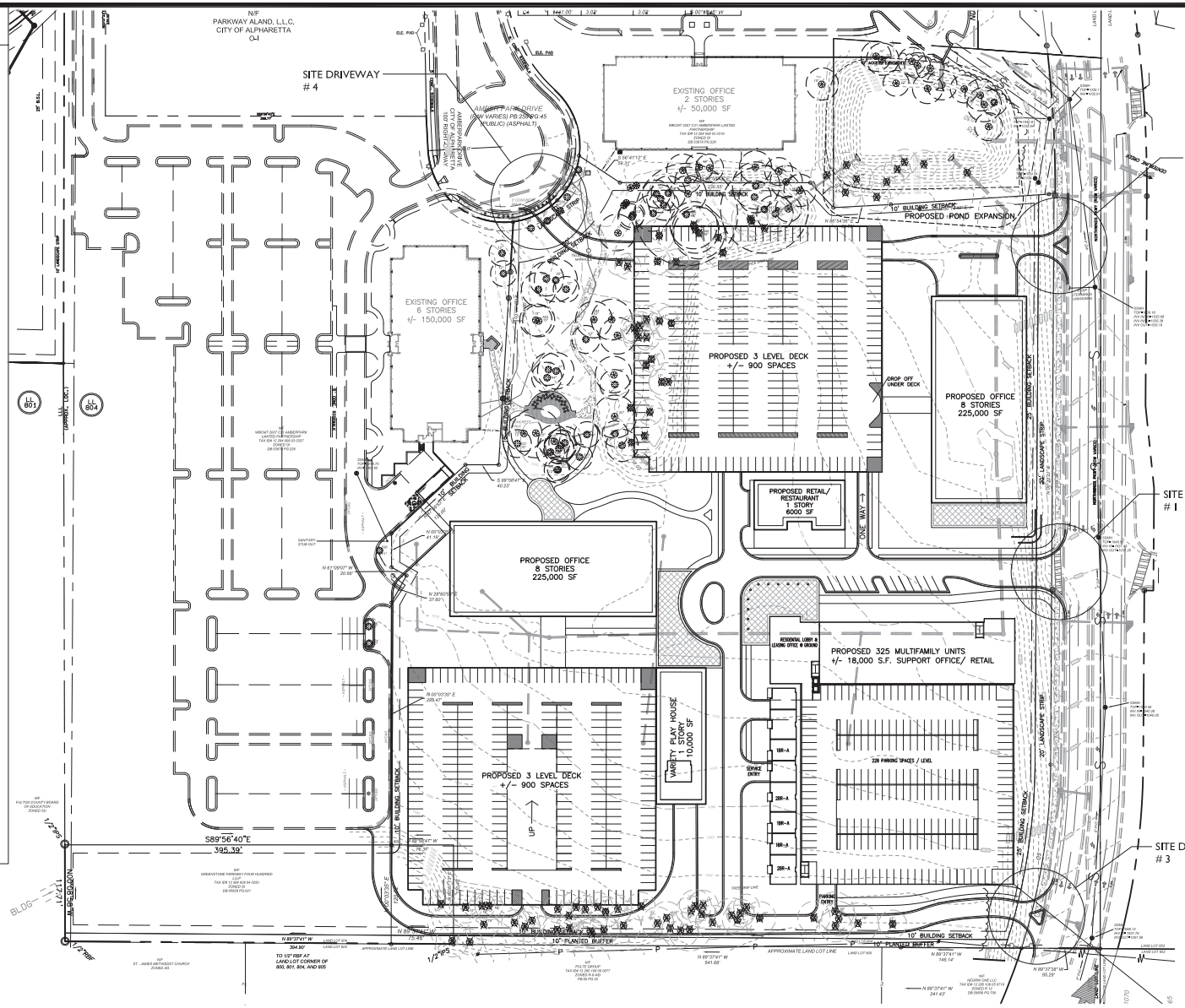

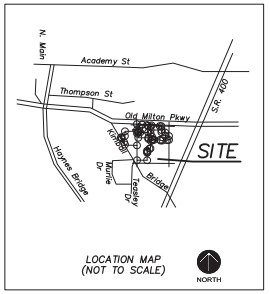

SITE DATA:

DRI NUMBER:	2778
TOTAL ACREAGE:	724,620 SF / 16.635 AC
LOCATION:	LL 804 1st DIST, 2nd SECT CITY OF ALPHARETTA FULTON COUNTY, GA
EXISTING ZONING:	O & I CONDITIONAL
PROPOSED ZONING:	C-2
MAXIMUM BUILDING HEIGHT:	8 STORIES (125')
SETBACKS:	
- FRONT:	CONDITIONAL
- SIDE:	CONDITIONAL
- REAR:	10'
PROPOSED USE:	MIXED USE DEVELOPMENT
- OFFICE *:	450,000 S.F.
- MULTI-FAMILY RESIDENTIAL:	325 UNITS
- RETAIL / RESTAURANT:	6,000 S.F.
- PLAYHOUSE:	10,000 S.F.
*	UP TO 10% OF THE OFFICE DENSITY CAN BE CONVERTED TO RETAIL/ RESTAURANT USES.
SITE DENSITY	
- NON-RESIDENTIAL:	28,014 SF/ AC. (.65 FAR)
- RESIDENTIAL:	19.53 UNITS PER ACRE
OPEN SPACE:	1.7 AC (10%)
REQUIRED PARKING:	
- OFFICE (3.2/1000 SF) =	1440
- MULTIFAMILY (2 PER UNIT + 1 PER 20 UITS)=	667 (455 REQUESTED)
- RETAIL (5/ 1000 SF) =	30
- PLAYHOUSE (1 PER 4 SEATS + 1 PER 10 SEATS) =	385 (SHARED WITH OFFICE)
TOTAL REQUIRED:	2,188 SPACES
PROVIDED PARKING:	2,237 SPACES
- OFFICE DECKS:	1,800 SPACES
- MULTI-FAMILY DECK:	455 SPACES
- ON STREET:	13 SPACES
TOTAL PARKING PROVIDED:	2,268 SPACES
IMPERVIOUS COVERAGE:	499,454 S.F. (69.0%)
PERVIOUS COVERAGE:	225,166 S.F. (31.0%)

VARIANCES REQUESTED:

1. REDUCE MULTIFAMILY REQUIRED PARKING FROM 718 TO 455.
2. 20% REDUCTION IN REQUIRED OFFICE PARKING
3. UP TO 20% COMPACT PARKING SPACES
4. RAISE MAXIMUM HEIGHT TO 8 STORIES
5. REDUCE THE BUFFER AGAINST RESIDENTIAL FROM 50' TO A 10' PLANTED LANDSCAPE STRIP.
6. REDUCE THE NUMBER OF BICYCLE PARKING SPACES.
7. REDUCE THE NUMBER OF ELECTRIC VEHICLE CHARGING STATIONS

NOTE:

1. There is no FEMA Flood Plain located on the site.
2. Storm water for the site will be handled within the common detention pond adjacent to the property. The pond may need to be modified to meet the requirements of the current storm water ordinance.

CLIENT:
GREENSTONE PROPERTIES, INC.
3301 WINDY RIDGE PARKWAY
SUITE 320
ATLANTA, GA. 30339
(678) 589-7608

TRAFFIC CONSULTANT:
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2160 KINGSTON COURT, SUITE O
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AEC
CIVIL ENGINEERING PLANNING LANDSCAPE ARCHITECTURE
50 Warm Springs Circle
Roswell Georgia 30075
(770) 641-1942 www.aecad.com

NORTH

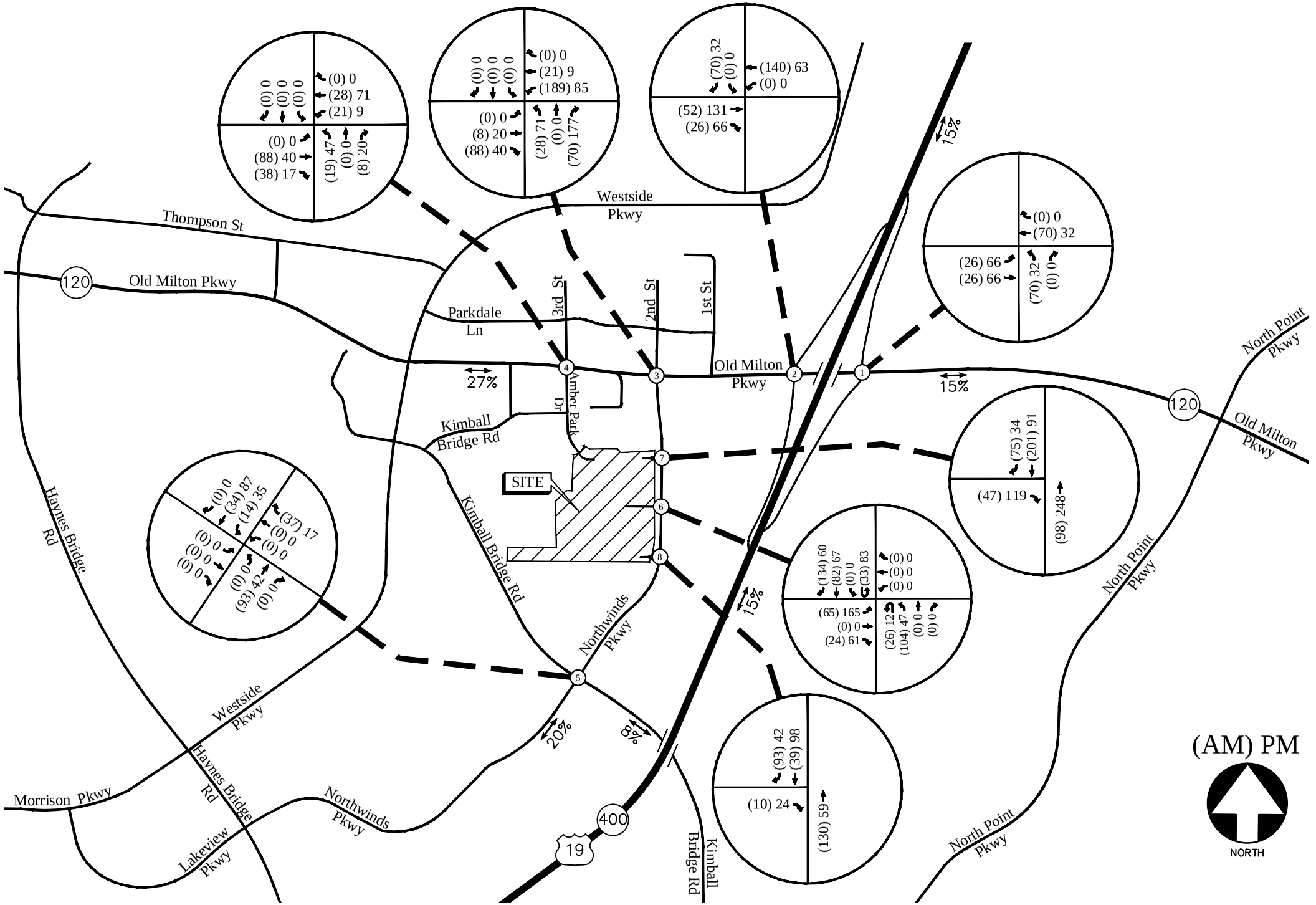
60 0 60 120

DRI SITE PLAN
DRI # 2778

GREENSTONE- PARKWAY 400

Alpharetta , Georgia

PROJECT INFORMATION
PROJECT NO.: 15-3799.00
DATE: 12-29-2017; REV 3-8-2018
SCALE: 1" = 60'
FILE NAME: 15-0000 P09.dwg
DESIGN/DRAWN: SCH/SLR



OUTER LEG TRIP DISTRIBUTION AND SITE-GENERATED PEAK HOUR VOLUMES

FIGURE 5

FUTURE TRAFFIC ANALYSIS

The future traffic operations are analyzed for the "No-Build" and "Build" conditions. This provides a basis of reference for determining both the contribution of the site to overall traffic conditions and the additional improvements needed to provide sufficient site access and capacity for passing traffic. Note that survey and construction drawings would be needed to verify the feasibility and extent of additional right-of-way required for any recommended improvements.

Improvements that are identified as "System Improvements" address deficiencies that are found within the existing road network prior to any impacts from the proposed development's added traffic. Improvements that are identified as "Site Mitigation Improvements" address further impacts that are a result of the proposed development's added traffic.

Future "No-Build" Conditions

The "No-Build" (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. The Future "No-Build" volumes consist of the existing traffic volumes (Figure 2) plus increases for annual growth of through traffic.

Annual Traffic Growth

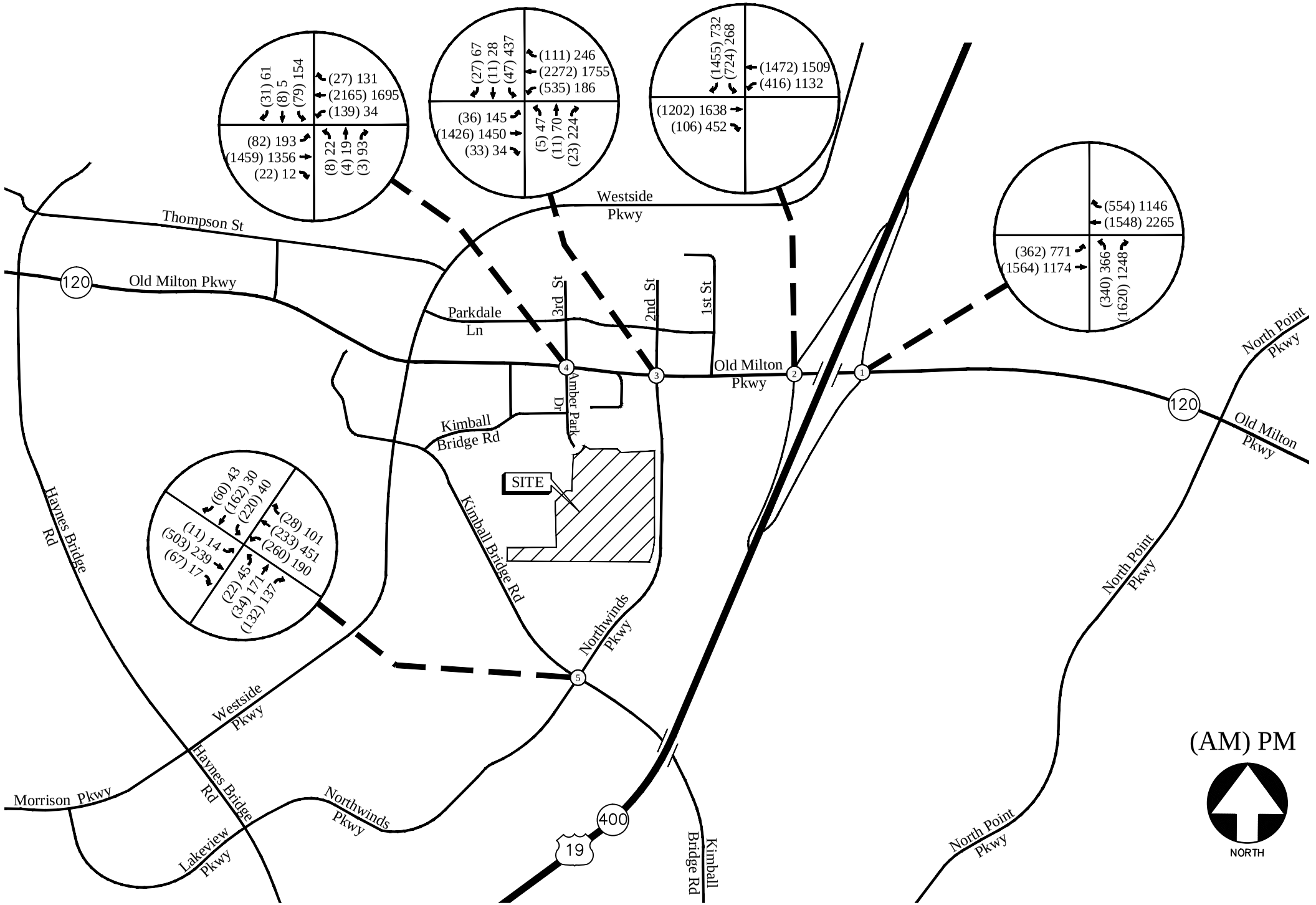
In order to evaluate future traffic operations in this area, a projection of normal traffic growth was applied to the existing volumes. The Georgia Department of Transportation recorded average daily traffic volumes at several locations in the vicinity of the site. Reviewing the growth over the last five years revealed no consistent positive growth of through traffic; therefore, a growth rate of 1% was used in the analysis. This growth factor was applied to the existing traffic volumes between collector and arterial roadways in order to estimate the future year traffic volumes prior to the addition of site-generated traffic. The resulting Future "No-Build" volumes on the roadway are shown in Figure 6.

Planned and Programmed Improvements in Study Area

The following improvements have been identified in the Regional Transportation Plan (Plan 2040), GDOT TransPi, and/or the local comprehensive transportation plan. These improvements are within the vicinity of the proposed development.

TABLE 5 – PLANNED AND PROGRAMMED IMPROVEMENTS

ARC#/GDOT#/ City#	Project	Type of Improvement	Network Year	Source
C1712	The Alpha Loop	Pedestrian/ Greenway	2018	City of Alpharetta
ALP-009	Kimball Bridge Road Bike/Ped/Operational Improvements	Roadway Corridor (Multimodal)	Tier 2	North Fulton TSPLOST
AR-ML-300/0001757	Express Lanes SR 400 from I-285 to McFarland Road	Reconstruction/ Rehabilitation	Long Range (2040)	ARC/GDOT



FUTURE (NO-BUILD) PEAK HOUR VOLUMES

FIGURE 6

A&R Engineering Inc.

Future "No-Build" Traffic Operations

The future "No-Build" traffic operations were analyzed using the volumes in Figure 6 and the results are shown in Table 6 below. The results of the analyses, including the recommended system improvements, are discussed in detail in the next section.

TABLE 6 – FUTURE "NO-BUILD" INTERSECTION OPERATIONS

	Intersection	No-Build Condition: LOS (Delay)				
		NO IMPROVEMENTS		SYSTEM IMPROVEMENTS		LOS Stnd
		AM Peak	PM Peak	AM Peak	PM Peak	
1	**SR 120 @ GA 400 NB Ramps***	**E (63.8)**	**F (115.3)**	**D (51.2)**	**E (66.3)**	**E / E**
	-Eastbound Approach	C (20.2)	F (111.7)	C (21.7)	D (36.1)	-
	-Westbound Approach	D (50.4)	F (142.5)	C (31.6)	F (102.9)	-
	-Northbound Approach	F (124.6)	E (60.4)	F (104.4)	C (24.0)	-
2	**SR 120 @ GA 400 SB Ramps**	**C (24.6)**	**D (43.9)**	**C (24.7)**	**D (40.3)**	**D / D**
	-Eastbound Approach	C (20.8)	E (73.2)	C (20.7)	E (76.9)	-
	-Westbound Approach	A (8.6)	B (16.1)	A (8.9)	A (6.5)	-
	-Southbound Approach	E (73.2)	F (87.9)	E (73.2)	F (87.9)	-
3	**SR 120 @ Northwinds Pkwy**	**D (54.8)**	**E (63.2)**	**C (32.1)**	**C (26.0)**	**D / E**
	-Eastbound Approach	A (0.6)	A (4.2)	A (0.8)	A (5.1)	-
	-Westbound Approach	F (82.6)	B (19.3)	D (46.6)	C (22.7)	-
	-Northbound Approach	E (73.7)	F (80.2)	E (73.7)	F (80.2)	-
	-Southbound Approach	E (70.7)	F (375.4)	E (70.2)	F (80.6)	-
4	**SR 120 @ Amber Park Dr**	**B (11.6)**	**B (18.3)**	**B (11.6)**	**B (18.2)**	**D / D**
	-Eastbound Approach	B (20.0)	C (22.9)	B (20.0)	C (22.9)	-
	-Westbound Approach	A (2.6)	A (0.9)	A (2.6)	A (0.9)	-
	-Northbound Approach	E (78.0)	E (76.9)	E (78.0)	E (76.9)	-
	-Southbound Approach	F (83.1)	F (152.1)	F (83.1)	F (152.1)	-
5	**Northwinds Pkwy @ Kimball Bridge Rd***	**C (33.6)**	**C (24.5)**	**C (33.6)**	**C (24.5)**	**D / D**
	-Eastbound Approach	C (31.1)	C (24.4)	C (31.1)	C (24.4)	-
	-Westbound Approach	C (20.1)	B (19.5)	C (20.1)	B (19.5)	-
	-Northbound Approach	D (46.7)	C (29.5)	D (46.7)	C (29.5)	-
	-Southbound Approach	D (46.9)	D (38.3)	D (46.9)	D (38.3)	-

**Results reported via HCM 2000*

Recommendations for System Improvements

A summary of the system improvements, which address deficiencies that are found within the existing road network for the "No-Build" conditions, is provided below. These are recommended for the local municipality to use in planning future transportation projects. A concept design of these improvements is included in the Appendix.

Summary of Recommended System Improvements

- SR 120 (Old Milton Parkway) @ GA 400 NB Ramps
  - Create a second eastbound left turn lane using the existing second westbound left turn lane at the adjacent intersection for the GA 400 SB Ramps
  - Create a second receiving lane on the GA 400 NB On-Ramp
  - Remove the inside westbound through lane by replacing with a raised median

- SR 120 (Old Milton Parkway) @ Northwinds Parkway/2nd Street
    - Remove the eastbound free-flow right turn and dedicated receiving lane and replace with a yield right turn condition
    - Restripe the southbound approach to operate with three dedicated left turn lanes and a shared through/right turn lane
    - Install permissive + overlap signal phasing for the northbound right turn movement

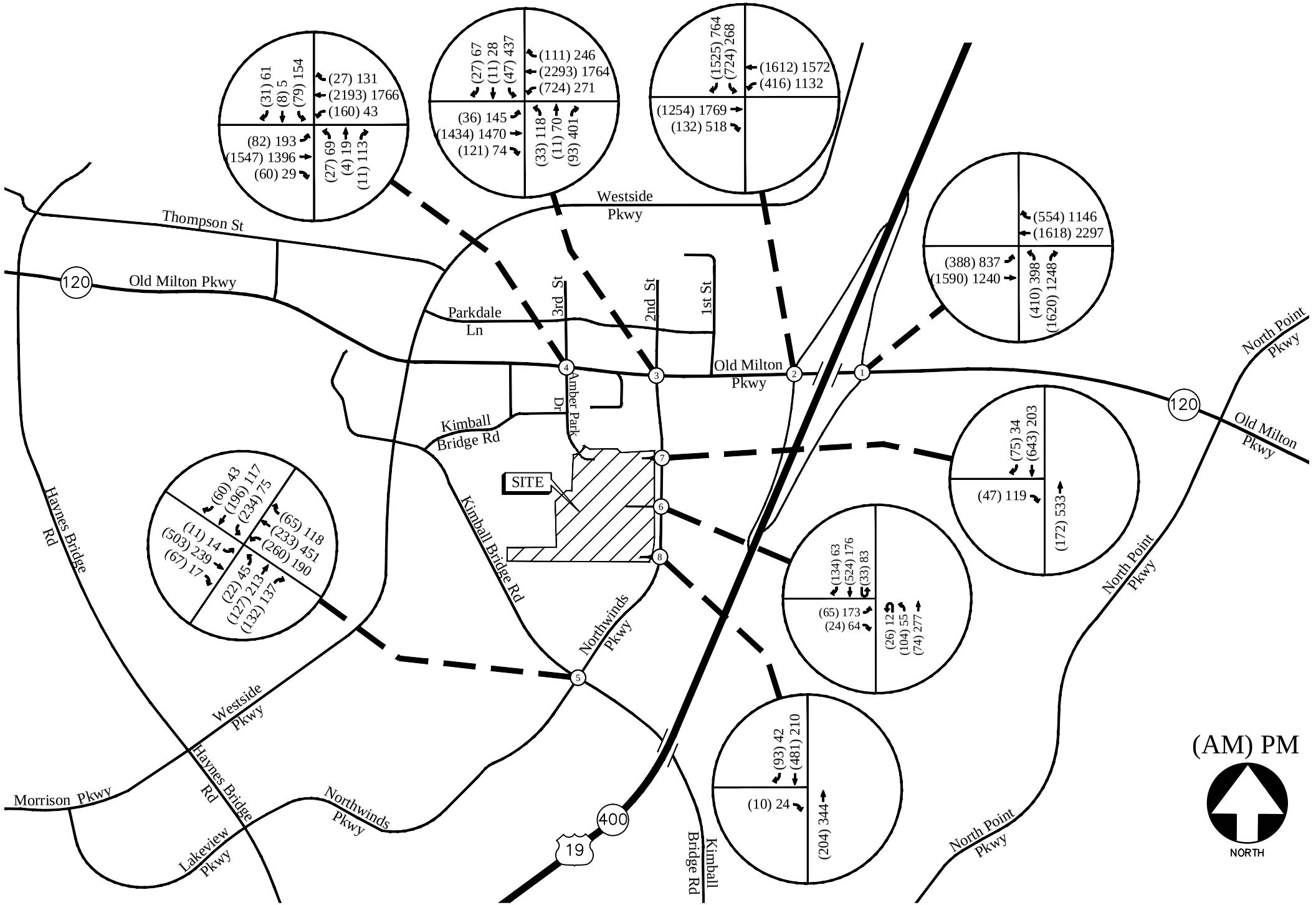
Future "Build" Conditions

The "Build" or development conditions include the estimated background traffic from the "No-Build" conditions plus the added traffic from the proposed development. In order to evaluate future traffic operations in this area, the additional traffic volumes from the site (Figure 5) and pass-by volumes were added to base traffic volumes (Figure 6) to calculate the future traffic volumes after the construction of the development. These total future traffic volumes are shown in Figure 7.

Site Access Configuration

The following access configuration was utilized when modeling the proposed site driveway intersections:

- Site Driveway #1: Full-access driveway on Northwinds Parkway
    - This driveway is recommended to consist of one entering and two exiting lanes. The eastbound (driveway) approach is recommended to have a dedicated left turn lane and a dedicated right turn lane for exiting traffic.
    - The intersection is proposed to be unsignalized with a STOP sign on the eastbound approach.
    - Entering left turn movements are assumed to be made from the existing northbound left-turn lane.
    - Entering right turn movements are assumed to be made from the southbound through lane. No deceleration lane is planned warranted. (See Appendix)
- Site Driveways #2 & #3: Right-in/right-out driveways on Northwinds Parkway
    - Each of these driveways are proposed to consist of one entering and one exiting lane. The eastbound (driveway) approach is proposed to have only one right turn lane for exiting traffic.
    - Each intersection is proposed to be unsignalized with a STOP sign on the eastbound approach.
    - Entering right turn movements are proposed to be made from the southbound through lane. No deceleration lane is warranted. (See Appendix)
- Site Driveway #4: Right-in/right-out driveway on Amber Park Drive (not included in analysis)
    - This driveway is recommended to consist of one entering and one exiting lane. The northbound (driveway) approach is recommended to have a right turn lane for exiting traffic.
    - The intersection is proposed to be unsignalized with a STOP sign on the northbound approach.
    - Entering right turn movements are assumed to be made from the outside through lane within the existing roundabout.



FUTURE (BUILD) PEAK HOUR VOLUMES

FIGURE 7

A&R Engineering Inc.

Future "Build" Traffic Operations

The "Build" conditions are evaluated to determine effectiveness of the recommended system and site mitigation improvements. The results of the "Build" operations analysis with the assumed site access configuration is shown below in Table 7. Recommendations on traffic control and lane geometry are shown graphically in Figure 8. The results of the analysis, including the recommended improvements, are discussed in detail in the next section.

TABLE 7 – FUTURE "BUILD" INTERSECTION OPERATIONS

	Intersection	Build Condition: LOS (Delay)				
		NO IMPROVEMENTS		WITH SYSTEM AND SITE IMPROVEMENTS		LOS Stnd
		AM Peak	PM Peak	AM Peak	PM Peak	
1	**SR 120 @ GA 400 NB Ramps***	**E (65.0)**	**F (125.7)**	**E (57.6)**	**E (69.7)**	**E / E**
	-Eastbound Approach	C (23.6)	F (135.1)	C (22.2)	D (45.9)	-
	-Westbound Approach	D (51.9)	F (143.1)	C (32.5)	F (105.0)	-
	-Northbound Approach	F (122.4)	E (75.8)	F (122.5)	C (24.4)	-
2	**SR 120 @ GA 400 SB Ramps**	**C (24.0)**	**D (47.2)**	**C (24.1)**	**B (19.6)**	**D / D**
	-Eastbound Approach	C (21.4)	F (80.0)	C (21.3)	C (22.2)	-
	-Westbound Approach	A (8.2)	B (15.3)	A (8.5)	B (11.6)	-
	-Southbound Approach	E (73.2)	F (87.9)	E (73.2)	E (75.6)	-
3	**SR 120 @ Northwinds Pkwy**	**F (123.6)**	**E (79.0)**	**D (48.8)**	**C (29.7)**	**D / E**
	-Eastbound Approach	A (0.6)	A (4.2)	A (1.2)	A (5.9)	-
	-Westbound Approach	F (187.5)	C (27.7)	E (70.6)	B (14.2)	-
	-Northbound Approach	E (76.0)	F (278.2)	E (76.0)	F (173.2)	-
	-Southbound Approach	E (69.0)	F (375.4)	E (68.5)	E (79.8)	-
4	**SR 120 @ Amber Park Dr**	**B (12.3)**	**B (19.1)**	**B (12.3)**	**B (19.0)**	**D / D**
	-Eastbound Approach	B (18.8)	C (22.8)	B (18.8)	C (22.8)	-
	-Westbound Approach	A (3.5)	A (0.9)	A (3.5)	A (0.7)	-
	-Northbound Approach	E (77.3)	F (84.6)	E (77.3)	F (84.6)	-
	-Southbound Approach	F (83.3)	F (152.2)	F (83.3)	F (152.2)	-
5	**Northwinds Pkwy @ Kimball Bridge Rd***	**D (43.3)**	**C (29.3)**	**D (43.3)**	**C (29.3)**	**D / D**
	-Eastbound Approach	D (37.8)	C (27.2)	D (37.8)	C (27.2)	-
	-Westbound Approach	C (26.5)	C (22.0)	C (26.5)	C (22.0)	-
	-Northbound Approach	E (59.6)	D (37.3)	E (59.6)	D (37.3)	-
	-Southbound Approach	E (58.6)	D (39.0)	E (58.6)	D (39.0)	-
6	**Northwinds Pkwy @ Site Drwy 1**					
	-Eastbound Approach	D (30.7)	C (18.6)	D (30.7)	C (18.6)	D / D
	-Northbound Left	C (15.5)	A (8.5)	C (15.5)	A (8.5)	D / D
	-Southbound Left	A (7.9)	A (9.2)	A (7.9)	A (9.2)	
7	**Northwinds Pkwy @ Site Drwy 2 (RIRO)**					
	-Eastbound Approach	C (15.9)	B (10.1)	C (15.9)	B (10.1)	D / D
8	**Northwinds Pkwy @ Site Drwy 3 (RIRO)**					
	-Eastbound Approach	B (12.4)	A (9.5)	B (12.4)	A (9.5)	D / D

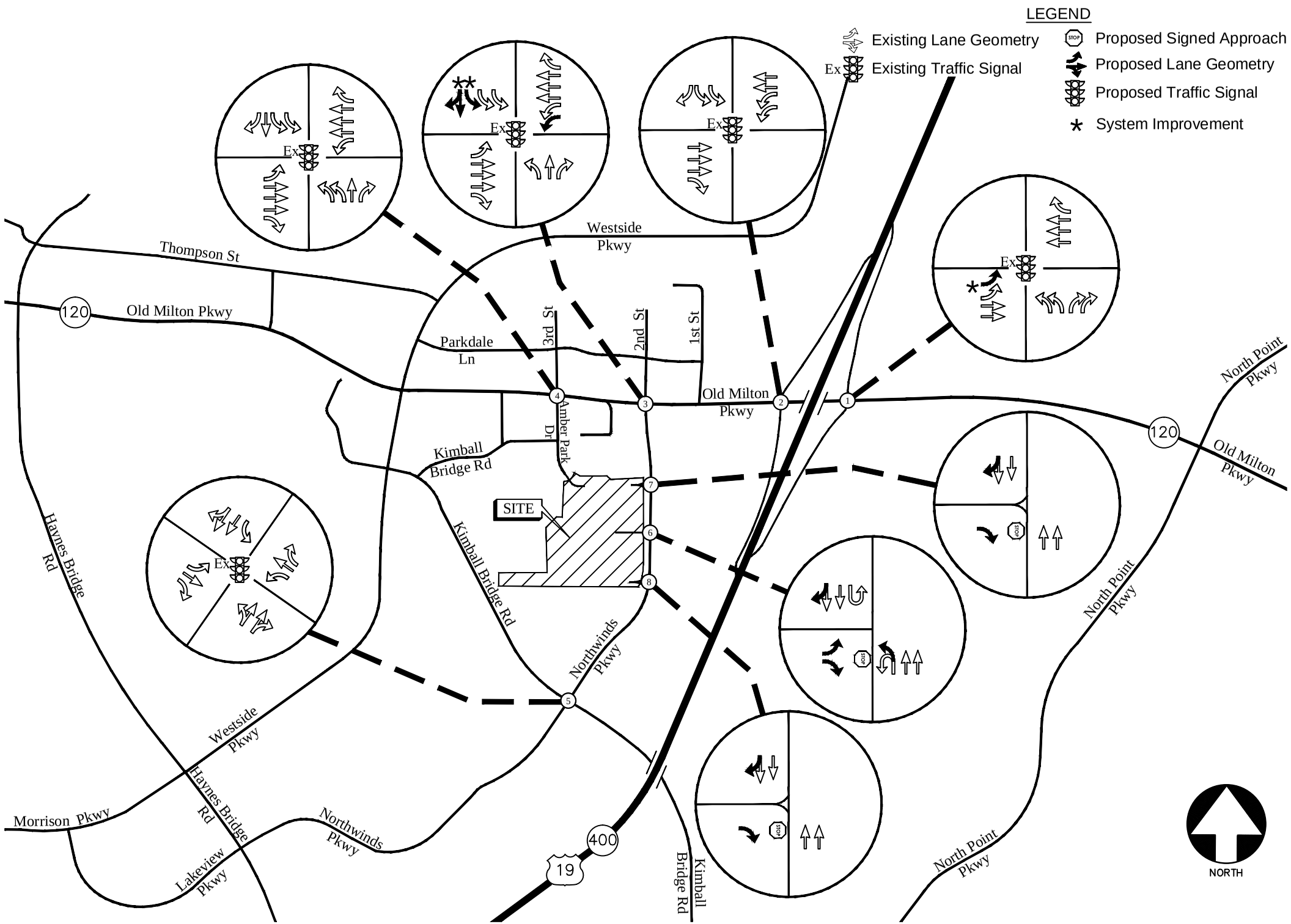
**Results reported via HCM 2000*

Recommendations for Site Mitigation Improvements

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development. A summary of the system improvements is provided below. A concept design of these improvements is included in the Appendix.

Summary of Recommended Site Mitigation Improvements

- SR 120 (Old Milton Parkway) @ Northwinds Parkway/2nd Street
    - Install a second westbound left turn lane with protected signal phasing on SR 120 (Old Milton Parkway)



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY

FIGURE 8

CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the added traffic from the proposed Parkway 400 mixed-use development that will be located west of Northwinds Parkway between SR 120 (Old Milton Parkway) and Kimball Bridge Road in Alpharetta, Georgia. The development will consist of:

- 450,000 square feet of office space
- 325 multifamily units
- 6,000 square feet of retail/restaurant space
- 10,000 square foot playhouse/theater

The development proposes one full-access and two right-in/right-out driveways on Northwinds Parkway, as well as a connection to SR 120 (Old Milton Parkway) and Kimball Bridge Road via Amber Park Drive. Existing and future operations after completion of the project were analyzed at the intersections of:

- SR 120 (Old Milton Parkway) at GA 400 Northbound Ramps
- SR 120 (Old Milton Parkway) at GA 400 Southbound Ramps
- SR 120 (Old Milton Parkway) at Northwinds Parkway
- SR 120 (Old Milton Parkway) at Amber Park Drive
- Northwinds Parkway at Kimball Bridge Road

The analysis included the evaluation of Future operations for "No-Build" and "Build" conditions, both of which account for increases in annual growth of through traffic. The results of the analysis are listed below:

System Recommendations and Improvements

A summary of the system improvements, which address deficiencies that are found within the existing road network for the "No-Build" conditions, is provided below. These are recommended for the local municipality to use in planning future transportation projects. A concept design of these improvements is included in the Appendix.

Summary of Recommended System Improvements

- SR 120 (Old Milton Parkway) @ GA 400 NB Ramps
    - Create a second eastbound left turn lane using the existing second westbound left turn lane at the adjacent intersection for the GA 400 SB Ramps
    - Create a second receiving lane on the GA 400 NB On-Ramp
    - Remove the inside westbound through lane by replacing with a raised median

Site Access Configuration

The following access configuration was utilized when modeling the proposed site driveway intersections:

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    - This driveway is recommended to consist of one entering and two exiting lanes. The eastbound (driveway) approach is recommended to have a dedicated left turn lane and a dedicated right turn lane for exiting traffic.
    - The intersection is proposed to be unsignalized with a STOP sign on the eastbound approach.
    - Entering left turn movements are assumed to be made from the existing northbound left-turn lane.
    - Entering right turn movements are assumed to be made from the southbound through lane. No deceleration lane is planned warranted. (See Appendix)
- Site Driveways #2 & #3: Right-in/right-out driveways on Northwinds Parkway
    - Each of these driveways are proposed to consist of one entering and one exiting lane. The eastbound (driveway) approach is proposed to have only one right turn lane for exiting traffic.
    - Each intersection is proposed to be unsignalized with a STOP sign on the eastbound approach.
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    - This driveway is recommended to consist of one entering and one exiting lane. The northbound (driveway) approach is recommended to have a right turn lane for exiting traffic.
    - The intersection is proposed to be unsignalized with a STOP sign on the northbound approach.
    - Entering right turn movements are assumed to be made from the outside through lane within the existing roundabout.

Site Mitigation Improvements

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development. A summary of the system improvements is provided below. A concept design of these improvements is included in the Appendix.

Summary of Recommended Site Mitigation Improvements

- SR 120 (Old Milton Parkway) @ Northwinds Parkway/2nd Street
    - Install a second westbound left turn lane with protected signal phasing on SR 120 (Old Milton Parkway)

Appendix

Existing Intersection Traffic Counts

A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SR120 (Old Milton Pky) at GA 400 NB Ramp
07-09 AM - 04-06 PM

File Name : 20180012
Site Code : 20180012
Start Date : 2/6/2018
Page No : 1

Groups Printed- Unshifted

	GA 400 NB Off Ramps Northbound				GA 400 NB On Ramps Southbound				SR 120 (Old Milton Pkwy) Eastbound				SR 120 (Old Milton Pkwy) Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	43	0	301	344	0	0	0	0	140	213	0	353	0	430	81	511	1208
07:15 AM	69	0	288	357	0	0	0	0	93	342	0	435	0	361	74	435	1227
07:30 AM	64	0	388	452	0	0	0	0	80	327	0	407	0	313	109	422	1281
07:45 AM	73	0	374	447	0	0	0	0	100	345	0	445	0	357	130	487	1379
Total	249	0	1351	1600	0	0	0	0	413	1227	0	1640	0	1461	394	1855	5095
08:00 AM	70	0	378	448	0	0	0	0	93	380	0	473	0	342	125	467	1388
08:15 AM	72	0	391	463	0	0	0	0	77	346	0	423	0	412	147	559	1445
08:30 AM	93	0	399	492	0	0	0	0	93	420	0	513	0	341	132	473	1478
08:45 AM	92	0	389	481	0	0	0	0	85	357	0	442	0	393	128	521	1444
Total	327	0	1557	1884	0	0	0	0	348	1503	0	1851	0	1488	532	2020	5755
*** BREAK ***																	
04:00 PM	69	0	246	315	0	0	0	0	155	252	0	407	0	564	203	767	1489
04:15 PM	92	0	316	408	0	0	0	0	200	268	0	468	0	508	298	806	1682
04:30 PM	82	0	283	365	0	0	0	0	163	286	0	449	0	557	287	844	1658
04:45 PM	92	0	318	410	0	0	0	0	195	259	0	454	0	596	256	852	1716
Total	335	0	1163	1498	0	0	0	0	713	1065	0	1778	0	2225	1044	3269	6545
05:00 PM	86	0	282	368	0	0	0	0	183	315	0	498	0	516	260	776	1642
05:15 PM	128	0	313	441	0	0	0	0	189	251	0	440	0	540	235	775	1656
05:30 PM	112	0	285	397	0	0	0	0	176	264	0	440	0	468	223	691	1528
05:45 PM	101	0	282	383	0	0	0	0	154	270	0	424	0	439	215	654	1461
Total	427	0	1162	1589	0	0	0	0	702	1100	0	1802	0	1963	933	2896	6287
Grand Total	1338	0	5233	6571	0	0	0	0	2176	4895	0	7071	0	7137	2903	10040	23682
Apprch %	20.4	0	79.6		0	0	0		30.8	69.2	0		0	71.1	28.9		
Total %	5.6	0	22.1	27.7	0	0	0	0	9.2	20.7	0	29.9	0	30.1	12.3	42.4	

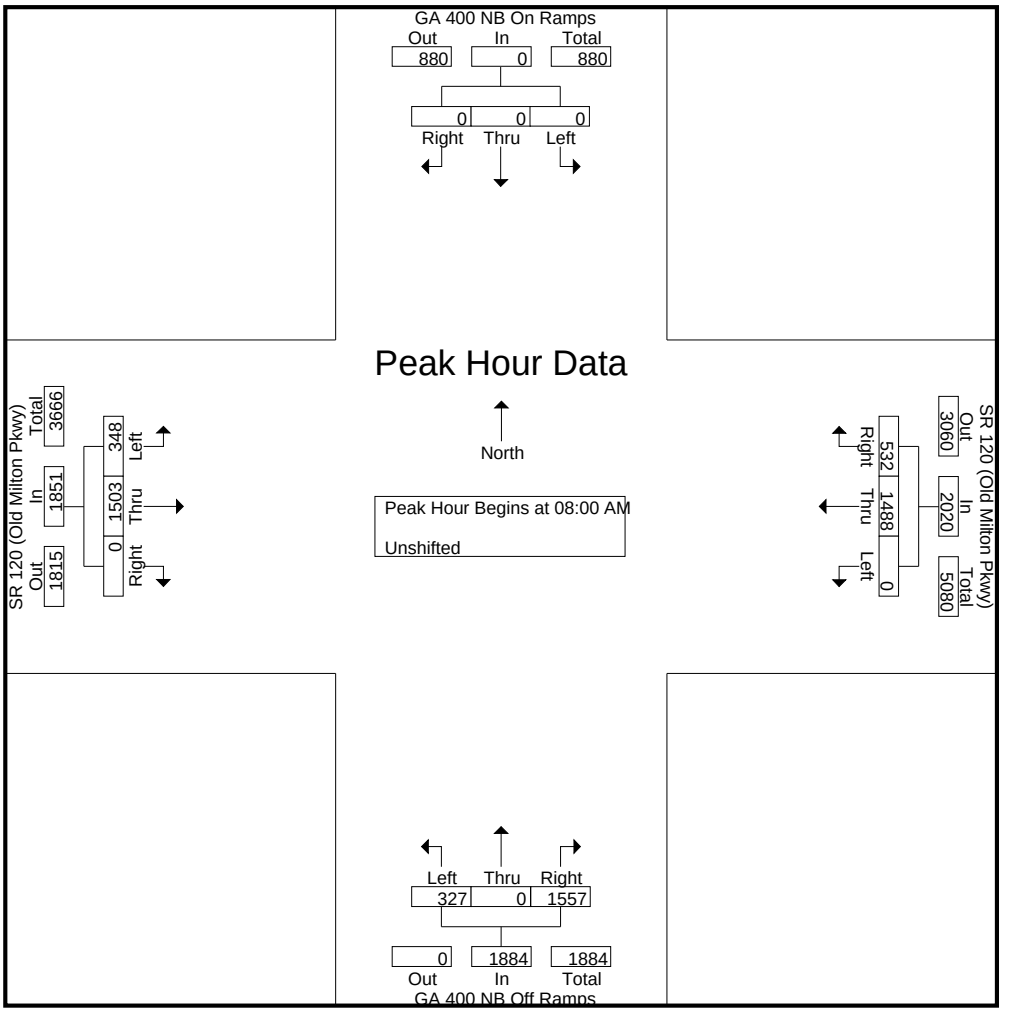
A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SR120 (Old Milton Pky) at GA 400 NB Ramp
07-09 AM - 04-06 PM

File Name : 20180012
Site Code : 20180012
Start Date : 2/6/2018
Page No : 2

	GA 400 NB Off Ramps Northbound				GA 400 NB On Ramps Southbound				SR 120 (Old Milton Pkwy) Eastbound				SR 120 (Old Milton Pkwy) Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	70	0	378	448	0	0	0	0	**93**	380	0	473	0	342	125	467	1388
08:15 AM	72	0	391	463	0	0	0	0	77	346	0	423	0	**412**	**147**	**559**	1445
08:30 AM	**93**	0	**399**	**492**	0	0	0	0	93	**420**	0	**513**	0	341	132	473	**1478**
08:45 AM	92	0	389	481	0	0	0	0	85	357	0	442	0	393	128	521	1444
Total Volume	327	0	1557	1884	0	0	0	0	348	1503	0	1851	0	1488	532	2020	5755
% App. Total	17.4	0	82.6		0	0	0		18.8	81.2	0		0	73.7	26.3		
PHF	.879	.000	.976	.957	.000	.000	.000	.000	.935	.895	.000	.902	.000	.903	.905	.903	.973



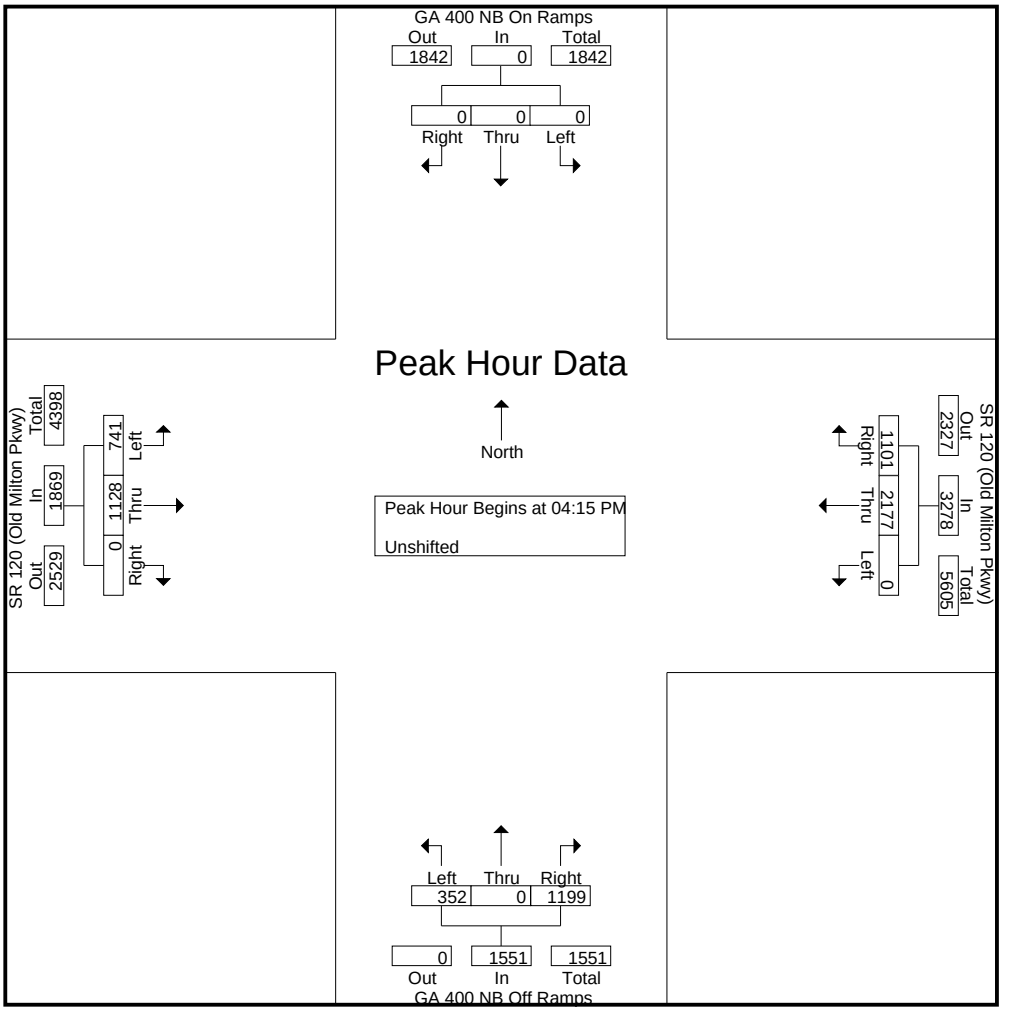
A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SR120 (Old Milton Pky) at GA 400 NB Ramp
07-09 AM - 04-06 PM

File Name : 20180012
Site Code : 20180012
Start Date : 2/6/2018
Page No : 3

	GA 400 NB Off Ramps Northbound				GA 400 NB On Ramps Southbound				SR 120 (Old Milton Pkwy) Eastbound				SR 120 (Old Milton Pkwy) Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**92**	0	316	408	0	0	0	0	**200**	268	0	468	0	508	**298**	806	1682
04:30 PM	82	0	283	365	0	0	0	0	163	286	0	449	0	557	287	844	1658
04:45 PM	92	0	**318**	**410**	0	0	0	0	195	259	0	454	0	**596**	256	**852**	**1716**
05:00 PM	86	0	282	368	0	0	0	0	183	**315**	0	**498**	0	516	260	776	1642
Total Volume	352	0	1199	1551	0	0	0	0	741	1128	0	1869	0	2177	1101	3278	6698
% App. Total	22.7	0	77.3		0	0	0		39.6	60.4	0		0	66.4	33.6		
PHF	.957	.000	.943	.946	.000	.000	.000	.000	.926	.895	.000	.938	.000	.913	.924	.962	.976



A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SR 120 Old Milton Pkwy at GA400 SB Ramp
07-09 AM - 04-06 PM

File Name : 20180013
Site Code : 20180013
Start Date : 2/6/2018
Page No : 1

Groups Printed- Unshifted

	GA 400 SB On Ramp Northbound				GA 400 SB Off Ramp Southbound				SR120(Old Milton Pkwy) Eastbound				SR120(Old Milton Pkwy) Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	0	91	0	358	449	0	262	33	295	121	352	0	473	1217
07:15 AM	0	0	0	0	109	0	343	452	0	326	79	405	92	338	0	430	1287
07:30 AM	0	0	0	0	125	0	318	443	0	282	14	296	97	280	5	382	1121
07:45 AM	0	0	0	0	102	0	254	356	0	343	21	364	97	333	0	430	1150
Total	0	0	0	0	427	0	1273	1700	0	1213	147	1360	407	1303	5	1715	4775
08:00 AM	0	0	0	0	157	0	369	526	0	316	17	333	80	332	0	412	1271
08:15 AM	0	0	0	0	159	0	387	546	0	264	26	290	95	389	0	484	1320
08:30 AM	0	0	0	0	196	0	342	538	0	317	29	346	96	338	0	434	1318
08:45 AM	0	0	0	0	184	0	300	484	0	258	30	288	129	356	0	485	1257
Total	0	0	0	0	696	0	1398	2094	0	1155	102	1257	400	1415	0	1815	5166
*** BREAK ***																	
04:00 PM	0	0	0	0	86	0	138	224	0	321	101	422	304	329	0	633	1279
04:15 PM	0	0	0	0	60	0	137	197	0	408	98	506	283	317	0	600	1303
04:30 PM	0	0	0	0	64	0	115	179	0	385	113	498	287	352	0	639	1316
04:45 PM	0	0	0	0	62	0	134	196	0	392	102	494	305	383	0	688	1378
Total	0	0	0	0	272	0	524	796	0	1506	414	1920	1179	1381	0	2560	5276
05:00 PM	0	0	0	0	74	0	154	228	0	424	121	545	278	324	0	602	1375
05:15 PM	0	0	0	0	57	0	210	267	0	383	112	495	283	385	0	668	1430
05:30 PM	0	0	0	0	65	0	205	270	0	375	99	474	222	358	0	580	1324
05:45 PM	0	0	0	0	72	0	178	250	0	352	76	428	195	345	0	540	1218
Total	0	0	0	0	268	0	747	1015	0	1534	408	1942	978	1412	0	2390	5347
Grand Total	0	0	0	0	1663	0	3942	5605	0	5408	1071	6479	2964	5511	5	8480	20564
Apprch %	0	0	0		29.7	0	70.3		0	83.5	16.5		35	65	0.1		
Total %	0	0	0	0	8.1	0	19.2	27.3	0	26.3	5.2	31.5	14.4	26.8	0	41.2	

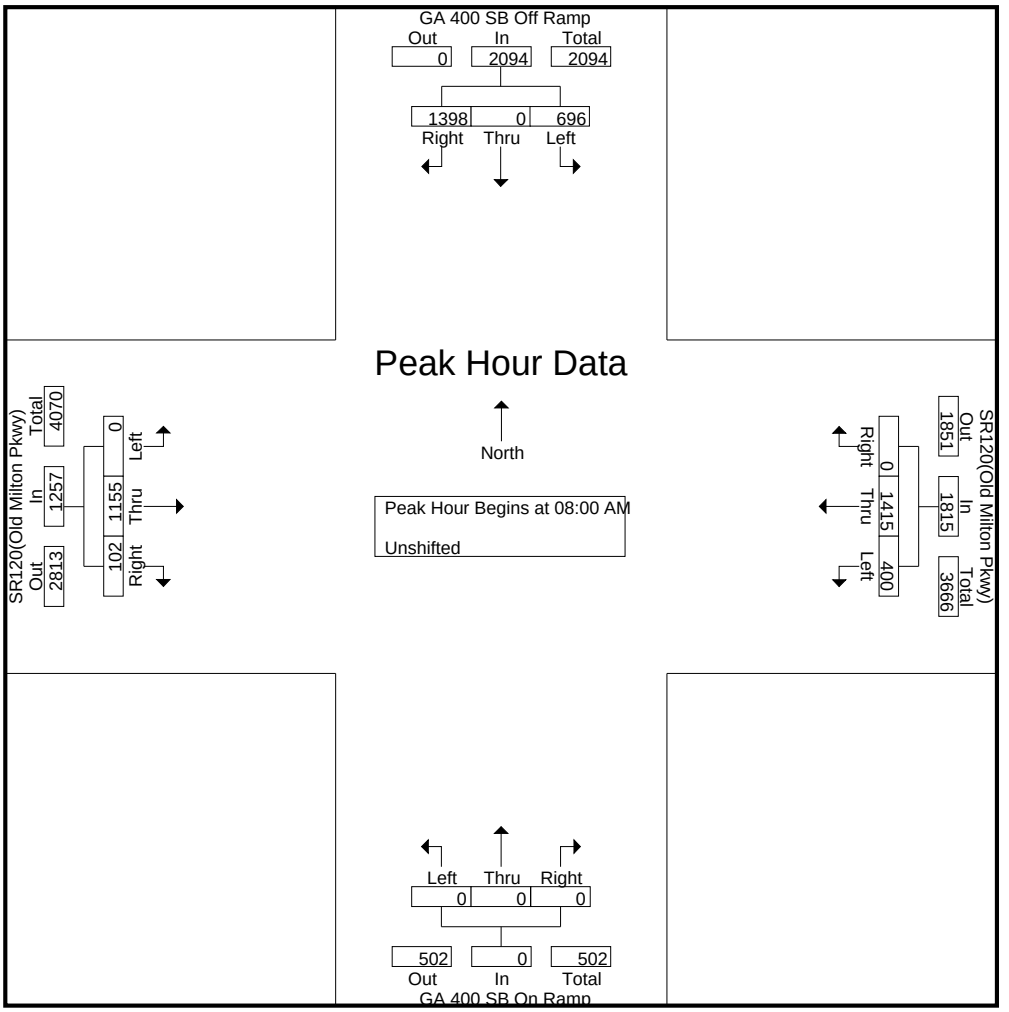
A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SR 120 Old Milton Pkwy at GA400 SB Ramp
07-09 AM - 04-06 PM

File Name : 20180013
Site Code : 20180013
Start Date : 2/6/2018
Page No : 2

	GA 400 SB On Ramp Northbound				GA 400 SB Off Ramp Southbound				SR120(Old Milton Pkwy) Eastbound				SR120(Old Milton Pkwy) Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	157	0	369	526	0	316	17	333	80	332	0	412	1271
08:15 AM	0	0	0	0	159	0	**387**	**546**	0	264	26	290	95	**389**	0	484	**1320**
08:30 AM	0	0	0	0	**196**	0	342	538	0	**317**	29	**346**	96	338	0	434	1318
08:45 AM	0	0	0	0	184	0	300	484	0	258	**30**	288	**129**	356	0	**485**	1257
Total Volume	0	0	0	0	696	0	1398	2094	0	1155	102	1257	400	1415	0	1815	5166
% App. Total	0	0	0		33.2	0	66.8		0	91.9	8.1		22	78	0		
PHF	.000	.000	.000	.000	.888	.000	.903	.959	.000	.911	.850	.908	.775	.909	.000	.936	.978



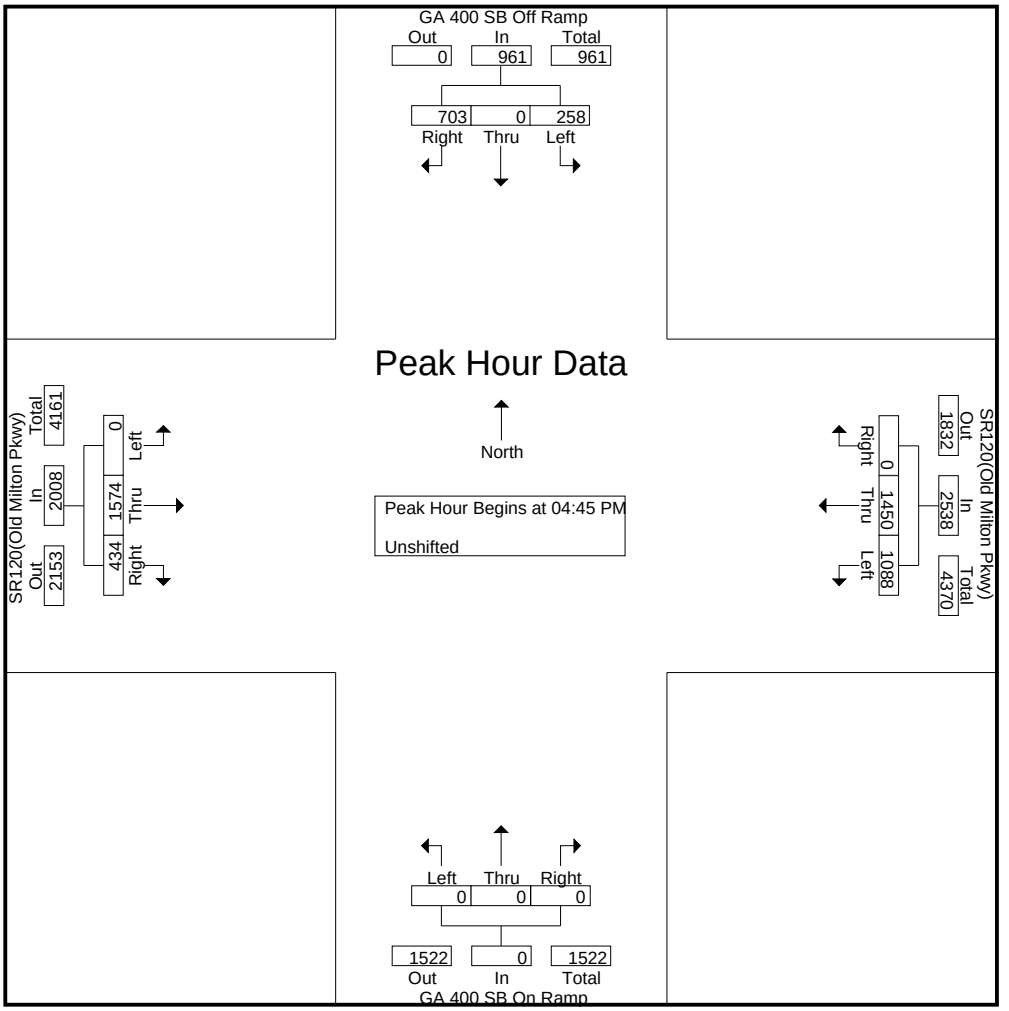
A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SR 120 Old Milton Pkwy at GA400 SB Ramp
07-09 AM - 04-06 PM

File Name : 20180013
Site Code : 20180013
Start Date : 2/6/2018
Page No : 3

	GA 400 SB On Ramp Northbound				GA 400 SB Off Ramp Southbound				SR120(Old Milton Pkwy) Eastbound				SR120(Old Milton Pkwy) Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	62	0	134	196	0	392	102	494	**305**	383	0	**688**	1378
05:00 PM	0	0	0	0	**74**	0	154	228	0	**424**	**121**	**545**	278	324	0	602	1375
05:15 PM	0	0	0	0	57	0	**210**	267	0	383	112	495	283	**385**	0	668	**1430**
05:30 PM	0	0	0	0	65	0	205	**270**	0	375	99	474	222	358	0	580	1324
Total Volume	0	0	0	0	258	0	703	961	0	1574	434	2008	1088	1450	0	2538	5507
% App. Total	0	0	0		26.8	0	73.2		0	78.4	21.6		42.9	57.1	0		
PHF	.000	.000	.000	.000	.872	.000	.837	.890	.000	.928	.897	.921	.892	.942	.000	.922	.963



A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SR 120 Old Milton Pkwy at Northwinds Pkwy
07 - 09 AM - 04 - 06 PM

File Name : 20180014
Site Code : 20180014
Start Date : 2/6/2018
Page No : 1

Groups Printed- Unshifted

	Northwinds Pkwy Northbound				Northwinds Pkwy Southbound				SR 120 Old Milton Pk Eastbound				SR 120 Old Milton Pk Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	1	1	7	9	4	1	1	6	2	246	6	254	106	526	22	654	923
07:15 AM	1	2	6	9	10	2	4	16	5	376	8	389	117	582	20	719	1133
07:30 AM	1	3	4	8	7	0	5	12	9	291	9	309	118	523	32	673	1002
07:45 AM	0	2	3	5	15	3	10	28	8	347	7	362	123	536	27	686	1081
Total	3	8	20	31	36	6	20	62	24	1260	30	1314	464	2167	101	2732	4139
08:00 AM	3	4	9	16	13	6	7	26	13	356	8	377	156	542	28	726	1145
08:15 AM	3	4	8	15	15	8	9	32	12	322	6	340	137	537	23	697	1084
08:30 AM	2	2	5	9	11	5	7	23	10	302	9	321	105	495	36	636	989
08:45 AM	3	3	5	11	18	2	10	30	13	298	12	323	85	527	42	654	1018
Total	11	13	27	51	57	21	33	111	48	1278	35	1361	483	2101	129	2713	4236
*** BREAK ***																	
04:00 PM	4	9	37	50	50	1	11	62	12	372	8	392	67	375	32	474	978
04:15 PM	1	9	33	43	52	4	12	68	15	316	7	338	58	353	51	462	911
04:30 PM	12	11	39	62	62	8	14	84	18	340	8	366	55	383	58	496	1008
04:45 PM	12	10	38	60	58	8	13	79	19	330	9	358	32	365	53	450	947
Total	29	39	147	215	222	21	50	293	64	1358	32	1454	212	1476	194	1882	3844
05:00 PM	22	17	48	87	88	6	18	112	32	320	12	364	33	377	62	472	1035
05:15 PM	19	23	46	88	94	12	12	118	36	391	7	434	46	415	57	518	1158
05:30 PM	4	12	65	81	122	9	16	147	29	347	8	384	54	465	61	580	1192
05:45 PM	0	15	56	71	116	0	18	134	42	335	6	383	46	430	56	532	1120
Total	45	67	215	327	420	27	64	511	139	1393	33	1565	179	1687	236	2102	4505
Grand Total	88	127	409	624	735	75	167	977	275	5289	130	5694	1338	7431	660	9429	16724
Apprch %	14.1	20.4	65.5		75.2	7.7	17.1		4.8	92.9	2.3		14.2	78.8	7		
Total %	0.5	0.8	2.4	3.7	4.4	0.4	1	5.8	1.6	31.6	0.8	34	8	44.4	3.9	56.4	

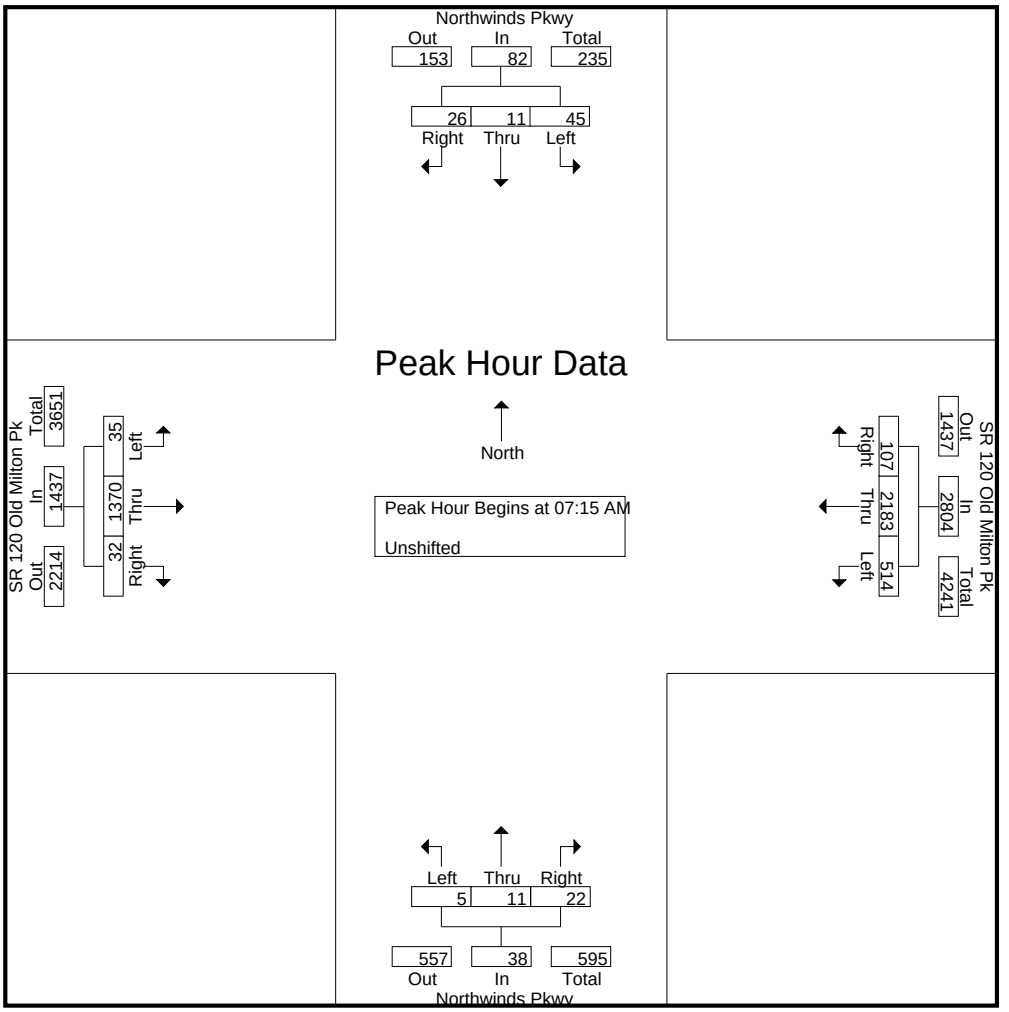
A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SR 120 Old Milton Pkwy at Northwinds Pkwy
07 - 09 AM - 04 - 06 PM

File Name : 20180014
Site Code : 20180014
Start Date : 2/6/2018
Page No : 2

	Northwinds Pkwy Northbound				Northwinds Pkwy Southbound				SR 120 Old Milton Pk Eastbound				SR 120 Old Milton Pk Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	1	2	6	9	10	2	4	16	5	**376**	8	**389**	117	**582**	20	719	1133
07:30 AM	1	3	4	8	7	0	5	12	9	291	**9**	309	118	523	**32**	673	1002
07:45 AM	0	2	3	5	**15**	3	**10**	**28**	8	347	7	362	123	536	27	686	1081
08:00 AM	**3**	**4**	**9**	**16**	13	**6**	7	26	**13**	356	8	377	**156**	542	28	**726**	**1145**
Total Volume	5	11	22	38	45	11	26	82	35	1370	32	1437	514	2183	107	2804	4361
% App. Total	13.2	28.9	57.9		54.9	13.4	31.7		2.4	95.3	2.2		18.3	77.9	3.8		
PHF	.417	.688	.611	.594	.750	.458	.650	.732	.673	.911	.889	.924	.824	.938	.836	.966	.952



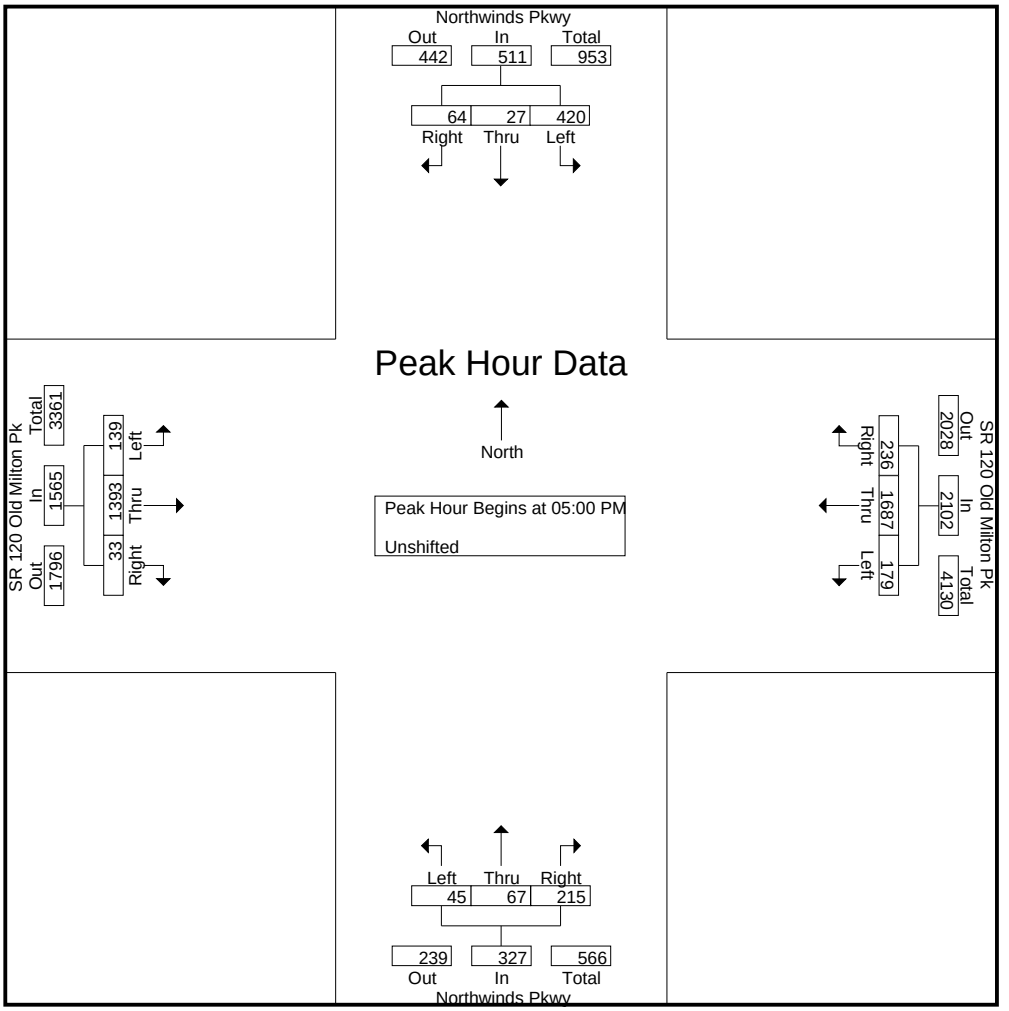
A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SR 120 Old Milton Pkwy at Northwinds Pkwy
07 - 09 AM - 04 - 06 PM

File Name : 20180014
Site Code : 20180014
Start Date : 2/6/2018
Page No : 3

	Northwinds Pkwy Northbound				Northwinds Pkwy Southbound				SR 120 Old Milton Pk Eastbound				SR 120 Old Milton Pk Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**22**	17	48	87	88	6	**18**	112	32	320	**12**	364	33	377	**62**	472	1035
05:15 PM	19	**23**	46	**88**	94	**12**	12	118	36	**391**	7	**434**	46	415	57	518	1158
05:30 PM	4	12	**65**	81	**122**	9	16	**147**	29	347	8	384	**54**	**465**	61	**580**	**1192**
05:45 PM	0	15	56	71	116	0	18	134	**42**	335	6	383	46	430	56	532	1120
Total Volume	45	67	215	327	420	27	64	511	139	1393	33	1565	179	1687	236	2102	4505
% App. Total	13.8	20.5	65.7		82.2	5.3	12.5		8.9	89	2.1		8.5	80.3	11.2		
PHF	.511	.728	.827	.929	.861	.563	.889	.869	.827	.891	.688	.901	.829	.907	.952	.906	.945



A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SRn120 Old Milton Pkwy at Amber Park Dr.
07 - 09 AM - 04 - 06 PM

File Name : 20180015
Site Code : 20180015
Start Date : 2/6/2018
Page No : 1

Groups Printed- Unshifted

	Amber Park Drive Northbound				Amber Park Drive Southbound				SR 120 Old Milton Parkway Eastbound				SR 120 Old Milton Parkway Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	1	2	5	5	1	7	13	16	284	1	301	16	507	4	527	846
07:15 AM	3	1	1	5	16	2	5	23	16	347	2	365	45	540	7	592	985
07:30 AM	1	1	0	2	20	0	8	28	21	356	6	383	33	523	6	562	975
07:45 AM	2	0	2	4	17	3	10	30	19	362	8	389	27	501	3	531	954
Total	8	3	5	16	58	6	30	94	72	1349	17	1438	121	2071	20	2212	3760
08:00 AM	2	2	0	4	23	3	7	33	23	337	5	365	29	517	10	556	958
08:15 AM	0	1	2	3	20	2	2	24	24	302	5	331	32	526	13	571	929
08:30 AM	3	1	2	6	23	3	12	38	28	295	7	330	36	505	15	556	930
08:45 AM	2	1	2	5	16	5	10	31	25	288	8	321	35	475	18	528	885
Total	7	5	6	18	82	13	31	126	100	1222	25	1347	132	2023	56	2211	3702
*** BREAK ***																	
04:00 PM	2	2	16	20	19	1	8	28	29	359	5	393	12	347	16	375	816
04:15 PM	4	1	15	20	25	3	13	41	33	362	6	401	6	353	15	374	836
04:30 PM	7	3	18	28	27	2	17	46	32	365	5	402	4	365	17	386	862
04:45 PM	6	3	22	31	29	5	14	48	35	369	8	412	7	371	21	399	890
Total	19	9	71	99	100	11	52	163	129	1455	24	1608	29	1436	69	1534	3404
05:00 PM	8	5	25	38	25	1	11	37	36	372	5	413	8	387	27	422	910
05:15 PM	5	6	23	34	39	2	16	57	49	337	2	388	8	388	33	429	908
05:30 PM	4	4	24	32	43	1	15	59	56	311	2	369	9	390	29	428	888
05:45 PM	4	3	17	24	41	1	17	59	44	283	3	330	8	464	37	509	922
Total	21	18	89	128	148	5	59	212	185	1303	12	1500	33	1629	126	1788	3628
Grand Total	55	35	171	261	388	35	172	595	486	5329	78	5893	315	7159	271	7745	14494
Apprch %	21.1	13.4	65.5		65.2	5.9	28.9		8.2	90.4	1.3		4.1	92.4	3.5		
Total %	0.4	0.2	1.2	1.8	2.7	0.2	1.2	4.1	3.4	36.8	0.5	40.7	2.2	49.4	1.9	53.4	

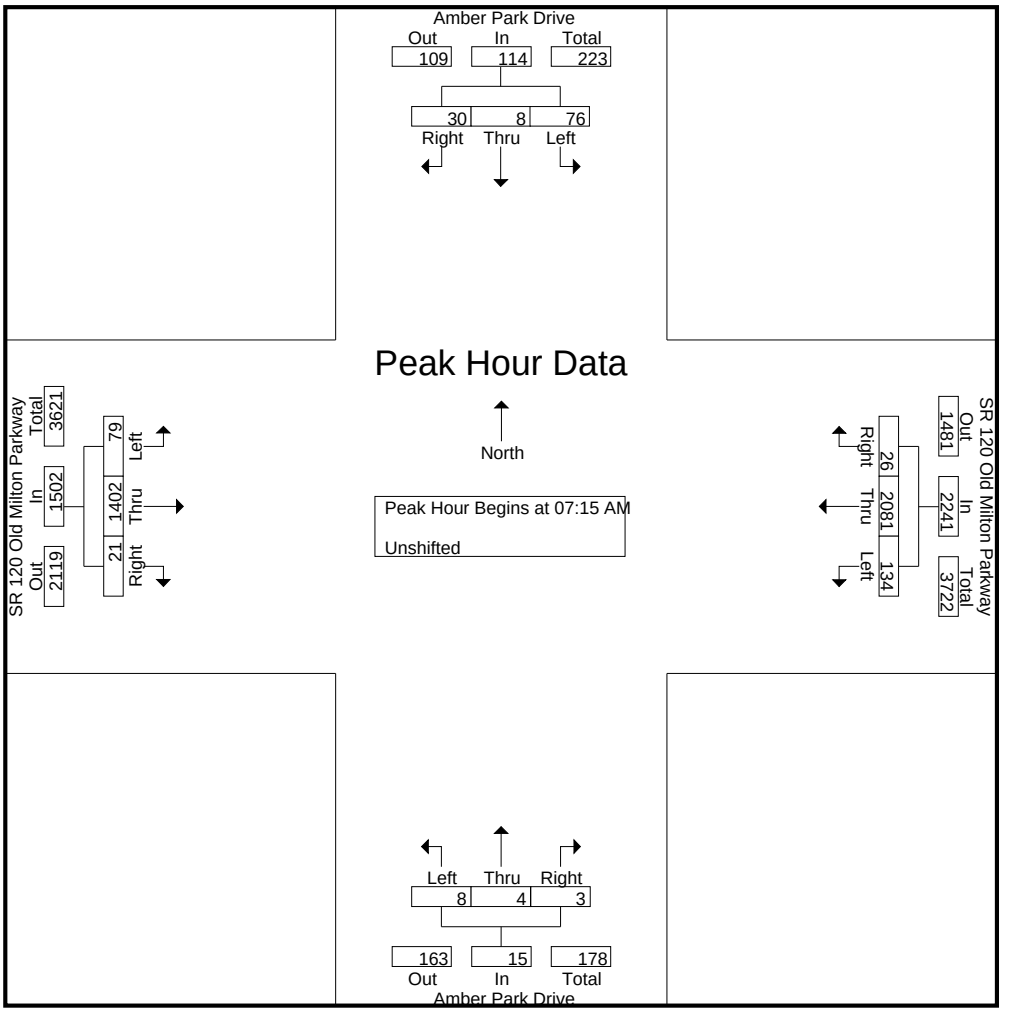
A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SRn120 Old Milton Pkwy at Amber Park Dr.
07 - 09 AM - 04 - 06 PM

File Name : 20180015
Site Code : 20180015
Start Date : 2/6/2018
Page No : 2

	Amber Park Drive Northbound				Amber Park Drive Southbound				SR 120 Old Milton Parkway Eastbound				SR 120 Old Milton Parkway Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**3**	1	1	**5**	16	2	5	23	16	347	2	365	**45**	**540**	7	**592**	**985**
07:30 AM	1	1	0	2	20	0	8	28	21	356	6	383	33	523	6	562	975
07:45 AM	2	0	**2**	4	17	**3**	**10**	30	19	**362**	**8**	**389**	27	501	3	531	954
08:00 AM	2	**2**	0	4	**23**	3	7	**33**	**23**	337	5	365	29	517	**10**	556	958
Total Volume	8	4	3	15	76	8	30	114	79	1402	21	1502	134	2081	26	2241	3872
% App. Total	53.3	26.7	20		66.7	7	26.3		5.3	93.3	1.4		6	92.9	1.2		
PHF	.667	.500	.375	.750	.826	.667	.750	.864	.859	.968	.656	.965	.744	.963	.650	.946	.983



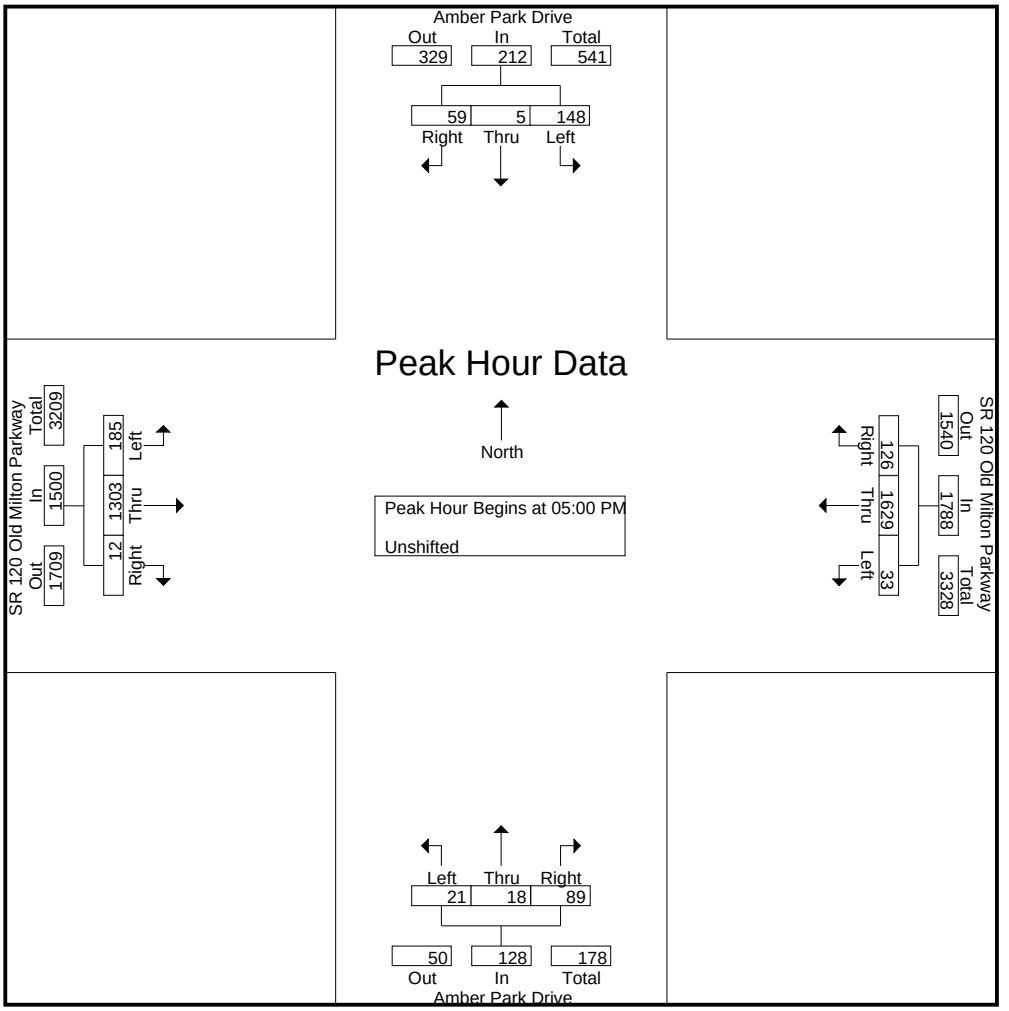
A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
SRn120 Old Milton Pkwy at Amber Park Dr.
07 - 09 AM - 04 - 06 PM

File Name : 20180015
Site Code : 20180015
Start Date : 2/6/2018
Page No : 3

	Amber Park Drive Northbound				Amber Park Drive Southbound				SR 120 Old Milton Parkway Eastbound				SR 120 Old Milton Parkway Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	**8**	5	**25**	**38**	25	1	11	37	36	**372**	**5**	**413**	8	387	27	422	910
05:15 PM	5	**6**	23	34	39	**2**	16	57	49	337	2	388	8	388	33	429	908
05:30 PM	4	4	24	32	**43**	1	15	**59**	**56**	311	2	369	**9**	390	29	428	888
05:45 PM	4	3	17	24	41	1	**17**	59	44	283	3	330	8	**464**	**37**	**509**	**922**
Total Volume	21	18	89	128	148	5	59	212	185	1303	12	1500	33	1629	126	1788	3628
% App. Total	16.4	14.1	69.5		69.8	2.4	27.8		12.3	86.9	0.8		1.8	91.1	7		
PHF	.656	.750	.890	.842	.860	.625	.868	.898	.826	.876	.600	.908	.917	.878	.851	.878	.984



A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
Northwinds Pkwy at Kimball Bridge Road
07 - 09 AM - 04 - 06 PM

File Name : 20180016
Site Code : 20180016
Start Date : 2/6/2018
Page No : 1

Groups Printed- Unshifted

	Northwinds Parkway Northbound				Northwinds Parkway Southbound				Kimball Bridge Road Eastbound				Kimball Bridge Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	3	1	14	18	43	34	4	81	2	41	14	57	51	41	3	95	251
07:15 AM	5	2	18	25	39	26	4	69	1	83	10	94	55	47	4	106	294
07:30 AM	3	8	29	40	36	51	2	89	2	78	20	100	52	47	3	102	331
07:45 AM	5	12	25	42	48	48	13	109	3	96	18	117	55	45	5	105	373
Total	16	23	86	125	166	159	23	348	8	298	62	368	213	180	15	408	1249
08:00 AM	3	6	20	29	52	50	17	119	4	102	21	127	58	40	6	104	379
08:15 AM	4	8	29	41	54	42	15	111	2	117	16	135	63	52	8	123	410
08:30 AM	6	7	37	50	58	35	12	105	1	129	12	142	68	56	4	128	425
08:45 AM	8	12	41	61	47	29	14	90	4	135	15	154	61	76	9	146	451
Total	21	33	127	181	211	156	58	425	11	483	64	558	250	224	27	501	1665
*** BREAK ***																	
04:00 PM	7	15	48	70	36	33	4	73	3	56	3	62	57	82	11	150	355
04:15 PM	6	21	25	52	8	7	5	20	4	54	5	63	52	82	12	146	281
04:30 PM	7	24	24	55	10	6	9	25	2	62	8	72	46	96	16	158	310
04:45 PM	5	33	26	64	9	10	11	30	3	68	6	77	42	101	19	162	333
Total	25	93	123	241	63	56	29	148	12	240	22	274	197	361	58	616	1279
05:00 PM	9	42	39	90	8	8	11	27	5	55	2	62	48	117	27	192	371
05:15 PM	13	47	36	96	12	6	10	28	3	57	5	65	47	109	28	184	373
05:30 PM	16	42	31	89	9	5	9	23	2	50	3	55	46	106	23	175	342
05:45 PM	14	33	27	74	9	5	9	23	3	41	9	53	39	89	18	146	296
Total	52	164	133	349	38	24	39	101	13	203	19	235	180	421	96	697	1382
Grand Total	114	313	469	896	478	395	149	1022	44	1224	167	1435	840	1186	196	2222	5575
Apprch %	12.7	34.9	52.3		46.8	38.6	14.6		3.1	85.3	11.6		37.8	53.4	8.8		
Total %	2	5.6	8.4	16.1	8.6	7.1	2.7	18.3	0.8	22	3	25.7	15.1	21.3	3.5	39.9	

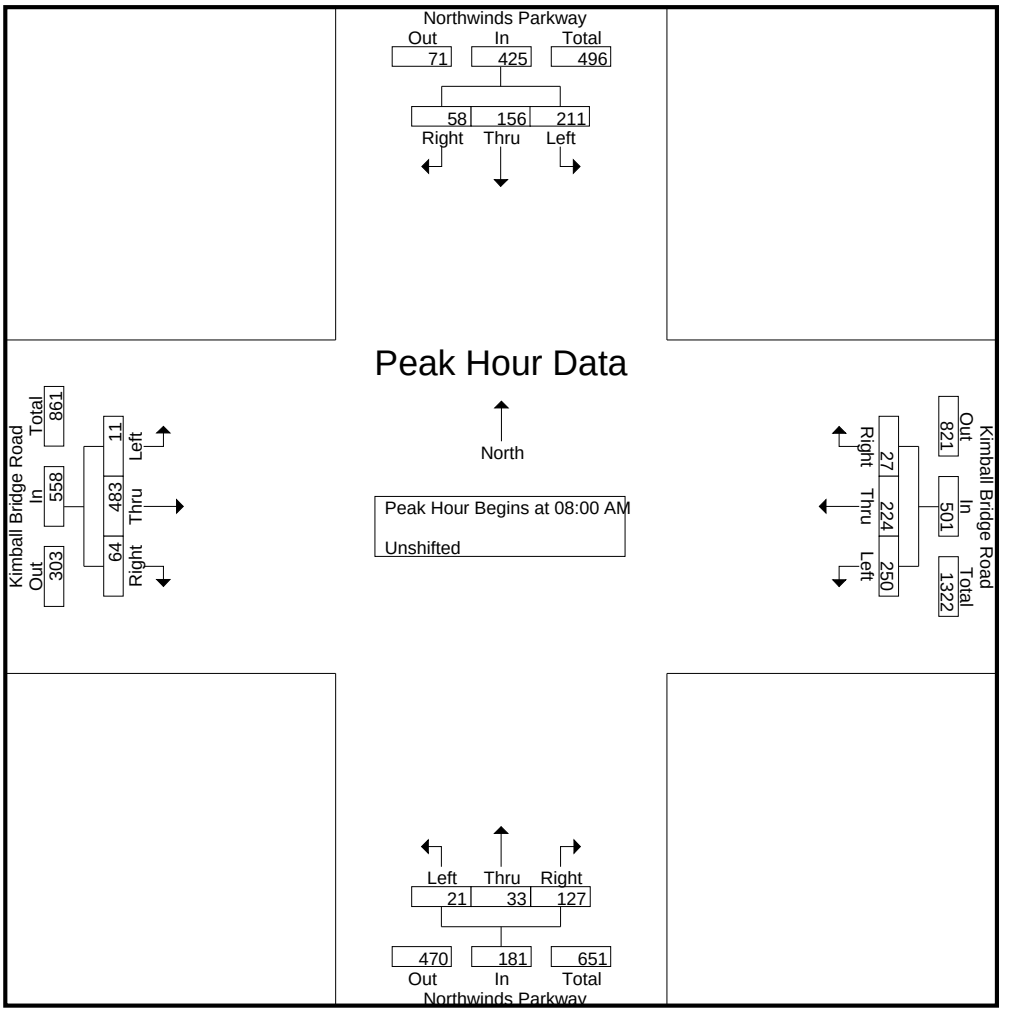
A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
Northwinds Pkwy at Kimball Bridge Road
07 - 09 AM - 04 - 06 PM

File Name : 20180016
Site Code : 20180016
Start Date : 2/6/2018
Page No : 2

	Northwinds Parkway Northbound				Northwinds Parkway Southbound				Kimball Bridge Road Eastbound				Kimball Bridge Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	3	6	20	29	52	**50**	**17**	**119**	**4**	102	**21**	127	58	40	6	104	379
08:15 AM	4	8	29	41	54	42	15	111	2	117	16	135	63	52	8	123	410
08:30 AM	6	7	37	50	**58**	35	12	105	1	129	12	142	**68**	56	4	128	425
08:45 AM	**8**	**12**	**41**	**61**	47	29	14	90	4	**135**	15	**154**	61	**76**	**9**	**146**	**451**
Total Volume	21	33	127	181	211	156	58	425	11	483	64	558	250	224	27	501	1665
% App. Total	11.6	18.2	70.2		49.6	36.7	13.6		2	86.6	11.5		49.9	44.7	5.4		
PHF	.656	.688	.774	.742	.909	.780	.853	.893	.688	.894	.762	.906	.919	.737	.750	.858	.923



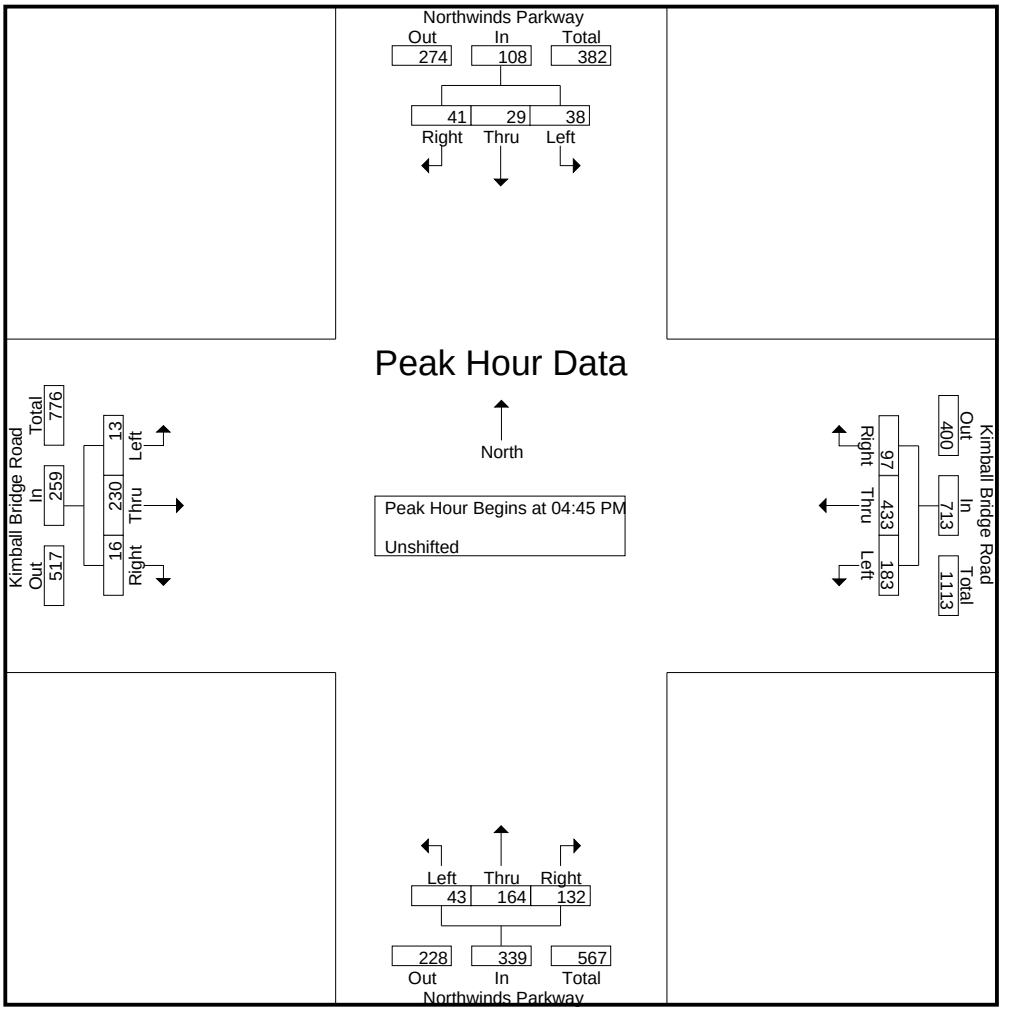
A & R Engineering, Inc.

2160 Kingston Court,Suite 'O',
Marietta, GA 30067

TMC Data
Northwinds Pkwy at Kimball Bridge Road
07 - 09 AM - 04 - 06 PM

File Name : 20180016
Site Code : 20180016
Start Date : 2/6/2018
Page No : 3

	Northwinds Parkway Northbound				Northwinds Parkway Southbound				Kimball Bridge Road Eastbound				Kimball Bridge Road Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	5	33	26	64	9	**10**	**11**	**30**	3	**68**	**6**	**77**	42	101	19	162	333
05:00 PM	9	42	**39**	90	8	8	11	27	**5**	55	2	62	**48**	**117**	27	**192**	371
05:15 PM	13	**47**	36	**96**	**12**	6	10	28	3	57	5	65	47	109	**28**	184	**373**
05:30 PM	**16**	42	31	89	9	5	9	23	2	50	3	55	46	106	23	175	342
Total Volume	43	164	132	339	38	29	41	108	13	230	16	259	183	433	97	713	1419
% App. Total	12.7	48.4	38.9		35.2	26.9	38		5	88.8	6.2		25.7	60.7	13.6		
PHF	.672	.872	.846	.883	.792	.725	.932	.900	.650	.846	.667	.841	.953	.925	.866	.928	.951



GRTA Letter of Understanding

LETTER OF UNDERSTANDING

February 5, 2018

Chris Scott
Greenstone Properties
3301 Windy Ridge Parkway
Suite 320
Atlanta, GA 30339

RE: **DRI 2778 Greenstone Parkway 400**

Dear Mr. Scott:

The purpose of this letter is to document the discussions during the Pre-Review and Methodology Meeting held at GRTA's office on January 29, 2018 regarding **DRI 2778 Greenstone Parkway 400.** Some of the following items were discussed in this meeting and should assist you and your consultant team in preparing the DRI Review Package.

PROJECT OVERVIEW

- The project is located in the City of Alpharetta. The proposed development is located on Northwinds Parkway between State Route 120 and Kimball Bridge Road with GA 400 to the east.
- The DRI trigger for this development is a rezoning.
- The project is planned as a residential development with 450,000 SF office, 325 residential units, 6,000 SF of retail and restaurant and 10,000 SF of theater space.
- The vehicular trip generation is estimated to be 8,002 gross daily trips based on the *ITE Trip Generation Manual 10th edition*.
- The development site proposes five access points. There are three total access points along Northwinds Parkway: one full access and two right-in/right-out driveways. There are also additional access points via Amber Park Drive and the southern parking lot.
- The projected build-out is one phase, to be completed by 2022.
- The applicant is applying for approval under GRTA's non-expedited review process.

STUDY NETWORK

1. SR 120 (Old Milton Parkway) at GA 400 Northbound Ramps
2. SR 120 (Old Milton Parkway) at GA 400 Southbound Ramps
3. SR 120 (Old Milton Parkway) at Northwinds Parkway/ 2nd Street
4. SR 120 (Old Milton Parkway) at Amber Park Drive
5. Kimball Bridge Road at Northwinds Parkway
6. All site driveways

METHODOLOGY

- All intersections identified as within the study network shall be analyzed during the AM and PM peak hours for (1) existing conditions, (2) future "no-build" conditions [may not be applicable for the site driveways, and (3) future "build" conditions. This DRI shall be reviewed in one phase to be completed by 2022.

- Capacity analysis shall be based on turning movement counts collected not more than 12-months prior to the date of the actual DRI submittal to GRTA. As appropriate, pedestrian counts and heavy vehicle counts shall be collected with vehicle counts and considered within the capacity analysis. Turning movement counts shall be collected while local schools are in session and ordinarily not between the week of Thanksgiving and the second week of January or any week of a major holiday.

- A 1.0% annual background traffic growth rate shall be used for all roadways. Trip generation information for any other major developments currently underway in the study area shall be taken into consideration.

- The Level of Service (LOS) standard for all analyses shall be LOS D.

- An alternate mode trip reduction of 5% is allowed for this development.

- Default values should not be assumed in the traffic modeling. Existing conditions shall be taken into account.

- The applicant shall research TIP, STIP, RTP, and GDOT's construction work program, as well as any local government plans (SPLOST, CIP, etc.), to determine the open-to-traffic date, sponsor, cost of the project, funding source(s), for future roadway projects in the project vicinity. This information shall be included within the traffic analysis.

ADDITIONAL INFORMATION

Every roadway segment and intersection listed above will be analyzed for "required improvements." If the existing LOS for the segment or intersection is below the applicable level of service for a particular time period (e.g., A.M. peak period, P.M. peak period, etc.), then the measured LOS service for that segment and time periods is the standard by which the "base" and "future" traffic conditions will be designed. For example, if the County's LOS standard is LOS D, but an intersection or segment currently operates at LOS E for a certain peak period, then the LOS standard for that intersection or segment for "base" and "future" conditions becomes LOS E (only for that intersection and only for that peak period). The "base" is the phase year traffic without the development traffic (also called future "no-build" conditions) and the "future" is the phase year with the development traffic (also called future "build" conditions). As required in the technical guidelines, specific "required improvements" will be identified to bring the "base" LOS and "future" LOS for every roadway segment and intersection up to the applicable LOS standard. If the existing LOS for the segment or intersection is LOS F, then the future "no-build' and future "build" LOS standard will be LOS E. The improvements required to achieve the desired LOS standard will be provided in a table and graphic within the study. The traffic study should indicate the existing roadway laneage at each studied intersection as well as the laneage required (to meet the LOS standard) for future "no-build" and future "build" conditions. The improvements may include both programmed improvements and improvements identified in the study.

The planned and programmed improvement should indicate the project sponsor, the anticipated funding by source (federal, state, city/county, developer, CID, etc.), the year open-to-traffic, and estimate of the total project cost. All other required improvements identified in the study should, to the extent known, identify the cost, sponsor, funding, and timing. If any of these elements are not known, please state as "unknown."

The future "no-build" and the future "build" analyses should NOT automatically include/assume the additional lanes/capacity associated with planned and programmed improvement projects unless those roadway projects are currently under construction. Instead, the traffic consultant should recommend the additional laneage required to satisfy the level of service standard.

DRI REVIEW PACKAGE CHECKLIST

Please use the DRI Review Package Checklist to help you prepare your GRTA DRI Review Package for expedited review of your application. The Checklist reflects the understandings set forth in this letter, and is incorporated into this letter by reference.

The site plan shall be prepared in accordance with Section 4-104 of the DRI Review Package Technical Guidelines and it shall be dated, and shall be at a scale of 1"= 200' or larger (showing more detail). The site plan shall be consistent with GRTA's Site Plan Information Guidelines, which represents the minimum required information on site plans.

The applicant shall indicate on the site plans all adjacent land uses, current zoning, and future land use as indicated on the future land use map. Additionally, all existing and proposed sidewalks, existing and proposed pedestrian trails, and existing and proposed roadway laneage should be indicated on the site plan.

DRI REVIEW PACKAGE SUBMITTAL

At the time you are ready to submit your DRI Review Package to GRTA, please note the following:

- Provide one (1) paper copy of all materials:
  - Transportation analysis
  - Site Plan
- Provide one (1) CD-ROM with electronic versions of all submittal documents:
  - Provide a PDF of each document
  - Provide the native format for each document
    - .dwg is the preferred CAD format (AutoCAD)
    - .doc is the preferred word processing format (Word)
    - .xls is the preferred spreadsheet format (Excel)
    - .sy8, .sy9 or .sy10 is the preferred capacity analysis format (Synchro)

As part of the completeness certification process, please have your consultant forward one copy of the completed GRTA DRI Review Package (traffic analysis, site plan, CD) to the GDOT District Office, Regional Commission and local government Planning & Development and Transportation group (contact information provided below). GRTA shall be copied on each of the transmittal letters.

GRTA	ATLANTA REGIONAL COMMISSION	CITY OF ALPHARETTA	GDOT DISTRICT 7
Emily Estes 245 Peachtree Center Ave. Suite 2200 Atlanta, GA 30303	Andrew Smith International Tower 229 Peachtree Street NE Suite 100 Atlanta, GA 30303	Eric Graves 2 Park Plaza Alpharetta, GA 30009	Paul DeNard 5025 New Peachtree Road NE Chamblee, GA 30341

If you have any questions, please feel free to contact me directly at 404-893-6171 or eestes@srta.ga.gov.

Sincerely,
Emily Estes
Planner

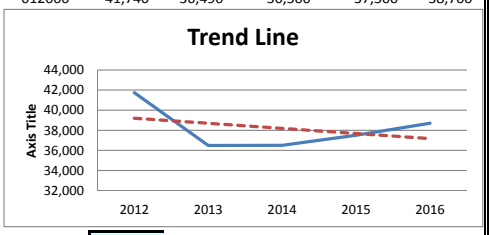
cc:

Jon West, DCA
Andrew Smith, ARC
Jon Tuley, ARC
Annie Gillespie, GRTA/SRTA
Paul DeNard, GDOT District 7
Eric Graves, City of Alpharetta
Abby Rettig, A & R Engineering
Abdul Amer, A & R Engineering
Jill Arnold, PFT Legal
Doug Dillard, PFT Legal
Steve Rowe, AEC, Inc
Justin Adams, TCR
Leonard Wood, TCR

Linear Regression of Daily Traffic

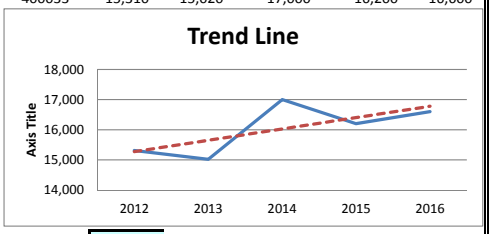
Location	Growth Rate	R Squared	Station ID	Route	2012	2013	2014	2015	2016
SR 120 (West of Northwinds Pk	-1.3%	0.13	1210310	012000	41,740	36,490	36,500	37,500	38,700
GA 400 NB Off-Ramp at SR 120	2.4%	0.50	121r091	400033	15,310	15,020	17,000	16,200	16,600
GA 400 SB On-Ramp at SR 120	6.9%	0.34	121r692	400036	9,490	12,390	15,900	13,100	13,400
GA 400 NB On-Ramp at SR 120	-5.6%	0.33	121r092	400034	13,230	9,020	10,300	9,680	9,910
GA 400 SB Off-Ramp at SR 120	-0.7%	0.07	121r691	400035	12,010	10,680	11,300	11,100	11,400
Weighted Average	**0.0%**	0.00	Sum of Count Stations =		91,780	83,600	91,000	87,580	90,010

Location	Traffic Counter	RCLINK	2012	2013	2014	2015	2016
SR 120 (West of Northwinds Pkwy)	1210310	012000	41,740	36,490	36,500	37,500	38,700



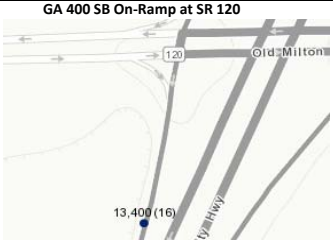
Growth Rate	-1.3%	Intercept	1,059,284	Slope	-507.00
Trend Line	39,200	38,693	38,186	37,679	37,172

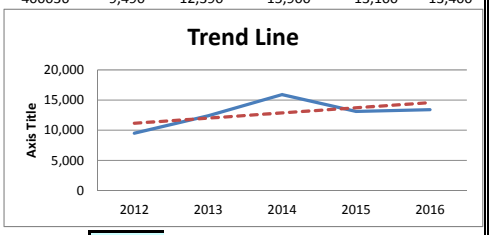
Location	Traffic Counter	RCLINK	2012	2013	2014	2015	2016
GA 400 NB Off-Ramp at SR 120	121r091	400033	15,310	15,020	17,000	16,200	16,600



Growth Rate	2.4%	Intercept	-741,238	Slope	376.00
Trend Line	15,274	15,650	16,026	16,402	16,778

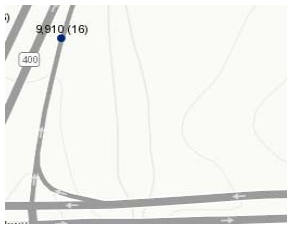
Location	Traffic Counter	RCLINK	2012	2013	2014	2015	2016
GA 400 SB On-Ramp at SR 120	121r692	400036	9,490	12,390	15,900	13,100	13,400

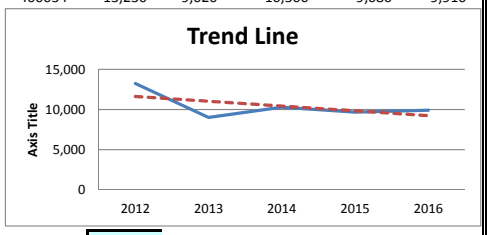




Growth Rate	6.9%	Intercept	-1,705,086	Slope	853.00
Trend Line	11,150	12,003	12,856	13,709	14,562

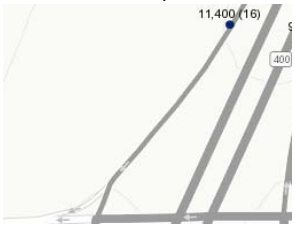
Location	Traffic Counter	RCLINK	2012	2013	2014	2015	2016
GA 400 NB On-Ramp at SR 120	121r092	400034	13,230	9,020	10,300	9,680	9,910

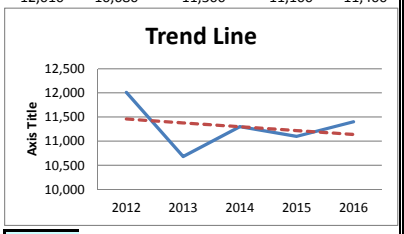




Growth Rate	-5.6%	Intercept	1,214,800	Slope	-598.00
Trend Line	11,624	11,026	10,428	9,830	9,232

Location	Traffic Counter	RCLINK	2012	2013	2014	2015	2016
GA 400 SB Off-Ramp at SR 120	121r691	400035	12,010	10,680	11,300	11,100	11,400





Growth Rate	-0.7%	Intercept	172,418	Slope	-80.00
Trend Line	11,458	11,378	11,298	11,218	11,138

Fact Sheets for Planned and Programmed Improvements

ALPHA LOOP

COMMUNITY VISION

Project ID: C1712

Project Website

Project is on budget.

Project is on schedule.

Description:

The Alpha Loop is a dynamic and transformative project for Alpharetta. These multi-use paths connecting Avalon to Downtown Alpharetta will involve two interconnected routes including a three-mile inner loop and a five-mile outer loop that would link locations like Downtown Alpharetta, Avalon, and the Northwinds area located at Haynes Bridge Road and S.R. 400. A portion of the three-mile inner loop will have a natural feel, incorporating a greenway that would run along a stream. The trails will include bicycle service areas and pockets of seating areas where people can gather and rest. Design of the inner loop portion has been awarded to Pond (contract amount of $376,190) and Alta (contract amount of $226,525). POND is designing the inner loop segment running behind AMLI as well as a tunnel underneath Westside Parkway. Included in their proposal is designing various pedestrian bridges, park spaces, identify locations for public art, and other enhancements as depicted in the master plan. Alta is designing the inner loop segment along the Northwinds section. Alta will start their design where POND stops their design coming from under the tunnel at Westside Parkway. The Alpha Loop is a public/private partnership as several developments are constructing portions of Alpha Loop and other developments have incorporated Alpha Loop into their overall development plans. One of the first phases of Alpha Loop is currently under construction along Thompson Street, behind the Voysey Residential Development. Funding (full design and partial construction) is provided through (1) the 2016 Alpharetta Parks and Transportation Bond, (2) contribution from the Alpharetta Business Community, (3) contribution from the North Fulton Community Improvement District, (4) contribution from Avalon, and (5) general capital funds. Construction cost estimates will be provided as a component of the design process. The AlphaLoop will better connect our neighborhoods, improve our travel and mobility, spur economic development, and elevate the overall quality of life in the Technology City of the South. For more information regarding this project, please contact Pete Sewczwicz, Public Works Director, at (678) 297-6219 or psewczwicz@alpharetta.ga.us.

Budget

$2.2 million

Primary Funding Source

Bond

Committed (not spent)

$442,000

Spent

$213,000

Design Completion

2018 (Apr.)

Design Firm

Pond & Company / Alta Planning + Design

Construction Completion

TBD

Construction Firm

TBD

Stage

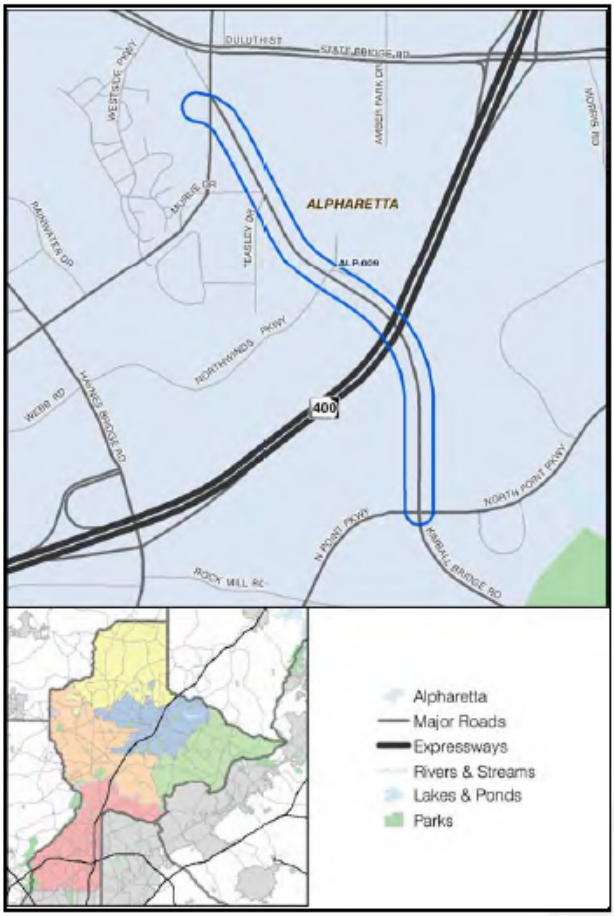
Land | Concept | **Design** | Bidding | Construction | Completed

Kimball Bridge Road: Bike/Ped/Operational Improvements — ALP-009

Project Description

Pedestrian, bike and operational improvements to Kimball Bridge Road, connecting residential neighborhoods to Downtown Alpharetta, Avalon, schools, and parks.

Project Details	
TYPE	Roadway Corridor (Multimodal)
MAIN ROUTE	Kimball Bridge Road
EXTENTS	From Westside Parkway to North Point Parkway
LOCATION	
LENGTH (miles)	1.1
GDOT/ ARC ID	



Project Cost Estimate		
ENGINEERING COST		$100,000
RIGHT-OF-WAY COST		$500,000
CONSTRUCTION COST		$4,306,529
OTHER COSTS		
TOTAL CAPITAL COST		**$4,906,529**
CITY TSPLOST FUNDS	Alpharetta	$4,906,529

Project Implementation	
LOCAL LEAD	Alpharetta
Funding Partners	
DESIGN	
RIGHT-OF-WAY	
CONSTRUCTION	

Project Status	
DESIGN	
ROW	
CONSTRUCTION	
ENVIRONMENTAL	Not started

Project Timeline	
READY FOR CONSTRUCTION	24 mo.
ANTICIPATED LENGTH OF CONSTRUCTION	12 mo.

Notes:

AR-ML-300

Atlanta Region's Plan RTP (2016) PROJECT FACT SHEET

Short Title	SR 400 MANAGED LANES FROM I-285 NORTH TO MCFARLAND ROAD
GDOT Project No.	0001757/0008445
Federal ID No.	MSL00-0001-00(757)
Status	Long Range
Service Type	Roadway / Managed Lanes
Sponsor	GDOT
Jurisdiction	Regional - North
Analysis Level	In the Region's Air Quality Conformity Analysis

Existing Thru Lane	0	**LCI**		**Network Year**	2040
Planned Thru Lane	4	**Flex**		**Corridor Length**	16.5 miles

Detailed Description and Justification

Project includes preliminary design of managed lanes along SR 400 between I-285 and SR 20. In this case, managed lanes means high occupancy toll lanes. Passenger vehicles not meeting an occupancy requirement use these lanes by paying a variable toll. Meanwhile, transit vehicles and passenger vehicles meeting the occupancy requirement can use the lanes for free. Two managed lanes in each direction (four total) are proposed between I-285 and Holcomb Bridge Road and one managed lane in each direction (two total) between Holcomb Bridge Road and McFarland Parkway. Managed lanes are designed to provide a reliable trip option for those that carpool, use a vanpool, take transit, or wish to pay to use the lane.

Phase Status & Funding Information		Status	FISCAL YEAR	TOTAL PHASE COST	BREAKDOWN OF TOTAL PHASE COST BY FUNDING SOURCE			
					FEDERAL	STATE	BONDS	LOCAL/PRIVATE
PE	SRTA - Toll Revenue	AUTH	2011	**$8,000,000**	~~$0,000~~	~~$0,000~~	~~$0,000~~	~~$8,000,000~~
ALL	General Federal Aid 2022-2040		LR 2031-2040	**$429,000,000**	$343,200,000	$85,800,000	$0,000	$0,000
ALL	Toll Revenue Bonds		LR 2031-2040	**$351,000,000**	$0,000	$0,000	$351,000,000	$0,000
				$788,000,000	**$343,200,000**	**$85,800,000**	**$351,000,000**	**$8,000,000**

SCP: Scoping PE: Preliminary engineering / engineering / design / planning PE-OV: GDOT oversight services for engineering ROW: Right-of-way Acquistion
UTL: Utility relocation CST: Construction / Implementation ALL: Total estimated cost, inclusive of all phases

? For additional information about this project, please call (404) 463-3100 or email transportation@atlantaregional.com.

Report Generated: 12/16/2016

PRECONSTRUCTION STATUS REPORT

PROJ ID	COUNTY	DESCRIPTION
0001757	Fulton	**SR 400 FM I-285/FULTON TO MCFARLAND RD/FORSYTH-EXPRESS LANES**

Mgmt Let Date:

Major Mobility Investment (MMIP); Design-Build-Finance delivery
SR 400 is one of the most congested facilities in metro Atlanta. The addition of Express Lanes to this corridor will provide additional reliable capacity from I-285 to McFarland Road. The proposed Express Lanes will be constructed to the inside of the general purpose lanes and will directly connect to the Revive 285 project. This mobility enhancing project would consist of:
¿ Two Express Lanes in each direction along SR 400 between I-285N and McGinnis Ferry Road.
¿ One Express Lane in each direction from McGinnis Ferry Road to McFarland Road.
Intermediate access points will be determined as additional coordination, environmental documentation and design activities are completed on the corridor.
Estimated Costs*: $2.4 Billion

PROJ NO:	MSL00-0001-00(757)	**SPONSOR:**	GDOT
MPO TIP#:	AR-ML-300	**PROJ MGR:**	Lewis, Robert
MPO:	Atlanta TMA	**DOT DIST:**	1, 7
PROJ LENGTH (MI):	17.06	**CONG DIST:**	006, 007
TYPE WORK:	Managed Lanes	**HOUSE DIST:**	047, 048, 049, 051, 080
LET RESPONSIBILITY:	GDOT Let	**SENATE DIST:**	006, 021, 032, 040, 056
BIKE PROVISIONS INCLUDED?	N		

Phase	FY Approved	Approved FY Estimate*	Fund	Phase Status
Construction	2025	$105,000,000.00	Z001	PRECST
Construction	2033	$120,000,000.00	Z001	PRECST
Construction	2027	$110,000,000.00	Z001	PRECST
Construction	2040	$135,000,000.00	Z001	PRECST
Construction	2059	$180,000,000.00	Z001	PRECST
Construction	2050	$155,000,000.00	Z001	PRECST
Right of Way	2022	$22,300,000.00	Z001	PRECST
Engineering	2017	$5,000,000.00	HB170	AUTHORIZED
Construction	2038	$130,000,000.00	Z001	PRECST
Construction	2035	$125,000,000.00	Z001	PRECST
Construction	2028	$110,000,000.00	Z001	PRECST
Engineering	2005	$461,217.80	Q05	AUTHORIZED
Construction	2043	$140,000,000.00	Z001	PRECST
Construction	2046	$145,000,000.00	Z001	PRECST
Engineering	2020	$15,900,000.00	Z001	PRECST
Construction	2054	$165,000,000.00	Z001	PRECST
Construction	2048	$150,000,000.00	Z001	PRECST
Construction	2058	$175,000,000.00	Z001	PRECST
Right of Way	2017	$4,000,000.00	Z001	PRECST
Construction	2056	$170,000,000.00	Z001	PRECST
Right of Way		$23,400,000.00	Z001	PRECST
Construction	2049	$155,000,000.00	Z001	PRECST
Construction	2052	$160,000,000.00	Z001	PRECST
Construction	2037	$130,000,000.00	Z001	PRECST
Construction	2044	$140,000,000.00	Z001	PRECST
Engineering	2011	$2,060,253.01	44220	AUTHORIZED
Engineering	2010	$728,806.25	LY10S	AUTHORIZED
Engineering	2010	$171,095.00	HY10	AUTHORIZED
Construction	2039	$130,000,000.00	Z001	PRECST
Construction	2057	$175,000,000.00	Z001	PRECST
Construction	2030	$115,000,000.00	Z001	PRECST
Engineering	2019	$40,400,000.00	Z001	PRECST
Construction	2042	$140,000,000.00	Z001	PRECST
Construction	2022	$55,000,000.00	Z001	PRECST
Construction	2047	$150,000,000.00	Z001	PRECST
Engineering	2005	$8,538,782.20	L010	AUTHORIZED
Construction	2032	$120,000,000.00	Z001	PRECST
Construction	2045	$145,000,000.00	Z001	PRECST
Construction	2041	$135,000,000.00	Z001	PRECST
Construction	2053	$165,000,000.00	Z001	PRECST
Construction	2021	$65,000,000.00	HB170	PRECST
Construction	2055	$170,000,000.00	Z001	PRECST
Construction	2051	$160,000,000.00	Z001	PRECST
Construction	2029	$115,000,000.00	Z001	PRECST
Construction	2034	$125,000,000.00	Z001	PRECST
Right of Way	2021	$4,000,000.00	Z001	PRECST
Construction	2026	$110,000,000.00	Z001	PRECST
Construction	2031	$115,000,000.00	Z001	PRECST
Construction	2024	$37,800,000.00	Z001	PRECST

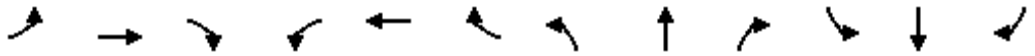
Existing Intersection Analysis

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	348	1503	1488	532	327	1557
Future Volume (vph)	348	1503	1488	532	327	1557
Lane Group Flow (vph)	370	1670	1653	585	372	1589
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	6.0	15.0	15.0	15.0	8.0	
Minimum Split (s)	13.0	28.6	24.6	24.6	14.6	
Total Split (s)	50.0	110.0	60.0	60.0	50.0	
Total Split (%)	31.3%	68.8%	37.5%	37.5%	31.3%	
Yellow Time (s)	4.0	4.6	4.6	4.6	3.6	
All-Red Time (s)	3.0	1.5	1.5	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.1	6.1	6.1	6.6	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	Max	C-Min	C-Min	C-Min	None	
v/c Ratio	0.52	0.60	0.77	0.70	0.78	1.06
Control Delay	56.3	11.8	50.3	14.8	77.8	45.1
Queue Delay	4.6	1.7	0.0	0.0	0.0	0.0
Total Delay	60.9	13.5	50.3	14.8	77.8	45.1
Queue Length 50th (ft)	411	402	450	115	196	~109
Queue Length 95th (ft)	m510	492	495	268	239	#258
Internal Link Dist (ft)		487	857			
Turn Bay Length (ft)					280	420
Base Capacity (vph)	708	2764	2158	834	931	1500
Starvation Cap Reductn	261	866	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.83	0.88	0.77	0.70	0.40	1.06

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: GA 400 NB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	348	1503	0	0	1488	532	327	0	1557	0	0	0
Future Volume (vph)	348	1503	0	0	1488	532	327	0	1557	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.1			6.1	6.1	6.6		4.0			
Lane Util. Factor	1.00	0.95			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)	1770	3539			6408	1583	3433		1500			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1770	3539			6408	1583	3433		1500			
Peak-hour factor, PHF	0.94	0.90	0.92	0.92	0.90	0.91	0.88	0.92	0.98	0.92	0.92	0.92
Adj. Flow (vph)	370	1670	0	0	1653	585	372	0	1589	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	301	0	0	0	0	0	0
Lane Group Flow (vph)	370	1670	0	0	1653	284	372	0	1589	0	0	0
Turn Type	Prot	NA			NA	Perm	Prot		Free			
Protected Phases	5	2			6		4					
Permitted Phases						6			Free			
Actuated Green, G (s)	64.1	125.0			53.9	53.9	22.3		160.0			
Effective Green, g (s)	64.1	125.0			53.9	53.9	22.3		160.0			
Actuated g/C Ratio	0.40	0.78			0.34	0.34	0.14		1.00			
Clearance Time (s)	7.0	6.1			6.1	6.1	6.6					
Vehicle Extension (s)	2.5	4.5			4.5	4.5	2.5					
Lane Grp Cap (vph)	709	2764			2158	533	478		1500			
v/s Ratio Prot	0.21	0.47			0.26		0.11					
v/s Ratio Perm						0.18			c1.06			
v/c Ratio	0.52	0.60			0.77	0.53	0.78		1.06			
Uniform Delay, d1	36.3	7.3			47.4	42.9	66.5		80.0			
Progression Factor	1.45	1.44			1.00	1.00	1.00		1.00			
Incremental Delay, d2	1.7	0.6			2.7	3.8	7.5		40.7			
Delay (s)	54.3	11.0			50.1	46.7	74.0		120.7			
Level of Service	D	B			D	D	E		F			
Approach Delay (s)		18.9			49.2			111.9			0.0	
Approach LOS		B			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	59.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

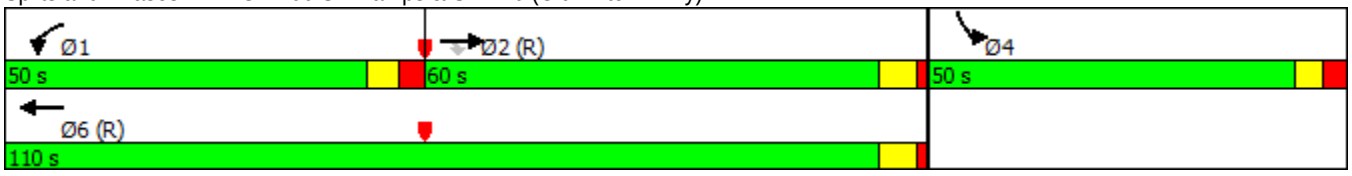
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1155	102	400	1415	696	1398
Future Volume (vph)	1155	102	400	1415	696	1398
Lane Group Flow (vph)	1269	120	513	1555	782	1553
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	15.0	15.0	6.0	15.0	8.0	
Minimum Split (s)	24.5	24.5	13.0	24.5	22.5	
Total Split (s)	60.0	60.0	50.0	110.0	50.0	
Total Split (%)	37.5%	37.5%	31.3%	68.8%	31.3%	
Yellow Time (s)	4.5	4.5	4.0	4.5	3.4	
All-Red Time (s)	1.5	1.5	3.0	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	7.0	6.0	6.4	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	Max	C-Min	Min	
v/c Ratio	0.74	0.20	0.52	0.66	0.90	0.98
Control Delay	35.5	2.9	81.8	24.6	71.4	20.7
Queue Delay	0.0	0.0	0.0	0.8	0.8	0.0
Total Delay	35.5	2.9	81.8	25.3	72.2	20.7
Queue Length 50th (ft)	306	0	293	317	404	0
Queue Length 95th (ft)	244	17	307	389	474	#197
Internal Link Dist (ft)	1090			487		
Turn Bay Length (ft)		420				300
Base Capacity (vph)	1716	613	986	2365	935	1583
Starvation Cap Reductn	0	0	0	453	0	0
Spillback Cap Reductn	0	0	0	0	33	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.20	0.52	0.81	0.87	0.98

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: GA 400 SB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1155	102	400	1415	0	0	0	0	696	0	1398
Future Volume (veh/h)	0	1155	102	400	1415	0	0	0	0	696	0	1398
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	0	1863
Adj Flow Rate, veh/h	0	1269	0	513	1555	0				782	0	0
Adj No. of Lanes	0	3	1	2	2	0				2	0	1
Peak Hour Factor	0.92	0.91	0.85	0.78	0.91	0.92				0.89	0.92	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1850	576	925	2393	0				848	0	390
Arrive On Green	0.00	0.73	0.00	0.54	1.00	0.00				0.25	0.00	0.00
Sat Flow, veh/h	0	5253	1583	3442	3632	0				3442	0	1583
Grp Volume(v), veh/h	0	1269	0	513	1555	0				782	0	0
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1721	1770	0				1721	0	1583
Q Serve(g_s), s	0.0	21.7	0.0	15.7	0.0	0.0				35.5	0.0	0.0
Cycle Q Clear(g_c), s	0.0	21.7	0.0	15.7	0.0	0.0				35.5	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1850	576	925	2393	0				848	0	390
V/C Ratio(X)	0.00	0.69	0.00	0.55	0.65	0.00				0.92	0.00	0.00
Avail Cap(c_a), veh/h	0	1850	576	925	2393	0				938	0	431
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.92	0.00	0.55	0.55	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	16.8	0.0	30.7	0.0	0.0				58.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.9	0.0	1.3	0.8	0.0				13.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	15.2	0.0	10.9	0.5	0.0				25.5	0.0	0.0
LnGrp Delay(d),s/veh	0.0	18.8	0.0	32.0	0.8	0.0				72.3	0.0	0.0
LnGrp LOS		B		C	A					E		
Approach Vol, veh/h		1269			2068						782	
Approach Delay, s/veh		18.8			8.5						72.3	
Approach LOS		B			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	50.0	64.2		45.8		114.2		
Change Period (Y+Rc), s	7.0	6.0		6.4		6.0		
Max Green Setting (Gmax), s	43.0	54.0		43.6		104.0		
Max Q Clear Time (g_c+I1), s	17.7	23.7		37.5		2.0		
Green Ext Time (p_c), s	3.4	30.2		2.0		101.3		

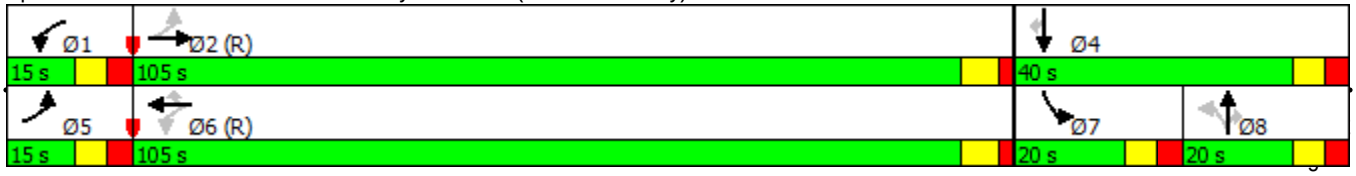
Intersection Summary	
HCM 2010 Ctrl Delay	23.8
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	1370	32	514	2183	107	5	11	22	45	11	26
Future Volume (vph)	35	1370	32	514	2183	107	5	11	22	45	11	26
Lane Group Flow (vph)	52	1505	36	627	2322	127	12	16	36	60	24	40
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2		Free	6		6	8		8			4
Detector Phase	5	2		1	6	6	8	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0	15.0	8.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.0	30.7		13.0	36.7	36.7	42.5	42.5	42.5	13.0	44.5	44.5
Total Split (s)	15.0	105.0		15.0	105.0	105.0	20.0	20.0	20.0	20.0	40.0	40.0
Total Split (%)	9.4%	65.6%		9.4%	65.6%	65.6%	12.5%	12.5%	12.5%	12.5%	25.0%	25.0%
Yellow Time (s)	4.0	4.7		4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	1.8		3.0	1.8	1.8	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	6.5		7.0	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.38	0.42	0.02	2.32	0.62	0.11	0.17	0.17	0.19	0.34	0.10	0.15
Control Delay	30.3	6.5	0.0	618.3	10.7	1.4	78.0	76.5	2.1	77.9	59.0	2.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.3	6.5	0.0	618.3	10.7	1.4	78.0	76.5	2.1	77.9	59.0	2.8
Queue Length 50th (ft)	8	117	0	~811	384	10	12	16	0	31	22	0
Queue Length 95th (ft)	22	89	m0	m#994	m477	m16	16	33	0	47	26	0
Internal Link Dist (ft)		703			1090			604			273	
Turn Bay Length (ft)	235			330		120	365			180		115
Base Capacity (vph)	150	3609	1583	270	3772	1206	112	151	237	278	384	383
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.42	0.02	2.32	0.62	0.11	0.11	0.11	0.15	0.22	0.06	0.10

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Northwinds Pkwy & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	1370	32	514	2183	107	5	11	22	45	11	26
Future Volume (veh/h)	35	1370	32	514	2183	107	5	11	22	45	11	26
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	52	1505	0	627	2322	0	12	16	0	60	24	40
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	2	1	1
Peak Hour Factor	0.67	0.91	0.89	0.82	0.94	0.84	0.42	0.69	0.61	0.75	0.46	0.65
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	213	3530	1099	374	3612	1125	111	92	78	120	238	202
Arrive On Green	0.07	1.00	0.00	0.10	1.00	0.00	0.05	0.05	0.00	0.03	0.13	0.13
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1332	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	52	1505	0	627	2322	0	12	16	0	60	24	40
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1332	1863	1583	1721	1863	1583
Q Serve(g_s), s	1.3	0.0	0.0	8.0	0.0	0.0	1.4	1.3	0.0	2.7	1.8	3.6
Cycle Q Clear(g_c), s	1.3	0.0	0.0	8.0	0.0	0.0	1.4	1.3	0.0	2.7	1.8	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	213	3530	1099	374	3612	1125	111	92	78	120	238	202
V/C Ratio(X)	0.24	0.43	0.00	1.67	0.64	0.00	0.11	0.17	0.00	0.50	0.10	0.20
Avail Cap(c_a), veh/h	242	3530	1099	374	3612	1125	153	151	129	280	384	327
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	0.47	0.47	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.9	0.0	0.0	18.9	0.0	0.0	73.0	73.0	0.0	75.8	61.7	62.4
Incr Delay (d2), s/veh	0.5	0.3	0.0	309.0	0.4	0.0	0.4	0.9	0.0	3.2	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.1	0.2	0.0	80.7	0.3	0.0	0.9	1.3	0.0	2.5	1.7	2.9
LnGrp Delay(d),s/veh	6.4	0.3	0.0	327.9	0.4	0.0	73.4	73.9	0.0	79.0	61.8	62.9
LnGrp LOS	A	A		F	A		E	E		E	E	E
Approach Vol, veh/h		1557			2949			28			124	
Approach Delay, s/veh		0.6			70.1			73.7			70.5	
Approach LOS		A			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	117.6		27.4	12.4	120.1	12.6	14.9
Change Period (Y+Rc), s	7.0	* 6.5		7.0	7.0	* 6.5	7.0	7.0
Max Green Setting (Gmax), s	8.0	* 99		33.0	8.0	* 99	13.0	13.0
Max Q Clear Time (g_c+I1), s	10.0	2.0		5.6	3.3	2.0	4.7	3.4
Green Ext Time (p_c), s	0.0	96.0		0.3	0.0	96.0	0.1	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	46.9
HCM 2010 LOS	D

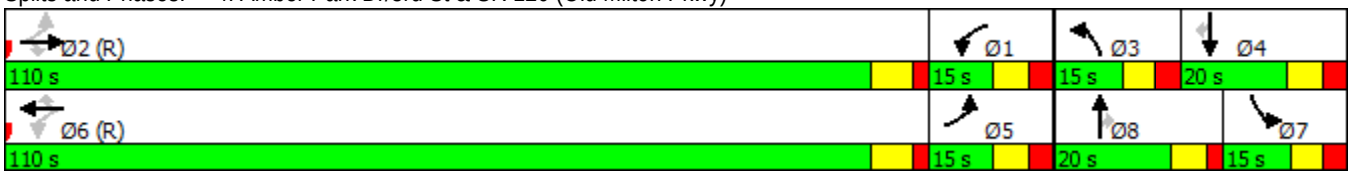
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1402	21	134	2081	26	8	4	3	76	8	30
Future Volume (vph)	79	1402	21	134	2081	26	8	4	3	76	8	30
Lane Group Flow (vph)	92	1445	32	181	2168	40	12	8	8	92	12	40
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	6.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.4	34.8	34.8	13.3	36.8	36.8	13.0	51.3	51.3	13.0	48.3	48.3
Total Split (s)	15.0	110.0	110.0	15.0	110.0	110.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	9.4%	68.8%	68.8%	9.4%	68.8%	68.8%	9.4%	12.5%	12.5%	9.4%	12.5%	12.5%
Yellow Time (s)	4.4	4.8	4.8	4.3	4.8	4.8	4.0	4.3	4.3	4.0	4.3	4.3
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	7.0	6.3	6.3	7.0	7.3	7.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.61	0.40	0.03	0.54	0.58	0.03	0.09	0.09	0.04	0.52	0.13	0.20
Control Delay	43.7	10.6	0.0	19.6	1.8	0.0	75.2	74.8	0.3	84.8	75.6	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.7	10.6	0.0	19.6	1.8	0.0	75.2	74.8	0.3	84.8	75.6	2.3
Queue Length 50th (ft)	11	159	0	21	10	0	6	8	0	49	12	0
Queue Length 95th (ft)	73	262	0	61	14	0	13	15	0	75	27	0
Internal Link Dist (ft)		996			703			362			282	
Turn Bay Length (ft)	340		225	245		175	70					80
Base Capacity (vph)	158	3608	1160	337	3741	1198	171	159	250	177	147	239
Starvation Cap Reductn	0	0	0	0	156	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.40	0.03	0.54	0.60	0.03	0.07	0.05	0.03	0.52	0.08	0.17

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 50 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 4: Amber Park Dr/3rd St & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	1402	21	134	2081	26	8	4	3	76	8	30
Future Volume (veh/h)	79	1402	21	134	2081	26	8	4	3	76	8	30
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	92	1445	32	181	2168	40	12	8	0	92	12	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	2	1	1
Peak Hour Factor	0.86	0.97	0.66	0.74	0.96	0.65	0.67	0.50	0.38	0.83	0.67	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	357	2917	908	497	3205	998	53	71	60	133	105	90
Arrive On Green	0.12	0.57	0.57	0.35	1.00	1.00	0.02	0.04	0.00	0.04	0.06	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	92	1445	32	181	2168	40	12	8	0	92	12	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	0.0	27.1	1.4	0.0	0.0	0.0	0.6	0.7	0.0	4.2	1.0	0.0
Cycle Q Clear(g_c), s	0.0	27.1	1.4	0.0	0.0	0.0	0.6	0.7	0.0	4.2	1.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	357	2917	908	497	3205	998	53	71	60	133	105	90
V/C Ratio(X)	0.26	0.50	0.04	0.36	0.68	0.04	0.22	0.11	0.00	0.69	0.11	0.00
Avail Cap(c_a), veh/h	357	3280	1021	497	3280	1021	172	159	136	172	148	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.9	20.3	14.8	19.5	0.0	0.0	77.8	74.4	0.0	76.0	71.7	0.0
Incr Delay (d2), s/veh	0.4	0.6	0.1	0.3	0.9	0.1	2.1	0.7	0.0	7.8	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	18.8	1.1	7.6	0.5	0.0	0.5	0.6	0.0	3.9	0.9	0.0
LnGrp Delay(d),s/veh	16.3	20.9	14.9	19.9	0.9	0.1	79.9	75.1	0.0	83.8	72.1	0.0
LnGrp LOS	B	C	B	B	A	A	E	E		F	E	
Approach Vol, veh/h		1569			2389			20			104	
Approach Delay, s/veh		20.5			2.3			78.0			82.5	
Approach LOS		C			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.6	98.6	9.5	16.4	26.5	107.6	13.5	12.4
Change Period (Y+Rc), s	7.4	* 6.8	7.0	7.3	7.4	6.8	7.3	* 6.3
Max Green Setting (Gmax), s	7.7	* 1E2	8.0	12.7	7.6	103.2	8.0	* 14
Max Q Clear Time (g_c+I1), s	2.0	29.1	2.6	3.0	2.0	2.0	6.2	2.7
Green Ext Time (p_c), s	0.4	62.7	0.0	0.2	0.1	98.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.7
HCM 2010 LOS	B

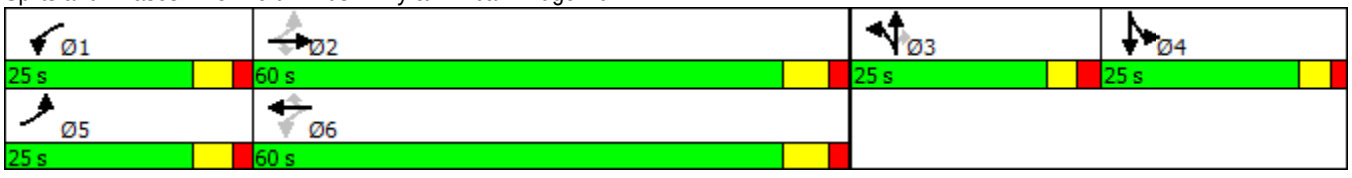
Notes

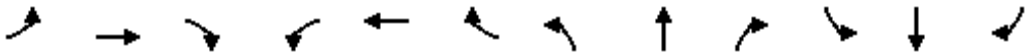
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	11	483	64	250	224	27	33	127	211	156
Future Volume (vph)	11	483	64	250	224	27	33	127	211	156
Lane Group Flow (vph)	16	543	84	272	303	36	80	165	232	268
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Split	NA
Protected Phases	5	2		1	6		3		4	4
Permitted Phases	2		2	6		6		3		
Detector Phase	5	2	2	1	6	6	3	3	4	4
Switch Phase										
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	41.8	41.8	10.5	44.8	44.8	40.4	40.4	40.1	40.1
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0	25.0	25.0	25.0	25.0
Total Split (%)	18.5%	44.4%	44.4%	18.5%	44.4%	44.4%	18.5%	18.5%	18.5%	18.5%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	3.1	3.1	3.2	3.2
All-Red Time (s)	2.1	2.3	2.3	2.1	2.3	2.3	2.3	2.3	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.8	6.8	6.1	6.8	6.8	5.4	5.4	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	Min	Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.03	0.79	0.13	0.71	0.31	0.04	0.48	0.56	0.74	0.43
Control Delay	11.6	38.8	2.6	22.4	16.6	0.1	58.6	15.7	58.1	38.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	38.8	2.6	22.4	16.6	0.1	58.6	15.7	58.1	38.5
Queue Length 50th (ft)	4	314	0	89	102	0	51	0	144	72
Queue Length 95th (ft)	11	505	7	151	165	0	87	37	#337	121
Internal Link Dist (ft)		651			693		393			505
Turn Bay Length (ft)	100		135	290		300			225	
Base Capacity (vph)	722	1008	907	481	1067	953	364	447	358	712
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.54	0.09	0.57	0.28	0.04	0.22	0.37	0.65	0.38

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 102.3
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Northwinds Pkwy & Kimball Bridge Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	483	64	250	224	27	21	33	127	211	156	58
Future Volume (vph)	11	483	64	250	224	27	21	33	127	211	156	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1826	1583	1770	3405	
Flt Permitted	0.58	1.00	1.00	0.20	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1072	1863	1583	381	1863	1583		1826	1583	1770	3405	
Peak-hour factor, PHF	0.69	0.89	0.76	0.92	0.74	0.75	0.66	0.69	0.77	0.91	0.78	0.85
Adj. Flow (vph)	16	543	84	272	303	36	32	48	165	232	200	68
RTOR Reduction (vph)	0	0	51	0	0	18	0	0	150	0	24	0
Lane Group Flow (vph)	16	543	33	272	303	18	0	80	15	232	244	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		6			3			
Actuated Green, G (s)	43.7	42.0	42.0	60.7	52.9	52.9		9.4	9.4	18.2	18.2	
Effective Green, g (s)	43.7	42.0	42.0	60.7	52.9	52.9		9.4	9.4	18.2	18.2	
Actuated g/C Ratio	0.41	0.40	0.40	0.57	0.50	0.50		0.09	0.09	0.17	0.17	
Clearance Time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Vehicle Extension (s)	1.5	5.0	5.0	1.5	5.0	5.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	454	740	629	384	933	792		162	140	305	586	
v/s Ratio Prot	0.00	0.29		c0.08	0.16			c0.04		c0.13	0.07	
v/s Ratio Perm	0.01		0.02	c0.32		0.01			0.01			
v/c Ratio	0.04	0.73	0.05	0.71	0.32	0.02		0.49	0.10	0.76	0.42	
Uniform Delay, d1	18.3	27.0	19.6	16.2	15.7	13.3		45.8	44.2	41.6	39.0	
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	0.0	4.6	0.1	4.8	0.4	0.0		0.9	0.1	9.6	0.2	
Delay (s)	18.3	31.6	19.6	21.1	16.1	13.3		46.7	44.4	51.3	39.1	
Level of Service	B	C	B	C	B	B		D	D	D	D	
Approach Delay (s)		29.7			18.2			45.1			44.8	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	105.6	Sum of lost time (s)	23.4
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

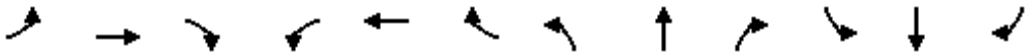
c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	Ø5	Ø9
Lane Configurations								
Traffic Volume (vph)	741	1128	2177	1101	352	1199		
Future Volume (vph)	741	1128	2177	1101	352	1199		
Lane Group Flow (vph)	797	1253	2392	1197	367	1276		
Turn Type	Prot	NA	NA	Perm	Prot	Free		
Protected Phases	5 9	2	6		4		5	9
Permitted Phases				6		Free		
Detector Phase	5 9	2	6	6	4	4		
Switch Phase								
Minimum Initial (s)		15.0	15.0	15.0	8.0		6.0	6.0
Minimum Split (s)		28.6	24.6	24.6	14.6		13.0	12.6
Total Split (s)		140.0	75.0	75.0	20.0		50.0	15.0
Total Split (%)		87.5%	46.9%	46.9%	12.5%		31%	9%
Yellow Time (s)		4.6	4.6	4.6	3.6		4.0	4.6
All-Red Time (s)		1.5	1.5	1.5	3.0		3.0	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			
Total Lost Time (s)		6.1	6.1	6.1	6.6			
Lead/Lag			Lag	Lag			Lead	
Lead-Lag Optimize?								
Recall Mode		C-Min	C-Min	C-Min	None		Max	Max
v/c Ratio	1.41	0.42	0.87	1.45	1.28	0.85		
Control Delay	242.4	0.3	45.6	236.8	204.3	6.3		
Queue Delay	0.2	0.2	16.5	0.0	0.5	0.0		
Total Delay	242.6	0.5	62.2	236.8	204.8	6.3		
Queue Length 50th (ft)	~1117	2	655	~1548	~249	0		
Queue Length 95th (ft)	m#1348	3	702	#1818	#357	0		
Internal Link Dist (ft)		487	857					
Turn Bay Length (ft)					280	420		
Base Capacity (vph)	564	2961	2759	826	287	1500		
Starvation Cap Reductn	12	821	0	0	0	0		
Spillback Cap Reductn	0	0	428	0	12	0		
Storage Cap Reductn	0	0	0	0	0	0		
Reduced v/c Ratio	1.44	0.59	1.03	1.45	1.33	0.85		

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 150 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: GA 400 NB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	741	1128	0	0	2177	1101	352	0	1199	0	0	0
Future Volume (vph)	741	1128	0	0	2177	1101	352	0	1199	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.1			6.1	6.1	6.6		4.0			
Lane Util. Factor	1.00	0.95			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)	1770	3539			6408	1583	3433		1500			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1770	3539			6408	1583	3433		1500			
Peak-hour factor, PHF	0.93	0.90	0.92	0.92	0.91	0.92	0.96	0.92	0.94	0.92	0.92	0.92
Adj. Flow (vph)	797	1253	0	0	2392	1197	367	0	1276	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	145	0	0	0	0	0	0
Lane Group Flow (vph)	797	1253	0	0	2392	1052	367	0	1276	0	0	0
Turn Type	Prot	NA			NA	Perm	Prot		Free			
Protected Phases	5 9	2			6		4					
Permitted Phases						6			Free			
Actuated Green, G (s)	51.9	133.9			68.9	68.9	13.4		160.0			
Effective Green, g (s)	51.9	133.9			68.9	68.9	13.4		160.0			
Actuated g/C Ratio	0.32	0.84			0.43	0.43	0.08		1.00			
Clearance Time (s)		6.1			6.1	6.1	6.6					
Vehicle Extension (s)		4.5			4.5	4.5	2.5					
Lane Grp Cap (vph)	574	2961			2759	681	287		1500			
v/s Ratio Prot	c0.45	0.35			0.37		c0.11					
v/s Ratio Perm						c0.66			c0.85			
v/c Ratio	1.39	0.42			0.87	1.55	1.28		0.85			
Uniform Delay, d1	54.0	3.3			41.4	45.5	73.3		0.0			
Progression Factor	1.54	0.02			1.00	1.00	1.00		1.00			
Incremental Delay, d2	180.4	0.2			4.0	252.7	149.6		6.3			
Delay (s)	263.4	0.3			45.4	298.2	222.9		6.3			
Level of Service	F	A			D	F	F		A			
Approach Delay (s)		102.6			129.7			54.6			0.0	
Approach LOS		F			F			D			A	

Intersection Summary			
HCM 2000 Control Delay	105.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	124.2%	ICU Level of Service	H
Analysis Period (min)	15		

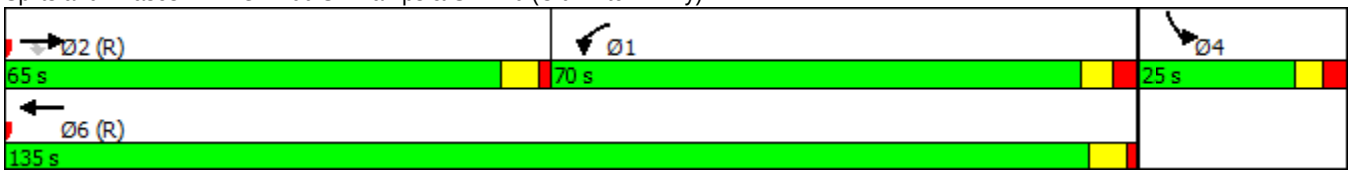
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1574	434	1088	1450	258	703
Future Volume (vph)	1574	434	1088	1450	258	703
Lane Group Flow (vph)	1692	482	1222	1543	297	837
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	15.0	15.0	6.0	15.0	8.0	
Minimum Split (s)	24.5	24.5	13.0	24.5	22.5	
Total Split (s)	65.0	65.0	70.0	135.0	25.0	
Total Split (%)	40.6%	40.6%	43.8%	84.4%	15.6%	
Yellow Time (s)	4.5	4.5	4.0	4.5	3.4	
All-Red Time (s)	1.5	1.5	3.0	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	7.0	6.0	6.4	
Lead/Lag	Lead	Lead	Lag			
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	Max	C-Min	Min	
v/c Ratio	0.89	0.64	0.90	0.54	0.79	0.53
Control Delay	52.7	23.2	45.1	0.7	85.2	1.3
Queue Delay	22.5	0.0	47.0	0.7	8.4	0.0
Total Delay	75.1	23.2	92.1	1.4	93.6	1.3
Queue Length 50th (ft)	598	225	684	7	157	0
Queue Length 95th (ft)	m560	m251	m734	m0	204	0
Internal Link Dist (ft)	1090			487		
Turn Bay Length (ft)		420				300
Base Capacity (vph)	1910	757	1351	2878	399	1583
Starvation Cap Reductn	0	0	385	873	0	0
Spillback Cap Reductn	284	0	0	0	71	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.04	0.64	1.27	0.77	0.91	0.53

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 145 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: GA 400 SB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1574	434	1088	1450	0	0	0	0	258	0	703
Future Volume (veh/h)	0	1574	434	1088	1450	0	0	0	0	258	0	703
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	0	1863
Adj Flow Rate, veh/h	0	1692	482	1222	1543	0				297	0	0
Adj No. of Lanes	0	3	1	2	2	0				2	0	1
Peak Hour Factor	0.92	0.93	0.90	0.89	0.94	0.92				0.87	0.92	0.84
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1873	583	1414	2890	0				343	0	158
Arrive On Green	0.00	0.12	0.12	0.55	1.00	0.00				0.10	0.00	0.00
Sat Flow, veh/h	0	5253	1583	3442	3632	0				3442	0	1583
Grp Volume(v), veh/h	0	1692	482	1222	1543	0				297	0	0
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1721	1770	0				1721	0	1583
Q Serve(g_s), s	0.0	52.5	47.6	48.8	0.0	0.0				13.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	52.5	47.6	48.8	0.0	0.0				13.6	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1873	583	1414	2890	0				343	0	158
V/C Ratio(X)	0.00	0.90	0.83	0.86	0.53	0.00				0.87	0.00	0.00
Avail Cap(c_a), veh/h	0	1875	584	1414	2890	0				400	0	184
HCM Platoon Ratio	1.00	0.33	0.33	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.45	0.45	0.27	0.27	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	67.5	65.3	32.5	0.0	0.0				71.0	0.0	0.0
Incr Delay (d2), s/veh	0.0	3.7	6.1	2.1	0.2	0.0				16.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	30.9	27.0	27.6	0.1	0.0				11.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	71.2	71.4	34.6	0.2	0.0				87.0	0.0	0.0
LnGrp LOS		E	E	C	A					F		
Approach Vol, veh/h		2174			2765						297	
Approach Delay, s/veh		71.2			15.4						87.0	
Approach LOS		E			B						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	72.7	64.9		22.4		137.6		
Change Period (Y+Rc), s	7.0	6.0		6.4		* 7		
Max Green Setting (Gmax), s	63.0	59.0		18.6		* 1.3E2		
Max Q Clear Time (g_c+I1), s	50.8	54.5		15.6		2.0		
Green Ext Time (p_c), s	12.1	4.4		0.3		119.3		

Intersection Summary	
HCM 2010 Ctrl Delay	42.6
HCM 2010 LOS	D

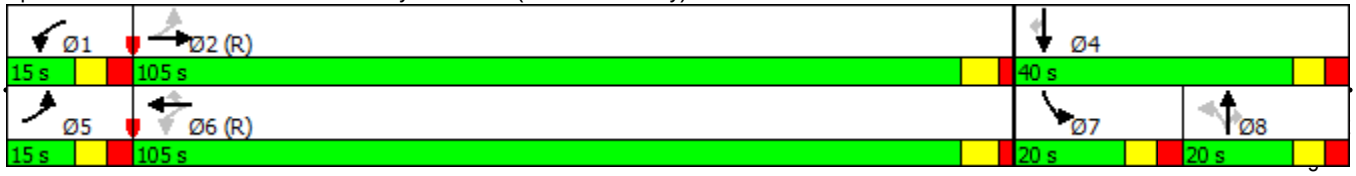
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	1393	33	179	1687	236	45	67	215	420	27	64
Future Volume (vph)	139	1393	33	179	1687	236	45	67	215	420	27	64
Lane Group Flow (vph)	167	1565	48	216	1854	248	88	92	259	488	48	72
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2		Free	6		6	8		8			4
Detector Phase	5	2		1	6	6	8	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0	15.0	8.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.0	30.7		13.0	36.7	36.7	42.5	42.5	42.5	13.0	44.5	44.5
Total Split (s)	15.0	105.0		15.0	105.0	105.0	20.0	20.0	20.0	20.0	40.0	40.0
Total Split (%)	9.4%	65.6%		9.4%	65.6%	65.6%	12.5%	12.5%	12.5%	12.5%	25.0%	25.0%
Yellow Time (s)	4.0	4.7		4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	1.8		3.0	1.8	1.8	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	6.5		7.0	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.95	0.50	0.03	0.97	0.59	0.24	0.81	0.61	1.09	1.76	0.12	0.19
Control Delay	95.6	10.0	0.0	78.9	37.9	18.1	116.8	88.7	119.7	392.9	52.9	11.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	95.6	10.0	0.0	78.9	37.9	18.1	116.8	88.7	119.7	392.9	52.9	11.6
Queue Length 50th (ft)	73	353	0	137	666	140	92	95	~183	~389	41	0
Queue Length 95th (ft)	m#177	m180	m0	#241	715	217	85	128	#316	#478	49	44
Internal Link Dist (ft)		703			1090			604			273	
Turn Bay Length (ft)	235			330		120	365			180		115
Base Capacity (vph)	175	3130	1583	222	3130	1022	109	151	237	278	384	383
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.50	0.03	0.97	0.59	0.24	0.81	0.61	1.09	1.76	0.13	0.19

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 75 (47%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Northwinds Pkwy & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	1393	33	179	1687	236	45	67	215	420	27	64
Future Volume (veh/h)	139	1393	33	179	1687	236	45	67	215	420	27	64
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	167	1565	0	216	1854	0	88	92	0	488	48	72
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	2	1	1
Peak Hour Factor	0.83	0.89	0.69	0.83	0.91	0.95	0.51	0.73	0.83	0.86	0.56	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	231	3131	975	335	3135	976	148	151	128	280	384	326
Arrive On Green	0.10	1.00	0.00	0.05	0.62	0.00	0.08	0.08	0.00	0.08	0.21	0.21
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1266	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	167	1565	0	216	1854	0	88	92	0	488	48	72
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1266	1863	1583	1721	1863	1583
Q Serve(g_s), s	5.9	0.0	0.0	7.4	35.2	0.0	11.0	7.6	0.0	13.0	3.4	6.1
Cycle Q Clear(g_c), s	5.9	0.0	0.0	7.4	35.2	0.0	11.0	7.6	0.0	13.0	3.4	6.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	231	3131	975	335	3135	976	148	151	128	280	384	326
V/C Ratio(X)	0.72	0.50	0.00	0.64	0.59	0.00	0.60	0.61	0.00	1.75	0.13	0.22
Avail Cap(c_a), veh/h	232	3131	975	335	3135	976	148	151	129	280	384	327
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.00	0.83	0.83	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	0.0	0.0	10.2	18.5	0.0	72.6	71.1	0.0	73.5	51.8	52.8
Incr Delay (d2), s/veh	9.4	0.5	0.0	3.5	0.7	0.0	6.3	6.9	0.0	349.8	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.2	0.3	0.0	6.9	22.8	0.0	7.4	7.6	0.0	35.6	3.1	4.8
LnGrp Delay(d),s/veh	29.0	0.5	0.0	13.7	19.2	0.0	78.9	77.9	0.0	423.3	51.9	53.2
LnGrp LOS	C	A		B	B		E	E		F	D	D
Approach Vol, veh/h		1732			2070			180			608	
Approach Delay, s/veh		3.2			18.6			78.4			350.1	
Approach LOS		A			B			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	105.0		40.0	14.9	105.1	20.0	20.0
Change Period (Y+Rc), s	7.0	* 6.5		7.0	7.0	* 6.5	7.0	7.0
Max Green Setting (Gmax), s	8.0	* 99		33.0	8.0	* 99	13.0	13.0
Max Q Clear Time (g_c+I1), s	9.4	2.0		8.1	7.9	37.2	15.0	13.0
Green Ext Time (p_c), s	0.0	96.0		1.0	0.0	61.1	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		59.1
HCM 2010 LOS		E

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	1303	12	33	1629	126	21	18	89	148	5	59
Future Volume (vph)	185	1303	12	33	1629	126	21	18	89	148	5	59
Lane Group Flow (vph)	223	1481	20	36	1851	148	32	24	100	172	8	68
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	6.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.4	34.8	34.8	13.3	36.8	36.8	13.0	51.3	51.3	13.0	48.3	48.3
Total Split (s)	15.0	110.0	110.0	15.0	110.0	110.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	9.4%	68.8%	68.8%	9.4%	68.8%	68.8%	9.4%	12.5%	12.5%	9.4%	12.5%	12.5%
Yellow Time (s)	4.4	4.8	4.8	4.3	4.8	4.8	4.0	4.3	4.3	4.0	4.3	4.3
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	7.0	6.3	6.3	7.0	7.3	7.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	1.16	0.42	0.02	0.14	0.54	0.13	0.21	0.24	0.49	1.01	0.06	0.30
Control Delay	152.0	11.3	0.0	1.8	2.7	0.2	76.9	78.4	13.3	142.9	73.4	3.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	152.0	11.3	0.0	1.8	2.7	0.2	76.9	78.4	13.3	142.9	73.4	3.4
Queue Length 50th (ft)	~158	239	0	1	61	0	17	25	0	~94	8	0
Queue Length 95th (ft)	#203	272	0	m4	73	m0	26	48	33	#168	19	0
Internal Link Dist (ft)		996			703			362			282	
Turn Bay Length (ft)	340		225	245		175	70					80
Base Capacity (vph)	192	3538	1140	262	3442	1113	171	159	250	171	169	256
Starvation Cap Reductn	0	0	0	0	127	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.16	0.42	0.02	0.14	0.56	0.13	0.19	0.15	0.40	1.01	0.05	0.27

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 70 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amber Park Dr/3rd St & SR 120 (Old Milton Pkwy)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	1303	12	33	1629	126	21	18	89	148	5	59
Future Volume (veh/h)	185	1303	12	33	1629	126	21	18	89	148	5	59
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	223	1481	20	36	1851	148	32	24	0	172	8	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	2	1	1
Peak Hour Factor	0.83	0.88	0.60	0.92	0.88	0.85	0.66	0.75	0.89	0.86	0.62	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	383	2950	918	451	3095	964	98	88	75	172	120	102
Arrive On Green	0.12	0.58	0.58	0.30	1.00	1.00	0.03	0.05	0.00	0.05	0.06	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	223	1481	20	36	1851	148	32	24	0	172	8	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	2.7	27.6	0.9	0.0	0.0	0.0	1.5	2.0	0.0	8.0	0.6	0.0
Cycle Q Clear(g_c), s	2.7	27.6	0.9	0.0	0.0	0.0	1.5	2.0	0.0	8.0	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	383	2950	918	451	3095	964	98	88	75	172	120	102
V/C Ratio(X)	0.58	0.50	0.02	0.08	0.60	0.15	0.33	0.27	0.00	1.00	0.07	0.00
Avail Cap(c_a), veh/h	383	3280	1021	451	3280	1021	172	159	136	172	148	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.1	19.9	14.3	14.2	0.0	0.0	76.2	73.6	0.0	76.0	70.4	0.0
Incr Delay (d2), s/veh	2.2	0.6	0.0	0.1	0.7	0.3	1.9	1.7	0.0	68.5	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.0	19.0	0.7	1.2	0.3	0.1	1.3	1.9	0.0	9.3	0.6	0.0
LnGrp Delay(d),s/veh	38.3	20.5	14.3	14.2	0.7	0.3	78.1	75.3	0.0	144.5	70.6	0.0
LnGrp LOS	D	C	B	B	A	A	E	E		F	E	
Approach Vol, veh/h		1724			2035			56			180	
Approach Delay, s/veh		22.8			0.9			76.9			141.2	
Approach LOS		C			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.3	99.6	11.6	17.6	26.7	104.2	15.3	13.8
Change Period (Y+Rc), s	7.4	* 6.8	7.0	7.3	7.4	6.8	7.3	* 6.3
Max Green Setting (Gmax), s	7.7	* 1E2	8.0	12.7	7.6	103.2	8.0	* 14
Max Q Clear Time (g_c+I1), s	2.0	29.6	3.5	2.6	4.7	2.0	10.0	4.0
Green Ext Time (p_c), s	0.4	63.2	0.0	0.5	0.2	95.4	0.0	0.0

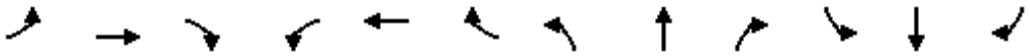
Intersection Summary	
HCM 2010 Ctrl Delay	17.7
HCM 2010 LOS	B

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	13	230	16	183	433	97	164	132	38	29
Future Volume (vph)	13	230	16	183	433	97	164	132	38	29
Lane Group Flow (vph)	20	271	24	193	466	111	253	155	48	84
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Split	NA
Protected Phases	5	2		1	6		3		4	4
Permitted Phases	2		2	6		6		3		
Detector Phase	5	2	2	1	6	6	3	3	4	4
Switch Phase										
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	41.8	41.8	10.5	44.8	44.8	40.4	40.4	40.1	40.1
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0	25.0	25.0	25.0	25.0
Total Split (%)	18.5%	44.4%	44.4%	18.5%	44.4%	44.4%	18.5%	18.5%	18.5%	18.5%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	3.1	3.1	3.2	3.2
All-Red Time (s)	2.1	2.3	2.3	2.1	2.3	2.3	2.3	2.3	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.8	6.8	6.1	6.8	6.8	5.4	5.4	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	Min	Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.06	0.52	0.05	0.38	0.58	0.15	0.60	0.32	0.30	0.25
Control Delay	12.5	29.1	0.2	14.6	22.8	4.5	36.8	7.8	43.1	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	29.1	0.2	14.6	22.8	4.5	36.8	7.8	43.1	23.5
Queue Length 50th (ft)	5	116	0	55	161	0	106	0	22	9
Queue Length 95th (ft)	12	193	0	100	335	30	229	44	56	25
Internal Link Dist (ft)		651			693		393			505
Turn Bay Length (ft)	100		135	290		300			225	
Base Capacity (vph)	648	1333	1164	636	1333	1164	484	531	473	904
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.20	0.02	0.30	0.35	0.10	0.52	0.29	0.10	0.09

Intersection Summary
Cycle Length: 135
Actuated Cycle Length: 77.9
Natural Cycle: 140
Control Type: Actuated-Uncoordinated

Splits and Phases: 5: Northwinds Pkwy & Kimball Bridge Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	230	16	183	433	97	43	164	132	38	29	41
Future Volume (vph)	13	230	16	183	433	97	43	164	132	38	29	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1839	1583	1770	3261	
Flt Permitted	0.45	1.00	1.00	0.42	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (perm)	833	1863	1583	784	1863	1583		1839	1583	1770	3261	
Peak-hour factor, PHF	0.65	0.85	0.67	0.95	0.93	0.87	0.67	0.87	0.85	0.79	0.72	0.93
Adj. Flow (vph)	20	271	24	193	466	111	64	189	155	48	40	44
RTOR Reduction (vph)	0	0	16	0	0	66	0	0	121	0	41	0
Lane Group Flow (vph)	20	271	8	193	466	45	0	253	34	48	43	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		6			3			
Actuated Green, G (s)	27.9	26.1	26.1	41.7	33.8	33.8		18.0	18.0	5.6	5.6	
Effective Green, g (s)	27.9	26.1	26.1	41.7	33.8	33.8		18.0	18.0	5.6	5.6	
Actuated g/C Ratio	0.34	0.32	0.32	0.50	0.41	0.41		0.22	0.22	0.07	0.07	
Clearance Time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Vehicle Extension (s)	1.5	5.0	5.0	1.5	5.0	5.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	301	588	500	509	762	647		400	344	120	221	
v/s Ratio Prot	0.00	0.15		c0.04	c0.25			c0.14		c0.03	0.01	
v/s Ratio Perm	0.02		0.00	0.15		0.03			0.02			
v/c Ratio	0.07	0.46	0.02	0.38	0.61	0.07		0.63	0.10	0.40	0.19	
Uniform Delay, d1	18.4	22.6	19.4	12.0	19.2	14.8		29.3	25.8	36.9	36.4	
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	0.0	1.2	0.0	0.2	2.1	0.1		2.4	0.0	0.8	0.2	
Delay (s)	18.4	23.8	19.4	12.2	21.3	14.9		31.7	25.9	37.7	36.5	
Level of Service	B	C	B	B	C	B		C	C	D	D	
Approach Delay (s)		23.1			18.1			29.5			36.9	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	82.6	Sum of lost time (s)	23.4
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

NCHRP 457 Right Turn Lane Analysis

RIGHT TURN LANE ANALYSIS
per NCHRP 457 guidelines

The following right turn lane analysis was used to determine the need for dedicated turn bays at proposed site driveway locations that are not located on State Routes.

Methdology

Guidelines for determining when to provide a right-turn bay on the major road of a two-way stop-controlled intersection are provided in Hasan, T. and Stokes, R.W. "Guidelines for Right-Turn Treatments at Unsignalized Intersections and Driveways on Rural Highways" (Transportation Research Record 1579). These guidelines were based on an evaluation of the operating and collisions costs associated with the right turn maneuver relative to the cost of construction. The operating costs included those of road-user fuel and delay. Separate guidelines were developed for two-lane and four-lane roadways, which are found in the NCHRP Report 457 “Evaluating Intersection Improvements: An Engineering Study Guide”.

Results

An evaluation of site traffic in relation to these guidelines is shown graphically in the following figures.

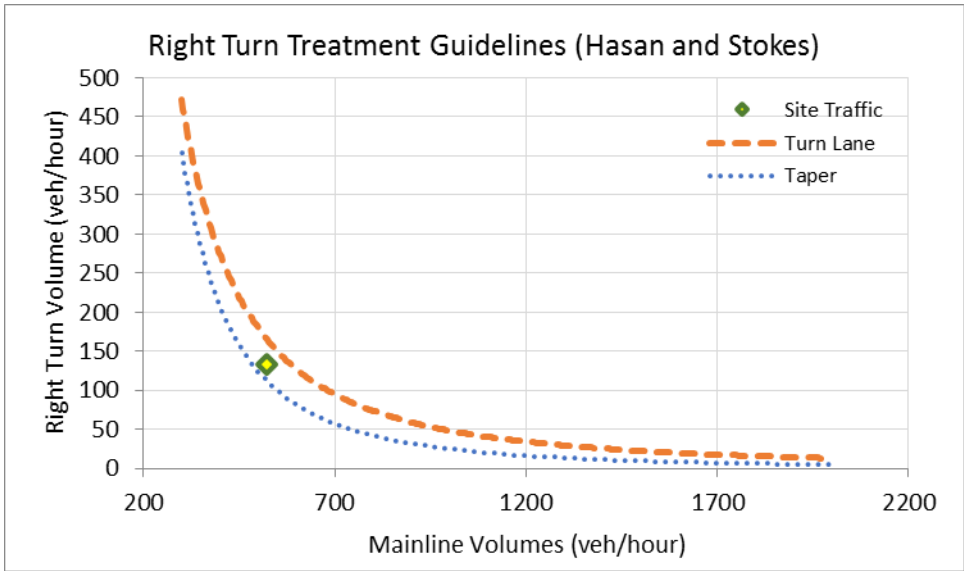


Figure 1 – NCHRP 457 Right Turn Lane Guidelines: Site Drwy 1 (Full-Access)

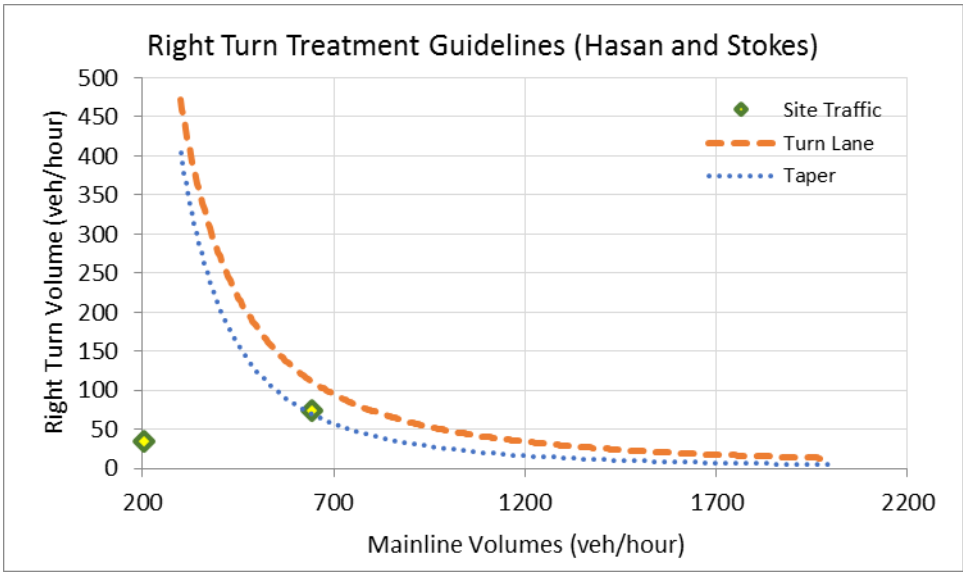


Figure 2 – NCHRP 457 Right Turn Lane Guidelines: Site Drwy 2 (RIRO)

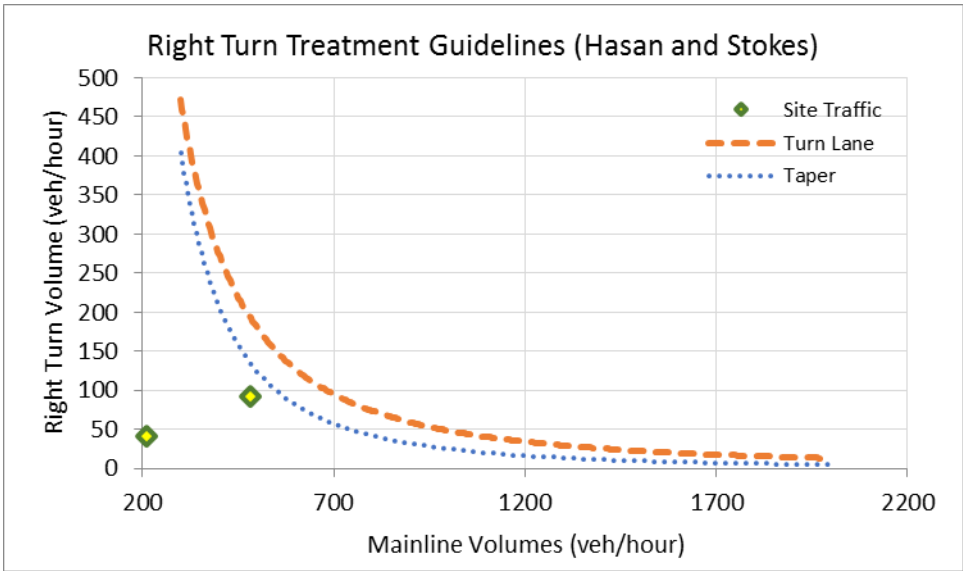


Figure 3 – NCHRP 457 Right Turn Lane Guidelines: Site Drwy 3 (RIRO)

Findings

The low volumes and speeds on the roadway would lessen the need for deceleration outside of the through lane. Therefore, unless stopping sight distance (335 feet for 35 mph) is obstructed on the southbound approach, a right turn lane is not warranted on the mainline at all the site driveways using the criteria in the NCHRP Report 457.

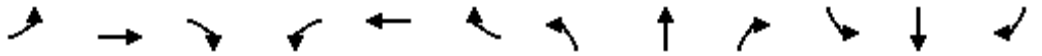
Future “No-Build” Intersection Analysis

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	362	1564	1548	554	340	1620
Future Volume (vph)	362	1564	1548	554	340	1620
Lane Group Flow (vph)	385	1738	1720	609	386	1653
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	6.0	15.0	15.0	15.0	8.0	
Minimum Split (s)	13.0	28.6	24.6	24.6	14.6	
Total Split (s)	50.0	110.0	60.0	60.0	50.0	
Total Split (%)	31.3%	68.8%	37.5%	37.5%	31.3%	
Yellow Time (s)	4.0	4.6	4.6	4.6	3.6	
All-Red Time (s)	3.0	1.5	1.5	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.1	6.1	6.1	6.6	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	Max	C-Min	C-Min	C-Min	None	
v/c Ratio	0.55	0.63	0.80	0.73	0.78	1.10
Control Delay	57.6	13.2	51.5	16.7	77.4	62.1
Queue Delay	5.7	2.5	0.0	0.0	0.0	0.0
Total Delay	63.3	15.7	51.5	16.7	77.4	62.1
Queue Length 50th (ft)	428	431	475	143	204	~188
Queue Length 95th (ft)	m521	507	521	307	246	#336
Internal Link Dist (ft)		487	857			
Turn Bay Length (ft)					280	420
Base Capacity (vph)	701	2749	2158	834	931	1500
Starvation Cap Reductn	253	850	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.92	0.80	0.73	0.41	1.10

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: GA 400 NB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	362	1564	0	0	1548	554	340	0	1620	0	0	0
Future Volume (vph)	362	1564	0	0	1548	554	340	0	1620	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.1			6.1	6.1	6.6		4.0			
Lane Util. Factor	1.00	0.95			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)	1770	3539			6408	1583	3433		1500			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1770	3539			6408	1583	3433		1500			
Peak-hour factor, PHF	0.94	0.90	0.92	0.92	0.90	0.91	0.88	0.92	0.98	0.92	0.92	0.92
Adj. Flow (vph)	385	1738	0	0	1720	609	386	0	1653	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	302	0	0	0	0	0	0
Lane Group Flow (vph)	385	1738	0	0	1720	307	386	0	1653	0	0	0
Turn Type	Prot	NA			NA	Perm	Prot		Free			
Protected Phases	5	2			6		4					
Permitted Phases						6			Free			
Actuated Green, G (s)	63.4	124.3			53.9	53.9	23.0		160.0			
Effective Green, g (s)	63.4	124.3			53.9	53.9	23.0		160.0			
Actuated g/C Ratio	0.40	0.78			0.34	0.34	0.14		1.00			
Clearance Time (s)	7.0	6.1			6.1	6.1	6.6					
Vehicle Extension (s)	2.5	4.5			4.5	4.5	2.5					
Lane Grp Cap (vph)	701	2749			2158	533	493		1500			
v/s Ratio Prot	0.22	0.49			0.27		0.11					
v/s Ratio Perm						0.19			c1.10			
v/c Ratio	0.55	0.63			0.80	0.58	0.78		1.10			
Uniform Delay, d1	37.3	7.8			48.1	43.7	66.1		80.0			
Progression Factor	1.44	1.49			1.00	1.00	1.00		1.00			
Incremental Delay, d2	1.7	0.6			3.2	4.5	7.7		56.4			
Delay (s)	55.5	12.3			51.3	48.1	73.8		136.4			
Level of Service	E	B			D	D	E		F			
Approach Delay (s)		20.2			50.4			124.6			0.0	
Approach LOS		C			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	63.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

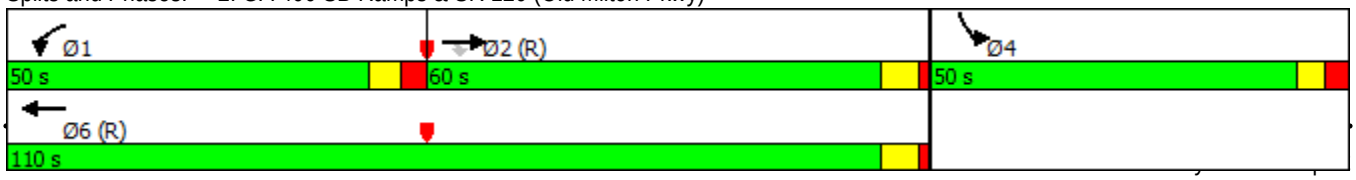
c Critical Lane Group

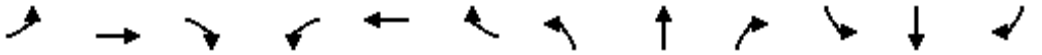
Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1202	106	416	1472	724	1455
Future Volume (vph)	1202	106	416	1472	724	1455
Lane Group Flow (vph)	1321	125	533	1618	813	1617
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	15.0	15.0	6.0	15.0	8.0	
Minimum Split (s)	24.5	24.5	13.0	24.5	22.5	
Total Split (s)	60.0	60.0	50.0	110.0	50.0	
Total Split (%)	37.5%	37.5%	31.3%	68.8%	31.3%	
Yellow Time (s)	4.5	4.5	4.0	4.5	3.4	
All-Red Time (s)	1.5	1.5	3.0	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	7.0	6.0	6.4	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	Max	C-Min	Min	
v/c Ratio	0.77	0.20	0.55	0.69	0.91	1.02
Control Delay	37.8	3.3	82.6	27.1	72.4	31.4
Queue Delay	0.0	0.0	0.0	1.0	1.7	0.0
Total Delay	37.8	3.3	82.6	28.1	74.2	31.4
Queue Length 50th (ft)	345	0	304	354	421	~74
Queue Length 95th (ft)	310	20	318	425	497	#336
Internal Link Dist (ft)	1090			487		
Turn Bay Length (ft)		420				300
Base Capacity (vph)	1716	617	966	2345	935	1583
Starvation Cap Reductn	0	0	0	435	0	0
Spillback Cap Reductn	0	0	0	0	41	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.20	0.55	0.85	0.91	1.02

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: GA 400 SB Ramps & SR 120 (Old Milton Pkwy)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1202	106	416	1472	0	0	0	0	724	0	1455
Future Volume (veh/h)	0	1202	106	416	1472	0	0	0	0	724	0	1455
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	0	1863
Adj Flow Rate, veh/h	0	1321	0	533	1618	0				813	0	0
Adj No. of Lanes	0	3	1	2	2	0				2	0	1
Peak Hour Factor	0.92	0.91	0.85	0.78	0.91	0.92				0.89	0.92	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1812	564	925	2367	0				873	0	402
Arrive On Green	0.00	0.71	0.00	0.54	1.00	0.00				0.25	0.00	0.00
Sat Flow, veh/h	0	5253	1583	3442	3632	0				3442	0	1583
Grp Volume(v), veh/h	0	1321	0	533	1618	0				813	0	0
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1721	1770	0				1721	0	1583
Q Serve(g_s), s	0.0	24.9	0.0	16.6	0.0	0.0				36.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	24.9	0.0	16.6	0.0	0.0				36.9	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1812	564	925	2367	0				873	0	402
V/C Ratio(X)	0.00	0.73	0.00	0.58	0.68	0.00				0.93	0.00	0.00
Avail Cap(c_a), veh/h	0	1812	564	925	2367	0				938	0	431
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.00	0.51	0.51	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.4	0.0	30.9	0.0	0.0				58.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.4	0.0	1.3	0.8	0.0				14.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	17.0	0.0	11.3	0.5	0.0				26.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	20.8	0.0	32.2	0.8	0.0				73.2	0.0	0.0
LnGrp LOS		C		C	A					E		
Approach Vol, veh/h		1321			2151						813	
Approach Delay, s/veh		20.8			8.6						73.2	
Approach LOS		C			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	50.0	63.0		47.0		113.0		
Change Period (Y+Rc), s	7.0	6.0		6.4		6.0		
Max Green Setting (Gmax), s	43.0	54.0		43.6		104.0		
Max Q Clear Time (g_c+I1), s	18.6	26.9		38.9		2.0		
Green Ext Time (p_c), s	3.5	27.1		1.7		101.5		

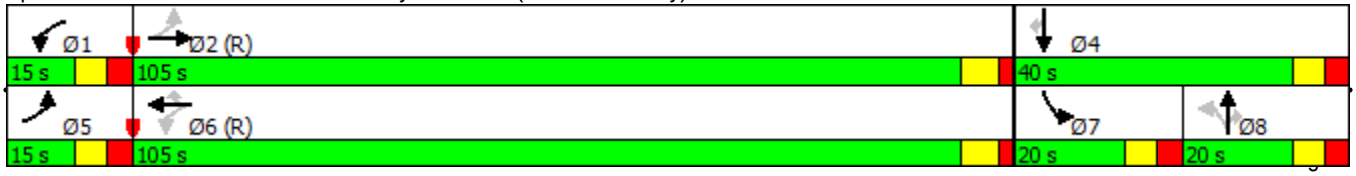
Intersection Summary	
HCM 2010 Ctrl Delay	24.6
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1426	33	535	2272	111	5	11	23	47	11	27
Future Volume (vph)	36	1426	33	535	2272	111	5	11	23	47	11	27
Lane Group Flow (vph)	54	1567	37	652	2417	132	12	16	38	63	24	42
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2		Free	6		6	8		8			4
Detector Phase	5	2		1	6	6	8	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0	15.0	8.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.0	30.7		13.0	36.7	36.7	42.5	42.5	42.5	13.0	44.5	44.5
Total Split (s)	15.0	105.0		15.0	105.0	105.0	20.0	20.0	20.0	20.0	40.0	40.0
Total Split (%)	9.4%	65.6%		9.4%	65.6%	65.6%	12.5%	12.5%	12.5%	12.5%	25.0%	25.0%
Yellow Time (s)	4.0	4.7		4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	1.8		3.0	1.8	1.8	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	6.5		7.0	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.42	0.43	0.02	2.54	0.64	0.11	0.17	0.17	0.20	0.35	0.10	0.16
Control Delay	38.4	6.4	0.0	713.9	11.4	1.4	78.0	76.5	2.2	78.0	58.9	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.4	6.4	0.0	713.9	11.4	1.4	78.0	76.5	2.2	78.0	58.9	3.6
Queue Length 50th (ft)	8	122	0	~909	423	10	12	16	0	33	22	0
Queue Length 95th (ft)	32	93	m0	m#1085	m516	m16	16	33	0	49	26	0
Internal Link Dist (ft)		703			1090			604			273	
Turn Bay Length (ft)	235			330		120	365			180		115
Base Capacity (vph)	141	3606	1583	257	3768	1205	112	151	237	278	384	383
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.43	0.02	2.54	0.64	0.11	0.11	0.11	0.16	0.23	0.06	0.11

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Northwinds Pkwy & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1426	33	535	2272	111	5	11	23	47	11	27
Future Volume (veh/h)	36	1426	33	535	2272	111	5	11	23	47	11	27
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	1567	0	652	2417	0	12	16	0	63	24	42
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	2	1	1
Peak Hour Factor	0.67	0.91	0.89	0.82	0.94	0.84	0.42	0.69	0.61	0.75	0.46	0.65
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	204	3528	1098	360	3608	1123	110	92	78	121	239	203
Arrive On Green	0.07	1.00	0.00	0.10	1.00	0.00	0.05	0.05	0.00	0.04	0.13	0.13
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1330	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	54	1567	0	652	2417	0	12	16	0	63	24	42
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1330	1863	1583	1721	1863	1583
Q Serve(g_s), s	1.4	0.0	0.0	8.0	0.0	0.0	1.4	1.3	0.0	2.9	1.8	3.8
Cycle Q Clear(g_c), s	1.4	0.0	0.0	8.0	0.0	0.0	1.4	1.3	0.0	2.9	1.8	3.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	204	3528	1098	360	3608	1123	110	92	78	121	239	203
V/C Ratio(X)	0.26	0.44	0.00	1.81	0.67	0.00	0.11	0.17	0.00	0.52	0.10	0.21
Avail Cap(c_a), veh/h	232	3528	1098	360	3608	1123	153	151	129	280	384	327
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	0.40	0.40	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.9	0.0	0.0	18.6	0.0	0.0	73.0	72.9	0.0	75.9	61.6	62.5
Incr Delay (d2), s/veh	0.6	0.4	0.0	368.7	0.4	0.0	0.4	0.9	0.0	3.4	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	0.2	0.0	66.4	0.2	0.0	0.9	1.3	0.0	2.6	1.7	3.1
LnGrp Delay(d),s/veh	6.5	0.4	0.0	387.3	0.4	0.0	73.4	73.8	0.0	79.3	61.8	63.0
LnGrp LOS	A	A		F	A		E	E		E	E	E
Approach Vol, veh/h		1621			3069			28			129	
Approach Delay, s/veh		0.6			82.6			73.7			70.7	
Approach LOS		A			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	117.5		27.5	12.5	120.0	12.6	14.9
Change Period (Y+Rc), s	7.0	* 6.5		7.0	7.0	* 6.5	7.0	7.0
Max Green Setting (Gmax), s	8.0	* 99		33.0	8.0	* 99	13.0	13.0
Max Q Clear Time (g_c+I1), s	10.0	2.0		5.8	3.4	2.0	4.9	3.4
Green Ext Time (p_c), s	0.0	96.0		0.3	0.0	96.0	0.1	0.2

Intersection Summary		
HCM 2010 Ctrl Delay		54.8
HCM 2010 LOS		D

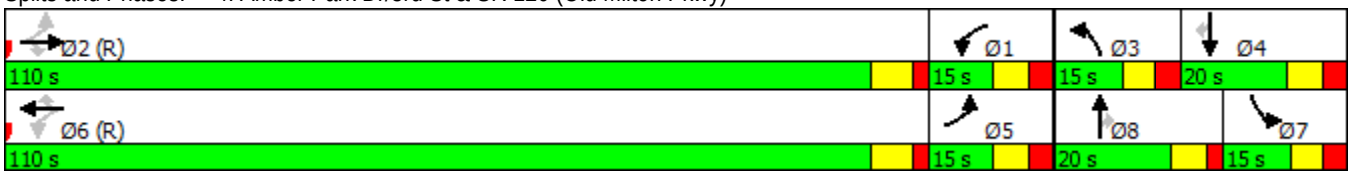
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	1459	22	139	2165	27	8	4	3	79	8	31
Future Volume (vph)	82	1459	22	139	2165	27	8	4	3	79	8	31
Lane Group Flow (vph)	95	1504	33	188	2255	42	12	8	8	95	12	41
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	6.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.4	34.8	34.8	13.3	36.8	36.8	13.0	51.3	51.3	13.0	48.3	48.3
Total Split (s)	15.0	110.0	110.0	15.0	110.0	110.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	9.4%	68.8%	68.8%	9.4%	68.8%	68.8%	9.4%	12.5%	12.5%	9.4%	12.5%	12.5%
Yellow Time (s)	4.4	4.8	4.8	4.3	4.8	4.8	4.0	4.3	4.3	4.0	4.3	4.3
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	7.0	6.3	6.3	7.0	7.3	7.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.63	0.40	0.03	0.68	0.60	0.04	0.09	0.09	0.04	0.54	0.13	0.21
Control Delay	49.5	9.0	0.0	27.9	1.8	0.0	75.2	74.8	0.3	85.6	75.6	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	9.0	0.0	27.9	1.9	0.0	75.2	74.8	0.3	85.6	75.6	2.4
Queue Length 50th (ft)	17	168	0	34	10	0	6	8	0	51	12	0
Queue Length 95th (ft)	85	276	0	75	15	0	13	15	0	77	27	0
Internal Link Dist (ft)		996			703			362			282	
Turn Bay Length (ft)	340		225	245		175	70					80
Base Capacity (vph)	153	3732	1196	278	3732	1196	171	159	250	177	147	239
Starvation Cap Reductn	0	0	0	0	155	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.40	0.03	0.68	0.63	0.04	0.07	0.05	0.03	0.54	0.08	0.17

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 50 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 4: Amber Park Dr/3rd St & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1459	22	139	2165	27	8	4	3	79	8	31
Future Volume (veh/h)	82	1459	22	139	2165	27	8	4	3	79	8	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	95	1504	33	188	2255	42	12	8	0	95	12	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	2	1	1
Peak Hour Factor	0.86	0.97	0.66	0.74	0.96	0.65	0.67	0.50	0.38	0.83	0.67	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	2975	926	470	3225	1004	53	71	60	136	107	91
Arrive On Green	0.11	0.58	0.58	0.33	1.00	1.00	0.02	0.04	0.00	0.04	0.06	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	95	1504	33	188	2255	42	12	8	0	95	12	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	0.0	27.9	1.4	0.0	0.0	0.0	0.6	0.7	0.0	4.4	1.0	0.0
Cycle Q Clear(g_c), s	0.0	27.9	1.4	0.0	0.0	0.0	0.6	0.7	0.0	4.4	1.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	2975	926	470	3225	1004	53	71	60	136	107	91
V/C Ratio(X)	0.28	0.51	0.04	0.40	0.70	0.04	0.22	0.11	0.00	0.70	0.11	0.00
Avail Cap(c_a), veh/h	342	3280	1021	470	3280	1021	172	159	136	172	148	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.74	0.74	0.74	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.8	19.6	14.1	22.4	0.0	0.0	77.8	74.4	0.0	75.9	71.5	0.0
Incr Delay (d2), s/veh	0.4	0.6	0.1	0.4	0.9	0.1	2.1	0.7	0.0	8.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.6	19.2	1.1	8.6	0.5	0.0	0.5	0.6	0.0	4.0	0.9	0.0
LnGrp Delay(d),s/veh	18.2	20.2	14.1	22.8	0.9	0.1	79.9	75.1	0.0	84.5	72.0	0.0
LnGrp LOS	B	C	B	C	A	A	E	E		F	E	
Approach Vol, veh/h		1632			2485			20			107	
Approach Delay, s/veh		20.0			2.6			78.0			83.1	
Approach LOS		B			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.6	100.4	9.5	16.5	25.7	108.3	13.6	12.4
Change Period (Y+Rc), s	7.4	* 6.8	7.0	7.3	7.4	6.8	7.3	* 6.3
Max Green Setting (Gmax), s	7.7	* 1E2	8.0	12.7	7.6	103.2	8.0	* 14
Max Q Clear Time (g_c+I1), s	2.0	29.9	2.6	3.0	2.0	2.0	6.4	2.7
Green Ext Time (p_c), s	0.5	63.7	0.0	0.2	0.1	99.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

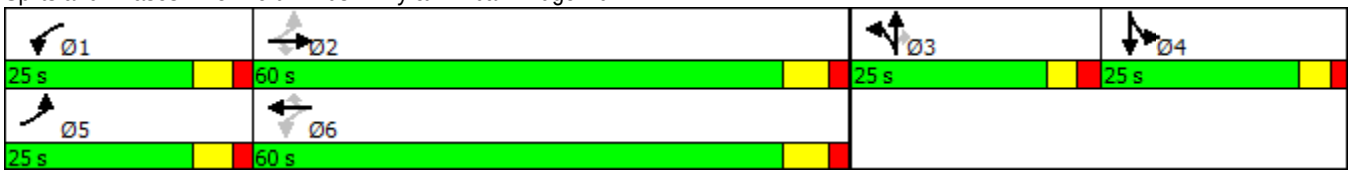
Notes

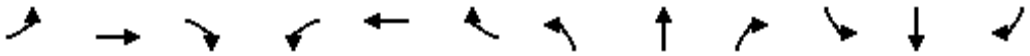
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	11	503	67	260	233	28	34	132	220	162
Future Volume (vph)	11	503	67	260	233	28	34	132	220	162
Lane Group Flow (vph)	16	565	88	283	315	37	82	171	242	279
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Split	NA
Protected Phases	5	2		1	6		3		4	4
Permitted Phases	2		2	6		6		3		
Detector Phase	5	2	2	1	6	6	3	3	4	4
Switch Phase										
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	41.8	41.8	10.5	44.8	44.8	40.4	40.4	40.1	40.1
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0	25.0	25.0	25.0	25.0
Total Split (%)	18.5%	44.4%	44.4%	18.5%	44.4%	44.4%	18.5%	18.5%	18.5%	18.5%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	3.1	3.1	3.2	3.2
All-Red Time (s)	2.1	2.3	2.3	2.1	2.3	2.3	2.3	2.3	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.8	6.8	6.1	6.8	6.8	5.4	5.4	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	Min	Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.03	0.81	0.13	0.76	0.32	0.04	0.49	0.57	0.76	0.44
Control Delay	11.6	40.4	3.0	26.9	16.8	0.1	60.3	15.8	60.5	39.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	40.4	3.0	26.9	16.8	0.1	60.3	15.8	60.5	39.8
Queue Length 50th (ft)	5	337	0	94	107	0	54	0	156	78
Queue Length 95th (ft)	11	539	9	176	171	0	89	38	#358	127
Internal Link Dist (ft)		651			693		393			505
Turn Bay Length (ft)	100		135	290		300			225	
Base Capacity (vph)	716	969	876	460	1048	939	349	441	344	686
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.58	0.10	0.62	0.30	0.04	0.23	0.39	0.70	0.41

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 105.7
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Northwinds Pkwy & Kimball Bridge Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	503	67	260	233	28	22	34	132	220	162	60
Future Volume (vph)	11	503	67	260	233	28	22	34	132	220	162	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1826	1583	1770	3404	
Flt Permitted	0.57	1.00	1.00	0.19	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1060	1863	1583	351	1863	1583		1826	1583	1770	3404	
Peak-hour factor, PHF	0.69	0.89	0.76	0.92	0.74	0.75	0.66	0.69	0.77	0.91	0.78	0.85
Adj. Flow (vph)	16	565	88	283	315	37	33	49	171	242	208	71
RTOR Reduction (vph)	0	0	53	0	0	18	0	0	156	0	24	0
Lane Group Flow (vph)	16	565	35	283	315	19	0	82	15	242	255	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		6			3			
Actuated Green, G (s)	45.6	43.9	43.9	63.1	55.3	55.3		9.7	9.7	19.1	19.1	
Effective Green, g (s)	45.6	43.9	43.9	63.1	55.3	55.3		9.7	9.7	19.1	19.1	
Actuated g/C Ratio	0.42	0.40	0.40	0.58	0.51	0.51		0.09	0.09	0.17	0.17	
Clearance Time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Vehicle Extension (s)	1.5	5.0	5.0	1.5	5.0	5.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	453	748	636	373	943	801		162	140	309	595	
v/s Ratio Prot	0.00	0.30		c0.09	0.17			c0.04		c0.14	0.07	
v/s Ratio Perm	0.01		0.02	c0.35		0.01			0.01			
v/c Ratio	0.04	0.76	0.06	0.76	0.33	0.02		0.51	0.11	0.78	0.43	
Uniform Delay, d1	18.7	28.0	20.0	17.5	16.0	13.5		47.5	45.8	43.1	40.2	
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	0.0	5.2	0.1	7.7	0.4	0.0		0.9	0.1	11.3	0.2	
Delay (s)	18.7	33.2	20.0	25.1	16.5	13.5		48.4	45.9	54.4	40.4	
Level of Service	B	C	C	C	B	B		D	D	D	D	
Approach Delay (s)		31.1			20.1			46.7			46.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	109.2	Sum of lost time (s)	23.4
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

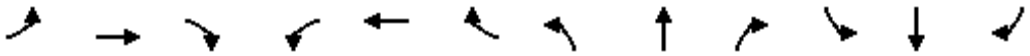
c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	Ø5	Ø9
Lane Configurations								
Traffic Volume (vph)	771	1174	2265	1146	366	1248		
Future Volume (vph)	771	1174	2265	1146	366	1248		
Lane Group Flow (vph)	829	1304	2489	1246	381	1328		
Turn Type	Prot	NA	NA	Perm	Prot	Free		
Protected Phases	5 9	2	6		4		5	9
Permitted Phases				6		Free		
Detector Phase	5 9	2	6	6	4	4		
Switch Phase								
Minimum Initial (s)		15.0	15.0	15.0	8.0		6.0	6.0
Minimum Split (s)		28.6	24.6	24.6	14.6		13.0	12.6
Total Split (s)		140.0	75.0	75.0	20.0		50.0	15.0
Total Split (%)		87.5%	46.9%	46.9%	12.5%		31%	9%
Yellow Time (s)		4.6	4.6	4.6	3.6		4.0	4.6
All-Red Time (s)		1.5	1.5	1.5	3.0		3.0	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			
Total Lost Time (s)		6.1	6.1	6.1	6.6			
Lead/Lag			Lag	Lag			Lead	
Lead-Lag Optimize?								
Recall Mode		C-Min	C-Min	C-Min	None		Max	Max
v/c Ratio	1.47	0.44	0.90	1.51	1.33	0.89		
Control Delay	264.4	0.3	48.0	264.0	222.0	8.5		
Queue Delay	0.2	0.2	32.8	0.0	0.5	0.0		
Total Delay	264.6	0.5	80.8	264.0	222.6	8.5		
Queue Length 50th (ft)	~1183	3	699	~1661	~264	0		
Queue Length 95th (ft)	m#1352	m3	746	#1931	#375	0		
Internal Link Dist (ft)		487	857					
Turn Bay Length (ft)					280	420		
Base Capacity (vph)	564	2961	2759	824	287	1500		
Starvation Cap Reductn	12	819	0	0	0	0		
Spillback Cap Reductn	0	0	432	0	12	0		
Storage Cap Reductn	0	0	0	0	0	0		
Reduced v/c Ratio	1.50	0.61	1.07	1.51	1.39	0.89		

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 150 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: GA 400 NB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	771	1174	0	0	2265	1146	366	0	1248	0	0	0
Future Volume (vph)	771	1174	0	0	2265	1146	366	0	1248	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.1			6.1	6.1	6.6		4.0			
Lane Util. Factor	1.00	0.95			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)	1770	3539			6408	1583	3433		1500			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1770	3539			6408	1583	3433		1500			
Peak-hour factor, PHF	0.93	0.90	0.92	0.92	0.91	0.92	0.96	0.92	0.94	0.92	0.92	0.92
Adj. Flow (vph)	829	1304	0	0	2489	1246	381	0	1328	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	142	0	0	0	0	0	0
Lane Group Flow (vph)	829	1304	0	0	2489	1104	381	0	1328	0	0	0
Turn Type	Prot	NA			NA	Perm	Prot		Free			
Protected Phases	5 9	2			6		4					
Permitted Phases						6			Free			
Actuated Green, G (s)	51.9	133.9			68.9	68.9	13.4		160.0			
Effective Green, g (s)	51.9	133.9			68.9	68.9	13.4		160.0			
Actuated g/C Ratio	0.32	0.84			0.43	0.43	0.08		1.00			
Clearance Time (s)		6.1			6.1	6.1	6.6					
Vehicle Extension (s)		4.5			4.5	4.5	2.5					
Lane Grp Cap (vph)	574	2961			2759	681	287		1500			
v/s Ratio Prot	c0.47	0.37			0.39		c0.11					
v/s Ratio Perm						c0.70			c0.89			
v/c Ratio	1.44	0.44			0.90	1.62	1.33		0.89			
Uniform Delay, d1	54.0	3.4			42.4	45.5	73.3		0.0			
Progression Factor	1.53	0.02			1.00	1.00	1.00		1.00			
Incremental Delay, d2	204.5	0.2			5.4	286.0	169.5		8.0			
Delay (s)	287.0	0.3			47.8	331.6	242.8		8.0			
Level of Service	F	A			D	F	F		A			
Approach Delay (s)		111.7			142.5			60.4			0.0	
Approach LOS		F			F			E			A	

Intersection Summary			
HCM 2000 Control Delay	115.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	128.6%	ICU Level of Service	H
Analysis Period (min)	15		

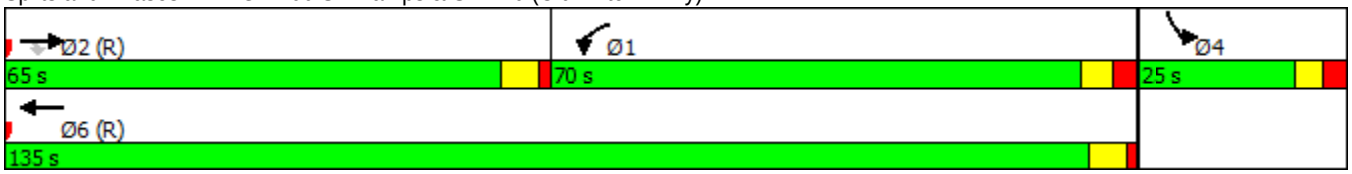
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1638	452	1132	1509	268	732
Future Volume (vph)	1638	452	1132	1509	268	732
Lane Group Flow (vph)	1761	502	1272	1605	308	871
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	15.0	15.0	6.0	15.0	8.0	
Minimum Split (s)	24.5	24.5	13.0	24.5	22.5	
Total Split (s)	65.0	65.0	70.0	135.0	25.0	
Total Split (%)	40.6%	40.6%	43.8%	84.4%	15.6%	
Yellow Time (s)	4.5	4.5	4.0	4.5	3.4	
All-Red Time (s)	1.5	1.5	3.0	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	7.0	6.0	6.4	
Lead/Lag	Lead	Lead	Lag			
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	Max	C-Min	Min	
v/c Ratio	0.93	0.67	0.94	0.56	0.81	0.55
Control Delay	54.6	24.4	46.5	0.8	86.5	1.4
Queue Delay	41.2	0.0	45.1	0.8	11.6	0.0
Total Delay	95.8	24.4	91.6	1.6	98.1	1.4
Queue Length 50th (ft)	630	248	728	8	163	0
Queue Length 95th (ft)	m580	m269	m758	m0	211	0
Internal Link Dist (ft)	1090			487		
Turn Bay Length (ft)		420				300
Base Capacity (vph)	1903	754	1351	2873	399	1583
Starvation Cap Reductn	0	0	385	873	0	0
Spillback Cap Reductn	288	0	0	0	71	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.67	1.32	0.80	0.94	0.55

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 145 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: GA 400 SB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1638	452	1132	1509	0	0	0	0	268	0	732
Future Volume (veh/h)	0	1638	452	1132	1509	0	0	0	0	268	0	732
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	0	1863
Adj Flow Rate, veh/h	0	1761	502	1272	1605	0				308	0	0
Adj No. of Lanes	0	3	1	2	2	0				2	0	1
Peak Hour Factor	0.92	0.93	0.90	0.89	0.94	0.92				0.87	0.92	0.84
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1874	584	1402	2880	0				353	0	163
Arrive On Green	0.00	0.12	0.12	0.54	1.00	0.00				0.10	0.00	0.00
Sat Flow, veh/h	0	5253	1583	3442	3632	0				3442	0	1583
Grp Volume(v), veh/h	0	1761	502	1272	1605	0				308	0	0
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1721	1770	0				1721	0	1583
Q Serve(g_s), s	0.0	54.9	49.8	53.3	0.0	0.0				14.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	54.9	49.8	53.3	0.0	0.0				14.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1874	584	1402	2880	0				353	0	163
V/C Ratio(X)	0.00	0.94	0.86	0.91	0.56	0.00				0.87	0.00	0.00
Avail Cap(c_a), veh/h	0	1875	584	1402	2880	0				400	0	184
HCM Platoon Ratio	1.00	0.33	0.33	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.38	0.38	0.19	0.19	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	68.5	66.2	33.9	0.0	0.0				70.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	4.8	6.6	2.2	0.1	0.0				17.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	31.9	27.8	29.2	0.1	0.0				12.1	0.0	0.0
LnGrp Delay(d),s/veh	0.0	73.3	72.8	36.1	0.1	0.0				87.9	0.0	0.0
LnGrp LOS		E	E	D	A					F		
Approach Vol, veh/h		2263			2877						308	
Approach Delay, s/veh		73.2			16.1						87.9	
Approach LOS		E			B						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	72.2	65.0		22.8		137.2		
Change Period (Y+Rc), s	7.0	6.0		6.4		* 7		
Max Green Setting (Gmax), s	63.0	59.0		18.6		* 1.3E2		
Max Q Clear Time (g_c+I1), s	55.3	56.9		16.1		2.0		
Green Ext Time (p_c), s	7.7	2.0		0.3		121.1		

Intersection Summary	
HCM 2010 Ctrl Delay	43.9
HCM 2010 LOS	D

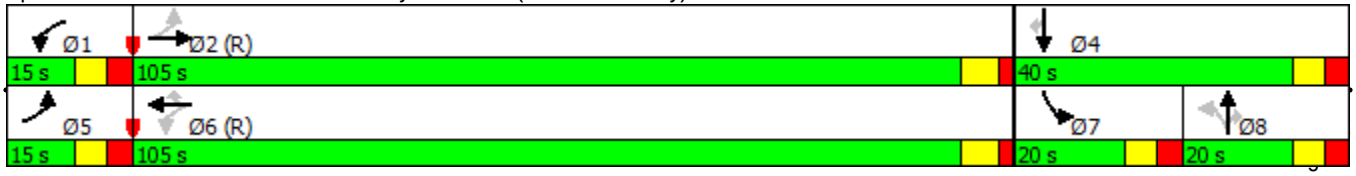
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	1450	34	186	1755	246	47	70	224	437	28	67
Future Volume (vph)	145	1450	34	186	1755	246	47	70	224	437	28	67
Lane Group Flow (vph)	175	1629	49	224	1929	259	92	96	270	508	50	75
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2		Free	6		6	8		8			4
Detector Phase	5	2		1	6	6	8	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0	15.0	8.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.0	30.7		13.0	36.7	36.7	42.5	42.5	42.5	13.0	44.5	44.5
Total Split (s)	15.0	105.0		15.0	105.0	105.0	20.0	20.0	20.0	20.0	40.0	40.0
Total Split (%)	9.4%	65.6%		9.4%	65.6%	65.6%	12.5%	12.5%	12.5%	12.5%	25.0%	25.0%
Yellow Time (s)	4.0	4.7		4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	1.8		3.0	1.8	1.8	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	6.5		7.0	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	1.05	0.52	0.03	1.07	0.62	0.25	0.84	0.64	1.14	1.83	0.13	0.19
Control Delay	124.8	10.2	0.0	104.3	38.3	18.0	122.7	90.4	135.0	423.0	53.0	11.5
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	124.8	10.3	0.0	104.3	38.3	18.0	122.7	90.4	135.0	423.0	53.0	11.5
Queue Length 50th (ft)	~110	383	0	~157	697	150	97	99	~207	~411	43	0
Queue Length 95th (ft)	m#219	m204	m0	#270	746	228	89	132	#338	#501	51	45
Internal Link Dist (ft)		703			1090			604			273	
Turn Bay Length (ft)	235			330		120	365			180		115
Base Capacity (vph)	166	3130	1583	210	3130	1022	109	151	237	278	384	386
Starvation Cap Reductn	0	232	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.56	0.03	1.07	0.62	0.25	0.84	0.64	1.14	1.83	0.13	0.19

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 75 (47%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Northwinds Pkwy & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	1450	34	186	1755	246	47	70	224	437	28	67
Future Volume (veh/h)	145	1450	34	186	1755	246	47	70	224	437	28	67
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	175	1629	0	224	1929	0	92	96	0	508	50	75
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	2	1	1
Peak Hour Factor	0.83	0.89	0.69	0.83	0.91	0.95	0.51	0.73	0.83	0.86	0.56	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	3131	975	323	3131	975	147	151	129	280	384	327
Arrive On Green	0.10	1.00	0.00	0.05	0.62	0.00	0.08	0.08	0.00	0.08	0.21	0.21
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1261	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	175	1629	0	224	1929	0	92	96	0	508	50	75
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1261	1863	1583	1721	1863	1583
Q Serve(g_s), s	6.2	0.0	0.0	7.7	37.6	0.0	11.6	8.0	0.0	13.0	3.5	6.3
Cycle Q Clear(g_c), s	6.2	0.0	0.0	7.7	37.6	0.0	11.6	8.0	0.0	13.0	3.5	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	221	3131	975	323	3131	975	147	151	129	280	384	327
V/C Ratio(X)	0.79	0.52	0.00	0.69	0.62	0.00	0.62	0.63	0.00	1.82	0.13	0.23
Avail Cap(c_a), veh/h	221	3131	975	323	3131	975	147	151	129	280	384	327
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.00	0.81	0.81	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.0	0.0	0.0	10.2	19.0	0.0	72.8	71.2	0.0	73.5	51.8	52.9
Incr Delay (d2), s/veh	15.3	0.5	0.0	5.1	0.7	0.0	7.9	8.4	0.0	381.3	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.0	0.3	0.0	7.2	23.9	0.0	7.8	7.9	0.0	37.8	3.3	5.0
LnGrp Delay(d),s/veh	38.2	0.5	0.0	15.3	19.8	0.0	80.8	79.6	0.0	454.8	51.9	53.3
LnGrp LOS	D	A		B	B		F	E		F	D	D
Approach Vol, veh/h		1804			2153			188			633	
Approach Delay, s/veh		4.2			19.3			80.2			375.4	
Approach LOS		A			B			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	105.0		40.0	15.0	105.0	20.0	20.0
Change Period (Y+Rc), s	7.0	* 6.5		7.0	7.0	* 6.5	7.0	7.0
Max Green Setting (Gmax), s	8.0	* 99		33.0	8.0	* 99	13.0	13.0
Max Q Clear Time (g_c+I1), s	9.7	2.0		8.3	8.2	39.6	15.0	13.6
Green Ext Time (p_c), s	0.0	96.0		1.1	0.0	58.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	63.2
HCM 2010 LOS	E

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	1356	12	34	1695	131	22	19	93	154	5	61
Future Volume (vph)	193	1356	12	34	1695	131	22	19	93	154	5	61
Lane Group Flow (vph)	233	1541	20	37	1926	154	33	25	104	179	8	70
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	6.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.4	34.8	34.8	13.3	36.8	36.8	13.0	51.3	51.3	13.0	48.3	48.3
Total Split (s)	15.0	110.0	110.0	15.0	110.0	110.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	9.4%	68.8%	68.8%	9.4%	68.8%	68.8%	9.4%	12.5%	12.5%	9.4%	12.5%	12.5%
Yellow Time (s)	4.4	4.8	4.8	4.3	4.8	4.8	4.0	4.3	4.3	4.0	4.3	4.3
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	7.0	6.3	6.3	7.0	7.3	7.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	1.29	0.44	0.02	0.15	0.56	0.14	0.22	0.25	0.51	1.05	0.06	0.31
Control Delay	200.5	11.6	0.0	1.9	2.7	0.2	77.0	78.6	14.9	151.1	73.2	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	200.5	11.6	0.0	1.9	2.7	0.2	77.0	78.6	14.9	151.1	73.2	3.6
Queue Length 50th (ft)	~205	254	0	1	64	0	17	26	0	~103	8	0
Queue Length 95th (ft)	#249	287	0	m3	75	m0	27	49	39	#175	19	0
Internal Link Dist (ft)		996			703			362			282	
Turn Bay Length (ft)	340		225	245		175	70					80
Base Capacity (vph)	181	3537	1140	249	3441	1112	171	159	250	171	169	256
Starvation Cap Reductn	0	0	0	0	126	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.29	0.44	0.02	0.15	0.58	0.14	0.19	0.16	0.42	1.05	0.05	0.27

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 70 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amber Park Dr/3rd St & SR 120 (Old Milton Pkwy)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	1356	12	34	1695	131	22	19	93	154	5	61
Future Volume (veh/h)	193	1356	12	34	1695	131	22	19	93	154	5	61
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	233	1541	20	37	1926	154	33	25	0	179	8	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	2	1	1
Peak Hour Factor	0.83	0.88	0.60	0.92	0.88	0.85	0.66	0.75	0.89	0.86	0.62	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	362	3004	935	426	3134	976	99	88	75	172	119	102
Arrive On Green	0.11	0.59	0.59	0.28	1.00	1.00	0.03	0.05	0.00	0.05	0.06	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	233	1541	20	37	1926	154	33	25	0	179	8	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	4.6	28.5	0.8	0.0	0.0	0.0	1.5	2.1	0.0	8.0	0.6	0.0
Cycle Q Clear(g_c), s	4.6	28.5	0.8	0.0	0.0	0.0	1.5	2.1	0.0	8.0	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	362	3004	935	426	3134	976	99	88	75	172	119	102
V/C Ratio(X)	0.64	0.51	0.02	0.09	0.61	0.16	0.33	0.28	0.00	1.04	0.07	0.00
Avail Cap(c_a), veh/h	362	3280	1021	426	3280	1021	172	159	136	172	148	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.7	19.2	13.6	15.0	0.0	0.0	76.2	73.6	0.0	76.0	70.4	0.0
Incr Delay (d2), s/veh	3.9	0.6	0.0	0.1	0.7	0.3	1.9	1.7	0.0	79.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.0	19.5	0.7	1.2	0.4	0.1	1.3	2.0	0.0	10.3	0.6	0.0
LnGrp Delay(d),s/veh	43.6	19.9	13.6	15.0	0.7	0.3	78.1	75.3	0.0	155.7	70.6	0.0
LnGrp LOS	D	B	B	B	A	A	E	E		F	E	
Approach Vol, veh/h		1794			2117			58			187	
Approach Delay, s/veh		22.9			0.9			76.9			152.1	
Approach LOS		C			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.5	101.3	11.6	17.6	25.4	105.4	15.3	13.9
Change Period (Y+Rc), s	7.4	* 6.8	7.0	7.3	7.4	6.8	7.3	* 6.3
Max Green Setting (Gmax), s	7.7	* 1E2	8.0	12.7	7.6	103.2	8.0	* 14
Max Q Clear Time (g_c+I1), s	2.0	30.5	3.5	2.6	6.6	2.0	10.0	4.1
Green Ext Time (p_c), s	0.4	64.0	0.0	0.5	0.1	96.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	18.3
HCM 2010 LOS	B

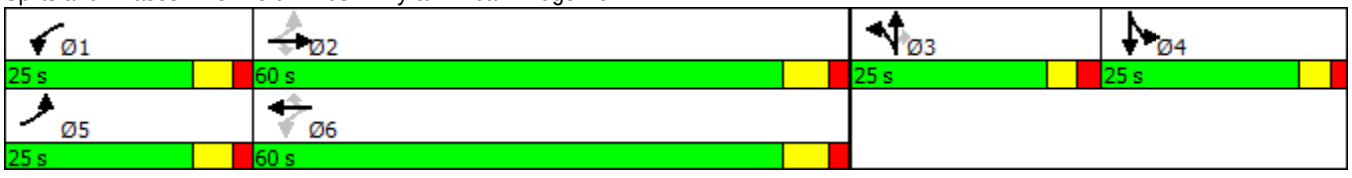
Notes

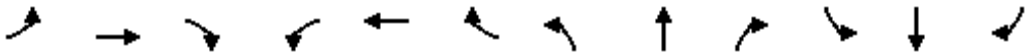
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	239	17	190	451	101	171	137	40	30
Future Volume (vph)	14	239	17	190	451	101	171	137	40	30
Lane Group Flow (vph)	22	281	25	200	485	116	264	161	51	88
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Split	NA
Protected Phases	5	2		1	6		3		4	4
Permitted Phases	2		2	6		6		3		
Detector Phase	5	2	2	1	6	6	3	3	4	4
Switch Phase										
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	41.8	41.8	10.5	44.8	44.8	40.4	40.4	40.1	40.1
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0	25.0	25.0	25.0	25.0
Total Split (%)	18.5%	44.4%	44.4%	18.5%	44.4%	44.4%	18.5%	18.5%	18.5%	18.5%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	3.1	3.1	3.2	3.2
All-Red Time (s)	2.1	2.3	2.3	2.1	2.3	2.3	2.3	2.3	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.8	6.8	6.1	6.8	6.8	5.4	5.4	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	Min	Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.07	0.54	0.05	0.41	0.61	0.16	0.59	0.32	0.32	0.26
Control Delay	12.5	29.9	0.2	15.1	23.8	4.4	37.4	7.8	44.6	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	29.9	0.2	15.1	23.8	4.4	37.4	7.8	44.6	24.1
Queue Length 50th (ft)	6	124	0	58	173	0	114	0	24	10
Queue Length 95th (ft)	13	201	0	104	355	30	#266	46	60	26
Internal Link Dist (ft)		651			693		393			505
Turn Bay Length (ft)	100		135	290		300			225	
Base Capacity (vph)	616	1274	1117	613	1274	1119	463	519	452	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.22	0.02	0.33	0.38	0.10	0.57	0.31	0.11	0.10

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 80.9
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Northwinds Pkwy & Kimball Bridge Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	239	17	190	451	101	45	171	137	40	30	43
Future Volume (vph)	14	239	17	190	451	101	45	171	137	40	30	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1839	1583	1770	3262	
Flt Permitted	0.41	1.00	1.00	0.41	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (perm)	768	1863	1583	755	1863	1583		1839	1583	1770	3262	
Peak-hour factor, PHF	0.65	0.85	0.67	0.95	0.93	0.87	0.67	0.87	0.85	0.79	0.72	0.93
Adj. Flow (vph)	22	281	25	200	485	116	67	197	161	51	42	46
RTOR Reduction (vph)	0	0	17	0	0	69	0	0	124	0	43	0
Lane Group Flow (vph)	22	281	8	200	485	47	0	264	37	51	45	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		6			3			
Actuated Green, G (s)	28.7	26.8	26.8	42.7	34.7	34.7		19.8	19.8	5.9	5.9	
Effective Green, g (s)	28.7	26.8	26.8	42.7	34.7	34.7		19.8	19.8	5.9	5.9	
Actuated g/C Ratio	0.33	0.31	0.31	0.50	0.40	0.40		0.23	0.23	0.07	0.07	
Clearance Time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Vehicle Extension (s)	1.5	5.0	5.0	1.5	5.0	5.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	279	582	495	492	754	640		424	365	121	224	
v/s Ratio Prot	0.00	0.15		c0.05	c0.26			c0.14		c0.03	0.01	
v/s Ratio Perm	0.02		0.00	0.16		0.03			0.02			
v/c Ratio	0.08	0.48	0.02	0.41	0.64	0.07		0.62	0.10	0.42	0.20	
Uniform Delay, d1	19.3	23.8	20.3	12.9	20.5	15.6		29.6	25.9	38.3	37.7	
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	0.0	1.3	0.0	0.2	2.6	0.1		2.0	0.0	0.9	0.2	
Delay (s)	19.3	25.2	20.4	13.1	23.1	15.7		31.6	26.0	39.1	37.8	
Level of Service	B	C	C	B	C	B		C	C	D	D	
Approach Delay (s)		24.4			19.5			29.5			38.3	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	85.7	Sum of lost time (s)	23.4
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

System Improvements Concept Design

Future “No-Build” Improved Intersection Analysis

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	362	1564	1548	554	340	1620
Future Volume (vph)	362	1564	1548	554	340	1620
Lane Group Flow (vph)	385	1738	1720	609	386	1653
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	6.0	15.0	15.0	15.0	8.0	
Minimum Split (s)	13.0	28.6	24.6	24.6	14.6	
Total Split (s)	30.0	115.0	85.0	85.0	45.0	
Total Split (%)	18.8%	71.9%	53.1%	53.1%	28.1%	
Yellow Time (s)	4.0	4.6	4.6	4.6	3.6	
All-Red Time (s)	3.0	1.5	1.5	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.1	6.1	6.1	6.6	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	Max	C-Min	C-Min	C-Min	None	
v/c Ratio	0.47	0.63	0.69	0.60	0.79	1.03
Control Delay	73.0	11.3	32.8	8.4	77.8	35.1
Queue Delay	0.0	0.4	0.0	0.0	0.0	0.0
Total Delay	73.0	11.8	32.8	8.4	77.8	35.1
Queue Length 50th (ft)	220	282	496	85	204	~65
Queue Length 95th (ft)	m268	316	550	204	247	#213
Internal Link Dist (ft)		487	857			
Turn Bay Length (ft)	175				280	420
Base Capacity (vph)	826	2751	2507	1019	823	1600
Starvation Cap Reductn	0	483	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.77	0.69	0.60	0.47	1.03

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: GA 400 NB Ramps & SR 120 (Old Milton Pkwy)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	362	1564	0	0	1548	554	340	0	1620	0	0	0
Future Volume (vph)	362	1564	0	0	1548	554	340	0	1620	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.1			6.1	6.1	6.6		4.0			
Lane Util. Factor	0.97	0.95			0.91	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	3539			5085	1583	3433		1600			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	3539			5085	1583	3433		1600			
Peak-hour factor, PHF	0.94	0.90	0.92	0.92	0.90	0.91	0.88	0.92	0.98	0.92	0.92	0.92
Adj. Flow (vph)	385	1738	0	0	1720	609	386	0	1653	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	239	0	0	0	0	0	0
Lane Group Flow (vph)	385	1738	0	0	1720	370	386	0	1653	0	0	0
Turn Type	Prot	NA			NA	Perm	Prot		Free			
Protected Phases	5	2			6		4					
Permitted Phases						6			Free			
Actuated Green, G (s)	38.5	124.4			78.9	78.9	22.9		160.0			
Effective Green, g (s)	38.5	124.4			78.9	78.9	22.9		160.0			
Actuated g/C Ratio	0.24	0.78			0.49	0.49	0.14		1.00			
Clearance Time (s)	7.0	6.1			6.1	6.1	6.6					
Vehicle Extension (s)	2.5	4.5			4.5	4.5	2.5					
Lane Grp Cap (vph)	826	2751			2507	780	491		1600			
v/s Ratio Prot	0.11	0.49			0.34		0.11					
v/s Ratio Perm						0.23			c1.03			
v/c Ratio	0.47	0.63			0.69	0.47	0.79		1.03			
Uniform Delay, d1	52.0	7.8			31.1	26.8	66.2		80.0			
Progression Factor	1.36	1.28			1.00	1.00	1.00		1.00			
Incremental Delay, d2	1.1	0.6			1.6	2.1	7.8		31.5			
Delay (s)	71.5	10.6			32.6	28.9	74.0		111.5			
Level of Service	E	B			C	C	E		F			
Approach Delay (s)		21.7			31.6			104.4			0.0	
Approach LOS		C			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

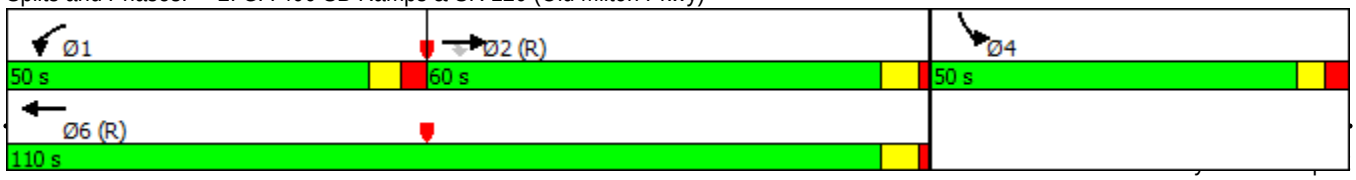
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1202	106	416	1472	724	1455
Future Volume (vph)	1202	106	416	1472	724	1455
Lane Group Flow (vph)	1321	125	533	1618	813	1617
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	15.0	15.0	6.0	15.0	8.0	
Minimum Split (s)	24.5	24.5	13.0	24.5	22.5	
Total Split (s)	60.0	60.0	50.0	110.0	50.0	
Total Split (%)	37.5%	37.5%	31.3%	68.8%	31.3%	
Yellow Time (s)	4.5	4.5	4.0	4.5	3.4	
All-Red Time (s)	1.5	1.5	3.0	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	7.0	6.0	6.4	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	Max	C-Min	Min	
v/c Ratio	0.77	0.20	0.55	0.69	0.91	1.02
Control Delay	34.7	2.6	71.9	17.8	72.4	31.4
Queue Delay	0.0	0.0	0.0	1.0	0.0	0.0
Total Delay	34.7	2.6	71.9	18.9	72.4	31.4
Queue Length 50th (ft)	423	0	304	355	421	~74
Queue Length 95th (ft)	354	16	318	425	497	#336
Internal Link Dist (ft)	1090			487		
Turn Bay Length (ft)		420	200			300
Base Capacity (vph)	1716	617	966	2345	935	1583
Starvation Cap Reductn	0	0	0	435	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.20	0.55	0.85	0.87	1.02

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: GA 400 SB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1202	106	416	1472	0	0	0	0	724	0	1455
Future Volume (veh/h)	0	1202	106	416	1472	0	0	0	0	724	0	1455
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	0	1863
Adj Flow Rate, veh/h	0	1321	0	533	1618	0				813	0	0
Adj No. of Lanes	0	3	1	2	2	0				2	0	1
Peak Hour Factor	0.92	0.91	0.85	0.78	0.91	0.92				0.89	0.92	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1812	564	925	2367	0				873	0	402
Arrive On Green	0.00	0.71	0.00	0.54	1.00	0.00				0.25	0.00	0.00
Sat Flow, veh/h	0	5253	1583	3442	3632	0				3442	0	1583
Grp Volume(v), veh/h	0	1321	0	533	1618	0				813	0	0
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1721	1770	0				1721	0	1583
Q Serve(g_s), s	0.0	24.9	0.0	16.6	0.0	0.0				36.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	24.9	0.0	16.6	0.0	0.0				36.9	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1812	564	925	2367	0				873	0	402
V/C Ratio(X)	0.00	0.73	0.00	0.58	0.68	0.00				0.93	0.00	0.00
Avail Cap(c_a), veh/h	0	1812	564	925	2367	0				938	0	431
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.89	0.00	0.64	0.64	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.4	0.0	30.9	0.0	0.0				58.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.3	0.0	1.7	1.1	0.0				14.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	16.9	0.0	11.8	0.6	0.0				26.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	20.7	0.0	32.6	1.1	0.0				73.2	0.0	0.0
LnGrp LOS		C		C	A					E		
Approach Vol, veh/h		1321			2151						813	
Approach Delay, s/veh		20.7			8.9						73.2	
Approach LOS		C			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	50.0	63.0		47.0		113.0		
Change Period (Y+Rc), s	7.0	6.0		6.4		6.0		
Max Green Setting (Gmax), s	43.0	54.0		43.6		104.0		
Max Q Clear Time (g_c+I1), s	18.6	26.9		38.9		2.0		
Green Ext Time (p_c), s	3.5	27.1		1.7		101.5		

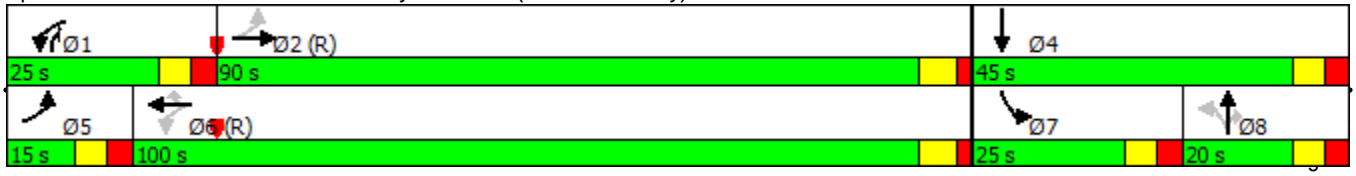
Intersection Summary	
HCM 2010 Ctrl Delay	24.7
HCM 2010 LOS	C

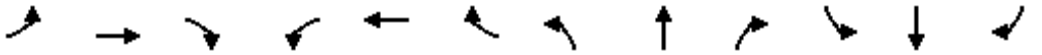
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	36	1426	33	535	2272	111	5	11	23	47	11
Future Volume (vph)	36	1426	33	535	2272	111	5	11	23	47	11
Lane Group Flow (vph)	54	1567	37	652	2417	132	12	16	38	63	66
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Perm	NA	pm+ov	Prot	NA
Protected Phases	5	2		1	6			8	1	7	4
Permitted Phases	2		Free	6		6	8		8		
Detector Phase	5	2		1	6	6	8	8	1	7	4
Switch Phase											
Minimum Initial (s)	6.0	15.0		6.0	15.0	15.0	8.0	8.0	6.0	6.0	8.0
Minimum Split (s)	13.0	30.7		13.0	36.7	36.7	42.5	42.5	13.0	13.0	44.5
Total Split (s)	15.0	90.0		25.0	100.0	100.0	20.0	20.0	25.0	25.0	45.0
Total Split (%)	9.4%	56.3%		15.6%	62.5%	62.5%	12.5%	12.5%	15.6%	15.6%	28.1%
Yellow Time (s)	4.0	4.7		4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	1.8		3.0	1.8	1.8	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	6.5		7.0	6.5	6.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?											
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.42	0.47	0.02	1.90	0.64	0.11	0.18	0.17	0.11	0.26	0.30
Control Delay	32.4	10.2	0.0	436.4	7.2	0.2	78.4	76.5	1.4	75.8	29.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.4	10.2	0.0	436.4	7.2	0.2	78.4	76.5	1.4	75.8	29.8
Queue Length 50th (ft)	11	179	0	~893	418	0	12	16	0	23	22
Queue Length 95th (ft)	34	153	m0	m#939	m496	m3	16	33	0	34	15
Internal Link Dist (ft)		703			1090			604			272
Turn Bay Length (ft)	235			330		120	365			180	
Base Capacity (vph)	142	3308	1583	343	3748	1199	108	151	357	561	432
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.47	0.02	1.90	0.64	0.11	0.11	0.11	0.11	0.11	0.15

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Northwinds Pkwy & SR 120 (Old Milton Pkwy)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1426	33	535	2272	111	5	11	23	47	11	27
Future Volume (veh/h)	36	1426	33	535	2272	111	5	11	23	47	11	27
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	54	1567	0	652	2417	0	12	16	0	63	24	42
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	3	1	0
Peak Hour Factor	0.67	0.91	0.89	0.82	0.94	0.84	0.42	0.69	0.61	0.75	0.46	0.65
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	3210	999	451	3608	1123	110	92	256	176	78	137
Arrive On Green	0.07	1.00	0.00	0.22	1.00	0.00	0.05	0.05	0.00	0.04	0.13	0.13
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1330	1863	1583	5003	609	1066
Grp Volume(v), veh/h	54	1567	0	652	2417	0	12	16	0	63	0	66
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1330	1863	1583	1668	0	1675
Q Serve(g_s), s	1.7	0.0	0.0	18.0	0.0	0.0	1.4	1.3	0.0	2.0	0.0	5.7
Cycle Q Clear(g_c), s	1.7	0.0	0.0	18.0	0.0	0.0	1.4	1.3	0.0	2.0	0.0	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.64
Lane Grp Cap(c), veh/h	195	3210	999	451	3608	1123	110	92	256	176	0	215
V/C Ratio(X)	0.28	0.49	0.00	1.45	0.67	0.00	0.11	0.17	0.00	0.36	0.00	0.31
Avail Cap(c_a), veh/h	223	3210	999	451	3608	1123	153	151	307	563	0	398
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.00	0.40	0.40	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.9	0.0	0.0	12.1	0.0	0.0	73.0	72.9	0.0	75.4	0.0	63.3
Incr Delay (d2), s/veh	0.7	0.5	0.0	205.9	0.4	0.0	0.4	0.9	0.0	1.2	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	0.3	0.0	81.6	0.2	0.0	0.9	1.3	0.0	1.7	0.0	4.9
LnGrp Delay(d),s/veh	9.6	0.5	0.0	218.1	0.4	0.0	73.4	73.8	0.0	76.6	0.0	64.1
LnGrp LOS	A	A		F	A		E	E		E		E
Approach Vol, veh/h		1621			3069			28			129	
Approach Delay, s/veh		0.8			46.6			73.7			70.2	
Approach LOS		A			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	107.5		27.5	12.5	120.0	12.6	14.9
Change Period (Y+Rc), s	7.0	* 6.5		7.0	7.0	* 6.5	7.0	7.0
Max Green Setting (Gmax), s	18.0	* 84		38.0	8.0	* 94	18.0	13.0
Max Q Clear Time (g_c+I1), s	20.0	2.0		7.7	3.7	2.0	4.0	3.4
Green Ext Time (p_c), s	0.0	81.1		0.3	0.0	91.0	0.1	0.2

Intersection Summary			
HCM 2010 Ctrl Delay		32.1	
HCM 2010 LOS		C	

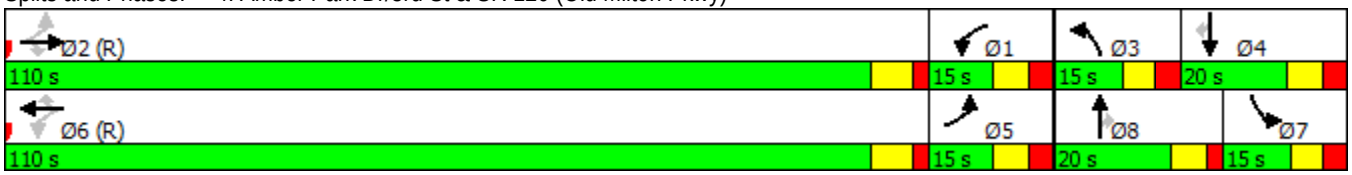
Notes

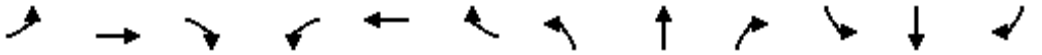
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	1459	22	139	2165	27	8	4	3	79	8	31
Future Volume (vph)	82	1459	22	139	2165	27	8	4	3	79	8	31
Lane Group Flow (vph)	95	1504	33	188	2255	42	12	8	8	95	12	41
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	6.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.4	34.8	34.8	13.3	36.8	36.8	13.0	51.3	51.3	13.0	48.3	48.3
Total Split (s)	15.0	110.0	110.0	15.0	110.0	110.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	9.4%	68.8%	68.8%	9.4%	68.8%	68.8%	9.4%	12.5%	12.5%	9.4%	12.5%	12.5%
Yellow Time (s)	4.4	4.8	4.8	4.3	4.8	4.8	4.0	4.3	4.3	4.0	4.3	4.3
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	7.0	6.3	6.3	7.0	7.3	7.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.63	0.40	0.03	0.68	0.60	0.04	0.09	0.09	0.04	0.54	0.13	0.21
Control Delay	49.5	9.0	0.0	32.1	5.4	0.1	75.2	74.8	0.3	85.6	75.6	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	9.0	0.0	32.1	5.6	0.1	75.2	74.8	0.3	85.6	75.6	2.4
Queue Length 50th (ft)	17	168	0	27	4	0	6	8	0	51	12	0
Queue Length 95th (ft)	85	276	0	75	376	0	13	15	0	77	27	0
Internal Link Dist (ft)		996			703			362			282	
Turn Bay Length (ft)	340		225	245		175	70					80
Base Capacity (vph)	153	3732	1196	278	3732	1196	171	159	250	177	147	239
Starvation Cap Reductn	0	0	0	0	511	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.40	0.03	0.68	0.70	0.04	0.07	0.05	0.03	0.54	0.08	0.17

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 50 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 4: Amber Park Dr/3rd St & SR 120 (Old Milton Pkwy)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1459	22	139	2165	27	8	4	3	79	8	31
Future Volume (veh/h)	82	1459	22	139	2165	27	8	4	3	79	8	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	95	1504	33	188	2255	42	12	8	0	95	12	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	2	1	1
Peak Hour Factor	0.86	0.97	0.66	0.74	0.96	0.65	0.67	0.50	0.38	0.83	0.67	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	342	2975	926	470	3225	1004	53	71	60	136	107	91
Arrive On Green	0.11	0.58	0.58	0.33	1.00	1.00	0.02	0.04	0.00	0.04	0.06	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	95	1504	33	188	2255	42	12	8	0	95	12	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	0.0	27.9	1.4	0.0	0.0	0.0	0.6	0.7	0.0	4.4	1.0	0.0
Cycle Q Clear(g_c), s	0.0	27.9	1.4	0.0	0.0	0.0	0.6	0.7	0.0	4.4	1.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	342	2975	926	470	3225	1004	53	71	60	136	107	91
V/C Ratio(X)	0.28	0.51	0.04	0.40	0.70	0.04	0.22	0.11	0.00	0.70	0.11	0.00
Avail Cap(c_a), veh/h	342	3280	1021	470	3280	1021	172	159	136	172	148	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.8	19.6	14.1	22.4	0.0	0.0	77.8	74.4	0.0	75.9	71.5	0.0
Incr Delay (d2), s/veh	0.4	0.6	0.1	0.4	0.9	0.1	2.1	0.7	0.0	8.6	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.6	19.2	1.1	8.6	0.5	0.0	0.5	0.6	0.0	4.0	0.9	0.0
LnGrp Delay(d),s/veh	18.2	20.2	14.1	22.8	0.9	0.1	79.9	75.1	0.0	84.5	72.0	0.0
LnGrp LOS	B	C	B	C	A	A	E	E		F	E	
Approach Vol, veh/h		1632			2485			20			107	
Approach Delay, s/veh		20.0			2.6			78.0			83.1	
Approach LOS		B			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.6	100.4	9.5	16.5	25.7	108.3	13.6	12.4
Change Period (Y+Rc), s	7.4	* 6.8	7.0	7.3	7.4	6.8	7.3	* 6.3
Max Green Setting (Gmax), s	7.7	* 1E2	8.0	12.7	7.6	103.2	8.0	* 14
Max Q Clear Time (g_c+I1), s	2.0	29.9	2.6	3.0	2.0	2.0	6.4	2.7
Green Ext Time (p_c), s	0.5	63.7	0.0	0.2	0.1	99.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

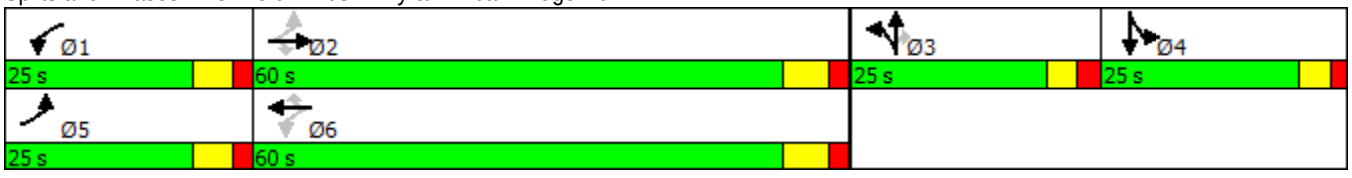
Notes

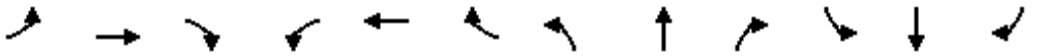
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	11	503	67	260	233	28	34	132	220	162
Future Volume (vph)	11	503	67	260	233	28	34	132	220	162
Lane Group Flow (vph)	16	565	88	283	315	37	82	171	242	279
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Split	NA
Protected Phases	5	2		1	6		3		4	4
Permitted Phases	2		2	6		6		3		
Detector Phase	5	2	2	1	6	6	3	3	4	4
Switch Phase										
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	41.8	41.8	10.5	44.8	44.8	40.4	40.4	40.1	40.1
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0	25.0	25.0	25.0	25.0
Total Split (%)	18.5%	44.4%	44.4%	18.5%	44.4%	44.4%	18.5%	18.5%	18.5%	18.5%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	3.1	3.1	3.2	3.2
All-Red Time (s)	2.1	2.3	2.3	2.1	2.3	2.3	2.3	2.3	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.8	6.8	6.1	6.8	6.8	5.4	5.4	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	Min	Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.03	0.81	0.13	0.76	0.32	0.04	0.49	0.57	0.76	0.44
Control Delay	11.6	40.4	3.0	26.9	16.8	0.1	60.3	15.8	60.5	39.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	40.4	3.0	26.9	16.8	0.1	60.3	15.8	60.5	39.8
Queue Length 50th (ft)	5	337	0	94	107	0	54	0	156	78
Queue Length 95th (ft)	11	539	9	176	171	0	89	38	#358	127
Internal Link Dist (ft)		651			693		393			505
Turn Bay Length (ft)	100		135	290		300			225	
Base Capacity (vph)	716	969	876	460	1048	939	349	441	344	686
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.58	0.10	0.62	0.30	0.04	0.23	0.39	0.70	0.41

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 105.7
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Northwinds Pkwy & Kimball Bridge Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	503	67	260	233	28	22	34	132	220	162	60
Future Volume (vph)	11	503	67	260	233	28	22	34	132	220	162	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1826	1583	1770	3404	
Flt Permitted	0.57	1.00	1.00	0.19	1.00	1.00		0.98	1.00	0.95	1.00	
Satd. Flow (perm)	1060	1863	1583	351	1863	1583		1826	1583	1770	3404	
Peak-hour factor, PHF	0.69	0.89	0.76	0.92	0.74	0.75	0.66	0.69	0.77	0.91	0.78	0.85
Adj. Flow (vph)	16	565	88	283	315	37	33	49	171	242	208	71
RTOR Reduction (vph)	0	0	53	0	0	18	0	0	156	0	24	0
Lane Group Flow (vph)	16	565	35	283	315	19	0	82	15	242	255	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		6			3			
Actuated Green, G (s)	45.6	43.9	43.9	63.1	55.3	55.3		9.7	9.7	19.1	19.1	
Effective Green, g (s)	45.6	43.9	43.9	63.1	55.3	55.3		9.7	9.7	19.1	19.1	
Actuated g/C Ratio	0.42	0.40	0.40	0.58	0.51	0.51		0.09	0.09	0.17	0.17	
Clearance Time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Vehicle Extension (s)	1.5	5.0	5.0	1.5	5.0	5.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	453	748	636	373	943	801		162	140	309	595	
v/s Ratio Prot	0.00	0.30		c0.09	0.17			c0.04		c0.14	0.07	
v/s Ratio Perm	0.01		0.02	c0.35		0.01			0.01			
v/c Ratio	0.04	0.76	0.06	0.76	0.33	0.02		0.51	0.11	0.78	0.43	
Uniform Delay, d1	18.7	28.0	20.0	17.5	16.0	13.5		47.5	45.8	43.1	40.2	
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	0.0	5.2	0.1	7.7	0.4	0.0		0.9	0.1	11.3	0.2	
Delay (s)	18.7	33.2	20.0	25.1	16.5	13.5		48.4	45.9	54.4	40.4	
Level of Service	B	C	C	C	B	B		D	D	D	D	
Approach Delay (s)		31.1			20.1			46.7			46.9	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	33.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	109.2	Sum of lost time (s)	23.4
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

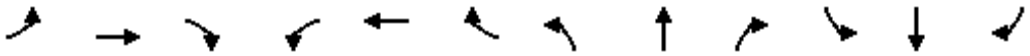
c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	771	1174	2265	1146	366	1248
Future Volume (vph)	771	1174	2265	1146	366	1248
Lane Group Flow (vph)	829	1304	2489	1246	381	1328
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	6.0	15.0	15.0	15.0	8.0	
Minimum Split (s)	13.0	28.6	24.6	24.6	14.6	
Total Split (s)	45.0	130.0	85.0	85.0	30.0	
Total Split (%)	28.1%	81.3%	53.1%	53.1%	18.8%	
Yellow Time (s)	4.0	4.6	4.6	4.6	3.6	
All-Red Time (s)	3.0	1.5	1.5	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.1	6.1	6.1	6.6	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	Max	C-Min	C-Min	C-Min	None	
v/c Ratio	0.96	0.47	0.99	1.25	0.83	0.89
Control Delay	90.1	0.4	56.3	147.0	83.8	8.5
Queue Delay	0.0	0.5	39.4	0.0	0.0	0.0
Total Delay	90.1	0.8	95.6	147.0	83.8	8.5
Queue Length 50th (ft)	407	4	931	~1393	201	0
Queue Length 95th (ft)	m#540	m4	#1060	#1663	260	0
Internal Link Dist (ft)		486	847			
Turn Bay Length (ft)	175				280	420
Base Capacity (vph)	860	2787	2507	994	502	1500
Starvation Cap Reductn	0	907	0	0	0	0
Spillback Cap Reductn	0	0	413	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.69	1.19	1.25	0.76	0.89

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 20 (13%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: GA 400 NB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	771	1174	0	0	2265	1146	366	0	1248	0	0	0
Future Volume (vph)	771	1174	0	0	2265	1146	366	0	1248	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.1			6.1	6.1	6.6		4.0			
Lane Util. Factor	0.97	0.95			0.91	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	3539			5085	1583	3433		1500			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	3539			5085	1583	3433		1500			
Peak-hour factor, PHF	0.93	0.90	0.92	0.92	0.91	0.92	0.96	0.92	0.94	0.92	0.92	0.92
Adj. Flow (vph)	829	1304	0	0	2489	1246	381	0	1328	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	213	0	0	0	0	0	0
Lane Group Flow (vph)	829	1304	0	0	2489	1033	381	0	1328	0	0	0
Turn Type	Prot	NA			NA	Perm	Prot		Free			
Protected Phases	5	2			6		4					
Permitted Phases						6			Free			
Actuated Green, G (s)	40.1	126.0			78.9	78.9	21.3		160.0			
Effective Green, g (s)	40.1	126.0			78.9	78.9	21.3		160.0			
Actuated g/C Ratio	0.25	0.79			0.49	0.49	0.13		1.00			
Clearance Time (s)	7.0	6.1			6.1	6.1	6.6					
Vehicle Extension (s)	2.5	4.5			4.5	4.5	2.5					
Lane Grp Cap (vph)	860	2786			2507	780	457		1500			
v/s Ratio Prot	0.24	0.37			0.49		0.11					
v/s Ratio Perm						c0.65			c0.89			
v/c Ratio	0.96	0.47			0.99	1.32	0.83		0.89			
Uniform Delay, d1	59.2	5.7			40.3	40.5	67.6		0.0			
Progression Factor	1.33	0.02			1.00	1.00	1.00		1.00			
Incremental Delay, d2	13.8	0.3			16.4	154.6	12.1		8.0			
Delay (s)	92.3	0.4			56.6	195.2	79.8		8.0			
Level of Service	F	A			E	F	E		A			
Approach Delay (s)		36.1			102.9			24.0			0.0	
Approach LOS		D			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	66.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	119.8%	ICU Level of Service	H
Analysis Period (min)	15		

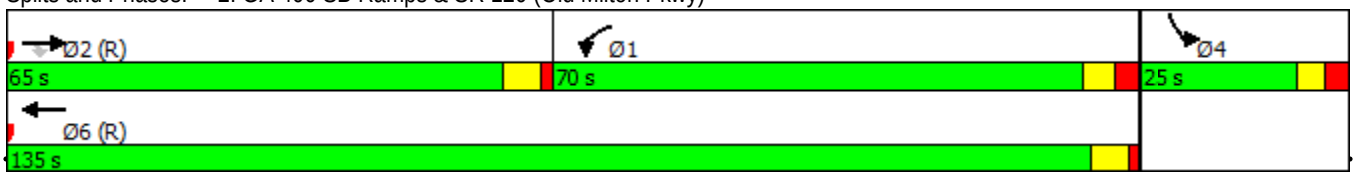
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1638	452	1132	1509	268	732
Future Volume (vph)	1638	452	1132	1509	268	732
Lane Group Flow (vph)	1761	502	1272	1605	308	871
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	15.0	15.0	6.0	15.0	8.0	
Minimum Split (s)	24.5	24.5	13.0	24.5	22.5	
Total Split (s)	65.0	65.0	70.0	135.0	25.0	
Total Split (%)	40.6%	40.6%	43.8%	84.4%	15.6%	
Yellow Time (s)	4.5	4.5	4.0	4.5	3.4	
All-Red Time (s)	1.5	1.5	3.0	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	7.0	6.0	6.4	
Lead/Lag	Lead	Lead	Lag			
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	Max	C-Min	Min	
v/c Ratio	0.93	0.67	0.94	0.56	0.81	0.55
Control Delay	55.9	26.1	31.2	1.7	86.5	1.4
Queue Delay	2.8	0.0	44.7	0.3	0.5	0.0
Total Delay	58.7	26.1	76.0	2.0	86.9	1.4
Queue Length 50th (ft)	566	145	677	51	163	0
Queue Length 95th (ft)	#623	m336	m702	m70	211	0
Internal Link Dist (ft)	1090			486		
Turn Bay Length (ft)		420	200			300
Base Capacity (vph)	1903	754	1351	2873	399	1583
Starvation Cap Reductn	0	0	301	555	0	0
Spillback Cap Reductn	80	0	0	0	8	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.67	1.21	0.69	0.79	0.55

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 155 (97%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: GA 400 SB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1638	452	1132	1509	0	0	0	0	268	0	732
Future Volume (veh/h)	0	1638	452	1132	1509	0	0	0	0	268	0	732
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	0	1863
Adj Flow Rate, veh/h	0	1761	502	1272	1605	0				308	0	0
Adj No. of Lanes	0	3	1	2	2	0				2	0	1
Peak Hour Factor	0.92	0.93	0.90	0.89	0.94	0.92				0.87	0.92	0.84
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1874	584	1402	2880	0				353	0	163
Arrive On Green	0.00	0.12	0.12	0.81	1.00	0.00				0.10	0.00	0.00
Sat Flow, veh/h	0	5253	1583	3442	3632	0				3442	0	1583
Grp Volume(v), veh/h	0	1761	502	1272	1605	0				308	0	0
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1721	1770	0				1721	0	1583
Q Serve(g_s), s	0.0	54.9	49.8	41.9	0.0	0.0				14.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	54.9	49.8	41.9	0.0	0.0				14.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1874	584	1402	2880	0				353	0	163
V/C Ratio(X)	0.00	0.94	0.86	0.91	0.56	0.00				0.87	0.00	0.00
Avail Cap(c_a), veh/h	0	1875	584	1402	2880	0				400	0	184
HCM Platoon Ratio	1.00	0.33	0.33	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.71	0.71	0.16	0.16	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	68.5	66.2	12.6	0.0	0.0				70.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	8.1	11.4	1.9	0.1	0.0				17.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	34.5	30.4	22.3	0.1	0.0				12.1	0.0	0.0
LnGrp Delay(d),s/veh	0.0	76.6	77.6	14.5	0.1	0.0				87.9	0.0	0.0
LnGrp LOS		E	E	B	A					F		
Approach Vol, veh/h		2263			2877						308	
Approach Delay, s/veh		76.9			6.5						87.9	
Approach LOS		E			A						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	72.2	65.0		22.8		137.2		
Change Period (Y+Rc), s	7.0	6.0		6.4		* 7		
Max Green Setting (Gmax), s	63.0	59.0		18.6		* 1.3E2		
Max Q Clear Time (g_c+I1), s	43.9	56.9		16.1		2.0		
Green Ext Time (p_c), s	18.9	2.0		0.3		121.1		

Intersection Summary	
HCM 2010 Ctrl Delay	40.3
HCM 2010 LOS	D

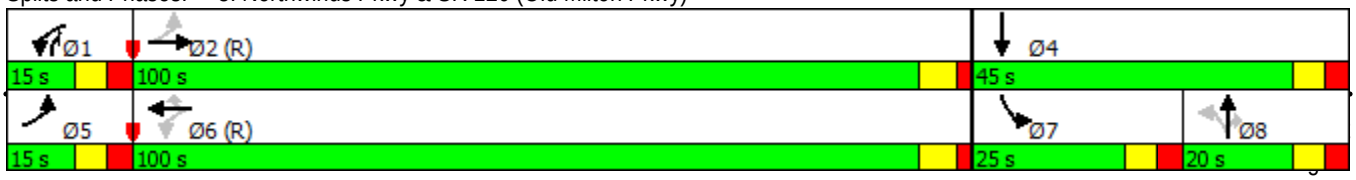
Notes

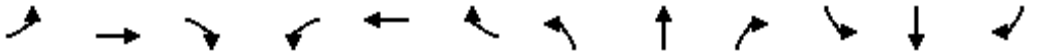
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	145	1450	34	186	1755	246	47	70	224	437	28
Future Volume (vph)	145	1450	34	186	1755	246	47	70	224	437	28
Lane Group Flow (vph)	175	1629	49	224	1929	259	92	96	270	508	125
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Perm	NA	pm+ov	Prot	NA
Protected Phases	5	2		1	6			8	1	7	4
Permitted Phases	2		Free	6		6	8		8		
Detector Phase	5	2		1	6	6	8	8	1	7	4
Switch Phase											
Minimum Initial (s)	6.0	15.0		6.0	15.0	15.0	8.0	8.0	6.0	6.0	8.0
Minimum Split (s)	13.0	30.7		13.0	36.7	36.7	42.5	42.5	13.0	13.0	44.5
Total Split (s)	15.0	100.0		15.0	100.0	100.0	20.0	20.0	15.0	25.0	45.0
Total Split (%)	9.4%	62.5%		9.4%	62.5%	62.5%	12.5%	12.5%	9.4%	15.6%	28.1%
Yellow Time (s)	4.0	4.7		4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	1.8		3.0	1.8	1.8	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	6.5		7.0	6.5	6.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?											
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	1.13	0.55	0.03	1.14	0.65	0.27	0.90	0.64	0.80	0.91	0.29
Control Delay	147.5	15.2	0.0	131.0	15.8	6.0	136.3	90.4	64.5	90.4	33.9
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	147.5	15.2	0.0	131.0	15.8	6.0	136.3	90.4	64.5	90.4	33.9
Queue Length 50th (ft)	~143	200	0	~154	271	18	97	99	205	189	69
Queue Length 95th (ft)	m#255	m215	m0	#179	293	41	89	132	281	#236	63
Internal Link Dist (ft)		703			1090			604			272
Turn Bay Length (ft)	235			330		120	365			180	
Base Capacity (vph)	155	2971	1583	197	2971	976	102	151	336	561	436
Starvation Cap Reductn	0	202	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.59	0.03	1.14	0.65	0.27	0.90	0.64	0.80	0.91	0.29

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 20 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Northwinds Pkwy & SR 120 (Old Milton Pkwy)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	1450	34	186	1755	246	47	70	224	437	28	67
Future Volume (veh/h)	145	1450	34	186	1755	246	47	70	224	437	28	67
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	175	1629	0	224	1929	0	92	96	0	508	50	75
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	3	1	0
Peak Hour Factor	0.83	0.89	0.69	0.83	0.91	0.95	0.51	0.73	0.83	0.86	0.56	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	210	2972	925	314	2972	925	147	151	208	563	160	240
Arrive On Green	0.10	1.00	0.00	0.05	0.58	0.00	0.08	0.08	0.00	0.11	0.24	0.24
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1261	1863	1583	5003	674	1011
Grp Volume(v), veh/h	175	1629	0	224	1929	0	92	96	0	508	0	125
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1261	1863	1583	1668	0	1684
Q Serve(g_s), s	6.8	0.0	0.0	8.0	40.6	0.0	11.6	8.0	0.0	16.0	0.0	9.8
Cycle Q Clear(g_c), s	6.8	0.0	0.0	8.0	40.6	0.0	11.6	8.0	0.0	16.0	0.0	9.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.60
Lane Grp Cap(c), veh/h	210	2972	925	314	2972	925	147	151	208	563	0	400
V/C Ratio(X)	0.83	0.55	0.00	0.71	0.65	0.00	0.62	0.63	0.00	0.90	0.00	0.31
Avail Cap(c_a), veh/h	210	2972	925	314	2972	925	147	151	208	563	0	400
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.00	0.81	0.81	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	0.0	12.3	22.3	0.0	72.8	71.2	0.0	70.1	0.0	50.2
Incr Delay (d2), s/veh	21.4	0.6	0.0	6.1	0.9	0.0	7.9	8.4	0.0	17.8	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.1	0.3	0.0	1.9	25.7	0.0	7.8	7.9	0.0	13.0	0.0	8.1
LnGrp Delay(d),s/veh	47.1	0.6	0.0	18.5	23.2	0.0	80.8	79.6	0.0	88.0	0.0	50.7
LnGrp LOS	D	A		B	C		F	E		F		D
Approach Vol, veh/h		1804			2153			188			633	
Approach Delay, s/veh		5.1			22.7			80.2			80.6	
Approach LOS		A			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	100.0		45.0	15.0	100.0	25.0	20.0
Change Period (Y+Rc), s	7.0	* 6.5		7.0	7.0	* 6.5	7.0	7.0
Max Green Setting (Gmax), s	8.0	* 94		38.0	8.0	* 94	18.0	13.0
Max Q Clear Time (g_c+I1), s	10.0	2.0		11.8	8.8	42.6	18.0	13.6
Green Ext Time (p_c), s	0.0	91.1		1.1	0.0	50.7	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		26.0
HCM 2010 LOS		C

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	1356	12	34	1695	131	22	19	93	154	5	61
Future Volume (vph)	193	1356	12	34	1695	131	22	19	93	154	5	61
Lane Group Flow (vph)	233	1541	20	37	1926	154	33	25	104	179	8	70
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	6.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.4	34.8	34.8	13.3	36.8	36.8	13.0	51.3	51.3	13.0	48.3	48.3
Total Split (s)	15.0	110.0	110.0	15.0	110.0	110.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	9.4%	68.8%	68.8%	9.4%	68.8%	68.8%	9.4%	12.5%	12.5%	9.4%	12.5%	12.5%
Yellow Time (s)	4.4	4.8	4.8	4.3	4.8	4.8	4.0	4.3	4.3	4.0	4.3	4.3
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	7.0	6.3	6.3	7.0	7.3	7.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	1.29	0.44	0.02	0.15	0.56	0.14	0.22	0.25	0.51	1.05	0.06	0.31
Control Delay	200.5	11.6	0.0	4.2	9.0	1.3	77.0	78.6	14.9	151.1	73.2	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	200.5	11.6	0.0	4.2	9.4	1.3	77.0	78.6	14.9	151.1	73.2	3.6
Queue Length 50th (ft)	~205	254	0	4	364	13	17	26	0	~103	8	0
Queue Length 95th (ft)	#249	287	0	m9	428	m24	27	49	39	#175	19	0
Internal Link Dist (ft)		996			703			362			282	
Turn Bay Length (ft)	340		225	245		175	70					80
Base Capacity (vph)	181	3537	1140	249	3441	1112	171	159	250	171	169	256
Starvation Cap Reductn	0	0	0	0	870	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.29	0.44	0.02	0.15	0.75	0.14	0.19	0.16	0.42	1.05	0.05	0.27

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 50 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amber Park Dr/3rd St & SR 120 (Old Milton Pkwy)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	1356	12	34	1695	131	22	19	93	154	5	61
Future Volume (veh/h)	193	1356	12	34	1695	131	22	19	93	154	5	61
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	233	1541	20	37	1926	154	33	25	0	179	8	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	2	1	1
Peak Hour Factor	0.83	0.88	0.60	0.92	0.88	0.85	0.66	0.75	0.89	0.86	0.62	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	362	3004	935	426	3134	976	99	88	75	172	119	102
Arrive On Green	0.11	0.59	0.59	0.28	1.00	1.00	0.03	0.05	0.00	0.05	0.06	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	233	1541	20	37	1926	154	33	25	0	179	8	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	4.6	28.5	0.8	0.0	0.0	0.0	1.5	2.1	0.0	8.0	0.6	0.0
Cycle Q Clear(g_c), s	4.6	28.5	0.8	0.0	0.0	0.0	1.5	2.1	0.0	8.0	0.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	362	3004	935	426	3134	976	99	88	75	172	119	102
V/C Ratio(X)	0.64	0.51	0.02	0.09	0.61	0.16	0.33	0.28	0.00	1.04	0.07	0.00
Avail Cap(c_a), veh/h	362	3280	1021	426	3280	1021	172	159	136	172	148	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.70	0.70	0.70	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.7	19.2	13.6	15.0	0.0	0.0	76.2	73.6	0.0	76.0	70.4	0.0
Incr Delay (d2), s/veh	3.9	0.6	0.0	0.1	0.6	0.2	1.9	1.7	0.0	79.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.0	19.5	0.7	1.2	0.3	0.1	1.3	2.0	0.0	10.3	0.6	0.0
LnGrp Delay(d),s/veh	43.6	19.9	13.6	15.0	0.6	0.2	78.1	75.3	0.0	155.7	70.6	0.0
LnGrp LOS	D	B	B	B	A	A	E	E		F	E	
Approach Vol, veh/h		1794			2117			58			187	
Approach Delay, s/veh		22.9			0.9			76.9			152.1	
Approach LOS		C			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.5	101.3	11.6	17.6	25.4	105.4	15.3	13.9
Change Period (Y+Rc), s	7.4	* 6.8	7.0	7.3	7.4	6.8	7.3	* 6.3
Max Green Setting (Gmax), s	7.7	* 1E2	8.0	12.7	7.6	103.2	8.0	* 14
Max Q Clear Time (g_c+I1), s	2.0	30.5	3.5	2.6	6.6	2.0	10.0	4.1
Green Ext Time (p_c), s	0.4	64.0	0.0	0.5	0.1	96.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

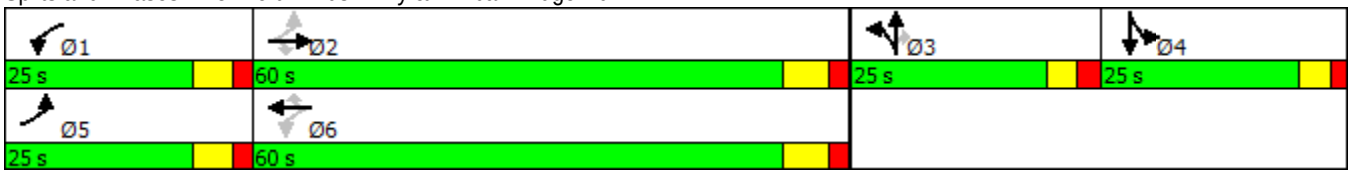
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	239	17	190	451	101	171	137	40	30
Future Volume (vph)	14	239	17	190	451	101	171	137	40	30
Lane Group Flow (vph)	22	281	25	200	485	116	264	161	51	88
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Split	NA
Protected Phases	5	2		1	6		3		4	4
Permitted Phases	2		2	6		6		3		
Detector Phase	5	2	2	1	6	6	3	3	4	4
Switch Phase										
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	41.8	41.8	10.5	44.8	44.8	40.4	40.4	40.1	40.1
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0	25.0	25.0	25.0	25.0
Total Split (%)	18.5%	44.4%	44.4%	18.5%	44.4%	44.4%	18.5%	18.5%	18.5%	18.5%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	3.1	3.1	3.2	3.2
All-Red Time (s)	2.1	2.3	2.3	2.1	2.3	2.3	2.3	2.3	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.8	6.8	6.1	6.8	6.8	5.4	5.4	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	Min	Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.07	0.54	0.05	0.41	0.61	0.16	0.59	0.32	0.32	0.26
Control Delay	12.5	29.9	0.2	15.1	23.8	4.4	37.4	7.8	44.6	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	29.9	0.2	15.1	23.8	4.4	37.4	7.8	44.6	24.1
Queue Length 50th (ft)	6	124	0	58	173	0	114	0	24	10
Queue Length 95th (ft)	13	201	0	104	355	30	#266	46	60	26
Internal Link Dist (ft)		651			693		393			505
Turn Bay Length (ft)	100		135	290		300			225	
Base Capacity (vph)	616	1274	1117	613	1274	1119	463	519	452	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.22	0.02	0.33	0.38	0.10	0.57	0.31	0.11	0.10

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 80.9
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Northwinds Pkwy & Kimball Bridge Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	239	17	190	451	101	45	171	137	40	30	43
Future Volume (vph)	14	239	17	190	451	101	45	171	137	40	30	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1839	1583	1770	3262	
Flt Permitted	0.41	1.00	1.00	0.41	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (perm)	768	1863	1583	755	1863	1583		1839	1583	1770	3262	
Peak-hour factor, PHF	0.65	0.85	0.67	0.95	0.93	0.87	0.67	0.87	0.85	0.79	0.72	0.93
Adj. Flow (vph)	22	281	25	200	485	116	67	197	161	51	42	46
RTOR Reduction (vph)	0	0	17	0	0	69	0	0	124	0	43	0
Lane Group Flow (vph)	22	281	8	200	485	47	0	264	37	51	45	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		6			3			
Actuated Green, G (s)	28.7	26.8	26.8	42.7	34.7	34.7		19.8	19.8	5.9	5.9	
Effective Green, g (s)	28.7	26.8	26.8	42.7	34.7	34.7		19.8	19.8	5.9	5.9	
Actuated g/C Ratio	0.33	0.31	0.31	0.50	0.40	0.40		0.23	0.23	0.07	0.07	
Clearance Time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Vehicle Extension (s)	1.5	5.0	5.0	1.5	5.0	5.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	279	582	495	492	754	640		424	365	121	224	
v/s Ratio Prot	0.00	0.15		c0.05	c0.26			c0.14		c0.03	0.01	
v/s Ratio Perm	0.02		0.00	0.16		0.03			0.02			
v/c Ratio	0.08	0.48	0.02	0.41	0.64	0.07		0.62	0.10	0.42	0.20	
Uniform Delay, d1	19.3	23.8	20.3	12.9	20.5	15.6		29.6	25.9	38.3	37.7	
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	0.0	1.3	0.0	0.2	2.6	0.1		2.0	0.0	0.9	0.2	
Delay (s)	19.3	25.2	20.4	13.1	23.1	15.7		31.6	26.0	39.1	37.8	
Level of Service	B	C	C	B	C	B		C	C	D	D	
Approach Delay (s)		24.4			19.5			29.5			38.3	
Approach LOS		C			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	24.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	85.7	Sum of lost time (s)	23.4
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

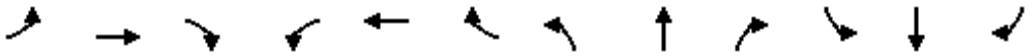
Future “Build” Intersections Analysis

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	388	1590	1618	554	410	1620
Future Volume (vph)	388	1590	1618	554	410	1620
Lane Group Flow (vph)	413	1767	1798	609	466	1653
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	6.0	15.0	15.0	15.0	8.0	
Minimum Split (s)	13.0	28.6	24.6	24.6	14.6	
Total Split (s)	50.0	110.0	60.0	60.0	50.0	
Total Split (%)	31.3%	68.8%	37.5%	37.5%	31.3%	
Yellow Time (s)	4.0	4.6	4.6	4.6	3.6	
All-Red Time (s)	3.0	1.5	1.5	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.1	6.1	6.1	6.6	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	Max	C-Min	C-Min	C-Min	None	
v/c Ratio	0.63	0.66	0.83	0.74	0.81	1.10
Control Delay	63.1	16.0	53.1	18.7	75.7	62.1
Queue Delay	9.1	2.9	0.0	0.0	0.2	0.0
Total Delay	72.1	18.9	53.1	18.7	76.0	62.1
Queue Length 50th (ft)	459	468	504	167	245	~188
Queue Length 95th (ft)	m556	517	552	334	289	#336
Internal Link Dist (ft)		487	857			
Turn Bay Length (ft)					280	420
Base Capacity (vph)	659	2666	2158	821	931	1500
Starvation Cap Reductn	209	763	0	0	0	0
Spillback Cap Reductn	0	0	0	0	92	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.93	0.83	0.74	0.56	1.10

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: GA 400 NB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	388	1590	0	0	1618	554	410	0	1620	0	0	0
Future Volume (vph)	388	1590	0	0	1618	554	410	0	1620	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1500	1900	1900	1900
Total Lost time (s)	7.0	6.1			6.1	6.1	6.6		4.0			
Lane Util. Factor	1.00	0.95			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)	1770	3539			6408	1583	3433		1500			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1770	3539			6408	1583	3433		1500			
Peak-hour factor, PHF	0.94	0.90	0.92	0.92	0.90	0.91	0.88	0.92	0.98	0.92	0.92	0.92
Adj. Flow (vph)	413	1767	0	0	1798	609	466	0	1653	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	288	0	0	0	0	0	0
Lane Group Flow (vph)	413	1767	0	0	1798	321	466	0	1653	0	0	0
Turn Type	Prot	NA			NA	Perm	Prot		Free			
Protected Phases	5	2			6		4					
Permitted Phases						6			Free			
Actuated Green, G (s)	59.7	120.6			53.9	53.9	26.7		160.0			
Effective Green, g (s)	59.7	120.6			53.9	53.9	26.7		160.0			
Actuated g/C Ratio	0.37	0.75			0.34	0.34	0.17		1.00			
Clearance Time (s)	7.0	6.1			6.1	6.1	6.6					
Vehicle Extension (s)	2.5	4.5			4.5	4.5	2.5					
Lane Grp Cap (vph)	660	2667			2158	533	572		1500			
v/s Ratio Prot	0.23	0.50			0.28		0.14					
v/s Ratio Perm						0.20			c1.10			
v/c Ratio	0.63	0.66			0.83	0.60	0.81		1.10			
Uniform Delay, d1	41.0	9.7			48.9	44.1	64.3		80.0			
Progression Factor	1.42	1.47			1.00	1.00	1.00		1.00			
Incremental Delay, d2	2.4	0.7			4.0	5.0	8.5		56.4			
Delay (s)	60.6	14.9			52.9	49.1	72.8		136.4			
Level of Service	E	B			D	D	E		F			
Approach Delay (s)		23.6			51.9			122.4			0.0	
Approach LOS		C			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	65.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

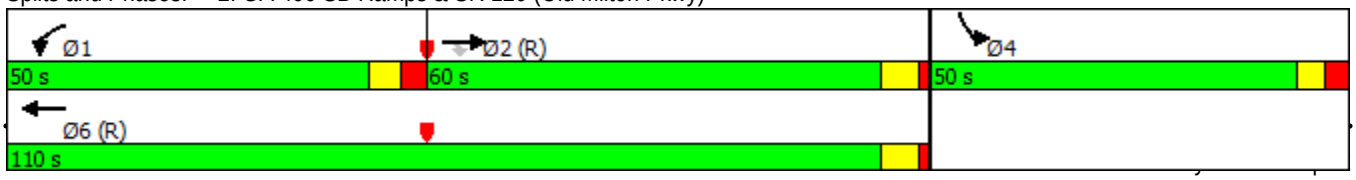
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1254	132	416	1612	724	1525
Future Volume (vph)	1254	132	416	1612	724	1525
Lane Group Flow (vph)	1378	155	533	1771	813	1694
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	15.0	15.0	6.0	15.0	8.0	
Minimum Split (s)	24.5	24.5	13.0	24.5	22.5	
Total Split (s)	60.0	60.0	50.0	110.0	50.0	
Total Split (%)	37.5%	37.5%	31.3%	68.8%	31.3%	
Yellow Time (s)	4.5	4.5	4.0	4.5	3.4	
All-Red Time (s)	1.5	1.5	3.0	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	7.0	6.0	6.4	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	Max	C-Min	Min	
v/c Ratio	0.80	0.24	0.55	0.76	0.91	1.07
Control Delay	39.6	4.3	80.5	31.8	72.4	48.6
Queue Delay	0.0	0.0	0.0	2.6	2.8	0.0
Total Delay	39.6	4.3	80.5	34.4	75.3	48.6
Queue Length 50th (ft)	237	0	304	445	421	~241
Queue Length 95th (ft)	352	26	318	514	497	#501
Internal Link Dist (ft)	1090			487		
Turn Bay Length (ft)		420				300
Base Capacity (vph)	1716	636	966	2345	935	1583
Starvation Cap Reductn	0	0	0	436	0	0
Spillback Cap Reductn	0	0	0	0	57	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.24	0.55	0.93	0.93	1.07

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: GA 400 SB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1254	132	416	1612	0	0	0	0	724	0	1525
Future Volume (veh/h)	0	1254	132	416	1612	0	0	0	0	724	0	1525
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	0	1863
Adj Flow Rate, veh/h	0	1378	0	533	1771	0				813	0	0
Adj No. of Lanes	0	3	1	2	2	0				2	0	1
Peak Hour Factor	0.92	0.91	0.85	0.78	0.91	0.92				0.89	0.92	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1812	564	925	2367	0				873	0	402
Arrive On Green	0.00	0.71	0.00	0.54	1.00	0.00				0.25	0.00	0.00
Sat Flow, veh/h	0	5253	1583	3442	3632	0				3442	0	1583
Grp Volume(v), veh/h	0	1378	0	533	1771	0				813	0	0
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1721	1770	0				1721	0	1583
Q Serve(g_s), s	0.0	27.2	0.0	16.6	0.0	0.0				36.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	27.2	0.0	16.6	0.0	0.0				36.9	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1812	564	925	2367	0				873	0	402
V/C Ratio(X)	0.00	0.76	0.00	0.58	0.75	0.00				0.93	0.00	0.00
Avail Cap(c_a), veh/h	0	1812	564	925	2367	0				938	0	431
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.88	0.00	0.45	0.45	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.7	0.0	30.9	0.0	0.0				58.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.7	0.0	1.2	1.0	0.0				14.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	18.5	0.0	11.1	0.6	0.0				26.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	21.4	0.0	32.1	1.0	0.0				73.2	0.0	0.0
LnGrp LOS		C		C	A					E		
Approach Vol, veh/h		1378			2304						813	
Approach Delay, s/veh		21.4			8.2						73.2	
Approach LOS		C			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	50.0	63.0		47.0		113.0		
Change Period (Y+Rc), s	7.0	6.0		6.4		6.0		
Max Green Setting (Gmax), s	43.0	54.0		43.6		104.0		
Max Q Clear Time (g_c+I1), s	18.6	29.2		38.9		2.0		
Green Ext Time (p_c), s	3.5	24.8		1.7		101.5		

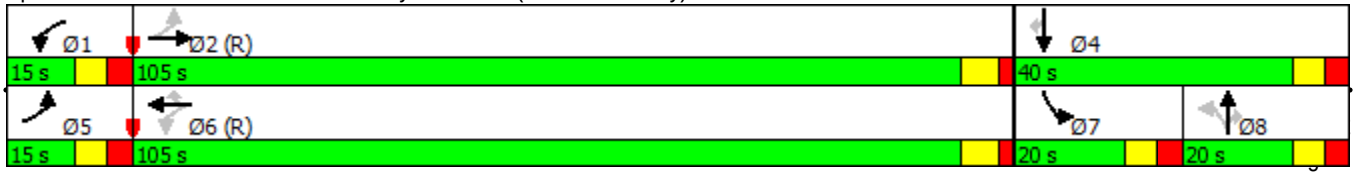
Intersection Summary	
HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	1434	121	724	2293	111	33	11	93	47	11	27
Future Volume (vph)	36	1434	121	724	2293	111	33	11	93	47	11	27
Lane Group Flow (vph)	54	1576	136	883	2439	132	79	16	152	63	24	42
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2		Free	6		6	8		8			4
Detector Phase	5	2		1	6	6	8	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0	15.0	8.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.0	30.7		13.0	36.7	36.7	42.5	42.5	42.5	13.0	44.5	44.5
Total Split (s)	15.0	105.0		15.0	105.0	105.0	20.0	20.0	20.0	20.0	40.0	40.0
Total Split (%)	9.4%	65.6%		9.4%	65.6%	65.6%	12.5%	12.5%	12.5%	12.5%	25.0%	25.0%
Yellow Time (s)	4.0	4.7		4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	1.8		3.0	1.8	1.8	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	6.5		7.0	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.44	0.47	0.09	3.71	0.70	0.12	0.76	0.11	0.60	0.35	0.08	0.14
Control Delay	44.4	6.8	0.1	1235.5	14.9	1.7	110.2	70.8	21.4	78.0	54.9	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.4	6.8	0.1	1235.5	14.9	1.7	110.2	70.8	21.4	78.0	54.9	3.2
Queue Length 50th (ft)	14	89	0	~1693	484	12	81	15	8	33	21	0
Queue Length 95th (ft)	35	120	0	m#1672	m647	m15	m60	m28	m1	49	25	0
Internal Link Dist (ft)		703			1090			604			273	
Turn Bay Length (ft)	235			330		120	365			180		115
Base Capacity (vph)	135	3388	1583	238	3505	1129	112	151	261	278	384	383
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.47	0.09	3.71	0.70	0.12	0.71	0.11	0.58	0.23	0.06	0.11

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Northwinds Pkwy & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1434	121	724	2293	111	33	11	93	47	11	27
Future Volume (veh/h)	36	1434	121	724	2293	111	33	11	93	47	11	27
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	54	1576	0	883	2439	0	79	16	0	63	24	42
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	2	1	1
Peak Hour Factor	0.67	0.91	0.89	0.82	0.94	0.84	0.42	0.69	0.61	0.75	0.46	0.65
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	3414	1063	351	3495	1088	140	133	113	121	280	238
Arrive On Green	0.07	1.00	0.00	0.10	1.00	0.00	0.07	0.07	0.00	0.04	0.15	0.15
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1330	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	54	1576	0	883	2439	0	79	16	0	63	24	42
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1330	1863	1583	1721	1863	1583
Q Serve(g_s), s	1.5	0.0	0.0	8.0	0.0	0.0	9.4	1.3	0.0	2.9	1.8	3.7
Cycle Q Clear(g_c), s	1.5	0.0	0.0	8.0	0.0	0.0	9.4	1.3	0.0	2.9	1.8	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	199	3414	1063	351	3495	1088	140	133	113	121	280	238
V/C Ratio(X)	0.27	0.46	0.00	2.51	0.70	0.00	0.56	0.12	0.00	0.52	0.09	0.18
Avail Cap(c_a), veh/h	227	3414	1063	351	3495	1088	153	151	129	280	384	327
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.00	0.29	0.29	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.9	0.0	0.0	20.3	0.0	0.0	73.3	69.6	0.0	75.9	58.5	59.3
Incr Delay (d2), s/veh	0.7	0.4	0.0	684.1	0.3	0.0	3.9	0.4	0.0	3.4	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.2	0.0	135.5	0.2	0.0	6.5	1.2	0.0	2.6	1.7	3.0
LnGrp Delay(d),s/veh	7.6	0.4	0.0	704.3	0.3	0.0	77.2	70.0	0.0	79.3	58.6	59.7
LnGrp LOS	A	A		F	A		E	E		E	E	E
Approach Vol, veh/h		1630			3322			95			129	
Approach Delay, s/veh		0.6			187.5			76.0			69.0	
Approach LOS		A			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	113.9		31.1	12.5	116.5	12.6	18.4
Change Period (Y+Rc), s	7.0	* 6.5		7.0	7.0	* 6.5	7.0	7.0
Max Green Setting (Gmax), s	8.0	* 99		33.0	8.0	* 99	13.0	13.0
Max Q Clear Time (g_c+I1), s	10.0	2.0		5.7	3.5	2.0	4.9	11.4
Green Ext Time (p_c), s	0.0	96.0		0.5	0.0	96.0	0.1	0.1

Intersection Summary			
HCM 2010 Ctrl Delay		123.6	
HCM 2010 LOS		F	

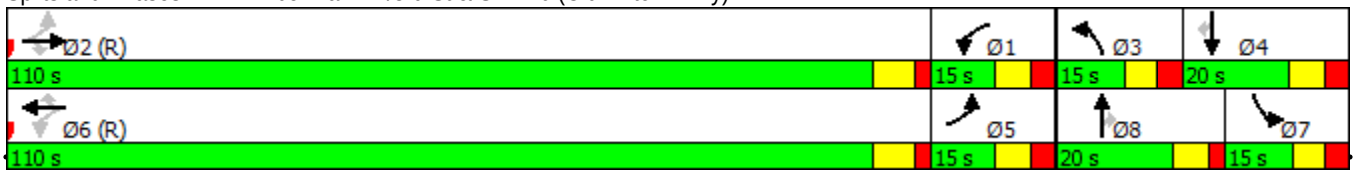
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	1547	60	160	2193	27	27	4	11	79	8	31
Future Volume (vph)	82	1547	60	160	2193	27	27	4	11	79	8	31
Lane Group Flow (vph)	95	1595	91	216	2284	42	40	8	29	95	12	41
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	6.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.4	34.8	34.8	13.3	36.8	36.8	13.0	51.3	51.3	13.0	48.3	48.3
Total Split (s)	15.0	110.0	110.0	15.0	110.0	110.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	9.4%	68.8%	68.8%	9.4%	68.8%	68.8%	9.4%	12.5%	12.5%	9.4%	12.5%	12.5%
Yellow Time (s)	4.4	4.8	4.8	4.3	4.8	4.8	4.0	4.3	4.3	4.0	4.3	4.3
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	7.0	6.3	6.3	7.0	7.3	7.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.66	0.45	0.08	0.89	0.65	0.04	0.26	0.09	0.15	0.52	0.13	0.21
Control Delay	59.9	11.8	0.5	54.9	2.6	0.0	77.7	74.8	1.5	83.8	75.8	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	11.8	0.5	54.9	2.7	0.0	77.7	74.8	1.5	83.8	75.8	2.4
Queue Length 50th (ft)	34	269	0	90	39	0	21	8	0	51	12	0
Queue Length 95th (ft)	#101	305	0	#123	42	m0	31	15	0	76	27	0
Internal Link Dist (ft)		996			703			362			282	
Turn Bay Length (ft)	340		225	245		175	70					80
Base Capacity (vph)	143	3532	1138	243	3532	1138	171	159	250	184	147	239
Starvation Cap Reductn	0	0	0	0	161	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.45	0.08	0.89	0.68	0.04	0.23	0.05	0.12	0.52	0.08	0.17

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 50 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amber Park Dr/3rd St & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1547	60	160	2193	27	27	4	11	79	8	31
Future Volume (veh/h)	82	1547	60	160	2193	27	27	4	11	79	8	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	95	1595	91	216	2284	42	40	8	0	95	12	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	2	1	1
Peak Hour Factor	0.86	0.97	0.66	0.74	0.96	0.65	0.67	0.50	0.38	0.83	0.67	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	3061	953	412	3230	1006	107	87	74	136	94	80
Arrive On Green	0.11	0.60	0.60	0.28	1.00	1.00	0.03	0.05	0.00	0.04	0.05	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	95	1595	91	216	2284	42	40	8	0	95	12	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	0.0	29.1	3.9	0.0	0.0	0.0	1.8	0.7	0.0	4.4	1.0	0.0
Cycle Q Clear(g_c), s	0.0	29.1	3.9	0.0	0.0	0.0	1.8	0.7	0.0	4.4	1.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	3061	953	412	3230	1006	107	87	74	136	94	80
V/C Ratio(X)	0.29	0.52	0.10	0.52	0.71	0.04	0.37	0.09	0.00	0.70	0.13	0.00
Avail Cap(c_a), veh/h	325	3280	1021	412	3280	1021	172	159	136	172	148	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.7	18.5	13.5	31.1	0.0	0.0	76.0	73.0	0.0	75.9	72.6	0.0
Incr Delay (d2), s/veh	0.5	0.6	0.2	0.8	0.9	0.1	2.1	0.5	0.0	8.6	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	19.9	3.1	10.5	0.5	0.0	1.6	0.6	0.0	4.0	0.9	0.0
LnGrp Delay(d),s/veh	18.2	19.1	13.7	31.9	0.9	0.1	78.1	73.5	0.0	84.5	73.2	0.0
LnGrp LOS	B	B	B	C	A	A	E	E		F	E	
Approach Vol, veh/h		1781			2542			48			107	
Approach Delay, s/veh		18.8			3.5			77.3			83.3	
Approach LOS		B			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.5	103.1	12.0	15.4	24.2	108.4	13.6	13.7
Change Period (Y+Rc), s	7.4	* 6.8	7.0	7.3	7.4	6.8	7.3	* 6.3
Max Green Setting (Gmax), s	7.7	* 1E2	8.0	12.7	7.6	103.2	8.0	* 14
Max Q Clear Time (g_c+I1), s	2.0	31.1	3.8	3.0	2.0	2.0	6.4	2.7
Green Ext Time (p_c), s	0.5	65.2	0.0	0.2	0.2	99.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

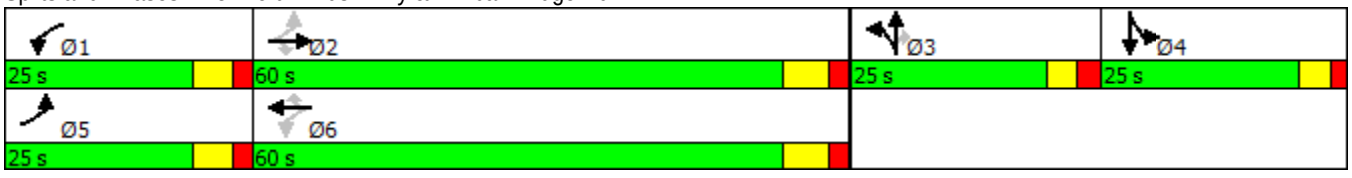
Notes

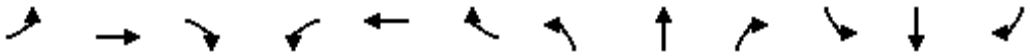
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	11	503	67	260	233	65	127	132	234	196
Future Volume (vph)	11	503	67	260	233	65	127	132	234	196
Lane Group Flow (vph)	16	565	88	283	315	87	217	171	257	322
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Split	NA
Protected Phases	5	2		1	6		3		4	4
Permitted Phases	2		2	6		6		3		
Detector Phase	5	2	2	1	6	6	3	3	4	4
Switch Phase										
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	41.8	41.8	10.5	44.8	44.8	40.4	40.4	40.1	40.1
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0	25.0	25.0	25.0	25.0
Total Split (%)	18.5%	44.4%	44.4%	18.5%	44.4%	44.4%	18.5%	18.5%	18.5%	18.5%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	3.1	3.1	3.2	3.2
All-Red Time (s)	2.1	2.3	2.3	2.1	2.3	2.3	2.3	2.3	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.8	6.8	6.1	6.8	6.8	5.4	5.4	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	Min	Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.04	0.84	0.14	0.83	0.34	0.10	0.81	0.46	0.85	0.53
Control Delay	13.6	47.7	3.1	38.9	19.7	2.0	74.4	11.6	75.1	48.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	47.7	3.1	38.9	19.7	2.0	74.4	11.6	75.1	48.3
Queue Length 50th (ft)	6	404	0	117	134	0	165	0	201	115
Queue Length 95th (ft)	12	568	10	#214	183	7	205	36	#410	155
Internal Link Dist (ft)		651			693		393			505
Turn Bay Length (ft)	100		135	290		300			225	
Base Capacity (vph)	668	856	786	402	971	877	312	410	304	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.66	0.11	0.70	0.32	0.10	0.70	0.42	0.85	0.53

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 118.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Northwinds Pkwy & Kimball Bridge Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	503	67	260	233	65	22	127	132	234	196	60
Future Volume (vph)	11	503	67	260	233	65	22	127	132	234	196	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1849	1583	1770	3422	
Flt Permitted	0.57	1.00	1.00	0.16	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (perm)	1060	1863	1583	303	1863	1583		1849	1583	1770	3422	
Peak-hour factor, PHF	0.69	0.89	0.76	0.92	0.74	0.75	0.66	0.69	0.77	0.91	0.78	0.85
Adj. Flow (vph)	16	565	88	283	315	87	33	184	171	257	251	71
RTOR Reduction (vph)	0	0	54	0	0	45	0	0	147	0	19	0
Lane Group Flow (vph)	16	565	34	283	315	42	0	217	24	257	303	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		6			3			
Actuated Green, G (s)	48.3	46.5	46.5	67.0	59.1	59.1		17.1	17.1	20.3	20.3	
Effective Green, g (s)	48.3	46.5	46.5	67.0	59.1	59.1		17.1	17.1	20.3	20.3	
Actuated g/C Ratio	0.40	0.38	0.38	0.55	0.49	0.49		0.14	0.14	0.17	0.17	
Clearance Time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Vehicle Extension (s)	1.5	5.0	5.0	1.5	5.0	5.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	431	711	604	340	904	768		259	222	295	570	
v/s Ratio Prot	0.00	0.30		c0.10	0.17			c0.12		c0.15	0.09	
v/s Ratio Perm	0.01		0.02	c0.36		0.03			0.02			
v/c Ratio	0.04	0.79	0.06	0.83	0.35	0.06		0.84	0.11	0.87	0.53	
Uniform Delay, d1	22.3	33.4	23.7	21.7	19.4	16.5		50.9	45.6	49.4	46.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.01	1.01	
Incremental Delay, d2	0.0	7.0	0.1	15.2	0.5	0.1		19.6	0.1	22.7	0.5	
Delay (s)	22.3	40.4	23.8	36.8	19.9	16.6		70.6	45.7	72.7	47.4	
Level of Service	C	D	C	D	B	B		E	D	E	D	
Approach Delay (s)		37.8			26.5			59.6			58.6	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	121.7	Sum of lost time (s)	23.4
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	65	0	24	0	0	0	26	104	74	0	33	0	524	134
Future Vol, veh/h	65	0	24	0	0	0	26	104	74	0	33	0	524	134
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	100	-	-	-	-	245	-	-	-	270	-	-
Veh in Median Storage, #	-	1	-	-	-	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	69	92	92	92	46	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	0	26	0	0	0	28	113	107	0	36	0	1139	146

Major/Minor	Minor2					Major1				Major2			
Conflicting Flow All	1620	-	642			937	1285	0	-	78	107	0	0
Stage 1	1284	-	-			-	-	-	-	-	-	-	-
Stage 2	336	-	-			-	-	-	-	-	-	-	-
Critical Hdwy	6.84	-	6.94			6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-			-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-			-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32			2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	94	0	417			364	536	-	0	1277	1482	-	-
Stage 1	224	0	-			-	-	-	0	-	-	-	-
Stage 2	696	0	-			-	-	-	0	-	-	-	-
Platoon blocked, %								-				-	-
Mov Cap-1 Maneuver	94	0	417			482	482	-	-	1277	1277	-	-
Mov Cap-2 Maneuver	182	0	-			-	-	-	-	-	-	-	-
Stage 1	224	0	-			-	-	-	-	-	-	-	-
Stage 2	696	0	-			-	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.7	8.8	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBL	SBT	SBR
Capacity (veh/h)	482	-	182	417	1277	-	-
HCM Lane V/C Ratio	0.293	-	0.388	0.063	0.028	-	-
HCM Control Delay (s)	15.5	-	36.8	14.2	7.9	-	-
HCM Lane LOS	C	-	E	B	A	-	-
HCM 95th %tile Q(veh)	1.2	-	1.7	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	47	0	172	643	75
Future Vol, veh/h	0	47	0	172	643	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	69	46	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	51	0	249	1398	82

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	699	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	382	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	382	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	382	-
HCM Lane V/C Ratio	-	0.134	-
HCM Control Delay (s)	-	15.9	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	0.5	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	0	204	481	93
Future Vol, veh/h	0	10	0	204	481	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	69	46	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	0	296	1046	101

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	523	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	499	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	499	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

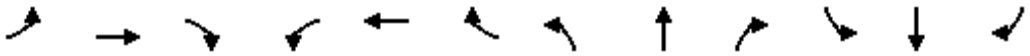
Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	499	-
HCM Lane V/C Ratio	-	0.022	-
HCM Control Delay (s)	-	12.4	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	Ø5	Ø9
Lane Configurations								
Traffic Volume (vph)	837	1240	2297	1146	398	1248		
Future Volume (vph)	837	1240	2297	1146	398	1248		
Lane Group Flow (vph)	900	1378	2524	1246	415	1328		
Turn Type	Prot	NA	NA	Perm	Prot	Free		
Protected Phases	5 9	2	6		4		5	9
Permitted Phases				6		Free		
Detector Phase	5 9	2	6	6	4	4		
Switch Phase								
Minimum Initial (s)		15.0	15.0	15.0	8.0		6.0	6.0
Minimum Split (s)		28.6	24.6	24.6	14.6		13.0	12.6
Total Split (s)		140.0	75.0	75.0	20.0		50.0	15.0
Total Split (%)		87.5%	46.9%	46.9%	12.5%		31%	9%
Yellow Time (s)		4.6	4.6	4.6	3.6		4.0	4.6
All-Red Time (s)		1.5	1.5	1.5	3.0		3.0	1.5
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			
Total Lost Time (s)		6.1	6.1	6.1	6.6			
Lead/Lag			Lag	Lag			Lead	
Lead-Lag Optimize?								
Recall Mode		C-Min	C-Min	C-Min	None		Max	Max
v/c Ratio	1.60	0.47	0.91	1.52	1.45	0.89		
Control Delay	315.2	0.5	49.0	267.4	267.1	8.5		
Queue Delay	0.2	0.3	35.3	0.0	0.5	0.0		
Total Delay	315.4	0.8	84.4	267.4	267.7	8.5		
Queue Length 50th (ft)	~1341	3	715	~1670	~303	0		
Queue Length 95th (ft)	m#1390	m3	763	#1940	#417	0		
Internal Link Dist (ft)		487	857					
Turn Bay Length (ft)					280	420		
Base Capacity (vph)	564	2961	2759	820	287	1500		
Starvation Cap Reductn	11	831	0	0	0	0		
Spillback Cap Reductn	0	0	414	0	12	0		
Storage Cap Reductn	0	0	0	0	0	0		
Reduced v/c Ratio	1.63	0.65	1.08	1.52	1.51	0.89		

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 150 (94%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: GA 400 NB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	837	1240	0	0	2297	1146	398	0	1248	0	0	0
Future Volume (vph)	837	1240	0	0	2297	1146	398	0	1248	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.1			6.1	6.1	6.6		4.0			
Lane Util. Factor	1.00	0.95			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)	1770	3539			6408	1583	3433		1500			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1770	3539			6408	1583	3433		1500			
Peak-hour factor, PHF	0.93	0.90	0.92	0.92	0.91	0.92	0.96	0.92	0.94	0.92	0.92	0.92
Adj. Flow (vph)	900	1378	0	0	2524	1246	415	0	1328	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	138	0	0	0	0	0	0
Lane Group Flow (vph)	900	1378	0	0	2524	1108	415	0	1328	0	0	0
Turn Type	Prot	NA			NA	Perm	Prot		Free			
Protected Phases	5 9	2			6		4					
Permitted Phases						6			Free			
Actuated Green, G (s)	51.9	133.9			68.9	68.9	13.4		160.0			
Effective Green, g (s)	51.9	133.9			68.9	68.9	13.4		160.0			
Actuated g/C Ratio	0.32	0.84			0.43	0.43	0.08		1.00			
Clearance Time (s)		6.1			6.1	6.1	6.6					
Vehicle Extension (s)		4.5			4.5	4.5	2.5					
Lane Grp Cap (vph)	574	2961			2759	681	287		1500			
v/s Ratio Prot	c0.51	0.39			0.39		c0.12					
v/s Ratio Perm						c0.70			0.89			
v/c Ratio	1.57	0.47			0.91	1.63	1.45		0.89			
Uniform Delay, d1	54.0	3.5			42.8	45.5	73.3		0.0			
Progression Factor	1.53	0.08			1.00	1.00	1.00		1.00			
Incremental Delay, d2	258.5	0.2			6.1	288.6	219.3		8.0			
Delay (s)	341.3	0.5			48.8	334.2	292.6		8.0			
Level of Service	F	A			D	F	F		A			
Approach Delay (s)		135.1			143.1			75.8			0.0	
Approach LOS		F			F			E			A	

Intersection Summary			
HCM 2000 Control Delay	125.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.58		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	132.1%	ICU Level of Service	H
Analysis Period (min)	15		

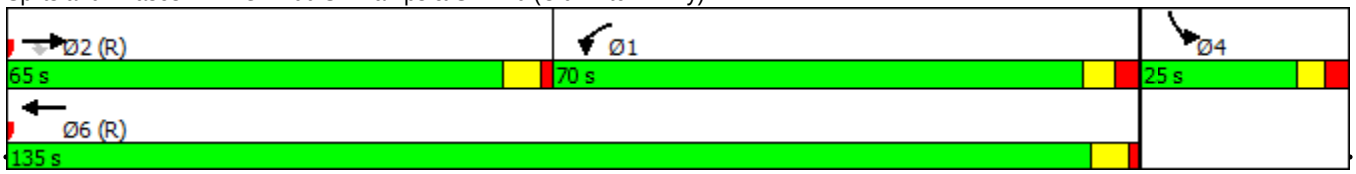
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1769	518	1132	1572	268	764
Future Volume (vph)	1769	518	1132	1572	268	764
Lane Group Flow (vph)	1902	576	1272	1672	308	910
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	15.0	15.0	6.0	15.0	8.0	
Minimum Split (s)	24.5	24.5	13.0	24.5	22.5	
Total Split (s)	65.0	65.0	70.0	135.0	25.0	
Total Split (%)	40.6%	40.6%	43.8%	84.4%	15.6%	
Yellow Time (s)	4.5	4.5	4.0	4.5	3.4	
All-Red Time (s)	1.5	1.5	3.0	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	7.0	6.0	6.4	
Lead/Lag	Lead	Lead	Lag			
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	Max	C-Min	Min	
v/c Ratio	1.00	0.76	0.94	0.58	0.81	0.57
Control Delay	59.2	29.0	44.7	1.2	86.5	1.5
Queue Delay	37.3	0.0	45.1	1.1	11.6	0.0
Total Delay	96.4	29.0	89.8	2.3	98.1	1.5
Queue Length 50th (ft)	~710	338	728	21	163	0
Queue Length 95th (ft)	m578	m301	m750	m0	211	0
Internal Link Dist (ft)	1090			487		
Turn Bay Length (ft)		420				300
Base Capacity (vph)	1903	754	1351	2873	399	1583
Starvation Cap Reductn	0	0	387	871	0	0
Spillback Cap Reductn	304	0	0	0	71	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.19	0.76	1.32	0.84	0.94	0.57

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 145 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: GA 400 SB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1769	518	1132	1572	0	0	0	0	268	0	764
Future Volume (veh/h)	0	1769	518	1132	1572	0	0	0	0	268	0	764
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	0	1863
Adj Flow Rate, veh/h	0	1902	576	1272	1672	0				308	0	0
Adj No. of Lanes	0	3	1	2	2	0				2	0	1
Peak Hour Factor	0.92	0.93	0.90	0.89	0.94	0.92				0.87	0.92	0.84
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1875	584	1402	2880	0				353	0	163
Arrive On Green	0.00	0.12	0.12	0.54	1.00	0.00				0.10	0.00	0.00
Sat Flow, veh/h	0	5253	1583	3442	3632	0				3442	0	1583
Grp Volume(v), veh/h	0	1902	576	1272	1672	0				308	0	0
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1721	1770	0				1721	0	1583
Q Serve(g_s), s	0.0	59.0	58.1	53.3	0.0	0.0				14.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	59.0	58.1	53.3	0.0	0.0				14.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1875	584	1402	2880	0				353	0	163
V/C Ratio(X)	0.00	1.01	0.99	0.91	0.58	0.00				0.87	0.00	0.00
Avail Cap(c_a), veh/h	0	1875	584	1402	2880	0				400	0	184
HCM Platoon Ratio	1.00	0.33	0.33	1.33	1.33	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.09	0.09	0.11	0.11	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	70.3	69.9	33.9	0.0	0.0				70.8	0.0	0.0
Incr Delay (d2), s/veh	0.0	10.3	8.5	1.4	0.1	0.0				17.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	52.1	29.4	28.3	0.1	0.0				12.1	0.0	0.0
LnGrp Delay(d),s/veh	0.0	80.5	78.3	35.3	0.1	0.0				87.9	0.0	0.0
LnGrp LOS		F	E	D	A					F		
Approach Vol, veh/h		2478			2944						308	
Approach Delay, s/veh		80.0			15.3						87.9	
Approach LOS		F			B						F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	72.2	65.0		22.8		137.2		
Change Period (Y+Rc), s	7.0	6.0		6.4		* 7		
Max Green Setting (Gmax), s	63.0	59.0		18.6		* 1.3E2		
Max Q Clear Time (g_c+I1), s	55.3	61.0		16.1		2.0		
Green Ext Time (p_c), s	7.7	0.0		0.3		122.3		

Intersection Summary	
HCM 2010 Ctrl Delay	47.2
HCM 2010 LOS	D

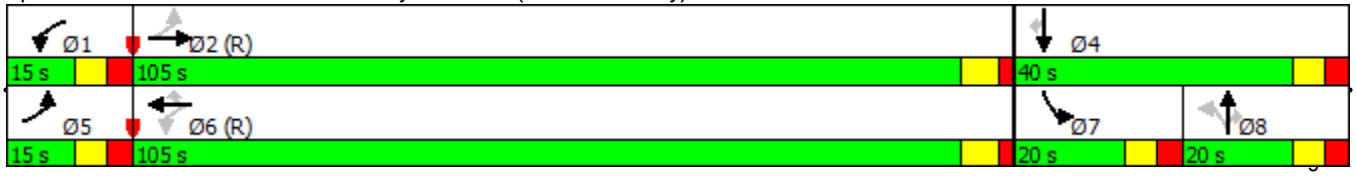
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	1470	74	271	1764	246	118	70	401	437	28	67
Future Volume (vph)	145	1470	74	271	1764	246	118	70	401	437	28	67
Lane Group Flow (vph)	175	1652	107	327	1938	259	231	96	483	508	50	75
Turn Type	pm+pt	NA	Free	pm+pt	NA	Perm	Perm	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6			8		7	4	
Permitted Phases	2		Free	6		6	8		8			4
Detector Phase	5	2		1	6	6	8	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0		6.0	15.0	15.0	8.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.0	30.7		13.0	36.7	36.7	42.5	42.5	42.5	13.0	44.5	44.5
Total Split (s)	15.0	105.0		15.0	105.0	105.0	20.0	20.0	20.0	20.0	40.0	40.0
Total Split (%)	9.4%	65.6%		9.4%	65.6%	65.6%	12.5%	12.5%	12.5%	12.5%	25.0%	25.0%
Yellow Time (s)	4.0	4.7		4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	1.8		3.0	1.8	1.8	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	6.5		7.0	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?												
Recall Mode	None	C-Min		None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	1.06	0.53	0.07	1.59	0.62	0.25	2.12	0.64	2.04	1.83	0.13	0.19
Control Delay	127.2	10.0	0.1	307.6	37.6	17.3	564.4	90.3	505.3	423.0	53.0	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	127.2	10.0	0.1	307.6	37.6	17.3	564.4	90.3	505.3	423.0	53.0	11.5
Queue Length 50th (ft)	~112	285	0	~394	701	149	~385	100	~674	~411	43	0
Queue Length 95th (ft)	m#229	m143	m0	#521	750	220	m#267	m128	m#777	#501	51	45
Internal Link Dist (ft)		703			1090			604			273	
Turn Bay Length (ft)	235			330		120	365			180		115
Base Capacity (vph)	165	3130	1583	206	3130	1022	109	151	237	278	384	386
Starvation Cap Reductn	0	214	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.57	0.07	1.59	0.62	0.25	2.12	0.64	2.04	1.83	0.13	0.19

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 75 (47%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Northwinds Pkwy & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	1470	74	271	1764	246	118	70	401	437	28	67
Future Volume (veh/h)	145	1470	74	271	1764	246	118	70	401	437	28	67
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	175	1652	0	327	1938	0	231	96	0	508	50	75
Adj No. of Lanes	1	3	1	1	3	1	1	1	1	2	1	1
Peak Hour Factor	0.83	0.89	0.69	0.83	0.91	0.95	0.51	0.73	0.83	0.86	0.56	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	220	3131	975	319	3131	975	147	151	129	280	384	327
Arrive On Green	0.10	1.00	0.00	0.05	0.62	0.00	0.08	0.08	0.00	0.08	0.21	0.21
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	1261	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	175	1652	0	327	1938	0	231	96	0	508	50	75
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1261	1863	1583	1721	1863	1583
Q Serve(g_s), s	6.2	0.0	0.0	8.0	37.9	0.0	13.0	8.0	0.0	13.0	3.5	6.3
Cycle Q Clear(g_c), s	6.2	0.0	0.0	8.0	37.9	0.0	13.0	8.0	0.0	13.0	3.5	6.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	220	3131	975	319	3131	975	147	151	129	280	384	327
V/C Ratio(X)	0.80	0.53	0.00	1.03	0.62	0.00	1.57	0.63	0.00	1.82	0.13	0.23
Avail Cap(c_a), veh/h	220	3131	975	319	3131	975	147	151	129	280	384	327
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.00	0.79	0.79	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	0.0	22.9	19.1	0.0	75.5	71.2	0.0	73.5	51.8	52.9
Incr Delay (d2), s/veh	15.6	0.5	0.0	51.3	0.7	0.0	285.2	8.4	0.0	381.3	0.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.0	0.3	0.0	26.5	23.9	0.0	32.7	7.9	0.0	37.8	3.3	5.0
LnGrp Delay(d),s/veh	38.9	0.5	0.0	74.2	19.8	0.0	360.7	79.6	0.0	454.8	51.9	53.3
LnGrp LOS	D	A		F	B		F	E		F	D	D
Approach Vol, veh/h		1827			2265			327			633	
Approach Delay, s/veh		4.2			27.7			278.2			375.4	
Approach LOS		A			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	105.0		40.0	15.0	105.0	20.0	20.0
Change Period (Y+Rc), s	7.0	* 6.5		7.0	7.0	* 6.5	7.0	7.0
Max Green Setting (Gmax), s	8.0	* 99		33.0	8.0	* 99	13.0	13.0
Max Q Clear Time (g_c+I1), s	10.0	2.0		8.3	8.2	39.9	15.0	15.0
Green Ext Time (p_c), s	0.0	96.0		1.7	0.0	58.5	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		79.0
HCM 2010 LOS		E

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	1396	29	43	1766	131	69	19	113	154	5	61
Future Volume (vph)	193	1396	29	43	1766	131	69	19	113	154	5	61
Lane Group Flow (vph)	233	1586	48	47	2007	154	105	25	127	179	8	70
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	6.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.4	34.8	34.8	13.3	36.8	36.8	13.0	51.3	51.3	13.0	48.3	48.3
Total Split (s)	15.0	110.0	110.0	15.0	110.0	110.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	9.4%	68.8%	68.8%	9.4%	68.8%	68.8%	9.4%	12.5%	12.5%	9.4%	12.5%	12.5%
Yellow Time (s)	4.4	4.8	4.8	4.3	4.8	4.8	4.0	4.3	4.3	4.0	4.3	4.3
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	7.0	6.3	6.3	7.0	7.3	7.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	1.39	0.45	0.04	0.20	0.59	0.14	0.62	0.24	0.61	0.98	0.08	0.34
Control Delay	241.8	12.3	0.1	2.8	3.4	0.5	90.9	76.6	23.8	133.6	72.4	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	241.8	12.3	0.1	2.8	3.4	0.5	90.9	76.6	23.8	133.6	72.4	4.6
Queue Length 50th (ft)	~232	270	0	4	113	4	56	26	1	97	8	0
Queue Length 95th (ft)	#368	317	0	m9	m117	m7	65	48	66	#175	19	0
Internal Link Dist (ft)		996			703			362			282	
Turn Bay Length (ft)	340		225	245		175	70					80
Base Capacity (vph)	168	3501	1130	237	3406	1102	171	159	250	183	147	239
Starvation Cap Reductn	0	0	0	0	152	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.39	0.45	0.04	0.20	0.62	0.14	0.61	0.16	0.51	0.98	0.05	0.29

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 70 (44%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amber Park Dr/3rd St & SR 120 (Old Milton Pkwy)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	1396	29	43	1766	131	69	19	113	154	5	61
Future Volume (veh/h)	193	1396	29	43	1766	131	69	19	113	154	5	61
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	233	1586	48	47	2007	154	105	25	0	179	8	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	2	1	1
Peak Hour Factor	0.83	0.88	0.60	0.92	0.88	0.85	0.66	0.75	0.89	0.86	0.62	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	3045	948	399	3168	986	146	93	79	172	99	84
Arrive On Green	0.10	0.60	0.60	0.25	1.00	1.00	0.04	0.05	0.00	0.05	0.05	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	233	1586	48	47	2007	154	105	25	0	179	8	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	5.6	29.1	2.0	0.0	0.0	0.0	4.8	2.1	0.0	8.0	0.7	0.0
Cycle Q Clear(g_c), s	5.6	29.1	2.0	0.0	0.0	0.0	4.8	2.1	0.0	8.0	0.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	338	3045	948	399	3168	986	146	93	79	172	99	84
V/C Ratio(X)	0.69	0.52	0.05	0.12	0.63	0.16	0.72	0.27	0.00	1.04	0.08	0.00
Avail Cap(c_a), veh/h	338	3280	1021	399	3280	1021	172	159	136	172	148	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.56	0.56	0.56	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.4	18.7	13.3	16.3	0.0	0.0	75.7	73.2	0.0	76.0	72.0	0.0
Incr Delay (d2), s/veh	5.8	0.6	0.1	0.1	0.6	0.2	11.2	1.5	0.0	79.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.3	19.8	1.6	1.7	0.3	0.1	4.6	2.0	0.0	10.3	0.6	0.0
LnGrp Delay(d),s/veh	48.2	19.3	13.4	16.4	0.6	0.2	86.9	74.7	0.0	155.7	72.4	0.0
LnGrp LOS	D	B	B	B	A	A	F	E		F	E	
Approach Vol, veh/h		1867			2208			130			187	
Approach Delay, s/veh		22.8			0.9			84.6			152.2	
Approach LOS		C			A			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.8	102.6	13.8	15.8	23.9	106.5	15.3	14.3
Change Period (Y+Rc), s	7.4	* 6.8	7.0	7.3	7.4	6.8	7.3	* 6.3
Max Green Setting (Gmax), s	7.7	* 1E2	8.0	12.7	7.6	103.2	8.0	* 14
Max Q Clear Time (g_c+I1), s	2.0	31.1	6.8	2.7	7.6	2.0	10.0	4.1
Green Ext Time (p_c), s	0.4	64.7	0.0	0.5	0.0	97.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.1
HCM 2010 LOS	B

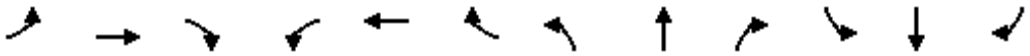
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	239	17	190	451	118	213	137	75	117
Future Volume (vph)	14	239	17	190	451	118	213	137	75	117
Lane Group Flow (vph)	22	281	25	200	485	136	312	161	95	209
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Split	NA
Protected Phases	5	2		1	6		3		4	4
Permitted Phases	2		2	6		6		3		
Detector Phase	5	2	2	1	6	6	3	3	4	4
Switch Phase										
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	41.8	41.8	10.5	44.8	44.8	40.4	40.4	40.1	40.1
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0	25.0	25.0	25.0	25.0
Total Split (%)	18.5%	44.4%	44.4%	18.5%	44.4%	44.4%	18.5%	18.5%	18.5%	18.5%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	3.1	3.1	3.2	3.2
All-Red Time (s)	2.1	2.3	2.3	2.1	2.3	2.3	2.3	2.3	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.8	6.8	6.1	6.8	6.8	5.4	5.4	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	Min	Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.07	0.57	0.05	0.44	0.64	0.19	0.74	0.33	0.46	0.50
Control Delay	14.1	33.1	0.2	17.3	26.7	4.3	47.3	8.4	47.0	38.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	33.1	0.2	17.3	26.7	4.3	47.3	8.4	47.0	38.8
Queue Length 50th (ft)	6	131	0	62	185	0	148	0	47	48
Queue Length 95th (ft)	14	221	0	117	387	33	#386	49	m100	79
Internal Link Dist (ft)		651			693		393			505
Turn Bay Length (ft)	100		135	290		300			225	
Base Capacity (vph)	562	1154	1023	565	1154	1032	420	485	410	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.24	0.02	0.35	0.42	0.13	0.74	0.33	0.23	0.26

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 88.3
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Northwinds Pkwy & Kimball Bridge Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	239	17	190	451	118	45	213	137	75	117	43
Future Volume (vph)	14	239	17	190	451	118	45	213	137	75	117	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1843	1583	1770	3422	
Flt Permitted	0.39	1.00	1.00	0.39	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (perm)	729	1863	1583	730	1863	1583		1843	1583	1770	3422	
Peak-hour factor, PHF	0.65	0.85	0.67	0.95	0.93	0.87	0.67	0.87	0.85	0.79	0.72	0.93
Adj. Flow (vph)	22	281	25	200	485	136	67	245	161	95	162	46
RTOR Reduction (vph)	0	0	17	0	0	83	0	0	126	0	20	0
Lane Group Flow (vph)	22	281	8	200	485	53	0	312	35	95	189	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		6			3			
Actuated Green, G (s)	29.5	27.6	27.6	44.0	36.0	36.0		20.2	20.2	10.4	10.4	
Effective Green, g (s)	29.5	27.6	27.6	44.0	36.0	36.0		20.2	20.2	10.4	10.4	
Actuated g/C Ratio	0.32	0.30	0.30	0.48	0.39	0.39		0.22	0.22	0.11	0.11	
Clearance Time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Vehicle Extension (s)	1.5	5.0	5.0	1.5	5.0	5.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	255	559	475	466	729	620		405	347	200	387	
v/s Ratio Prot	0.00	0.15		c0.05	c0.26			c0.17		0.05	c0.06	
v/s Ratio Perm	0.03		0.00	0.16		0.03			0.02			
v/c Ratio	0.09	0.50	0.02	0.43	0.67	0.09		0.77	0.10	0.47	0.49	
Uniform Delay, d1	21.6	26.5	22.6	14.9	23.0	17.6		33.7	28.6	38.2	38.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.01	1.01	
Incremental Delay, d2	0.1	1.5	0.0	0.2	3.0	0.1		8.0	0.0	0.6	0.4	
Delay (s)	21.7	28.0	22.6	15.1	26.0	17.7		41.7	28.7	39.3	38.9	
Level of Service	C	C	C	B	C	B		D	C	D	D	
Approach Delay (s)		27.2			22.0			37.3			39.0	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	91.9	Sum of lost time (s)	23.4
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	173	0	64	0	0	0	12	55	277	0	83	0	176	63
Future Vol, veh/h	173	0	64	0	0	0	12	55	277	0	83	0	176	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	100	-	-	-	-	245	-	-	-	270	-	-
Veh in Median Storage, #	-	1	-	-	-	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	73	92	92	92	56	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	188	0	70	0	0	0	13	60	379	0	90	0	314	68

Major/Minor	Minor2					Major1				Major2			
Conflicting Flow All	864	-	191			279	383	0	-	277	379	0	0
Stage 1	529	-	-			-	-	-	-	-	-	-	-
Stage 2	335	-	-			-	-	-	-	-	-	-	-
Critical Hdwy	6.84	-	6.94			6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-			-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-			-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32			2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	293	0	818			955	1172	-	0	957	1176	-	-
Stage 1	555	0	-			-	-	-	0	-	-	-	-
Stage 2	697	0	-			-	-	-	0	-	-	-	-
Platoon blocked, %								-				-	-
Mov Cap-1 Maneuver	293	0	818			1106	1106	-	-	957	957	-	-
Mov Cap-2 Maneuver	398	0	-			-	-	-	-	-	-	-	-
Stage 1	555	0	-			-	-	-	-	-	-	-	-
Stage 2	697	0	-			-	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	1.4	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBL	SBT	SBR
Capacity (veh/h)	1106	-	398	818	957	-	-
HCM Lane V/C Ratio	0.066	-	0.472	0.085	0.094	-	-
HCM Control Delay (s)	8.5	-	21.9	9.8	9.2	-	-
HCM Lane LOS	A	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	2.5	0.3	0.3	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	119	0	533	203	34
Future Vol, veh/h	0	119	0	533	203	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	73	56	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	129	0	730	363	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	181	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	831	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	831	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	831	-
HCM Lane V/C Ratio	-	0.156	-
HCM Control Delay (s)	-	10.1	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.6	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	0	344	210	42
Future Vol, veh/h	0	24	0	344	210	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	73	56	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	0	471	375	46

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	188	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	822	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	822	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	822	-
HCM Lane V/C Ratio	-	0.032	-
HCM Control Delay (s)	-	9.5	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0.1	-

Site Mitigation Improvements Concept Design

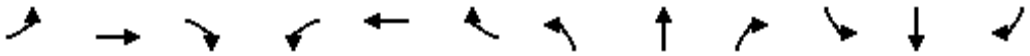
Future “Build” Improved Intersections Analysis

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	388	1590	1618	554	410	1620
Future Volume (vph)	388	1590	1618	554	410	1620
Lane Group Flow (vph)	413	1767	1798	609	466	1653
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free
Detector Phase	5	2	6	6	4	
Switch Phase						
Minimum Initial (s)	6.0	15.0	15.0	15.0	8.0	
Minimum Split (s)	13.0	28.6	24.6	24.6	14.6	
Total Split (s)	30.0	115.0	85.0	85.0	45.0	
Total Split (%)	18.8%	71.9%	53.1%	53.1%	28.1%	
Yellow Time (s)	4.0	4.6	4.6	4.6	3.6	
All-Red Time (s)	3.0	1.5	1.5	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.1	6.1	6.1	6.6	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	Max	C-Min	C-Min	C-Min	None	
v/c Ratio	0.55	0.66	0.72	0.60	0.82	1.10
Control Delay	62.7	14.0	33.8	9.4	76.3	62.1
Queue Delay	0.0	1.0	0.0	0.0	0.0	0.0
Total Delay	62.7	14.9	33.8	9.4	76.3	62.1
Queue Length 50th (ft)	236	383	531	104	245	~188
Queue Length 95th (ft)	m286	409	587	226	289	#336
Internal Link Dist (ft)		487	859			
Turn Bay Length (ft)	175				280	420
Base Capacity (vph)	747	2670	2507	1009	823	1500
Starvation Cap Reductn	0	575	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.84	0.72	0.60	0.57	1.10

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 30 (19%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: GA 400 NB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	388	1590	0	0	1618	554	410	0	1620	0	0	0
Future Volume (vph)	388	1590	0	0	1618	554	410	0	1620	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.1			6.1	6.1	6.6		4.0			
Lane Util. Factor	0.97	0.95			0.91	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	3539			5085	1583	3433		1500			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	3539			5085	1583	3433		1500			
Peak-hour factor, PHF	0.94	0.90	0.92	0.92	0.90	0.91	0.88	0.92	0.98	0.92	0.92	0.92
Adj. Flow (vph)	413	1767	0	0	1798	609	466	0	1653	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	229	0	0	0	0	0	0
Lane Group Flow (vph)	413	1767	0	0	1798	380	466	0	1653	0	0	0
Turn Type	Prot	NA			NA	Perm	Prot		Free			
Protected Phases	5	2			6		4					
Permitted Phases						6			Free			
Actuated Green, G (s)	34.8	120.7			78.9	78.9	26.6		160.0			
Effective Green, g (s)	34.8	120.7			78.9	78.9	26.6		160.0			
Actuated g/C Ratio	0.22	0.75			0.49	0.49	0.17		1.00			
Clearance Time (s)	7.0	6.1			6.1	6.1	6.6					
Vehicle Extension (s)	2.5	4.5			4.5	4.5	2.5					
Lane Grp Cap (vph)	746	2669			2507	780	570		1500			
v/s Ratio Prot	0.12	0.50			0.35		0.14					
v/s Ratio Perm						0.24			c1.10			
v/c Ratio	0.55	0.66			0.72	0.49	0.82		1.10			
Uniform Delay, d1	55.7	9.6			31.8	27.1	64.4		80.0			
Progression Factor	1.07	1.28			1.00	1.00	1.00		1.00			
Incremental Delay, d2	1.6	0.7			1.8	2.2	8.7		56.4			
Delay (s)	61.3	13.1			33.6	29.2	73.0		136.4			
Level of Service	E	B			C	C	E		F			
Approach Delay (s)		22.2			32.5			122.5			0.0	
Approach LOS		C			C			F			A	

Intersection Summary			
HCM 2000 Control Delay	57.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

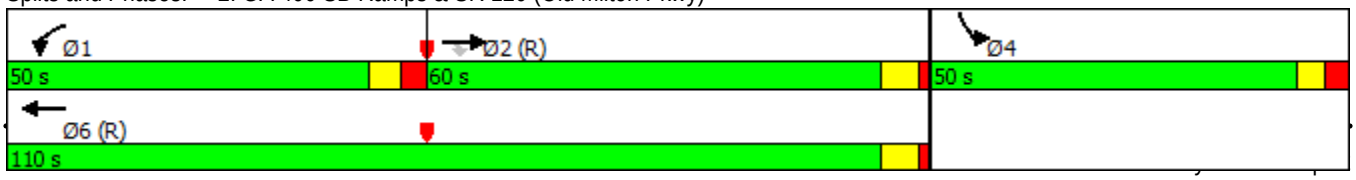
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1254	132	416	1612	724	1525
Future Volume (vph)	1254	132	416	1612	724	1525
Lane Group Flow (vph)	1378	155	533	1771	813	1694
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	15.0	15.0	6.0	15.0	8.0	
Minimum Split (s)	24.5	24.5	13.0	24.5	22.5	
Total Split (s)	60.0	60.0	50.0	110.0	50.0	
Total Split (%)	37.5%	37.5%	31.3%	68.8%	31.3%	
Yellow Time (s)	4.5	4.5	4.0	4.5	3.4	
All-Red Time (s)	1.5	1.5	3.0	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	7.0	6.0	6.4	
Lead/Lag	Lag	Lag	Lead			
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	Max	C-Min	Min	
v/c Ratio	0.80	0.24	0.55	0.76	0.91	1.07
Control Delay	32.0	2.6	84.3	15.7	72.4	48.6
Queue Delay	0.0	0.0	0.0	0.2	0.0	0.0
Total Delay	32.0	2.6	84.3	15.9	72.4	48.6
Queue Length 50th (ft)	165	0	304	311	421	~241
Queue Length 95th (ft)	291	19	318	332	497	#501
Internal Link Dist (ft)	1090			487		
Turn Bay Length (ft)		420	200			300
Base Capacity (vph)	1716	636	966	2345	935	1583
Starvation Cap Reductn	0	0	0	107	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.24	0.55	0.79	0.87	1.07

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: GA 400 SB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1254	132	416	1612	0	0	0	0	724	0	1525
Future Volume (veh/h)	0	1254	132	416	1612	0	0	0	0	724	0	1525
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	0	1863
Adj Flow Rate, veh/h	0	1378	0	533	1771	0				813	0	0
Adj No. of Lanes	0	3	1	2	2	0				2	0	1
Peak Hour Factor	0.92	0.91	0.85	0.78	0.91	0.92				0.89	0.92	0.90
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	1812	564	925	2367	0				873	0	402
Arrive On Green	0.00	0.71	0.00	0.54	1.00	0.00				0.25	0.00	0.00
Sat Flow, veh/h	0	5253	1583	3442	3632	0				3442	0	1583
Grp Volume(v), veh/h	0	1378	0	533	1771	0				813	0	0
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1721	1770	0				1721	0	1583
Q Serve(g_s), s	0.0	27.2	0.0	16.6	0.0	0.0				36.9	0.0	0.0
Cycle Q Clear(g_c), s	0.0	27.2	0.0	16.6	0.0	0.0				36.9	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1812	564	925	2367	0				873	0	402
V/C Ratio(X)	0.00	0.76	0.00	0.58	0.75	0.00				0.93	0.00	0.00
Avail Cap(c_a), veh/h	0	1812	564	925	2367	0				938	0	431
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.83	0.00	0.60	0.60	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	18.7	0.0	30.9	0.0	0.0				58.3	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.6	0.0	1.6	1.3	0.0				14.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	18.3	0.0	11.6	0.8	0.0				26.7	0.0	0.0
LnGrp Delay(d),s/veh	0.0	21.3	0.0	32.5	1.3	0.0				73.2	0.0	0.0
LnGrp LOS		C		C	A					E		
Approach Vol, veh/h		1378			2304						813	
Approach Delay, s/veh		21.3			8.5						73.2	
Approach LOS		C			A						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	50.0	63.0		47.0		113.0		
Change Period (Y+Rc), s	7.0	6.0		6.4		6.0		
Max Green Setting (Gmax), s	43.0	54.0		43.6		104.0		
Max Q Clear Time (g_c+I1), s	18.6	29.2		38.9		2.0		
Green Ext Time (p_c), s	3.5	24.8		1.7		101.5		

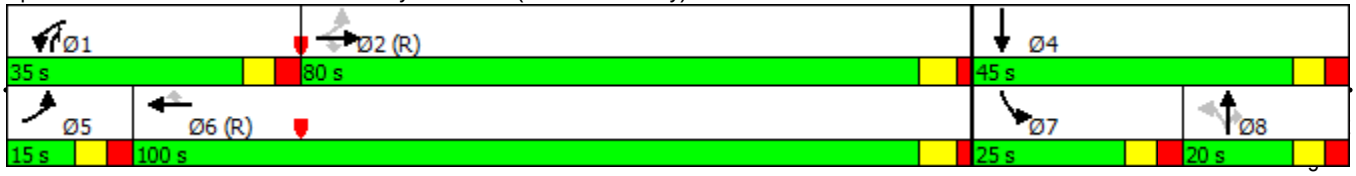
Intersection Summary	
HCM 2010 Ctrl Delay	24.1
HCM 2010 LOS	C

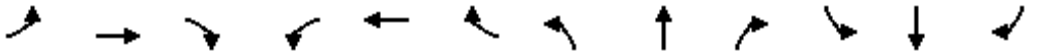
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	36	1434	121	724	2293	111	33	11	93	47	11
Future Volume (vph)	36	1434	121	724	2293	111	33	11	93	47	11
Lane Group Flow (vph)	54	1576	136	883	2439	132	79	16	152	63	66
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Prot	NA
Protected Phases	5	2		1	6			8	1	7	4
Permitted Phases	2		2			6	8		8		
Detector Phase	5	2	2	1	6	6	8	8	1	7	4
Switch Phase											
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	8.0	8.0	6.0	6.0	8.0
Minimum Split (s)	13.0	30.7	30.7	13.0	36.7	36.7	42.5	42.5	13.0	13.0	44.5
Total Split (s)	15.0	80.0	80.0	35.0	100.0	100.0	20.0	20.0	35.0	25.0	45.0
Total Split (%)	9.4%	50.0%	50.0%	21.9%	62.5%	62.5%	12.5%	12.5%	21.9%	15.6%	28.1%
Yellow Time (s)	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	1.8	1.8	3.0	1.8	1.8	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	6.5	6.5	7.0	6.5	6.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.44	0.57	0.14	1.47	0.69	0.12	0.77	0.11	0.28	0.27	0.23
Control Delay	33.4	17.1	0.6	262.4	7.8	0.1	116.2	72.9	17.4	76.1	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.4	17.1	0.6	262.4	7.8	0.1	116.2	72.9	17.4	76.1	26.4
Queue Length 50th (ft)	14	214	0	~648	392	0	82	16	35	23	21
Queue Length 95th (ft)	34	235	6	m#637	m406	m0	m63	m30	m32	34	15
Internal Link Dist (ft)		703			1090			604			272
Turn Bay Length (ft)	235			330		120	365			180	
Base Capacity (vph)	136	2775	941	600	3529	1136	108	151	546	561	432
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	72	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.57	0.14	1.47	0.71	0.12	0.73	0.11	0.28	0.11	0.15

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 45 (28%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Northwinds Pkwy & SR 120 (Old Milton Pkwy)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1434	121	724	2293	111	33	11	93	47	11	27
Future Volume (veh/h)	36	1434	121	724	2293	111	33	11	93	47	11	27
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	54	1576	0	883	2439	0	79	16	0	63	24	42
Adj No. of Lanes	1	3	1	2	3	1	1	1	1	3	1	0
Peak Hour Factor	0.67	0.91	0.89	0.82	0.94	0.84	0.42	0.69	0.61	0.75	0.46	0.65
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	181	2778	865	602	3495	1088	140	133	390	176	92	160
Arrive On Green	0.07	1.00	0.00	0.35	1.00	0.00	0.07	0.07	0.00	0.04	0.15	0.15
Sat Flow, veh/h	1774	5085	1583	3442	5085	1583	1330	1863	1583	5003	609	1066
Grp Volume(v), veh/h	54	1576	0	883	2439	0	79	16	0	63	0	66
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1583	1330	1863	1583	1668	0	1675
Q Serve(g_s), s	2.1	0.0	0.0	28.0	0.0	0.0	9.4	1.3	0.0	2.0	0.0	5.6
Cycle Q Clear(g_c), s	2.1	0.0	0.0	28.0	0.0	0.0	9.4	1.3	0.0	2.0	0.0	5.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.64
Lane Grp Cap(c), veh/h	181	2778	865	602	3495	1088	140	133	390	176	0	252
V/C Ratio(X)	0.30	0.57	0.00	1.47	0.70	0.00	0.56	0.12	0.00	0.36	0.00	0.26
Avail Cap(c_a), veh/h	210	2778	865	602	3495	1088	153	151	406	563	0	398
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.00	0.29	0.29	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.0	0.0	0.0	52.0	0.0	0.0	73.3	69.6	0.0	75.4	0.0	60.1
Incr Delay (d2), s/veh	0.8	0.8	0.0	212.5	0.3	0.0	3.9	0.4	0.0	1.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	0.3	0.0	55.8	0.2	0.0	6.5	1.2	0.0	1.7	0.0	4.7
LnGrp Delay(d),s/veh	14.8	0.8	0.0	264.5	0.3	0.0	77.2	70.0	0.0	76.6	0.0	60.6
LnGrp LOS	B	A		F	A		E	E		E		E
Approach Vol, veh/h		1630			3322			95			129	
Approach Delay, s/veh		1.2			70.6			76.0			68.5	
Approach LOS		A			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	35.0	93.9		31.1	12.5	116.5	12.6	18.4
Change Period (Y+Rc), s	7.0	* 6.5		7.0	7.0	* 6.5	7.0	7.0
Max Green Setting (Gmax), s	28.0	* 74		38.0	8.0	* 94	18.0	13.0
Max Q Clear Time (g_c+I1), s	30.0	2.0		7.6	4.1	2.0	4.0	11.4
Green Ext Time (p_c), s	0.0	71.2		0.5	0.0	91.0	0.1	0.1

Intersection Summary		
HCM 2010 Ctrl Delay		48.8
HCM 2010 LOS		D

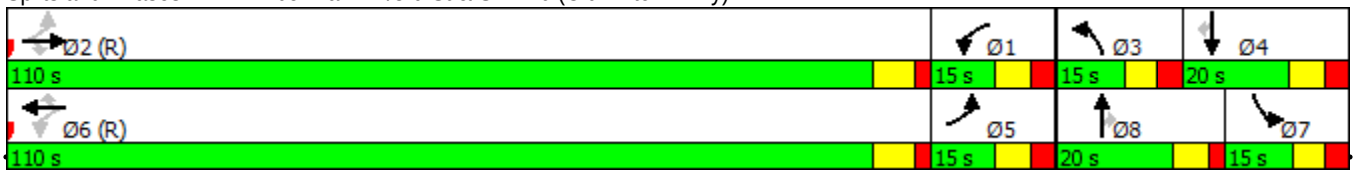
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	1547	60	160	2193	27	27	4	11	79	8	31
Future Volume (vph)	82	1547	60	160	2193	27	27	4	11	79	8	31
Lane Group Flow (vph)	95	1595	91	216	2284	42	40	8	29	95	12	41
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	6.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.4	34.8	34.8	13.3	36.8	36.8	13.0	51.3	51.3	13.0	48.3	48.3
Total Split (s)	15.0	110.0	110.0	15.0	110.0	110.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	9.4%	68.8%	68.8%	9.4%	68.8%	68.8%	9.4%	12.5%	12.5%	9.4%	12.5%	12.5%
Yellow Time (s)	4.4	4.8	4.8	4.3	4.8	4.8	4.0	4.3	4.3	4.0	4.3	4.3
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	7.0	6.3	6.3	7.0	7.3	7.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	0.66	0.45	0.08	0.89	0.65	0.04	0.26	0.09	0.15	0.52	0.13	0.21
Control Delay	59.9	11.8	0.5	65.9	11.8	0.1	77.7	74.8	1.5	83.8	75.8	2.4
Queue Delay	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	11.8	0.5	65.9	12.5	0.1	77.7	74.8	1.5	83.8	75.8	2.4
Queue Length 50th (ft)	34	269	0	101	522	0	21	8	0	51	12	0
Queue Length 95th (ft)	#101	305	0	#135	639	m0	31	15	0	76	27	0
Internal Link Dist (ft)		996			703			362			282	
Turn Bay Length (ft)	340		225	245		175	70					80
Base Capacity (vph)	143	3532	1138	243	3532	1138	171	159	250	184	147	239
Starvation Cap Reductn	0	0	0	0	766	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.45	0.08	0.89	0.83	0.04	0.23	0.05	0.12	0.52	0.08	0.17

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 50 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amber Park Dr/3rd St & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	1547	60	160	2193	27	27	4	11	79	8	31
Future Volume (veh/h)	82	1547	60	160	2193	27	27	4	11	79	8	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	95	1595	91	216	2284	42	40	8	0	95	12	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	2	1	1
Peak Hour Factor	0.86	0.97	0.66	0.74	0.96	0.65	0.67	0.50	0.38	0.83	0.67	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	325	3061	953	412	3230	1006	107	87	74	136	94	80
Arrive On Green	0.11	0.60	0.60	0.28	1.00	1.00	0.03	0.05	0.00	0.04	0.05	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	95	1595	91	216	2284	42	40	8	0	95	12	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	0.0	29.1	3.9	0.0	0.0	0.0	1.8	0.7	0.0	4.4	1.0	0.0
Cycle Q Clear(g_c), s	0.0	29.1	3.9	0.0	0.0	0.0	1.8	0.7	0.0	4.4	1.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	325	3061	953	412	3230	1006	107	87	74	136	94	80
V/C Ratio(X)	0.29	0.52	0.10	0.52	0.71	0.04	0.37	0.09	0.00	0.70	0.13	0.00
Avail Cap(c_a), veh/h	325	3280	1021	412	3280	1021	172	159	136	172	148	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.66	0.66	0.66	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.7	18.5	13.5	31.1	0.0	0.0	76.0	73.0	0.0	75.9	72.6	0.0
Incr Delay (d2), s/veh	0.5	0.6	0.2	0.8	0.9	0.1	2.1	0.5	0.0	8.6	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	19.9	3.1	10.5	0.5	0.0	1.6	0.6	0.0	4.0	0.9	0.0
LnGrp Delay(d),s/veh	18.2	19.1	13.7	31.9	0.9	0.1	78.1	73.5	0.0	84.5	73.2	0.0
LnGrp LOS	B	B	B	C	A	A	E	E		F	E	
Approach Vol, veh/h		1781			2542			48			107	
Approach Delay, s/veh		18.8			3.5			77.3			83.3	
Approach LOS		B			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.5	103.1	12.0	15.4	24.2	108.4	13.6	13.7
Change Period (Y+Rc), s	7.4	* 6.8	7.0	7.3	7.4	6.8	7.3	* 6.3
Max Green Setting (Gmax), s	7.7	* 1E2	8.0	12.7	7.6	103.2	8.0	* 14
Max Q Clear Time (g_c+I1), s	2.0	31.1	3.8	3.0	2.0	2.0	6.4	2.7
Green Ext Time (p_c), s	0.5	65.2	0.0	0.2	0.2	99.6	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

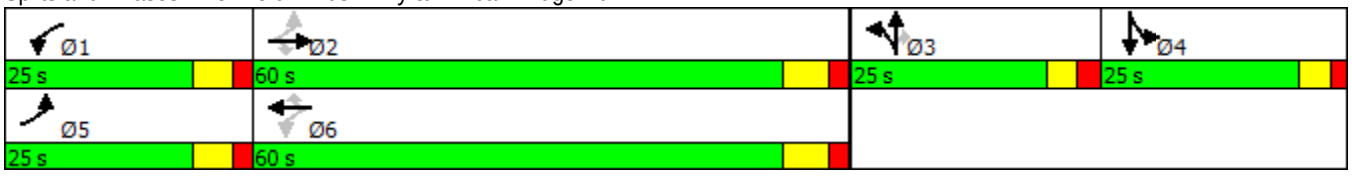
Notes

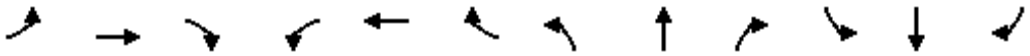
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	11	503	67	260	233	65	127	132	234	196
Future Volume (vph)	11	503	67	260	233	65	127	132	234	196
Lane Group Flow (vph)	16	565	88	283	315	87	217	171	257	322
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Split	NA
Protected Phases	5	2		1	6		3		4	4
Permitted Phases	2		2	6		6		3		
Detector Phase	5	2	2	1	6	6	3	3	4	4
Switch Phase										
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	41.8	41.8	10.5	44.8	44.8	40.4	40.4	40.1	40.1
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0	25.0	25.0	25.0	25.0
Total Split (%)	18.5%	44.4%	44.4%	18.5%	44.4%	44.4%	18.5%	18.5%	18.5%	18.5%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	3.1	3.1	3.2	3.2
All-Red Time (s)	2.1	2.3	2.3	2.1	2.3	2.3	2.3	2.3	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.8	6.8	6.1	6.8	6.8	5.4	5.4	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	Min	Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.04	0.84	0.14	0.83	0.34	0.10	0.81	0.46	0.85	0.53
Control Delay	13.6	47.7	3.1	38.9	19.7	2.0	74.4	11.6	75.1	48.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	47.7	3.1	38.9	19.7	2.0	74.4	11.6	75.1	48.3
Queue Length 50th (ft)	6	404	0	117	134	0	165	0	201	115
Queue Length 95th (ft)	12	568	10	#214	183	7	205	36	#410	155
Internal Link Dist (ft)		651			693		393			505
Turn Bay Length (ft)	100		135	290		300			225	
Base Capacity (vph)	668	856	786	402	971	877	312	410	304	607
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.66	0.11	0.70	0.32	0.10	0.70	0.42	0.85	0.53

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 118.1
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Northwinds Pkwy & Kimball Bridge Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	11	503	67	260	233	65	22	127	132	234	196	60
Future Volume (vph)	11	503	67	260	233	65	22	127	132	234	196	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1849	1583	1770	3422	
Flt Permitted	0.57	1.00	1.00	0.16	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (perm)	1060	1863	1583	303	1863	1583		1849	1583	1770	3422	
Peak-hour factor, PHF	0.69	0.89	0.76	0.92	0.74	0.75	0.66	0.69	0.77	0.91	0.78	0.85
Adj. Flow (vph)	16	565	88	283	315	87	33	184	171	257	251	71
RTOR Reduction (vph)	0	0	54	0	0	45	0	0	147	0	19	0
Lane Group Flow (vph)	16	565	34	283	315	42	0	217	24	257	303	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		6			3			
Actuated Green, G (s)	48.3	46.5	46.5	67.0	59.1	59.1		17.1	17.1	20.3	20.3	
Effective Green, g (s)	48.3	46.5	46.5	67.0	59.1	59.1		17.1	17.1	20.3	20.3	
Actuated g/C Ratio	0.40	0.38	0.38	0.55	0.49	0.49		0.14	0.14	0.17	0.17	
Clearance Time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Vehicle Extension (s)	1.5	5.0	5.0	1.5	5.0	5.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	431	711	604	340	904	768		259	222	295	570	
v/s Ratio Prot	0.00	0.30		c0.10	0.17			c0.12		c0.15	0.09	
v/s Ratio Perm	0.01		0.02	c0.36		0.03			0.02			
v/c Ratio	0.04	0.79	0.06	0.83	0.35	0.06		0.84	0.11	0.87	0.53	
Uniform Delay, d1	22.3	33.4	23.7	21.7	19.4	16.5		50.9	45.6	49.4	46.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.01	1.01	
Incremental Delay, d2	0.0	7.0	0.1	15.2	0.5	0.1		19.6	0.1	22.7	0.5	
Delay (s)	22.3	40.4	23.8	36.8	19.9	16.6		70.6	45.7	72.7	47.4	
Level of Service	C	D	C	D	B	B		E	D	E	D	
Approach Delay (s)		37.8			26.5			59.6			58.6	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	121.7	Sum of lost time (s)	23.4
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	65	0	24	0	0	0	26	104	74	0	33	0	524	134
Future Vol, veh/h	65	0	24	0	0	0	26	104	74	0	33	0	524	134
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	100	-	-	-	-	245	-	-	-	270	-	-
Veh in Median Storage, #	-	1	-	-	-	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	69	92	92	92	46	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	71	0	26	0	0	0	28	113	107	0	36	0	1139	146

Major/Minor	Minor2					Major1				Major2			
Conflicting Flow All	1620	-	642			937	1285	0	-	78	107	0	0
Stage 1	1284	-	-			-	-	-	-	-	-	-	-
Stage 2	336	-	-			-	-	-	-	-	-	-	-
Critical Hdwy	6.84	-	6.94			6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-			-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-			-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32			2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	94	0	417			364	536	-	0	1277	1482	-	-
Stage 1	224	0	-			-	-	-	0	-	-	-	-
Stage 2	696	0	-			-	-	-	0	-	-	-	-
Platoon blocked, %								-				-	-
Mov Cap-1 Maneuver	94	0	417			482	482	-	-	1277	1277	-	-
Mov Cap-2 Maneuver	182	0	-			-	-	-	-	-	-	-	-
Stage 1	224	0	-			-	-	-	-	-	-	-	-
Stage 2	696	0	-			-	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30.7	8.8	0.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBL	SBT	SBR
Capacity (veh/h)	482	-	182	417	1277	-	-
HCM Lane V/C Ratio	0.293	-	0.388	0.063	0.028	-	-
HCM Control Delay (s)	15.5	-	36.8	14.2	7.9	-	-
HCM Lane LOS	C	-	E	B	A	-	-
HCM 95th %tile Q(veh)	1.2	-	1.7	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	47	0	172	643	75
Future Vol, veh/h	0	47	0	172	643	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	69	46	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	51	0	249	1398	82

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	699	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	382	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	382	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.9	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	382	-
HCM Lane V/C Ratio	-	0.134	-
HCM Control Delay (s)	-	15.9	-
HCM Lane LOS	-	C	-
HCM 95th %tile Q(veh)	-	0.5	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	0	204	481	93
Future Vol, veh/h	0	10	0	204	481	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	69	46	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	0	296	1046	101

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	523	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	499	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	499	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

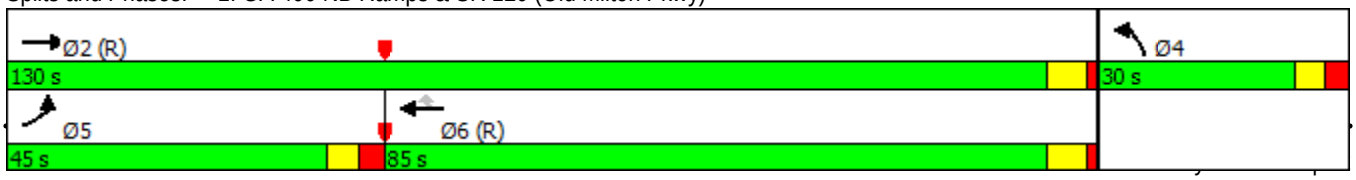
Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	499	-
HCM Lane V/C Ratio	-	0.022	-
HCM Control Delay (s)	-	12.4	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.1	-

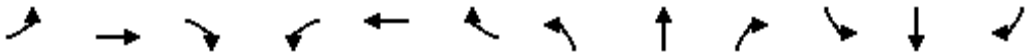
Lane Group	EBL	EBT	WBT	WBR	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	837	1240	2297	1146	398	1248
Future Volume (vph)	837	1240	2297	1146	398	1248
Lane Group Flow (vph)	900	1378	2524	1246	415	1328
Turn Type	Prot	NA	NA	Perm	Prot	Free
Protected Phases	5	2	6		4	
Permitted Phases				6		Free
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	6.0	15.0	15.0	15.0	8.0	
Minimum Split (s)	13.0	28.6	24.6	24.6	14.6	
Total Split (s)	45.0	130.0	85.0	85.0	30.0	
Total Split (%)	28.1%	81.3%	53.1%	53.1%	18.8%	
Yellow Time (s)	4.0	4.6	4.6	4.6	3.6	
All-Red Time (s)	3.0	1.5	1.5	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	6.1	6.1	6.1	6.6	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?						
Recall Mode	Max	C-Min	C-Min	C-Min	None	
v/c Ratio	1.10	0.50	1.01	1.26	0.83	0.89
Control Delay	101.0	8.0	59.6	148.1	80.8	8.5
Queue Delay	0.0	2.7	36.3	0.0	0.0	0.0
Total Delay	101.0	10.7	95.9	148.1	80.8	8.5
Queue Length 50th (ft)	~535	423	~971	~1395	220	0
Queue Length 95th (ft)	#674	125	#1087	#1665	#296	0
Internal Link Dist (ft)		487	856			
Turn Bay Length (ft)	175				280	420
Base Capacity (vph)	815	2740	2507	992	502	1500
Starvation Cap Reductn	0	1205	0	0	0	0
Spillback Cap Reductn	0	0	529	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.90	1.28	1.26	0.83	0.89

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 30 (19%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: GA 400 NB Ramps & SR 120 (Old Milton Pkwy)





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	837	1240	0	0	2297	1146	398	0	1248	0	0	0
Future Volume (vph)	837	1240	0	0	2297	1146	398	0	1248	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	6.1			6.1	6.1	6.6		4.0			
Lane Util. Factor	0.97	0.95			0.91	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	3539			5085	1583	3433		1500			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3433	3539			5085	1583	3433		1500			
Peak-hour factor, PHF	0.93	0.90	0.92	0.92	0.91	0.92	0.96	0.92	0.94	0.92	0.92	0.92
Adj. Flow (vph)	900	1378	0	0	2524	1246	415	0	1328	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	212	0	0	0	0	0	0
Lane Group Flow (vph)	900	1378	0	0	2524	1034	415	0	1328	0	0	0
Turn Type	Prot	NA			NA	Perm	Prot		Free			
Protected Phases	5	2			6		4					
Permitted Phases						6			Free			
Actuated Green, G (s)	38.0	123.9			78.9	78.9	23.4		160.0			
Effective Green, g (s)	38.0	123.9			78.9	78.9	23.4		160.0			
Actuated g/C Ratio	0.24	0.77			0.49	0.49	0.15		1.00			
Clearance Time (s)	7.0	6.1			6.1	6.1	6.6					
Vehicle Extension (s)	2.5	4.5			4.5	4.5	2.5					
Lane Grp Cap (vph)	815	2740			2507	780	502		1500			
v/s Ratio Prot	c0.26	0.39			0.50		0.12					
v/s Ratio Perm						c0.65			c0.89			
v/c Ratio	1.10	0.50			1.01	1.33	0.83		0.89			
Uniform Delay, d1	61.0	6.7			40.5	40.5	66.3		0.0			
Progression Factor	0.74	1.13			1.00	1.00	1.00		1.00			
Incremental Delay, d2	58.8	0.4			19.6	155.2	10.5		8.0			
Delay (s)	103.9	7.9			60.2	195.7	76.8		8.0			
Level of Service	F	A			E	F	E		A			
Approach Delay (s)		45.9			105.0			24.4			0.0	
Approach LOS		D			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	69.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	19.7
Intersection Capacity Utilization	122.6%	ICU Level of Service	H
Analysis Period (min)	15		

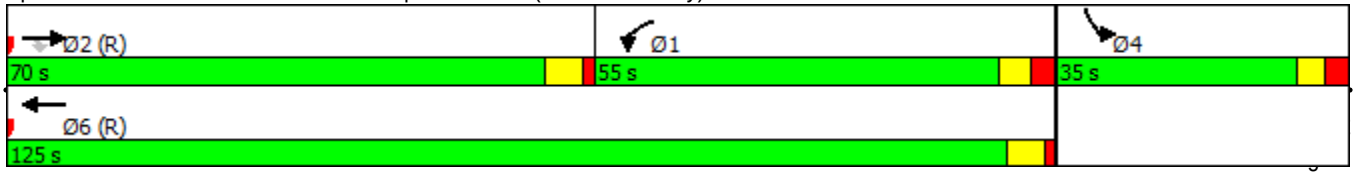
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1769	518	1132	1572	268	764
Future Volume (vph)	1769	518	1132	1572	268	764
Lane Group Flow (vph)	1902	576	1272	1672	308	910
Turn Type	NA	Perm	Prot	NA	Prot	Free
Protected Phases	2		1	6	4	
Permitted Phases		2				Free
Detector Phase	2	2	1	6	4	
Switch Phase						
Minimum Initial (s)	15.0	15.0	6.0	15.0	8.0	
Minimum Split (s)	24.5	24.5	13.0	24.5	22.5	
Total Split (s)	70.0	70.0	55.0	125.0	35.0	
Total Split (%)	43.8%	43.8%	34.4%	78.1%	21.9%	
Yellow Time (s)	4.5	4.5	4.0	4.5	3.4	
All-Red Time (s)	1.5	1.5	3.0	1.5	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	7.0	6.0	6.4	
Lead/Lag	Lead	Lead	Lag			
Lead-Lag Optimize?						
Recall Mode	C-Min	C-Min	Max	C-Min	Min	
v/c Ratio	0.82	0.61	1.24	0.59	0.73	0.57
Control Delay	55.7	23.8	143.1	6.9	77.8	1.5
Queue Delay	1.2	0.0	0.3	0.8	0.0	0.0
Total Delay	56.9	23.8	143.4	7.7	77.8	1.5
Queue Length 50th (ft)	702	260	~836	282	162	0
Queue Length 95th (ft)	760	m404	m#846	m283	202	0
Internal Link Dist (ft)	1090			487		
Turn Bay Length (ft)		420	200			300
Base Capacity (vph)	2316	943	1029	2828	613	1583
Starvation Cap Reductn	0	0	61	744	0	0
Spillback Cap Reductn	211	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.61	1.31	0.80	0.50	0.57

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 145 (91%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: GA 400 SB Ramps & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1769	518	1132	1572	0	0	0	0	268	0	764
Future Volume (veh/h)	0	1769	518	1132	1572	0	0	0	0	268	0	764
Number	5	2	12	1	6	16				7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	0	1863
Adj Flow Rate, veh/h	0	1902	576	1272	1672	0				308	0	0
Adj No. of Lanes	0	3	1	2	2	0				2	0	1
Peak Hour Factor	0.92	0.93	0.90	0.89	0.94	0.92				0.87	0.92	0.84
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	2025	631	1287	2866	0				366	0	169
Arrive On Green	0.00	0.80	0.80	0.75	1.00	0.00				0.11	0.00	0.00
Sat Flow, veh/h	0	5253	1583	3442	3632	0				3442	0	1583
Grp Volume(v), veh/h	0	1902	576	1272	1672	0				308	0	0
Grp Sat Flow(s),veh/h/ln	0	1695	1583	1721	1770	0				1721	0	1583
Q Serve(g_s), s	0.0	48.3	43.5	57.1	0.0	0.0				14.1	0.0	0.0
Cycle Q Clear(g_c), s	0.0	48.3	43.5	57.1	0.0	0.0				14.1	0.0	0.0
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2025	631	1287	2866	0				366	0	169
V/C Ratio(X)	0.00	0.94	0.91	0.99	0.58	0.00				0.84	0.00	0.00
Avail Cap(c_a), veh/h	0	2034	633	1287	2866	0				615	0	283
HCM Platoon Ratio	1.00	2.00	2.00	2.00	2.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.55	0.55	0.13	0.13	0.00				1.00	0.00	0.00
Uniform Delay (d), s/veh	0.0	14.7	14.2	19.8	0.0	0.0				70.1	0.0	0.0
Incr Delay (d2), s/veh	0.0	6.1	12.5	6.9	0.1	0.0				5.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	28.4	25.9	30.5	0.1	0.0				11.3	0.0	0.0
LnGrp Delay(d),s/veh	0.0	20.8	26.7	26.7	0.1	0.0				75.6	0.0	0.0
LnGrp LOS		C	C	C	A					E		
Approach Vol, veh/h		2478			2944						308	
Approach Delay, s/veh		22.2			11.6						75.6	
Approach LOS		C			B						E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	66.8	69.7		23.4		136.6		
Change Period (Y+Rc), s	7.0	6.0		6.4		* 7		
Max Green Setting (Gmax), s	48.0	64.0		28.6		* 1.2E2		
Max Q Clear Time (g_c+I1), s	59.1	50.3		16.1		2.0		
Green Ext Time (p_c), s	0.0	13.4		1.0		113.0		

Intersection Summary	
HCM 2010 Ctrl Delay	19.6
HCM 2010 LOS	B

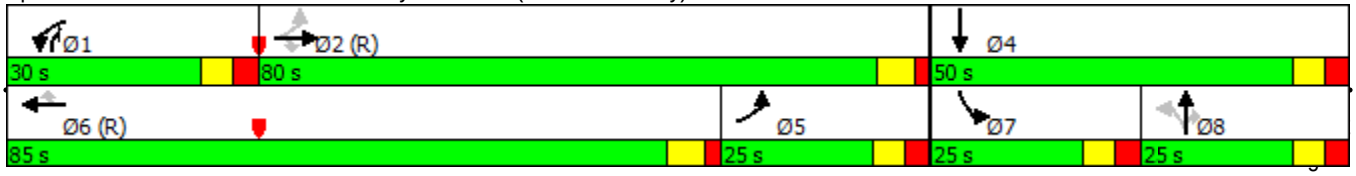
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	145	1470	74	271	1764	246	118	70	401	437	28
Future Volume (vph)	145	1470	74	271	1764	246	118	70	401	437	28
Lane Group Flow (vph)	175	1652	107	327	1938	259	231	96	483	508	125
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	pm+ov	Prot	NA
Protected Phases	5	2		1	6			8	1	7	4
Permitted Phases	2		2			6	8		8		
Detector Phase	5	2	2	1	6	6	8	8	1	7	4
Switch Phase											
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	8.0	8.0	6.0	6.0	8.0
Minimum Split (s)	13.0	30.7	30.7	13.0	36.7	36.7	42.5	42.5	13.0	13.0	44.5
Total Split (s)	25.0	80.0	80.0	30.0	85.0	85.0	25.0	25.0	30.0	25.0	50.0
Total Split (%)	15.6%	50.0%	50.0%	18.8%	53.1%	53.1%	15.6%	15.6%	18.8%	15.6%	31.3%
Yellow Time (s)	4.0	4.7	4.7	4.0	4.7	4.7	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	1.8	1.8	3.0	1.8	1.8	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	6.5	6.5	7.0	6.5	6.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	
Lead-Lag Optimize?											
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.72	0.69	0.13	0.71	0.78	0.31	1.64	0.46	0.89	0.91	0.26
Control Delay	61.7	25.6	1.2	67.4	45.2	20.0	358.1	75.6	62.1	90.4	30.2
Queue Delay	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	25.7	1.2	67.4	45.4	20.0	358.1	75.6	62.1	90.4	30.2
Queue Length 50th (ft)	130	267	0	158	631	89	~350	96	383	189	64
Queue Length 95th (ft)	m180	m288	m0	193	675	136	#236	129	472	#236	59
Internal Link Dist (ft)		703			1090			604			272
Turn Bay Length (ft)	235			330		120	365			180	
Base Capacity (vph)	244	2383	807	493	2494	839	141	209	558	561	489
Starvation Cap Reductn	0	76	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	102	0	0	0	0	0	3
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.72	0.13	0.66	0.81	0.31	1.64	0.46	0.87	0.91	0.26

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 25 (16%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Northwinds Pkwy & SR 120 (Old Milton Pkwy)



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	1470	74	271	1764	246	118	70	401	437	28	67
Future Volume (veh/h)	145	1470	74	271	1764	246	118	70	401	437	28	67
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	175	1652	0	327	1938	0	231	96	0	508	50	75
Adj No. of Lanes	1	3	1	2	3	1	1	1	1	3	1	0
Peak Hour Factor	0.83	0.89	0.69	0.83	0.91	0.95	0.51	0.73	0.83	0.86	0.56	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	340	2499	778	374	2425	755	187	210	350	563	181	272
Arrive On Green	0.25	0.98	0.00	0.22	0.95	0.00	0.11	0.11	0.00	0.11	0.27	0.27
Sat Flow, veh/h	1774	5085	1583	3442	5085	1583	1261	1863	1583	5003	674	1011
Grp Volume(v), veh/h	175	1652	0	327	1938	0	231	96	0	508	0	125
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1695	1583	1261	1863	1583	1668	0	1684
Q Serve(g_s), s	1.7	2.5	0.0	14.7	11.9	0.0	18.0	7.7	0.0	16.0	0.0	9.4
Cycle Q Clear(g_c), s	1.7	2.5	0.0	14.7	11.9	0.0	18.0	7.7	0.0	16.0	0.0	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.60
Lane Grp Cap(c), veh/h	340	2499	778	374	2425	755	187	210	350	563	0	453
V/C Ratio(X)	0.51	0.66	0.00	0.88	0.80	0.00	1.24	0.46	0.00	0.90	0.00	0.28
Avail Cap(c_a), veh/h	340	2499	778	495	2495	777	187	210	350	563	0	453
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.00	0.78	0.78	0.00	1.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	42.2	0.7	0.0	61.6	2.2	0.0	73.2	66.4	0.0	70.1	0.0	46.2
Incr Delay (d2), s/veh	1.1	1.2	0.0	10.4	2.3	0.0	143.7	1.6	0.0	17.8	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.7	1.6	0.0	11.5	8.0	0.0	28.3	7.3	0.0	13.0	0.0	7.9
LnGrp Delay(d),s/veh	43.3	1.9	0.0	72.0	4.5	0.0	216.9	68.0	0.0	88.0	0.0	46.5
LnGrp LOS	D	A		E	A		F	E		F		D
Approach Vol, veh/h		1827			2265			327			633	
Approach Delay, s/veh		5.9			14.2			173.2			79.8	
Approach LOS		A			B			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	24.4	85.6		50.0	27.2	82.8	25.0	25.0
Change Period (Y+Rc), s	7.0	* 7		7.0	* 7	6.5	7.0	7.0
Max Green Setting (Gmax), s	23.0	* 74		43.0	* 18	78.5	18.0	18.0
Max Q Clear Time (g_c+I1), s	16.7	4.5		11.4	3.7	13.9	18.0	20.0
Green Ext Time (p_c), s	0.7	63.5		1.7	11.7	62.4	0.0	0.0

Intersection Summary		
HCM 2010 Ctrl Delay		29.7
HCM 2010 LOS		C

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	1396	29	43	1766	131	69	19	113	154	5	61
Future Volume (vph)	193	1396	29	43	1766	131	69	19	113	154	5	61
Lane Group Flow (vph)	233	1586	48	47	2007	154	105	25	127	179	8	70
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	6.0	15.0	15.0	6.0	15.0	15.0	6.0	8.0	8.0	6.0	8.0	8.0
Minimum Split (s)	13.4	34.8	34.8	13.3	36.8	36.8	13.0	51.3	51.3	13.0	48.3	48.3
Total Split (s)	15.0	110.0	110.0	15.0	110.0	110.0	15.0	20.0	20.0	15.0	20.0	20.0
Total Split (%)	9.4%	68.8%	68.8%	9.4%	68.8%	68.8%	9.4%	12.5%	12.5%	9.4%	12.5%	12.5%
Yellow Time (s)	4.4	4.8	4.8	4.3	4.8	4.8	4.0	4.3	4.3	4.0	4.3	4.3
All-Red Time (s)	3.0	2.0	2.0	3.0	2.0	2.0	3.0	2.0	2.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	6.8	6.8	7.3	6.8	6.8	7.0	6.3	6.3	7.0	7.3	7.3
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
v/c Ratio	1.39	0.45	0.04	0.20	0.59	0.14	0.62	0.24	0.61	0.98	0.08	0.34
Control Delay	241.8	12.3	0.1	23.2	34.0	8.5	90.9	76.6	23.8	133.6	72.4	4.6
Queue Delay	0.0	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	241.8	12.3	0.1	23.2	39.0	8.5	90.9	76.6	23.8	133.6	72.4	4.6
Queue Length 50th (ft)	~232	270	0	25	743	58	56	26	1	97	8	0
Queue Length 95th (ft)	#368	317	0	m31	m734	m76	65	48	66	#175	19	0
Internal Link Dist (ft)		996			703			362			282	
Turn Bay Length (ft)	340		225	245		175	70					80
Base Capacity (vph)	168	3501	1130	237	3406	1102	171	159	250	183	147	239
Starvation Cap Reductn	0	0	0	0	1323	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.39	0.45	0.04	0.20	0.96	0.14	0.61	0.16	0.51	0.98	0.05	0.29

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 50 (31%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Amber Park Dr/3rd St & SR 120 (Old Milton Pkwy)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	193	1396	29	43	1766	131	69	19	113	154	5	61
Future Volume (veh/h)	193	1396	29	43	1766	131	69	19	113	154	5	61
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	233	1586	48	47	2007	154	105	25	0	179	8	0
Adj No. of Lanes	1	3	1	1	3	1	2	1	1	2	1	1
Peak Hour Factor	0.83	0.88	0.60	0.92	0.88	0.85	0.66	0.75	0.89	0.86	0.62	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	3045	948	399	3168	986	146	93	79	172	99	84
Arrive On Green	0.10	0.60	0.60	0.25	1.00	1.00	0.04	0.05	0.00	0.05	0.05	0.00
Sat Flow, veh/h	1774	5085	1583	1774	5085	1583	3442	1863	1583	3442	1863	1583
Grp Volume(v), veh/h	233	1586	48	47	2007	154	105	25	0	179	8	0
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1774	1695	1583	1721	1863	1583	1721	1863	1583
Q Serve(g_s), s	5.6	29.1	2.0	0.0	0.0	0.0	4.8	2.1	0.0	8.0	0.7	0.0
Cycle Q Clear(g_c), s	5.6	29.1	2.0	0.0	0.0	0.0	4.8	2.1	0.0	8.0	0.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	338	3045	948	399	3168	986	146	93	79	172	99	84
V/C Ratio(X)	0.69	0.52	0.05	0.12	0.63	0.16	0.72	0.27	0.00	1.04	0.08	0.00
Avail Cap(c_a), veh/h	338	3280	1021	399	3280	1021	172	159	136	172	148	126
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.38	0.38	0.38	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.4	18.7	13.3	16.3	0.0	0.0	75.7	73.2	0.0	76.0	72.0	0.0
Incr Delay (d2), s/veh	5.8	0.6	0.1	0.0	0.4	0.1	11.2	1.5	0.0	79.6	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.3	19.8	1.6	1.7	0.2	0.1	4.6	2.0	0.0	10.3	0.6	0.0
LnGrp Delay(d),s/veh	48.2	19.3	13.4	16.4	0.4	0.1	86.9	74.7	0.0	155.7	72.4	0.0
LnGrp LOS	D	B	B	B	A	A	F	E		F	E	
Approach Vol, veh/h		1867			2208			130			187	
Approach Delay, s/veh		22.8			0.7			84.6			152.2	
Approach LOS		C			A			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	27.8	102.6	13.8	15.8	23.9	106.5	15.3	14.3
Change Period (Y+Rc), s	7.4	* 6.8	7.0	7.3	7.4	6.8	7.3	* 6.3
Max Green Setting (Gmax), s	7.7	* 1E2	8.0	12.7	7.6	103.2	8.0	* 14
Max Q Clear Time (g_c+I1), s	2.0	31.1	6.8	2.7	7.6	2.0	10.0	4.1
Green Ext Time (p_c), s	0.4	64.7	0.0	0.5	0.0	97.7	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	19.0
HCM 2010 LOS	B

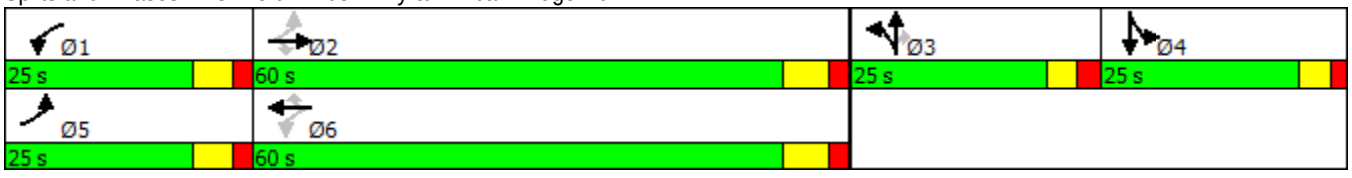
Notes

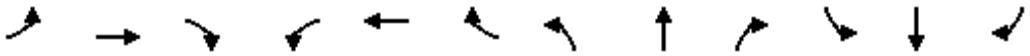
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	239	17	190	451	118	213	137	75	117
Future Volume (vph)	14	239	17	190	451	118	213	137	75	117
Lane Group Flow (vph)	22	281	25	200	485	136	312	161	95	209
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	NA	Perm	Split	NA
Protected Phases	5	2		1	6		3		4	4
Permitted Phases	2		2	6		6		3		
Detector Phase	5	2	2	1	6	6	3	3	4	4
Switch Phase										
Minimum Initial (s)	3.0	15.0	15.0	3.0	15.0	15.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.5	41.8	41.8	10.5	44.8	44.8	40.4	40.4	40.1	40.1
Total Split (s)	25.0	60.0	60.0	25.0	60.0	60.0	25.0	25.0	25.0	25.0
Total Split (%)	18.5%	44.4%	44.4%	18.5%	44.4%	44.4%	18.5%	18.5%	18.5%	18.5%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	3.1	3.1	3.2	3.2
All-Red Time (s)	2.1	2.3	2.3	2.1	2.3	2.3	2.3	2.3	1.9	1.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.1	6.8	6.8	6.1	6.8	6.8	5.4	5.4	5.1	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag
Lead-Lag Optimize?										
Recall Mode	None	Min	Min	None	Min	Min	Min	Min	None	None
v/c Ratio	0.07	0.57	0.05	0.44	0.64	0.19	0.74	0.33	0.46	0.50
Control Delay	14.1	33.1	0.2	17.3	26.7	4.3	47.3	8.4	47.0	38.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	33.1	0.2	17.3	26.7	4.3	47.3	8.4	47.0	38.8
Queue Length 50th (ft)	6	131	0	62	185	0	148	0	47	48
Queue Length 95th (ft)	14	221	0	117	387	33	#386	49	m100	79
Internal Link Dist (ft)		651			693		393			505
Turn Bay Length (ft)	100		135	290		300			225	
Base Capacity (vph)	562	1154	1023	565	1154	1032	420	485	410	810
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.24	0.02	0.35	0.42	0.13	0.74	0.33	0.23	0.26

Intersection Summary

Cycle Length: 135
Actuated Cycle Length: 88.3
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Northwinds Pkwy & Kimball Bridge Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	239	17	190	451	118	45	213	137	75	117	43
Future Volume (vph)	14	239	17	190	451	118	45	213	137	75	117	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583		1843	1583	1770	3422	
Flt Permitted	0.39	1.00	1.00	0.39	1.00	1.00		0.99	1.00	0.95	1.00	
Satd. Flow (perm)	729	1863	1583	730	1863	1583		1843	1583	1770	3422	
Peak-hour factor, PHF	0.65	0.85	0.67	0.95	0.93	0.87	0.67	0.87	0.85	0.79	0.72	0.93
Adj. Flow (vph)	22	281	25	200	485	136	67	245	161	95	162	46
RTOR Reduction (vph)	0	0	17	0	0	83	0	0	126	0	20	0
Lane Group Flow (vph)	22	281	8	200	485	53	0	312	35	95	189	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Split	NA	Perm	Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2		2	6		6			3			
Actuated Green, G (s)	29.5	27.6	27.6	44.0	36.0	36.0		20.2	20.2	10.4	10.4	
Effective Green, g (s)	29.5	27.6	27.6	44.0	36.0	36.0		20.2	20.2	10.4	10.4	
Actuated g/C Ratio	0.32	0.30	0.30	0.48	0.39	0.39		0.22	0.22	0.11	0.11	
Clearance Time (s)	6.1	6.8	6.8	6.1	6.8	6.8		5.4	5.4	5.1	5.1	
Vehicle Extension (s)	1.5	5.0	5.0	1.5	5.0	5.0		2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)	255	559	475	466	729	620		405	347	200	387	
v/s Ratio Prot	0.00	0.15		c0.05	c0.26			c0.17		0.05	c0.06	
v/s Ratio Perm	0.03		0.00	0.16		0.03			0.02			
v/c Ratio	0.09	0.50	0.02	0.43	0.67	0.09		0.77	0.10	0.47	0.49	
Uniform Delay, d1	21.6	26.5	22.6	14.9	23.0	17.6		33.7	28.6	38.2	38.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.01	1.01	
Incremental Delay, d2	0.1	1.5	0.0	0.2	3.0	0.1		8.0	0.0	0.6	0.4	
Delay (s)	21.7	28.0	22.6	15.1	26.0	17.7		41.7	28.7	39.3	38.9	
Level of Service	C	C	C	B	C	B		D	C	D	D	
Approach Delay (s)		27.2			22.0			37.3			39.0	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	91.9	Sum of lost time (s)	23.4
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations														
Traffic Vol, veh/h	173	0	64	0	0	0	12	55	277	0	83	0	176	63
Future Vol, veh/h	173	0	64	0	0	0	12	55	277	0	83	0	176	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	-	None	-	-	-	None
Storage Length	0	-	100	-	-	-	-	245	-	-	-	270	-	-
Veh in Median Storage, #	-	1	-	-	-	-	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	-	0	-	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	73	92	92	92	56	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	188	0	70	0	0	0	13	60	379	0	90	0	314	68

Major/Minor	Minor2					Major1				Major2			
Conflicting Flow All	864	-	191			279	383	0	-	277	379	0	0
Stage 1	529	-	-			-	-	-	-	-	-	-	-
Stage 2	335	-	-			-	-	-	-	-	-	-	-
Critical Hdwy	6.84	-	6.94			6.44	4.14	-	-	6.44	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-			-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-			-	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	-	3.32			2.52	2.22	-	-	2.52	2.22	-	-
Pot Cap-1 Maneuver	293	0	818			955	1172	-	0	957	1176	-	-
Stage 1	555	0	-			-	-	-	0	-	-	-	-
Stage 2	697	0	-			-	-	-	0	-	-	-	-
Platoon blocked, %								-				-	-
Mov Cap-1 Maneuver	293	0	818			1106	1106	-	-	957	957	-	-
Mov Cap-2 Maneuver	398	0	-			-	-	-	-	-	-	-	-
Stage 1	555	0	-			-	-	-	-	-	-	-	-
Stage 2	697	0	-			-	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.6	1.4	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBL	SBT	SBR
Capacity (veh/h)	1106	-	398	818	957	-	-
HCM Lane V/C Ratio	0.066	-	0.472	0.085	0.094	-	-
HCM Control Delay (s)	8.5	-	21.9	9.8	9.2	-	-
HCM Lane LOS	A	-	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	2.5	0.3	0.3	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	119	0	533	203	34
Future Vol, veh/h	0	119	0	533	203	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	73	56	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	129	0	730	363	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	181	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	831	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	831	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	831	-
HCM Lane V/C Ratio	-	0.156	-
HCM Control Delay (s)	-	10.1	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.6	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	24	0	344	210	42
Future Vol, veh/h	0	24	0	344	210	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Yield	-	None	-	Free
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	73	56	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	0	471	375	46

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	188	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	822	0	-	-	0
Stage 1	0	-	0	-	-	0
Stage 2	0	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	-	822	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT
Capacity (veh/h)	-	822	-
HCM Lane V/C Ratio	-	0.032	-
HCM Control Delay (s)	-	9.5	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	0.1	-

Traffic Volume Worksheets

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Traffic Volumes
Future Conditions

A&R Engineering
March 2018

1. SR 120 @ GA 400 NB Ramps

A.M. Peak Hour

	GA 400 NB Off-Ramp					GA 400 NB On-Ramp					SR 120 (Old Milton Pkwy)					SR 120 (Old Milton Pkwy)				
	Northbound					**Southbound**					**Eastbound**					**Westbound**				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	327	0	1557	1884	0	0	0	0	0	0	348	1503	0	1851	0	0	1488	532	2020
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	340	0	1620	1960	0	0	0	0	0	0	362	1564	0	1926	0	0	1548	554	2102
New Site Trips:	0	70	0	0	70	0	0	0	0	0	0	26	26	0	52	0	0	70	0	70
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	410	0	1620	2030	0	0	0	0	0	0	388	1590	0	1978	0	0	1618	554	2172

P.M. Peak Hour

	GA 400 NB Off-Ramp					GA 400 NB On-Ramp					SR 120 (Old Milton Pkwy)					SR 120 (Old Milton Pkwy)				
	Northbound					**Southbound**					**Eastbound**					**Westbound**				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	352	0	1199	1551	0	0	0	0	0	0	741	1128	0	1869	0	0	2177	1101	3278
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	366	0	1248	1614	0	0	0	0	0	0	771	1174	0	1945	0	0	2265	1146	3411
New Site Trips:	0	32	0	0	32	0	0	0	0	0	0	66	66	0	132	0	0	32	0	32
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	398	0	1248	1646	0	0	0	0	0	0	837	1240	0	2077	0	0	2297	1146	3443

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Traffic Volumes
Future Conditions

A&R Engineering
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2. SR 120 @ GA 400 SB Ramps

A.M. Peak Hour

Condition	GA 400 SB On-Ramp Northbound					GA 400 SB Off-Ramp Southbound					SR 120 (Old Milton Pkwy) Eastbound					SR 120 (Old Milton Pkwy) Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	0	0	0	0	0	696	0	1398	2094	0	0	1155	102	1257	0	400	1415	0	1815
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	0	0	0	0	0	724	0	1455	2179	0	0	1202	106	1308	0	416	1472	0	1888
New Site Trips:	0	0	0	0	0	0	0	0	70	70	0	0	52	26	78	0	0	140	0	140
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	0	0	0	0	0	724	0	1525	2249	0	0	1254	132	1386	0	416	1612	0	2028

P.M. Peak Hour

Condition	GA 400 SB On-Ramp Northbound					GA 400 SB Off-Ramp Southbound					SR 120 (Old Milton Pkwy) Eastbound					SR 120 (Old Milton Pkwy) Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	0	0	0	0	0	258	0	703	961	0	0	1574	434	2008	0	1088	1450	0	2538
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	0	0	0	0	0	268	0	732	1000	0	0	1638	452	2090	0	1132	1509	0	2641
New Site Trips:	0	0	0	0	0	0	0	0	32	32	0	0	131	66	197	0	0	63	0	63
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	0	0	0	0	0	268	0	764	1032	0	0	1769	518	2287	0	1132	1572	0	2704

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Traffic Volumes
Future Conditions

A&R Engineering
March 2018

3. SR 120 @ Northwinds Pkwy

A.M. Peak Hour

Condition	Northwinds Pkwy **Northbound**					2nd St **Southbound**					SR 120 (Old Milton Pkwy) **Eastbound**					SR 120 (Old Milton Pkwy) **Westbound**				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	5	11	22	38	0	45	11	26	82	0	35	1370	32	1437	0	514	2183	107	2804
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	5	11	23	39	0	47	11	27	85	0	36	1426	33	1495	0	535	2272	111	2918
New Site Trips:	0	28	0	70	98	0	0	0	0	0	0	0	8	88	96	0	189	21	0	210
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	33	11	93	137	0	47	11	27	85	0	36	1434	121	1591	0	724	2293	111	3128

P.M. Peak Hour

Condition	Northwinds Pkwy **Northbound**					2nd St **Southbound**					SR 120 (Old Milton Pkwy) **Eastbound**					SR 120 (Old Milton Pkwy) **Westbound**				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	45	67	215	327	0	420	27	64	511	0	139	1393	33	1565	0	179	1687	236	2102
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	47	70	224	341	0	437	28	67	532	0	145	1450	34	1629	0	186	1755	246	2187
New Site Trips:	0	71	0	177	248	0	0	0	0	0	0	0	20	40	60	0	85	9	0	94
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	118	70	401	589	0	437	28	67	532	0	145	1470	74	1689	0	271	1764	246	2281

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Traffic Volumes
Future Conditions

A&R Engineering
March 2018

4. SR 120 @ Amber Park Dr

A.M. Peak Hour

Condition	Amber Park Dr Northbound					3rd St Southbound					SR 120 (Old Milton Pkwy) Eastbound					SR 120 (Old Milton Pkwy) Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	8	4	3	15	0	76	8	30	114	0	79	1402	21	1502	0	134	2081	26	2241
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	8	4	3	15	0	79	8	31	118	0	82	1459	22	1563	0	139	2165	27	2331
New Site Trips:	0	19	0	8	27	0	0	0	0	0	0	0	88	38	126	0	21	28	0	49
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	27	4	11	42	0	79	8	31	118	0	82	1547	60	1689	0	160	2193	27	2380

P.M. Peak Hour

Condition	Amber Park Dr Northbound					3rd St Southbound					SR 120 (Old Milton Pkwy) Eastbound					SR 120 (Old Milton Pkwy) Westbound				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	21	18	89	128	0	148	5	59	212	0	185	1303	12	1500	0	33	1629	126	1788
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	22	19	93	134	0	154	5	61	220	0	193	1356	12	1561	0	34	1695	131	1860
New Site Trips:	0	47	0	20	67	0	0	0	0	0	0	0	40	17	57	0	9	71	0	80
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	69	19	113	201	0	154	5	61	220	0	193	1396	29	1618	0	43	1766	131	1940

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Traffic Volumes
Future Conditions

A&R Engineering
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5. Northwinds @ Kimball Bridge

A.M. Peak Hour

Condition	Northwinds Pkwy **Northbound**					Northwinds Pkwy **Southbound**					Kimball Bridge Rd **Eastbound**					Kimball Bridge Rd **Westbound**				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	21	33	127	181	0	211	156	58	425	0	11	483	64	558	0	250	224	27	501
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	22	34	132	188	0	220	162	60	442	0	11	503	67	581	0	260	233	28	521
New Site Trips:	0	0	93	0	93	0	14	34	0	48	0	0	0	0	0	0	0	0	37	37
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	22	127	132	281	0	234	196	60	490	0	11	503	67	581	0	260	233	65	558

P.M. Peak Hour

Condition	Northwinds Pkwy **Northbound**					Northwinds Pkwy **Southbound**					Kimball Bridge Rd **Eastbound**					Kimball Bridge Rd **Westbound**				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	43	164	132	339	0	38	29	41	108	0	13	230	16	259	0	183	433	97	713
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	45	171	137	353	0	40	30	43	113	0	14	239	17	270	0	190	451	101	742
New Site Trips:	0	0	42	0	42	0	35	87	0	122	0	0	0	0	0	0	0	0	17	17
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	45	213	137	395	0	75	117	43	235	0	14	239	17	270	0	190	451	118	759

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Traffic Volumes
Future Conditions

A&R Engineering
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6. Northwinds @ M. Drwy

A.M. Peak Hour

Condition	Northwinds Pkwy **Northbound**					Northwinds Pkwy **Southbound**					Site Driveway #2 **Eastbound**					- **Westbound**				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	0	71	0	71	0	0	425	0	425	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	0	74	0	74	0	0	442	0	442	0	0	0	0	0	0	0	0	0	0
New Site Trips:	26	104	0	0	130	33	0	82	134	249	0	65	0	24	89	0	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	26	104	74	0	204	33	0	524	134	691	0	65	0	24	89	0	0	0	0	0

P.M. Peak Hour

Condition	Northwinds Pkwy **Northbound**					Northwinds Pkwy **Southbound**					Site Driveway #2 **Eastbound**					- **Westbound**				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	0	274	0	274	0	0	108	0	108	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	0	285	0	285	0	0	112	0	112	0	0	0	0	0	0	0	0	0	0
New Site Trips:	12	47	0	0	59	83	0	67	60	210	0	165	0	61	226	0	0	0	0	0
Pass-by Trips:	0	8	-8	0	0	0	0	-3	3	0	0	8	0	3	11	0	0	0	0	0
Future 2022 Volumes:	12	55	277	0	344	83	0	176	63	322	0	173	0	64	237	0	0	0	0	0

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Traffic Volumes
Future Conditions

A&R Engineering
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7. Northwinds @ N. Drwy (RIRO)

A.M. Peak Hour

Condition	Northwinds Pkwy **Northbound**					Northwinds Pkwy **Southbound**					Site Driveway #1 **Eastbound**					- **Westbound**				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	0	71	0	71	0	0	425	0	425	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	0	74	0	74	0	0	442	0	442	0	0	0	0	0	0	0	0	0	0
New Site Trips:	0	0	98	0	98	0	0	201	75	276	0	0	0	47	47	0	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	0	172	0	172	0	0	643	75	718	0	0	0	47	47	0	0	0	0	0

P.M. Peak Hour

Condition	Northwinds Pkwy **Northbound**					Northwinds Pkwy **Southbound**					Site Driveway #1 **Eastbound**					- **Westbound**				
	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	0	274	0	274	0	0	108	0	108	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	0	285	0	285	0	0	112	0	112	0	0	0	0	0	0	0	0	0	0
New Site Trips:	0	0	248	0	248	0	0	91	34	125	0	0	0	119	119	0	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	0	533	0	533	0	0	203	34	237	0	0	0	119	119	0	0	0	0	0

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Traffic Volumes
Future Conditions

A&R Engineering
March 2018

8. Northwinds @ S. Drwy (RIRO)

A.M. Peak Hour

	Northwinds Pkwy **Northbound**					Northwinds Pkwy **Southbound**					Site Driveway #3 **Eastbound**					- **Westbound**				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	0	71	0	71	0	0	425	0	425	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	0	74	0	74	0	0	442	0	442	0	0	0	0	0	0	0	0	0	0
New Site Trips:	0	0	130	0	130	0	0	39	93	132	0	0	0	10	10	0	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	0	204	0	204	0	0	481	93	574	0	0	0	10	10	0	0	0	0	0

P.M. Peak Hour

	Northwinds Pkwy **Northbound**					Northwinds Pkwy **Southbound**					Site Driveway #3 **Eastbound**					- **Westbound**				
Condition	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot	U	L	T	R	Tot
Existing 2018 Volumes:	0	0	274	0	274	0	0	108	0	108	0	0	0	0	0	0	0	0	0	0
Growth Factor (%):	1	1	1	1		1	1	1	1		1	1	1	1		1	1	1	1	
No-Build 2022 Volumes:	0	0	285	0	285	0	0	112	0	112	0	0	0	0	0	0	0	0	0	0
New Site Trips:	0	0	59	0	59	0	0	98	42	140	0	0	0	24	24	0	0	0	0	0
Pass-by Trips:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future 2022 Volumes:	0	0	344	0	344	0	0	210	42	252	0	0	0	24	24	0	0	0	0	0